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ISO/IEC JTC 1/SC 32/WG1 N157



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**TITLE : Business Agreement Semantic Descriptive Techniques – Part 1:  
Operational Aspects of Open-edi for Implementation**

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**SOURCE : Project Editor**

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**ISO/IEC JTC 1/  
SC32/WG 1**

**OPEN-EDI**

Project Editor's Notes on 2<sup>nd</sup> CD

- 1  
2  
3 1. This 2<sup>nd</sup> CD 15944-1 incorporates:
  - 4  
5 ➤ the disposition of comments on the 1<sup>st</sup> CD document (JTC1/SC32 N0370) as found  
6 in JTC1/SC32/WG1/N147 (2000-05-05). These are based on instructions to the  
7 Project Editor of the 17-21 January, 2000 meeting and incorporated revisions of an  
8 editorial nature that were made at the discretion of the Project Editor. The result was  
9 a revised CD document SC32/WG1 N0148;
  - 10  
11 ➤ the results of the SC32/WG1 editing meeting held 12-14 June, 2000, Maidenhead,  
12 UK; and,
  - 13  
14 ➤ the resolutions and instructions to the Project Editor resulting from the SC32/WG1  
15 meeting held 15 June, 2000, Maidenhead, UK. (see SC32/WG1 N0156).
- 16  
17 2. Comments on the 1<sup>st</sup> CD and the results of the Editing Meeting led to a restructuring of the  
18 document. Subsequent SC32/WG1 work focused on what are now Sections 1.0 through 5  
19 and much of Section 8 as well as Section 9. These are now considered to be "stable".  
20
- 21 3. With respect to this 2<sup>nd</sup> CD ballot, P-member bodies are requested to focus their  
22 comments and contributions on Chapter 6 and those parts of Chapter 7 and 8 which require  
23 added content for their completion. Completion of these parts of ISO/IEC 15944-1 will be a  
24 priority at the next SC32/WG1 meeting to be held 9-13 October, 2000 Helsinki, Finland.  
25
- 26 4. One should also note that, work is underway on:
  - 27  
28 (1) harmonizing the contents of "Annex H (Informative) - Effect of Classification of  
29 Scenario Constructs" with the 2<sup>nd</sup> CD text found in Section 5.6 "Classification and  
30 Identification of Open-edi Scenarios"; and,
  - 31  
32 (2) completing Annex I (Informative) - Modeling Scenario Descriptions Using the Open-  
33 edi Scenario Template.
- 34  
35 [Note: The modelling tool chosen here is UML]  
36
- 37 5. At the June, 2000 editing meeting, the possible need for additional terms and definitions was  
38 raised, (e.g., "commitment"). P-members are encouraged to provide the same as part of  
39 their 2<sup>nd</sup> CD ballots and associated contributions.  
40
- 41 6. Minor editing work is continuing on this 2<sup>nd</sup> CD including verifying internal cross-references.  
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1

**2 Foreword**

3

4 ISO (the International Organization for Standardization) and IEC (the International Electrotechnical  
5 Commission) form the specialized system for worldwide standardization. National bodies that are  
6 members of ISO or IEC participate in the development of International Standards through technical  
7 committees established by the respective organization to deal with particular fields of technical  
8 activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other  
9 international organizations, governmental and non-governmental, in liaison with ISO and IEC, also  
10 take part in the work.

11

12 In the field of information technologies, ISO and IEC have established a joint technical committee,  
13 ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are  
14 circulated to national bodies for voting. Publication as an International Standard requires approval by  
15 at least 75 % of the national bodies casting a vote.

16

17 This ISO/IEC IS 15944-1 was prepared by the ISO/IEC Joint Technical Committee ISO/IEC JTC 1,  
18 *Information Technology, Subcommittee SC32, Data Management and Interchange.*

# 1 0 Introduction

## 2 0.1 Purpose and overview

3 This document is a working document addressing 1) Security in Open-edi, 2) Identification and  
4 analysis of classes of business requirements in relation to Open-edi scenarios, 3) Requirements  
5 on FDTs and registration procedures, 4) Open-edi scenario demands on the Open-edi support  
6 infrastructure. These topics were identified as Topics 12, 14, 15 and 19 respectively of ISO/IEC  
7 JTC1/SC32 WG1.

8  
9 IS 14462 Open-edi described the conceptual architecture necessary for carrying out Open-edi.  
10 That architecture described the need to have two separate and related views of the business  
11 activities. The first is the Business Operational View (BOV). The second is the Functional Service  
12 View (FSV).

13  
14 In the BOV, the requirements that the business puts on the exchange of information are described  
15 using a modelling technique. IS 14462 recognized that there was no single modelling technique  
16 identified whilst the IS was in preparation that would satisfy all of the conditions which could be  
17 identified that the FSV would need as input. It was also recognized that business users would  
18 need a selection of modelling tools since some tools appear to be better suited to particular types  
19 of business specifications and descriptions than others.

20  
21 To provide for a situation where business users may select from a range of modelling systems,  
22 selection criteria identifying the characteristics which any suitable modelling system must be able  
23 to support have to be defined. These criteria can be used in two ways. One is to be able to select  
24 a suitable modelling system. Another is to identify shortcomings in a modelling system currently in  
25 use so that the users can provide the extra information themselves if they prefer to use that  
26 modelling system.

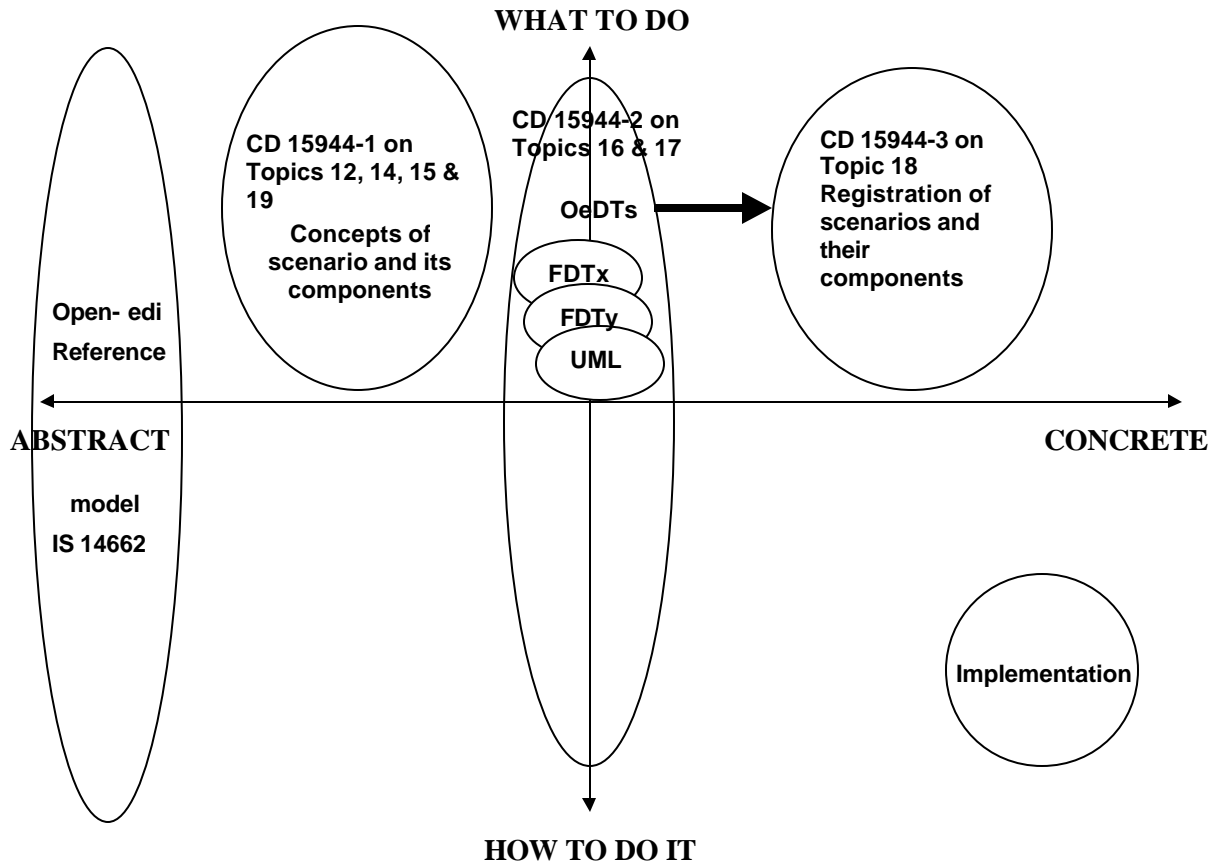
27  
28 The BOV is used to capture the business processes from the business perspective, but there are  
29 other things that the BOV would not capture because they are part of the operation of the Open-edi  
30 architecture itself. One example is that a process must be able to relate to specific information  
31 bundles. This relationship has to be precise because any supporting computer application has to  
32 be able to respond to the information structure that it receives as a result of a message from  
33 another Open-edi user. Another example is the need to provide for the ability to trigger an action  
34 because an event has not occurred (a message has been sent but no response has taken place).  
35 Therefore it is necessary to identify those characteristics which are not expected to be captured in  
36 the BOV but are required by computer systems developers in their work on the FSV.

37  
38 The FSV is used to express the technical methods by which the parts of the business processes  
39 used in Open-edi are developed. The FSV has to address the definition, development and lifecycle  
40 management of information bundles consisting of semantic components, together with any rules  
41 which are essential to their management and operation.

42  
43 The FSV is a specification of the way in which the exchange of information is managed. It is not  
44 concerned with any syntax used to encode or represent information that is being exchanged. The  
45 selection of a suitable syntax is left to the EDI implementors, just as the selection of the data  
46 interchange service on which messages are sent and received is left to networking specialists. It  
47 is also their responsibility to ensure that these syntaxes and services are able to satisfy



1 overarching communications requirements such as security services if these are not to be  
 2 supported through the FSV.  
 3  
 4 In summary, this document is the first of a three-part document that focuses on aspects of “what  
 5 to do” as opposed to “How to do it,” as shown in Figure 1. Existing standards/tools will be used to  
 6 the extent possible for “How to.”  
 7  
 8



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 11  
 12  
 Figure 1 Scope of CD 15944

13 **0.1.1 Business operational view (BOV), Open-edi and E-commerce, E-business, etc.**

14 The purpose of this introductory section is to provide users with an understanding of the relation of  
 15 this standard to concepts/terms such as "electronic commerce", "electronic administration",  
 16 "electronic business", etc.

17  
 18 Concepts/terms such as "edi", and now e-commerce, (and its compatriots such as e-  
 19 administration, e-business, e-government, e-logistics, e-travel, e-tailing, etc.), have a high profile  
 20 among users and suppliers alike including that of standardization. These concepts/terms have  
 21 many different meanings in various contexts and perspectives.<sup>1</sup> In addition, marketing people and

<sup>1</sup>The ISO/IEC JTC1 Business Team on Electronic Commerce (BT-EC) in its Report to JTC1 stated (p.9)

1 those seeking to raise investment funds, (e.g., IPOs), do and will continue to use "e-" words in a  
2 variety of ways.

3  
4 The underlying principles and characteristics of e-commerce and e-administration, e-business  
5 etc., include:

- 6  
7 (1) being business transaction-based (of both a financial and non-financial nature);  
8  
9 (2) using information technology (computers and telecommunications);  
10  
11 (3) interchanging electronic data involving establishment of commitments among persons<sup>2</sup>.  
12

13 From a commercial, legal and standardization perspective, one can view electronic commerce as:

14  
15 ***"electronic commerce: a category of business transactions, involving two or more***  
16 ***persons, enacted through electronic data interchange. Persons can be individuals and/or***  
17 ***organizations"***.<sup>3</sup>  
18

19 Consequently, interpretations and use of the concepts/terms, "e-commerce", "e-business", "e-  
20 administration", etc., which do not require:

- 21  
22 (1) a clearly understood purpose, mutually agreed upon goal(s), explicitness and unambiguity;  
23  
24 (2) pre-definable set(s) of activities and/or processes, pre-definable and structured data;  
25  
26 (3) commitments among persons being established through electronic data interchange;  
27  
28 (4) computational integrity and related characteristics; and,  
29  
30 (5) the above being specifiable through Formal Description Techniques (FDTs) and  
31 executable through information technology systems for use in real world actualizations;  
32

33 are deemed to be not a priority for this standard and likely outside of its scope.

---

*"BT-EC recognizes that Electronic Commerce (EC) can be defined in many different ways. But rather than attempting to provide a satisfactory definition, the Team has chosen to take a more heuristic approach to EC and to do so from a global perspective, i.e., world-wide, cross-sectorial, multilingual, various categories of participants (including consumers)".*

ISO/IEC JTC1 N5296 "Report to JTC1: Work on Electronic Commerce Standardization to be initiated". 4 May, 1998, 74 p.

<sup>2</sup> In this standard the term "party(ies)" is used in its generic context independent of roles or categories of "person". It assumes that a party has the properties of a "person".

<sup>3</sup>Definitions for the terms "business transaction" and "electronic data interchange" are found in *ISO/IEC 14662 "Open-edi Reference Model"*, for "organization" in *ISO/IEC 6523 "Information Technology - Structure for the Identification of organizations and organization parts, Part 1: Identification of organization identification schemes; and, Part 2: Registration of organizations identification schemes"*, and for "person" and "individual" in this standard.

1  
2 The above noted five requirements are essential for achieving interoperability from a business  
3 operation view perspective (just as existing computer and telecommunication standards have as a  
4 key objective interoperability from an IT perspective).  
5

## 6 **0.2 Organization and description**

7

8 This document describes the key concepts required for developing the business operational view  
9 (BOV) of a business transaction and scenario. It considers how a scenario may be decomposed  
10 into functions and how the different classes of constraints to be applied should be identified. It  
11 provides for methods of modeling processes, work flow and information flow. The requirement to  
12 identify primitive or common components that are needed to support the scenario so that there is  
13 a high likelihood of re-usability of the components that are produced or the likelihood of being able  
14 to locate a suitable component available from a registry. A key purpose of this standard is to  
15 incorporate real world requirements arising from existing commercial frameworks and legal  
16 frameworks governing common to business transactions.

17 The document provides two checklists to guide the reader through the mechanics of determining  
18 the scope of a business transaction and determining the adequacy of the scenario definition as  
19 well as those of scenario components. Throughout this standard the focus is on maximizing  
20 interoperability and re-useability of scenarios and scenario components. Wherever possible,  
21 available standards which may be used in support of the implementation of requirements have  
22 been identified.

23

# 24 **1 SCOPE**

## 25 **Integrated business operational view (BOV)**

26

27  
28 The Open-edi Reference Model (IS 14662, Section 4) states:  
29

30 *"The intention is that the sending, by an Open-edi party, of information from a scenario,*  
31 *conforming to Open-edi standards, shall allow the acceptance and processing of that*  
32 *information in the context of that scenario by one or more Open-edi parties by reference to*  
33 *the scenario and without the need for agreement. However, the legal requirements and/or*  
34 *liabilities resulting from the engagement of an organization in any Open-edi transaction*  
35 *may be conditioned by the competent legal environment(s) or the formation of a legal*  
36 *interchange agreement between the participating organizations. Open-edi parties need to*  
37 *observe rule-based behaviour and possess the ability to make commitments in Open-edi*  
38 *(e.g., business, operational, technical, legal and/or audit perspectives)."*  
39

40 This BOV-related standard addresses the fundamental requirements of the commercial and legal  
41 frameworks and their environments, and also integrates the requirements of the information  
42 technology and telecommunications environments.  
43

1 In addition to the existing strategic directions of "portability" and "interoperability", the added  
2 strategic direction of ISO/IEC JTC1 of "cultural adaptability" is supported in this standard. This  
3 BOV standard also supports requirements arising from the public policy/consumer environment,  
4 cross-sectorial requirements and the need to address horizontal issues.<sup>4</sup> This BOV standard  
5 integrates these different sets of requirements. See Figure 2.

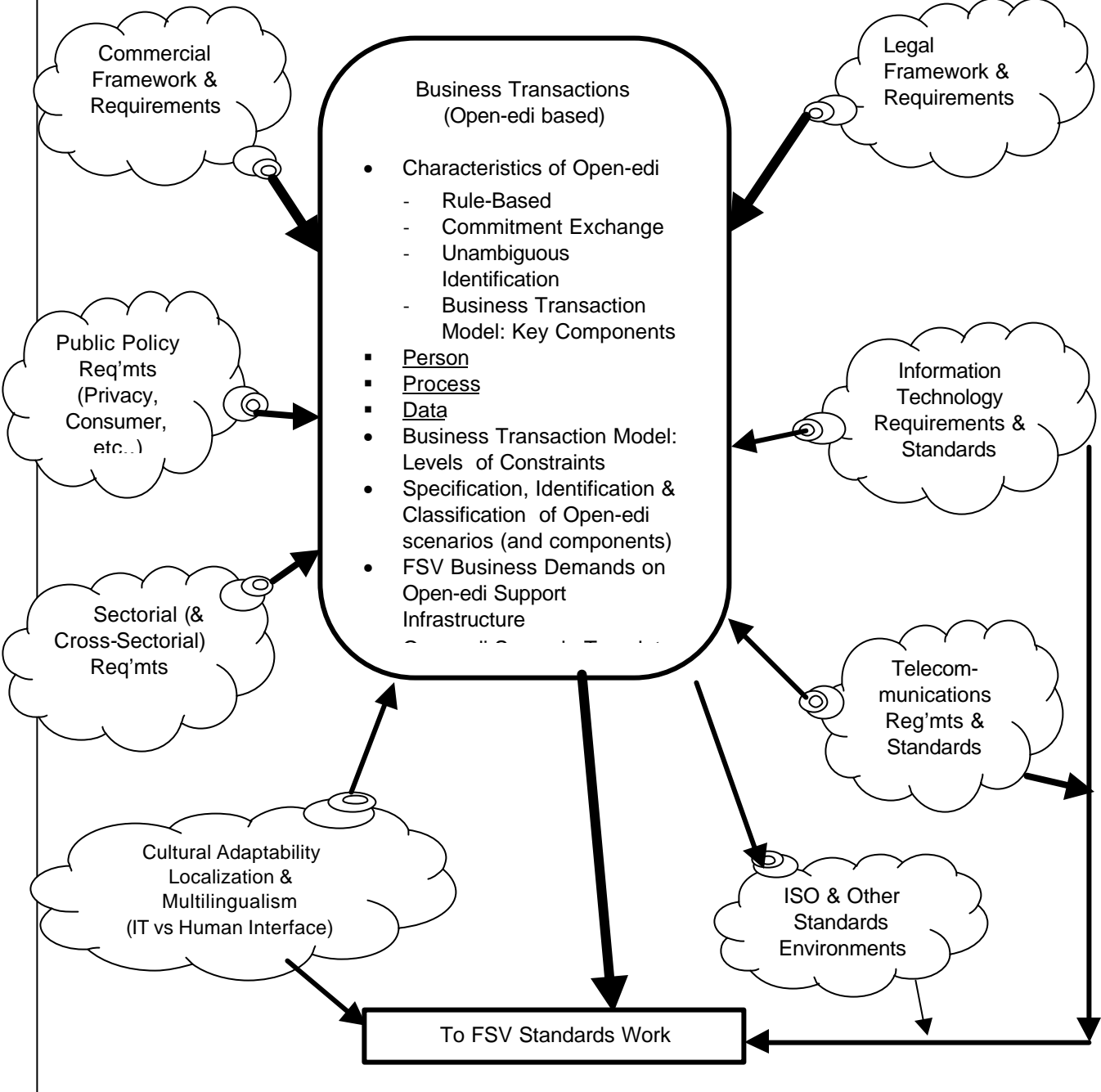
6  
7 This standard provides an integrated approach to meeting the requirements of the legal and  
8 commercial (including administrative) environments while taking into account (global) public  
9 policy/consumer requirements, (e.g., privacy/data protection, consumer protection, product or  
10 service "labelling", etc.). This means that terms and definitions in this standard serve as a  
11 common bridge among these different sets of business operational requirements allowing the  
12 integration of code sets and rules defining these requirements to be integrated into business  
13 processes electronically.

14  
15 This standard is also a methodology and tool for specifying common business practices as parts  
16 of common business transactions in the form of scenarios, scenario attributes, roles, information  
17 bundles and semantic components. It achieves this by 1) developing standard computer  
18 processable specifications of common business rules and practices as scenarios and scenario  
19 components; and 2) maximizing the re-use of these components in business transactions.

---

<sup>4</sup> See further on these requirements the Recommendations of the ISO/IEC JTC1 Business Team on Electronic Commerce(BT-EC) [Ref: ISO/IEC JTC1 N5296].

**Sources of Requirements on the Business Operational View(BOV) aspects of Open-edi which need to be integrated and/or taken into account**



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42  
43  
44

**Figure 2 Integrated View – Business Operational Requirements**

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated below were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most current editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

*ISO/IEC IS 14662: 1997, Information Technologies – Open-edition reference model*

*ISO/IEC IS 11179: Information Technologies – Specification and standardization of data elements*

*ISO/IEC 10181-2:1996, 1996 Information technology - Open Systems Interconnection - Security frameworks for open systems: Authentication framework*

*ISO/IEC TR 13335-1:1996, 1996 Information technology -- Guidelines for the management of IT Security - Part 1: Concepts and models for IT security*

*ISO/IEC Directives, Part 1, Section 2.5.6, 1998*

*ISO/IEC Guide 2: 1996*

*ISO/IEC 2382:1999, Information Technology - Vocabulary*

*ISO/IEC 9798-1:1997, Information Technology - Security techniques - Entity authentication - Part 1: General*

*ISO 1087:1990, Terminology - Vocabulary*

*ISO/IEC 6523-1: 1998, Information Technology - Structure for the identification of organizations and organization parts -- Part 1: Identification of organization identification schemes; -- Part 2: Registration of organization identification schemes*

## 3 Technical normative elements

### 3.1 Definitions

For the purposes of this International Standard, the following definitions apply:

**3.1.01 Agent:** a 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 Services View (FSV) where they are defined as an "Information Processing Domain(IPD)".

**3.1.02 Application Program Interface (API):** a boundary across which application software uses facilities of programming languages to invoke services [ISO/IEC 14662:1997 (3.1.1)]

1  
2 **3.1.03 Authentication:** the provision of assurance of the claimed identity of an entity. [ISO/IEC  
3 10181-2:1996]  
4

5 **3.1.04 Authenticity:** the property that ensures that the identity of a subject or resource is the one  
6 claimed. Authenticity applies to entities such as users, processes, systems and information.  
7 [ISO/IEC TR 13335-1:1996 (3.3) monolingual (English) only]  
8

9 **3.1.05 Business:** a series of processes, each having a clearly understood purpose, involving  
10 more than one organization, realized through the exchange of information and directed towards  
11 some mutually agreed upon goal, extending over a period of time. [ISO/IEC 14662:1997 (3.1.2)]  
12

13 **3.1.06 Business Operational View (BOV):** a perspective of business transactions limited to  
14 those aspects regarding the making of business decisions and commitments among  
15 organizations, which are needed for the description of a business transaction. [ISO/IEC  
16 14662:1997 (3.1.3)]  
17

18 **3.1.07 Business transaction:** a predefined set of activities and/or processes of organizations  
19 which is initiated by an organization to accomplish an explicitly shared business goal and  
20 terminated upon recognition of one of the agreed conclusions by all the involved organizations  
21 although some of the recognition may be implicit. [ISO/IEC 14662:1997 (3.1.4)]

22 **3.1.08 Buyer:** a person who aims to get possession of a good or service through providing an  
23 acceptable equivalent value, usually in money, to the person providing such a good or service.  
24

25 **3.1.09 Consensus (standardization perspective):** general agreement, characterized by the  
26 absence of sustained opposition to substantial issues by any important part of the concerned  
27 interests and by a process that involves seeking to take into account the views of all parties  
28 concerned and to reconcile any conflicting arguments  
29

30 NOTE - Consensus need not imply unanimity. [Based on ISO/IEC Directives, Part 1,  
31 Section 2.5.6, 1998; see also ISO/IEC Guide 2: 1996 (1.7)]  
32

33 **3.1.10 Data:** A reinterpretable representation of information in a formalized manner suitable for  
34 communication, interpretation, or processing  
35

36 NOTE - Data can be processed by humans or by automatic means [ISO/IEC 2382:1993]  
37

38 **3.1.11 Data (in a business transaction):** representations of recorded information that are being  
39 prepared or have been prepared in a form suitable for use in a computer system  
40

41 **3.1.12 Data element:** a unit of data for which the definition, identification, representation and  
42 permissible values are specified by means of a set of attributes. [ISO/IEC 11179-3:1994 (3.3)]  
43

44 **3.1.13 Data element (in organization of data):** a unit of data that is considered in context to be  
45 indivisible  
46

47 Example: The data element "age of a person" with values consisting of all combinations of  
48 3 decimal digits.  
49

1 NOTE - Differs from the entry 17.06.02 in ISO/IEC 2382-17. [ISO/IEC 2382-04:1998  
2 (04.07.01)]  
3

4 **3.1.14 Distinguishing identifier:** data that unambiguously distinguishes an entity in the  
5 authentication process [ISO/IEC 10181-2:1996]  
6

7 **3.1.15 Electronic Data Interchange (EDI):** the automated exchange of any predefined and  
8 structured data for business purposes among information systems of two or more organizations  
9 [ISO/IEC 14662:1997 (3.1.5)]  
10

11 **3.1.16 Entity:** any concrete or abstract thing that exists, did exist, or might exist, including  
12 associations among these things.  
13

14 Example: A person, object, event, idea, process, etc.  
15

16 NOTE - An entity exists whether data about it are available or not. [ISO/IEC 2382-17:1996  
17 (17.02.05)]  
18

19 **3.1.17 Entity authentication:** the corroboration that the entity is the one claimed. [ISO/IEC 9798-  
20 1:1997 (3.3.11) monolingual (English) only]  
21

22 **3.1.18 (entity) identification:** a method of using one or more attributes whose attribute values  
23 uniquely identify each occurrence of a specified entity. [ISO/IEC 2382-17:1996 (17.02.14)]  
24

25 **3.1.19 Formal Description Technique (FDT) {JTC1 directives}:** a specification method based  
26 on a description language using rigorous and unambiguous rules both with respect to developing  
27 expressions in the language (formal syntax) and interpreting the meaning of these expressions  
28 (formal semantics).  
29

30 **3.1.20 Functional Service View (FSV):** a perspective of business transactions limited to those  
31 information technology interoperability aspects of IT Systems needed to support the execution of  
32 Open-edi transactions [ISO/IEC 14662:1997 (3.1.7)]  
33

34 **3.1.21 Identification:** a rule-based process, explicitly stated, involving the use of one or more  
35 attributes, i.e., data elements, whose value (or combination of values) are used to identify uniquely  
36 the occurrence or existence of a specified entity.  
37

38 **3.1.22 Identifier (in business transaction):** an unambiguous, unique and a linguistically neutral  
39 value, resulting from the application of a rule-based identification process. Identifiers must be  
40 unique within the identification scheme of the issuing authority.  
41

42 **3.1.23 Individual:** A person who is a human being, i.e., a natural person, who acts as a distinct  
43 indivisible entity or is considered as such.  
44

45 **3.1.24 Information (in information processing):** knowledge concerning objects, such as facts,  
46 events, things, processes, or ideas, including concepts, that within a certain context has a  
47 particular meaning [ISO 2382-1:1993 (01.01.01)]  
48



1 **3.1.25 Information Bundle (IB):** the formal description of the semantics of the information to be  
2 exchanged by Open-edi Parties playing roles in an Open-edi scenario [ISO/IEC 14662:1997  
3 (4.1.2.2)]  
4

5 **3.1.26 Information Technology System (IT System):** a set of one or more computers,  
6 associated software, peripherals, terminals, human operations, physical processes, information  
7 transfer means, that form an autonomous whole, capable of performing information processing  
8 and/or information transfer [ISO/IEC 14662: 1997 (3.1.8)]  
9

10 **3.1.27 Medium:** physical material which serves as a functional unit, in or on which information or  
11 data is normally recorded, in which information or data can be retained and carried, from which  
12 information or data can be retrieved, and which is non-volatile in nature.  
13

14 NOTES:

- 15
- 16 (1) This definition is independent of the material nature on which the information is  
17 recorded and/or technology utilized to record the information, (e.g., paper,  
18 photographic, i.e, chemical, magnetic, optical, ICs (integrated circuits), as well as other  
19 categories no longer in common use such as vellum, parchment (and other animal  
20 skins), plastics, (e.g., bakelite or vinyl), textiles, (e.g., linen, canvas), metals, etc.).
- 21 (2) The inclusion of the "non-volatile in nature" attribute is to cover latency and  
22 records retention requirements.
- 23 (3) This definition of "medium" is independent of:
- 24 a) Form or format of recorded information;  
25 b) Physical dimension and/or size; and,  
26 c) Any container or housing that is physically separate from material being  
27 housed and without which the medium can remain a functional unit.
- 28 (4) This definition of "medium" also captures and integrates the following key  
29 properties:
- 30 a) The property of medium as a material in or on which information or data  
31 can be recorded and retrieved;  
32 b) The property of storage;  
33 c) The property of physical carrier;  
34 d) The property of physical manifestation, i.e., material;  
35 e) The property of a functional unit; and,  
36 f) The property of (some degree of) stability of the material in or on which the  
37 information or data is recorded.  
38

39 **3.1.28 Name:** designation of an object by a linguistic expression [ISO 1087:1990 (5.3.1.3)]  
40

41 **3.1.29 Object:** any part of the perceivable or conceivable world.  
42

43 NOTE: Objects may also be material, (e.g., engine) or immaterial, (e.g., magnetism) [ISO  
44 1087:1990 (2.1)]  
45

46 **3.1.30 Open-edi:** electronic data interchange among multiple autonomous organizations to  
47 accomplish an explicit shared business goal according to Open-edi standards [ISO/IEC  
48 14662:1997 (3.1.9)]  
49

1 **3.1.31 Open-edi Description Technique (OeDT):** a specification method such as a Formal  
2 Description Technique, another methodology having the characteristics of a Formal Description  
3 Technique, or a combination of such techniques as needed to formally specify BOV concepts, in a  
4 computer processible form [ISO/IEC 14662:1997 (4.1.1)]  
5

6 **3.1.33 Open-edi Party (OeP):** an organization that participates in Open-edi [ISO/IEC 14662:1997  
7 (3.1.11)]  
8

9 NOTE: Often in this ISO/IEC 15944-1 standard referred to generically as "party" or "parties" for any  
10 entity modelled as playing a role in Open-edi scenarios.  
11

12 **3.1.33 Open-edi scenario:** a formal specification of a class of business transactions having the  
13 same business goal [ISO/IEC 14662:1997 (3.1.12)]  
14

15 **3.1.34 Open-edi Standard:** a standard that complies with the Open-edi Reference Model  
16 [ISO/IEC 14662:1997 (3.1.10)]  
17

18 **3.1.35 Open-edi transaction:** a business transaction that is in compliance with an Open-edi  
19 scenario [ISO/IEC 14662:1997 (3.1.13)]  
20

21 **3.1.36 Organization:** a unique framework of authority within which a person or persons act, or  
22 are designated to act, towards some purpose.  
23

24 NOTE: The kinds of organizations covered by this International Standard include the  
25 following examples:  
26

27 a) an organization incorporated under law;

28 b) an unincorporated organization or activity providing goods and/or services including:

29 1) partnerships;

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

32 3) sole proprietorships

33 4) governmental bodies  
34  
35

36 c) groupings of the above types of organizations where there is a need to identify these in  
37 information interchange [ISO/IEC 6523-1: 1998 (3.1)]  
38

39 **3.1.37 Organization part:** any department, service or other entity within an organization, which  
40 needs to be identified for information interchange [ISO/IEC 6523-1:1998 (3.2)]  
41

42 **3.1.38 Organization person:** an organization part which has the properties of a person and thus  
43 is able to make commitments on behalf of that organization.  
44

45 NOTE:

46 a) an organization can have one or more organization persons.

47 b) an organization person is deemed to represent and act on behalf of the  
48 organization and to do so in a specified capacity.

49 c) an organization person can be a "natural person" such as an employee or  
50 officer of the organization.

1 d) an organization person can be a legal person, i.e., another organization.  
2

3 **3.1.39 Persona:** the set of data elements and their values by which a person wishes to be known  
4 and thus identified in a business transaction  
5

6 **3.1.40 Person:** an entity, i.e., a natural or legal person, recognized by law as having legal rights  
7 and duties, able to make commitment(s), assume and fulfil resulting obligation(s), and able of  
8 being held accountable for its action(s).  
9

10 NOTE: Synonyms for "legal person" include "artificial person", "body corporate", etc.,  
11 depending on the terminology used in competent jurisdictions.  
12

13 **3.1.41 Person signature:** a signature, i.e., a name representation, distinguishing mark or usual  
14 mark, which is created by and pertains to a person  
15

16 **3.1.42 Process:** a series of actions or events taking place in a defined manner leading to the  
17 accomplishment of an expected result  
18

19 **3.1.43 Public administration:** an entity, i.e., a person, which is an organization and has the  
20 added attribute of being authorized to act on behalf of a regulator  
21

22 **3.1.44 Recorded information:** any information that is recorded on or in a medium irrespective of  
23 form, recording medium or technology utilized, and in a manner allowing for storage and retrieval.  
24

25 NOTES:

26 (1) This is a generic definition and is independent of any ontology, (e.g., those of  
27 "facts" versus "data" versus "information" versus "intelligence" versus "knowledge",  
28 etc.).

29 (2) Through the use of the term "information," all attributes of this term are inherited  
30 in this definition.

31 (3) This definition covers:

32 a) any form of recorded information, means of recording, and any medium  
33 on which information can be recorded; and,

34 b) all types of recorded information including all data types, instructions or  
35 software, databases, etc.  
36

37 **3.1.45 Regulator:** a person who has authority to prescribe external constraints which serve as  
38 principles, policies or rules governing or prescribing the behaviour of persons involved in a  
39 business transaction as well as the provisioning of goods and services interchanged  
40

41 **3.1.46 Role:** a specification which models an external intended behaviour (as allowed within a  
42 scenario) of an Open-edl Party [ISO/IEC 14662:1997 (4.1.2.1)]  
43

44 **3.1.47 Scenario attribute:** the formal specification of information, relevant to an Open-edl  
45 scenario as a whole, which is neither specific to roles nor to information bundles. [ISO/IEC  
46 14662:1997 (4.1.2.3)]  
47

48 **3.1.48 Seller:** a person who aims to hand over voluntarily or in response to a demand or request,  
49 a good or service to another person and in return receives an acceptable equivalent value, usually  
50 in money, for the good or service provided

1  
2 **3.1.49 Semantic component (SC):** a unit of information unambiguously defined in the context of  
3 the business goal of the business transaction.

4  
5 A SC may be atomic or composed of other SCs. [ISO/IEC 14662:1997 (4.1.2.2)]  
6

7 **3.1.50 Standards:** documented agreements containing technical specifications or other precise  
8 criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that  
9 materials, products, processes and services are fit for their purpose. [This is the generic definition  
10 of "standards" of the ISO and IEC (and now found in the ISO/IEC JTC1 Directives, Part 1, Section  
11 2.5:1998) {See also ISO/IEC Guide 2: 1996 (1.7)} <<<http://www.iso.ch/infoe/intro.html>>>]  
12

13 **3.1.51 Third party:** a person besides the two primarily concerned in a business transaction who  
14 is agent of neither and who fulfils a specified role or function as mutually agreed to by the two  
15 primary persons.

16  
17 NOTE: It is understood that more than two persons can at times be primary parties in a  
18 business transaction  
19

20 **3.1.52 Unambiguous:** the level of certainty and explicitness required in the completeness of the  
21 semantics of the recorded information interchanged appropriate to the goal of a business  
22 transaction  
23

## 24 **3.2 Symbols and abbreviations**

25

<b>API</b>	Application Program Interface
<b>BIM</b>	Business and Information Modelling
<b>BOV</b>	Business Operational View
<b>CASE</b>	Computer Aided Software Engineering
<b>DMA</b>	Decision Making Application
<b>EDI</b>	Electronic Data Interchange
<b>EDIFACT</b>	EDI For Administration, Commerce and Transport
<b>FDT</b>	Formal Description Technique
<b>FSV</b>	Functional Service View
<b>GE</b>	Group of Experts
<b>IB</b>	Information Bundle
<b>IPD</b>	Information Processing Domain
<b>IT</b>	Information Technology
<b>MHEG</b>	Multimedia Hypermedia Expert Group
<b>OeCI</b>	Open-edi Control Information

<b>OeDT</b>	Open-edi Descriptive Technique
<b>OeP</b>	Open-edi Party
<b>OeSE</b>	Open-edi Support Entity
<b>OeUD</b>	Open-edi User Data
<b>OSI</b>	Open System Interconnection
<b>SC</b>	Semantic Component (in the context of Open-edi scenarios)
<b>SC</b>	Sub-Committee (in the context of ISO or IEC)
<b>SGML</b>	Standard Generalised Mark-up Language
<b>STEP</b>	STandard for the Exchange of Product model data
<b>TC</b>	Technical Committee
<b>TDID</b>	Trade Data Interchange Directory
<b>TI</b>	Transfer Infrastructure
<b>UN/ECE</b>	United Nations / Economic Commission for Europe
<b>UNSM</b>	United Nations Standard Message
<b>WG</b>	Working Group
<b>WP</b>	Working Party

1

## 2 **4. Characteristics of Open-edi**

3

4 Open-edi describes flows of information using Information bundles which cause pre-defined  
5 changes in the states of the parties to the exchange. Parties using Open-edi make the  
6 commitment that they will adhere to the predefined rules for the roles, scenarios and bundles of  
7 information as they apply to them.

8

9 There are a number of characteristics by which Open-edi is recognized and defined. These are:

10

- 11 - actions based upon following predefined rules;
- 12 - commitment of the parties involved;
- 13 - communications among parties are automated;
- 14 - parties control and maintain their states;
- 15 - parties act autonomously;
- 16 - multiple simultaneous transactions can be supported.

17

18 Each is now described in more detail.

19

### 20 **4.1 Actions based upon following clear, predefined rules**

21

1 Open-edi is based upon following rules which are clear and predefined. These rules formally  
2 specify the role(s) of the parties involved in Open-edi and the expected behaviour(s) of the parties  
3 as seen by other parties engaging in Open-edi. Open-edi rules are applied to:

- 4
- 5 - content of information flows; and
- 6 - the information flows themselves.
- 7

8 The combination of both of these provides a complete definition of the relationships among the  
9 parties since it requires them to achieve a common semantic understanding of the information  
10 exchanged. They must also have consistent generic procedural views on their interaction.  
11 Therefore rule sets have to be agreed in advance and captured in Open-edi scenarios. This is a  
12 major component of the agreement required among parties.  
13

#### 14 ***4.2 Commitment of the parties involved.***

15

16 Open-edi is a class of electronic information flows which involves predefined types and states of  
17 commitments of the parties concerned. These involve tasks or functions to be carried out,  
18 obligations to be entered into, etc. These commitments are either implicit or explicit. In Open-edi,  
19 all commitments must be stated clearly and unambiguously and understood by all parties involved.  
20 Commitments are of several types and exist at several levels. The obligations arising from  
21 commitments can be fulfilled either directly by the parties, or through agents acting on their behalf.  
22

#### 23 ***4.3 Communications among parties are automated.***

24

25 Open-edi activities take place automatically among information systems. The actual exchange of  
26 information and compliance with rule sets agreed for the Open-edi exchange must be  
27 implemented by using an automata or computer program. As a result, the use of Open-edi means  
28 that only requirements for interchange of information among information systems and applications  
29 are considered. Requirements pertaining to the interchange of information between humans and  
30 terminals or programs are not addressed. That is not to say that computer applications  
31 surrounding an Open-edi system could not provide for human intervention, but that these would  
32 not form part of the Open-edi scenario itself, although their existence could be recorded as part of  
33 a business transaction definition.  
34 .

#### 35 ***4.4 Parties control and maintain their states.***

36

37 An Open-edi party must always have and make available to other parties a state description. As  
38 perceived by another party, a state description includes only the knowledge necessary for a  
39 particular Open-edi activity to take place. A state description is the characteristic of a party at a  
40 given point in time which allows the prediction of its behaviour (or possible ranges of behaviour). A  
41 state description is defined in terms of those characteristics which must be available to other  
42 parties for the purpose of enabling agreed Open-edi scenarios. States must therefore be stable,  
43 sustainable and persistent. When a party needs to change its state it must observe the rules by  
44 which state changes are allowed. Changes of the state of one party should be available to all  
45 other parties for whom this change has an importance.  
46

1 **4.5 Parties act autonomously**

2  
3 Open-edi is intended to preserve the autonomy of parties as they engage in business transactions.  
4 The characteristic of autonomy is crucial from several perspectives including the ability to commit  
5 from a business/operational perspective, technical, legal, audit, etc. Just as commitment can  
6 exist at several levels, so can autonomy exist at several levels.  
7

8 The characteristic of autonomy provides a controlled means by which the information systems of  
9 parties can retain the individuality of the manner in which they carry out their internal business  
10 processes whilst providing a consistent external behaviour conforming to agreed business  
11 processes.  
12

13 **4.6 Multiple simultaneous transactions can be supported**

14  
15 Open-edi systems can enable an Open-edi party to participate in multiple distinct Open-edi  
16 transactions simultaneously.  
17

18 The above six characteristics serve as criteria which must be satisfied in order for electronic flows  
19 of information or data to be considered Open-edi. These criteria apply irrespective of the area of  
20 application for Open-edi.  
21

22 **0 Components of a business transaction**

23 **5.1 Introduction**

24 **5.1.1. Overview**

25 The BOV is used to capture and define the integration between business operational  
26 requirements<sup>5</sup> and requirements that arise from:  
27

- 28 • existing commercial frameworks;
  - 29 • existing legal frameworks;
  - 30 • those of a public policy/consumer requirements nature;
  - 31 • sectorial (and cross-sectorial) requirements;
  - 32 • localization and multilingualism;
  - 33 • information technology and telecommunication requirements and standards.
- 34

35 The BOV is able to provide this capability because issues such as of contents of contract and  
36 applicable law can be captured during the business analysis phase, but cannot be captured at a  
37 later stage in scenario definition.  
38

---

<sup>5</sup> In order to understand this chapter, readers are advised to familiarize themselves with the definitions of the following terms: “Business Operational View (BOV)”, “Functional Services View (FSV)”, “business”, “business transaction”, “Open-edi”, and “Electronic Data Interchange (EDI)”. {See further Annex B}.

1 Capturing these additional requirements is essential to ensuring that the parties have, or are able  
2 to obtain through the use of the Open-edi scenario, a clear understanding of the parameters of any  
3 commitment being made.

4  
5 Fundamental concepts defined here include:

- 6
- 7 • the introduction of person as the entity within an Open-edi party that carries the legal
  - 8 responsibility for making a commitment;
  - 9 • the need to have processes which, together, deliver the commonly agreed business
  - 10 objectives;
  - 11 • data exchange, which is the transfer of information bundles between and among parties;
  - 12 • constraints that have to be applied to the scenario as a result of the nature of the persons, the
  - 13 role they are playing or the scenario itself.
- 14

15 It is essential, when considering scenarios, to determine clearly the constraints that apply to the  
16 scenario, either preconditions on entry to any point in a scenario, or post-conditions determined by  
17 the scenario component and role combination that have just been played.

18  
19 The primary purpose of this Chapter is two-fold; namely:

- 20
- 21 (1) to capture key aspects of a business transaction in order to serve as a
  - 22 common basis and understanding for users of this standard representing these
  - 23 different sources of business operational requirements; and,
  - 24
  - 25 (2) to serve as source for the “WHAT’s” of business requirements to be specified
  - 26 in Chapter 6, “Guidelines for Scoping Open-edi Scenarios,” and as part of the context
  - 27 for Chapter 7, “Rules for the Specification of Open-edi Scenario and Their
  - 28 Components”.
  - 29

30 The introductory sections of this chapter cover aspects which apply to business transactions as a  
31 whole and introduces the Business Transaction Model in terms of its three components and levels  
32 of constraints. Sections 2, 3, and 4 focus on the three component parts of the Business  
33 Transaction Model. Section 5 provides business demands on the Open-edi support infrastructure.  
34 Identification and Classification of Open-edi scenarios, based on the concepts of this chapter are  
35 discussed in Section 6.

### 36 37 **5.1.2 Rule-Based Standard**

38 This standard is intended to be used within and outside of the ISO and IEC by diverse sets of  
39 users having different perspectives and needs.<sup>6</sup>

40  
41 The International Standards Organization (ISO) states that:<sup>7</sup>

42  

---

<sup>6</sup>See Figure 1 in Chapter 1.0 “Scope”.

<sup>7</sup>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.



1 *"standards are documented agreements containing technical specifications or other*  
2 *precise criteria to be used consistently as rules, guidelines, or definitions of*  
3 *characteristics, to ensure that materials, products, processes and services are fit for their*  
4 *purpose".<sup>8</sup>*  
5

6 **The main focus of this standard is more of the nature of "other precise criteria to be used**  
7 **consistently as rules, guidelines, or definitions of characteristics, to ensure that materials,**  
8 **products, processes and services are fit for their purposes".**  
9

10 The key elements in this standard are the rules and the associated terms and definitions of  
11 characteristics. As noted in Section 4.1, Open-edi is based on rules which are predefined and  
12 mutually agreed to. In this standard, the rules capture as precisely and clearly as possible precise  
13 criteria and agreed upon requirements of business transactions representing common business  
14 operational practices and functional requirements. These rules also serve as a common set of  
15 understanding bridging the varied perspectives of the commercial framework, the legal framework,  
16 the information technology framework, standardizers, consumers, etc.<sup>9</sup>  
17

18 In this standard, the common rules are sequentially enumerated and present in bold. Choice of  
19 words in both the rules, the terms and definitions is governed by maximizing the ability to map, on  
20 the one hand, to commercial and legal frameworks of the day-to-day world of business, and on the  
21 other, to that of information and technology frameworks, service providers, and standardizers, etc.  
22

### 23 **5.1.3 Business Transaction: Commitment Exchange Added to Information Exchange**

24 The Business Operational View (BOV) states the need not only for information exchange but also  
25 commitment exchange in order for business transactions to take place among autonomous  
26 parties using Open-edi. Most ISO/IEC JTC1 standards focus on information exchange aspects  
27 only. This standard focuses on integrating commitment exchange with information exchange in  
28 the dematerialized world of Open-edi.  
29

---

<sup>8</sup>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, i.e.,

*"consensus (standardization perspective): general agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments.*

*NOTE - Consensus need not imply unanimity".*

<sup>9</sup>The working principle here is that of 'coordinated autonomy', i.e., all parties around the table are autonomous. The degree to which they cooperate, agree on common needs, business rules and practices, etc., and reach agreement on the same in form of precise rules, terms and definitions, etc., is a key factor in the widespread and use of standards.

Further, it is understood that the focus of this BOV standard in being rule-based is on the "WHATs" and not on the "HOWs", (e.g., the specification of scenarios and scenario components remain the same but there will be various ways to implement them without compromising interoperability).

1 **Rule 1:**

2

3 **Business transactions require both information exchange and commitment exchange.**

4

5 A key property of a business transaction is that it involves commitment exchange in addition to  
6 information exchange. To date, the primary focus of FSV-related standards, i.e., those in the  
7 areas of information technology, telecommunication services, security services, etc., is that of  
8 information exchanges among objects as senders and receivers via locations specified as an  
9 address.

10

11

12 In this context, a "person" is seen simply as an entity which may or may not be associated with the  
13 technical components which are considered to be the objects which send or receive data, i.e., the  
14 focus of existing telecommunication and information technology standards is information  
15 exchange only with technical components as the "end points" is illustrated below in Figure 3<sup>10</sup>.

---

<sup>10</sup> The IT and telecommunication standards that exist and their implementation ensure efficient routing and networking among addressees, locating them as end points for a given length of time (or session) via terrestrial and/or wireless networks. The end points referred to in these standards as "user", "end user", or "technical components" can be a terminal device (including hand-held) a token, (e.g., a magnetic stripe card, IC card, etc.), an information system, an application, a directory service, etc. Within the Open System Interconnect (OSI) approach, different layers have their own addressing scheme(s) designed to support the functional services at that level.

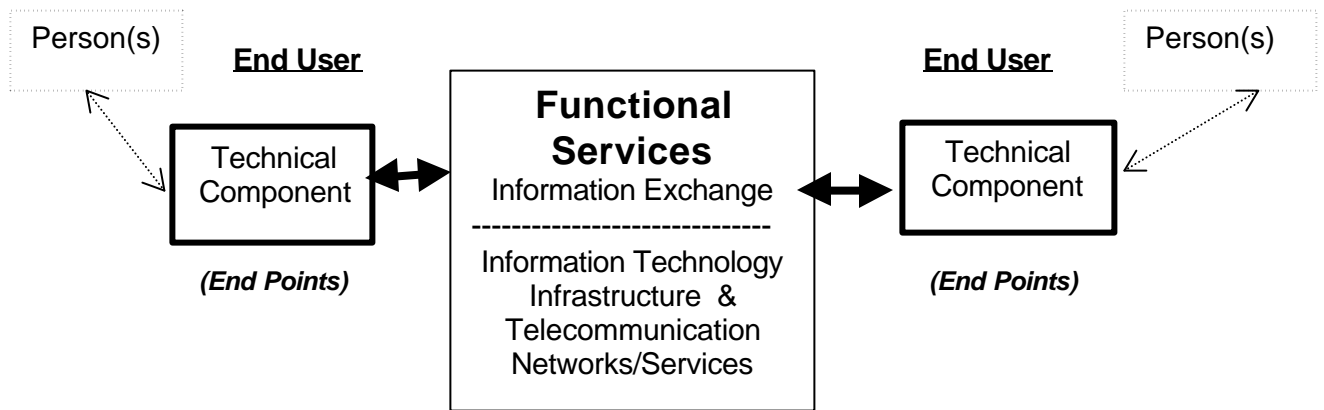


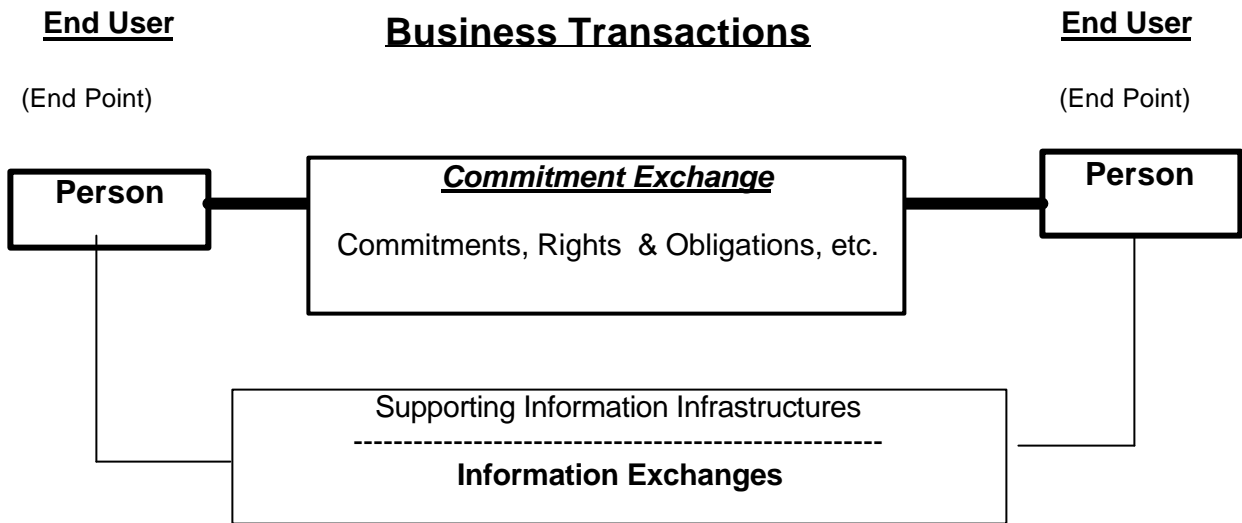
Figure 3: Illustration of “Technical Components” as End Users of Information Exchange(s) in IT Standards

Various combinations of information technologies may be utilized in the establishment of commitments, formation of rights and obligations, and other commitment exchange.

**Rule 2:**

**In this standard, the term “Person” is used to represent the generic use of the term “party” plus the ability of a party to be able to make commitments with respect to a business transaction.**

From the perspective of the requirements of commercial and legal frameworks, information exchange is but one element in a business transaction for which the end points are "persons" (natural or legal) and not technical components. Two key attributes of a business transaction which differentiate it from (general) information exchange is that business transactions involve (1) commitment exchange; and, (2) that "persons" are the end users, the "alpha" and "omega" in their roles as buyers and sellers of goods and services. The term commonly used in the context of business transactions is that of “party” . In this standard the term “person” is used to specify a party which has the ability to make commitments, being held responsible for, have rights and obligations, etc. in the context of a business transactions. This is illustrated in Figure 4.



**Figure 4: Illustration of “Persons” as End Users in Commitment Exchange in Business Transactions Based on Existing Commercial and Legal Frameworks**

In Open-edi, the entity able to make commitments, i.e., a "person", is represented in dematerialized form and engages in a business transaction via electronic data interchange<sup>11</sup>.

A "person" is therefore defined in this standard as:

**"person":**<sup>12</sup> *an entity, i.e., a natural or legal person, recognized by law as having legal rights and duties, able to make commitment(s), assume and fulfil resulting obligation(s), and able of being held accountable for its action(s).*

**NOTE -** *Synonyms for "legal person" include "artificial person", "body corporate", etc., depending on the terminology used in competent jurisdictions".*

<sup>11</sup> The Open-edi Reference Model defines Open-edi as "electronic data interchange among multiple autonomous organizations to accomplish an explicit shared business goal according to Open-edi standards". ISO/IEC 6523 defines "organization" as "a unique framework of authority within which a person or persons act, or are designed to act, towards some purpose". The focus and scope of the ISO/IEC 6523 standard is that of "information exchange" only. It is used extensively world-wide and in many sectors including information technologies, telecommunications (including telephony and the Internet), banking, transport, health, education, security services, etc. ISO/IEC 6523, however, does not define "person" nor deal with commitments exchange.

<sup>12</sup>This definition has been drafted with assistance from lawyers (public and private sector) with international expertise in both common and civil law to cover both the present material world and the emerging dematerialized world. It is drafted to be independent of any particular information technology, i.e., is medium neutral. See further Section 5.2 "Rules Governing the Person Component", and Annex E "Business Transaction Model: Person Component".

1 There are three broad categories of Persons as players in Open-edi; the person as "individual", the  
2 person as an "organization", and the person as "public administration".<sup>13</sup> Consequently, business  
3 transactions executed through Open-edi must allow for the following business relationships  
4 reflecting the three categories of "person":  
5

- 6 (1) individual <-> individual
- 7 (2) individual <-> organization
- 8 (3) individual <-> public administration
- 9 (4) organization <-> organization
- 10 (5) organization <-> public administration
- 11 (6) public administration <-> public administration.<sup>14</sup>

12  
13 Thus for the purposes of this standard, the term "person" is used to represent these business  
14 relationships with a specific focus on including the legal and commercial requirements of  
15 "commitment exchange" in the business operational view a in a business transaction.<sup>15</sup>  
16

17 **Rule 3:**

18  
19 **Persons are the only entities which are able to make and agree on business decisions and**  
20 **commitments to accomplish an explicitly shared goal in a business transaction.**

21  
22 Persons are deemed to be autonomous in their ability to make commitments and be held  
23 accountable for their actions. The degree to which persons agree to common business  
24 operational rules represents the degree to which they coordinate their autonomy. Sets of  
25 coordinated autonomy and associated rules (explicitly stated) can be identified and referenced.  
26 These include competent legal environments, agreed upon business conventions, etc., and any  
27 other sets of external constraints explicitly stated as "rules", which the persons who are parties to  
28 a business transaction mutually agree to.  
29

30 **Rule 4**

31  
32 **In (electronic) business transactions, all commitments must be stated explicitly and**  
33 **unambiguously and be understood by all persons involved in a business transaction.**  
34

---

<sup>13</sup>See further below, Section 5.2 "Rules Governing the Person Component".

<sup>14</sup> At present, e-business involving organization to organization is often referred to as "B2B" and that involving organization and individuals as consumers as "B2C".

<sup>15</sup>At the time that the Open-edi Reference Model was developed, individuals, on the whole, participated in EDI-based business transactions with each other via organizations. The rapid world-wide development and use of the Internet in support of business transactions has led to individuals engaging in business transactions directly with organizations, i.e., without organizations acting as agents on their behalf, as well as individuals engaging in business transactions directly with each other, i.e., individual ? individual. At the same time, the Internet has made possible the conduct of business transactions not only among public administrations with other organizations but also of public administrations with individuals. For further discussion on the entity "person(s)" and its Level 1 sub-components, see below Section 5.2 "Rules Governing the Person Component".

1 The use of information technology invokes a higher order of magnitude of requirements for rule-  
 2 based, unambiguity, explicitness, etc., than in present day commerce and business transactions,  
 3 (e.g., the commitments made and applicable rules must be able of being captured using formal  
 4 description techniques (FDTs).

5  
 6 It must be noted that meeting the criteria of “explicit” and “unambiguous” in Rule 3 does not  
 7 preclude the ability to reference and invoke common business processes and default sets of  
 8 values for terms and conditions in an actual business transaction. On the contrary, the Open-edi  
 9 Reference Model and this Business Operational View standard is based on the assumption that  
 10 most real world business transactions, i.e., instantiations, are but combinations or previously  
 11 defined common, re-useable components, i.e., as scenarios and scenario components.

12  
 13 In Open-edi, the only entity able to make commitments, i.e., a "person", is represented in  
 14 dematerialized forms and engages in business transactions via electronic data interchange.  
 15 Figure 5 below provides an integrated view of the BOV and FSV perspectives of persons as  
 16 dematerialized entities in a Business Transaction.

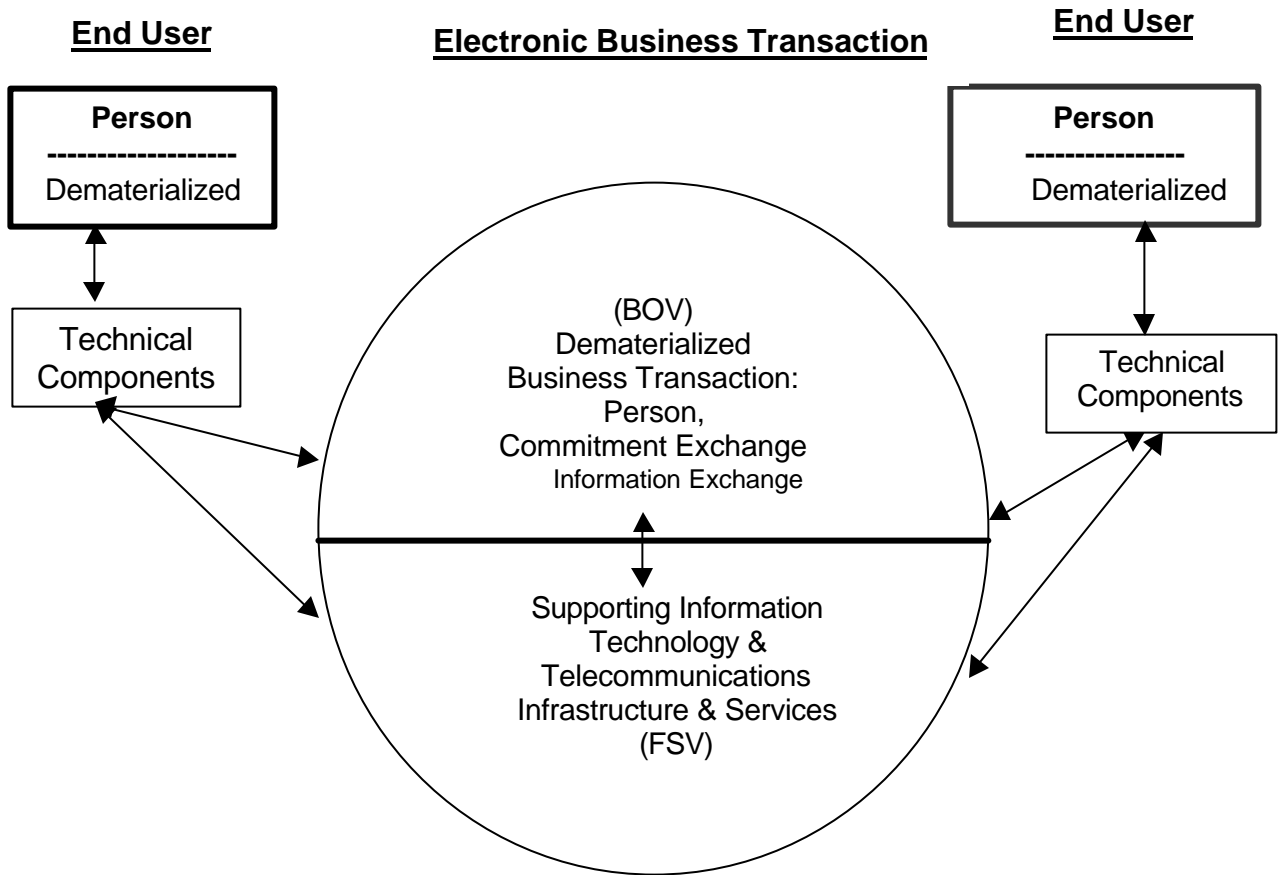


Figure 5: Integrated View - Commercial/Legal and IT Perspectives of Persons as “End Users” in an Electronic Business Transaction through Technical Components

#### 1 5.1.4 Business Transaction: Unambiguous Identification of Entities<sup>16</sup>

2

3 In existing business transactions, and now even more so in electronic business transactions,  
4 there exists a need for the unambiguous identification of all entities which comprise a real world  
5 business transaction (e.g., persons, objects, events, processes, etc.). A key objective of this  
6 standard is to serve as a methodology and tool for the specification and unambiguous identification  
7 of Open-edi scenarios and scenario components as re-useable elements in support of common  
8 business transactions. "Unambiguous" is an issue in business transactions because states of  
9 ambiguity and uncertainty are not desired from legal, commercial, consumer and information  
10 technology perspectives. Issues of unambiguousness apply to all aspects of a business  
11 transaction and even more so to those which are EDI-based. Further, the objectives of  
12 interoperability and re-useability of Open-edi scenarios and scenario components for business  
13 transactions require their unambiguous identification.

14

15 Standards exist for the unambiguous identification of material objects. However, unambiguous  
16 identification of persons (individuals or organizations)<sup>17</sup> in business transactions has always been  
17 a difficult issue. These are exacerbated in the dematerialized world of Open-edi. In order to  
18 resolve the issue of "unambiguous identification" of entities in a business transaction, i.e., persons,  
19 objects, processes, events, etc., the issue has been decomposed into its two key components:

20

21 • "unambiguous"; and,

22

23 • "identification".

24

25 **Rule 5:**

26

27 **In global business transactions, common business practices and standards exist for the**  
28 **identification of entities<sup>18</sup> comprising a business transaction including persons<sup>19</sup>. Existing**

---

<sup>16</sup> Annex C "Unambiguous Identification of Entities in a Business Transaction" provides the informative and explanatory text for the rules and definitions in Section 5.1.4.

<sup>17</sup> See further below Section 5.2 "Rules Governing the Person Component".

<sup>18</sup> The term "entity" is defined in the international standard ISO/IEC 2382 "Information technology - Vocabulary" as:

**"17.02.05 entity:** *any concrete or abstract thing that exists, did exist, or might exist, including associations among things.*

*Example: A person, object, event, idea, process, etc....*

*NOTE - Please observe that an entity exists whether data about it are available or not."*

Entities in a business transaction are not only "objects" but also "persons", "events", and "processes". The term "object" is defined in the international standard ISO 1087 as:

**"2.1 object:** *any part of the perceivable or conceivable world.*

*NOTE - Objects may also be material, (e.g., engine) or immaterial, (e.g., magnetism).*

1 standards shall be used to the greatest degree possible in the building and use of  
2 scenarios and scenario components.

3  
4 **Rule 6:**

5  
6 **The degree to which ambiguity in (electronic) business transactions can be minimized is**  
7 **directly related to the ability to realize the opportunities in and potential of Open-edi as**  
8 **well as its widespread adoption and use.**

9  
10 The term "unambiguous" is defined as:

11  
12 ***"unambiguous:** the level of certainty and explicitness required in the completeness*  
13 *of the semantics of the recorded information interchanged appropriate to the goal of the*  
14 *business transaction".*

15  
16 This definition of "unambiguous":

- 17
- 18 • applies equally to business transactions which are paper-based and Open-edi based;
  - 19
  - 20 • is a common requirement of all industry sectors;
  - 21
  - 22 • is medium neutral, i.e., applies irrespective of the combination of IT technologies or platforms  
23 utilized; and,
  - 24
  - 25 • applies to all three components of the business transaction, i.e., "person", "process", and  
26 "data".
  - 27

28 **Rule 7:**

29  
30 **The nature and purpose of the business transaction determines the level of certainty**  
31 **required, i.e., trust, reliability, accountability, etc., in the identification of the elements in a**  
32 **business transaction, (e.g., person, product, service, etc.).**

33  
34 Approaching unambiguity in terms of levels of certainty and explicitness allows to linkage into and  
35 harmonization with levels of assurance in authentication as part of security services and  
36 standards. However, the issue of "identification" is separate from and should not be confused with  
37 that of "authentication". Identification must have been established before authentication can take  
38 place.

39  
40 **Rule 8:**

41  
42 **The process of authentication presupposes the existence of an entity and the completion**  
43 **of the application of a rule-based identification process resulting in the assignment of an**

---

<sup>19</sup> Key standards for the global unambiguous identification of persons generally, and organizations and individuals specifically, are identified and summarized from a business transaction perspective in Annex D "Existing Standards for the Identification of Persons (Organizations and Individuals) in Business Transactions".



1 "identifier", i.e., the authentication process is a corroboration of an identification  
2 process.<sup>20</sup>

3  
4 The definition for "identification" is:

5  
6 **"Identification:** a rule-based process, explicitly stated, involving the use of one or  
7 more attributes, i.e., data elements, whose value (or combination of values) are used to  
8 identify uniquely the occurrence or existence of a specified entity".  
9

10 **Rule 9:**

11  
12 **It is assumed that one key result of any identification process for an entity relevant to or**  
13 **used to support a business transaction is the assignment of a unique, i.e., distinguishing,**  
14 **identifier.**

15  
16 In the context of a business transaction, "identifier" is defined as:

17  
18 **"identifier (business transaction):** an unambiguous, unique and a linguistically neutral  
19 value, resulting from the application of a rule-based identification process. Identifiers must  
20 be unique within the identification scheme of the issuing authority.<sup>21</sup>  
21

22 **Rule 10:**

23  
24 **"Names" are not that useful for unambiguous identification nor can they serve as**  
25 **identifiers for elements in a business transaction. "Name(s)" shall be considered**  
26 **equivalent linguistic expression(s) associated with an "identifier".<sup>22</sup>**

---

<sup>20</sup> There are multiple "standard" definitions for "identifier". These and the standards in which they are found have been taken into account in the rules and definitions pertaining to "identification" and "identifier(business transaction)". {See further Annex C, Section C.4.}

<sup>21</sup> NOTE 1 - Although an identifier is a single value, this single value may be composed of one or more atomic components. For example, the last number or terminal digit can be a "check" digit, or intelligence may be built into the identifier according to the business rules governing the identification process and the assignment of identifiers by the issuing organization.

NOTE 2 - An identifier as a single value can include a combination of the identifier of the issuing organization and the identification number assigned by that issuing organization, i.e., standards such as ISO/IEC 6523, 7501, 7812, etc., are based on this principle.

NOTE 3 - Whether an identifier used in a business transaction has built-in intelligence or not is determined by the agreed upon rule base of the issuing authority. Many existing international (and national) standards exist resulting in what are considered "intelligent identifiers". Organizations which wish to map such intelligent identifiers to "non-intelligent identifiers" in their internal applications can use ISO/IEC TR 15452 - "Information Technology -Specification of data value domains".

<sup>22</sup>One may consider "names" to be "aliases" associated with an "identifier". In global (electronic) business transactions, the same real object is recognized and known by multiple names depending on the language utilized at the human interface. The international standard ISO 1087 - Terminology - Vocabulary defines "name" as:

**"name:** designation of an object by a linguistic expression".

1  
2 Consequently, an "object" will have as many, i.e., multiple names, as there exist linguistic  
3 expressions used to designate<sup>23</sup> it.  
4

5 **Rule 11:**  
6

7 **Open-edi scenarios, scenario attributes, roles, information bundles, semantic components**  
8 **and other elements pertaining to the same are to be identified through unique,**  
9 **unambiguous and linguistically neutral identifiers. With such identifiers may be associated**  
10 **one or more names as needed for market, legal, localization and/or multilingual**  
11 **requirements<sup>24</sup>.**

12 **5.1.5 Business transaction model: Key Components**

13 **Rule 12**  
14

15 There are three fundamental and essential components which exist in any business transaction,  
16 namely "person", "process" and "data"<sup>25</sup>.  
17

18 The Business Transaction Model for the good or service being traded and the supporting functional  
19 (IT) services utilized, is made up of three fundamental and essential components which exist in  
20 any business transaction; namely:  
21

- 22 • person(s) as the committing entity(ies) or party(ies) (at least a buyer and a seller);  
23
- 24 • process(es) as a series of actions or events required to accomplish the mutually agreed upon  
25 goal;  
26
- 27 • data exchange pertaining to the electronic/digitized data itself as well as data pertaining to  
28 dematerialized persons and processes comprising a business transaction.  
29

30 These three fundamental components and their interactions are represented graphically in Figure  
31 6: Business Transaction Model: Fundamental Components. Essential BOV aspects of each key  
32 component, its sub-components along with associated rules, terms and definitions as well as  
33 other attributes are explained in Sections 5.2, 5.3, and 5.4 below.

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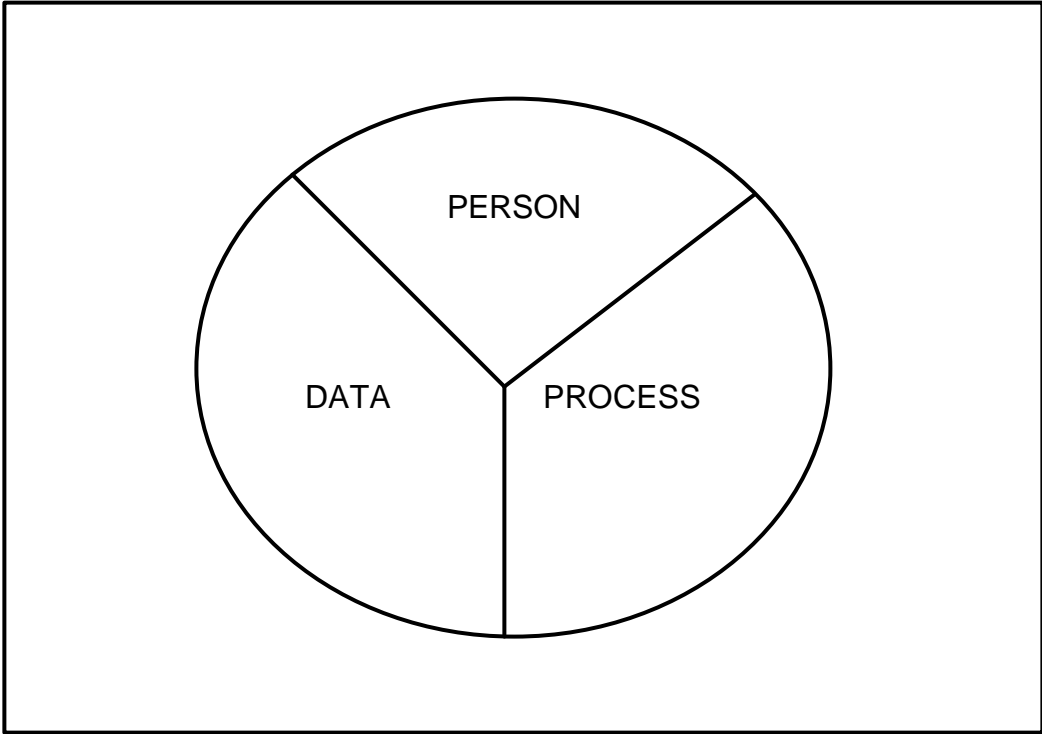
<sup>23</sup>ISO 1087 defines "*designation*" as:

**"*designation*:"**      *any representation of a concept*".

<sup>24</sup> See further below, Section 5.2 "Rules Governing the Person Component".

<sup>25</sup> Business rules as well as related terms and definitions for each of these three fundamental components are found in Sections 5.2, 5.3 and 5.4 below.

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**Figure 6: Business Transaction Model - Fundamental Components  
(Graphic Illustration)**

26 **5.1.6 Business Transaction Model: Levels of Constraints<sup>26</sup>**

27 In addition to its three fundamental components, another aspect of the Business Transaction  
28 Model is that of “levels of constraints”. The Business Operational View derived for Open-edi shows  
29 that there are constraints applied to business transactions<sup>27</sup>. The Open-edi model identifies two  
30 categories of constraints namely,

---

<sup>26</sup> The primary scope of this standard in the context of the "Business Transaction Model: Levels of Constraints" is that of Level 0 – No External Constraints (on business transactions) Level 0 covers those constraints which the persons involved in a business transaction impose on them selves This standard also provides a linkage to common Level 1, External Constraints, pertaining to “persons” as entities in a business transaction requiring the introduction of “individual,” “organization,” “organization person,” “regulator,” and “public administration.”

<sup>27</sup> See further below, Section 8 “Rules for Specification of Open-edi Scenarios and Their Components”.

- 1 (1) those that cover agreements between the buyer and the seller and the entities associated with  
2 achieving the mutually agreed upon goal of the business transaction, i.e. constraints which the  
3 buyer and seller mutually agree to; and,
- 4 (2) sets of constraints on a business transaction external to those agreed upon by the buyer and  
5 seller. The primary source of these external constraints are those of a legal or regulatory  
6 nature.

7 In order to understand and resolve issues of constraints on a business transaction, “levels of  
8 constraints” are defined in the Business Transaction model as follows: Level 0 – No External  
9 Constraints (on a Business Transaction)

10 Level 0, as the base level, has been derived to provide a simplified view of business transactions  
11 for which there are no external constraints or restrictions to the nature and conduct of the  
12 transaction other than those mutually agreed to by the buyer and seller for the explicitly stated goal  
13 of the business transaction, i.e., they are self-imposed. This allows one to build scenarios and  
14 scenario components for referencing and re-use as generic or base scenarios without having to  
15 factor in external constraints.<sup>28</sup>

16  
17

18 Level 1 - External Constraints: Public Administration<sup>29</sup>

19

20 Level 1 - Public Administration are external constraint rules, i.e., laws and regulations, for the  
21 conduct of business transactions<sup>30</sup>. These range from taxation related regulation, to health and  
22 safety or packaging and labelling requirements to ensuring that nature of the business transaction  
23 and/or the goods or services delivered do not comprise behaviour of a criminal nature. Level 1+  
24 external constraints pertain to what are deemed to be horizontal external constraints which provide  
25 common external constraint rules pertaining to business transactions, (e.g., privacy/data  
26 protection, consumer policy, etc.).

27

28 The imposition of Level 1 external constraints on business transactions is exemplified by the  
29 introduction of a third type role in a business transaction, namely that of “regulator” and a third type  
30 of person as a player in a business transaction, namely that of “public administration”.<sup>31</sup>

---

<sup>28</sup> The Scenario Description in Annex I below is an example of a Level 0 - No External Constraints on Business Scenario and Scenario Components.

<sup>29</sup> In the real world, there are external constraints or restrictions to the conduct of business transactions, i.e. external constraints. For the purposes of this standard two levels are already identified. They are Level 1 – Public Administration”, and “Level 1+ – Sector Specific”.

<sup>30</sup> Laws and regulations exist within and among jurisdictions and are the primary source of “External Constraints” on Business Transactions. ISO/IEC JTC1/SC32 is sponsoring a NWI (see ISO/IEC JTC1 N5846) which has been accepted (see ISO/IEC JTC1 N6204) to address the issue of jurisdictions as it impacts specification of external constraints on business transactions. This standard is directed at being able to identify and reference laws and regulations impacting scenarios and scenario components. Development is underway on ISO/IEC 18038 - Information technology - *Identification and Mapping of Various Categories of Jurisdictional Domains*”.

<sup>31</sup> On “regulator” and “public administration”, see further below Sections 5.25 and 5.2.6. See also Annex E “Business Transaction Model: Person Component”.

1  
2 Level 1 external constraints represent constraints imposed by regulators (and enacted through  
3 public administrations) which apply regardless of the type of business or sector within which the  
4 business transaction was occurring, i.e. external constraints which are horizontal. This allows  
5 one to build scenarios and scenario components for referencing and reuse for specific common  
6 sets of Level 1 constraints. These can then be combined with Level 0 scenarios for building  
7 application use scenarios.

#### 8 9 Level 1+ – External Constraints: Sectorial

10  
11 Level 1+ of the model pertains to external constraints that may be of a sectorial nature even  
12 though some of these constraints are common to two or more sectors and supported through  
13 common standards. Sectorial constraints are found in telecommunications, transportation and  
14 delivery, financial/banking, import/export restrictions specific to a good or service, inter-or intra-  
15 state trade, etc. Each sector does impose specific ways of conducting business transactions  
16 within itself and with other sectors. These sector specific constraints and conditions are to be  
17 addressed in Level 1+of the model<sup>32</sup>. This allows one to build scenarios and scenario components  
18 for referencing and reuse of Level 1 sets of external constraints such as “customs clearance”,  
19 “transport of dangerous goods”<sup>33</sup>, etc.

---

<sup>32</sup> A useful characteristic of Level 1+ external constraints is that at the sectorial level, national and international focal points and recognized authorities already exist. The rules and common business practices in many sectorial areas are already known. Use of this standard (and related standards) will facilitate the transformation of these business rules into specified and re-useable scenarios and scenario components.

<sup>33</sup> Note: An interesting aspect of standardization activities at Level **1+2** is that there are also requirements for establishing common rules for interchanges among sectors. These rules are normally imposed by a particular sector on the others. For example, the banking sector may impose certain rules for the exchange of financial information between itself and other sectors. Sometimes the rules are established to enhance or facilitate services of a particular sector with others. The transportation sector is a good example. It establishes business rules in conjunction with other sectors for the transport and handling of speciality goods, (e.g., radioactive materials, live animals, etc.).

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These three constraint levels of business transactions are illustrated below in Figure 7: Business Transaction Model: Levels of External Constraints.

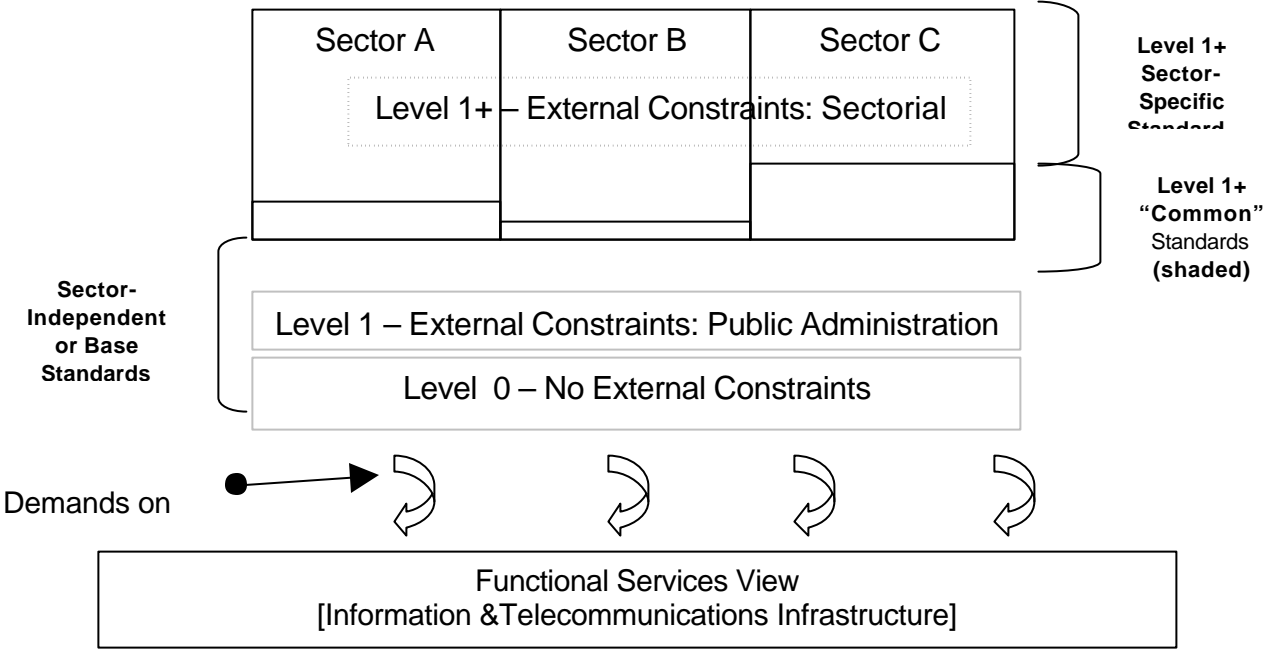


Figure 7: Business Transaction Model – Levels of Constraints

## 1 5.2 *Rules Governing the Person Component*<sup>34</sup>

### 3 5.2.1 Introduction

4 The purpose of this section is three-fold; namely:

- 6 (1) to incorporate and support a key aspect of the BOV, i.e., the making of business decisions  
7 and commitments;
- 9 (2) to capture, at Level 0, the unique attributes of "person" as the entity in business  
10 transactions able to make commitments; and,
- 12 (3) to capture the business operational requirements from both commercial and legal  
13 perspectives.

15 In addition, this section introduces some common generic aspects of the Person Component at  
16 Level 1 – External Constraints: Public Administration such as “individual,” “organization,”  
17 “regulator,” and “public administration.”  
18

### 19 5.2.2 Person, Personae, Identification and Person Signature

#### 21 Rule 13:

23 **An electronic business transaction, like business transactions in general, requires**  
24 **"persons", i.e., as decision makers, as the key real world entity and point of departure**  
25 **(instead of information technology applications, devices, tokens, information systems,**  
26 **etc.).**

#### 28 Rule 14:

30 **Irrespective of the use of any particular information technology and related devices in**  
31 **Open-edi, "persons" are the only entities which are legally recognized as able to make**  
32 **commitments, agree to the rights and obligations entered into, can be held accountable**  
33 **for their actions, etc.**

#### 35 Rule 15:

37 A "person" is defined as:

39 ***"person"<sup>35</sup>: an entity, i.e. a natural or legal person, recognized by law as having***  
40 ***legal rights and duties, able to make commitment(s), assume and fulfil resulting***  
41 ***obligation(s), and able of being held accountable for its action(s).***

---

<sup>34</sup> Annex E “Business Transaction Model: Person Component” provides the informative and explanatory text for Section 5.2.2

1  
2  
3 **Note: Synonyms for "legal person" include "artificial person", "body**  
4 **corporate", etc. depending on the terminology used in competent**  
5 **jurisdictions."**  
6  
7

8 **The three unique properties of "person" already identified include:**<sup>36</sup>  
9

- 10 1. a human being (natural person) or body corporate (legal or artificial person) having  
11 rights and duties recognized by law;
- 12
- 13 2. the ability to act in some capacity, make commitments and fulfil resulting obligations;  
14 **and,**
- 15
- 16 3. the ability to be able to be held accountable for actions, behaviours, decisions, etc.
- 17

18 **Note: From an (electronic) business transaction perspective all three properties must**  
19 **exist/be present for an entity to be able to be identified and referenced as a "person".**  
20

21 Unlike (material) objects, persons represent and identify themselves (as well as other persons) in  
22 a variety of ways, i.e., through different personae<sup>37</sup>, depending on the context of the business  
23 transaction. The set of rules which follow summarize the key aspects of "personae".  
24

25 **Rule 16:**  
26

27 **Persons (natural or legal) currently do, and will continue, to identify and represent**  
28 **themselves in a variety of ways, i.e., have at least one and usually multiple personae.**  
29 **These various personae and their associated identities represent the intersection of the**  
30 **activity or function the person is engaged in and the role the person plays in a business**  
31 **transaction.**  
32

33 Integrating the above results in the following definition:  
34

35 ***"persona: the set of data elements and their values by which a person wishes to be***  
36 ***known and thus identified in a business transaction".***  
37

38 Figure 8 provides a graphical representation of the links of a single same person (natural or legal)  
39 to its many personae in the different context and roles.  
40

---

<sup>35</sup>This definition has been drafted to cover both the present material world and the emerging dematerialized world. It is drafted to be independent of any particular information technology, i.e., is medium neutral.

<sup>36</sup>Temporary Note: These are the three distinct and unique properties of a "person" already identified which differentiate a person from any other type(s) or category(ies) of entities in the dematerialized world of information technologies, i.e., objects, events, ideas, processes, etc. If SC32/WG1 members can identify other, i.e., additional (unique) properties of "person", they are encouraged to provide them.

<sup>37</sup> See further Annex E, Section E.4.1



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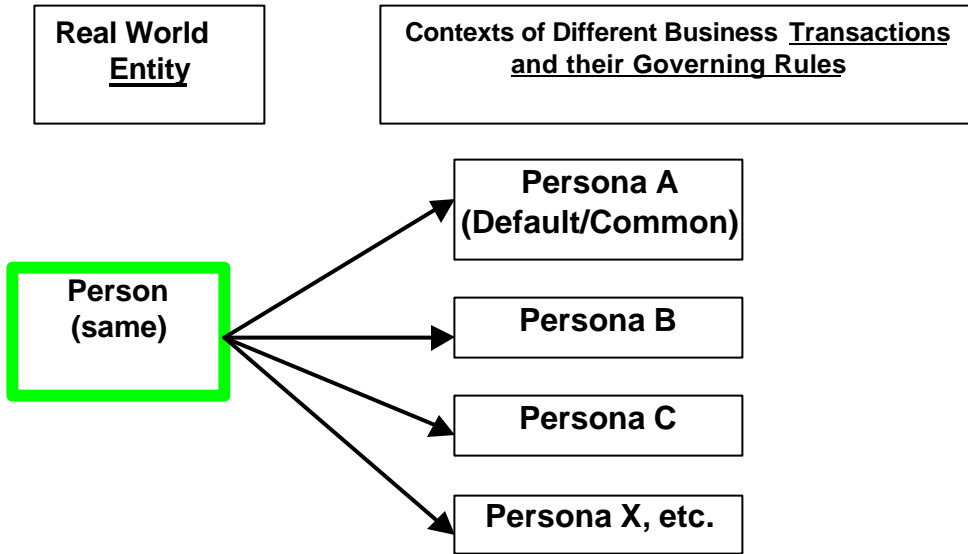


Figure 8: Links of a Person to its Persona(e) in the Context of Different Business Transactions and their Governing Rules

**Rule 17:**

The level of unambiguity, i.e., certainty/reliability of a persona and resulting identification/identity utilized by a person, must be appropriate to the goal of the business transaction. Most often this is a question of degree of granularity and level of specificity.

**Rule 18:**

Business transactions having different goals may allow a person to use the same persona and its associated identification schema (including resulting identifiers), while others prohibit this.

**Rule 19:**

At times, the data elements comprising a persona and rules governing their values in a business transaction is prescribed by the party offering the good or service. A systematic approach here is known as a registration schema and the entity registering the persona known as a registration authority (RA). Usually a registration authority assigns an identifier unique within that identification schema to each discrete person/persona. At times, a RA utilizes the ID of another schema.

**Rule 20:**

1  
2 **A person (natural or legal) may have multiple "names" and a person may change its name.**

3  
4 **Rule 21:**

5  
6 **Names of natural persons are not unique. Many different discrete real world natural**  
7 **persons can and do share the same name (and even date of birth or mother's maiden**  
8 **name, etc.).**

9  
10 **Rule 22:**

11  
12 **A natural person can and does identify him/herself in a business transaction through a**  
13 **variety of possible data elements comprising a name, (e.g., combination of given names,**  
14 **surname(s), nicknames, titles/qualifications, etc.).**

15  
16 **Rule 23:**

17  
18 **A legal person can and does have multiple names, (e.g., legal, operating, marketing name,**  
19 **etc.), as well as various linguistic equivalents of the same.<sup>38</sup>**

20  
21 **Rule 24:**

22  
23 **A name of a person (natural or legal) does not necessarily provide for unambiguous**  
24 **identification.**

25  
26 **Rule 25:**

27  
28 **The number of types of (common) data elements pertaining to the name of a person is**  
29 **finite. A set of standard data elements may serve as a template or catalogue for capturing**  
30 **and exchanging name information on persons in electronic data interchange.**

31  
32 **Rule 26:**

33  
34 **Associated with each persona of the same person can be a single identifier, or several**  
35 **personae can utilize the same identifier, and/or, two or more identifiers can be associated**  
36 **with a single persona, (e.g., use of exactly the same "name" on multiple credit cards with**  
37 **different identifiers).**

38  
39 An identifier is a unique value within an identification schema. In the day-to-day real world this is  
40 already happening. Figure 9 illustrates person to persona(e) to identifier links.

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<sup>38</sup> For example, a geo-political jurisdiction may well have more than one official language. Consequently, an organization may well have two or more official names, i.e., a linguistically equivalent name in each official language of that jurisdiction. This is especially true for names for public sector organizations in jurisdictions having more than one official language.

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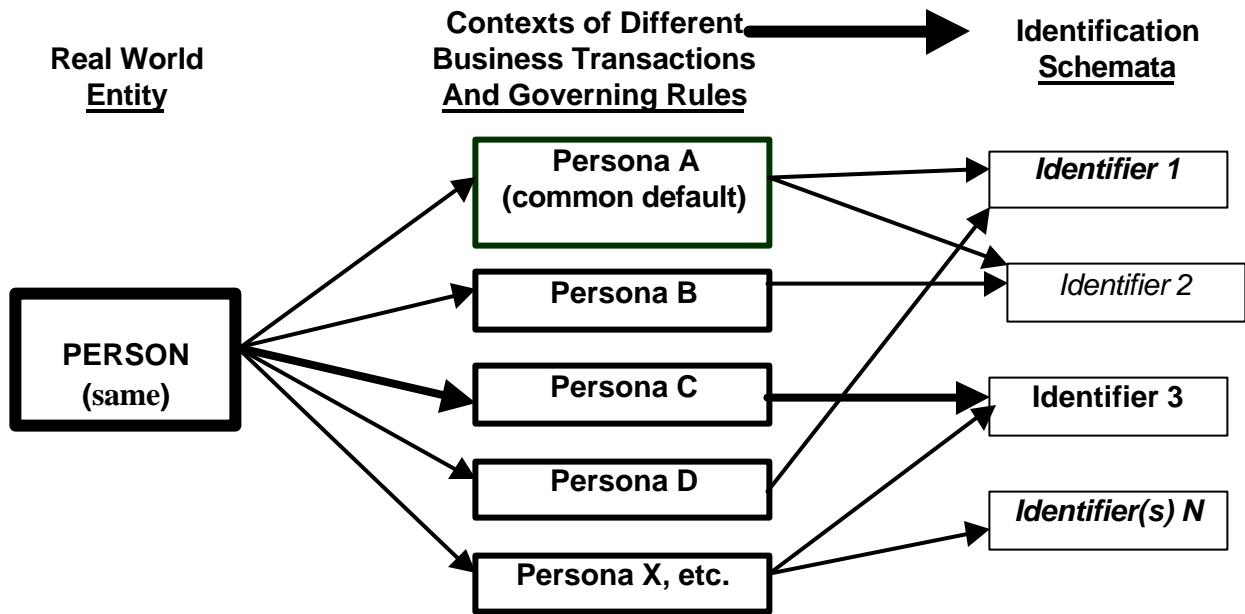


Figure 9: Illustration of Links of a Person to Persona(e) to Identifier(s) issued through Identification Schemata applicable to the contexts of different business transactions

**Rule 27:**

In present day business transactions, a person can and does use different signatures.

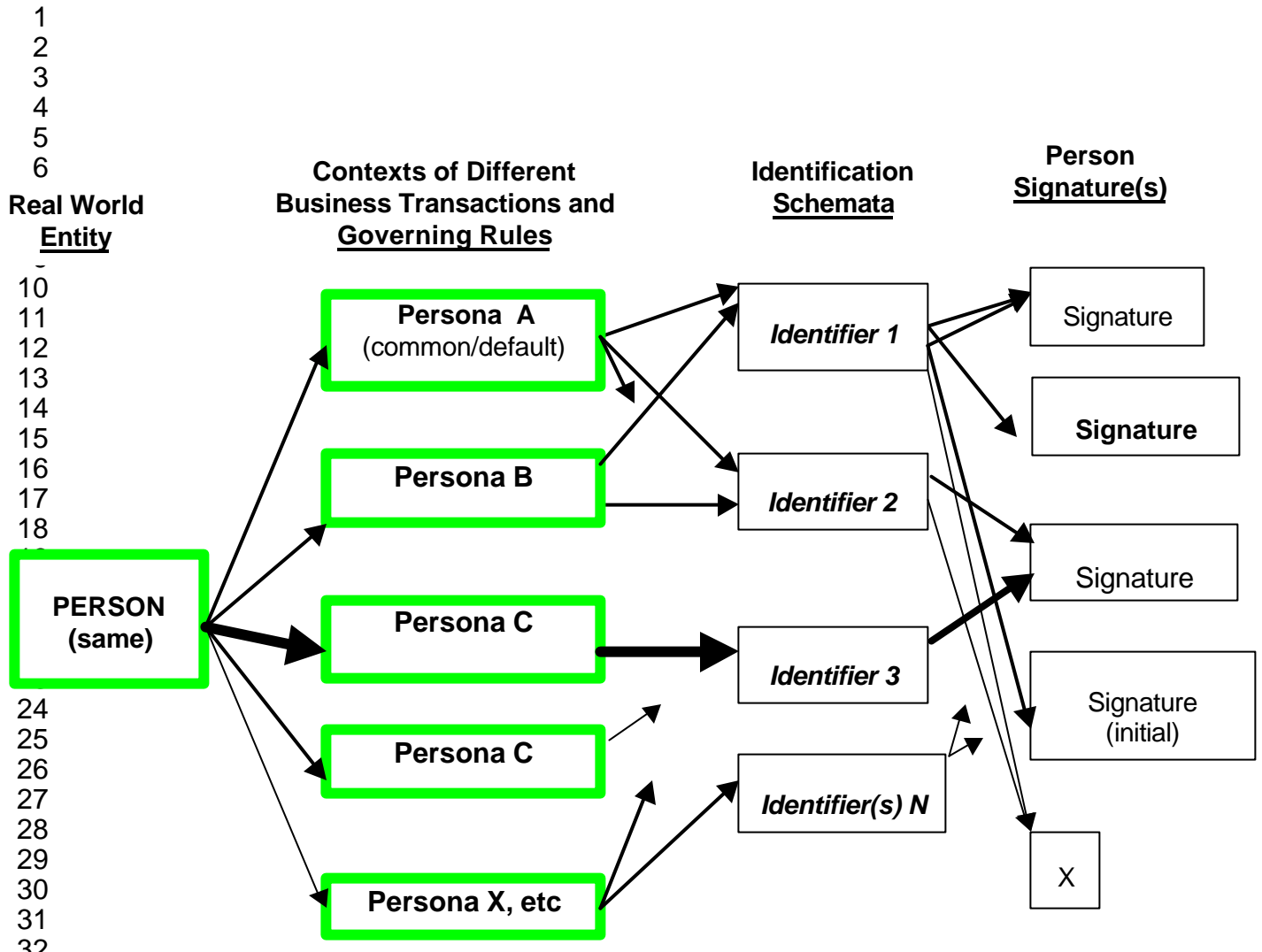
**Rule 28:**

An organization person as an employee or officer acting on behalf of an organization "signs", i.e., links itself, to a business transaction on behalf of that organization, in a variety of ways.

**Rule 29:**

It is assumed that, (a) a signature belongs to a person, (and not a "technical component"); (b) is created/generated by a person; and, (c) depending on the context of the business transaction, is used either for the purposes of identification, authentication and/or authorization.

The interworking of these rules results in a variety of combinations of linkages currently existing among personae, identifications, and person signatures for the same single real world person. This is illustrated in Figure 10.



35 Figure 10: Illustration of Relationships of Links of a Person to (its) Persona(e) to Identification  
36 Schemata and resulting Identifiers to associated Person Signatures –  
37 in the Context of Different Business Transactions and Governing Rules

38  
39 Rule 30

40  
41 In an (electronic) business transaction, the end entities are persons irrespective of the  
42 nature and combinations of "technical components" of the functional support services of  
43 the information infrastructure involved.

44  
45 Rule 31:

46  
47 A signature which is created by and/or pertains to a person is deemed to be a "person  
48 signature" and is defined as follows:

1           **"person signature:** *a signature, i.e., a name representation, distinguishing mark or usual*  
2           *mark, which is created by and pertains to a person".*

3  
4  
5  
6   **Rule 32:**

7  
8   **A person signature can occur with respect to any set of activities or a person signature**  
9   **can occur with respect to any of the processes in a business transaction.**

10  
11   **5.2.3 Person and Roles: Buyer and Seller**

12  
13   **Rule 33:**

14  
15   **The two basic roles of persons involved in any business transaction are those of "buyer"**  
16   **and "seller".**

17  
18   They are defined as:<sup>39</sup>

19  
20           **"buyer:** *a person who aims to get possession of a good or service through providing*  
21           *an acceptable equivalent value, usually in money, to the person providing such a good or*  
22           *service."*

23  
24           **"seller:** *a person who aims to hand over voluntarily or in response to a*  
25           *demand or request, a good or service to another person and in return receives an*  
26           *acceptable equivalent value, usually in money, for the good or service provided."*

27  
28   **Rule 34:**

29  
30   **Rules and practices of "buyers" and "sellers" governing business transactions, including**  
31   **those via Open-edi, apply either to persons generally or distinguish between**  
32   **"individuals" and "organizations".**

33  
34   **Rule 35:**

35  
36   **It is assumed that unless bound by external constraints "buyers" and "sellers" as persons**  
37   **are free to undertake any business transaction involving any good or service they**  
38   **mutually agree to.**

39  
40   **5.2.4 Person and Delegation of Commitment to "Agent" and/or "Third Party"**

41  

---

<sup>39</sup> The phrase "providing an acceptable equivalent value" recognizes that this is for the "buyer" and the "seller" to mutually agree to. A mutually accepted value can be of a monetary nature and defined as such, a barter arrangement, the value can be of a non-monetary nature, etc. See further Annex E, Section E.5.1.

1 **Rule 36:**

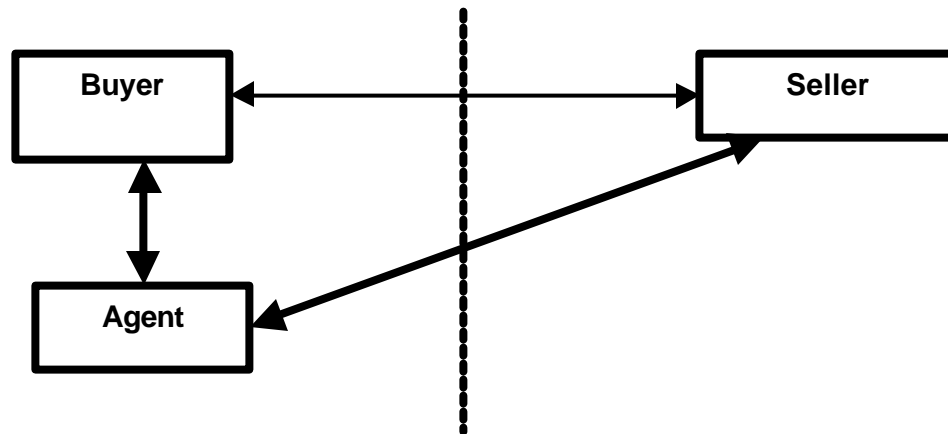
2  
3 **Rights or obligations arising from commitments in a business transaction can be fulfilled**  
4 **either directly by the person who is an end entity or through an agent acting on its behalf.**

5  
6 In the context of this standard, "agent" is defined as:

7  
8 **"agent:** *a person acting for another person in a clearly specified capacity in the*  
9 *context of a business transaction".*

10  
11 NOTE: Excluded here are agents as "automatons" (or robots, bobots, etc.) In ISO/IEC 14662,  
12 "automatons" are recognized and provided for but as part of the Functional Services View (FSV) where  
13 they are defined as an "Information Processing Domain(IPD)".

14  
15 In a business transaction, "agents" are those persons who undertake a specific business process  
16 or function on behalf of a buyer or a seller<sup>40</sup>. This basic relationship of an agent to a buyer or a  
17 seller is illustrated in Figure 11.



33  
34 **Figure 11: Illustration of Buyer Seller Interaction with Buyer Using an Agent**

35  
36 **Rule 37:**

37  
38 **The delegation of a right or obligation of a person exercising a role in a business**  
39 **transaction to another person acting as an agent must be explicitly stated.**

40  
41 **Rule 38:**

42  
43 **It is recognized that certain roles and responsibilities of a person in a business**  
44 **transaction cannot be delegated to agents. Where this is so, such constraints must be**  
45 **explicitly stated.**

46  
47 **Rule 39:**

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<sup>40</sup> In electronic business transactions there are also agents who provide an IT-based service either directly to a buyer or a seller or to other agents. See further Annex E, Section E.6.2

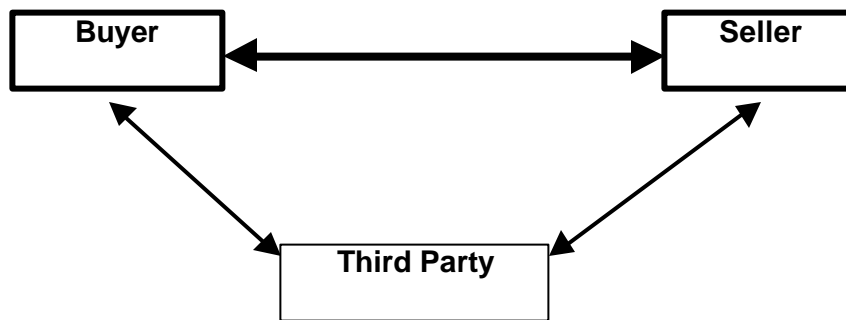
1  
2 **The primary persons in a business transaction can agree to have another person(s) as**  
3 **third party(ies) fulfil a common specified role or function.**

4  
5 The generic definition for "third party" is:

6  
7 ***"third party:** a person besides the two primarily concerned in a business transaction who*  
8 *is agent of neither and who fulfils a specified role or function as mutually agreed to by the*  
9 *two primary persons.*

10  
11 *Note: It is understood that more than two persons can at times be primary parties in a*  
12 *business transaction."*

13  
14 In addition to notarial-type functions, clearinghouses and exchanges are prime examples of third  
15 parties. The nature of the linkages between buyer and seller and a common third party is illustrated  
16 in Figure 12.



31  
32 **Figure 12: Illustration of Buyer and Seller with a Third Party**

33  
34 **5.2.5 Person and Level 1 – External Constraints: Individual and Organization**

35  
36 From a business transaction perspective, most include some minimum Level 1 – External  
37 Constraints .A common, almost generic requirement of Level 1 – External Constraints: Public  
38 Administration, is that such requirements often require one to distinguish whether the persons  
39 participating in a business transaction are deemed to be “ individuals” or “organizations.” This  
40 section focuses on these Level 1 requirements.

41  
42 **Rule 40:**  
43

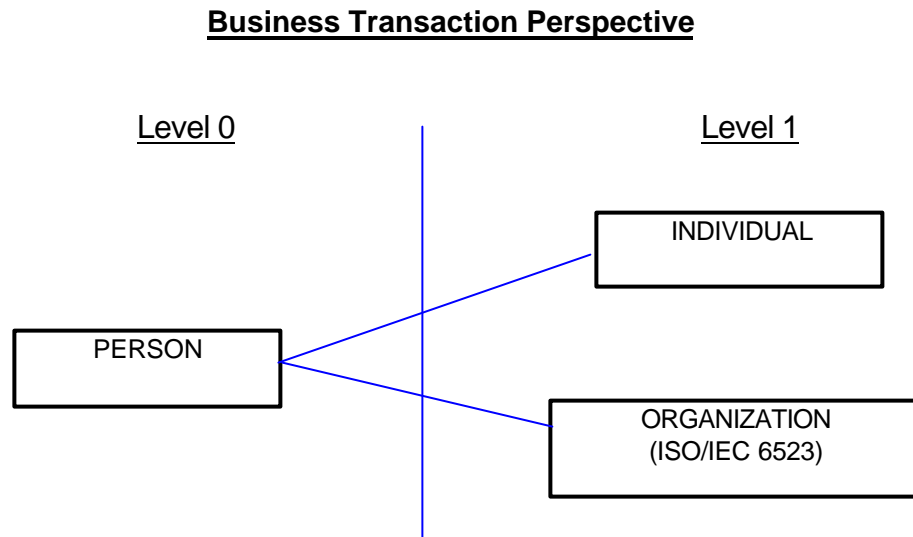
1 From a legal perspective, generally applicable world-wide, there are basically two types of  
2 persons, namely, "natural persons", and "legal persons" (a.k.a. "artificial persons")<sup>41</sup>.

3  
4  
5 **Rule 41**

6  
7 **At Level 1 External Constraints, the two basic categories of persons as players in any**  
8 **business scenario are deemed to be:**

- 9  
10 (1) individual; and,  
11 (2) organization

12  
13 Consequently, this standard uses the terms "individual" and "organization" as the two basic  
14 categories of persons as players in any business transaction involving minimum Level 1 external  
15 constraints. Figure 13 illustrates these Level 0 and Level 1 business transaction perspectives for  
16 persons.



35 **Figure 13: Integrated Business Transaction Perspective of "Person"**  
36  
37  
38 **Level 0 and Level 1**

39  
40 It is understood that:

- 41  
42 (1) a "natural person" can participate in a business transaction as either an "individual" or an  
43 "organization"; and,  
44  
45 (2) a "legal person" participates in business transactions only as an "organization".  
46

<sup>41</sup> See further Annex E, Section E.3.



1 **Rule 42:**

2  
3 **"Individual" is the attribution of the property of indivisibility to a natural person, i.e., in**  
4 **making commitments having rights/obligations, being accountable/responsible for, etc.**

5  
6 Individual is defined as:

7  
8 ***"individual:*** *A person who is a human being, i.e., a natural person, who acts as a distinct*  
9 *indivisible entity or is considered as such".<sup>42</sup>*

10  
11 **Rule 43**

12  
13 **A legal (or artificial) person consists of one or more natural persons and/or one or more**  
14 **other legal persons. A unifying term and common concept used internationally is the**  
15 **standard term "organization" as the collective common term for all the different ways legal**  
16 **(or artificial) persons can be composed and be recognized in various jurisdictions.**

17  
18 The term "organization" is defined in ISO/IEC 6523<sup>43</sup>

19  
20 **Rule 44:**

21  
22 **A key property of an "organization" is that unlike an "individual", it is deemed to be**  
23 **divisible, i.e., can have one or more distinct parts identified for information interchange.**

24  
25 The term "organization part" is also defined in ISO/IEC 6523.<sup>44</sup>

---

<sup>42</sup>Notes:

- (1) The use of the term "person" in the definition of "individual" means that an "individual" inherits all the properties and behaviours of "person".
- (2) The definition of "individual" is neutral towards and independent of:
  - the manner in which various jurisdictions have different rules as to what criteria must be met for an entity to be considered/qualify as a "natural person";
  - any qualifications which a jurisdiction may place on natural persons with respect to their ability to make commitments, being held responsible/accountable for, etc. (e.g."minors", "being incapacitated", etc.).
- (3) This definition is harmonized with basic concepts and requirements underlying Privacy/Data Protection, i.e., "personal information", which is defined as "information about an identifiable individual". This includes information provided by an individual about him/herself to another person in the context of an eventual delivery of a good or service provided by that person in the role of "seller". See further Annex E, Section E.3.1

~~(3)(4)~~  
<sup>43</sup>See Section 3.1.36 above for the standard definition and notes for "organization".

<sup>44</sup> The ISO/IEC 6523 definition for "organization part" is:

**"3.2 organization part:** *Any department, service or other entity within an organization, which needs to be identified for information interchange".*

1  
2 **Rule 45:**

3  
4 **From a business transaction perspective, one needs to be able to qualify and identify**  
5 **which “organization parts” can commit to, and be held responsible/accountable, with**  
6 **respect to a business transaction, i.e., on behalf of the organization.<sup>45</sup>**

7  
8 Within the context of (a) the definition of "person"; (b) the international standard definitions for  
9 "organization" and "organization part"; and, (c) the added requirements of business transaction, it  
10 is necessary to introduce the concept/term and associated definition of "organization person" as  
11 follows:

12  
13 **"organization person:** *an organization part which has the properties of a person and*  
14 *thus is able to make commitments on behalf of that organization.*

15  
16 *Note : (a) an organization can have one or more organization persons.*

17  
18 *(b) an organization person is deemed to represent and act on behalf of the*  
19 *organization and to do so in a specified capacity.*

20  
21 *(c) an organization person can be a "natural person" such as an employee or*  
22 *officer of the organization.*

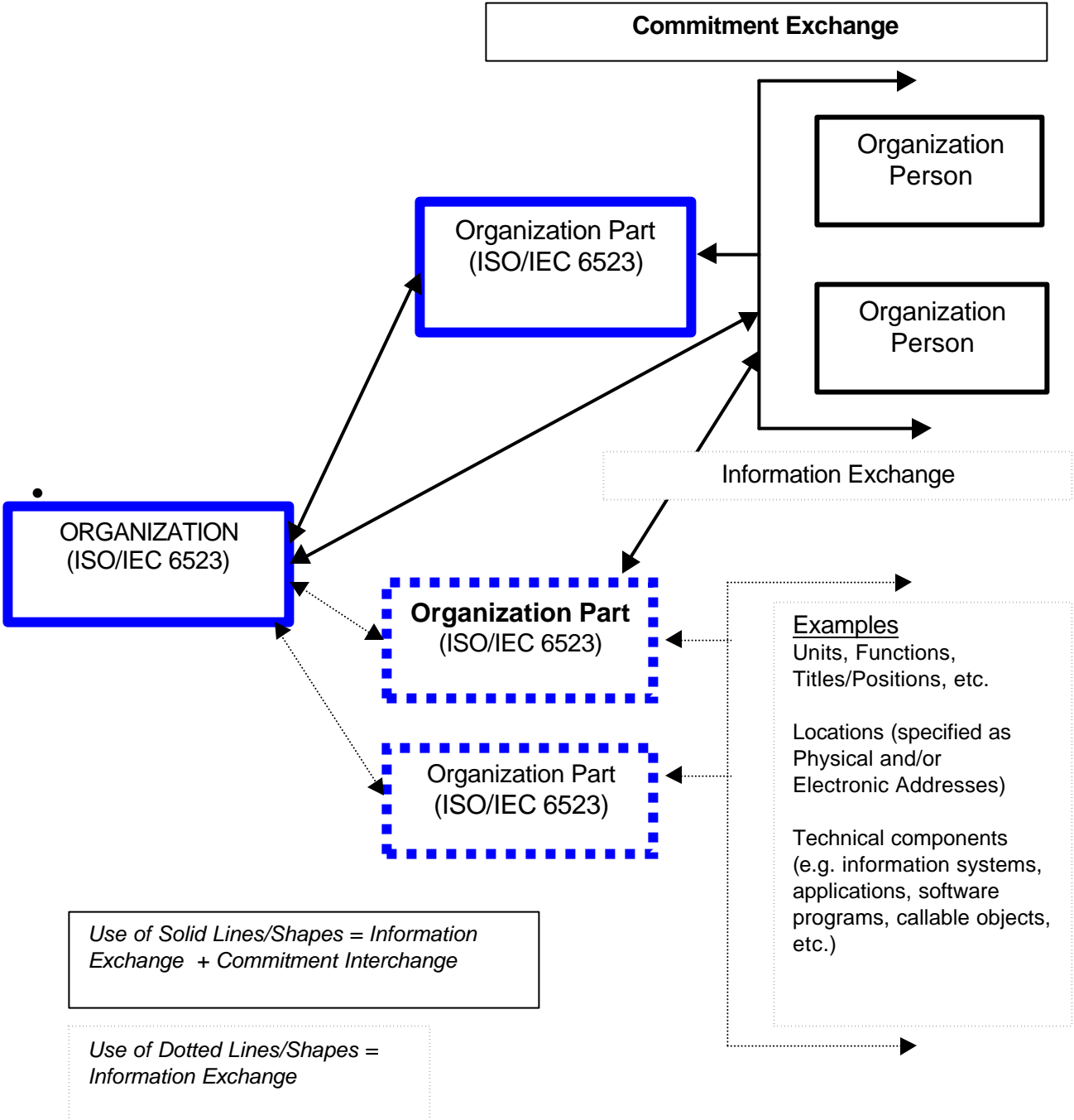
23  
24 *(d) an organization person can be a "legal person", i.e., another organization".*  
25  
26

27 Figure 14 illustrates the linkages among “organization”, “organization part” and “organization  
28 person” and does so in the context of commitment exchange versus information exchange.  
29  
30  
31

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<sup>45</sup> See further Annex E, Section E.3.3.

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**Figure 14: Illustration of Commitment Exchange versus Information Exchange for Organization, Organization Part(s) and Organization Person(s)**

1 The inter-working of the previous rules represent Level 0 No External Constraints and Level 1 -  
 2 External Constraints in the Business Transaction Model. Figure 15 captures these rules in matrix  
 3 form.  
 4  
 5

Basic Players	Key Roles in (Electronic) Business Transaction	
	Buyer	Seller
Level 0: Person (undifferentiated)	YES	YES
Level 1: Person (individual)	YES	NO (YES) <sup>46</sup>
Level 1: Person (organization)	YES	YES

6  
 7 **Figure 15: Business Transaction Model – Basic Players and Key Roles**  
 8

9  
 10 **5.2.6 Person and Level 1 – External Constraints: "Regulator and "Public Administration"**

11  
 12 **Rule 46:**

13  
 14 **External constraints exist on the provisioning of goods and services and the behaviour of**  
 15 **persons as players in business transactions including those provided via electronic**  
 16 **commerce.**

17  
 18 **The introduction of Level 1 external constraints on the behaviour of persons as players,**  
 19 **i.e., individuals and organizations, and their roles as buyers or sellers in a business**  
 20 **transaction introduces an additional:**

- 21  
 22 **(1) third role, i.e., "regulator"; and,**  
 23 **(2) third category of player, i.e., "public administration".**  
 24

25 Entities which impose external constraints on market behaviour and associated business  
 26 transactions of buyers and sellers are deemed to be "regulators". "Regulator" is defined as:

27  
 28 ***"regulator: a person who has authority to prescribe external constraints which serve as***  
 29 ***principles, policies or rules governing or prescribing the behaviour of persons involved in a***  
 30 ***business transaction as well as the provisioning of goods and services interchanged."***<sup>47</sup>  
 31

32 The third category of player in a business transaction is that of "public administration". A "public  
 33 administration" is a person who is deemed to have all the attributes of an organization plus at least

---

<sup>46</sup> From an IT standards perspective, (e.g., ISO/IEC 6523), an unincorporated activity providing a good or service is deemed to be an organization. However, there may be legal requirements in a jurisdiction, where a "natural person" in the role of a seller is deemed to be an "individual" and not an organization. It is up to such jurisdictions to resolve how such an approach is harmonized with Privacy/Data Protection requirements.

<sup>47</sup> See further Annex E, Section E.5.2

1 one unique additional attribute, from the perspective of a business transaction. A public  
 2 administration has the attribute that in addition to being able to play the roles of an organization,  
 3 i.e., "buyer" and "seller", it can also act on behalf of a "regulator".  
 4

5 [Note: This role of acting on behalf of a "regulator" is unique to "public administration" and is  
 6 independent of whether the latter decides to delegate or outsource such a function, i.e., to  
 7 an "agent" acting on its behalf].  
 8

9 The definition of "public administration" is:

10  
 11 **"public administration:** *an entity, i.e., a person, which is an organization and has the*  
 12 *added attribute of being authorized to act on behalf of a regulator".*  
 13

14 Not all persons as players can perform all three roles especially the role of "regulator." For the  
 15 Business Transaction Model at Level 1- External Constraints, the permitted intersects of the  
 16 persons as players and of the three key roles is illustrated in Figure 16.  
 17

Persons as Players at Level 1	Key Roles in (Electronic) Business Transaction		
	Buyer	Seller	Regulator
Individual	YES	NO (YES) <sup>48</sup>	NO
Organization	YES	YES	NO(YES) <sup>49</sup>
Public Administration	YES	YES	YES

18  
 19 **Figure 16: Business Transaction Model: - Basic Players and Key Roles**  
 20 **- Level 1 - Public Administration Constraints**  
 21

## 22 **5.3 Rules Governing the Process Component<sup>50</sup>**

### 23 **5.3.1 Introduction**

24 For the purposes of this standard and in the context of a business transaction, a "process" is  
 25 defined as:  
 26

---

<sup>48</sup> From an IT standards perspective, (e.g., ISO/IEC 6523), an unincorporated activity providing a good or service is deemed to be an organization. However, there may be legal requirements in a jurisdiction, where a "natural person" in the role of a seller is deemed to be an "individual" and not an organization. It is up to such jurisdictions to resolve how such an approach is harmonized with Privacy/Data Protection requirements.

<sup>49</sup> Increasingly products and services provided by public sector administrations on behalf of regulators are being "outsourced" to organizations which are not public administrations (e.g., private sector-for-profit or not-for-profit organizations).

<sup>50</sup> Annex F "Business Transaction Model: Process Component" provides informative and explanatory text for Section 5.3.

1            **"process:**     *a series of actions or events taking place in a defined manner leading to the*  
2            *accomplishment of an expected result".*  
3

4     **Rule 47: A business transaction is considered to consist of five sets of distinct activities,**  
5     **namely; planning, identification, negotiation, actualization and post-actualization.**  
6

7     Business transactions, and in particular those which are Open-edi based, can be viewed from a  
8     process perspective as five distinct activities. This perspective on the process component is  
9     linked to the making of business decisions and commitments in a business transaction. By  
10    providing this common view to business transactions, one provides a single frame of reference for  
11    discussion of many of the diverse issues as well putting these issues in a context<sup>51</sup>.  
12

13    These five basic sets of activities integrate existing well-known and widely used business models  
14    which take the perspective of the seller, the perspective of buyer and that of a combined buyer-  
15    seller view as well as that of contract formation. Also incorporated in this standard is the approach  
16    of "early loose couplings" and "late bindings". Factored into this division of five phases are  
17    common external constraints of the nature of privacy/data protection, consumer protection and  
18    similar legal/regulatory requirements as external constraints on business transactions, i.e. those at  
19    Levels 1+. {See further above 5.1.6}.  
20

21    This division into five phases facilitates the identification of, and mapping to, existing standards  
22    which can be utilized in support of Open-edi based implementations. It therefore not only  
23    facilitates specification and re-use of scenarios and scenario components but reduces their cost  
24    of construction by maximizing (re-)use of existing standards and related tools.  
25

26    **Rule 48:**

27  
28    **It is understood that these five basic activities need not occur in a sequential manner.**  
29

30    For example, data pertaining to Post-Actualization aspects, (e.g., warranties), may well be made  
31    available as part of the Planning Phase. Or the choices in methods of payments to be decided  
32    upon as part of the Negotiation Phase may be made known as part of the Planning information.  
33

34    **Rule 49:**

35  
36    **In a business transaction, any party to the transaction can terminate the business**  
37    **transaction upon one of the agreed conclusions by all those involved although some of**  
38    **the recognition may be implicit.**  
39

40    A common example here is that of one of the parties deciding not to respond at a specific step  
41    during a business process, (e.g., a time out).  
42

43    **Rule 50:**  
44

---

<sup>51</sup> For example, in "Identification", this may be the point to introduce the need for authentication whereas the area of "Negotiation" or "Actualization" may be the point to pursue the issue of digital signatures.

1 In an instantiation of a business transaction, these five sets of activities may be  
2 completed in a single continuous interactive dialogue or through several sets of  
3 interactions among buyer and seller and possibly involve agents or third parties as well<sup>52</sup>.

#### 4 5.3.2 Planning

5 In the Planning Phase, both the buyer and seller are engaged in a process to decide what action to  
6 take for acquiring or selling a good or service. From a seller's perspective, the Planning Phase  
7 relates to all those actions or events whereby data pertaining to the availability of a good or service  
8 is made available. It is up to the seller to decide how much data to make available and at what  
9 level of granularity without having any information on a specific buyer.

10  
11 Common examples here include advertising, market research, promotions, provision of  
12 catalogues, direct marketing, product branding and positioning of a good or service, auctions,  
13 terms and conditions of trade, warranties, etc.

14  
15 From a buyer's perspective, the Planning Phase pertains to all those actions or events whereby:

- 16  
17 (1) the potential buyer searches among potential suppliers of a good or service based on  
18 information made available by these suppliers of goods and services, i.e., as potential  
19 sellers;
- 20  
21 (2) the potential buyer requests information, product/service literature, etc., from potential  
22 sellers; and/or,
- 23  
24 (3) the potential buyer makes a more explicit statement of needs in the form of a request for  
25 proposals (RFP), for quotation (RFQ), price quotes, etc. It is becoming increasingly  
26 common and often required for public sector organization(s) to publicly post (detailed)  
27 specifications of the requirements pertaining to a planned purchase of a good or service.

#### 28 5.3.3 Identification

29 The Identification Phase pertains to all those actions or events whereby data is interchanged  
30 among potential buyers and sellers in order to establish a one-to-one linkage, i.e. in the Planning  
31 Phase a potential Buyer will have identified a possible seller(s) or a potential Seller(s) will have  
32 identified a Buyer with a stated request.

33  
34 .The Identification Phase also pertains to exchanges of information bundles required to progress  
35 from the Planning Phase to the Negotiation Phase as is mutually acceptable. A key result of the  
36 Identification Phase is the transformation from a loose coupling among potential buyers and sellers  
37 to an early one-to-one binding required, and mutually agreed to, for the Negotiation Phase to begin.

38  
39 From a seller's perspective, there may well be limits on the nature and level of detailed of data a  
40 seller is willing to provide on a particular good or service, i.e., in the Planning Phase, without  
41 identification of the potential buyer.

42  
43 From a buyer's perspective, there may well be requirements for more detailed data on the  
44 prospective seller, especially where the seller is represented to the buyer in electronic form.

---

<sup>52</sup> An example of the first is an "immediate settlement" (see Section 5.7.2.2). An example of the second is the use of a real estate agent (See section 5.7.1)

1  
2 A key aspect of the Identification Phase is to ensure that “Level 1 External Constraints: Public  
3 Administration” of the nature of privacy/data protection, consumer policy, etc. can be complied with  
4 if required<sup>53</sup>. This requires the seller to determine whether the person as potential buyer is an  
5 "individual" or an "organization" (a Level 1 External Constraint) or can simply be considered a  
6 “person” ( a Level 0 perspective).<sup>54</sup>

#### 7 **5.3.4 Negotiation**

8 The Negotiation Phase pertains to all those actions and events involving the exchange of  
9 information bundles following the Identification Phase, i.e. a potential buyer and seller having (1)  
10 identified the nature of good(s) and/or service(s) to be provided; and, (2) identified each other at a  
11 level of certainty, i.e., unambiguity, to their mutual agreement. The process of negotiation is  
12 directed at achieving an explicit, mutually understood, and agreed upon goal of a business  
13 transaction and associated terms and conditions. This may include such things as the detailed  
14 specification of the good or service, quantity, pricing, after sales servicing, delivery requirements,  
15 financing, use of agents and/or third parties, etc. This is the key to the entire process because it is  
16 during the Negotiation Phase that the direction of the remaining activities in a business transaction  
17 will be established.

18  
19 The end of the Negotiation Phase is marked by the following conditions being present.

- 20  
21 (1) The particular good or service to be provided by the seller to the buyer has been specified  
22 at a level of detail, i.e., granularity, mutually agreed to by both buyer and seller.  
23  
24 (2) The buyer and seller have unambiguously identified each other to their mutual satisfaction.  
25  
26 (3) The buyer and seller have agreed to whether or not agents or third parties are to be  
27 involved in the business transaction and, if so, have explicitly stated the specified roles or  
28 function these persons are to fulfil.  
29  
30 (4) The buyer and seller have agreed to terms and conditions pertaining to:  
31  
32 (4.1) the acceptable equivalent value which the buyer is to provide to the seller in exchange for  
33 the latter providing the good or service.  
34  
35 If an "acceptable equivalent value" is of a monetary nature, this involves agreement on  
36 terms of payment, method of payment, financing, etc.  
37  
38 (4.2) Transfer of property rights, (e.g., from full and complete ownership to a (permanent or  
39 short term) licence to use, (e.g., as in relation to intellectual property rights).  
40  
41 (4.3) Post-actualization requirements {see below Section 5.3.5}  
42

---

<sup>53</sup> This is independent of whether these external constraints are of a regulatory or self-regulatory nature.

<sup>54</sup> For the purposes of this standard, and in conformance with ISO/IEC 6523-1, unincorporated persons who provide a good or service, i.e., natural persons, who as role players are "sellers" in a business transaction are deemed to be an “organization”.



- 1 (5) Contract formation is deemed to have been concluded. Formation of contract can range  
2 from:  
3  
4 (a) the seller providing an explicit summary of all the pertinent information exchanged  
5 as information bundles during the Planning, Identification and Negotiation Phases  
6 for sign-off by the buyer; to  
7  
8 (b) the totality of the exchanges of information bundles among seller and buyer (and/or  
9 participating agents and/or third parties) during the Planning, Identification and  
10 Negotiation Phases resulting in the formation of an implicit contract.

### 11 **5.3.5 Actualization<sup>55</sup>**

12 The Actualization Phase pertains to all activities or events necessary for the execution of the  
13 results of the negotiation for an actual business transaction. Normally the seller produces or  
14 assembles the goods, starts providing the services, prepares and completes the delivery of good  
15 or service, etc., to the buyer as agreed according to the terms and conditions agreed upon at the  
16 termination of the Negotiation Phase.

17  
18 Normally, the buyer begins the transfer of acceptable equivalent value, usually in money, to the  
19 seller providing the good or service. Where transfers of value of a monetary nature are involved,  
20 these can range from pre-paid (P.P.D) to cash-on-delivery (C.O.D), i.e., as found in common  
21 international commercial terms (a.k.a, Incoterms), or for pre-paid deposit or no deposit, to  
22 staggered payments, financing, to payment at a mutually agreed to date after delivery of  
23 acceptance by the buyer of the product/service, (e.g., "no payment/no interest for 90 days").  
24

25 In addition, it is understood that in transport of a good or a service from a seller to a buyer and the  
26 transfer of equivalent acceptable value from buyer to seller, there are associated transfers of  
27 property rights. It is assumed that unless special conditions apply, where and how such transfer  
28 of property rights are to be transferred is governed by international accepted commercial terms,  
29 i.e., Incoterms, (e.g., "F.A.S." or Free-Along Side, or "F.O.B." Free-On-Board, etc.).  
30

### 31 **5.3.6 Post-actualization**

32 The Post-Actualization Phase includes all of the activities or events and associated exchanges of  
33 information bundles that occur between the buyer and the seller after the agreed upon good or  
34 service is deemed to have been delivered.  
35

36 These can be activities pertaining to warranty coverage, service after sales, post-sales financing  
37 such as monthly payments or other financial arrangements, consumer complaint handling and  
38 redress or some general post-actualization relationships between buyer and seller<sup>56</sup>.

---

<sup>55</sup>It is assumed that common business practices are followed. Not covered are external factors beyond the control of either buyer or seller which prevent completion of the business transaction, (e.g., those deemed to be Acts of God, Acts of War, etc.). It is up to the seller and/or buyer to singly or jointly decide on measures to minimize the negative impacts of these and other risks, (e.g, through insurance).

<sup>56</sup> The Post-Actualization Phase could include ongoing communications pertaining to product recall or fixes of defects, availability of product replacements, (e.g., new models), or associated product availability, available changes in the services provided (or add-ons), available changes in the terms and conditions pertaining to the

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### 5.4 Rules Governing the Data Component<sup>57</sup>

#### 5.4.1 “Recorded Information”

The context of this section on “Rules Governing the Data Component” is that of data in an electronic business transaction. The two key attributes of Open-edi here are that: (1) it is “business transaction”-based; and, (2) takes place through “electronic data interchange”. These terms are defined in ISO/IEC 14662:1997(E) “Information Technologies - Open-edi Reference Model”<sup>58</sup>.

The definition of business transaction<sup>59</sup> is:

- generic, i.e., independent of whether it is executed through electronic or non-electronic means;
- sector independent, i.e., it applies within and among sectors, (e.g., public/private, industrial, geographic, etc.); and,
- independent of whether the business transaction pertains to “for profit” or “not-for-profit” based exchanges of values.

A standard definition for “information” exists<sup>60</sup>. It is also medium neutral and serves as the basis,

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good or service provided, (e.g., prices/rates, packaging or bundling of services, extensions of warranties, or time period covered, etc.).

<sup>57</sup> Annex G “Business Transaction Model: Data Component” provides the informative and explanatory text for Section 5.4

<sup>58</sup> **“3.1.4 business transaction:** *a predefined set of activities and/or processes of organizations which is initiated by an organization to accomplish an explicitly shared business goal and terminated upon recognition of one of the agreed conclusions by all the involved organizations although some of the recognition may be implicit”.*

**“3.1.5 Electronic Data Interchange (EDI):** *the automated exchange of any predefined and structured data for business purposes among information systems or two or more organizations”.*

<sup>59</sup> As needed to facilitate widespread adoption and use of Open-edi in support of application areas such as electronic commerce, electronic administration, electronic business, e-logistics, e-government, e-education, e-travel, e-medicine, etc.).

<sup>60</sup> ISO/IEC 2382 “Information technology - vocabulary Part 1 - Fundamental Terms” defines “information” as:

**“0.1.01.01 information (in information processing):** *knowledge concerning objects, such as facts, events, things, processes, or ideas, including concepts, that within a certain context has a particular.* ISO/IEC 1087 “Terminology - vocabulary” defines object as:

**“2.1 object:** *any part of the perceivable or conceivable world”.*

1 i.e., point of departure for this standard. However, this standard definition does not require  
2 "information" to be recorded.

3  
4 **Rule 51:**

5  
6 **In a business transaction, information is either recorded or it is not.**

7  
8 Basically, information exists in two states:

- 9  
10 (1) that which is "known" to a natural person, but is not yet recorded in any form; or,  
11  
12 (2) that which is recorded on some medium.

13  
14 Both states are acceptable in the present legal and commercial frameworks and business  
15 practices. Where business transactions may or may not include recorded information. In  
16 everyday commerce, a contractual agreement, need not involve any recorded information, i.e., can  
17 be a verbal contract, (e.g., based on a handshake).

18  
19 **Rule 52:**

20  
21 **Electronic business transactions require "recorded information".**

22  
23 Unlike business transactions in general, electronic business transactions are based on and  
24 require "recorded information" which is defined as:

25  
26 **"recorded information:** *any information that is recorded on or in a medium irrespective of*  
27 *form, recording medium or technology utilized, and in a manner allowing for storage and*  
28 *retrieval"*<sup>61</sup>.

29  
30 *Notes:*

- 31  
32 (1) *This is a generic definition and is independent of any ontology, (e.g., those of "facts"*  
33 *versus "data" versus "information" versus "intelligence" versus "knowledge", etc.).*  
34  
35 (2) *Through the use of the term "information", all attributes of this term are inherited in this*  
36 *definition.*  
37  
38 (3) *This definition covers:*  
39  
40 (a) *any form of recorded information, means of recording, and any medium on which*  
41 *information can be recorded; and,*  
42

---

<sup>61</sup> Current laws and regulations governing government and business operations are mostly "paper-based" and presume the presence of paper records. "Medium neutrality" encapsulates two key attributes: (1) neutrality towards, i.e., independent of, the means, method or technology used to record information; and, (2) neutrality, independent of the type of "medium" on which the information is recorded.

1 (b) all types of recorded information including all data types, instructions or software,  
2 databases, etc.  
3

4 The term "medium"<sup>62</sup> is defined as:  
5

6 **"medium:** physical material which serves as a functional unit, in or on which  
7 information or data is normally recorded, in which information or data can be retained and  
8 carried, from which information or data can be retrieved, and which is non-volatile in  
9 nature".<sup>63</sup>  
10

11 Notes:  
12

13 (1) This definition is independent of the material nature on which the information is recorded  
14 and/or technology utilized to record the information, (e.g., paper, photographic, i.e.,  
15 chemical, magnetic, optical, ICs (integrated circuits), as well as other categories no longer  
16 in common use such as vellum, parchment (and other animal skins), plastics, (e.g.,  
17 bakelite or vinyl), textiles, (e.g., linen, canvas), metals, etc.)  
18

19 (2) The inclusion of the "non-volatile in nature" attribute is to cover latency and records  
20 retention requirements.  
21

22 (3) This definition of "medium" is independent of:  
23

24 a) form or format of recorded information;

25 b) physical dimension and/or size; and,

26 c) any container or housing that is physically separate from material being housed and  
27 without which the medium can remain a functional unit.  
28

29 (4) This definition of "medium" also captures and integrates the following key properties:  
30

31 a) the property of medium as a material in or on which information or data can be  
32 recorded and retrieved;

33 b) the property of storage;

34 c) the property of physical carrier;

35 d) the property of physical manifestation, i.e., material;

36 e) the property of a functional unit; and,

37 f) the property of (some degree of) stability of the material in or on which the information  
38 or data is recorded.  
39

40 The relation of "information" to "recorded information" and "medium" to existing legal and  
41 commercial frameworks for business transactions is illustrated in Figure 17.  
42  
43

---

<sup>62</sup> The meaning and use of the term "medium" often gets confused with form, format, type of representation and use, etc. of information. It is therefore necessary to have a common understanding of the concept/term "medium", i.e., from legal, commercial, information technology, standardization, etc., perspectives.

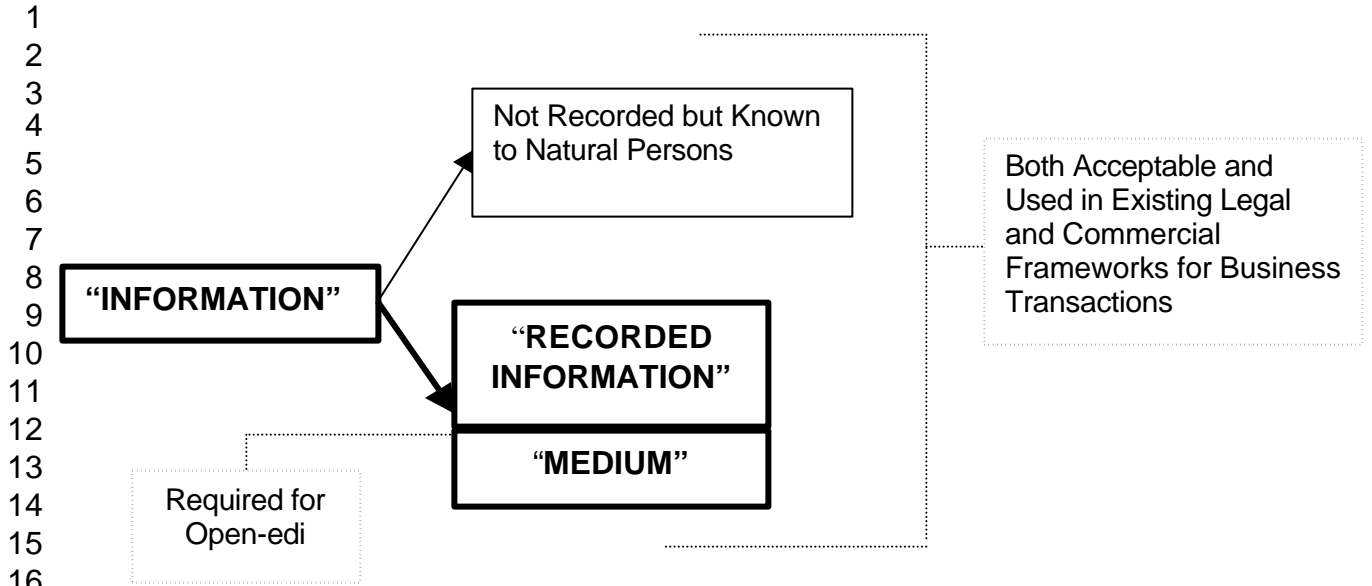


Figure 17: Relation of “Information”, Recorded Information” & “Medium” in Business Transactions – Legal, Commercial and Open-edi Requirements

## 5.4.2 Predefined and Structured Data Elements

### Rule 53:

**Not all recorded information is data, but all data is recorded information.**

Not all recorded information is data but all data is a category of recorded information. Data is a particular category of recorded information which has certain properties. The definition of "data" in the context of an electronic business transaction is.<sup>64</sup>

***"data(business transaction):** representations of recorded information that are being prepared or have been prepared in a form suitable for use in a computer system".*

Notes:

- (1) Under this definition of "data", software is a subset or category of data.
- (2) This definition of "data" is presented from the perspectives of both the legal framework and standardization framework and is generic in nature. It is applicable to all categories of information exchanges involving computer systems and telecommunication networks.

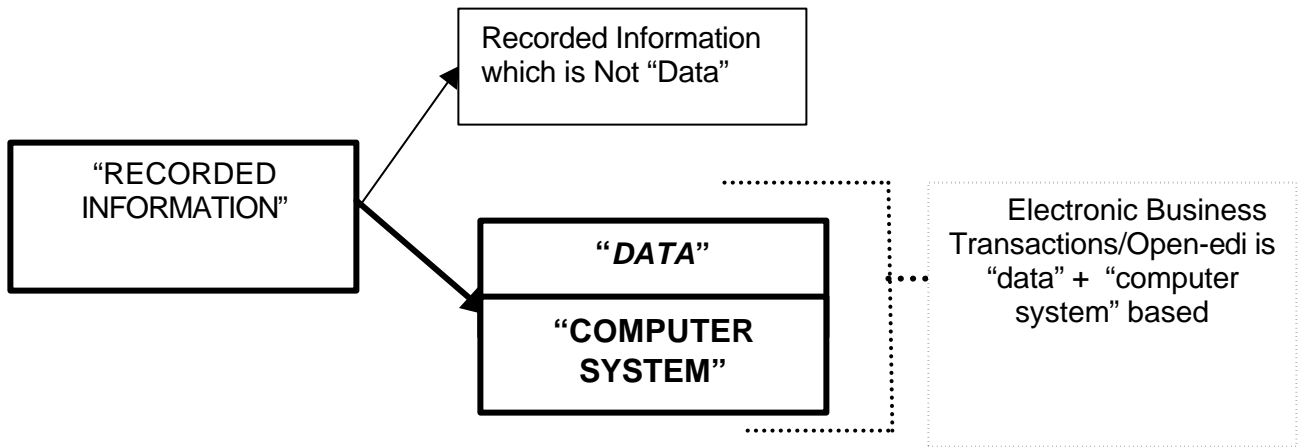
<sup>64</sup>This definition integrates definitions of "data" from IT, commercial and legal perspectives. The use of the term "computer systems" links to the Open-edi Reference Model definitions "3.1.5 "Electronic Data Interchange (EDI)" and "3.1.8 Information Technology System (IT system)".

1 (3) Use of the term "recorded information" in this definition means that all attributes of this term  
2 are inherited.  
3

4 **Rule 54:**

5  
6 **Electronic business transactions involve (1) data; and, (2) data that is recorded or stored**  
7 **on any medium in or by a computer system.**

8  
9 Electronic commerce by definition requires the utilization of information technology and particularly  
10 that of a computer system. Any recorded information which does not have the properties of "data"  
11 and cannot be utilized in a computer system does not form part of an Open-edi business  
12 transaction. This is illustrated in Figure 18.  
13



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29 **Figure 18: Relation of "Recorded Information", "Data" and "Computer System" in Electronic**  
30 **Business Transactions / Open-edi**

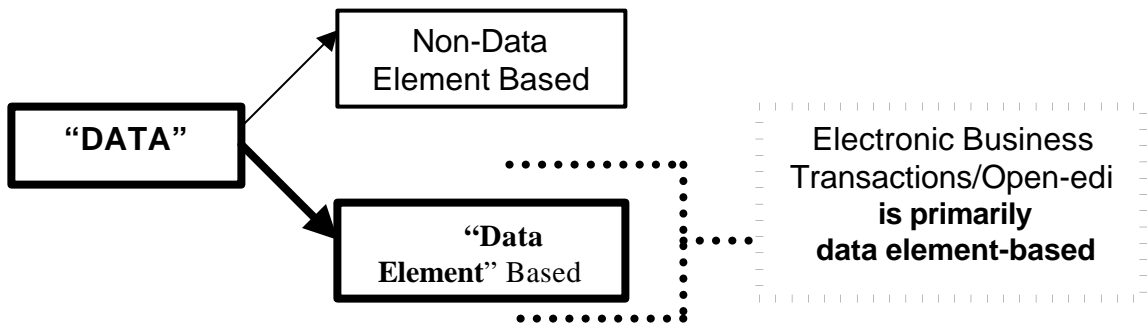
1 **Rule 55:**

2  
3 **The definition of "data", and related information technology terms and definitions found in**  
4 **this standard must be mappable into legal frameworks<sup>65</sup>.**  
5  
6

7 **Rule 56:**

8  
9 **Business transactions are primarily data element-based.**

10  
11 Figure 19 provides an illustration of this rule.



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24  
25 **Figure 19: Relations "Data" and "Data Elements" in**  
26 **Electronic Business Transactions/Open-edi**

27  
28  
29 **Rule 57:**

30  
31 **Having a standard definition of "data element" supports requirements of**  
32 **unambiguousness in electronic commerce.**  
33

34 The current version of ISO/IEC 11179-3:1994 "Information Technology Specification and  
35 Standardization of Data Elements" defines data element as:  
36

---

<sup>65</sup> Information technology standards also define "data". The international standard ISO/IEC 2382 "Information Technology Vocabulary," Part 1, defines "data" as follows:

**01.01.02 data:** *A reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing.*

Notes

(1) *Data can be processed by humans or by automatic means.*

This definition of "data" in the context of Open-edi and business transactions makes "by automatic means" a must and implicitly considers, i.e., implies, "processing by humans" to be a human interface issue.

1            **"data element:**        *a unit of data for which the definition, identification, representation*  
2            *and permissible values are specified by means of a set of attributes".*

3  
4            It suffices to note that the more complete and precise the specification of the set of attributes<sup>66</sup>  
5            pertaining to a data element, the higher the level of certainty, i.e., unambiguousness, of the  
6            semantics in the meaning and use of a data element in (electronic) business transactions.

7  
8            **Rule 58:**

9  
10           **The greater the degree to which data is structured and predefined, i.e., is "data-element-**  
11           **based", the less ambiguity and the higher the degree of cost-effectiveness and**  
12           **efficiencies in the utilization of information technologies in support of Open-edi.**

13  
14           **Rule 59:**

15  
16           **The degree to which "ambiguity" in (electronic) business transactions can be minimized is**  
17           **directly related to the ability to realizing the opportunities in and potential of Open-edi as**  
18           **well as its widespread adoption and use in various application areas, (e.g, e-commerce, e-**  
19           **administration, e-government, e-business, e-logistics, etc.).**

20  
21           **Rule 60:**

22  
23           **With respect to Open-edi standards development pertaining to the data component, the**  
24           **priority is be placed on data which is of the nature of data elements and within this**  
25           **context, data elements which are (or should be) predefined and structured.**

26  
27           Data of this nature already exists and is used extensively in commerce world-wide and are  
28           commonly known as "code sets".<sup>67</sup>

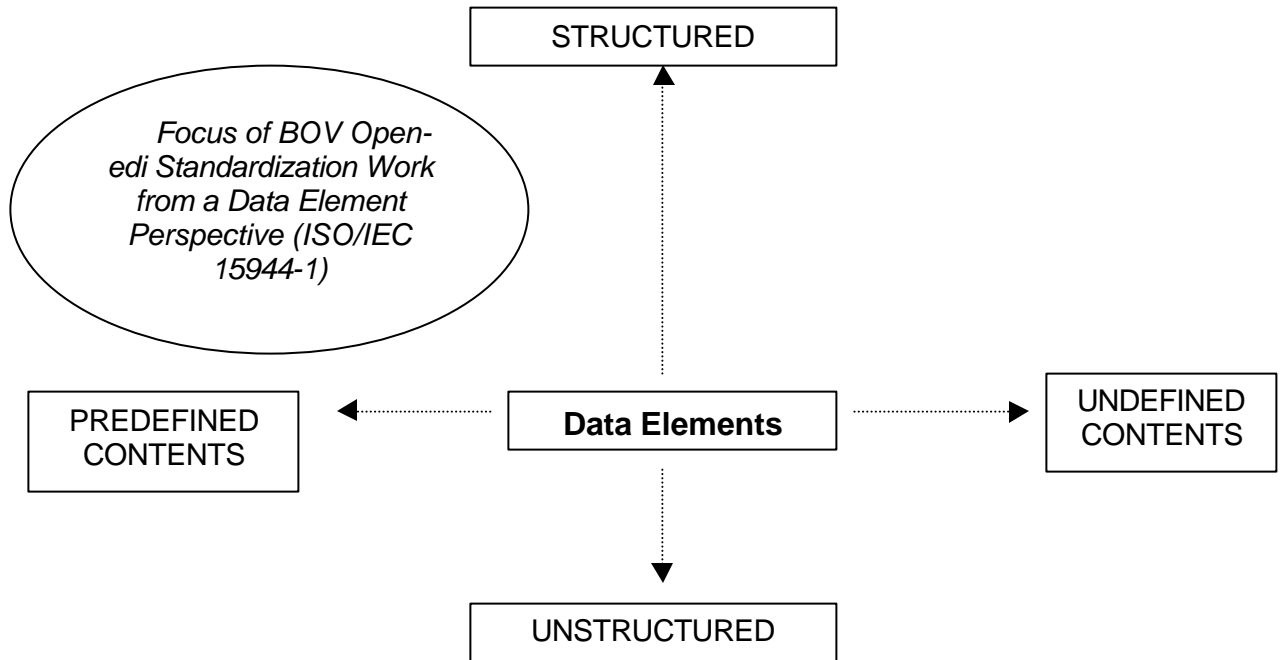
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<sup>66</sup> See further below Section 7.5.5. "Rules for the specification of semantic components and semantic components attributes"

<sup>67</sup> See further ISO/IEC 18022 -Information technology- Identification, Mapping and IT-enablement of Standards for Widely Used Coded Value Domains". This standard is under development by ISO/IEC JTC1/SC32 WG2 - Metadata.



1  
2 Rule 60 is graphically represented in the following illustration, i.e. Figure 20:  
3



24 Figure 20: Focus of BOV Open-edi Standardization Work from Data Element Perspective –  
25 Predefined and Structured Data Elements  
26

27  
28  
29 Rule 61:

30  
31 Standards development work in support of electronic business transactions must  
32 incorporate and support data granularity requirements. Granularity pertains to the need  
33 to work at the data element level to a degree of detail appropriate to the level of certainty  
34 required in the data being interchanged among the parties participating in a business  
35 transaction.  
36

## 37 5.5 Business requirements on the FSV (Business demands on open-edi support 38 infrastructure)

### 39 5.5.1 Introduction

40 The transfer of information between and among Open-edi parties in Open-edi may require the use  
41 of electronic security methods and techniques just as in the paper based world information could  
42 be put in tamper-evident envelopes or sent registered delivery or by courier. Regulators may  
43 control the use of electronic systems for the transfer of information. Regulators may restrict  
44 information from being sent by parties subject to their control to parties domiciled in other

1 jurisdictions or may regulate in specific ways the application or use of security methods and  
2 techniques.

3  
4 Open-edi scenarios and information bundles must therefore be capable of reflecting constraints to  
5 be applied which may be as a result of:

- 6
- 7     ➤ commitments among parties,
- 8     ➤ external constraints.
- 9

10 These requirements (constraints) are not usually captured by traditional modelling methods  
11 because these concentrate on identifying the flows of internal information required and the triggers  
12 that cause its movement. As a result, scenario and information bundle designers must ensure  
13 that both internal and external constraints are correctly captured and recorded and included with  
14 scenario and information bundle definitions.

## 15

### 16 **5.5.2 Self Imposed Constraints**

17  
18 Generic services required by businesses sending information bundles for the purposes of  
19 facilitating trade include:

- 20
- 21 1) Certainty of the accuracy of the information bundle (also referred to as information bundle  
22 integrity);
- 23 2) Knowledge of the authorization of the information bundle (also referred to as non-repudiation of  
24 source);
- 25 3) Confidentiality of the information bundle contents;
- 26 4) Certainty of the sending of an information bundle (also referred to as non-repudiation of  
27 despatch);
- 28 5) Certainty that a information bundle has been received (also referred to as non-repudiation of  
29 receipt);
- 30 6) Proof of the time at which an information bundle was created or sent (also referred to as  
31 timestamping services);
- 32 7) Notarization of an information bundle;
- 33 8) Quality of service.
- 34

35 A further generic requirement may be to have explicit knowledge of the progress of an information  
36 bundle that has been despatched prior to its final receipt.

37  
38 Any or all of these services may be specified by any of the parties involved in the scenario.  
39 However, at each stage in a scenario, only the party sending an information bundle is able to  
40 implement those requirements. It is not possible for any receiving party to affect the decision

1 made by the sending party in terms of the functions implemented. However, it is possible that a  
2 receiving party could refuse to accept the information bundle because its security treatment was  
3 not acceptable.

4  
5 Security requirements listed above are those which may be agreed contractually between parties.

6  
7 There are several ways in which quality of service can be considered a requirement. In terms of  
8 the FSV the parameters of quality of service are of a series of clearly defined types:

- 9  
10 i) the ability of the infrastructure in use to carry out its defined task within a  
11 specific timescale. This may be considered to be a Mean Time To Respond  
12 (MTTR), the Mean Time Between Failures (MTBF) or the ability to convey a  
13 specific volume of information inside a specific timescale.  
14 ii) the requirement to have processing equipment with a specific ability or  
15 capability in order to process the data provided to provide a specific result.  
16 iii) the requirement that equipment being used in support of the processing  
17 activity(ies) has been developed in accordance with a particular quality standard  
18 or has been accredited against a particular standard and has achieved some  
19 specified level of compliance.  
20 iv) that the party(ies) achieve(s) one or more particular quality standards in the  
21 operation of their processes.  
22

23 Other internal requirements or constraints may be created as a result of the business transaction  
24 itself, such as terms of payment, delivery requirements are expected to be captured and represented  
25 as scenario components since they are business information rather than generic constraints.  
26

### 27 **5.5.3 External Constraints**

28  
29 The majority of business transactions will be subject to constraints applied by outside parties such  
30 as regulators. These constraints may vary according to the nature of the business transaction,  
31 the role being played by one of the parties or the nature of the information being sent. Such  
32 constraints include:

- 33  
34 a) national law;  
35 b) national regulation;  
36 c) trade body regulation;  
37 d) codes of practice;  
38 e) treaties;  
39 f) international agreements;  
40 g) memoranda of understanding;  
41 h) international conventions;  
42 i) international protocols;  
43 j) international law.  
44

45 The effects of these external constraints may be to require that a specific security service is used,  
46 that the service is performed in a specific manner, or that the scenario is performed in a specific  
47 manner and using specified information bundles.  
48

1 Examples of these constraints include:  
2

- 3 a) confidentiality of a part or the whole of a specific information bundle is required to be applied by  
4 the competent authority at the origination or the destination;
- 5 b) the mechanism used to obtain confidentiality may need to be constrained to operate in a  
6 particular manner such as the use of a specific algorithm or maximum or minimum key length;
- 7 c) the mechanism used to obtain confidentiality must support specific additional services such as  
8 the facility to allow authorised third parties to be able to read the content of the information  
9 bundle;
- 10 d) the mechanism(s) used to provide integrity or non-repudiation services may be constrained to  
11 use specific algorithms or methods of computation together with particular key lengths;
- 12 e) the transmission of some information bundles to specified nation state destinations may be  
13 constrained;
- 14 f) there may be a mandatory requirement to use a specific notary or third party as a part of the  
15 scenario or to provide information to them in a specified form or to obtain commitment from  
16 them
- 17 g) the information may have to be reproducible in a specified format and/or may readable or  
18 perceivable by any person
- 19
- 20 h) with respect to the any of the above, there may be retention requirements for a specified time  
21 period for defined sets of recorded information, i.e. one or more predefined groupings of  
22 information bundles.  
23

24 Where parties to an Open-edi transaction are domiciled in different jurisdictions there may be  
25 conflict between applicable external constraints. Such conflicts should be detected during the  
26 building of or playing of the scenario, and may require methods of resolution that cannot be  
27 resolved within the Open-edi scenario.  
28

#### 29 **5.5.4 BOV Requirements on the FSV for Security Methods and Techniques**

30  
31 In order to cater for these requirements scenario descriptions and information bundle descriptions  
32 must include fields or labels that indicate the security functional requirements available with them.  
33

34 Fields or labels must allow a party to identify any constraints that have been applied. When a  
35 scenario or information bundle does not indicate that a security constraint is mandatory for the  
36 scenario or the information bundle, there must be an indicator determining if the constraint is  
37 mandatory or optional on all recipients.  
38

39 Fields or labels must also provide for constraints applied by outside parties such as regulators or  
40 similar bodies. These constraints must be explicitly stated and must identify the applicability of the

1 constraint. For instance, if the constraint is only binding for a scenario where a party is domiciled  
2 in a specific nation state or group of nation states, or is only binding where the party is supervised  
3 or regulated by a specific authority, then these limitations must also be listed.

4  
5 Scenarios or information bundles may be declared as mandatory for use in specific  
6 circumstances (customs reporting to a nation state or designated authority, taxation recording,  
7 international carnet documentation and so on). Scenario designers may have to give  
8 consideration to the effect of the determination of the proper law governing a business transaction  
9 as well as the domicile of the parties sending and receiving information bundles or taking part in  
10 scenarios,  
11

## 12 **5.5.5 Liability of Repositories**

13  
14 Repositories containing scenarios and information bundles may be required to demonstrate to the  
15 users of their services that the information disclosed is properly registered and that it is authentic.  
16 To discharge this requirement, repositories will require the use of security services to give users  
17 confidence that the scenario and information bundle definitions downloaded are valid and can be  
18 relied upon for their purpose. In this respect, scenario and information bundle repositories may  
19 need to be considered in two groups.  
20

21 The first group is those that provide registration facilities on a best efforts basis. That is, that  
22 scenarios or information bundles registered there have been done so with reasonable diligence  
23 and skill, but no guarantee as to their accuracy is given and no liability is accepted for their  
24 inaccuracies.  
25

26 The second group is those that provide registration facilities where the items to be registered are  
27 checked for their correctness and, where a nation state is involved, the information is officially  
28 approved. This group will accept liability for the information that they provide to users.  
29

## 30 **5.6 Classification and Identification of Open-edi Scenarios**

### 31 **5.6.1 Introduction**

32 From the view point of Open-edi objectives, it is desired to be able to commence a business  
33 transaction by simply choosing a particular scenario from the standardized set of scenarios and  
34 applying it to the intended business transaction. In this context, the standard Open-edi scenario is  
35 supposed to be a generic class of various specific scenarios. In addition, if the generic scenario  
36 class were successfully obtained, it could consist of a small number of mandatory scenario  
37 components and many conditional and/or optional scenario components.

38 Although such a standardization idea for Open-edi scenarios seems to be a straightforward  
39 solution, it is likely to be difficult to distinguish a particular scenario from the others. In particular,  
40 the scenario specification having scenario components with many conditional attributes whose  
41 possible set of permitted values or behaviours are not predefined and/or registered may be so  
42 complex that the semantics could not be clearly compiled even if an excellent OeDT is employed.

1 In addition, for those scenarios having the same scenario attributes (e.g. an OeS Set of  
2 Information Bundles) but with slightly different value domains, let alone various combinations of the  
3 same, it is not evident whether they all have to be interpreted as a single scenario or not. Even if  
4 each scenario could be formally identified, having a unique identifier, many scenarios that are  
5 actually identical for semantics may be redundantly registered as standard scenarios.  
6 Discrimination of scenarios becomes increasingly difficult under these conditions<sup>68</sup>. Such overlap  
7 and duplication must be avoided and the focus must be on maximizing reuseability.

8 One of the effective solutions to avoid the confusion and maximize reuseability is to establish a  
9 scenario classification scheme based on well-defined criteria, which may reduce the complexity of  
10 conditional attributes as much as possible.

## 12 **5.6.2 Classification of Open-edi scenarios**

### 13 **5.6.2.1 Requirements for Classification of Open-edi Scenarios**

14 The classification for Open-edi scenarios should meet the following requirements:

- 15 **1) Simplicity:** the classification is plainly and unambiguously defined.
- 16 **2) Selectivity:** the classification is disjoint and non-redundant.
- 17 **3) Inclusiveness:** the classification applies to any of Open-edi scenarios.
- 18 **4) Stability:** the classification is stable for the environmental changes.
- 19 **5) Reality:** the classification is applicable to real world business transactions.

#### 21 Three Factors for the Classification of Open-edi Scenarios

22 In support of the requirements stated above, the following three factors are considered as the key  
23 attributes for the classification of Open-edi scenarios:

##### 25 **5.6.2.2.1 Market type on business boundary**

26 A business transaction can consist of the following business activities:

- 27 j) A buyer finds a relevant seller(s) through the network by using a certain services and/or tools,  
28 such as a portal site and/or a search engine.
- 29 k) The buyer negotiates the business terms and conditions with the seller(s).

---

<sup>68</sup> ISO/IEC 15944-2, Information Technology – Business Agreement Semantic Descriptive Techniques - Part 2: Registration of Scenarios and their Components will address this aspect in detail.

1 l) The buyer receives the goods or services and pays the amount of price to the seller(s)  
2 according to the business terms and conditions.

3 In this business transaction, the existence of a defined market is not mentioned. However, in most  
4 cases, business transactions are performed in markets where the business rules and conventions  
5 are well-known and relatively stable. For example, in a typical case of financial transactions, which  
6 mainly trades a value and/or credit with other persons without the physical delivery of cash or  
7 security, the established conventions of financial markets provide predefined sets of activities and  
8 information exchanges as well as roles of parties to such transactions, i.e. this can be considered  
9 a "defined market. In such a defined market, the buyers and the sellers chose from predefined  
10 sets of choices, known as "principal terms and conditions" for their business transactions. They  
11 participate in the defined market, by accepting such "terms and conditions" at the registration in  
12 advance.

13 Other scenario constructs, such as identification and authentication procedures, may be also  
14 greatly changed depending on whether the defined market exists or not. It seems to be much  
15 easier to discuss the classification of Open-edi scenarios by knowing whether the market type to  
16 which the scenario is to apply is "defined" or "undefined." "Market type" is particularly meaningful in  
17 identifying the boundary of a business transaction such as the trigger and completion terms.

#### 18 19 **5.6.2.2.2 Settlement type in business process**

20 From the viewpoint of a business process, which is mentioned as a fundamental component of  
21 business transactions (See Section 5.3 above), it is significant to know whether all the elements of  
22 "Actualization" of a business transaction ( delivery of goods or services, payment, etc.) are  
23 simultaneously settled through a network, or separately performed through different channels and  
24 with various time duration for Actualization elements. In the case of simultaneous settlement, the  
25 business transaction could be immediately completed if the delivery of goods or services and the  
26 payment are both valid and acceptable for all of the participants. On the other hand, if the delivery  
27 of the good or service and payment are separately performed through different channels  
28 respectively, the business transaction could not be completed until a later time when their  
29 acceptance and settlement are confirmed.

30 In order to bridge the time difference and/or spatial gap of the delivery of goods or services and  
31 payment, the concrete identification of the business transaction and the authentication of either or  
32 both participants are required for establishing the credit and debit relationship among them  
33 relevant to the business transaction. It also requires ability to differentiate scenario constructs  
34 depending on the settlement type.

35

1 **5.6.2.2.3 Roles in Business Transactions: Primitive or Complex)**

2 Regarding the roles of persons in business transactions in Open-edi, which is also mentioned as  
3 a fundamental component (See Section 5.1.5 above), these roles are considered as being either  
4 “primitive” or “complex”. Buyer and seller are two mandatory roles in any business transaction  
5 and are therefore classified as “primitives”. Complexity arises from the decision by the buyer or  
6 seller to add the role of an “agent” or a “third party” or both in a business transaction to be  
7 modelled as an Open-edi scenario.

8 Thus the third factor for classification of Open-edi scenarios pertains to roles and the need to  
9 distinguish between primitive or complex. In many cases, a business transaction is completed  
10 when the delivery of goods or services and settlement are both confirmed between the buyer and  
11 seller. However, in some cases of business transactions, such as a real estate transaction  
12 through an escrow company, the third participant other than the buyer and seller is involved in the  
13 business transaction. In that case, the business transaction is completed only when the escrow  
14 has confirmed the delivery of good or service and settlement according to the terms and  
15 conditions of the specific business transaction. Each participation type may have its own scenario  
16 construct respectively.

17

18 **5.6.3 Trade Models Based on three Classifications Factors**

19 The simplest business process shown in Fig.21 is the primitive trade model, from which we start  
20 the discussion of trade models derived from the classification factors mentioned in the previous  
21 section.

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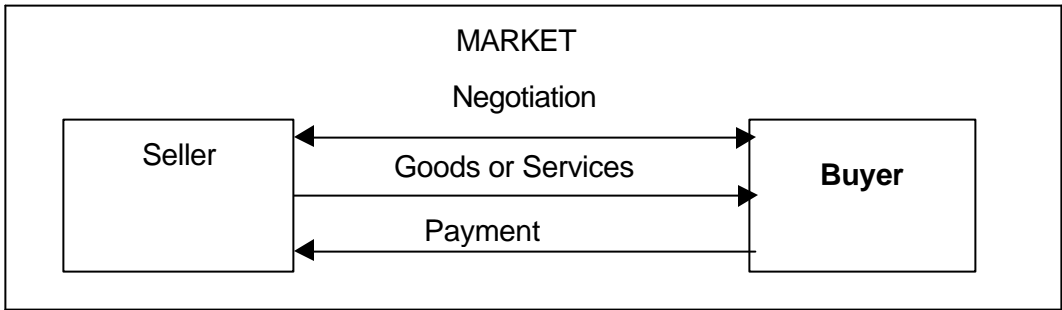
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**Fig. 21 Primitive Trade Model**

33 The description of the Primitive Trade Model is as follows:

34 **Beginning of Trade:** either a buyer or a seller finds the negotiable counterpart, by appropriate  
35 approaches in a market.



1 **Trade Scenario:** then either or both a buyer and/or a seller shows an acceptable scenario to the  
2 counterpart, and negotiates the terms and conditions of business transaction based on the  
3 choices within the accepted scenario. In general, the way of acceptance of a particular scenario  
4 or choice of scenarios may be a part of the terms and conditions of the anticipated business  
5 transaction.

6 **Authentication of Participants:** for the confirmation of the settlement of credit and/or debit  
7 between the buyer and seller, it is assumed that the buyer and/or seller have already been  
8 identified as deemed necessary. The authentication of the identification of the buyer or seller is  
9 mandatory in the case where the payment or delivery of the good or service is performed later  
10 than the agreement resulting from the negotiation process. If both of delivery of the good or  
11 service and payment are performed later than the agreement, the authentication of both  
12 participants is mandatory. On the contrary, if the delivery of the good or service and payment are  
13 simultaneously and immediately performed as well as the agreement, no authentication of buyer  
14 or seller is required.

15 **Completion of Trade:** the trade will complete when both of the delivery of the good or service  
16 and payment are successfully finished.

#### 17 **5.6.3.1 Trade models by market type**

18 Two trade models are derived from the classification by market type.

19 **Defined Market Model:** a trade model where the buyer and seller accept the entry terms of  
20 market in advance and then commence the actual business transactions. A defined market must  
21 have an accepted and recognized source for the business rules and conventions for that market  
22 including adjudication of disputes in the market, i.e. a “market administrator”. The “market  
23 administrator” of a defined market may be a buyer, seller or a third party. In any case, the  
24 scenario(s) to be applied to this trade model is explicitly established by the “market administrator”.  
25 The buyer and seller participate in a defined market through an explicit registration procedure (e.g.  
26 identification/registration scenario for that market in advance, thereby qualifying for and accepting  
27 the terms and condition for participation in that market). There may be two possibilities for  
28 participation in a defined market: (1) through identification/registration of either the buyer or seller,  
29 or both; and (2) where no identification/registration is required (e.g. for those operating on a “cash”  
30 or “payment in advance basis”). Advance identification/registration in a defined market saves  
31 repeating such efforts for each of the actual business transactions. Ability to reference a  
32 predefined scenario(s) of a defined market in support of an actual business transaction also  
33 provides considerable savings in cost and time for such business transactions.

34 The significance of the Defined Market Model is that the business scenario(s) applied to the market  
35 is predefined- for that specific market. This frees the buyers and sellers from the negotiation  
36 efforts of principal terms and conditions to be applied for each business transaction.

37

1 **Undefined Market Model:** a trade model, starting from and conforming to the Primitive Trade  
2 Model, which is performed in undefined markets under the Open-edi environment. In this trade  
3 model, the buyer or seller begins the business transaction by seeking their counterpart using  
4 appropriate services and/or tools (e.g. as a portal site and search engine). The business scenario  
5 to be applied to the transaction is decided upon in each individual case. The buyer or seller may  
6 simply accept the scenario proposed by the counterpart, or they mutually negotiate.

7 In order to save the negotiation efforts, it is possible that the buyer or seller seeks the counterpart  
8 specifying a specific scenario in the search criteria at the beginning of the business transaction.  
9 However, generally speaking, this type of business scenario should include, as a part of the  
10 scenario, the negotiation process of the terms and conditions. Thus, the Undefined Trade Model  
11 necessarily requires the coincident agreement of scenario acceptance and the contents of terms  
12 and conditions under the scenario acceptance.

### 13 **5.6.3.2 Trade models by settlement type**

14 Two trade models are derived from the classification of the settlement type.

15 **Immediate Settlement Model:** a trade model where the entire business transaction process,  
16 such as negotiation, delivery of goods or services and payment, is completed in real-time under  
17 the Open-edi environment. One of the typical cases is downloading a software product or music  
18 from the vendor site, and paying with e-money or a debit account. This trade model is almost  
19 equivalent to a casual procurement of a good or service, which is done by cash at a store on the  
20 street. The procurement can be completed at the moment when it has been confirmed that the  
21 good or service is acceptable for the buyer and the payment is valid for the seller. The  
22 identification of business transaction and/or authentication of buyer and/or seller are not required.  
23 Rather, from the viewpoint of privacy protection, such a trade model should not be excluded from  
24 the Open-edi environment, especially since such a trade model provides for anonymity (and  
25 overall cost reduction of an actual business transaction).

26 **Separate Settlement Model:** a trade model where the business transaction is performed under  
27 the Open-edi environment, and where the delivery of the good or service and/or payment is  
28 separated from the agreement process. In this trade model, a special consideration should be  
29 taken on the scenario construct to bridge the time difference and/or spatial gap among agreement,  
30 delivery and payment.

31 This trade model requires an up-front explicit identification of the actual business transaction  
32 required for mapping the agreement to the delivery and/or payment performed separately.  
33 Secondly, the authentication of buyer and/or seller is required to confirm the relationship of credit  
34 and debit among participants, that is kept through the business transaction process from  
35 agreement to delivery of goods or services and payment. Thirdly, the transition requires that the  
36 status of the business transaction process should be identified and tracked through the completion  
37 of specified activities of the business transaction process.

1    **5.6.3.3 Trade models by participation type**

2    Two trade models are derived from the classification of the participation type.

3    **Primitive Trade Model:** a trade model where only buyer and seller are directly involved in a  
4    business transaction. In this trade model, the business relationship is basically closed between  
5    the two parties. The transaction is completed when the credit and/or debit is settled between the  
6    buyer and seller.

7    **Complex Trade Model:** a trade model where agent(s) and/or third party can be included in  
8    addition to the buyer and seller. For example, where a third party mediates the buyer and seller.  
9    Here, a typical example is a business transaction involving real estate where an Escrow company  
10   mediates the buyer and seller. In this trade model, the role of the third party may have many  
11   variations. The scenario(s) for such business transactions is required to explicitly denote the role  
12   and responsibility of the third party (and/or agents) participating in the business transaction. And,  
13   the business transaction should also satisfy the terms and conditions which are relevant to the  
14   third party for the completion, not only the settlement of the debit/credit between the buyer and  
15   seller.

16   **5.6.4 Classification and Components of Open-edi Scenarios**

17   **5.6.4.1 Classification on open-edi scenarios**

18   The classification attributes mentioned in the previous section, Market Type, Payment Type and  
19   Participation Type are mutually disjoint. Applying each of them to an axis of 3-dimensions, a  
20   classification of Open-edi scenarios is obtained with the requirement of scenario constructs  
21   summarized in Figure 22.

22

1

Class	Classification Attributes			Scenario Construct
	Market	Settlement	Participation	
<b>a) U-I-P</b>	Undefined	Immediate	Primitive	m) Basic Primitive Trade Scenario
<b>b) U-I-C</b>	Undefined	Immediate	Complex	n) Basic Complex Trade Scenario
<b>c) U-S-P</b>	Undefined	Separate	Primitive	o) Primitive Agreement Scenario p) Separate Delivery Scenario q) Separate Payment Scenario r) Authentication Scenario
<b>d) U-S-C</b>	Undefined	Separate	Complex	s) Complex Agreement Scenario t) Separate Delivery Scenario u) Separate Payment Scenario v) Authentication Scenario
<b>e) D-I-P</b>	Defined	Immediate	Primitive	w) Membership Registration Scenario x) Defined Primitive Trade Scenario
<b>f) D-I-C</b>	Defined	Immediate	Complex	y) Membership Registration Scenario z) Defined Complex Trade Scenario
<b>g) D-S-P</b>	Defined	Separate	Primitive	aa) Membership Registration Scenario bb) Defined Primitive Agreement Scenario cc) Separate Delivery Scenario dd) Separate Payment Scenario ee) Defined Authentication Scenario
<b>h) D-S-C</b>	Defined	Separate	Complex	ff) Membership Registration Scenario gg) Defined Complex Agreement Scenario hh) Separate Delivery Scenario ii) Separate Payment Scenario jj) Defined Authentication Scenario

2

**Figure 22: Scenario Classification and Constructs**

3

4 **a) U-I-P Class:** a scenario class of business transactions, which is attributed by Undefined  
5 Market, Immediate Settlement and Primitive Participation. This scenario class consists of a single  
6 Basic Primitive Trade Scenario that is conforming to the Primitive Trade Model under the Open-edi  
7 environment.

8 **b) U-I-C Class:** a scenario class of business transactions, which is attributed by Undefined  
9 Market, Immediate Settlement and Complex Participation. This scenario class consists of a single  
10 Basic Complex Trade Scenario, which is a complete set of complex trade processes under the  
11 Open-edi environment.

12 **c) U-S-P Class:** a scenario class of business transactions, which is attributed by Undefined  
13 Market, Separate Settlement and Primitive Participation. This scenario class consists of the

1 following four components: Primitive Agreement Scenario, Separate Delivery Scenario, Separate  
2 Payment Scenario and Authentication Scenario.

3 **d) U-S-C Class:** a scenario class of business transactions, which is attributed by Undefined  
4 Market, Separate Settlement and Complex Participation. This scenario class consists of the  
5 following four components: Complex Agreement Scenario, Separate Delivery Scenario, Separate  
6 Payment Scenario and Authentication Scenario.

7 **e) D-I-P Class:** a scenario class of business transactions, which is attributed by Defined Market,  
8 Immediate Settlement and Primitive Participation. This scenario class consists of the following  
9 two components: Membership Registration Scenario and Defined Primitive Trade Scenario.

10 **f) D-I-C Class:** a scenario class of business transactions, which is attributed by Defined Market,  
11 Immediate Settlement and Complex Participation. This scenario class consists of the following  
12 two components: Membership Registration Scenario and Defined Complex Trade Scenario.

13 **g) D-S-P Class:** a scenario class of business transactions, which is attributed by Defined Market,  
14 Separate Settlement and Primitive Participation. This scenario class consists of the following five  
15 components: Membership Registration Scenario, Defined Primitive Agreement Scenario, Separate  
16 Delivery Scenario, Separate Payment Scenario and Defined Authentication Scenario.

17 **h) D-S-C Class:** a scenario class of business transactions, which is attributed by Defined Market,  
18 Separate Settlement and Complex Participation. This scenario class consists of the following five  
19 components: Membership Registration Scenario, Defined Complex Agreement Scenario,  
20 Separate Delivery Scenario, Separate Payment Scenario and Defined Authentication Scenario.

#### 21 **5.6.4.2 Scenario components**

22 As is demonstrated in Tab.5-1, the scenario components are quite different depending on scenario  
23 classes. Those scenario components are described as follows:

24

##### 25 **5.6.4.2.1 Basic Primitive Trade Scenario:**

26 This scenario includes all processes of a transaction to begin and complete a Basic Primitive  
27 Trade.

28 At the beginning of business transaction, either the buyer or seller finds the negotiable counter  
29 part, by appropriate approaches.

30 Then, either the buyer or seller shows an acceptable scenario to the counterpart, and negotiates  
31 the terms and conditions of business transaction. The manner of acceptance of a particular  
32 scenario may be a part of the terms and conditions.

33 The business transaction will complete when both the delivery of the good or service and payment  
34 are coincidentally and successfully finished.

1 No authentication of buyer and seller is required because the delivery and payment are  
2 simultaneously and immediately performed as well as the agreement of business transaction.

3  
4 **5.6.4.2.2 Basic Complex Trade Scenario:**

5 This scenario includes all processes of a transaction to begin and complete a Basic Complex  
6 Trade.

7 At the beginning of business transaction, either or both the buyer and seller find the negotiable  
8 counter part by appropriate approaches or through an appropriate mediator.

9 Then, either the buyer or seller shows an acceptable scenario to the counterpart, and negotiates  
10 the terms and conditions of business transaction under the mediation of mediator(s). The manner  
11 of acceptance of a particular scenario may be a part of the terms and conditions.

12 The business transaction will complete when both the delivery of the good or service and payment  
13 are coincidentally and successfully finished and confirmed by the participants according to the  
14 terms and conditions agreed upon the business transaction.

15 No authentication of buyer and seller may be required because the delivery and payment are  
16 simultaneously and immediately performed as well as the agreement of business transaction.  
17 The mediator is required a certain authentication to qualify the ability of mediation. The  
18 qualification depends on the role of mediator.

19  
20 **5.6.4.2.3 Defined Primitive Trade Scenario:**

21 This scenario is the core of D-I-P scenario and includes all processes of a business transaction to  
22 begin and complete a Defined Primitive Trade of which the terms and conditions are accepted in  
23 advance by the participants.

24 Before participating to the bujsiness transaction, the buyer and/or seller are required to  
25 identify/register themselves according to the requirements of the defined market and to accept its  
26 terms and conditions of trade

27 Either the buyer or seller begins the actual business transaction according to the direction  
28 provided by the rules of the Defined Market..

29 The business transaction is completed when both the delivery of the good or service and payment  
30 are coincidentally and successfully finished and confirmed by the participants according to the  
31 terms and conditions defined in the market and/or agreed upon the business transaction.

32 The qualification of membership in a Defined Market is required for the participants. However, no  
33 authentication of buyer and seller may be required because the delivery of the good or service and  
34 payment are simultaneously and immediately performed as well as the agreement of business  
35 transaction.

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**5.6.4.2.4 Defined Complex Trade Scenario:**

This scenario is the core of D-I-C scenario and includes all processes of a business transaction to begin and complete a Defined Complex Trade of which the terms and conditions are accepted in advance by the participants.

Before participating in the business transaction, the buyer, seller and/or mediator are required to make a membership registration to the defined market and to accept the terms and conditions of trade.

Either the buyer or seller begins and negotiates the actual business transaction according to the rules of the specific market under the mediation of an appropriate third party. The business transaction is completed when both the delivery of the good or service and payment are coincidentally and successfully finished and confirmed by the participants according to the terms and conditions defined in the market and/or agreed upon in the business transaction.

The qualification of membership is required for the participants. But no authentication of buyer and seller may be required because the delivery of goods or services and payment are simultaneously and immediately performed as well as the agreement of business transaction.

**5.6.4.2.5 Primitive Agreement Scenario:**

This scenario is the agreement part of U-S-P scenario, which precedes the delivery of goods or services and/or payment of the business transaction.

At the beginning, either the buyer or seller finds the negotiable counter part through appropriate approaches. Then, either or both of them show an acceptable scenario(s) to the counterpart, and negotiate the terms and conditions of business transaction as provided for by the possible choices in that scenario. The manner of acceptance of a particular scenario may be a part of the terms and conditions.

In the agreement, it is explicitly described that the delivery of the good or service and/or payment are separately performed later. A unique identification of the business transaction is required for mapping the agreement to the delivery of the good or service and/or payment performed separately. And, the identification should be unambiguous in the global scope because the unbounded market may not have a well-defined boundary.

The business transaction will complete when both the delivery of the good or service and payment are successfully finished and confirmed by the participants according to the Separate Delivery Scenario and Separate Payment Scenario.

1 **5.6.4.2.6 Defined Primitive Agreement Scenario:**

2 This scenario is the agreement part of D-S-P scenario, which precedes the delivery of goods or  
3 services and/or payment of the business transaction.

4 Before participating in the business transaction, the buyer and/or seller are required to make a  
5 membership registration to the specific market and to accept the terms and conditions of trade.

6 Either the buyer or seller begins the actual business transaction according to the rules of the  
7 specific market.

8 In the agreement, it is explicitly described that the delivery of goods or services and/or payment are  
9 separately performed later. A unique identification of the business transaction is required for  
10 mapping the agreement to the delivery of goods or services and/or payment performed separately.  
11 And, the identification should be unique and unambiguous in the market boundary.

12 The business transaction will complete when both the delivery of the good or service and payment  
13 are successfully finished and confirmed by the participants according to the terms and conditions  
14 defined in the market and/or to the Separate Delivery Scenario and Separate Payment Scenario.

15

16 **5.6.4.2.7 Complex Agreement Scenario:**

17 This scenario is the agreement part of U-S-C scenario, which precedes the delivery of goods or  
18 services and/or payment of the transaction.

19 Either the buyer or seller begins and negotiates the actual business transaction under the  
20 mediation of an appropriate mediator according to the rule of the specific market.

21 The business transaction is completed when both the delivery of the good or service and payment  
22 are successfully finished and confirmed by the participants according to the Separate Delivery  
23 Scenario and Separate Payment Scenario.

24 In the agreement, it is explicitly stated that the delivery of goods or services and/or payment are  
25 separately performed later. In addition, a unique identification of the actual business transaction is  
26 required for mapping the agreement to the delivery of the good or service and/or payment  
27 performed separately. And, the identification of business transaction should be unambiguous in  
28 the global scope because the unbounded market may not have a well-defined boundary.

29 The business transaction will complete when both the delivery of the good or service and payment  
30 are successfully finished and confirmed by the participants according to the Separate Delivery  
31 Scenario and Separate Payment Scenario.

32



1 **5.6.4.2.8 Defined Complex Agreement Scenario:**

2 This scenario is the agreement part of D-S-C scenario, which precedes the delivery of goods or  
3 services and/or payment of the business transaction in a Defined Market.

4 Either the buyer or seller begins and negotiates the actual business transaction according to the  
5 rules of the Defined Market.

6 In the agreement, it is explicitly described that the delivery of goods or services and/or payment are  
7 separately performed later. A unique and unambiguous identification of the business transaction is  
8 required for mapping the agreement to the delivery of the good or service and/or payment  
9 performed separately. And, the identification of business transaction should be unique in the  
10 market boundary.

11 The business transaction is completed when both the delivery of the good or service and payment  
12 are successfully finished and confirmed by the participants according to the terms and conditions  
13 defined in the market and/or to the Separate Delivery Scenario and Separate Payment Scenario.

14

15 **5.6.4.2.9 Separate Delivery Scenario:**

16 This scenario is the delivery part of U-S-P, U-S-C, D-S-P and D-S-C scenarios, which is  
17 separately performed after the agreement on the actual business transaction.

18 When the delivery of goods or services is separately performed from the agreement of the  
19 business transaction, the specific terms and conditions of delivery of the good or service should  
20 be explicitly specified. The delivery status should be noted in the scenario, as the completion of  
21 delivery of the good or services is a mandatory factor for the completion of the actual business  
22 transaction as a whole.

23

24 Furthermore, the delivery scenario should keep a stable reference to the precedent agreement  
25 scenario to denote the relationship between the separated activities of a business transaction.

26

27 **5.6.4.2.10 Separate Payment Scenario:**

28 This scenario is the payment part of U-S-P, U-S-C, D-S-P and D-S-C scenarios, which is  
29 separately performed after the agreement of business transaction.

30 When the payment is separately performed after the agreement of the business transaction, the  
31 payment scenario is required to explicitly state the specific terms and conditions of payment.

32 The payment status should also be noted in the scenario, as the completion of payment is a  
33 mandatory factor for the completion of the business transaction as a whole.

34 Furthermore, the payment scenario should keep a stable reference to the precedent agreement  
35 scenario to denote the relationship between the separated activities of a business transaction.

36

1 **5.6.4.2.11 Authentication Scenario:**

2 This scenario is the authentication part of U-S-P and U-S-C scenarios, which identifies and  
3 confirms the agreement and/or the participants relevant to the business transaction in an  
4 Undefined Market.

5 When the delivery of goods or services and/or payment is separately performed after the  
6 agreement of the business transaction, the authentication scenario is required to explicitly identify  
7 and confirm the credit and debit relationship between participants involved in the business  
8 transaction. The identification of agreement and/or participants should be unambiguous in the  
9 global scope because the implicit market may not have a well-defined boundary.

10 The authentication scenario should also keep a stable reference to the relevant agreement  
11 scenario to denote the relationship among the business transaction, the agreement and/or the  
12 participants.

13

14 **5.6.4.2.12 Defined Authentication Scenario:**

15 This scenario is the authentication part of D-S-P and D-S-C scenarios, which identifies and  
16 confirms the agreement and/or the participants relevant to the business transaction.  
17 Authentication assumes that identification has already been established by means that are  
18 adequate for the business purpose. When the delivery of goods or services and/or payment is  
19 separately performed after the agreement of the business transaction, the authentication scenario  
20 is required to explicitly identify and confirm the credit and debit relationship between participants  
21 involved in the business transaction.

22 The authentication scheme is provided based on corroboration of the rules for identification of the  
23 specific market. The identification of agreement and/or participants within a Defined Market should  
24 be unique and unambiguous.

25 The authentication scenario should also keep a stable reference to the relevant agreement  
26 scenario to denote the relationship among the business transaction the agreement and/or the  
27 participants.

28

29 **5.6.4.3 Remarks on scenario classification**

30 **5.6.4.3.1 Continuous Transaction:**

31 No discrimination is supposed between a continuous repeating transactions and a spot, one time  
32 transaction. The continuous transaction is considered as a repetition of spot transactions of which  
33 the terms and conditions are constant with variations only as permitted under such terms and  
34 conditions or only a variable part changing.

35

1 **5.6.4.3.2 Services Transaction:**

2 The business transaction of services is basically same as of goods even if it may have different  
3 attributes relevant to the delivery procedure and the status confirmation.

4

5 **5.6.4.3.3 Auction Transaction:**

6 An auction transaction is supposed to be a variation of complex business transaction, which  
7 requires the competitive participation of two or more buyers for a sale of good or service.

8

9 **5.6.4.3.4 Bidding Transaction:**

10 A bidding transaction is supposed to be a variation of Primitive transaction, which requires the  
11 competitive participation of two or more sellers for a procurement of good or service.

12

13 **5.6.4.3.5 Credit Payment Transaction:**

14 A business transaction settled by a credit card requires a provision of credit and the authentication  
15 of the buyer. Thus the transaction type is differed from the transaction by cash, and is supposed to  
16 be a kind of Separate Payment Model.

17

18 **5.6.4.3.6 Regulatory Constraints:**

19 Actual business transactions may be subject to external constraints as normative rules that the  
20 parties have agreed to. Many types of constraints of a regulatory nature, i.e., external constraints,  
21 exist. Each such external constraint is partially or entirely applied to a specific market type,  
22 participant type, good or service type, delivery type and/or payment type, etc. In addition, some of  
23 them apply only in a certain country or region, i.e. jurisdiction, and/or for only a certain time period.

24 However, the above scenario classification is considered to be independent from regulatory  
25 requirements, i.e. external constraints.

26

27 **6 GUIDELINES FOR SCOPING OPEN-EDI SCENARIOS**

28

29

30 Project Editor's Notes:

31

32 *Comments and contributions are welcome to improve Section 6.0.*

33

34 (1) *The contents of Section 6 represent the results of work at the SC32/WG1 meeting held 15*  
35 *June, 2000 Maidenhead, UK.*

1  
2 (2) *It suffices to note that Section 6 requires more work to complete its contents. Completion*  
3 *of Section 6 will be a priority at the next SC32/WG1 meeting to be held, 9-13 October,*  
4 *2000, Helsinki, Finland.*

5  
6 (3) *Comments and contributions from P-members (and liaisons) on Section 6 are most*  
7 *welcome.*

8 -----  
9

## 10 **6.1 INTRODUCTION AND BASIC PRINCIPLES**<sup>69</sup>

11  
12 This Section focuses on taking the contents of the previous Sections 1.0 through 5.0 of this  
13 standard and utilizing them in the form of rules and associated template, i.e., a checklist, for  
14 scoping Open-edi scenarios.

15  
16 While Sections 7 and 8 below provide detailed rules for the specification of Open-edi scenarios  
17 and their components, Section 6 focuses on the scoping the business environment of the  
18 business transaction modelled through an Open-edi scenario.

19  
20 The approach taken is that of identifying the most primitive common components of a business  
21 transaction, i.e., moving from the general to more detailed, the simplest to more complex, from no  
22 external constraints on a business transaction those which incorporate such external constraints,  
23 from no special requirements, etc., on functional services to specific requirements.

24  
25 The basic principles for scoping Open-edi scenarios include:

- 26  
27 (1) a priority on identifying the most primitive, i.e., generic and common, components of a  
28 business transaction;  
29  
30 (2) determining at the outset whether the business transaction to be modelled is of a simple,  
31 generic nature, i.e., there are no external constraints on the business transaction or  
32 includes parties other than a buyer and seller;  
33  
34 (3) establishing whether the parties making commitments with respect to their roles in a  
35 business transaction, i.e., "persons" are undifferentiated or whether the business  
36 relationship is of a more granular nature, i.e., incorporates the three categories of person,  
37 namely, individual, organization, and public administration.  
38  
39 (4) noting whether or not the scenario provides for delegation of commitment to agents or third  
40 parties;  
41  
42 (5) with respect of the process in a business reaction, establish whether the scenario focuses  
43 on all five parts, i.e., Planning, Identification, Negotiation, Actualization and Post-  
44 Actualization, one or any combinations of them;  
45

---

<sup>69</sup>Section 6 and the resulting template is meant to complement Sections 7 and 8 which contain the detailed specification requirements for Open-edi scenarios and their components.

- 1 (6) establishing the degree to which the recorded information is of the nature of predefined and  
2 structured data elements;
- 3
- 4 (7) serving as a checklist of primarily criteria of basically YES/NO nature. This facilitates  
5 registration<sup>70</sup> of scenario and scenario components in repositories for their re-use;
- 6
- 7 (8) facilitating users of such repositories to see if a "best fit" is available and if necessary, build  
8 additional components to create a best fit;
- 9
- 10 (9) ensuring that use of these criteria for scoping an Open-edi scenario will avoid/prevent  
11 "scope creep";
- 12
- 13 (10) identifying whether and which kinds of generic functional services are required to support  
14 the scenario;
- 15
- 16 (11) others?
- 17
- 18
- 19

## 20 **6.2 RULES FOR SCOPING OPEN-EDI SCENARIOS**

### 21 Project Editor's Note

- 22
- 23
- 24 (1) *These are "draft" rules resulting from the SC32/WG1 Maidenhead meeting and further*  
25 *consultations of the Project Editor with SC32/WG1 experts.*
- 26
- 27 (2) *The rules which follow focus first of all on scoping Open-edi scenarios from a Business*  
28 *Operational View (BOV) perspective, i.e., as found above in Sections 5.1 through 5.4 and*  
29 *Section 5.6, and then business requirements on the Functional Services View (FSV), i.e.,*  
30 *as found in Section 5.5.*
- 31
- 32 (3) *The rules in Section 6.2 focus on scoping Open-edi scenarios. Completion of the*  
33 *associated template, as found in Section 6.3 below, will facilitate completion of the more*  
34 *detailed Open-edi scenario template found below in Section 8, (e.g., if the Open-edi*  
35 *scenario is scoped at being applicable to modelling business transactions at Level 0 - No*  
36 *External Constraints, all the attributes for "Open-edi scenario (OeS) attributes, "role*  
37 *attributes", , "role demands on Open-edi Parties", and "Information Bundle (IB)" attributes,*  
38 *pertaining to "External Constraints on Business Requirements, i.e., Laws and Regulations",*  
39 *would be specified as "Not Applicable".*
- 40
- 41 (4) *The level of granularity, i.e., detail, that these rules for scoping Open-edi scenarios should*  
42 *have is to be decided upon at the SC32/WG1 meeting to be held 9-13 October, Helsinki,*  
43 *Finland.*
- 44

45 -----

---

46

<sup>70</sup>The full set of criteria for Registration of Open-edi Scenarios and scenario components as well as associated procedures is being developed as Part 2 of this ISO/IEC 15944 standard.

1 **Rule nn1:**

2  
3 **Whether or not an Open-edi scenario incorporates external constraints on a business**  
4 **transaction, must be stated at the outset.**<sup>71</sup>

5  
6 Explanatory Note(s):

- 7  
8 (1) Many of the elements of a business transaction are generic, i.e., independent of the good  
9 or service provided, (e.g., "planning" including making known availability of goods or  
10 services via a catalogue, terms of payment, methods of delivery, including modes of  
11 transport for physical goods or via telecommunications for "virtual" goods/services, post-  
12 actualization including warranties, etc.).  
13  
14 (2) It is anticipated that many re-useable Open-edi scenarios and scenario components will be  
15 developed and registered which model common elements of global/international business  
16 transactions, i.e., before one has to add/incorporate external constraints.  
17

18  
19 **Rule nn2:**

20  
21 **It is necessary to state whether the Open-edi parties in the business transaction being**  
22 **modelled are (a) persons in general, i.e., undifferentiated; or (b) differentiates among**  
23 **categories of persons, i.e., individuals, organizations and public administration.**

24  
25  
26 Explanatory Note(s):

- 27  
28 (1) From a generic perspective, one can model business transaction as re-useable Open-edi  
29 scenarios and scenario components based on the assumption that the Open-edi party has  
30 the properties and behaviours of a "person", i.e., ability to commit, being held accountable,  
31 etc., without needing to further differentiate as to the category of "person".  
32  
33 (2) On the other hand, business transactions being modelled through Open-edi scenarios and  
34 scenario components may well focus on "organization to organization" (colloquially labelled  
35 "B2B") or on "organization to individual" (colloquially known as "B2C").  
36  
37 (3) Further, business transactions involving public administration as the buyer are different in  
38 that the "buyer" as a public administration will likely impose predefined external constraints.  
39  
40 (4) Finally, "individual to individual" business transactions are most likely to be mediated below  
41 via a third party {See further Rule nn re: third party and Rule n.n re: Complex Trade Model}  
42  
43

---

<sup>71</sup>Note: ISO/IEC JTC1/SC32 is sponsoring a NWI (see ISO/IEC JTC1 N5846) which has been accepted (see ISO/IEC JTC1 N6204) to address the issue of jurisdictions as it impacts specification of external constraints on business transactions. This NWI is directed at being able to identify and reference laws and regulations impacting scenarios and scenario components. Development is underway of ISO/IEC 18038 - Information technology - *Identification and Mapping of Various Categories of Jurisdictional Domains*".

1 **Rule nn3:**

2  
3 **It is necessary to specify whether or not any of the commitments among the primary**  
4 **parties involved in a business transaction, i.e., the seller and buyer, can be delegated to**  
5 **an agent and/or a third party.**

6  
7 Explanatory Note(s):

- 8  
9 (1) Roles of Open-edi Parties in a business transaction may or not be delegate-able. In  
10 addition, from a re-useability perspective, one may well want to register at Open-edi  
11 scenario or scenario component at a very generic level, i.e., without any delegation of  
12 commitments.  
13  
14 (2) On the other hand, users of this standard may well want to take such a generic re-usable  
15 component and add to it the allow-ability:  
16  
17 ➤ for a seller to utilize an "agent";  
18  
19 ➤ for a buyer to utilize an "agent";  
20  
21 ➤ for buyers and sellers to mutually agree to utilize a third party;  
22  
23 ➤ for a third party to offer services as a "mediating party" facilitating prospective  
24 buyers and sellers to come together. {See further Sections 5.6.3.3 Trade Models}

25  
26  
27 **Rule nn4:**

28  
29 **A business transaction consists of a predefined set of activities and/or processes. It is**  
30 **necessary to state whether an Open-edi scenario (a) covers all the five distinct sets of**  
31 **distinct activities; namely: (1) planning, (2) identification, (3) negotiation, (4) actualization,**  
32 **and, (5) post-actualization; or (b) covers only one or a specific combination of these sets**  
33 **of distinct activities.**

34  
35  
36 Explanatory Note(s):

- 37  
38 (1) A seller having available a predefined catalogue of goods or services will benefit from  
39 having a generic Open-edi scenario scoped at providing this generic function.  
40  
41 (2) Unambiguous identification is a major issue in e-commerce (and e-business, e-  
42 commerce, etc.). Availability of a generic Open-edi scenario focusing on identification of  
43 persons specifying the WHATs independent of the HOWs, will benefit all parties.  
44  
45 (3) Terms of payment are a generic requirement to most business transactions. An Open-edi  
46 scenario focusing on "terms of payment", would (1) assume that the "Identification"  
47 process has already been completed; and, (2) cover the Negotiation, Actualization and  
48 Post-Actualization aspects.  
49  
50

1  
2 **Rule nn5:**

3  
4 **EDI involves the automated exchange of predefined and structured data. It is important to**  
5 **specify for scoping purposes whether or not the (to be registered) Open-edi scenario and**  
6 **scenario components particularly those pertaining to Information Bundles (and Semantic**  
7 **Components) reference sets of predefined and structured data, i.e., "coded value**  
8 **domains".<sup>72</sup>**

9  
10 Explanatory Note(s):

11  
12 (1) (to be completed before or at Helsinki meeting)

13  
14  
15 (2) Others?

16  
17 **Rule nn6:**

18  
19 **As part of the scoping of Open-edi scenarios, it is necessary to identify (1) the which of**  
20 **the three factors for classification of Open-edi scenarios apply, i.e., (a) market type, (b)**  
21 **settlement type, and (c) primitive or complex roles; and, (2) which of the two basic,**  
22 **mutually exclusive options applies for each of these three factors.**

23  
24  
25  
26 Explanatory Note(s):

27  
28 (1) This rule captures the key elements to be captured in the template {See Section 6.3 below}  
29 in support of the requirements arising from Section 5.6 Classification and Identification of  
30 Open-edi Scenarios. {See also Annex H}

31  
32 (2) Others?

33  
34  
35  
36 **Rule nn7:**

37  
38 **It is necessary to state for Open-edi scenarios, whether or not the business transaction**  
39 **being modelled places demands on the Open-edi support infrastructure, i.e., in support of**  
40 **those commitments mutually agreed to by the persons involved.**

41  
42  
43 Explanatory Note(s):  
44

---

<sup>72</sup> See further ISO/IEC 18022 -Information technology- Identification, Mapping and IT-enablement of Standards for Widely Used Coded Value Domains". This standard is under development by ISO/IEC JTC1/SC32 WG2 - Metadata.



1 (1) this rule captures the key elements to be captured in the template {See Section 6.3 below}  
2 in support of the requirements arising from Section 5.2.2 Self-Imposed Constraints}

3

4 (2) Others?

5

6

7 **Rule nn8:**

8

9 **If the business transaction being modelled through an Open-edi scenario incorporates**  
10 **external constraints which impact FSV demands on Open-edi Support Infrastructure**  
11 **(OeSI), these must be specified.**

12

13 Explanatory Note(s):

14

15 (1) Not all external constraints on a business transaction place FSV demands on the OeSI,  
16 (e.g., the use of a particular coded value domain (CVD) and permitted values of codes with  
17 a CVD).

18

19 (2) Others?

20

21

22

23

24

1 **6.3 TEMPLATE FOR SPECIFYING SCOPE OF AN OPEN-EDI SCENARIO**

2  
3 Project Editor's Notes

- 4  
5 1. *The purpose of this template is to capture in coded form key aspects for the scoping of an*  
6 *Open-edi scenario and scenario components for their registration and re-use.*  
7  
8 2. *On the whole each of these aspects (or scoping attributes), it is necessary to state whether*  
9 *the attributes applies or not, i.e. as a Yes/No decision. It is suggested that these two*  
10 *conditions be coded as Yes = 1 and No = 2. This will allow us to :*  
11  
12 *a) support the ISO/IEC JTC1 strategic direction of "cultural adaptability" be allowing for*  
13 *multilingual equivalents of these two codes from a global perspective; and,*  
14 *b) facilitate computer processability, search-ability and reference-ability of through these*  
15 *scoping attributes of Open-edi scenarios.*  
16  
17 3. *The assignment of "Scope ID Code" numbers may be modified as a result of the October*  
18 *SC32/WG1, Helsinki meeting.*  
19  
20 4. *On the whole for the "Scope ID Codes" the block numeric numbers 1000 to 1999 are/have*  
21 *been reserved. For the "Component ID Code" numbers, {See Section 8.2.3 below} the*  
22 *block numeric 2000+ has been reserved, i.e., up to "9999".*

23  
24 *The purpose here is to ensure that all the numeric identifiers for attribute for:*

- 25  
26 (1) *scoping Open-edi scenarios; and,*  
27 (2) *specifying Open-edi scenarios and their components*

28  
29 *will be unique, unambiguous and linguistically neutral within ISO/IEC 15944-1.*

30  
31 *This approach will facilitate unambiguous referencing registration<sup>73</sup> and re-useability.*

- 32  
33 5. *This approach will also facilitate localization and use multiple equivalencies for these*  
34 *numeric tags, i.e., multiple equivalent human interface equivalencies.*  
35  
36 6. *The above and related matters should be discussed at the upcoming SC32/WG1 Helsinki*  
37 *meeting.*  
38  
39

40 -----  
41

42  
43  
44  
45  

---

<sup>73</sup> Registration of Open-edi scenarios and scenario components is being addressed as Part2 of ISO/IEC 15944-1.

IT-Interface		Linguistic Human-Interface Equivalents			Spare
Scope Tag ID Code (1)	Decision Code (2)	Name (English) (3)	Name (French) (4)	Name (Other) (5)	
1000		<b>Business goal of business transaction- No External Constraints</b> <sup>74</sup>			
1010		<b>Business goal of business transaction includes External Constraints</b>			
		(to be completed)			
		(to be completed)			
1030		<b>Persons: Undifferentiated</b>			
1031		Persons: Individual <-> Individual			
1032		Persons: Individual <-> Organization <sup>75</sup>			
1033		Persons: Individual <-> Public Administration			
1034		Persons: Organization <-> Organizations <sup>76</sup>			
1035		Persons: Organization <-> Public Administration			
1036		Persons: Public Administration <-> Public Administration			
		(to be completed)			
1040		<b>Primitive or Complex Business Transaction</b> <sup>77</sup>			
1050		<b>Business Transaction allows for Agents</b> <sup>78</sup>			

<sup>74</sup> It is important in scoping an Open-edi Scenario to specify at the outset whether or not external constraints apply to the business transaction being modelled. If there are no external constraints, i.e. the only constraints are those which the buyer and seller mutually agree to, then such an Open-edi scenario can often serve as a generic re-useable lego block in support of those Open-edi scenarios which do include external constraints.

<sup>75</sup> Often referred to as “B2C”, i.e. as in “business to consumer”. Here it is understood that a “consumer” is an “individual” and not an “organization”.

<sup>76</sup> Often referred to as “B2B” i.e. as in “business to business”.

<sup>77</sup> Primitive means business transaction to be modelled as an Open-scenario involves buyer and seller only

<sup>78</sup> It is assumed that Business Rules and Constraints pertaining to the ability of the two primary parties, i.e. the seller and buyer, to be able to delegate all or part of their role and associated commitments to and Agent(s) will be specified as part of “Role Attributes”, see further below Section 7.4.2.5.

IT-Interface		Linguistic Human-Interface Equivalents			Spare
Scope Tag ID Code (1)	Decision Code (2)	Name (English) (3)	Name (French) (4)	Name (Other) (5)	
1051		Buyer Agent			
1052		Seller Agent			
<b>1060</b>		<b>Business Transaction allows for Third Parties</b> <sup>79</sup>			
		(to be completed)			
<b>1200</b>		<b>PROCESS COMPONENT: All five sets of distinct activities covered.</b>			
<b>1210</b>		<b>Planning</b>			
1215		Public information on goods/services provided by a seller			
1220		Public information on goods/services needed by buyer			
1225		Predefined/referenceable Catalog			
1230		Buyer initiated goods/service request			
1235		Seller initiated goods/service offer			
1240		Predefined Market Model			
		(to be completed)			
<b>1250</b>		<b>Identification</b>			
1255		Identification for information exchange purposes only (e.g. an address) <sup>80</sup>			
1260		Identification of Person able to make			

<sup>79</sup> It is assumed that Business Rules and Constraints pertaining to the ability of the two primary parties, i.e. the seller and buyer, to commonly agree to delegate all or part of their role and associated commitments to a “third party(ies)” will be specified as part of “Role Attributes”, see further below Section 7.4.2.5.

<sup>80</sup> A typical example here is an e-mail address or a P.O. box address

IT-Interface		Linguistic Human-Interface Equivalents			Spare
Scope Tag ID Code (1)	Decision Code (2)	Name (English) (3)	Name (French) (4)	Name (Other) (5)	
		commitment <sup>81</sup>			
<b>1300</b>		<b>Negotiation</b>			
1305		Monetary Payment Involved			
1310		Immediate Settlement Model			
1315		Separate Settlement Model payment			
		(to be completed)			
<b>1340</b>		<b>Actualization</b>			
1345		(to be completed)			
1350		(to be completed)			
<b>1380</b>		<b>Post-actualization</b>			
		(to be completed ,e.g. warranties)			
		(to be completed, e.g. records retention)			
<b>1400</b>		<b>DATA COMPONENT</b>			
1405		Predefined and Structured, i.e. code sets			
1420		(to be completed, e.g. data integrity)			
1425		(to be completed, e.g. retention /latency of all IBs)			
<b>1500</b>		<b>Business Requirements on FSV – No External Constraints<sup>82</sup></b>			
1510		Service: Information Bundle Integrity			

1

<sup>81</sup> This is usually required for the Negotiation step and certainly for Actualization

<sup>82</sup> See further above Section 5.5.2

1525		Service: Confidentiality of IB contents			
1530		Service: Non-repudiation of receipt			
1535		Service: Proof of Time IB creation <sup>83</sup>			
1540		Service: Notarization of IBs			
1545		Service: Quality of Service (QoS)			
1550		(to be completed)			
<b>1600</b>		<b>EXTERNAL CONSTRAINTS<sup>84</sup></b>			
1605		(to be completed)			
1610		(to be completed)			

1  
2

<sup>83</sup> Often referred to as time-stamping services

<sup>84</sup> ISO/IEC JTC1/SC32 is sponsoring a NWI (see ISO/IEC JTC1 N5846) which has been accepted (see ISO/IEC JTC1 N6204) to address the issue of jurisdictions as it impacts specification of external constraints on business transactions. This NWI is directed at being able to identify and reference laws and regulations impacting scenarios and scenario components. Development is underway of ISO/IEC 18038 - Information technology - *Identification and Mapping of Various Categories of Jurisdictional Domains*".

## 7. RULES FOR SPECIFICATION OF OPEN-EDI SCENARIOS AND THEIR COMPONENTS

### 7.1. Introduction and basic principles

This section presents the rules for specification of Open scenarios, with respect to Open-edi scenario attributes, and attributes of scenario components, i.e., roles and Information Bundles (IBs) (including Semantic components).

A key thrust of the Open-edi approach is to enable organizations to participate in EDI with minimal prior agreement about the way the data is to be exchanged among them.<sup>85</sup> In contrast with current forms of electronic data and document interchange, this means that not only the data has to be predefined, structured and standardized, but also the contexts in which this data is exchanged. More precisely the computer systems of the Open-edi partners need to be able to handle incoming messages<sup>86</sup> on Information Bundles (or set of Information Bundles) automatically. Specification of the "message handling" process is a key element of an Open-edi scenario. The key difference with present day EDI (and EDI message handling) is that Open-edi not only (1) describes how a single message needs to be interpreted as well as describing how several messages relate with each other; but also, (2) specifies the same in a standardized and computer interpretable manner.

It is not the purpose of this standard to develop the scenarios themselves. However, in order for electronic data interchanges representing commitment and information exchange in a business transaction among autonomous parties to be computer interpretable and interoperable requires:

- (1) explicitly stated and defined business requirements; and,
- (2) the specification of these business requirements in a formal way which can "be understood" by an automated information system. This includes ensuring that the requirements of OeDTs are also defined. {See Section 6.6}.

Open-edi Scenarios are composed of several building blocks. They specify the information exchanges and commitments made that govern a transaction conducted among a set of organizations, referred to as Open-edi Parties. Roles and information bundles have been introduced in the Open-edi Reference Model (IS 14662). Roles specify the behaviour of the Open-edi Parties, whereas the information bundles specify the semantics of the information exchanged including the commitments made. In order to connect the roles and information bundles, various attributes at the Open-edi Scenario level are defined as well. In this chapter the structure of these concepts is further defined in terms of the attributes that need to be defined and the formal

---

<sup>85</sup>This includes EDI-based applications popularly known as e-commerce, e-business, e-travel, e-government, e-logistics, etc.

<sup>86</sup>The term "message" is currently defined with many different meanings and uses within ISO and ISO/IEC ranging from "message" as in EDI message as in ISO 9735 EDIFACT and its "Implementation Guidelines" to "message" as in message handling in the ISO/IEC 78498, 9594 and 10021 series of standards (and their equivalent ITU X400 and X.500 series of Recommendations).

1 specifications of some of the components. This will lead to a stipulation of the requirements on  
2 Formal Description Techniques that are to be used for the formal specification of roles and  
3 information bundles.

4  
5 Although all the attributes must be specified, the presence and conditions of each attribute may  
6 vary, depending on (1) the level of the business transaction, {see Section 5.1.5}, the scenario and  
7 its components; (2) the agreed upon business requirements and rules; and/or, (3) the applicability  
8 of external constraints on business requirements, i.e., laws and regulations. The rules and codes  
9 for specifying the presence and condition of the attributes of scenarios components and their  
10 attributes are stated in Annex A.

11  
12 It is important to note that roles model the externally visible behaviour among Open-edi Parties. It  
13 is up to users to determine and define the boundary between internal and external behaviour  
14 associated with a role. The modelling of roles in a scenario should allow for an Open-edi Party to  
15 be seen as a single organization with a huge internal process or a number of individual entities  
16 within an organization, i.e., organization parts and organization persons, each with a smaller  
17 internal process.<sup>87</sup>

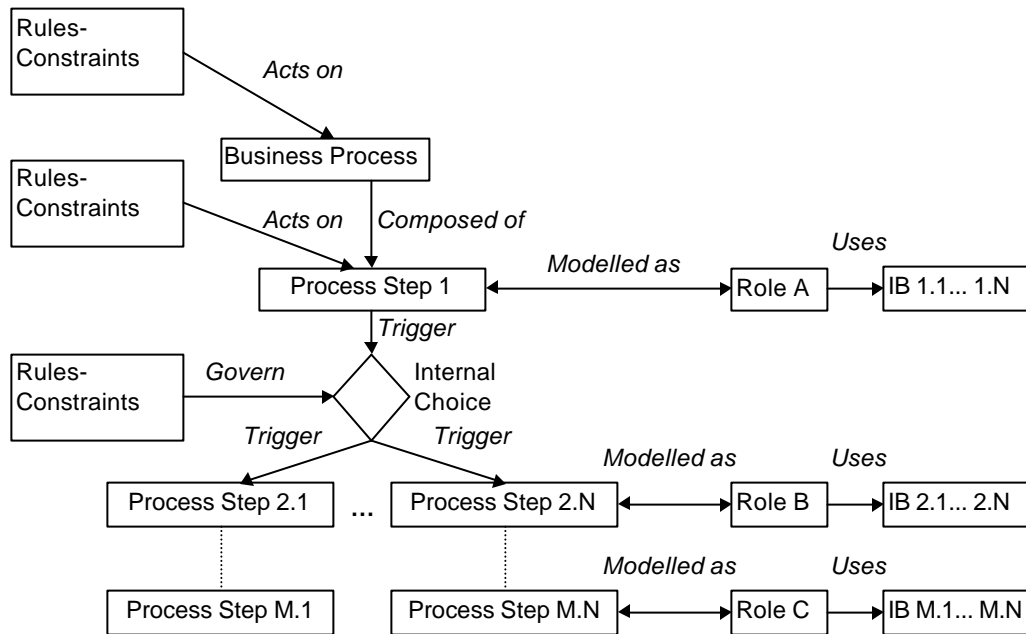
18  
19 The concept of is related to business processes necessary to achieve the mutually agreed upon  
20 goal of business transaction and the associated incoming and outgoing Information Bundles. This  
21 is illustrated in Figure 23 below.

---

<sup>87</sup>Roles in scenarios involving public sector (and associated Information Bundles) tend to have more extensive externally visible behaviour than those among private sector organizations. Among private sector organizations, the boundary between externally visible and internal behaviour is often determined by factors of degree of commonality in (international) business practices, industry sector conventions, degree of trust in business relations, etc.



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**Figure 23: Illustration of operation of Open-edi from the point of view of an autonomous organization in terms of scenario components**

Figure 23 is to be understood as follows. It represents an operation of Open-edi from the point of view of an autonomous organization, which wants to use it to support a certain business process. The outside world may have constraints on this process (for instance particular jurisdictions may regulate certain activities or require information to be exchanged). Also the organization may have internal rules governing their business processes in general. Both types of constraints are represented in the box labelled "Rules-Constraints".

The business process itself consists of a number of steps. After the completion of each step, a new state is reached and some internal choice will be made to decide which step will be executed next. This decision is based on the result of the previous step using an internal rule-base. The choice can result in multiple steps executed in parallel or in a number of alternatives.

The Open-edi scenario is only concerned with those parts of these process steps that are related to the exchange of IBs among roles. It is assumed that this particular information will be specified in the role description. In other words, the role description contains knowledge required on the inter-dependencies of the Information Bundle exchanges. This also implies that the entire specification of the EDI relevant part of the business process will be done by multiple roles which are inter-connected within a scenario (using scenario attributes). A different approach is to define the role as the combination of all these process steps, and call the different subsets differently, for instance episodes or activity units.

Although it seems that this is a rather fundamental decision to make, the view can also be taken that this is only an identification (and naming) issue if it is assumed that multiple levels of decomposition and types of inheritance can take place at the role level. From a modelling perspective it is not really relevant whether something is designated a role, sub-scenario or

1 episode, since the information that is captured in the models is of the exact same kind (sending-  
2 receiving of IBs). The relationships among all these modules need to be defined unambiguously,  
3 which is always the case if modularity, inheritance or hierarchical decomposition is introduced.  
4

5 Although Figure 6.1 shows that a certain process step is implemented by a specific role, it may be  
6 the case that actually several alternative models can be used for this purpose. For instance, the  
7 process step "get product information" can be implemented by a single IB exchange of a  
8 prospective buyer with the seller or by multiple exchanges of smaller IBs as part of a session (or  
9 sets of sessions as a dialogue). These two cases would probably be covered by different role  
10 descriptions with the same purpose.  
11

12 The resulting scenario will consist of models for each Open-edi party involved in the business  
13 transaction and thus specifies the overall exchange of Information Bundles. [The process steps in  
14 one organization should have "mirror" steps in the other organization to make the entire business  
15 transaction work (if someone sends an IB but the other party does not know about it, the scenario  
16 is clearly incorrect)].  
17

18 This introduction concludes by noting that one important issue is the reusability of Open-edi  
19 Scenarios and their components. Since all these components must be provided with unique,  
20 unambiguous and linguistically neutral identifiers, reusability is possible. Reusability of Open-edi  
21 Scenarios is facilitated through the reusability of its components. If a new Open-edi Scenario is to  
22 be developed using an existing scenario, scenario developers can simply reuse the components  
23 of this existing scenario.  
24

25 Reusability of scenarios as well as scenario components is embedded in:  
26

- 27 (1) The specification of scenarios and scenario components from a Business Operational  
28 View perspective at a level of granularity appropriate to the goal of the business transaction  
29 and with the degree of explicitness required to transform these business requirements into  
30 a model using formal description techniques, i.e., using an OeDT.  
31
- 32 (2) The OeDT model serving a two-fold purpose/goal; namely:  
33
  - 34 (2.1) ensuring that all the business requirements pertaining to a scenario and scenario  
35 components (a) are unambiguous, i.e., conform to the level of certainty and completeness  
36 required by the goal of the business transaction being modelled; and, (b) can interwork, i.e.,  
37 there are no logical inconsistencies or gaps.  
38
  - 39 (2.2) ensuring that (a) all the information of the nature of demands on the Functional Services  
40 View (FSV) is specified in the BOV aspects of a scenario and its components and  
41 modelled in the associated OeDT; and, (b) from a FSV perspective, the BOV requirements  
42 are unambiguous, i.e., the level of certainty is appropriate to the goal of the business  
43 transaction and resulting demands on the FSV result in no logical inconsistencies or gaps.  
44

45 Reusability of scenarios and scenario components is an achievable objective because existing  
46 (global) business transactions whether of a verbal or paper-based nature, already consist of  
47 "standard" reusable components unambiguously understood among participating existing parties  
48 (even though such "standard" components are not yet specified through the use of FDTs).  
49 Similarly, earlier and present experience with syntaxes for electronic data interchange whether ISO

1 9735 (EDIFACT) or ANS X.12-based have demonstrated the need for and feasibility of reusable  
2 components.

3  
4 Use of this standard will ensure that such reusability is embedded in the formal description  
5 techniques used for specifying the components.  
6

## 7 **7.2 OES demands on interoperability**

8  
9 *[Yet to be completed. Must also incorporate those arising from Sections 5]*  
10  
11

## 12 **7.3. Rules for specification of Open-edi scenarios and scenario attributes**

### 14 **7.3.1. Open-edi scenario rules**

15  
16 The definition of "Open-edi scenario" is:

17  
18 *"Open-edi scenario: a formal specification of a class of business transactions having the*  
19 *same business goal".*  
20

#### 21 **Rule 62:**

22  
23 **An Open-edi scenario is specified through roles and information bundles and scenario**  
24 **attributes.**

#### 27 **Rule 63:**

28  
29 **An Open-edi scenario is composed of two or more roles.**

#### 31 Explanatory Note(s):

- 32  
33 (1) In the Planning Phase of a business transaction {See Section 5.3.2 above}, the second role  
34 is often assumed to be played by a responding Open-edi Party, i.e., provided for as an  
35 expected role. For example, the posting of an electronic catalogue by a seller assumes the  
36 existence of prospective buyers. Or the posting of a request for quotation by a buyer  
37 assume the existence of prospective sellers. In either case, an agreed upon termination of  
38 a business transaction can be the expiry of a time.  
39

#### 40 **Rule 64:**

41  
42 **A business transaction may be specified as one or more Open-edi scenarios.**

#### 44 Explanatory Note(s):

1 (1) For example, a model of a business transaction spanning several jurisdictions involving  
2 customs clearance, multi-modal transport and several banks involved in financial transfers  
3 could be specified through several interlinked scenarios.  
4

5 **Rule 65:**  
6

7 ***Aspects related to a business transaction which are not covered in rules and specifications***  
8 ***of Role and Information Bundle (and their attributes) must be specified through Open-edi***  
9 ***scenario attributes.***  
10

11 **7.3.2. Open-edi scenario (OeS) attributes and associated rules**

12  
13 Open-edi Scenario Attributes are:  
14

- 15 a) OeS Identifier
- 16 b) OeS Name(s)
- 17 c) OeS Purpose
- 18 d) OeS Set of Roles
- 19 e) OeS Set of Information Bundles
- 20 f) OeS Set of Requirements on Open-edi Parties
- 21 g) OeS Set of External Constraints on Business Requirements, i.e., Laws and Regulations
- 22 h) OeS Inheritance Identifier(s) and Cross-References
- 23 i) OeS Security Service Requirements
- 24 j) OeS Communication – Quality of Service Requirements
- 25 k) OeS Role Requirements and Constraints
- 26 l) OeS Dependency among Roles in a Scenario
- 27 m) OeS Dependency among Information Bundles in a Scenario
- 28 n) OeS Dependency among Semantic Components of different Information Bundles
- 29 o) OeS Demands on Open-edi Parties
- 30 p) OeS Demands on Open-edi Infrastructure

31  
32 With respect to these Open-edi Scenario (OeS) Attributes the following rules apply.  
33

34 **7.3.2.1. Scenario attribute: OeS Identifier**

35  
36 **Rule 66:**  
37

38 **The Open-edi Scenario Identifier must be unique, linguistically neutral, unambiguous and**  
39 **referenceable. It is a mandatory attribute.**  
40

41 Explanatory Note(s): (text to be added)  
42

43 **7.3.2.2. Scenario attribute: OeS Name(s)**  
44

1 **Rule 67:**

2  
3 **OeS Name is the designation of the Open-edi scenario Identifier by a linguistic**  
4 **expression. More than one OeS Name as equivalent linguistic expressions may be**  
5 **associated with an OeS Identifier.**

6  
7 Explanatory Note(s):

- 8  
9 (1) It is necessary to be able to support localization, multilingualism, cross-sectorial and  
10 cultural adaptability requirements. An Open-edi scenario formal specified and identified  
11 through its OeS identifier will likely have associated with it one or more designated  
12 equivalent linguistic expressions, i.e., names, labels, etc., from a human interface  
13 perspective, (e.g., as "aliases").  
14  
15 (2) The use of a specific linguistic equivalent expression as a name for an OeS attribute may  
16 be prescribed in a jurisdiction.  
17

18 **7.3.2.3. Scenario attribute: OeS Purpose**

19  
20 **Rule 68:**

21  
22 **The OeS attribute "Purpose" specifies the scope of the Open-edi Scenario.**

23  
24 Explanatory Note(s):

- 25  
26 (1) The use of the term "scope" indicates the need for preciseness and specificity.  
27  
28 (2) The focus and boundaries of th OeS Purpose can be defined using inclusionary rules and  
29 definitional statements as well as exclusionary rules.  
30

31 **7.3.2.4. Scernario attribute: OeS Set of Roles**

32  
33 **Rule 69:**

34  
35 **The set of Roles applicable to the scenario must be specified and referenced through**  
36 **their Role Identifiers.**

37  
38  
39 **Rule 70:**

40  
41 **If applicable, one should state which roles are mandatory, conditional, or mandatory**  
42 **subject to a conditional (See further Annex A).**

43  
44 **Rule 71:**  
45

1 Where applicable, constraints on the same Open-edi Party playing more than one of the  
2 roles in the set of roles applicable to the OeS must be specified.  
3

4 **7.3.2.5. Scenario attribute: OeS Set of Information Bundles**

5  
6 **Rule 72:**

7  
8 The set of IBs applicable to the scenario must be specified through the unique identifiers  
9 of the IBs.

10  
11 **Rule 73:**

12  
13 If applicable, one should state which IBs are mandatory, conditional, or mandatory subject  
14 to a conditional.

15  
16 **Rule 74:**

17  
18 Where applicable, constraints on IBs pertaining to roles in the OeS must be specified.  
19

20 **7.3.2.6. Scenario attribute: OeS Set of Requirements on Open-edi Parties**

21  
22 **Rule 75:**

23  
24 The business requirements, rules and practices applicable at the scenario level must be  
25 specified. This specification must be stated at a level of detail to ensure that there is no  
26 ambiguity in the commitments among Open-edi Parties at the scenario level.

27  
28 **Rule 76:**

29  
30 Business constraints, if any at the scenario level, pertaining to Open-edi Parties and  
31 scenario components must be specified. All of these must be accounted for in  
32 components, i.e., roles and/or information bundles.

33  
34 Explanatory Note(s):

- 35  
36 (1) Business constraints are those which persons, as individuals and/or organizations,  
37 mutually agree to impose upon themselves (as an exercise in "coordinated autonomy").  
38  
39 (2) External constraints are those which are those imposed on aspects of a business  
40 transaction. A primary source of external constraints are jurisdictions, (e.g., those of a  
41 geopolitical nature, category of services, types of commodities, etc.).  
42

1 **7.3.2.7. Scenario attribute: OeS Set of External Constraints on Business Requirements, i.e.,**  
2 **Laws and Regulations**

3  
4 **Rule 77:**

5  
6 **Requirements or constraints arising from applicable laws or regulations at the scenario**  
7 **level must be explicitly stated including the source jurisdictions.<sup>88</sup>**

8  
9 **Rule 78:**

10  
11 **Where multiple laws and regulations apply at the scenario level, the constraint applicable**  
12 **[must be integrated.**

13  
14 Explanatory Note(s):

- 15  
16 (1) For scenarios developed at Level 0 of the Business Transaction Model, this Scenario  
17 Attributes will not apply.  
18  
19 (2) Scenario developed which incorporate such Level 1+ external constraints should have the  
20 formal specifications modelled through an OeDT reviewed by the source jurisdiction.  
21

22 **7.3.2.8. Scenario attribute: OeS Inheritance Identifier(s) and Cross-References**

23  
24 **Rule 79:**

25  
26 **The Scenario attribute is used when:**

- 27  
28 **a) a scenario is a customized version of a more generic scenario; and/or,**  
29 **b) a scenario is built using other scenarios as parts of its scenario.**

30  
31 Explanatory Note(s):

- 32  
33 (1) An example of Rule 79.a) would be where a generic (general) multi-modal transport logistic  
34 scenario is used as the basis for a transport scenario customized for a specific mode of  
35 transport.  
36  
37 (2) An example of Rule 79.b) would be where a transport delivery scenario is combined with a  
38 (terms of) payment scenario, (e.g., for C.O.D. where the transporter also is responsible for  
39 the role involving collection of payment).

---

<sup>88</sup>Note: ISO/IEC JTC1/SC32 is sponsoring a NWI (see ISO/IEC JTC1 N5846) which has been accepted (see ISO/IEC JTC1 N6204) to address the issue of jurisdictions as it impacts specification of external constraints on business transactions. This NWI is directed at being able to identify and reference laws and regulations impacting scenarios and scenario components. Development is underway of ISO/IEC 18038 - Information technology - *Identification and Mapping of Various Categories of Jurisdictional Domains*".

1

2 **7.3.2.9. Scenario attribute: OeS Security Service Requirements**

3

4 **Rule 80:**

5

6 **Security service requirements that have to be satisfied at the scenario level must be**  
7 **stated including non-applicability {See further Annex A}.**

8

9 [to be completed based on Section 5.5 "Business Requirements on FSV"]

10

11

12 **7.3.2.10. Scenario attribute: OeS Communication - Quality of Service**  
13 **Requirements**

14

15 **Rule 81:**

16

17 **Quality of service requirements for telecommunication services if applicable at the**  
18 **scenario level should be stated here.**

19

20 [to be completed based on Section 5.5 "Business Requirements a FSV"]

21

22 Explanatory Note(s):

23

24 **7.3.2.11. Scenario attribute: OeS Role Requirements and Constraints**

25

26 **Rule 82:**

27

28 **This attribute is used to identify requested and/or undesirable configurations of Open-edi**  
29 **Parties playing roles (or combinations of roles) within a scenario.**

30

31 Explanatory Note(s):



1 **7.3.2.12. Scenario attribute: OeS Dependency among roles in a Scenario**

2 **7.3.2.13. Scenario attribute: OeS Dependency among Information Bundles in a**  
3 **Scenario**

4 **7.3.2.14. Scenario attribute: OeS Dependency among Semantic Components of**  
5 **different Information Bundles**

6 **7.3.2.15 OES demands on Open-edi parties**

7  
8 *[Yet to be completed. Must also incorporate those arising from Sections 5.5.and 5.6]*  
9

10 **7.3.2.16 OES demands on Open-edi infrastructure**

11  
12 *[Yet to be completed. Must also incorporate those arising from Sections 5.5 and 5.6]*  
13

14 **7.4. Rules for specification of Open-edi roles and role attributes**

15 **7.4.1. Rules governing roles**

16  
17 A "role" is defined as "a specification which models the external visible behaviour (as allowed within  
18 a scenario) of an Open-edi Party. A role contains the formal description of this behaviour, (e.g.,  
19 business process), as well as the list and specification of the associated attributes".  
20

21 A role usually represent a business function and associated commitments, obligations and  
22 responsibilities of a person (individual or organization) as well as associated common business  
23 processes. An Open-edi role is the (re-useable) computer interpretable and processable  
24 specification of the same instantiated by a person as an Open-edi Party.  
25

26 The BOV rules governing "Role" include:  
27

28 **Rule 83:**

29  
30 **Open-edi Parties take on commitments based on role commitment.**

31  
32 **Rule 84:**

33  
34 **An Open-edi Party may play one or more roles and a role may be played by one or more**  
35 **Open-edi Parties.**

36  
37 **Rule 85:**  
38

1 **Internal and external behaviour shall be associated with a role.**

2  
3 Explanatory Note(s):

4 (1) It is up to users to determine and define the boundary between internal and external  
5 behaviour associated with a role.  
6

7  
8 (2) Modelling of roles should allow for an Open-edi Party to be seen as a single entity with a  
9 huge internal process or as a number of individual entities, i.e., as organization parts and  
10 organization persons, each with a smaller internal process.  
11

12  
13 (3) The concept of role is related to specifying business processes and Information  
14 Bundles.  
15 {See Figure 23 above}.  
16

17 **Rule 86:**

18  
19 **A role must be a component of one or more scenarios.**  
20

21 Explanatory Note(s):

22  
23 (1) A role can only exist within the context of a scenario.  
24

25 **Rule 87:**

26  
27 **The behaviour of a role shall be specified by states, transitions, events, actions and/or**  
28 **internal functions.**  
29

30 **Rule 88:**

31  
32 **The role attributes shall be clearly defined and specified to complete a role specification**  
33 **using plain text.**  
34

35 Explanatory Note(s):

36  
37 (1) The "using plain text" requirements has a three-fold purpose; namely:  
38

39 (i) to ensure that the Business Operational View of the Open-edi scenario is clearly  
40 expressed and understood by persons representing user requirements and/or  
41 Open-edi Parties;  
42

43 (ii) to ensure that business requirements are stated independently of any modelling  
44 techniques or language. (The formal specification of a role via an OeDT ensures  
45 computer process-ability);  
46

47 (iii) to ensure that commitments and obligations associated with a role are fully and  
48 clearly understood by persons undertaking a role as an Open-edi Party in an  
49 instantiation of a scenario.

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**Rule 89:**

The formal specification of a role is to be defined using an Open-edi Description Technique (OeDT).

**7.4.2. Role attributes and associated rules**

Role Attributes are:

- a) Role Identifier
- b) Role Name(s)
- c) Role Purpose
- d) Role Business Goal(s)
- e) Role Business Rules and Constraints
- f) Role Inheritance Identifiers and Cross-References
- g) Role External Constraints on Business Requirements, i.e., Laws and Regulations
- h) Role Security Service Constraints
- i) Role Communications and Quality of Service Requirements
- j) Role Demands on Open-edi Support Infrastructure

**7.4.2.1. Role attribute: Role Identifier**

**Rule 90:**

Each Role must have an identifier. The Role Identifier must be unique, linguistically neutral, unambiguous and referenceable.

**Rule 91:**

The Role ID shall include the OeS Identifier of the scenario to which the role is a part.

This has implications on registration of roles.

**7.4.2.2. Role attribute: Role Name(s)**

**Rule 92:**

A Role may have one or more names. A Role name is the designation of Role ID by a linguistic expression. More than one Role Name as equivalent linguistic expressions may be associated with a Role ID, (e.g., as "aliases").

Explanatory Note(s):

- a) The specific linguistic expression used to designate a Role ID can be:

- 1  
2 b) The results of an agreed upon common business convention a practice (internationally or by  
3 business sector); or,  
4  
5 c) Prescribed by laws and regulations of a jurisdiction (at international, regional, or national level,  
6 industry sector, etc.).  
7

8 *[Note: To be developed further in 15944-2 as part of registration procedures]*  
9

10 **7.4.2.3. Role attribute: Role Purpose**

11  
12 **Rule 93:**

13  
14 **The objective(s) of the business function shall be specified as the Role Purpose.**  
15

16 **7.4.2.4. Role attribute: Role Business Goal(s)**

17  
18 **Rule 94:**

19  
20 **The Role Business Goal shall explicitly state the business process(es) of the role**  
21 **including the agreed upon conclusion(s) of the role.**  
22

23 **Rule 95:**

24  
25 **The Role Business Goal attribute shall specify the rights and duties, commitments,**  
26 **resulting obligations, and accountabilities of the Open-edi Parties participating in the**  
27 **Role.**  
28

29 The specification of the Role Business Goal must be stated at a level of detail to ensure that there  
30 is no ambiguity in the commitments, rights and obligations as well as accountabilities among the  
31 Open-edi Parties at the role level.  
32

33 **7.4.2.5. Role attribute: Role Business Rules and Constraints**

34 **Rule 96:**

35  
36 **Predefined and accepted business rules and associated practices applicable to a Role**  
37 **shall be specified as Role Business Rules and be appropriately referenced.**  
38

39 Explanatory Note(s):

- 40  
41 (1) Existing world trade among private sector entities, most public/private sector business  
42 transactions, etc., are based on known common business practices. Primary examples  
43 here are the International Commercial Terms (INCOTERMS) of the International Chamber

1 of Commerce, that of an IATA qualified/certified freight forwarder or a financial institution  
2 which is a member of SWIFT.

- 3  
4 (2) Such commonly known and accepted business practices or roles need only to be specified  
5 once using OeDT to be able to serve as referenceable and reusable Open-edi Roles.  
6

7 **Rule 97:**

8  
9 **Additional business practices pertinent to a role shall also be specified as Role Business  
10 Rules.**

11  
12 Explanatory Note(s):  
13

14  
15 **Rule 98:**

16  
17 **Constraints, if any, on an Open-edi Party being able to play a role shall be specified.**

18  
19 The condition of there being no constraints, (e.g., at Business Transaction Model Level 0) if  
20 present should be explicitly stated.

21  
22 {See further Annex A}.

23  
24 Explanatory Note(s):  
25

- 26 (1) In ISO/IEC 14462 Open-edi Reference Model, is included the example of a human organ  
27 transplant. The example identified constraints on an Open-edi Party being able to play, i.e.,  
28 instantiate, a specific role. Not any Open-edi Party can take the role of a doctor, a bank, an  
29 insurance broker, an air mode transporter, a telecommunications carrier, etc.  
30

31 **7.4.2.6. Role attribute: Role Inheritance Identifiers and Cross-References**

32  
33 **Rule 99:**

34  
35 **Use of a role as part of a role shall be specified by a cross-reference to the used role.**

36  
37 The attribute is to be utilized when:

- 38  
39 a) a role is a customized version of a more generic role; and/or.  
40  
41 b) a role is built using other roles as parts of its role.  
42

43  
44 An example of Rule 99.a) would be where a generic role is used as the basis for a customized  
45 role, (e.g., a generic transport role customize for transport of materials of a radioactive  
46 nature, or of a perishable commodity, etc.).  
47

1 Another example of Rule 99.a) would be where a (generic) role developed at Level 0 of the  
2 Business Transaction Model is used as the basis for specifying the same Role at Level 1,  
3 i.e., involving public administration constraints of a regulatory nature.  
4

5 An example of Rule 99.b) would be where a role combines/integrates two or more "granular" roles.  
6 This is a matter of business needs and perspectives.  
7

#### 8 **7.4.2.7. Role Attribute: Role External Constraints on Business Requirements, i.e., Laws and** 9 **Regulations<sup>89</sup>**

##### 10 **Rule 100:**

11  
12  
13 **Any external constraints arising from laws or regulations to any aspect of the role and its**  
14 **attributes must be identified and stated including the reference/source of the applicable**  
15 **law or regulation, i.e., qualifications for a role, prescribed behaviour, restrictions on the**  
16 **delegation of a role, etc.**  
17

18  
19 For (generic) roles development at Level 0 of the Business Transaction Model this attribute will not  
20 be applicable. {See Annex A}  
21

22 Roles whose existence are due to meet requirements of external constraints of the nature of laws  
23 and regulations should be so identified, the requirements stated explicitly (so that there can be  
24 formally specified using an OeDT) and source referenced.  
25

26 Where multiple laws and regulations serve as external constraints or requirements on a role, the  
27 role specification is deemed to be an integration of such a combination of external constraints and  
28 requirements.  
29

#### 30 **7.4.2.8. Role attribute: Role Security Service Requirements**

##### 31 **Rule 101:**

32  
33 **Security Service requirements at the role level shall be stated as one of:**

- 34 **1. Must not be applied**
  - 35 **2. May be applied if available, or**
  - 36 **3. Are mandatory**
- 37

38 **In cases 2 and 3, the specific security functions shall be specified.**  
39

40 {See further Annex A}

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<sup>89</sup> Note: ISO/IEC JTC1/SC32 is sponsoring a NWI (see ISO/IEC JTC1 N5846) which has been accepted (see ISO/IEC JTC1 N6204) to address the issue of jurisdictions as it impacts specification of external constraints on business transactions. This NWI is directed at being able to identify and reference laws and regulations impacting scenarios and scenario components. Development is underway of ISO/IEC 18038 - Information technology - *Identification and Mapping of Various Categories of Jurisdictional Domains*".

1  
2 [to be completed based on Chapter 8 "Business Requirements on FSV"]

3  
4 Explanatory Note(s):

- 5  
6 (1) Security Service requirements may be depended on the content or data values of the IBs  
7 associated with a Role. This rule includes the requirements such dependencies as  
8 conditionals should explicitly stated. {See Annex A}.

9  
10 **7.4.2.9. Role Attribute: Role Communications and Quality of Service**  
11 **Requirements**

12  
13 **Rule 102:**

14  
15 **Quality of service applicable at the role level shall be stated under this attribute, e.g.,**  
16 **availability, equipment that can process at proper rate.**

17  
18 [to be completed based on Section 5.5 "Business Requirements on FSV"]

19  
20 **7.4.2.10 Role Demands on Open-edi Support Infrastructure**

21 **7.4.3. Role demands on Open-edi parties**

22  
23 [This section yet to be developed in terms of rules and explanatory notes. Annex A is applicable  
24 here]

25 Restrictions on how roles may be assumed by OePs shall be stated. For example:

- 26 a) Minors can't purchase alcohol, residency,  
27 b) Residency requirements to do certain activities.

28  
29 The following are required to be specified:

30  
31 Role demands on Open-edi Parties represent a set of Role Attributes which require the following  
32 to be specified:

- 33  
34 a) IDs for these demands stated as constraints on role behaviour;  
35 b) Constraints on OeP characteristics;  
36 c) Constraints on maximum number of OePs playing a role;  
37 d) Constraints imposing a role to be conditional;  
38 e) Constraints on differing OePs playing this role;  
39 f) Interdependencies of roles. (e.g., Role 10A5 requires Role "B15" to be present).

40  
41 **7.4.4. Interoperability demands among roles shall be stated**

1 [This section to be developed further in terms of rules and explanatory notes. Annex A is  
2 applicable here]  
3 Interoperability demands among roles shall be specified. The following are required to be specified:  
4  
5 a) IDs for Role Demands on Interoperability;  
6 b) IBs for the Role;  
7 c) IB sequences/dependencies;  
8 d) Timer Expiration  
9 e) Error Conditions;  
10 f) Other?  
11

#### 12 **7.4.5. Role states**

13  
14 [This section to be developed further in terms of rules and explanatory notes. Annex A is  
15 applicable here]  
16

17 States of a role shall be specified. States must conform to the following rules:  
18

##### 19 **Rule 103**

20  
21 **A Role State specifies the states of a Role.**

##### 22 23 **Rule 104:**

24  
25 **A state must belong to only one role.**

##### 26 27 **Rule 105:**

28  
29 **A Role state changes upon the occurrence of an event.**

##### 30 31 **Rule 106:**

32  
33 **A state may be a current state to one or more transitions.**

##### 34 35 **Rule 107:**

36  
37 **A state may be the next state to one or more transitions.**

##### 38 39 **Rule 108:**

40  
41 **A state is specified by the following Role State Attribute Types:**

##### 42 43 **1) Role State Identifier (Mandatory)**

44  
45 **The Role State Identifier must be unique, linguistically neutral, unambiguous**  
46 **and referenceable.**  
47



1           2)     **Role State Name(s) (Conditional or Optional)**

2

3           3)     **Role State Definition (Mandatory).**

4

#### 5   **7.4.6.           Role transitions**

6

7   A "role transition" is defined *"as the process of changing from one state to another within a given*

8   *role"*.

9

10 **Rule 109:**

11

12 **Within an Open-edi Scenario, a role transition is defined by:**

13

14       a) **The current state of the role;**

15       b) **The event which triggers the transition;**

16       c) **The actions started by this transition;**

17       d) **The next state of the role after this transition.**

18

19

20 **Rule 110:**

21

22 **A transition must belong to only one role.**

23

24 **Rule 111:**

25

26 **A transition may be triggered by only one event.**

27

28 **Rule 112:**

29

30 **A transition may start one or more actions.**

31

32 **Rule 113:**

33

34 **A transition may have one current state and may have one next state.**

35

36

37 **Rule 114:**

38

39 **A role transition is specified by the following attribute types:**

40

41       a)     **State/transition matrix row number of a state/transition table,**

42       b) **User specified sequence number of an information bundle sequence chart;**

43       c) **Other.**

#### 44 **7.4.7.           Role events**

45 A role event is a stimulus for a role to take action, e.g., receipt of an information bundle.

1 [This section to be developed further in terms of rules and explanatory notes. Annex A is  
2 applicable here]

3  
4 **Rule 115:**

5  
6 **A role event triggers a transition.**

7  
8 **Rule 116**

9  
10 **A role event is triggered by only one Information Bundle or by only one internal**  
11 **behaviour/function of a role.**

12  
13 **Rule 117:**

14  
15 **A role event is specified by the following Role Event Attribute Types:**

16  
17 **a) Role Event Identifier (Mandatory)**

18  
19 **The Role Event Identifier must be unique, linguistically neutral, unambiguous and**  
20 **referenceable**

21  
22 **b) Role Event Name(s): (Conditional or Optional)**

23  
24 **c) Role Event Definition: (Mandatory)**

25  
26  
27 **7.4.8. Role actions**

28  
29 **Rule 118:**

30  
31 **A role action is started by a transition.**

32  
33 **Rule 119:**

34  
35 **A role action sends one or more Information Bundles and/or triggers one or more internal**  
36 **functions.**

37  
38 **Rule 120:**

39  
40 **A role action is specified by the following Role Action Attribute Types:**

41  
42 **a) Role Action Identifier: (Mandatory)**

43  
44 **The Role Action Identifier must be unique, linguistically neutral, unambiguous and**  
45 **referenceable.**

46  
47 **b) Role Action Name(s): (Conditional or Optional)**

1  
2 c) **Role Action Definition: (Mandatory).**  
3

#### 4 **7.4.9. Role internal function [potential need]**

5  
6 An internal function is a procedure which describes the internal behaviour of a role, i.e., behaviour  
7 deemed to be internal behaviour in the context of the good of a business transaction as specified  
8 in a scenario.  
9

#### 10 **Rule 121:**

11  
12 **An internal function may trigger one event and may be triggered by one or more actions.**

#### 13 [Editor's Notes:

14  
15  
16 (1) *It is still unclear whether internal functions need to be included in the text or not. It may well*  
17 *be that business functions which are considered external behaviour of roles in one Open-*  
18 *edi Scenario may in another be scenario considered internal functions.*

19  
20 (2) *Also an "internal function" can be used to describe the "WHAT's" of the internal behaviour*  
21 *of a role without specifying the "HOW's".*

22  
23 (3) *If "internal function" is to be included text from SC32/WG1 N040 could be taken].*  
24

#### 25 **7.4.10. Role demand on Open-edi support infrastructure**

26  
27 d) From Catalogue

#### 28 [Editor's Note:

29  
30  
31 (1) *This section yet to be developed. Requires completion of draft Chapter 8. Examples in*  
32 *Annex I to be utilized].*  
33

### 34 **7.5. Rules for specification of Open-edi information bundles (IBs) and IB attributes**

#### 35 36 **7.5.1. Rules governing information bundles**

37 An Information Bundle (IB) is defined as *"the formal description of the semantics of the recorded*  
38 *information to be exchanged by Open-edi Parties playing roles in an Open-edi scenario".*

39  
40 Organizations have to process Information Bundles they have never dealt with before need to be  
41 able to determine the meaning of them. The key criteria on this process is that the sender and the  
42 receiver of such IBs have the same understanding about the semantics of the data they have

1 exchanged. For this purpose the Open-edi Reference Model notes that a SC may be atomic or  
2 composed of other SCs.<sup>90</sup>

3  
4 Furthermore, the function of the Information Bundle as a whole needs to be completely understood  
5 and representable as well. For instance, depending on the context in which it is send, a purchase  
6 order may have the function of an offer or an acceptance. The semantics of the underlying data is  
7 the same in both these cases. It seems that two options exist to solve this. The first option  
8 assumes that this knowledge can be represented as state changes inside the role description.  
9 Another approach would be to model these functions explicitly and associate this information with  
10 the Information Bundle instead of the role. The latter could be done by using theory from linguistic  
11 philosophy (the so-called Speech Acts) which identify some basic functions of utterances (such  
12 as Request, Confirm, Order etc.). This is an open issue.

13  
14 Whatever the approach, it is necessary that the Open-edi description technique includes a formal  
15 way to describe the semantics of the content of Information Bundle. For example the role will need  
16 in some cases to refer to some values of instances of semantic components.<sup>91</sup>

17  
18 It is therefore necessary to document the requirements on the OeDT to describe Information  
19 Bundles. A second advantage of this approach is that at the Open-edi scenario level, the only  
20 information that may be needed is the identification of the Information Bundles and a reference to  
21 the repository(ies) where the formal specification of the semantics can be found.

22  
23  
24 **Rule 122:**

25  
26 **A formal description of Information Bundle is used to model the semantic aspects of the**  
27 **business information to be exchanged and are constructed using semantic components.**

28  
29 **Rule 123:**  
30

---

<sup>90</sup>What is an atomic component, i.e., an indivisible data element, is dependent on the context. Within one business context and associated goal of a business transaction, a Semantic Component may be considered to be atomic in electronic data interchanges among participating Open-edi Parties. Within another business transaction, this "atomic" Semantic Component may well be considered to be composed of several other SCs. "Atomicity" of Semantic Components is thus a matter of granularity and is context dependent on the business requirements. For example, in one business transaction, an IB pertaining to a client name or a street name address can be represented by a single SC. In another business transaction an IB pertaining to a client name is composed of several SCs, one of which may in turn be composed of several SCs. Similarly, an IB pertaining to the information pertaining to a street number address is composed of many SCs, several of which in turn are composites, i.e., data structures containing multiple more discrete and granular SCs.

<sup>91</sup>Take the example of insurance, an Information Bundle which is an accident report and semantic components thereof which describes damages. These damages can be car damages or physical injuries. Let us suppose that when there is an accident report to an insurance company, if there are some human beings injured, then an expert must be involved if not no expert is required. Where an expert is required the description of the role will require to reference a value of a semantic component of the Information Bundle.

1 **An Information Bundle consists of one or more semantic components and/or other**  
2 **Information Bundles.**

3  
4 **Rule 124:**

5  
6 **Information Bundles are the bindings between Semantic Components and the Roles.**

7 The sender binds the role to the Information Bundle for the scenario.

8  
9 The semantic aspects of the business information to be exchanged are best understood by first  
10 specifying them in plain text, followed by specification in formal descriptive techniques. Refer to  
11 Explanatory Notes for Rule 88.

### 12 13 **7.5.2. Information bundle (IB) attributes and associated rules**

14 The attributes of an Information Bundle must be clearly specified (in plain text). The attributes  
15 types of an Information Bundles included the following (and are further explained in the sections  
16 which follow):

- 17  
18 a) IB Identifier (mandatory)  
19 b) IB Name(s) (optional)  
20 c) IB Purpose (mandatory)  
21 d) Business Rules controlling Content of IBs (mandatory)  
22 e) IB External Constraints on Business Requirements Governing Content of an IB, i.e., laws and  
23 regulations (mandatory)  
24 f) IB Contents (mandatory)  
25 g) IB Recorded Information Retention – Business Rules and Constraints (optional)  
26 h) IB Recorded Information Retention - External Constraints on Business Requirements, i.e.  
27 Laws and Regulations (optional)  
28 i) IB Timer Expiration (optional)  
29 j) IB Dependency among SCs of the same Information Bundle

30  
31  
32 In addition, there are also requirements for the specification of:

- 33  
34 k) IB information for Interoperability  
35 l) IB Demands on Open-edi Support Infrastructure.

#### 36 37 **7.5.2.1. Information Bundle attribute: IB Identifier**

38  
39 **Rule 125:**

40  
41 **Each IB must have an Identifier. The IB Identifier must be unique, linguistically neutral,**  
42 **unambiguous and referenceable.**

43  
44 **Rule 126:**

45  
46 **The IB Identifier shall be constructed autonomously.**

1  
2 Explanatory Note(s):  
3

- 4 (1) An IB is composed of one or more Semantic Components forming an IB may have a  
5 different meaning and use in the context of one role than in the context of another role.  
6

7 **7.5.2.2. Information Bundle attribute: IB Name(s)**

8  
9 **Rule 127:**

10  
11 **An IB may have one or more names. AN IB Name is the designation of the IB ID by a**  
12 **linguistic expression. More than one IB Name as equivalent linguistic expressions may be**  
13 **associated with an IB ID, (e.g., as "aliases").**

14  
15 The specific linguistic expression used to designate an IB ID can be:

- 16 a) The results of an agreed common business convention or practice (internally or by  
17 business  
18 sector),i.e.Level 0; or,  
19 b) Prescribed by laws and regulations of a jurisdiction (at the international, regional, national,  
20 etc., levels, or for an industry sector, etc.),i.e. Level 1+..  
21

22 **7.5.2.3. Information Bundle attribute: IB Purpose**

23  
24 **Rule 128:**

25  
26 **The IB Purpose shall be to specify the nature of the contents or concepts of the IB.**

27  
28 As defined in the Open-edi Reference Model, an Information Bundle the formal description of the  
29 semantics of the information to be exchanged by Open-edi Parties playing roles in an Open-edi  
30 scenario. The IB is used to model the semantic aspects of the business information. Information  
31 bundles are constructed using Semantic Components.  
32

33 **7.5.2.4. Information Bundle attribute: Business Rules Controlling Content of IBs**

34  
35 **Rule 129:**

36  
37 **Any business rules controlling content of an IB must be identified and the nature and**  
38 **functioning of these rules explicitly stated. The source of such business rules must also**  
39 **be referenced.**  
40

1 **7.5.2.5. Information Bundle attribute: IB External Constraints on Business**  
2 **Requirements Governing Content or Concept(s) of an IB, i.e., Laws and Regulations**

3  
4 **Rule 130:**

5  
6 **Any external constraints arising from laws and regulations governing the content of an IB**  
7 **must be identified, the requirements explicitly stated and the source referenced.**

8  
9 **Rule 131:**

10  
11 **Any IB created to meet requirement of external constraints of the nature of laws and**  
12 **regulations should be so identified, the contents of the IB explicitly defined, at the level of**  
13 **granularity required, and the source law/regulation referenced.**  
14

15 **7.5.2.6 Information Bundle Attribute: IB Contents**

16  
17 **Rule 132:**

18  
19 **Semantic Component IDs and/or IB IDs contained in an IB shall be specified.**

20 For example, IB 25F6 can consist of IB 25F. plus one added SC. In a logistics chain, the  
21 completion of a role often results in the addition of an IB to the set of IB(s) received and the  
22 sending out/forwarding of the IB(s) received with the added SC(s) as a new IB, (e.g., in clearance  
23 of goods at customs the key IB that a custom broker needs, to complete an instantiation of the  
24 customs clearance, is the "release number" from the Customs authority).  
25  
26

27 **7.5.2.7 Information Bundle Attribute: IB Recorded Information<sup>92</sup> Retention – Business**  
28 **Rules and Constraints**

29  
30 **Rule 133:**

31  
32 **Requirements for retention of recorded information for an IB, if any, shall be specified as**  
33 **well as which OePs involved in the associated Role(s) have the primary responsibility for**  
34 **retaining this recorded information**

35  
36 Explanatory Note(s)

37  
38 For example, a seller may require a buyer to retain the ID of an IB and its recorded information  
39 contents issued by the seller to the buyer in relation to a specific good or service for the period of

---

<sup>92</sup> The term "recorded information" is utilized here as defined in Clause 3.1.45 above, i.e. independent of form, medium of recording or technology utilized.

1 time associated with post-actualization aspects of a business transaction.<sup>93</sup> Buyer and seller may  
2 agree to use a third party to retain a records retention/archiving service (e.g. as part of a notarial-  
3 type service).  
4

5 **7.5.2.8 Information Bundle Attribute: IB Recorded Information Retention - External**  
6 **Constraints on Business Requirements, i.e. Laws and Regulations**

7  
8 **Rule 134:**

9  
10 **Requirements arising from laws or regulations for the retention of recorded information**  
11 **applicable to the IB, if any, shall be explicitly stated and the source(s) referenced.**  
12

13 **7.5.2.9 Information Bundle Attribute: IB Timer Expiration**

14  
15 **Rule 135:**

16  
17 **Requirements for a scenario defined response shall be explicitly specified.**

18  
19 The other definition of latency supported by the IB is the time by which the intended recipient(s) of  
20 the IB must make the response by the scenario definition to comply with the scenario constraints.  
21

22 When this use of latency is selected, the time for the scenario defined response must be  
23 specified, either as the time period following the sending of the relevant IB, or as the time, as  
24 specified by UCT or GPS time, by which the scenario defined response must have taken place.  
25

26 **7.5.2.10 Information Bundle Attribute: Dependency among SCs of the same Information**  
27 **Bundle**

28  
29 **7.5.3. IB information for interoperability**

30  
31 [Note:

32  
33 (1) *This section requires further development work. Section 6.4.5 below is a start at filling this*  
34 *gap].*

35  
36 c) Relationships of SCs with IBs.

37 d) List of SCs and their attributes including definitions;

38 *This is where the OeS template is filled out with IDs of Semantic Components*

---

<sup>93</sup> This could be the ID number of the business transaction issued by the seller with respect to the seller's "return of good policy" which the seller requires the buyer to retain, or a recorded information retention requirement(s) arising from various post-actualization requirements between a buyer and seller (as well as agents or third parties) as applicable (e.g. warranties).



1 **7.5.4. IB demands on Open-edi infrastructure**

2

3 **Rule 136:**

4

5 **IB demands on the Open-edi infrastructure shall be specified.**

6

7 [Note:

8

9 (1) *This section requires further development work. The elements needed to be contained in*  
10 *"Catalogue" should be identified].*

11

12 The Open-edi Reference Model specifies that the set of functional capabilities modelled in the  
13 OeSI provides for initiating, operating, and tracking the progress of Open-edi transactions. The set  
14 of functional capabilities of the Open-edi Support Infrastructure shall implement a catalogue of  
15 predefined demands on the Open-edi Support Infrastructure which are listed as follows:

16

17 a) Handling of DMA requests;

18

19 b) Negotiation of role playing;

20

21 c) Specification of the Open-edi configuration;

22

23 d) Interpreting and processing of a role;

24

25 e) Making available the data values received from information bundles from Open-edi  
26 systems;

27

28 f) Capture of the data values provided as a result of behaviour choice;

29

30 g) Provision of security services and auditing services;

31

32 h) Tracking and notification of Open-edi transaction status and progress across applications;

33

34 i) Management of error reporting;

35

36 j) Management of communications.

37

38

39 **7.5.5. Rules for the specification of semantic components and semantic**  
40 **component attributes**

41

42

43 **7.5.5.1. Rules governing semantic components**

44

45 A Semantic Component (SC) is defined as *"a unit of recorded information unambiguously defined*  
46 *in the context of the business goal of the business transaction"*.

1  
2 **Rule 137:**

3  
4 **A Semantic Component may be atomic or composed of other SCs.**

5  
6 Explanatory Note(s):

7  
8 Within one business context and associated goal of a business transaction, a Semantic  
9 Component may be considered to be atomic in electronic data interchanges among participating  
10 Open-edi Parties. Within another business transaction, this "atomic" Semantic Component may  
11 be considered to be composed of several other SCs. "Atomicity" of Semantic Components is thus  
12 a matter of granularity and is context dependent on the business requirements.  
13

14  
15  
16 **Rule 138:**

17  
18 **A Semantic Component can be a single (simple) data element, a composite data element, or**  
19 **a data structure, (e.g., a set of data elements which interwork in order to ensure semantic**  
20 **completeness and ensure the required unambiguousness).**

21  
22 **Rule 139:**

23  
24 **A Semantic Component must be a component of at least one Information Bundle when**  
25 **exchanged among Open-edi Parties.**

26  
27  
28 **Rule 140:**

29  
30 **A Semantic Component shall be specified via semantic component attributes.**

31  
32 The attributes of a Semantic Component must be clearly specified (in plain text). The attributes  
33 types of a Semantic Component include the following (and are further explained in the sections  
34 which follow).  
35

36 **Rule 141:**

37  
38 **Where the set of permitted values of the semantic component is governed by a code set,**  
39 **the code set utilized must be identified and referenced. By using such code sets Open-**  
40 **edi Parties agree to the business practice(s) and rule set(s) of which the code set**  
41 **referenced forms part.**<sup>94</sup>

42  
43 Explanatory Note(s):

44  

---

<sup>94</sup> See further ISO/IEC 18022 -Information technology- Identification, Mapping and IT-enablement of Standards for Widely Used Coded Value Domains". This standard is under development by ISO/IEC JTC1/SC32 WG2 - Metadata. This work is supported by SC32/WG1 because of its link to supporting IB and SC requirements. {See SC32/WG1 N0123, Resolution WG1/11}.

- 1 (1) For example, if an amount of payment is specified by a SC through the use of a type of  
2 currency or fund-based on code for ISO 4217 standard of "Codes representing Currencies  
3 and Funds", Open-edi Parties by using a SC which references ISO 4217 agree to be  
4 bound by the rules and conditions governing ISO 4217. Also the Open-edi Information  
5 System has the facilities to support ISO 4217.  
6
- 7 (2) Another common example in business transactions is the use of codes representing  
8 International Commercial Terms, (e.g., C.O.D., F.O.,B., etc.). Here also a Semantic  
9 Component with references a code set when used by Open-edi Parties in (as part of) an  
10 Information Bundle exchanged among roles means that such Open-edi Parties agree to be  
11 bound by and accept the rules and obligations of which the code set referenced of which it  
12 forms part.  
13  
14

### 15 **7.5.5.2. Rules Governing Semantic Component attributes**

16 The attributes of a Semantic Component must be clearly specified. The attribute types of a SC  
17 include the following:

- 18
- 19 • SC Identifier (mandatory)
- 20 • SC Name(s) (optional)
- 21 • SC Definition (mandatory)
- 22
- 23

#### 24 **7.5.5.2.1 Semantic Component Attribute: SC Identifier**

25  
26 **Rule 142:**

27  
28 **Each Semantic Component must have an Identifier. The SC Identifier must be unique,  
29 linguistically neutral, unambiguous and referenceable.**

30  
31 **Rule 143:**

32  
33 **The SC Identifier shall be constructed autonomously.**

#### 34 35 **7.5.5.2.2 Semantic Component Attribute: SC Name(s)**

36  
37 **Rule 144:**

38  
39 **A SC may have one or many names. The name should be unique for a single SC and help  
40 the understanding of the purpose and contents of an SC.**

41  
42 **Rule 145:**

43

1 **An SC Name is the designation of the SC ID by a linguistic expression. More than one SC**  
2 **Name as equivalent linguistic expressions may be associated with an SC ID, (e.g., as**  
3 **"aliases").**

4  
5 **7.5.5.2.3 Semantic Component Attribute: SC Definition**

6  
7 **Rule 146:**

8  
9 **A Semantic Component shall be fully defined.**

10  
11 *[Note attributes shall include those stated in ISO/IEC 11179-3:1994, i.e. be harmonized with it.. To*  
12 *be completed before or at the Helsinki meeting]*

13  
14  
15 **7.6. Business Requirements on FSV (business demands on Open-edi support**  
16 **infrastructure)**

17  
18 The BOV is intended to capture the requirements placed upon the FSV by the business process.  
19 However, there are a number of requirements of a technical nature which would be assumed in  
20 the BOV to have been addressed elsewhere or may not be obvious from the analysis of the  
21 business process and there is no mechanism in BOV for capturing them.

22  
23 These may be identified by the following categories:

- 24  
25 a) naming and addressing requirements for clear and unambiguous identification of FSV  
26 components, as well as associated naming and addressing information as required to  
27 ensure that all parties processing those components are able to derive the same meaning  
28 from them,  
29 b) quality of service of the network or value added service used to support the exchange of  
30 information between Open-edi parties in terms of reliability, availability;  
31 c) security techniques to be applied to the information to be exchanged in compliance with  
32 general business requirements of one or more of the parties or in order to meet legal  
33 requirements or trade or other sectoral demands;  
34 d) requirements for logging, journalising or otherwise recording information in order to meet  
35 general legal, commercial, contractual or accounting/auditing purposes as well as for the  
36 purposes of obtaining or maintaining statistical or other reporting information;  
37 e) determination of the syntax or other encoding technique to be applied to the information for  
38 the purpose of exchange.  
39

40 These are captured as a catalogue of demands which can be imposed on a scenario or any of its  
41 components. The catalogue identifies all the capabilities that are available to the user.

42  
43 The catalogue of demands is used following the BOV modelling work to ensure that the  
44 requirements have been captured even if they were not addressed by the FDT that was used, and  
45 that they are included in the requirements to be met by the FSV. These requirements are a further  
46 dimension of the capabilities of the FSV which may cause a specific role or information bundle to  
47 be inappropriate for use with a particular BOV model.  
48

1 The following relationships exist between BOV and FSV:

- 2 a) An Open-edi Scenario may be implemented by one or more Open-edi Configurations
- 3 b) An Open-edi Configuration may support one or more Open-edi Scenarios
- 4 c) A role may be played by one or more DMAs
- 5 d) A DMA may play one or more roles
- 6 e) An information parcel may be mapped to one or more Open-edi User Data
- 7 f) An Open-edi User Data may be mapped to one or more information parcels

8

9 The interactions between internal functions and roles may be mapped to one or more  
10 implementation models in the FSV, which implies that the current FSV concepts should be  
11 updated:

12

- 13 a) Add a new concept: "Information system", as an implementation of an internal  
14 function.
- 15 b) Add new relationships between "Information system" and Open-edi User Data

16

17 These two concepts will be needed if the interface between information systems and DMA  
18 should be modelled; as an application program interface (API), as an client/server  
19 connection, etc. The corresponding model in the BOV will define the semantic and  
20 platform independant specification of the possible interfaces in FSV.

1 **8. Open-edi scenario template**

2 **8.1. Purpose**

3  
4  
5  
6  
7

The purpose of the Open-edi scenario template is to ensure that all the information required for the Business Operational View (BOV) of an Open-edi Scenario, its components and all their attributes is captured in a systematic and explicit manner.

8 Chapter 6.5 [??] is based on an initial set of requirements already identified in Chapter 4.1 of  
9 ISO/IEC 14662 *Open-edi Reference Model* to which are added the results of standards  
10 development work on the BOV itself, i.e., that of this 2<sup>nd</sup> CD 15944. The order and grouping of the  
11 items in the BOV Template is based on that of Chapter 7 itself which in turn is based on  
12 development of Open-edi Scenarios based on actual business cases.

13  
14  
15  
16

[Note: More items may be added to this template and other modifications made based on further practical work].

17 **8.2. Template Structure and Content**

18  
19  
20  
21

The Open-edi Scenario Template is structured in matrix form and consists of two distinct parts, namely:

- 22 (1) those focused on the IT-interface perspective; and,
  - 23 (2) those focused on the human-interface perspective.
- 24

25 **8.2.1. IT-interface needs perspective**

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27  
28  
29  
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31

From an IT-interface needs perspective, all that is required is that of unique, linguistically neutral and unambiguous identifiers for scenario attributes, and scenario components and their attributes. In order to facilitate use and management a block numeric numbering scheme is used to assign these identifiers<sup>95</sup> as follows:

a) Scenario Attributes	2000 through 2999
b) Role Attributes	3000 through 3999
c) Information Bundle Attributes	4000 through 4999
d) Semantic Component Attributes	5000 through 5999

32  
33  
34

Within each of these major blocks there are sub-blocks of numbers reflecting the hierarchy and relationships of sets of attributes.

---

<sup>95</sup>Implementors of Open-edi Scenarios are free to map these identifiers to non-intelligent identifiers in their internal applications, (e.g., as part of their internal behaviour).

[Note: The rules and schema for the assignment of block numeric Component ID Codes need to be discussed at the Helsinki meeting].

**8.2.2. Human interface needs perspective**

Human interface needs perspectives are on the whole of a linguistic nature. Natural language(s) are used to provide equivalent linguistic expressions understandable for use by human beings. Since human beings use multiple natural languages, the Template matrix is structured to allow for expandability into as many linguistic equivalent terms and names as may be required by users of this standard.

**8.2.3. Consolidated template of attributes of Open-edi scenarios, roles and information bundles**

Note(s):

- (1) *The exact physical appearance of the Template in matrix form and numeric assignment of ID Tags for scenario components and attributes is to be discussed at the October, Helsinki meeting.*
- (2) *The assignment of numeric identifier for Component ID Codes here is "illustrative". The rules and schema for assignment of the Component ID Identifiers need to be discussed at the Helsinki meeting.*
- (3) *Resources/Time available did not permit for assuring that this draft version of the Template is complete].*

IT-Interface		Human-Interface Equivalents			Spare
Component ID Code (1)	Spare (2)	Name (English) (3)	Name (French) (4)	Name (Other) (5)	
<b>2000</b>		<b>OPEN-EDI SCENARIO ATTRIBUTES</b>			
2010		OeS Identifier			
2020		OeS Name(s)			
2030		OeS Purpose			
2040		OeS Set of Roles OeS Business Requirements, Rules and Constraints			
2050		OeS Set of Information Bundles OeS			

IT-Interface		Human-Interface Equivalents			Spare
Component ID Code	Spare	Name (English)	Name (French)	Name (Other)	
(1)	(2)	(3)	(4)	(5)	(6)
		Scenario Inheritance Identifier(s) and Cross-References			
2060		OeS Set of Requirements on Open-edi Parties			
2070		OeS Set of External Constraints on Business Requirements, i.e., Laws and Regulations			
2080		OeS Inheritance Identifier(s) and Cross References			
2090		OeS Security Service Requirements			
2100		OeS Communication - Quality of Service Requirements			
2120		OeS Role Requirements and Constraints			
2130		OeS Dependency among Roles in a Scenario			
2140		OeS Dependency among Information Bundles in a Scenario			
2150		OeS Dependency among Semantic Components of different Information Bundles			
2500		OeS DEMANDS ON OPEN-EDI PARTIES			
2600		OeS DEMANDS ON OPEN-EDI INFRASTRUCTURE			
<b>3000</b>		<b>ROLE ATTRIBUTES</b>			
3005		Role Identifier			
3010		Role Name(s)			
3015		Role Purpose			
3020		Role Business Goal(s)			



IT-Interface		Human-Interface Equivalents			Spare
Component ID Code	Spare	Name (English)	Name (French)	Name (Other)	
(1)	(2)	(3)	(4)	(5)	(6)
3025		Role Business Rules and Constraints			
3030		Role Inheritance Identifiers and Cross-References			
3035		Role External Constraints on Business Requirements, i.e., Laws and Regulations			
3040		Role Security Service Requirements			
3045		Role Communications and Quality of Service Requirements			
3050		ROLE DEMANDS ON OPEN-EDI PARTIES			
3060		INTEROPERABILITY DEMANDSAMONG ROLES			
3065		Role States			
3070		ROLE TRANSITIONS			
3075		ROLE EVENTS			
3080		ROLE ACTIONS			
3085		ROLE INTERNAL FUNCTION			
3090		ROLE DEMANDS ON OPEN-EDI SUPPORT INFRASTRUCTURE			
<b>4000</b>		<b>INFORMATION BUNDLE ATTRIBUTES</b>			
4010		IB Identifier			
4020		IB Name(s)			
4030		IB Purpose			
4040		Business Rules Controlling Content of Ibs			
4050		IB External Constraints on Business Requirements, Governing Content of an IB, i.e., Laws and Regulations			
4060		IB contents			

IT-Interface		Human-Interface Equivalents			Spare
Component ID Code	Spare	Name (English)	Name (French)	Name (Other)	
(1)	(2)	(3)	(4)	(5)	(6)
4070		IB recorded information retention – business rules and constraints			
4080		IB recorded information retention – external constraints on business requirements, i.e., laws and regulations			
4085		IB timer expiration			
4090		Relationship of semantic components within an IB			
4100		IB INFORMATION FOR INTEROPERABILITY			
4200		IB DEMANDS ON OPEN-EDI SUPPORT INFRASTRUCTURE			
<b>5000</b>		<b>SEMANTIC COMPONENT ATTRIBUTES</b>			
5010		SC Identifier			
5020		SC Name(s)			
5030		SC Definition			

1

1

## 2 **9 Requirements on Open-edi description techniques**

3

4 In this section the requirements to be posed on the Formal Description Techniques that are  
5 candidate Open-edi Description Techniques for modelling roles and information bundles are listed.  
6 Section 6.6.1 lists a set of general requirements, Sections 6.6.2 and 6.6.3 list the specific  
7 requirements for roles and information bundles respectively. The main assumptions that serve as  
8 the basis for these requirements are found in the preceding sections of this Chapter.

9

### 10 **9.1. General Requirements on Open-edi Description Techniques**

11

12 Open-edi Scenarios will be written by different user communities and shall be compliant with the  
13 BOV related standards.

14

15 Moreover, it is highly desirable that several tools exist on the market and that the standards of the  
16 OeDTs provide for a neutral format of exchange between the tools in order that specifications  
17 produced on one tool of the market can be reused and modified on another modelling tool of the  
18 market.

19

#### 20 **Rule 147:**

21

22 **OeDTs should provide both for (1) computer interpretability and process-ability at the IT**  
23 **interface among heterogenous information systems and (2) a human understandable**  
24 **(interpretable) linguistic equivalent(s) at the human interface level.**

25

#### 26 Explanatory Note(s):

27

28 (1) The use of unique, linguistically neutral, and unambiguous identifiers for all scenario and  
29 scenario components, facilitates mapping the computer interpretable formal specification  
30 into one (or more) human understandable linguistically based equivalents.

31

#### 32 **Rule 148:**

33

34 **Every OeDT shall allow for the verification whether all possible initiation paths of a**  
35 **scenario lead to allowable termination.**

36

#### 37 **Rule 149:**

38

#### 39 **OeDT Properties**

40

41 The following properties will be used as a yardstick to measure if a certain representation is  
42 primitive, in the sense that it has the sufficient and necessary modelling constructs to represent  
43 phenomena from a certain domain (in the case of Open-edi this domain is the exchange of data  
44 among parties).<sup>96</sup>

---

<sup>96</sup>This list is based on a study by Winograd (1978) on typical features of semantic primitives.

1  
2 **Finitude:** the number of modelling constructs must be smaller than the number of real-world  
3 phenomena these constructs can represent.

4  
5 **Comprehensiveness:** every phenomenon within the boundaries of the domain to be modelled  
6 can be expressed as a structure of modelling constructs

7  
8 **Completeness:** describing a phenomenon in terms of modelling constructs reveals all the  
9 necessary information about this phenomenon.

10  
11 **Independence:** no modelling construct is definable in terms of another construct

12  
13 **Canonicity:** no two unique phenomena are definable by the same structure of modelling  
14 constructs.

## 15 16 **9.2. Requirements on OeDTs for Roles**

17  
18 The behaviour to be performed by the Open-edi Party playing the role has to be modelled and  
19 interrelated. This means that a process modelling technique has to be chosen for modelling  
20 activities and role interaction, in addition to a data modelling technique capabilities.<sup>97</sup> An OeDT  
21 must also have the ability to support a hierarchical decomposition of the roles as well as  
22 inheritance and cross-referencing.

23  
24 The state of each of the Open-edi party playing a role should be represented in order to be able to  
25 analyze the dynamic properties of a scenario. A state describes the status of a role, and may be  
26 changed when one or more events have occurred. The initial state (starting point) and the final  
27 state(s) (termination point(s)) of each Open-edi Party should be unambiguously stated. Each role  
28 shall have only one initial state, but may have one or more alternative final states. A state must  
29 belong to only one role. The overall status of the transaction, governed by the Open-edi Scenario,  
30 is composed of the states of each of the roles.

31  
32 A transition between states within a given role is triggered by events and results in actions. A state  
33 may be current state to one or more transitions, and may be next state to one or more transitions.

34  
35 Three kinds of events are to be represented: the receiving of information bundles, external choices  
36 and time-outs. Where information bundles are received, a reference to the unique identifier of this  
37 information bundle {see Section 6.4.2.1} must be present, as well as the requirements from the  
38 Catalogue of Demands posed on the FSV level for the exchange of this information bundle.  
39 External choices should be represented to allow the specification of alternative ways of  
40 proceeding, depending on events beyond the control of the Open-edi party playing the role. This  
41 includes the handling of error messages coming out of the FSV. Finally, it should be possible to  
42 explicitly model time-outs in order to be able to model deadlines and to detect if an expected  
43 information bundle has not been received from another Open-edi Party.

---

<sup>97</sup>SC32/WG1 has identified several classes of such techniques and given specific examples of existing FDTs for each of these classes (for instance IDEF, Petri Nets, Data Flow Diagrams, etc.). For examples, see ISO/IEC 14662:1998 *Open-edi Reference Model*, "Annex C (Informative) Example of Formal Description Techniques for Modelling Role Behaviour". Currently UML is being investigated.

1  
2 Two kinds of actions are to be represented: the sending of information bundles and the making of  
3 (internal decisions). Where information bundles are sent, a reference to the unique identifier of  
4 this information bundle {see Section 6.4.2.1} must be present, as well as the requirements from  
5 the Catalogue of Demands posed on the FSV level for the exchange of this information bundle.  
6 Internal choices made by the Open-edi parties playing the roles must be represented (referenced),  
7 although the actual internal rules on which these choices are based need not be modelled. These  
8 internal rules are usually confidential to the organization. Thus, only the fact that a choice is made  
9 is represented, not how this choice is made.

10  
11 The ordering of the exchanges of information bundles may have strict temporal specifications, for  
12 instance in a business transaction conducted as series of dialogues interactively. Hence, both  
13 absolute and relative temporal constraints have to be expressible in the OeDT as well. Also, the  
14 specification of concurrent events/actions has to be supported.

15  
16 It should be noted that it is not trivial to represent choices and concurrency with a single FDT,  
17 since many techniques are only strong in one area. For instance, state transition diagrams or  
18 networks are weak in the expression of concurrency but strong in choice. PERT diagrams are  
19 exactly the inverse. However, FDTs do exist that are capable of doing this.

20  
21 The requirement to be able to model internal and external choices, the events that influence the  
22 execution of a role, the inclusion of timers, as well as their concurrent interoperation, guarantees  
23 that all common forms of exception handling can be modelled.  
24

### 25 **9.3. Requirements on OeDTs for Information Bundles**

26  
27 An OeDT must have the ability to support a hierarchical decomposition of the information bundle  
28 into the semantic components it consists of.  
29

30 The OeDT for information bundles needs to represent the inter-working between semantic  
31 components, both within an information bundle and between semantic components in different  
32 information bundles. This means that the following aspects have to be explicitly covered:  
33

- 34 d) the representation of the cardinality of these relationships;
- 35
- 36 e) the representation of the composition of information bundles in terms of semantic  
37 components;
- 38
- 39 f) the representation of the dependency between semantic components within an information  
40 bundle; and,
- 41
- 42 g) the representation of the dependency between semantic components in different  
43 information bundles.  
44

## 45 **10 References**

46  
47 ISO/IEC JTC 1/WG 3 N014 Report of the Open-edi conceptual model

- 1 1992-04-09
- 2
- 3 IEC ISO ITU-TS UN/ECE Report of the Inter-Agency Working Group for Coordinated Open-edi
- 4 Standards Development
- 5 1993-08
- 6
- 7 ISO/IEC JTC 1/SC 30 N068 Open-edi Topics List
- 8
- 9 ISO/IEC JTC 1/SC 30 N132 Relationship between the components of an Open-edi scenario 1995-
- 10 02-07
- 11
- 12 ISO/IEC JTC 1/SC 30 N133 Identification and analysis of classes of business requirements in
- 13 relation to the Open-edi scenarios
- 14 1995-02-01
- 15
- 16 ISO/IEC JTC 1/SC 30/WG 1 N005 Open-edi Metamodel
- 17 1996-03-20

**ANNEX A (Normative) - CODES REPRESENTING PRESENCE-TYPE ATTRIBUTES:  
MANDATORY, CONDITIONALS, OPTIONAL AND NOT  
APPLICABLE**

Open-edi scenarios are composed of several building blocks including Open-edi scenario attributes, and role attributes, information bundles (IBs) (as well as attributes of Semantic Components (SCs)).

All Open-edi scenario attributes must be specified at all times, i.e., in order to ensure explicitness and unambiguousness in the formal specification of Open-edi scenarios and scenario components.

However, the nature and function of these scenario attributes will differ depending on the scope and context, i.e., the goal, of the business transaction being modelled. And, although all scenario attributes must be specified, the actual values assigned to these attributes may contain statements ranging from "mandatory" to "not applicable" (N/A). Further, at times, there are often interworkings and dependencies among attributes within each scenario component as well as among the scenario components themselves, i.e., Conditionals. These also must be specified as well as the their relationships and/or dependencies to other Open-edi scenario attributes

The five basic presence-type attribute types are:

- Mandatory
- Conditional
- mandatory subject to a Conditional
- Optional; and,
- Not Applicable.

The coding convention for "presence-type" of attributes is presented in Table-01.

**Table-01<sup>1</sup>: Codes Representing Presence-Types of Attributes: Mandatory, Conditionals, Optional and Not Applicable {2<sup>nd</sup> CD Version,2000-0701}**

---

<sup>1</sup>In this table, only the equivalent linguistic expressions in the English and French language are provided. This table is expandable, i.e. via additional columns, to cover any number of equivalent linguistic expressions (and their mnemonics), (e.g., Spanish, German, Russian, Chinese, Japanese, etc.), especially if one uses ISO/IEC 10646-1:1993 *Information Technology -- Universal Multiple-Octet Coded Character Set (UCS) -- Part 1: Architecture and Basic Multilingual Plane* (a.k.a Unicode).

**ANNEX A (Normative) - CODES REPRESENTING PRESENCE-TYPE ATTRIBUTES:  
MANDATORY, CONDITIONALS, OPTIONAL AND NOT  
APPLICABLE**

1

IT Interface		Human Interface / Equivalent Linguistic Expressions			
Table ID <sup>3</sup>	Code	English (en) <sup>2</sup>		French (fr)	
		Mnemonic <sup>4</sup>	Linguistic Expression	Mnemonic	Linguistic Expression
(1)	(2)	(3)	(4)	(5)	(6)
15944-1:01	1	M	Mandatory	E	Essentiel
15944-1:01	2	C	Conditional	C	Conditionnel
15944-1:01	3	m	mandatory subject to a Conditional	e	essentiel en fonction d'un Conditionnel
15944-1:01	4	O	Optional	F	Optionnel facultatif
15944-1:01	9	N	Not Applicable	S	Sans objet

2

3

4

**Rules Governing Codes Representing "Presence-Types" of Attributes**

5

6

**Rule A-1:**

7

8

**For all attributes of Open-edi scenarios and scenario components, the presence-type attribute must be specified by one of the codes of this table.**

9

10

11

12

**Rule A-2: Assignment of Codes<sup>5</sup>**

13

14

**Table 15944-1:01 is meant to be exhaustive, meaning all the identified business requirements are included.**

15

16

17

Should business requirements, within the scope of this table, be identified which require additional presence-types, these can be added via a Technical Amendment to this standard. Should the number of required added codes necessitate migrating to double-digit codes, this possibility is foreseen. Change from a single digit to a double-digit code will require change of "9" to "99" for "Not

18

19

20

<sup>2</sup>The "(en)" and "(fr)" are taken from ISO 639 "Codes for the representation of names of languages/Codes pour la représentation des noms de langue".

<sup>3</sup>The unique and unambiguous Table Identifier is composed of the number and part of this standard, i.e., "15499-1", and the table number within that standard, i.e., "01" using the colon (:) as the separator.

<sup>4</sup>The columns for mnemonic, i.e., Columns "3" and "5", represent (1) present linguistic-based characters in use; and, (2) assist in mapping to linguistic neutral codes in Column "2". (Mnemonics are "memory aids/aides-mémoire").

<sup>5</sup> This table incorporates some of the elements of development work in progress in support of a new standard. See further ISO/IEC 18022 -Information technology- Identification, Mapping and IT-enablement of Standards for Widely Used Coded Value Domains". This standard is under development by ISO/IEC JTC1/SC32 WG2 - Metadata.



**ANNEX A (Normative) - CODES REPRESENTING PRESENCE-TYPE ATTRIBUTES:  
MANDATORY, CONDITIONALS, OPTIONAL AND NOT  
APPLICABLE**

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Applicable". The highest possible digit in a numeric code set, i.e., "9", "99", "999", etc., is a reserved code for "Not Applicable".

**Rule A-3:**

**Code 1 (Mandatory) is deemed to be self-explanatory, i.e., if used the attribute must be present and have a value .**

**Rule A-4:**

**If Code = 2 (Conditional/Conditionnel) is used, the Condition must be specified in the form of rules and also must include the provisions to be met for the value for the attribute.**

**Rule A-5:**

**If Code = 3 (mandatory subject to a Conditional/essentiel en fonction d'un Conditionnel) is used, the Conditional to which the attribute is related to must be specified and referenced including dependencies.**

**Rule A-6:**

**Code = 4 ((Optional/Optionnel) is exactly that, no conditions of any kind apply.**

Whether or not an actual value is assigned to an attribute with a Code 4 is completely discretionary.

**Rule A-7:**

**Use of Code = 5 (Not Applicable/Sans objet) is used to state explicitly that the attribute is not applicable and there thus are no values to be found in any instantiation of the attribute.**

Examples include those pertaining to there not being any constraints, specific security or communications service requirements, etc. It is expected that in scenarios developed at Level 0 of the Business Transaction Model, i.e. No External Constraints, as well as in (simple) generic scenarios, the Code 5 will be frequently used.

## **ANNEX B - (NORMATIVE) CONSOLIDATED LIST OF TERMS AND DEFINITIONS WITH CULTURAL ADAPTABILITY: ENGLISH AND FRENCH LANGUAGE EQUIVALENCY**

*[Editor's Note: This Annex will be amended as work on ISO/IEC 15944-1 progresses. At present, it is not certain whether or not ISO/IEC 15944-1 will be published in both the English and French languages as was the case for ISO/IEC 14662 "Open-edition Reference Model". If so, after the FDIS stage the equivalent French language terms and definitions will be used in the French language version of ISO/IEC 15944-1.*

*In the meantime, the development of equivalent French language terms and definitions serves as a mechanism to minimize any hidden ambiguities in the use of the English language].*

### 1. Introduction

Users of this ISO/IEC 15944-1 standard may not have ready access to all standards referenced in either the English language version or the French language equivalent where available.

This standard maximizes the use of existing standards where and whenever possible including relevant and applicable existing terms and definitions. This Annex contains the consolidated list of the English and French language paired terms and definitions used in this standard including those terms and definitions introduced in this standard.

### 2. Cultural Adaptability

ISO/IEC JTC1 has added "cultural adaptability" as the third strategic direction which all standards development work should support. The two other existing strategic directions are "portability" and "interoperability". Not all ISO/IEC JTC1 standards are being provided in more than one language, i.e., in addition to "ISO/IEC English," in part due to resource constraints.

Terms and definitions are an essential part of a standard. Should resources be lacking to make an ISO/IEC standard available in multiple languages, at the minimum, the terms and definitions should be translated into at least one other language and preferably more.

A key benefit of translation of terms and definitions is that such work at providing bilingual/multilingual equivalency:

- should be considered a "quality control check" in that establishing an equivalency in another language ferrets out "hidden" ambiguities in the source language. Often it is only in the translation that ambiguities in the meaning, i.e., semantics, of the term/definition are discovered. Ensuring bilingual/multilingual equivalency of terms/definition should thus be considered akin to a minimum "ISO 9000-

like" quality control check; and,

- is considered a key element in the widespread adoption and use of standards world-wide (especially by users of this standard who include those in various industry sectors, within a legal perspective, policy makers and consumer representatives, other standards developers, IT hardware and service providers, etc.).

This Annex also serves to support the "cultural adaptability" aspects of standards as required by ISO/IEC JTC1. Its purpose is to ensure that if, for whatever reason, an ISO/IEC JTC1 standard is developed in one ISO/IEC "official" language only, at the minimum the terms and definitions are made available in more than one language.<sup>1</sup>

### 3. Organization of Annex B

The terms/definitions are organized in matrix form in alphabetical order (English language). The columns in the matrix are as follows:

Col. No.	Use
1	ID as per ISO/IEC 15944-1 (3.1.nn)
2	Source. International standard referenced or ISO/IEC 15944-1.
3	English Language - Term
4	English Language - Definition
5	French Language - Term
6	French Language - Definition

The primary reason for organizing the columns in this order is to facilitate the addition of equivalent terms/definitions in other languages as added sets of paired columns, (e.g., Spanish, Japanese, German, Russian, etc.).

---

<sup>1</sup>Other ISO/IEC member bodies are encouraged to provide bilingual/multilingual equivalencies of terms/definitions for the language(s) in use in their countries.

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
01	ISO/IEC 15944-1 (3.1.01)	agent	a 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 Services View (FSV) where they are defined as an "Information Processing Domain (IPD)".	agent	personne agissant au nom d'une autre personne à titre précis dans le contexte d'une transaction d'affaires.  NOTE:  [add French language equivalent]
02	ISO/IEC 14662:1997 (3.1.1)	Application Program Interface (API)	a boundary across which application software uses facilities of programming languages to invoke services.	Interface de programme d'application (API, Application Program Interface)	frontière au travers de laquelle un logiciel applicatif fait appel, pour demander des services, aux moyens qu'offrent les langages de programmation.
03	ISO/IEC 10181-2:1996	authentication	the provision of assurance of the claimed identity of an entity.	authentification	attestation de l'identité revendiquée par une entité.
04	ISO/IEC TR 13335-1:1996 (3.3) monolingual (English) only	authenticity	the property that ensures that the identity of a subject or resource is the one claimed. Authenticity applies to entities such as users, processes, systems and information.	authenticité	propriété assurant que l'identité d'un sujet ou d'une ressource est celle qui est prétendue. L'authenticité s'applique à des entités telles que des utilisateurs, des processus, des systèmes et des informations.
05	ISO/IEC 14662:1997 (3.1.2)	business	a series of processes, each having a clearly understood purpose, involving more than one organisation, realised through the exchange of information and	affaires	série de processus, ayant chacun une finalité clairement définie, impliquant plus d'une organisation, réalisés par échange d'informations et tendant à

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			directed towards some mutually agreed upon goal, extending over a period of time.		l'accomplissement d'un objectif accepté par accord mutuel pour une certaine période de temps.
06	ISO/IEC 14662:1997 (3.1.3)	Business Operational View (BOV)	a perspective of business transactions limited to those aspects regarding the making of business decisions and commitments among organisations, which are needed for the description of a business transaction.	Vue opérationnelle des affaires (BOV, Business Operational View)	vue perspective sur les transactions d'affaires, restreinte à ceux des aspects relatifs à la prise par les organisations de décisions et d'engagements concernant leurs affaires qui sont nécessaires pour décrire une transaction d'affaires.
07	ISO/IEC 14662:1997 (3.1.4)	business transaction	a predefined set of activities and/or processes of organisations which is initiated by an organisation to accomplish an explicitly shared business goal and terminated upon recognition of one of the agreed conclusions by all the involved organisations although some of the recognition may be implicit.	transaction d'affaires	ensemble prédéterminé d'activités menées par des organisations et/ou de procédures qu'elles suivent, déclenché par une organisation qui vise à atteindre dans les affaires un but expressément partagé, terminé lorsqu'est observée une des conclusions convenues par toutes les organisations prenantes, bien que cette observation puisse être partiellement implicite.
08	ISO/IEC 15944-1 (3.1.08)	buyer	a person who aims to get possession of a good or service through providing an acceptable equivalent value, usually in money, to the person providing such a good or service.	acheteur	personne désirant acquérir un bien ou un service en fournissant une valeur équivalente acceptable, généralement de l'argent, à la personne qui offre ce bien ou ce service.
09	Based on ISO/IEC Directives, Part 1, Section 2.5.6, 1998; see also ISO/IEC Guide 2: 1996 (1.7)	consensus (standardization perspective)	general agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any	consensus (perspective de la normalisation)	accord général caractérisé par l'absence d'opposition ferme à l'encontre de l'essentiel du sujet émanant d'une partie importante des intérêts en jeu et par un processus de recherche de prise en considération des vues de toutes les parties

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			<p>conflicting arguments.</p> <p>NOTE - Consensus need not imply unanimity.</p>		<p>concernées et de rapprochement des positions divergentes éventuelles.</p> <p>NOTE - Le consensus n'implique pas nécessairement l'unanimité.</p>
10	ISO/IEC 2382:1993	data	<p>A reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing.</p> <p>NOTE - Data can be processed by humans or by automatic means.</p>	donnée	<p>Représentation réinterprétable d'une information sous une forme conventionnelle convenant à la communication, à l'interprétation.</p> <p>NOTE - Les données peuvent être traitées par des moyens humains ou automatiques.</p>
11	ISO/IEC 15944-1 (3.1.11)	data (in a business transaction)	<p>representations of recorded information that are being prepared or have been prepared in a form suitable for use in a computer system.</p>	donnée	<p>représentations d'informations enregistrées qui sont préparées ou l'ont été de façon à pouvoir être utilisées dans un ordinateur.</p>
12	ISO/IEC 11179-3:1994 (3.3 E) (3.4 F)	data element	<p>a unit of data for which the definition, identification, representation and permissible values are specified by means of a set of attributes.</p>	élément de données	<p>unité d'information dont la définition, l'identification, la représentation et les valeurs autorisées sont spécifiées au moyen d'un ensemble d'attributs.</p>
13	ISO/IEC 2382-04:1998 (04.07.01)	data element (in organization of data)	<p>a unit of data that is considered in context to be indivisible.</p> <p>Example: The data element "age of a person" with values consisting of all combinations of 3 decimal digits.</p> <p>NOTE - Differs from the entry 17.06.02 in ISO/IEC 2382-17.</p>	élément de données (en organisation de données)	<p>Donnée considérée comme indivisible dans un certain contexte.</p> <p>Exemple: L'élément de données «âge d'une personne» avec des valeurs comprenant toutes les combinaisons de trois chiffres décimaux.</p> <p>NOTE - Cette notion est différente de celle de l'article 17.06.02 dans la norme ISO/CEI 2382-17.</p>

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
14	ISO/IEC 10181-2:1996	distinguishing identifier	data that unambiguously distinguishes an entity in the authentication process.	identificateur distinctif	information qui différencie sans ambiguïté une entité dans le processus d'authentification.
15	ISO/IEC 14662:1997 (3.1.5)	Electronic Data Interchange (EDI)	the automated exchange of any predefined and structured data for business purposes among information systems of two or more organisations.	Echange de Données Informatisé (EDI, Electronic Data Interchange)	échange automatisé de données structurées et prédéfinies pour traiter des affaires entre les systèmes d'information de deux ou plusieurs organisations.
16	ISO/IEC 2382-17:1996 (17.02.05)	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.	entité	tout objet ou association d'objets, concret ou abstrait, existant, ayant existé ou pouvant exister.  Exemple: Personne, événement, idée, processus, etc.  NOTE - Une entité existe que l'on dispose de données à son sujet ou non.
17	ISO/IEC 9798-1:1997 (3.3.11) monolingual (English) only	entity authentication	the corroboration that the entity is the one claimed.	authentification de l'entité	corroboration que l'entité est bien celle qui est revendiquée.
18	ISO/IEC 2382-17:1996 (17.02.14)	(entity) identification	a method of using one or more attributes whose attribute values uniquely identify each occurrence of a specified entity.	identification (d'entités)	méthode qui consiste à utiliser un ou plusieurs attributs dont les valeurs d'attribut identifient de façon unique chaque occurrence d'une entité donnée.
19	ISO/IEC 14662:1997 (3.1.6)	Formal Description Technique (FDT)	a 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	Technique de description formelle (FDT, Formal description Technique)	méthode de spécification fondée sur un langage de spécification faisant appel à des règles rigoureuses et non ambiguës tant pour le développement d'expressions dans le langage (syntaxe formelle) que pour l'interprétation de la

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			semantics).		signification de ces expressions (sémantique formelle).
20	ISO/IEC 14662:1997 (3.1.7)	Functional Service View (FSV)	a perspective of business transactions limited to those information technology interoperability aspects of IT Systems needed to support the execution of Open-edi transactions.	Vue fonctionnelle des services (FSV)	vue perspective sur les transactions d'affaires, restreinte à ceux des aspects relatifs au fonctionnement informatique coopératif entre systèmes d'information qui sont nécessaires à l'exécution des transactions d'EDI-ouvert.
21	ISO/IEC 15944-1 (3.1.21)	identification	a rule-based process, explicitly stated, involving the use of one or more attributes, i.e., data elements, whose value (or combination of values) are used to identify uniquely the occurrence or existence of a specified entity.	identification	processus basé sur des règles, énoncées explicitement, impliquant l'utilisation d'un ou plusieurs attributs, par exemple des éléments de données, dont la valeur (ou une combinaison de valeurs) sert à identifier de façon unique l'occurrence ou l'existence d'une entité spécifiée.
22	ISO/IEC 15944-1 (3.1.22)	identifiant (in business transaction)	an unambiguous, unique and a linguistically neutral value, resulting from the application of a rule-based identification process. Identifiers must be unique within the identification scheme of the issuing authority.	identificateur (transaction d'affaires)	valeur non ambiguë, unique et linguistiquement neutre, résultant de l'application d'un processus d'identification à base de règles Les identificateurs doivent être uniques dans le système d'identification de l'autorité émettrice.
23	ISO/IEC 15944-1 (3.1.23)	individual	A person who is a human being, i.e., a natural person, who acts as a distinct indivisible entity or is considered as such.	individu	personne qui est un être humain, par exemple une personne physique, qui agit à titre d'entité indivisible distincte ou qui est considérée comme telle.
24	ISO 2382-1:1993 (01.01.01)	information (in information processing)	knowledge concerning objects, such as facts, events, things, processes, or ideas, including concepts, that within a certain context has a particular meaning.	information (en traitement de l'information)	connaissance concernant un objet tel qu'un fait, un événement, une chose, un processus ou une idée, y compris une notion, et qui, dans un contexte déterminé, a une signification



Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
					particulière.
25	ISO/IEC 14662:1997 (4.1.2.2)	Information Bundle (IB)	the formal description of the semantics of the information to be exchanged by Open-edi Parties playing roles in an Open-edi scenario.	Faisceau d'informations) (IB, Information Bundle)	description formelle de la valeur sémantique des informations échangées entre partenaires d'EDI-ouvert jouant un rôle dans un scénario d'EDI-ouvert.
26	ISO/IEC 14662:1997 (3.1.8)	Information Technology System (IT System)	a set of one or more computers, associated software, peripherals, terminals, human operations, physical processes, information transfer means, that form an autonomous whole, capable of performing information processing and/or information transfer.	système d'information	ensemble constitué d'un ou de plusieurs ordinateurs, avec leurs logiciels associés, de périphériques, de terminaux, d'opérateurs humains, de processus physiques et de moyens de transfert d'information, formant un tout autonome capable de traiter l'information et/ou de la transmettre.
27	ISO/IEC 15944-1 (3.1.27)	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.	support	matériel physique qui sert d'unité fonctionnelle, et dans lequel ou sur lequel l'information ou les données sont normalement stockées, dans lequel de l'information ou des données peuvent être retenues, à partir duquel de l'information ou des données peuvent être extraites, et qui est non-volatile par nature.
27		medium (cont'd)	Notes:  (1) This definition is independent of the material nature on which the information is recorded and/or technology utilized to record the information, (e.g., paper, photographic, i.e, chemical, magnetic, optical, ICs (integrated circuits), as well as other categories no longer in	support (suite)	Notes :  (1) Cette définition est indépendante de la nature matérielle sur laquelle l'information est enregistrée et/ou de la technologie utilisée pour enregistrer l'information (par exemple du papier, des supports photographiques, chimiques, magnétiques, optiques, des

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			common use such as vellum, parchment (and other animal skins), plastics, (e.g., bakelite or vinyl), textiles, (e.g., linen, canvas), metals, etc.).		circuits imprimés, ainsi que d'autres catégories qui ne sont plus utilisées de façon courante telles que le vélin, le parchemin (et autres peaux animales), les plastiques (par exemple la bakélite ou le vinyl), les textiles (par exemple le lin et la toile), les métaux, etc.
27		medium (cont'd)	(2) The inclusion of the "non-volatile in nature" attribute is to cover latency and records retention requirements.	support (suite)	(2) L'inclusion de l'attribut «nature non-volatile» couvre les exigences en matière de latence et de rétention des dossiers.
27		medium (cont'd)	(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.	support (suite)	(3) La définition de «support» est indépendante des éléments suivants: a) la forme ou le format de l'information enregistrée; b) la dimension physique et/ou la taille; et, c) tout conteneur ou boîtier qui est séparé physiquement du matériel logé et sans lequel le support peut demeurer une unité fonctionnelle.
27		medium (cont'd)	(4) This definition of "medium" also captures and integrates the following key properties:	support (suite)	(4) La définition de «support» reflète et intègre aussi les propriétés clés suivantes:
27		medium (cont'd)	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;	support (suite)	a) propriété du support comme matériel dans ou sur lequel de l'information ou des données peuvent être stockées et extraites; b) la propriété du stockage;

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			<p>d) the property of physical manifestation, i.e., material;</p> <p>e) the property of a functional unit; and,</p> <p>f) the property of (some degree of) stability of the material in or on which the information or data is recorded.</p>		<p>c) la propriété du porteur physique;</p> <p>d) la propriété de la manifestation physique, par exemple le matériel;</p> <p>e) la propriété d'une unité fonctionnelle; et,</p> <p>f) la propriété (jusqu'à un certain degré) de la stabilité du matériel dans ou sur lequel l'information ou les données sont stockées.</p>
28	ISO 1087:1990 (5.3.1.3)	name	designation of an object by a linguistic expression.	nom	désignation d'un objet par une unité linguistique.
29	ISO 1087:1990 (2.1)	object	<p>any part of the perceivable or conceivable world.</p> <p>NOTE - Objects may also be material, (e.g., engine) or immaterial, (e.g., magnetism).</p>	objet	<p>élément de la réalité qui peut être perçu ou conçu.</p> <p>NOTE - Les objets peuvent être matériels (par exemple: moteur) ou immatériels (par exemple: magnétisme).</p>
30	ISO/IEC 14662:1997 (3.1.9)	Open-edi	electronic data interchange among multiple autonomous organisations to accomplish an explicit shared business goal according to Open-edi standards.	EDI-ouvert	échange de données informatisé par application des normes d'EDI-ouvert entre plusieurs organisations autonomes visant un objectif d'affaires explicitement partagé.
31	ISO/IEC 14662:1997 (4.1.1)	Open edi Description Technique (OeDT)	a specification method such as a Formal Description Technique, another methodology having the characteristics of a Formal Description Technique, or a combination of such techniques as needed to formally specify BOV concepts, in a computer processible	Technique de description d'EDI-ouvert	méthode de spécification, technique de description formelle, ou toute autre technique ayant les caractéristiques d'une technique de description formelle, ou combinaison de ces techniques, permettant de spécifier formellement les concepts de la BOV sous forme

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			form.		calculable par un ordinateur.
32	ISO/IEC 14662:1997 (3.1.11)	Open-edi Party (OeP)	<p>an organisation that participates in Open-edi.</p> <p>NOTE:</p> <p>Often in this ISO/IEC 15944-1 standard referred to generically as "party" or "parties" for any entity modeled as playing a role in Open-edi scenarios.</p>	Partenaire d'EDI-ouvert	<p>organisation participant à l'EDI-ouvert.</p> <p>NOTE:</p> <p>[add French language equivalent]</p>
33	ISO/IEC 14662:1997 (3.1.12)	Open-edi scenario	a formal specification of a class of business transactions having the same business goal.	scénario d'EDI-ouvert	spécification formelle d'une classe de transactions d'affaires partageant le même objectif d'affaires.
34	ISO/IEC 14662:1997 (3.1.10)	Open-edi standard	a standard that complies with the Open-edi Reference Model	norme d'EDI-ouvert	norme qui respecte le modèle de référence pour l'EDI-ouvert.
35	ISO/IEC 14662:1997 (3.1.13)	Open-edi transaction	a business transaction that is in compliance with an Open-edi scenario.	transaction d'EDI-ouvert	transaction d'affaires qui respecte un scénario d'EDI-ouvert.
36	ISO/IEC 6523-1:1998 (3.1)	organization	<p>a unique framework of authority within which a person or persons act, or are designated to act, towards some purpose.</p> <p>NOTE: The kinds of organizations covered by this International Standard include the following examples:</p> <p>a) an organization incorporated under law;</p> <p>b) an unincorporated organization or activity providing goods and/or services including:</p>	organisation	<p>cadre unique d'autorité dans lequel une ou plusieurs personnes agissent ou sont désignées pour agir afin d'atteindre un certain but.</p> <p>NOTE: Les types d'organisations couverts par la présente partie de l'ISO/CEI 6523 comprennent par exemple les éléments suivants:</p> <p>a) organisations constituées suivant des formes juridiques prévues par la loi;</p> <p>b) autres organisations ou activités fournissant des biens et/ou des</p>

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			1) partnerships;		1) services, tels que sociétés en participation;
36		organization (cont'd)	2) social or other non-profit organizations or similar bodies in which ownership or control is vested in a group of individuals; 3) sole proprietorships 4) governmental bodies  c) groupings of the above types of organizations where there is a need to identify these in information interchange.	organisation (suite)	2) organismes sociaux ou autres à but non lucratif dans lesquels le droit de propriété ou le contrôle est dévolu à un groupe de personnes; 3) entreprises individuelles individuelles 4) administrations et organismes de l'état; c) regroupements des organisations des types ci-dessus, lorsqu'il est nécessaire de les identifier pour l'échange d'informations.
37	ISO/IEC 6523-1:1998 (3.2)	organization part	any department, service or other entity within an organization, which needs to be identified for information interchange.	partie d'organisation	n'importe quel département, service ou autre entité au sein d'une organisation, qu'il est nécessaire d'identifier pour l'échange d'informations.
38	ISO/IEC 15944-1 (3.1.38)	organization person	an organization part which has the properties of a person and thus is able to make commitments on behalf of that organization.  NOTE:  (a) an organization can have one or more organization persons. (b) an organization person is deemed to represent and act on behalf of the organization and to	personne d'organisation	partie d'une organisation qui a les propriétés d'une personne et est ainsi capable de prendre des engagements au nom de cette organisation  NOTE:  (a) une organisation peut avoir une ou plusieurs personnes d'organisation. (b) une personne d'organisation est considérée représenter une

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			<p>do so in a specified capacity.</p> <p>(c) an organization person can be a "natural person" such as an employee or officer of the organization.</p> <p>(d) an organization person can be a legal person, i.e., another organization.</p>		<p>organisation et agir en son nom, et ce à titre de capacité spécifiée.</p> <p>(c) une personne d'organisation peut être une «personne naturelle» telle qu'un employé ou un agent de l'organisation.</p> <p>(d) une personne d'organisation peut être une personne morale, par exemple une autre organisation.</p>
39	ISO/IEC 15944-1 (3.1.39)	persona	the set of data elements and their values by which a person wishes to be known and thus identified in a business transaction.	persona	série d'éléments de données et leurs valeurs selon lesquelles une personne désire être connue et ainsi identifiée dans une transaction d'affaire.
40	ISO/IEC 15944-1 (3.1.40)	person	<p>an entity, i.e., a natural or legal person, recognized by law as having legal rights and duties, able to make commitment(s), assume and fulfil resulting obligation(s), and able of being held accountable for its action(s).</p> <p>NOTE - Synonyms for "legal person" include "artificial person", "body corporate", etc., depending on the terminology used in competent jurisdictions.</p>	personne	<p>entité, par exemple une personne physique ou morale, reconnue par la loi comme ayant des droits et des devoirs, capable de faire des engagements, d'assumer et de remplir les obligations résultantes, et capable d'être tenue responsable de ses actions.</p> <p>NOTE – Parmi les synonymes de «personne morale», on trouve «personne juridique», «personne fictive», «corporation», etc., selon la terminologie utilisée par les juridictions compétentes.</p>
41	ISO/IEC 15944-1 (3.1.41)	person signature	a signature, i.e., a name representation, distinguishing mark or usual mark, which is created by and pertains to a person.	signature de personne	signature, par exemple la représentation d'un nom, marque de distinction ou marque habituelle, qui est

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
					créée par une personne et se rapporte à celle-ci.
42	ISO/IEC 15944-1 (3.1.42)	process	a series of actions or events taking place in a defined manner leading to the accomplishment of an expected result.	processus	série d'actions ou d'événements qui se produisent d'une manière définie et qui aboutissent à un résultat attendu.
43	ISO/IEC 15944-1 (3.1.43)	public administration	an entity, i.e., a person, which is an organization and has the added attribute of being authorized to act on behalf of a regulator.	administration public	entité, par exemple une personne, qui est une organisation et a l'attribut supplémentaire d'être autorisé à agir au nom d'une autorité de réglementation.
44	ISO/IEC 15944-1 (3.1.44)	recorded information	any information that is recorded on or in a medium irrespective of form, recording medium or technology utilized, and in a manner allowing for storage and retrieval.	information enregistrée	toute information enregistrée sur ou dans un support quelle que soit sa forme, le support de stockage ou la technologie utilisés, et de façon à permettre son stockage et son extraction.
44		recorded information (cont'd)	NOTES - (1) This is a generic definition and is independent of any ontology, (e.g., those of "facts" versus "data" versus "information" versus "intelligence" versus "knowledge", etc.).	information enregistrée (suite)	NOTES – (1) Cette définition est générique et indépendante de toute ontologie (par exemple le point de vue des «faits» par rapport aux «données», à «l'information», aux «renseignements», à la «connaissance», etc.
44		recorded information (cont'd)	(2) Through the use of the term "information," all attributes of this term are inherited in this definition.	information enregistrées (suite)	(2) Dans l'utilisation du terme «information», tous les attributs de ce terme sont hérités dans cette définition.
44		recorded information (cont'd)	(3) This definition covers: (a) any form of recorded information,	information enregistrée (suite)	(3) Cette définition couvre les éléments suivants :

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			<p>means of recording, and any medium on which information can be recorded; and,</p> <p>(b) all types of recorded information including all data types, instructions or software, databases, etc.</p>		<p>(a) toute forme d'information enregistrée, tout moyen d'enregistrement, et tout support sur lequel l'information peut être enregistrée; et,</p> <p>(b) tous types d'information enregistrée, y compris tous les types de données, instructions ou logiciels, bases de données, etc.</p>
45	ISO/IEC 15944-1 (3.1.45)	regulator	a person who has authority to prescribe external constraints which serve as principles, policies or rules governing or prescribing the behaviour of persons involved in a business transaction as well as the provisioning of goods and services interchanged.	autorité de réglementation	personne autorisée à prescrire des contraintes externes qui servent de principes, de politiques ou de règles régissant ou prescrivant le comportement des personnes concernées par une transaction d'affaire, ainsi que la fourniture des biens et des services échangés.
46	ISO/IEC 14662:1997 (4.1.2.1)	role	a specification which models an external intended behaviour (as allowed within a scenario) of an Open-edi Party.	rôle	spécification qui modélise le comportement externe attendu d'un partenaire d'EDI-ouvert dans le cadre permis par un scénario.
47	ISO/IEC 14662:1997 (4.1.2.3)	scenario attribute	the formal specification of information, relevant to an Open-edi scenario as a whole, which is neither specific to roles nor to information bundles.	attribut de scénario	spécification formelle d'une information d'intérêt pour la globalité d'un scénario d'EDI-ouvert, qui ne ressortit spécifiquement ni aux rôles ni aux faisceaux d'informations.
48	ISO/IEC 15944-1 (3.1.48)	seller	a person who aims to hand over voluntarily or in response to a demand or request, a good or service to another person and in return receives an acceptable equivalent value, usually in	vendeur	personne qui vise à fournir, volontairement ou suite à une demande, un bien ou un service à une autre personne, et qui reçoit en retour une valeur équivalente acceptable,



Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
			money, for the good or service provided.		habituellement en argent.
48	ISO/IEC 14662:1997 (4.1.2.2)	semantic component (SC)	<p>a unit of information unambiguously defined in the context of the business goal of the business transaction.</p> <p>A SC may be atomic or composed of other SCs.</p>	Composant sémantique (SC, Semantic Component)	<p>unité d'information définie de manière non ambiguë dans le contexte de l'objectif d'affaires de la transaction d'affaires.</p> <p>Un SC peut être atomique ou composé d'autres SC.</p>
50	This is the generic definition of "standards" of the ISO and IEC (and now found in the ISO/IEC JTC1 Directives, Part 1, Section 2.5:1998) {See also ISO/IEC Guide 2: 1996 (1.7)} << <a href="http://www.iso.ch/info/intro.html">http://www.iso.ch/info/intro.html</a> >>	standards	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.	norme	accords documentés contenant des spécifications techniques ou autres critères précis destinés à être utilisés systématiquement en tant que règles, lignes directrices ou définitions de caractéristiques pour assurer que des matériaux, produits, processus et services sont aptes à leur emploi.
51	ISO/IEC 15944-1 (3.1.51)	third party	<p>a person besides the two primarily concerned in a business transaction who is agent of neither and who fulfils a specified role or function as mutually agreed to by the two primary persons.</p> <p>NOTE - It is understood that more than two persons can at times be primary parties in a business transaction.</p>	tierce partie	<p>personne, autre que les deux personnes concernées en premier lieu par une transaction d'affaires et qui n'est l'agent d'aucune d'elles, et qui joue un rôle ou remplit une fonction spécifiés, selon l'accord mutuel des deux personnes concernées en premier lieu.</p> <p>NOTE – Il est entendu que plus de deux personnes peuvent parfois être les parties de première part dans une transaction d'affaires.</p>

Annex B - (Normative) Consolidated List of Terms and Definitions with Cultural Adaptability: English and French Language Equivalency

Identification		English Language		French Language	
Term ID	Source	Term	Definition	Term	Definition
(1)	(2)	(3)	(4)	(5)	(6)
52	ISO/IEC 15944-1 (3.1.52)	unambiguous	the level of certainty and explicitness required in the completeness of the semantics of the recorded information interchanged appropriate to the goal of a business transaction.	non-ambigu	niveau de certitude et d'explicité exigé dans la complétude de la sémantique d'une information enregistrée et échangée dans le but d'une transaction d'affaires.

**ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN  
(ELECTRONIC) BUSINESS TRANSACTIONS**

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**C.1 INTRODUCTION**

1. Annex C provides necessary informative and explanatory text for (1) the rules; and (2) the terms and definitions found in Section 5.1.4 of the Normative part of this standard. The rules stated here in bold are the same as those stated in Section 5.1.4 even though they have been re-numbered in this Annex (e.g. Rules 5 through 11 in Section 5.1.4, are found here as Rules C.1 through C.7).
2. This Annex, like the standard of which it is part, maximizes use of existing ISO and ISO/IEC standards. The source of the contents of this Annex is the need to respond in a pragmatic manner to existing real world issues of ability to identify and reference with an acceptable level of trust and certainty all the "entities" which comprise parts of a business transaction (e.g. persons, objects, events, processes, etc.). Added here are the challenges of doing the same or better in the dematerialized world of electronic business transactions (e.g. as in e-commerce, e-business, e-government, e-tailing, etc.)
3. This Annex is also meant to assist users of this standard who are either not familiar with Open-edi standards in general or whose main focus to date has been on Functional Services View(FSV) standards only.

**C.2 KEY ISSUES**

"Unambiguous" is an issue in business transactions<sup>1</sup> because states of ambiguity and uncertainty are not desired from commercial, legal, consumer and information technology perspectives. Issues of unambiguousness apply to all aspects of a business transaction and even more so to those which are EDI-based.

A key objective of this standard for business semantic descriptive techniques is to serve as a methodology and tool for the specification and unambiguous identification of Open-edi scenarios and scenario components as re-useable elements in support of common business transactions.

---

<sup>1</sup> The terms "business" and "business transaction" are utilized in this Annex as defined in the ISO/IEC 14662 Open-edi reference model. For these definitions of these terms, see above Section 3.1 Definitions.

## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

1 These and the related objectives of interoperability and re-useability of Open-edi scenarios and  
2 scenario components for business transactions require their unambiguous identification.  
3

### 5 C.3 BASIC ASSUMPTIONS: ENTITIES, OBJECTS AND PERSONS

#### 6 . 7 Rule C-1:

8  
9 **In global business transactions, common business practices and standards exist for the**  
10 **identification of entities comprising a business transaction including persons<sup>2</sup>. Existing**  
11 **standards shall be used to the greatest degree possible in the building and use of scenarios**  
12 **and scenario components<sup>3</sup>.**  
13

14  
15 Even prior to the use of computer-based technologies, business practices were developed and put  
16 into place which assisted in the unambiguous identification of goods being traded world-wide and for  
17 people when they travelled to and from various countries. Within existing business practices and  
18 information technology standards, there exist to the unambiguous identification of entities as  
19 material objects in the real world. It is assumed that these existing business practices, standards and  
20 techniques in support of common business functions and practices form a useful basis for finding  
21 solutions to the issues of unambiguous identification in electronic business transactions not only for  
22 goods and services but especially for “persons” in the dematerialized world of Open-edi.  
23

24 That is, in existing business transactions, and now even more so in electronic business transactions,  
25 there exists a need for the unambiguous identification of all entities which comprise a business  
26 transaction.  
27

28 Information technology standards exist for the unambiguous identification of entities as parts of the  
29 global information technology/telecommunications infrastructure.  
30

31 The term "entity" is defined in the international standard ISO/IEC 2382 "Information technology -  
32 Vocabulary" as:  
33

34 **"17.02.05** **entity:** *any concrete or abstract thing that exists, did exist, or might exist,*  
35 *including associations among things.*  
36

37 *Example:* *A person, object, event, idea, process, etc....*  
38

39 *NOTE - Please observe that an entity exists whether data about it are available or not."*  
40

41  
42 **"17.02.05** **entité:** *tout objet ou association d'objets, concret ou abstrait, existant, ayant*  
43 *existé ou pouvant exister.*

---

<sup>2</sup> See further Annexes D and E.

<sup>3</sup> Key standards for the global unambiguous identification of persons generally, and organizations and individuals specifically, are identified and summarized from a business transaction perspective in Annex D "Existing Standards for the Identification of Persons (Organizations and Individuals) in Business Transactions".

## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

1  
2       *Exemple:       Personne, événement, idée, processus, etc...*

3  
4       *NOTE -       A noter qu'une entité existe que l'on dispose de données à son sujet ou non."*

5  
6 Entities in a business transaction are not only "objects" but also "persons", "events", and  
7 "processes".

8  
9 The term "object" is defined in the international standard ISO 1087 as:

10  
11       **"2.1   object:***any part of the perceivable or conceivable world.*

12  
13       *NOTE - Objects may also be material, (e.g., engine) or immaterial, (e.g., magnetism).*

14  
15       **2.1   objet:** *élément de la réalité qui peut être perçu ou conçu.*

16  
17       *NOTE - Les objets peuvent être matériels (par exemple : moteur) ou immatériels (par*  
18 *exemple: magnétisme)".*

19  
20 Standards exist for the unambiguous identification of entities as material objects (or for things viewed  
21 as material objects). An example of assignment of unique and unambiguous identifiers to material  
22 objects are those represented in both visual and machine-readable form through ubiquitous use of  
23 bar code symbology. Another family of standards exist for the unambiguous identification of objects  
24 as locations (specified as physical and/or electronic address).<sup>4</sup>

25  
26 Unambiguous identification of persons (individuals or organizations)<sup>5</sup> in business transactions has  
27 always been peculiar issues to be addressed. These are exacerbated in the dematerialized world of  
28 Open-edi.

29  
30 In order to resolve the issue of "unambiguous identification" of entities in a business transaction, i.e.,  
31 persons, objects, processes, events, etc., the issue has been decomposed into its two key  
32 components:

- 33  
34       ➤ "unambiguous"; and,  
35  
36       ➤ "identification".  
37

### 38   **C.4 "UNAMBIGUOUS"**

#### 39   **Rule C-2:**

40  
41

---

<sup>4</sup>Here the ISO/IEC 9594 - Information Technology - Open System Interconnection (OSI) family of standards (also published by the ITU as X.500 Directory Services, X.509 Authentication Framework, etc., provide various approaches, service solutions, for the unambiguous identification of electronic objects with as primary focus the binding of these objects to locations via a unique electronic address.

<sup>5</sup>See further Section 5.2 "Rules Governing the Person Component" and Annex D.

## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

1 The degree to which ambiguity in (electronic) business transactions can be minimized is  
2 directly related to the ability to realize the opportunities in and potential of Open-edi as well as  
3 its widespread adoption and use.

4 The term "unambiguous" is defined as:

5  
6  
7 **"unambiguous:** *the level of certainty and explicitness required in the completeness of*  
8 *the semantics of the recorded information interchanged appropriate to the goal of the*  
9 *business transaction".*

10  
11  
12  
13 This definition of "unambiguous":

- 14  
15 ➤ applies equally to business transactions which are paper-based and Open-edi based;
- 16  
17 ➤ is a common requirement of all industry sectors;
- 18  
19 ➤ is medium neutral, i.e., applies irrespective of the combination of IT technologies or platforms  
20 utilized; and,
- 21  
22 ➤ applies to all three components of the business transaction, i.e., "person", "process", and  
23 "data".

### 24 [Explanatory Notes to this Definition:

- 25  
26  
27 (1) *The term "unambiguous" is not defined in Oxford, Webster, Random House, Larousse, etc.,*  
28 *dictionaries nor in international or national standards (including those pertaining to information*  
29 *technology, security services, etc.).*
- 30  
31 (2) *The dictionaries noted define the prefix "un-" as expressing negation which when affixed to an*  
32 *adjective such as "ambiguous" provides the purely negative form.*
- 33  
34 (3) *"Ambiguous" (or "ambiguity") is defined in a number of ways as "representing state(s) of*  
35 *uncertainty" capable of being understood or interpreted in two or more ways; "a lack of*  
36 *distinctiveness", "level of doubt", "not clearly defined", "insecure in its indications and thus not*  
37 *to be relied upon", "d'une situation dont le sens est incertain", etc.*
- 38  
39 (4) *Based on the results of these key dictionary definitions and other vocabulary tools in the*  
40 *context of "unambiguous identification" in (electronic) business transactions, the key*  
41 *properties of "unambiguous" are "the state of being absolutely certain", "a state not capable of*  
42 *being misinterpreted", "a state to be relied upon", etc.]*

### 43 44 **Rule C-3:**

45  
46  
47 **The nature and purpose of the business transaction determines the level of certainty required,**  
48 **i.e., trust, reliability, accountability, etc. in the identification of the elements in a business**  
49 **transaction, (e.g., person, product, service, etc.).**

50  
51 That is the goal, i.e., the nature and purpose, of a business transaction determine the level of  
52 certainty, i.e., unambiguity, in the identification of a person (as well as all the other entities in a  
53 business transaction such as the goods, services, financials, etc.).

## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

Approaching unambiguity in terms of levels of certainty allows to linkage into and harmonization with levels of assurance in authentication as part of security services and standards.

### C.5 "IDENTIFICATION"

The issue of "identification" is separate from and should not be confused with that of "authentication".<sup>6</sup> **Authentication assumes that identification has already occurred.** Standard definitions pertaining to authentication include:

*"**authenticity**: the property that ensures that the identity of a subject or resource is the one claimed. Authenticity applies to entities such as users, processes, systems and information".<sup>7</sup>*

*"**entity authentication**: the corroboration that the entity is the one claimed"<sup>8</sup>*

*"**authentication**: the provisioning of assurance of the claimed identity of an entity".<sup>9</sup>*

*"**distinguishing identifier**: data that unambiguously distinguishes an entity in the authentication process".<sup>10</sup>*

#### Rule C-4:

**The process of authentication presupposes the existence of an entity and the completion of the application of a rule-based identification process resulting in the assignment of an "identifier", i.e., the authentication process is a corroboration of an identification process.**

The term "identification" is not defined in international standards. The term "(entity) identification" is defined:

*"**(entity) identification**: a method of using one or more attributes whose attribute values uniquely identify each occurrence of a specified entity".<sup>11</sup>*

---

<sup>6</sup>In electronic business transactions, two priority questions often asked; namely: (1) "How do I know who I am dealing with?"; and, (2) "How do I know you are who you say you are?". The first question pertains to "identification". The second question is one of "authentication". All too often one either (1) fails to distinguish between "identification" and "authentication", and/or (2) starts with authentication and security services assuming that "unambiguous identification" has already occurred.

<sup>7</sup>ISO/IEC TR 13335-1:1996 - Information technology - Guidelines for the management of IT Security - Part 1 Concepts.

<sup>8</sup>ISO/IEC 9798-1:1997 - Information technology - Security Techniques - Entity authentication mechanisms - Part 1: General.

<sup>9</sup>ISO/IEC 10181-2:1996 Information technology - Open Systems Interconnection - Security frameworks for open systems: Authentication framework.

<sup>10</sup>Also taken from ISO/IEC 10181-2.

## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

1  
2 Identification consists of a process using one or more attributes, i.e., data elements, whose value or  
3 combination of values together uniquely identify each occurrence for a "specified entity"

4  
5 The Oxford and Webster dictionaries have definitions for "identification" as both:

- 6  
7 ➤ a "process": the action or process of determining what a thing is; to recognize or establish  
8 as being a particular person or thing; the action of identifying.  
9  
10 ➤ a "state": the recognition of a thing as being what it is.

11  
12 Further, both the Oxford and Webster dictionaries define "identity" as:

- 13  
14 ➤ the quality or condition of being the same in substance, composition, nature, properties or in  
15 particular qualities under consideration (Oxford);  
16  
17 ➤ the state or fact of remaining the same one, under varying aspects or conditions (Webster).

18  
19 If "identification" can be assumed to be a process, one key result of such a process is the creation of  
20 an "identifier". Several international standard definitions exist for "identifier". These include:

21  
22 ISO 1087-2 "*Terminology - Vocabulary*" which defined:

23  
24 ***"identifier:*** *one or more characteristics used to identify or name a data category and*  
25 *possibly to indicate certain properties of that data category".*

26  
27 [Note: ISO/IEC 2382-15 has a similar definition for "identifier". {See 15.01.03}]

28  
29 ISO/IEC 9594 - Information technology - Open Systems Interconnection (also published by the ITU  
30 X.500 Directory Services) has the concept/term as "distinguishing identifier" which is defined (and  
31 also cited in ISO/IEC 10181-2) as:

32  
33 ***"distinguishing identifier:*** *data that unambiguously distinguishes an entity in the*  
34 *authentication process.*

35  
36 The response to the question "What is meant by identification?" can be summarized as follows:

- 37  
38 (1) there are two basic concepts/meanings imbedded; namely:  
39  
40 (a) identification as a process; and,  
41 (b) identification as a state.  
42  
43 (2) identification involves the use of one or more attributes, i.e., data elements, the values of  
44 which (or combination of values) uniquely identify the occurrence or existence of a specified  
45 entity.  
46  
47 (3) identification as the quality or condition of being the same is dependent on what is "under  
48 consideration", i.e., the context, purpose and or use of the identification in a business process.  
49 Identification is therefore related to the goal of the business transaction within which it is to be  
50 utilized.

---

<sup>11</sup>ISO/IEC 2382-17 Information Technology Vocabulary - Databases



## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

1  
2 (4) where identification is a process undertaken by an organization, a key result is the  
3 assignment/issuance of an (unique) identifier by that organization to the particular instance or  
4 occurrence of an object or entity within the process utilized.<sup>12</sup>

5  
6 (5) the same single world object or entity may well have more than one identifier assigned to it  
7 depending on the context(s) and identification process(es) of which it can be a part.<sup>13</sup>

8  
9 Finally, "identification" both as a process or a state is related to the agreed upon goal of the business  
10 in general and within such a context that of each business transaction in particular. As such, there  
11 are degrees or levels of detail and specificity to identification. For example, a business transaction in  
12 electronic commerce involving a value of \$500 or less via debit/credit card, may well require a level of  
13 certainty of information for identification which is less than that for a similar business transaction but  
14 now one with a value of over \$10,000. The same holds true for electronic administration where the  
15 value of the assets involved may be low or high even though these values are of a non-monetary  
16 nature.

17  
18  
19 Taking into account:

- 20  
21 (1) the ISO/IEC 8382-17 definition of "(entity) identification";  
22 (2) the various ISO/IEC definitions pertaining to "identifier";  
23 (3) the various ISO/IEC definitions pertaining to authentication;  
24 (4) the Oxford and Webster dictionaries' definitions for "identification" and "identity"; and,  
25 (5) placing these in the context of (electronic) business transactions, the CD 15944-1 definition  
26 for "identification" is:

27  
28 **"Identification:** *a rule-based process, explicitly stated, involving the use of one or more*  
29 *attributes, i.e., data elements, whose value (or combination of values) are used to identify*  
30 *uniquely the occurrence or existence of a specified entity".<sup>14</sup>*

### 31 32 33 Notes:

- 34  
35 1. An identification schema which is part of a standard normally has a Registration Authority.

---

<sup>12</sup>Organizations responsible for maintaining an identification process and associated code scheme for the issuance of identifiers and registering the same are commonly known as "Registration Authorities" (RAs).

<sup>13</sup> See further above Section 5.2.2 and Annex E.3.1 "Personae and Identification"

<sup>14</sup> This definition takes into account and supports two key possibilities or options with respect to identification; namely:

- Option 1: that a specified entity (or object), i.e., its occurrence or instantiation, will have an identification which is unique and unchanging, i.e., a single permanent unique identifier for an instantiated real world object; and/or,
- Option 2: that each occurrence of a specified entity, (e.g., a real world person) {See further below Section 5.2.4}, can have multiple identifications and resulting identifiers related/relevant to the (explicitly) stated context (or purpose), i.e., business goal.

## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

- 1  
2 2. Standards exist for the registration of identification schemas in specified domains. Key  
3 examples are provided in Annex D "Existing Standards for the Identification of Persons in  
4 Business Transactions (Organizations and Individuals).  
5  
6  
7

### 8 9 **Rule C-5:**

10  
11 **It is assumed that one key result of any identification process for an entity relevant to or used**  
12 **to support a business transaction is the assignment of a unique, i.e., distinguishing, identifier.**  
13

14 In view of the fact that multiple different "standard" definitions exist for the term "identifier", each with  
15 their own context and purpose, the term "identifier(business transaction)" and definition is needed  
16 which incorporates relevant aspects of these other standards and places them in the context of a  
17 business transaction.  
18

19 The term "identifier(business transaction)" is defined as:  
20

21 ***"identifier (business transaction):** an unambiguous and a linguistically neutral value,*  
22 *resulting from the application of a rule-based identification process. Identifiers must be unique*  
23 *within the identification scheme of the issuing authority.*  
24

#### 25 **NOTES -**

26  
27 *NOTE 1 - Although an identifier is a single value, this single value may be composed of*  
28 *one or more atomic components. For example, the last number or terminal digit can be a*  
29 *"check" digit, or intelligence may be built into the identifier according to the business rules*  
30 *governing the identification process and the assignment of identifiers by the issuing*  
31 *organization.*  
32

33 *NOTE 2 - An identifier as a single value can include a combination of the identifier of the*  
34 *issuing organization and the identification number assigned by that issuing organization, i.e.,*  
35 *standards such as ISO/IEC 6523, 7501, 7812, etc., are based on this principle.*  
36

37 *NOTE 3 - Whether an identifier used in a business transaction has built-in intelligence or*  
38 *not is determined by the agreed upon rule base of the issuing authority. Many existing*  
39 *international (and national) standards exist resulting in what are considered "intelligent*  
40 *identifiers". Organizations which wish to map such intelligent identifiers to "non-intelligent*  
41 *identifiers" in their internal applications can use ISO/IEC TR 15452 - "Information Technology*  
42 *-Specification of data value domains".*  
43

### 44 **C.6 IDENTIFICATION VERSUS DESIGNATION (OR "IDENTIFIERS" VERSUS "NAMES")**

45 In global (electronic) business transactions, the same real object is recognized and known by multiple  
46 names depending on the language utilized at the human interface. Quoting the ISO/IEC JTC1 BT-  
47 EC Report:  
48

## ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS

1        *"Human beings like to name "objects". But the approach of using "names" is not very IT*  
2        *friendly, cost-efficient or time efficient".<sup>15</sup>*

3  
4        *"Terms and names found in standards (as discussed in Section 6.1 and 6.2 above) are not*  
5        *linguistically neutral, nor are they IT-processable. In Electronic Commerce, there are specific*  
6        *local requirements which need to be identified.... There is a need to cast international*  
7        *standards in a manner which on the one hand supports unique, unambiguous and*  
8        *linguistically neutral identification and referencing of objects and on the other hand, supports*  
9        *the development of designation of such objects by terms and names in support of localization*  
10       *and multilingual requirements...."<sup>16</sup>*

11  
12       The international standard ISO 1087 - Terminology - Vocabulary defines "name" as:

13  
14        *"name: designation of an object by a linguistic expression".*

15  
16        *"nom: désignation d'un objet par une unité linguistique".*

17  
18       Consequently, any "object" will have:

- 19  
20       (1)    as many, i.e., multiple names, as there exist linguistic expressions used to designate<sup>17</sup> it;
- 21  
22       (2)    in global electronic business transactions, many of the "names" used to designate the  
23        "object" being traded or a service being provided will be in the form of linguistic expressions  
24        which use non Latin-1 Characters, (e.g., Arabic, Chinese, Thai, Hebrew, Japanese, etc., all of  
25        which can now be supported via ISO/IEC 10646 a.k.a. Unicode); and,
- 26  
27       (3)    similarly persons (natural or legal) will have more than "one name" including that in their local  
28        language and Latin-1 equivalents of the same.

### 30       **Rule C-6:**

31  
32       **"Names" are not that useful for unambiguous identification nor can they serve as identifiers**  
33       **for elements in a business transaction. "Name(s)" shall be considered linguistic**  
34       **expression(s) associated with an "identifier".<sup>18</sup>**

35  
36       Unfortunately, in the world of information technology and within a particular application or information  
37       system, a "name" (or "name space") of entity, (e.g., person<sup>19</sup>, object, process, event, etc.), is often

---

<sup>15</sup>Quote taken from the JTC1/BT-EC Report to JTC1: Work on Electronic Commerce Standardization to be initiated, 1998-05-04, p. 22 (registered as ISO/IEC JTC1 document number N5296).

<sup>16</sup>*Ibid*, p.40, (in Section 7.4.5 Localization).

<sup>17</sup>ISO 1087 defines "designation" as:

*"designation:           any representation of a concept".*

*"designation:        toute représentation d'une notion".*

<sup>18</sup>One could consider "names" to be "aliases" associated with an "identifier". See further Annex E.3.

<sup>19</sup> On "identifiers" versus "names" for persons, see further Section 5.2.2 in the normative part of the standard and Annex E "Business Transaction Model: Person Component.

## **ANNEX C (INFORMATIVE) - UNAMBIGUOUS IDENTIFICATION OF ENTITIES IN (ELECTRONIC) BUSINESS TRANSACTIONS**

1 used as a synonym for "identifier". This causes major problems in global interoperability from both a  
2 business operational view (BOV) and functional services view (FSV) perspective.

3

4

### **Rule C.7:**

5

6

**Open-edi scenarios, scenario attributes, roles, information bundles, semantic components  
7 and other elements pertaining to the same are to be identified through unique, unambiguous  
8 and linguistically neutral identifiers. With such identifiers may be associated one or more  
9 names as needed for market, legal, localization and/or multilingual requirements.**

10

**Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations**

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43	<b><u>Note on Compliance with Privacy/Data Protection, Consumer Policy, etc.</u></b>	
44		
45	It is assumed in this standard and throughout this Annex that the collection, storage, use and	
46	interchange of recorded information based on these standards is <u>done in compliance with</u>	
47	<u>applicable laws</u> and pursuant regulations particularly those which pertain to privacy/data	
48	protection requirements, consumer policy, other confidentiality and security services	
49	requirements, access and use policies, etc. This applies irrespective of whether a jurisdiction	

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1 takes a regulatory or self-regulatory approach to compliance with such requirements.  
2  
3  
4  
5

### 6 **D.0 INTRODUCTION** 7

- 8 1. This Annex is provides informative and explanatory text in support of (1) the rules; (2) the  
9 terms and definitions found in Sections 1 through 5 of the Normative part of this standard; (3)  
10 the Open-edi Reference Model (see below D.1 "purpose"). The business rules, as stated  
11 here in bold, are the same as those stated in these sections even though they have been re-  
12 numbered in this Annex. Some rules have been reworded to fit the context and merge aspect  
13 of the rules stated in the above noted Normative Parts. Those which are unique to this Annex  
14 D are indicated with an "\*".  
15
- 16 2. This Annex is also meant to assist users of this standard who are either not familiar with  
17 Open-edi standards in general or whose main focus to date has been on Functional Services  
18 View( FSV) only.  
19
- 20 3. The focus of this Annex D is to support he "person component", i.e. the need for  
21 unambiguous  
22 identification of persons making commitments in an electronic business transaction, in  
23 support of this standard and Open-edi.  
24
- 25 4. This Annex provides additional required information with respect to existing standards which  
26 form part of the Open-edi standards Framework. They are to be used to support the person  
27 component" which is one of the three fundamental components of the Business Transaction  
28 Model".  
29
- 30 5. The primary purpose of the Business Transaction Model is to serve as a common high level  
31 and non-technical view of business transactions. The basic assumption of this Business  
32 Transaction Model is that this common view is derived from (classical) commerce models  
33 with commonly understood (basic) processes as well as with common terms, definitions and  
34 perspectives shared by industry, government (especially policy makers), standardizers,  
35 consumers, IT specialists and other interested parties.  
36

37 One key underlying assumption of the Business Transaction Model is that in business  
38 transactions, apart from the specific goods or services being provided, there are three  
39 essential components in any business transaction; namely:

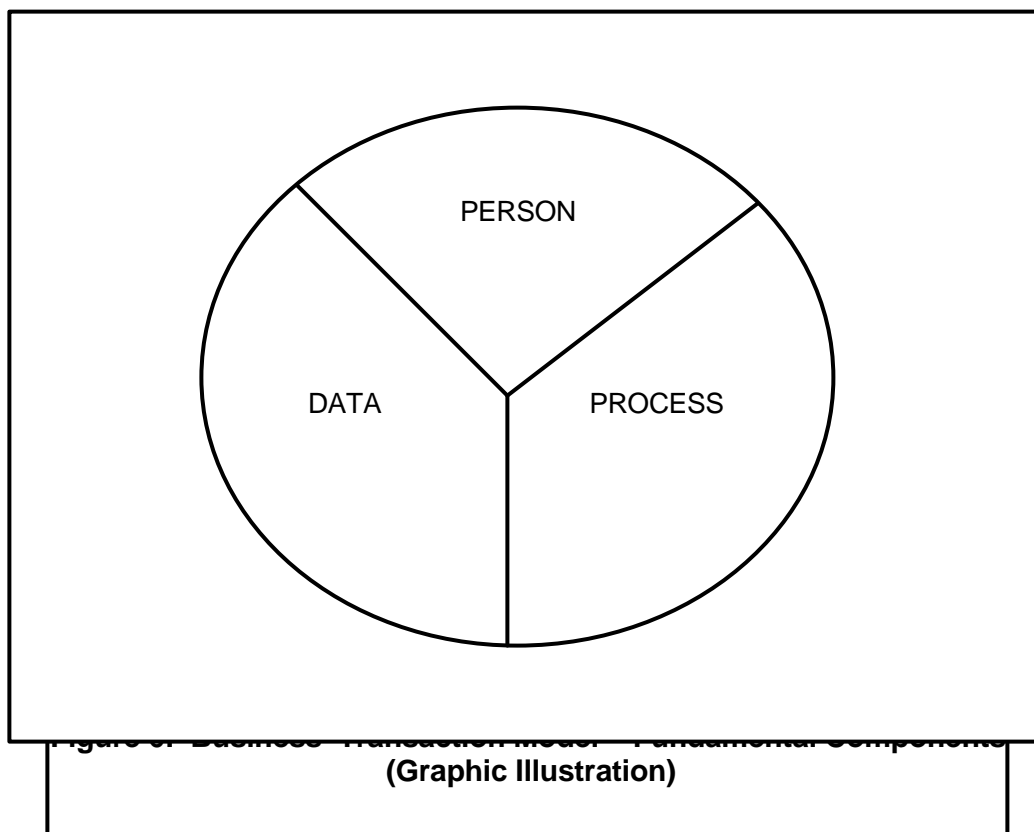
- 40 ➤ persons as subjects or parties (at least a buyer and a seller);
- 41
- 42 ➤ business processes; and,
- 43
- 44 ➤ the information or data exchanged.  
45  
46  
47

48 These three fundamental components are presented graphically in Figure D.1 (as taken from  
49 Section 5.1.5).

**Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations**

1

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations



### D.1 PURPOSE

34  
35  
36 The first paragraph of Section 1.0 Scope of ISO/IEC 14662 **Open-edi Reference Model** (1998)  
37 states:

38  
39 *"This International Standard specifies the framework for coordinating the integration of*  
40 *existing standards and the development of future standards for the inter-working of*  
41 *organizations via Open-edi and provides a reference for such standards".*  
42

43 The purpose of this Annex D is:

- 44  
45 (1) to identify and summarize some key existing standards that support unambiguous  
46 identification of persons in business transactions in particular areas relevant to Open-edi. It  
47 is the intention that these standards be utilized in the development of scenarios and  
48 scenario components requiring the unambiguous identification of persons making  
49 business decisions and commitments; and,  
50  
51 (2) to provide a summary of several recurring issues and policy considerations in the  
52 unambiguous identification of persons especially as individuals in electronic business



## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1 transactions arising from Open-edi related standards development work; namely:

- 2
- 3 ➤ anonymity;
- 4 ➤ privacy/data protection;
- 5 ➤ what is an "individual";
- 6 ➤ role of a "natural" person in a business transaction;
- 7 ➤ single global unique "identifiers" for individuals.
- 8

9 The purpose here is to assist users of this standard in dealing with these policy and legal  
10 considerations when building re-useable scenarios and scenario components.

### 11

### 12

### 13

### 14 **D.2 APPROACH AND OVERVIEW**

15  
16 "Unambiguous identification" of persons, i.e., as entities, able to make the commitments required  
17 for a business transaction, is one of the most important issues affecting Open-edi and the need  
18 for standards.

19  
20 International standards exist which focus on specific aspects of naming, addressing and  
21 identification of persons (individual and organizations).

22  
23 The purpose of this Annex D is to provide information on key international standards already to  
24 serve as examples of existing standards which focus on unambiguous identification of persons  
25 independent of "Open-edi" but already in use in commerce and administration world-wide. These  
26 standards should be considered "Open-edi related standards".

27  
28 [Note: These examples are chosen apart from the international standard ISO/IEC 9594/ X.500  
29 Directory Services which focuses on binding between objects, i.e., not "persons", and  
30 their locations defined as electronic "addresses" in this standard. Further the focus of this  
31 X.400/X.500 series of standards is on information exchange and not commitment  
32 exchange. {See further Annex C "Unambiguous Identification of Entities in a Business  
33 Transaction"}.

34  
35 Unless stated otherwise use of the term "person" in this Annex D covers both "organization" and  
36 "individuals". { See further Section 5.2.2}

### 37

### 38

### 39 **D.3 EXISTING STANDARDS FOR THE UNAMBIGUOUS IDENTIFICATION OF**

### 40 **PERSONS**

#### 41

#### 42 **D.3.1 INTRODUCTION**

43  
44 International standards exist and are in use world-wide which ensure in the unambiguous  
45 identification of persons. These should be used as part of the Open-edi standards framework.  
46 Although developed for specific purposes and prior to the advent of the Internet, the global digital  
47 economy, e-commerce, e-business, etc., these standards contain specifications for the "WHATs"  
48 as well as approaches/solutions for some of the "HoWs" which can (and should) serve as key  
49 (generic) building blocks for the Open-edi standards framework.

## **Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations**

1  
2 In the sections which follow are presented and discussed examples of international standards  
3 which support the unambiguous identification of:

- 4  
5 (1) persons (in general covering both individuals and organizations);  
6 (2) organizations; and,  
7 (3) individuals.  
8  
9

### 10 11 D.3.2 KEY EXISTING STANDARDS

#### 12 13 **D.3.2.1 Specific Standards Already Identified**

##### 14 15 16 **Rule D-1\*:**

17  
18 **Multiple international standards exist and are in use in business transactions world-wide**  
19 **for the unambiguous identification of persons. These shall be used as part of the Open-**  
20 **edi standards framework.**

21  
22 In the work undertaken in the area of "unambiguous identification" of persons, the following  
23 international standards have already been identified as being of particular relevance, i.e., those of  
24 the ISO/IEC. [These standards are presented here in numeric order]. There are likely to be more,  
25 (e.g., those pertaining to Directory services, procedures for Registration Authorities, industry  
26 sector specific standards, etc.).  
27

28 ISO/IEC 6523-1:1999, Information Technology - Structure for the identification of organizations  
29 and organization parts - Part 1 : Identification of organization identification schemes  
30

31 ISO/IEC 6523-2:1999, Information Technology - Structure for the identification of organizations  
32 and organization parts - Part 2: Registration of organizations identification schemes.  
33

34 ISO/IEC 7501-1:1993 Identification cards -- Machine readable travel documents - Part 1: Machine  
35 readable passport  
36

37 ISO/IEC 7501-2:1995 Identification cards - Machine readable travel documents - Part 2: Machine  
38 readable visa  
39

40 ISO/IEC 7501-3:1995 Information technology -- Identification cards -- Machine readable travel  
41 documents: Part 3: Size-1 and size-2  
42

43 ISO/IEC 7812-1:1993 Identification cards - Identification of issuers - Part 1: Numbering system  
44

45 ISO/IEC 7812-2:1993 Identification cards - Identification of issuers - Part 2: Application and  
46 registration procedures  
47

48 ISO 8583:1993 Financial transaction card originated messages - Interchange message  
49 specifications

## **Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations**

1  
2 ISO/IEC 9594.1-9:1995 Information technology - Open Systems Interconnection - The Directory.  
3 (This nine part standard was developed in collaboration with the ITU-T with the identical text  
4 published as ITU-T Recommendation X.500)

5  
6 ISO/IEC 9798-1:1997 Information technology - Security techniques - Entity authentication - Part 1:  
7 General

8  
9 ISO/IEC 10181-1: 1996 Information technology - Open Systems Interconnection - Security  
10 frameworks for open systems: Overview

11  
12 ISO/IEC 10181-2: 1996 Information technology - Open Systems Interconnection - Security  
13 frameworks for open systems: Authentication framework

14  
15 ISO/IEC 11179-3:1994 Information technology -- Specification and standardization of data  
16 elements -- Part 3: Basic attributes of data elements

17  
18 ISO/IEC 11179-4:1995 Information technology -- Specification and standardization of data  
19 elements -- Part 4: Rules and guidelines for the formulation of data definitions

20  
21 ISO/IEC 11179-5 Information technology -- Specification and standardization of data elements --  
22 Part 5: Naming and Identification principles for data elements

23  
24 ISO/IEC TR 13335-1:1996 Information technology -- Guidelines for the management of IT Security  
25 - Part 1: Concepts and models for IT security

### **D.3.2.2 (Global) Unambiguous Identification of "Organizations" - ISO/IEC 6523**

#### **Rule D-2\*:**

29  
30  
31  
32 **A widely used international standard exists for the (global) unambiguous identification of**  
33 **organizations (ISO/IEC 6523). This standard should be used as part of the Open-edi**  
34 **standards framework.**

35  
36 This section focuses on summarizing the key aspects of one widely used international standard  
37 as a building block for resolving the issue of unambiguous identification of "organizations"<sup>1</sup> in  
38 Open-edi. The formal title of the standard is:

39  
40 *ISO/IEC 6523-1, Information Technology - Structure for the identification of organizations and*  
41 *organization parts Part 1 : Identification of organization identification schemes*

42  
43 *ISO/IEC 6523-2, Information Technology - Structure for the identification of organizations and*

---

<sup>1</sup>See section 5.2 "Rules governing the Person Component" for definition of "organization" and "organization part", how ISO/IEC 6523 is utilized in the standard in the context of information exchange and why the added definition of "organization person" is needed to cover the commitment exchange aspects of a business transaction.

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1 organization parts Part 2: Registration of organizations identification schemes.

2  
3 Originally developed in 1984, this standard in Part 1 "specifies a structure for globally and  
4 unambiguously identifying organizations, and parts thereof, for the purpose of information  
5 interchange".

6  
7 Part 2 "specifies the procedure for registration of organization identification schemes, and the  
8 requirements of International Code Designator Values, to designated identification schemes".

9  
10 ISO/IEC 6523 has proved very useful and has recently been revised, updated and enhanced  
11 (1997-98). The revised final version was successfully balloted and was been published in 1998.

12  
13 The British Standards Institute (BSI) is the ISO/IEC Registration Authority for this standard.

14  
15 **ISO/IEC 6523 supports a structured and data element-based approach and is based on**  
16 **the following assumptions/ rules:**

- 17
- 18 ➤ there exist and will continue to exist (and co-exist), multiple systems for the unambiguous  
19 identification of organizations, i.e., organization identification schemata. Different  
20 schemata exist to support different goals;
  - 21
  - 22 ➤ each organization schema is managed by an Issuing Organization (IO). The standard  
23 requires the issuing organization to provide precise criteria with respect to the rules  
24 governing the assignment of identifiers to each of the participants in a schema as well as  
25 criteria specifying who can or cannot be a member of that schema;
  - 26
  - 27 ➤ each particular organization identification schema of an Issuing Organization is assigned a  
28 unique identifier under ISO/IEC 6523 by the BSI. This schema identifier is known as an  
29 International Code Designator (ICD);
  - 30
  - 31 ➤ within each identification scheme, a unique identifier is assigned by the Issuing  
32 Organization to each (member) organization. This identifier is unique within that particular  
33 schema, and is known as an "organization identifier";
  - 34
  - 35 ➤ the combination of the ICD plus "organization identifier" supports the global and  
36 unambiguous identification of one organization among all other organizations;
  - 37
  - 38 ➤ the same real world organization can be part of one or more ISO 6523-based identification  
39 schemata (and most often are). Thus the same real world organization will have one or  
40 more identifiers all of which are unique and unambiguous (globally);
  - 41
  - 42 ➤ within each organization there may be departments, a service, information systems, or  
43 other entities, which need to be identified for information interchange, i.e., as "organization  
44 part(s)";<sup>2</sup>
  - 45

---

<sup>2</sup>See further Section 5.2. "Rules Governing the Process Component" (and in particular Section 5.2.5) for the definition of "Organization Part" and how it is utilized in this standard.

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

- each organization part within an organization may need to be assigned an identifier, i.e., organization part identifier (OPI); and,
- at times it may be desired or required to specify the source used for the organization part identifier (OPIS).

A graphic illustration, i.e. Figure D.2, of the four data elements comprising the base structure of ISO/IEC 6523-based identifiers is as follows:

**Figure D.2: Base Structure of Component Parts of an ISO/IEC 6523 based Identifier**

1	2	3	4
ICD	Organization Identifier	Organization Part Identifier	OPI Source

(The attributes of each data element and its use are specified in Part 1 of ISO/IEC 6523).

The key here is the ICD which is an integer value in the range of 1 to 9999. According to the rules of ISO/IEC 6523, each, ICD value allocated to an organization identification scheme shall be unique and once assigned shall not be re-allocated. ICD numbers are allocated sequentially. The highest current number is "0130" (There are some gaps).

Part 2 of ISO/IEC 6523 specifies the procedure and information, i.e., the process and data, required for the registration of organization schemes by issuing organizations (IOs), i.e. those responsible for the operation of an organization identification scheme associated with an ICD.

The registration authority for ISO/IEC 6523 is the British Standards Institute (BSI) which receives and processes applications for additions and amendments to the register of organization identification schemes, assign the ICD values, and maintain the register.

The widespread adoption and use, globally, of ISO/IEC 6523 is demonstrated in Figure D.3 through ICD's already allocated which include:

**Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations**

1  
2  
3  
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6

**Figure D.3: Sample of ISO/IEC 6523 allocated ICDs with associated Name of Coding System and Coverage Information**

<b>ICD</b>	<b>Name of Coding System</b>	<b>Coverage</b>
0002	System Information et Repertoire des Enterprises et des Etablissements: SIRENE	Enterprises (individual enterprises or companies) in the field of agriculture, industry, trade services. Associations, authorities, regional authorities and public establishments active in France (over 3,300,000 registrations). The only "official" number used between authorities and organizations when dealing with data interchange on organizations.
0005	USA FED GOV OSI Network	Any organization that participates in GOSNET which encompasses governmental offices throughout the world. The ICD code forms the initial part of the OSI network addressing and naming tree
0029	The All-Union Classifier of Enterprises and Organizations	All organizations in the USSR/Russia
0030	AT&T/OSI Network	Any organization in an AT&T/OSI network environment. This program encompasses organizations throughout the world
0034	Reuters Open Addressing Standard	Reuters and associated companies, their customers and suppliers
0037	LY-tunnus	All organizations in Finland including juridical persons and associations
0038	Australian GOSIP Network	Australian government departments at federal, state, local levels, etc.
0041	Citicorp Global Information Network	Any company or organization that participates in a Citicorp Global Information Network environment (world-wide)
0049	Auckland Area Health	Health related organizations in New Zealand
0052	Society of Motion Picture and Television Engineers (SMPTE)	Any organization which operates within or distributes to establishing SMPTE practices
0060	Data Universal Numbering System (D-U-N-S)	Dun and Bradstreet. The DUNS numbers have world-wide recognition as a means of identifying businesses and institutions
0064	UTC: Uniform Transport Code	The shipping and transport industry. The code identifies an individual transport or handling unity, (e.g., pallet, parcel), for reasons of tracking or tracing.
0069	SITA Object Identifier	Airlines, air manufacturers, etc., i.e., users of SITA Worldwide Telecommunications and Information Services
0073	ICD Formatted ATM Address	Private ATM networks using Newbridge terminal switching equipment
0078	Mitel terminal or switching equipment	Networks using Mitel terminal or switching equipment

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ICD	Name of Coding System	Coverage
0080	UK National Health Service Scheme	Scope = "legal entities" of the UK Health care community, GPs, GDP, NHS Hospital Trusts, Health Authorities, Laboratories, Blood Transfusion, etc.
0085	Swiss Chambers of Commerce Schema	Organizations (legal persons, partnerships, sole proprietorships and their branch offices) registered in the business register or organizations (legal or natural) not registered in the business register
0088	EAN Location Code	European Article Numbering system. Over 300,000 participants (mainly manufacturers) in over 66 countries
0090	Internet IP Addressing ISO 6523 ICD Encoding	IANA - any organization in the Internet environment
0093	Revenue Canada Business Number Registration	Unique identification of private and public sector entities, i.e., registrants, government programs and operating entity(ies). Used for GST. {See Treasury Board Information Standard (TBITS)-30 - <u>Business Number</u> << <a href="http://www.tbs-sct.gc.ca/its_nit/SIGS/ITSN122/30C_e.html">http://www.tbs-sct.gc.ca/its_nit/SIGS/ITSN122/30C_e.html</a> }
0111	Object Identifiers	IEEE including RAC (Registration authority committee and other sub-entities for SMPTE 298M Universal Labels for Unique Identification of Digital Data, an ISO/ITU-based identifier hierarchy registration system
0117	STENTOR - ICD Coding System	Coding system used within Stentor's ATM network to identify ICD NASP end points. ICD Code used to form Initial Domain part of the OSI Network Address as specified in Annex A of ISO/IEC 8348:1993
0126	GTE/OSI Network	Any organizations in a GTE/OSI network environment throughout the world.
0128	BNCR (Telekurs Banken Clearing Number)	Swiss banking institutions (sponsored through SWIFT - Society for Worldwide Interbank Financial Telecommunications)

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9

The examples<sup>3</sup> of ISO 6523 identification schemes, presented above, demonstrate that a standard exists which is already used extensively world-wide in commerce (and administration). **This standard already supports many Open-edi applications.** The above examples represent:

- country-based schemes of both a general and particular nature, (e.g., SIRENE schema of France, ICD = 0002, the LY-tunnus schemata of Finland ICD= 0037, the Canadian

---

<sup>3</sup>The examples are taken from ISO/IEC 6523 Data interchange - Structure for the identification of organizations. List B: The numerical list of all ICDs that have been issued. (July, 1999). The assistance of Doug Langlotz, Standards Council of Canada (SCC), in obtaining this updated List B is appreciated.

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1 Business Number (BN) Registration schema, ICD = 0093, etc.);

- 2
- 3 ➤ telecommunication sector use both with respect to "switching" equipment and  
4 communication services;
- 5
- 6 ➤ the IP addresses utilized in the Internet, i.e., through IANA; {See under ICD = 0090}
- 7
- 8 ➤ a schema in support of government-based open system interconnect programs (GOSIP)  
9 in various countries as well as departments of Defence;
- 10
- 11 ➤ identification of articles, i.e., manufacturer ID + product number, being traded world-wide  
12 as well as their units of packaging, (e.g., pallets, parcels, containers), visually recognized  
13 through the ubiquitous use of bar codes, (e.g., ICD=0088);
- 14
- 15 ➤ key industry sectors such as banking, security and related services, health, airlines,  
16 aeronautics, automobile, entertainment/motion pictures, etc.; and,
- 17
- 18 ➤ major enterprises providing goods and services on a world-wide basis.
- 19

20 International standards, mechanisms and procedures thus exist for the unambiguous  
21 identification of organizations not only world-wide but also in support of various roles that an  
22 organization can play, i.e., with respect to a particular role, it will utilize the applicable (registered)  
23 identification scheme and the associated unique identifier. In 1995-1996, the European  
24 Commission and Industry Canada together took a lead role in resolving the issue of  
25 "unambiguous and unique identification of organizations world-wide" required for EDI.

26

27 The approach taken was to resolve the issue through enhancing the procedures and criteria  
28 associated with the applicable international standard ISO/IEC 6532. This was accomplished as  
29 part of the EDIRA project (EDI Registration Authorities) as a component of the TRI-EDI initiative  
30 (Telecommunication Requirements for International EDI). The EDIRA project successfully  
31 addressed the need for harmonization and interoperability between on the one hand ISO/IEC  
32 6532-based identification of organizations including X.500, and on the other, different structures  
33 and approaches in use at that time in electronic data interchange (EDI) based on use of ANSI X12  
34 standards and UN/EDIFACT. As part of this project, Revenue Canada was successfully  
35 registered internationally as the Issuing Organization (IO) for the Business Number (BN)  
36 identification scheme, a.k.a. TBITS-30 Business Number.<sup>4</sup>

37

---

<sup>4</sup>The results of TRI-EDI II projects are freely available, i.e., the results have been published on CD-ROM with copies deposited in key public libraries world-wide. The bibliographic citation is:

TRI-EDI II. Telecommunications Requirements for International EDI = Interconnexion des systèmes internationaux d'échange de données informatisés (ISI-EDI). [Interactive Media]/compiling editor M. Janice Pereira; contributors Industry Canada, European Commission, Jake V.Th. Knoppers, Andrée Lenoir, Michel Peereman, et al. Ottawa: Industry Canada, 1996, 1 computer optical disk, 4 3/4" (12 cm). ISBN 0-662-62715-6. Cat.No. C2-307/1996-MRC.

One can also contact the compiling editor for the TRI-EDI II publication, M. Janice Pereira at <<mpereira@istar.ca>>.



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### D.3.2.2.1 ISO/IEC 6523 and the Identification of "Roles" in Scenarios and Scenario Components

Of particular interest here in the context of construction of scenarios and scenario components is the linkage between ICDs assigned under ISO/IEC 6523 and the of "roles".

Many of the schemata for the identification of organizations contain rules which qualify whether or not an organization is qualified for a certain role. These ICDs are therefore useful in the development of scenario and scenario components with Level 1 and Level 1+ external constraints.<sup>5</sup> Many of the ICDs, as taken from Figure D.3 above are of this nature and include as examples:

- ICD=002, SIRENE. In France, the only "official" number for the identification of organizations which interchange data with authorities.
- ICD=0080, UK Health Service. "Legal entities" of the UK health care community
- ICD=0088, EAN Location Code. Organizations which qualify for and participate in the European Article Numbering System
- ICD=0128, BCNR. Swiss banking institutions.

### D.3.2.3 (Global) Unambiguous Identification Of "Buyers And Sellers" - Iso/iec 7812<sup>6</sup>

#### Rule D-3\*:

**An international standard exists for the (global) unambiguous identification of persons as "buyers" and "sellers", i.e. ISO/IEC 7812. This standard should be used as part of the Open-edi standards framework.**

This section focuses on summarizing the key aspects of the international standard:

ISO/IEC 7812-1:1993 Identification cards - Identification of issuers - Part 1: Numbering system

ISO/IEC 7812-2:1993 Identification cards - Identification of issuers - Part 2: Application and registration procedures

---

<sup>5</sup> See further Section 5.1.6.

<sup>6</sup>Technically, ISO/IEC 7812 pertains to identification cards. However, the major users of this standard are banks, financial institutions and other issuers of credit/debit cards (as well as major retailers). Persons use these credit/debit cards in the role of sellers and buyers for payments and fund transfers accompanying business transactions.

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This standard is one of a suite of standards developed by another ISO/IEC JTC1 committee namely JTC1/SC17 *Identification cards and related devices*. This standard, which has been in use for near fifteen years, is in its third edition, (issued 1993) and is currently under its scheduled five year review. The main challenge of SC17 is that of accommodating market-driven needs, diverse industry applications and a variety of information technologies.

ISO/IEC 7812 is *"one of a series of standards describing the parameters for identification cards and the use of such cards in international interchange"*.

**The standard specifies a unique pre-defined structure and the data elements for the identification of card issuers and individual account numbers for the purpose of identifying an account.** The resulting "identification number", i.e., the number that identifies the card issuer and card holder, is designed to be globally unique and unambiguous.

Since credit/debit card issuers (as well as other identification card issuers) are the prime users of this standard and these cards are used to buy and sell goods and services, they serve as a primary building block for the unambiguous identification of buyers and sellers in (electronic) business transaction.

The predefined structure and data elements of this standard are the following:

- (1) recognizing that identification cards are utilized in many industry sectors in various application, a single digit is used to support a major industry classification system with the permitted code values pre-assigned. This Major Industry Identifier (MII) is used to identify the major industry of card issuer as follows as listed in Figure D.4:

**Figure D.4 Assignment of Major Industry Identifier s under ISO/IEC 7812**

MII	Major Industry Assigned to*
0	for assignment by ISO/TC 68 and for other future industry assignments**
1	airlines
2	airlines and other future industry assignments
3	travel and entertainment
4	banking/financial
5	banking/financial
6	merchandising and banking
7	petroleum
8	telecommunications and other future industry assignments
9	for assignment by national standards bodies

Notes:

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

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- \* The standard states *"The MII does not in anyway reflect or limit the application in which the card is useable. The single digit MIIs are assigned using the applicant's description of their main area of business on the application form. {See Annex A of ISO/IEC 7812-2}"*
- \*\* Ten thousand numbers in the range "00" have been allocated to ISO/TC 68 for assignment to institutions other than card issuers in order to accommodate requirements in ISO 8583 - Financial transaction card originated messages.
- \*\*\* Within ISO/IEC JTC1 SC17 and the financial/banking community, discussions are under way on dropping the "Major Industry Assigned To" areas for the MII. Major factors are the blurring of classification of industry sectors (from that perceived 15 years ago) and the need to free up unused blocks of numbers to meet exploding demand (much like that for area codes in telephony).

- (2) the assignment of a unique five digit identifier to a card issuing institution that meets the registration requirements as specified in Part 1.
- (3) the third data element is the individual account identification, a variable length, maximum 12 digit number. {See ISO 7811-3 - Identification cards - Recording technique - Part 3: Location of embossed characters on IS-1 cards}
- (4) the final data element is a single check digit calculated on all the preceding digits of the identification number computed according to the Luhn formula for modules-10 check digit (explained in Annex B of Part 1 of ISO/IEC 7812).

A graphical representation is presented in Figure D.5

**Figure D.5: Structure of the Parts Comprising the ISO/IEC 7812 Identifier**

Issuer Identifier Number (IIN)			
MII	Issuer Identifier	Individual Account Identification	Check Digit
□	□ □ □ □ □	□ □ □... □	□
Identification Number			

33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43

The Issuer Identifier Number (IIN) forms the first part of the identification number. It is composed of two elements, the MII and Issuer Identifier. The IIN is unique and unambiguous globally. If the MII is dropped, which is likely, the Issuer Identifier Number will stay at six (6) digits and the Issuer Identifier will become six (6) digits instead of the present five (5).

Part 2 of this standard specifies the application and registration procedures including criteria for numbers issued in accordance with Part 1. The effective management of the numbering system for the identification of card issuers is done through a Registration Management Group (RMG), a.k.a., ISO/IEC JTC1/SC17/WG5.

## **Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations**

1  
2 The ISO/IEC register of card issuer identification numbers is maintained by the Standards  
3 Department, American Bankers Association (ABA). It is the international Registration Authority for  
4 ISO/IEC 7812.

### **D.3.2.4 (Global) Unambiguous Identification Of Individuals - ISO/IEC 7501**

#### **Rule D-4\*:**

10  
11 **An international standard exists for the (global) unambiguous identification of holders of**  
12 **machine readable travel documents (MRTDs), i.e. ISO/IEC 7501. This standard has**  
13 **components which should be part of the Open-edi standards framework.**

14  
15 Individuals have identification cards based on ISO/IEC 7501 for travel documents, ISO/IEC 7812  
16 for identification cards (including credit/debit cards), as well as many other documents/cards  
17 identifying individuals.

18  
19  
20 ISO/IEC 7501-1:1993 Identification cards -- Machine readable travel documents - Part 1: Machine  
21 readable passport

22  
23 ISO/IEC 7501-2:1995 Identification cards - Machine readable travel documents - Part 2: Machine  
24 readable visa

25  
26 ISO/IEC 7501-3:1995 Information technology -- Identification cards -- Machine readable travel  
27 documents: Part 3: Size-1 and size-2

28  
29 These standards are currently undergoing revision. This revision is incorporating "cultural  
30 adaptability" requirements as well as co-existence requirements of different technologies on a  
31 single card, (e.g., embossing, magnetic stripe, bar coding, integrated chip, optical storage, visual,  
32 etc.). The results of this revision will impact many other international and national standards  
33 pertaining to the unambiguous identification of individuals.

34  
35 Another major objective of the fourth edition of ISO/IEC 7501 is "global interoperability" particularly  
36 with respect to the standardized specifications for placement of both eye-readable and machine-  
37 readable data in all MRTDs.

38  
39 This standardization work is a cooperative effort of: (1) ISO/IEC JTC1 SC17 - Identification Cards  
40 and Related Devices; and, (2) the International Civil Aviation Organization (ICAO). ICAO is the UN  
41 organization through which member countries establish policies, rules and standards world-wide  
42 in the area of civil aviation. (It is headquartered in Montreal) The fourth edition, (1999/2000) of  
43 ISO/IEC 7501 is being prepared through ICAO Document 9303, Parts 1, 2 and 3.

44  
45 The present new draft of DOC 9303 uses terms such as "person", "holder", "name of holder",  
46 etc., but does not explicitly state that only a natural person as an "individual" can be a "holder" of a  
47 machine-readable travel document, i.e., not a legal person. This was always assumed implicitly.  
48 From an Open-edi perspective, this criteria should be made explicit. (Person also is not defined  
49 in this standard).

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1  
2 **[Note: The same individual can have more than one global ISO/IEC 7501-based identifier,**  
3 **i.e., hold more than one passport, depending on the rules of the Issuing State(s)].**  
4

### 5 6 D.3.3 CONCLUSIONS 7

8 The existing international standards identified above have common requirements for data, i.e.,  
9 data elements pertaining to, a person. The data element values are structured and pre-defined. It  
10 is recognized that each of these standards has a specific focus and scope. All of them, however,  
11 are relevant to standardization requirements in support of electronic commerce.  
12

13 **Rather than creating new standards, it is recommended that the Open-edi standardization**  
14 **framework place a priority on utilizing existing standards in an integrated manner to**  
15 **create generic base standards.** Another term here would be a generic bridge standard, i.e., the  
16 need for a data element-based generic standard for unambiguous identification of persons  
17 (individuals).  
18

#### 19 **Rule D-5\*:** 20

21 **The number of data elements pertaining to persons/individuals comprising common/basic**  
22 **name and address information is finite. Many have already been defined in various**  
23 **international standards (as well as in government standards)<sup>7</sup>. They should be**  
24 **consolidated/integrated.**  
25

#### 26 27 (1) Identification of Persons 28

- 29 ➤ ISO/IEC 6523 - Structure for the Identification of organizations and organization  
30 parts
- 31
- 32 ➤ ISO/IEC 7501 - Identification Cards - Machine Readable Travel Documents  
33
- 34 ➤ ISO/IEC 7812 - Identification Cards - Identification of Issuers  
35

#### 36 37 (2) Identification of Address (and Persons/Personae) 38

- 39 ➤ ISO/IEC 9594/X.500 Directory Services (focuses on bindings between objects and  
40 their locations).  
41

42 A project for the development of a standard(s) for naming, addressing and identification to support  
43 unambiguous identification of persons in electronic business transactions, should be based on  
44 the following development principles:  
45

---

<sup>7</sup> See for example the (600 page) Treasury Board Information Technology (TBITS)-37 "Naming and Addressing" standard of the Canadian federal government. This standard, which integrates over 23 international standards, is available for free (e.g. via CD-ROM).

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

- support a structured and data element-based approach;
- focus on the common, generic requirements but allow for "user extensions";
- utilize and integrate relevant international standards (or parts thereof);
- be modular and have the ability to support various levels of details, i.e., granularity, thereby providing flexibility in its use in heterogeneous applications;
- ensure the ability to support requirements of privacy legislation, public and private sector;
- maximize facilitation of interoperability of data elements pertaining to name, addresses and identification data among players in electronic commerce, i.e., as required in business transactions (and in compliance with applicable legislation); and,
- be IT-platform neutral and independent of specific applications.

### D.4 SOME COMMON POLICY AND IMPLEMENTATION CONSIDERATIONS FOR UNAMBIGUOUS

#### D.4.1 INTRODUCTION

In Open-edi and related standards development work, on the Business Operational View, the need to be able to address legal requirements in (electronic) business transactions is a recurring issue, especially those which are of a horizontal public policy nature, i.e., Level 1 - External Constraints on Business Transactions.

**It is not the purpose of this and other Open-edi related standards to attempt to resolve these issues. However, it is useful to help reduce misunderstanding about common Level 1 external constraints.**

This is the purpose and context of Section D.4. One major area of public policy issue impacting electronic business transaction is that of the interactions of:

- individual ↔ organization; and,
- individual ↔ public administration

{See Normative part, Section 5.1.3}.

At the time that the Open-edi Reference Model was developed, individuals, on the whole, participated in EDI-based business transactions with each other only via organizations. The rapid world-wide development and use of the Internet in support of business transactions has led to (1) individuals engaging in business transactions directly with organizations, i.e., without organizations acting as agents on their behalf, as well as (2) individuals engaging in business transactions directly with each other, i.e., individual ↔ individual. At the same time, the Internet has made possible the conduct of business transactions not only among public administrations with other organizations but also of public administrations with individuals. {See further on the

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1 entity "person(s)" and its Level 1 sub-components, above in Section 5.2 "Rules Governing the  
2 Person Component"}.

3  
4 Five key policy issues associated with the unambiguous identification of persons, especially in the  
5 role of individuals, in electronic business transactions include:

- 6
- 7       ➤     anonymity;
- 8       ➤     privacy/data protection;
- 9       ➤     what is an "individual";
- 10       ➤    role of a "natural" person in a business transaction, i.e. as an "individual" or  
11       "organization person";
- 12       ➤    single global unique "identifiers" for individuals.
- 13

14  
15 They are interrelated and presented in the sections which follow.

16  
17 The approach to these Sections of Annex D is based on the following assumptions:

18  
19 (1) Privacy/Data Protection is already a major concern of consumers with respect to  
20 electronic commerce as is the wider issue of building trust.

21  
22 (2) The need for unambiguous identification is relative to the context and purpose and  
23 associated requirements of the nature of the business transaction in which it is to be used.

24  
25       Consequently, in electronic business transactions, there may be levels of "unambiguity",  
26 i.e., degrees of completeness or reduction of uncertainty in identification.

27  
28 (3) The higher the level of degree of certainty, i.e., unambiguity, of the identification of a  
29 person, the less-costly and more efficient the process for determining authenticity.

30  
31 (4) The need for unambiguous identification of individuals, their desire at times for anonymity,  
32 and a coordinated implementation of the Open-edi standards framework requires a clear  
33 response as to which of the two options presented in this Annex D should be the "base"  
34 option.

### 35 36 37 D.4.2 ANONYMITY

#### 38 39 **Rule D-6\*:**

40  
41 **Identification of a person as buyer in a business transaction is not always necessary in**  
42 **(electronic) business transaction including the seller knowing whether or not the buyer is**  
43 **an individual.**

44  
45 In day-to-day use in business transactions, as well as now electronic business transactions, one  
46 usually speaks of clients, consumers, customers, etc., not so much of "individuals". However, it  
47 is the adoption of electronic commerce by individuals which has one of the highest profiles in the  
48 development of strategies for the widespread adoption and use of electronic commerce by the  
49 private and public sector alike.

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1  
2 From an electronic commerce (or e-business) perspective, one often does not need to distinguish  
3 whether the entity which is party to a business transaction is a "natural person" or "legal person",  
4 nor an "individual" or "organization", etc. Credit worthiness, ability to pay, secure payment, etc., of  
5 a "person" are often more important criteria.

6  
7 Currently, **a buyer can remain anonymous vis-à-vis a seller by presenting a money value**  
8 **token<sup>8</sup> in which a seller has 100% trust, (e.g., cash).** Similarly in electronic commerce where  
9 the value token when presented by the buyer to the seller has 100% trust of the seller, the buyer  
10 can also remain anonymous (provided the "E-cash" really has the nature of cash, and does not  
11 identify the bearer or holder of the token). Similarly, if a person (undifferentiated as to organization  
12 or individual) with an e-mail address of "diamondsR4ever@aol.com" presents an acceptable  
13 value token which does not link value token to buyer, the buyer can remain anonymous to the  
14 seller.

15  
16 Thus in electronic business transactions, unambiguous identification does not necessarily require  
17 one to distinguish the nature of the person in a business transaction, i.e., whether the person is an  
18 individual or organization (or an organization person).<sup>9</sup>

19  
20 The Process Component of the Business Transaction Model has five basic sets of activities  
21 should be noted, i.e., Planning, Identification, Negotiation, Actualization and Post-Actualization.<sup>10</sup>  
22 In the Planning set of activities, that is, the first phase in a business transaction, (prospective)  
23 buyers and sellers can and do often remain anonymous of each other. The fundamental  
24 characteristic of the Identification Phase is that of establishing one-to-one bindings among the  
25 parties (potentially) involved in a business transaction.

### 26 27 28 D.4.3 PRIVACY/DATA PROTECTION

29  
30 Privacy/data protection<sup>11</sup> pertains to sets of rights and obligations pertaining to the collection, use  
31 and disclosure of personal information. Personal information is defined as "meaning information  
32 about an identifiable individual that is recorded in any form". Initially, privacy rights and obligations

---

<sup>8</sup>The term "value token" is a generic term used to cover values of a monetary nature such as cash, money orders, bearer bonds, pre-paid value tokens, etc.

<sup>9</sup>Privacy concerns of individuals who are worried about who knows what you see and spend online on the Internet with whom, for what, etc., are giving rise to "anonymization services". Disabling "cookies" on one's browser's preferences increasingly prevents prospective buyers from exploring Websites of sellers. Such services allow one (1) to browse the Web and go anywhere "cookie free"; (2) to send e-mail through a middle man "remailer"; (3) an anonymous website to allow anyone (individual or organization) to have a homepage without identifying themselves; (4) to support the use of synonyms, etc. {See further, Time, February 8, 1999, p. 62, or visit <<www.anonymize.com>>}.  
<sup>10</sup>See Section 5.1.5 and Sections 5.3 "Rules Governing the Process Component".

<sup>11</sup>In North America, i.e., Canada and the USA, "privacy" is the term used. In other countries, the term "data protection" is used, (e.g., those countries who are members of the European Union and others).



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1 pertained primarily to personal information collected, used and controlled by the public sector,  
2 (e.g., by federal as well as state/lander/provincial levels of government). In addition, specific  
3 sectors and activities have their own sets of "privacy" requirements, (e.g., banking records,  
4 medical records, student educational records, etc.).  
5

6 However, while initially privacy/data protection requirements were focused on specific types of  
7 business transaction and/or business sectors, these requirements are rapidly becoming  
8 generalized for the whole of the public and private sectors in many countries as well as all the  
9 countries who are members of the European Union.

10  
11 Within the context of this Annex D, a common working definitions for "privacy" is:

12  
13 **"Privacy:** most often defined as the right to be left alone, free from intrusion or  
14 interruption, privacy is an umbrella term, encompassing element such as physical  
15 privacy, communications privacy, and information privacy. Privacy is linked to other  
16 fundamental human rights such as freedom and personal autonomy".  
17

18 **"protection de la vie privée:** Définie le plus souvent comme le droit à ne pas être  
19 dérangé, libre d'intrusion ou d'interruption, la protection de la vie privée est un terme  
20 générique englobant des éléments comme la confidentialité matérielle, la confidentialité  
21 des communications et la confidentialité des renseignements. La protection de la vie  
22 privée est liée à d'autres droits fondamentaux comme la liberté et l'autonomie  
23 individuelle".  
24

25 Similarly a working definition of "personal information" here is:

26  
27 **"personal information:** Any information about an identifiable individual that is  
28 recorded in any form, including electronically or on paper. Some examples would be  
29 information about a person's religion, age, financial transactions, medical history, address,  
30 or blood type".<sup>12</sup>  
31

32 **"renseignements personnels:** Tout renseignement au sujet d'un individu  
33 identifiable, qui est enregistré sous une forme quelconque, y compris électroniquement ou  
34 sur papier. Cela comprend, par exemple, les renseignements à propos de la religion, de  
35 l'âge, des opérations financières, du passé médical, de l'adresse ou du groupe sanguin de  
36 quelqu'un".  
37

38 It is outside the scope of this Annex D to discuss this matter further. It suffices to note that one  
39 key objective of the development of the Business Transaction Model is the ability to support the  
40 privacy/data protection requirements for the implementation of Level 1 - External Constraints on  
41 Business. These challenges include defining what is an "individual" and what are the criteria for  
42 an "identifiable individual" from an IT-enablement perspective.  
43

44 However, it should also be noted that the basis and point of departure of the Levels of Constraints  
45 in the Business Transaction Model is that of Level 0 - No External Constraints, and "person"

---

<sup>12</sup>In some jurisdictions, privacy/data protection legislation can apply to electronically, i.e., computer system-based, recorded information only.

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1 undifferentiated, i.e., one need not distinguish whether the person is an "individual" or  
2 "organization".  
3

4 Once can thus develop Level 0 generic and re-useable scenarios and scenario components for  
5 use in business transactions. Scenarios and scenario components built to support requirements  
6 of Level 1 External Constraints such as those of a privacy/data protection nature would use, i.e.  
7 inherit, these Level 0 scenarios and scenario components.  
8  
9

### 10 D.4.4 WHAT IS AN "INDIVIDUAL" AND WHAT ARE CRITERIA FOR IDENTIFIABLE 11 INDIVIDUAL? 12

13 One needs to have a definition for individual in the dematerialized world of business transactions,  
14 i.e., what are the unique attributes and behaviours of "individual" which allows one to distinguish  
15 "individual" as a unique entity/object from all the other objects one's information system is dealing  
16 with?  
17

18 No standard definition, internationally or domestically, currently exists for "individual"<sup>13</sup>. A review  
19 of terminology of international standards could not identify a standard which contained and defined  
20 the concept/term "individual". Rather international standards tend to define particular roles of an  
21 individual in a business process along with associated data elements, (e.g., passport holder, card  
22 holder, entity, etc.).  
23

24 The concept/term "individual needs to be defined in a consistent manner not only in the context of  
25 existing and future Privacy/Data Protection requirements but also as a component of medium  
26 neutral legal/regulatory frameworks.  
27

#### 28 **Rule D-7:** 29

30 **"Individual" is the attribution of the property of indivisibility to a natural person, i.e., in**  
31 **making commitments, ability to have rights and obligations, being**  
32 **accountable/responsible for, etc.**  
33

34 Consequently, for the purposes of this standard "individual" has been defined as:<sup>14</sup>  
35

36 ***"individual:** A person, who is a human being, i.e., natural person, who acts as a distinct*  
37 *indivisible entity or is considered as such".*  
38

39 *The use of the term "person" in the definition of "individual" means that an "individual" inherits all*  
40 *the properties and behaviours of "person". Secondly, the definition is neutral towards and*

---

<sup>13</sup>A review of international standards (using the online ISO Internet-based tools at hand) did not identify any standard which contained and defined the concept/term "individual". International standards that one might expect to contain a definition for "individual" tend to define particular roles of an individual in relation to a specific business process along with associated data elements, (e.g., passport holder, (credit) card holder, or more generically "token holder", etc.).

<sup>14</sup>See further Section 5.2.2 "Rules Governing the Person Component" and Annex E (Informative) - Business Transaction Model: Person Component.

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1 independent of:

- 2
- 3 ➤ the manner in which various jurisdictions have differing rules as to what criteria must be
- 4 met for an entity to be considered/qualify as a "human being" or "natural person";
- 5
- 6 ➤ any qualification which a jurisdiction may place on human being/natural person with
- 7 respect to ability to make commitments, be held responsible for, etc., (e.g., "minors",
- 8 "being incapacitated", etc.).
- 9

10 Constraints of this nature exist in both the legal and commercial frameworks but are part of

11 Levels 1+ - External Constraints of the Open-edi Model.

12

13 This definition is harmonized with basic concepts underlying privacy. "Personal information", is

14 defined as "information about an identifiable individual". This includes information provided by an

15 individual about him/herself to another person in the context of an eventual delivery of a good or

16 service provided by that other person in the role of seller.

17

18 While this definition of "individual" serves as a common base, at Level 1 - External Constraints,

19 one needs to have specific criteria for what constitutes "identifiable" as in "identifiable individual".

20 Currently such criteria do not exist. Further, the interplay of the issue of "anonymity and

21 unambiguous identification needs to be addressed.

### 22

### 23

### 24 D.4.5 ROLE OF NATURAL PERSON IN A BUSINESS TRANSACTION AS "INDIVIDUAL OR

### 25 ORGANIZATION" (OR "ORGANIZATION PERSON")?

26

27 With respect to business transaction and the application/implementation of the Level 1

28 Privacy/Data Protection requirements, one will need to be able to determine in the Identification

29 Phase of the Process Component,<sup>15</sup> when one is marketing/selling goods and/or services,

30 whether the person one is dealing with is an identifiable individual or not, i.e., an "individual" or an

31 "organization"(or "organization person"). If the former, Privacy/Data Protection requirements

32 would apply, if the latter, these would not apply, (and to the information on a "person").

33

34 Consequently, from an electronic business transaction perspective, it is necessary to have a

35 clearly understood definition of "organization", i.e., if one is dealing with an "organization" and not

36 an "individual" for the associated information on an organization Privacy/Data Protection

37 requirements would not apply. Fortunately, there is an international standard definition for

38 "organization" which also is utilized in this standard, i.e., ISO/IEC 6523. (See further Section 5.2.5

39 and Annex E)

40

41 As a result of standard development work on this issue the following points were made:

- 42
- 43 ➤ individual is a natural person with a specific role(s) in a process;
- 44
- 45 ➤ the natural person in the role of a buyer also supplies information;

---

<sup>15</sup>See further Section 5.3 "Rules Governing the Process Component" as well as Annex F (Informative) - "Business Transaction Model: Process Component".

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1  
2 ➤ a natural person in the role of a "buyer" is the recipient of a good and/or service.

3  
4 A key question is whether information provided by a natural person in the role of seller is deemed  
5 to be, i.e., to be treated as, that pertaining to an "individual" or an "organization"?

6  
7 In many jurisdictions, and in the context of the Goods and Services Tax (GST) or Value-Added  
8 Tax (VAT), anyone who provides a good or service is deemed to be an organization, irrespective  
9 of whether the good or service provided is zero rated, exempt, or the goods/services provider is  
10 exempt; or the person providing the good or service is an incorporated person, (e.g., "legal  
11 person) or not.

12  
13 ISO/IEC 6523 takes a similar approach in its definition of "organization" (which is adopted as a  
14 normative reference in this standard).

15  
16 Note b) of the ISO/IEC 6523 definition of "organization" states:

17  
18 *"NOTE: The kinds of organizations covered by this part of ISO/IEC 6523 include the*  
19 *following examples:*

20  
21 *b) an unincorporated organization or activity providing goods and/or*  
22 *services...".*

23  
24  
25 In summary ISO/IEC 6523 considers, any person irrespective of their particular "legal" status  
26 (including unincorporated natural persons), who provides a good and/or service to be an  
27 "organization". This Open-edi standard takes a similar approach, i.e., any person in the role of a  
28 seller in a business transaction is deemed to be either a "person" at Level 0, or an "organization"  
29 at base Level 1.

### 30 31 32 D.4.6 UNAMBIGUOUS IDENTIFICATION OF INDIVIDUALS - TWO BASIC OPTIONS

33  
34 In the preceding sections, some key issues and requirements of both the commercial framework  
35 and legal frameworks were identified pertaining to the unambiguous identification of individuals.  
36 Before these issues can be resolved, it is necessary to have agreement on the overall approach  
37 or context, within which these issues are to be resolved.

38  
39 The results of the research and analysis undertaken in support of this standard is that **there are**  
40 **essentially two options for resolving the issue of unambiguous identification and**  
41 **persons, namely (1) what can be called "the Swedish option", and (2) what one can call**  
42 **the "Rest-of-the-World (ROW) option".**

43  
44 Option 1: SWEDISH SOLUTION<sup>16</sup>

---

<sup>16</sup>It should be noted that what is called here the "Swedish Solution" is not unique to Sweden. Other countries have (and may have) taken a similar approach. The USA and Canada among others have not. It is just that Sweden has the most transparent and clearly stated rules with respect to unambiguous identification of individuals, i.e., through single IDs. It also has very strong privacy

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1. One single nation-wide schema and registration authority whereby each discrete and unique natural person has a single (official) persona and is assigned a unique identifier at birth to be used for life (and thereafter).
2. This single persona and the unique ID for each natural person is to be used for multiple different purposes and in various contexts, i.e., basically an one-to-many relation.
3. Data elements ensuring unambiguous name representation and identification of individual are prescribed (including biometrics), their values are captured in database(s) and then utilized to produce a single unique "personal identifier" which in turn is used to produce a card/token, i.e., on a one-to-one basis. National standards are developed for an integrated "smart card" for this purpose.<sup>17</sup>

### Option 2: REST-OF-WORLD (ROW)

1. Multiple registration schemes and authorities and associated identification schemes and associated sets of data elements reflect needs of different purposes and use, i.e., contexts.
2. Person has multiple personae and associated IDs, i.e., basically many-to-many. This is so for both "natural" persons and "legal" persons (or organizations).<sup>18</sup>

**From an Open-edi perspective, one has two basic options, the Swedish option or the Rest-of-the-World option.**

Both Options are possible. From a standardization perspective either option can be supported through development of standards. Cost-efficient and effective development of standards as well as their widespread adoption and use requires a decision to be taken.

With respect to the Swedish option, it is technically feasible to design and operate a registration schema for unique (single) unambiguous identifier for each discrete natural person, i.e., use of biometric, (fingerprints, iris patterns), genetics, (e.g., DNA), etc. However, building such an infrastructure require a massive upfront financial investment.

---

legislation and is the country which pioneered the concept and implementation privacy/data protection.

<sup>17</sup>The Swedish National Standards Body, i.e., Svensk Standards (or "SS") has recently developed several standards to this effect. They are:

- Svensk Standard SS 61 43 30 (1998) Identification Cards - Electronic ID Application;
- Svensk Standard SS 61 43 31 (1998) Identification Cards - Electronic ID Certification; and,
- Svensk Standard SS 61 43 32 (1998) Identification Cards - Electronic ID Card - Swedish Profile.

<sup>18</sup>On "persona" and "identification", see further Section 5.2.2 in the normative part of this standard and Annex E (Informative) "Business Transaction Model: Person Component"

## Annex D (Informative) - Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals) and Some Common Policy and Implementation Considerations

1 For such a mechanism to be effective requires universal participation either voluntary or through  
2 legislation. However, at present, neither of which these are likely to happen in the near future in  
3 many countries.<sup>19</sup> Consequently, a single global schema for unambiguous identification resulting  
4 in a single universal identifier for each unique natural person is not a viable scenario.

5  
6 In the present world, there is not a single universal schema for the provision and registration of a  
7 unique single unambiguous identifier for each single unique real world person (natural or legal).  
8 Current schemes which have such objectives are bounded by jurisdictions and in their operation.  
9 In addition, the use of the resulting identifiers are restricted by law or contractual agreement for a  
10 particular purpose. Changes in law and agreements among jurisdictions and levels of jurisdiction  
11 are required for any "universal" single schema, i.e., adoption of the Swedish Solution in all  
12 countries and world-wide. Also the introduction of single universal identifier could well lead to new  
13 types of security problems.

14  
15 The most viable approach for Open-edi standards development is the "Rest-of-World" option.  
16 Even if any country should change its current policy in this area and use/mandate the Swedish  
17 option domestically for "natural persons", it would still have to be able to accommodate the "Rest-  
18 of-the-World" option for international business transactions.

19  
20 **The conclusion, is that the approach for resolving issues pertaining to the unambiguous**  
21 **identification of individuals (in the Open-edi Standards Framework) should be based on**  
22 **the Rest-of-the-World option.**

---

<sup>19</sup>The "Swedish Option" in any country requires applying enabling national legislation harmonized at both the federal and state/provincial levels locally and then internationally.

**ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT**

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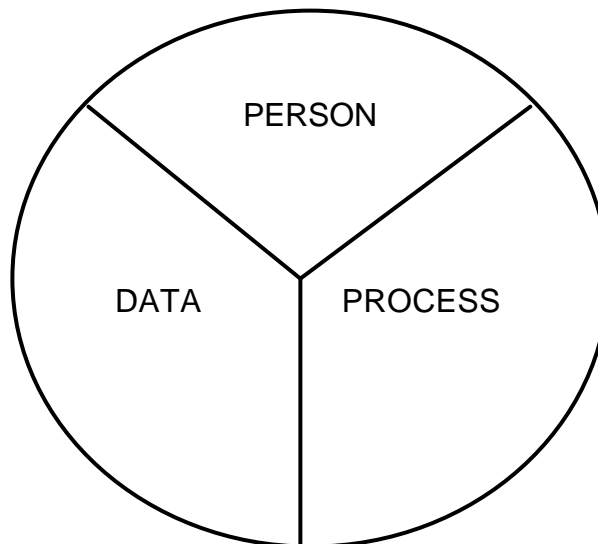
**E.0 INTRODUCTION**

1. Annex E provides necessary informative and explanatory text for (1) the rules and (2) the terms and definitions as well as the figures found in Sections 5.1.5 and 5.2 pertaining to the Person Component of the Normative part of this standard. The rules as stated here in Annex E in bold are the same as those stated in these two sections as well as for the figures even though both have been re-numbered in this Annex (e.g. Rules 13 through 46 in Section 5.2, here in Annex E are Rules E-1 through E-34).
2. The major basis for this Annex E is the result of work on requirements for standards in support of e-commerce involving participation of various business sectors, (banking, retail, transport, telecommunications, IT, etc.), public policy makers (various levels of government),

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1 consumer associations, experts in security services, lawyers (private and public sector with  
2 expertise in common and civil law as well as international trade law), ISO and ISO/IEC JTC1  
3 standardizers, etc. This work identified gaps in an integrated approach incorporating  
4 requirements of commercial and legal frameworks and those of existing telecom/IT standards  
5 including security services.

- 6
- 7 3. The primary reason for this Annex E is that no standards exist which focus on the making of  
8 business decisions and commitments, nor on the attributes and behaviours of entities and  
9 specifically "persons" as the unique type of entity able to make commitments.
- 10
- 11 4. Whether or not a "person" decides to delegate decision and commitment making to be  
12 executed via a software program, (e.g., use of an "expert system"), "artificial intelligence",  
13 "intelligent agents", etc., is immaterial to the fact that the person who "delegates" authority  
14 through these or other IT means, i.e., as technical components, is still held to be  
15 responsible, accountable, liable, etc.
- 16
- 17 5. This is one of three Annexes which provide additional required information on one of the  
18 three fundamental components of a business transactions, namely "person", "process", and  
19 "data". These three fundamental components are presented graphically in Figure E.1 (as  
20 taken from Section 5.1.5)
- 21



**Figure E.1: Business Transaction Model - Fundamental Components  
(Graphic Illustration)**



## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1

2

3

4 6. This annex is also meant to assist users of this standard who are either not familiar with  
5 Open-edi standards in general or whose main focus to date has been on Functional  
6 Services View (FSV) standards only.

7

8 7. The rules and associated terms and definitions in Annex E incorporate those of relevant  
9 existing international standards, referenced in this standard, and introduce other rules in  
10 order to bridge existing gaps. The intended result is an approach which links these  
11 different perspectives and integrates their requirements.  
12

### 13 E.1 PURPOSE

14

15 The purpose of this Annex E is five-fold; namely:

16

17 (1) to incorporate and support a key aspect of the BOV, namely that of making of business  
18 decisions and commitments;

19

20 (2) to capture the business operational requirements from both commercial and legal  
21 perspectives;

22

23 (3) to capture the unique attributes of "person" as the entity in business transactions able to  
24 make commitments;

25

26 (4) to ensure that this standard can be used in support of both organizations and individuals  
27 engaging in business transactions via Open-edi; and,

28

29 (5) to ensure that this standard recognizes and can support the role of "regulator" in addition  
30 to the roles of "buyer" and "seller" in a business transaction.  
31

32

33

34 The approach taken in this section is to identify and define the distinguishing properties and  
35 behaviours of "person" (and associated categories of "individual" and "organization") in the form of  
36 clear and precise rules as well as associated terms and definitions. These rules summarize the  
37 results of the analyses, findings, discussions, and feedback to date on standardization work on an  
38 integrated approach to the various sources of business requirements.<sup>1</sup>

39

40 Accompanying the "rules" are brief explanatory notes. A key result or outcome of these rules are  
41 key fundamental common definitions and associated terms in support of widespread adoption and  
42 use of Open-edi, (e.g., as in e-commerce).

---

<sup>1</sup> See Figure 1 in Section 1.0 Scope

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1 These terms and definitions are to serve as common bridges/links among policy makers, industry,  
2 consumers, IT specialists, etc. They are also to be utilized as common bridges among the legal  
3 and commercial frameworks with the information technology framework and standardizers.  
4  
5

### 6 E.2 "PERSON" IN A BUSINESS TRANSACTION

#### 7 Rule E-1:

8  
9 **An electronic business transaction, like business transactions in general, requires**  
10 **"persons", i.e., as decision makers, as the key real world entity and point of departure**  
11 **(instead of information technology applications, devices, tokens, information systems,**  
12 **etc.).<sup>2</sup>**  
13

14 In Open-edi business transactions, information systems are deemed to serve as extensions of  
15 persons who identify themselves in a business transaction in a dematerialized manner, i.e.,  
16 through electronic digitized data elements, instead of through their physical presence or a physical  
17 surrogate, (e.g., paper documentation).  
18

19 A key underlying need of the issue of unambiguous identification is the ability in a dematerialized  
20 world to be able to differentiate a person from all the other entities that one is dealing with, among  
21 the participating information and communication technology systems, i.e., through the digitized  
22 data being interchanged.<sup>3</sup>  
23

24 The term "entity" is defined in ISO/IEC 2382 "Information technology - Vocabulary" as:

25  
26  
27 **"17.02.05** **entity:** *any concrete or abstract thing that exists, did exist, or might exist,*  
28 *including associations among things.*

29  
30 *Example:* *A person, object, event, idea, process, etc....*

31  
32 *NOTE - Please observe that an entity exists whether data about it are available or*  
33 *not."*  
34

35  
36 **"17.02.05** **entité:** *tout objet ou association d'objets, concret ou abstrait, existant,*  
37 *ayant existé ou pouvant exister.*

38  
39 *Exemple:* *Personne, événement, idée, processus, etc...*

40  
41 *NOTE - A noter qu'une entité existe que l'on dispose de données à son sujet ou*  
42 *non."*  
43  
44

---

<sup>2</sup> See further Section 5.1.3

<sup>3</sup> For example, in the dematerialized world of Open-edi, how does one differentiate between, on the one hand, (a) <<jake.knoppers@disney.com>> or <<jake4ever@disney.com>> which are representations of real world person, and (b) on the other <<mickey.mouse@disney.com>> which is not a real world person?

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

### 1 Rule E-2:

2  
3 **Irrespective of the use of any particular information technology and related devices in**  
4 **Open-edi, "persons" are the only entities which are legally recognized as able to make**  
5 **commitments, agree to the rights and obligations entered into, can be held accountable**  
6 **for their actions, etc.**

7  
8 Under commonly accepted international law, in any business transaction, whatever the nature and  
9 combination of information technologies involved, the participating parties must be "persons".  
10 Persons are the only entities which are and can be held legally responsible and accountable for  
11 their actions, including authentication, authorization, commitment, etc.

12  
13 A generic definition for person is required, i.e., a "person" as a unique type of entity in a  
14 dematerialized world differentiated from all other entities as those currently defined and found in  
15 information technology standards such as objects, applications, devices, information systems,  
16 processes, sets of software code (or "applets" as "callable objects"), etc.

17  
18 Various dictionary definitions for "person" exist. (See Oxford/Webster/Larousse). Compounding  
19 the issue is that under various laws within a jurisdiction<sup>4</sup>, let alone among jurisdictions, multiple  
20 particular definitions of what is or what is not a person exist. Research and analysis as well as  
21 discussions with SC32/WG1 members and others, (e.g., lawyers), resulted in a number of  
22 findings. Summarizing and integrating these findings from the perspective and needs of the  
23 dematerialized world of electronic business transactions has as objective the ability to differentiate  
24 "persons" from all other types of entities, i.e., as a unique entity type (or object). This resulted in a  
25 definition of "person" and the identification of a set of properties of a "person".

### 26 Rule E-3:

27  
28  
29 A "person" is defined as:

30  
31 ***"person"<sup>5</sup>: an entity, i.e. a natural or legal person, recognized by law as having***  
32 ***legal rights and duties, able to make commitment(s), assume and fulfil resulting***  
33 ***obligation(s), and able of being held accountable for its action(s).***

34  
35 ***Note: Synonyms for "legal person" include "artificial person", "body corporate".***  
36 ***Etc. depending on the terminology used in competent jurisdictions."***

37  
38  
39 **The three unique properties of "person" already identified include:<sup>6</sup>**

<sup>4</sup> Note: ISO/IEC JTC1/SC32 is sponsoring a NWI (see ISO/IEC JTC1 N5846) which has been accepted (see ISO/IEC JTC1 N6204) to address the issue of jurisdictions as it impacts specification of external constraints on business transactions. This NWI is directed at being able to identify and reference laws and regulations impacting scenarios and scenario components. Development is underway of ISO/IEC 18038 - Information technology - *Identification and Mapping of Various Categories of Jurisdictional Domains*".

<sup>5</sup> This definition has been drafted to cover both the present material world and the emerging dematerialized world. It is drafted to be independent of any particular information technology, i.e., is medium neutral.

<sup>6</sup> Temporary Note: These are the three distinct and unique properties of a "person" already identified which differentiate a person from any other type(s) or category(ies) of entities in the dematerialized world of information technologies, i.e., objects, events, ideas, processes, etc. If SC32/WG1 members can identify other, i.e., additional (unique) properties of "person", they are encouraged to provide them.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

- 1
- 2 (1) a human being (natural person) or body corporate (legal or artificial person) having
- 3 rights and duties recognized by law;
- 4
- 5 (2) the ability to act in some capacity, make commitments and fulfil resulting
- 6 obligations;
- 7 (3) and,
- 8
- 9 (3) the ability to be able to be held accountable for actions, behaviours, decisions, etc.

10  
11 **Note: From an (electronic) business transaction perspective all three properties must**  
12 **exist/be present for an entity to be identified and referenced as a "person".**

13  
14 A body of rules (including laws and regulations) exist which set external constraints, i.e. Level 1  
15 and Level 1+ external constraints on business transactions on the allowable behaviour of persons  
16 and/or proscribe expected behaviours. These rule sets apply generally and/or locally as well as in  
17 relation to the provisioning a particular good or service. These rules apply to persons in the  
18 general sense. Many of these rule sets arising from the legal framework distinguish between  
19 persons as (1) natural persons as "individuals"; and, (2) natural persons or legal persons as  
20 "organizations". Some apply to one type of person only.

21  
22 Present day business transactions are in compliance with these rule sets domestically and  
23 internationally. It is assumed that in (electronic) business transaction, "persons" will also comply  
24 with applicable Level 1 and Level 2+ rule sets (updated and made medium neutral as required).

### 25 26 **E.3 PERSONAE, IDENTIFICATION AND PERSON SIGNATURE**

#### 27 **E.3.1 Personae and Identification**

28  
29 Unlike (material) objects, persons represent and identify themselves (as well as other persons) in  
30 a variety of ways, i.e., through different personae<sup>7</sup>, depending on the context of the business  
31 transaction.

32  
33 The set of rules which follow summarize the key aspects of "personae".

#### 34 35 **Rule E-4:**

36  
37 **Persons (natural or legal) currently do, and will continue, to identify and represent**  
38 **themselves in a variety of ways, i.e., have at least one and usually multiple personae.**  
39 **These various personae and their associated identities represent the intersection of the**  
40 **activity or function the person is engaged in and the role the person plays in a business**  
41 **transaction.**

---

42  
<sup>7</sup> The Latin word for person is "persona" in the singular. In literature, "personae" are the characters (assumed by actors) in a play or novel. In Jungian psychology, a persona is the set of attributes adopted by an individual to fit himself for the social world which he sees as his or the personality an individual presents to the world. {Oxford/Webster}

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1 In different business processes, the same person may, and does, represent him/her/itself through  
2 similar or different personae. In the physical world and the paper-based world such  
3 representations and associated identification are made unambiguous through the context, i.e., a  
4 person (natural or legal) is physically present or the paper-based documentation provides  
5 sufficient contextual information to bind a person to the persona utilized.  
6

7 In the dematerialized world, one cannot readily ascertain whether the entity one is dealing with  
8 electronically is a representation of a real world person or not, (e.g., jknoppers@disney.com or  
9 jake4ever@disney.com versus mickeymouse@disney.com). The examples provided all meet  
10 requirements for routing and addressing, i.e., sent to or receive information from an addressable  
11 device. From an IT perspective these are only variations in values in a data element(s).  
12

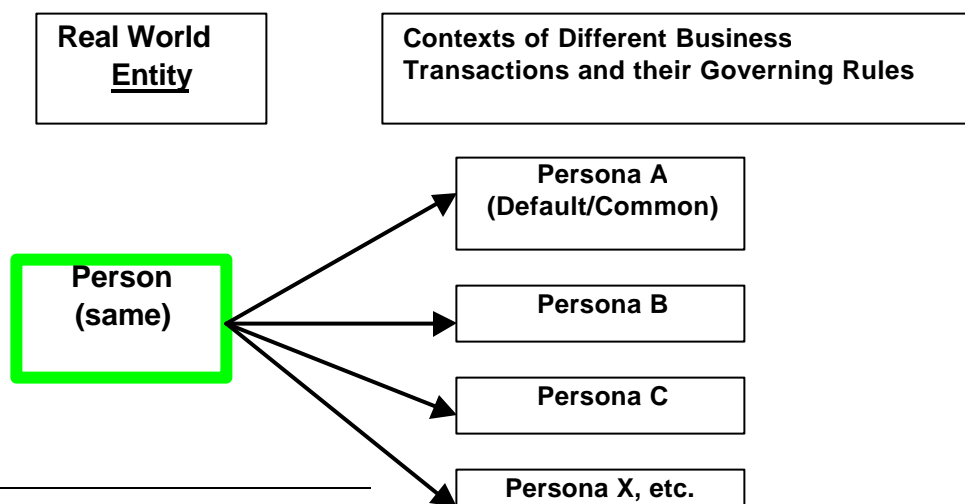
13 A real world person (natural or legal) represents her/him/itself in one or more different ways, i.e.,  
14 personae. An IT system does not "know" whether the values in such (a set of) data elements  
15 represent a real world person or not. The identification and representation of a persona of a  
16 person is done through one or more data elements. In short, the context or role of a person in a  
17 business transaction has a major influence on the persona utilized by a person.  
18

19 Integrating the above results in the following definition:

20  
21 **"persona:** *the set of data elements and their values by which a person wishes to be*  
22 *known and thus identified in a business transaction".*  
23

24 In addition, to name(s) of a person, this set of data elements can include information such as  
25 address, (physical or virtual), nicknames, trade names, pseudonyms, numbers, codes, date of  
26 birth, etc.<sup>8</sup>  
27

28 Figure E.2 (taken from Section 5.2.3) provides a graphical representation of the links of a single  
29 same person (natural or legal) → personae in the different context roles.  
30  
31  
32



33  
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47  
8 A common persona for all individuals, i.e., natural persons, is that of the name by which the individual was registered (or "baptised"). However, individuals immigrate. A substantial number of citizens in various countries (e.g., the United States) have a second name (e.g., a surname) which is not their registered name (e.g., ability), etc.

Figure E.2: Links of a Person to its Persona(e) in the Context of Different Business Transactions and their Governing Rules

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

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Before continuing, it is useful to provide some examples of the same real world person having multiple different personae and associated different identifiers in the context of various business transactions.

Example #1: A bank as a "legal person"/ "organization" with multiple personae and associated identifiers

- (a) A bank acting in the formal role of a bank as a regulated entity under Canadian, USA, Japan or U.K. banking legislation, and as part of a federation of banks world-wide identifies itself and interacts with other banks through a unique identity (number) issued by SWIFT for interbank fund transfers.
- (b) The same bank acting in the role of employer as any other employer in a country unambiguously identifies itself to the taxation authorities via a unique number issued by such an authority.
- (c) The same bank acting in the role of a seller of goods and/or services collects applicable taxes on behalf of the government(s) in whose jurisdiction(s) the sale is deemed to have taken place, i.e., Goods and Services Tax(GST) or Value-Added-Tax(VAT) identifies itself through a unique identifier numbers issued by GST/VAT at the national/federal level as well as the provincial/state/lander/canton level as required. (as well as through equivalent unambiguous identification schemas and associated identifiers for the other jurisdictions).
- (d) The same bank in the role of a buyer of goods and/or services can unambiguously identify itself in a variety of ways. A common one being the Dun and Bradstreet Number.
- (e) The same bank in the role or member of a community with restricted membership and specialized functions, (e.g., CIRRUS, EDC, Canadian Payments Association, etc.), unambiguously identifies itself through a unique identifier issued by/associated with each such member of this community.
- (f) The same bank in the role of an incorporated entity can unambiguously identify itself through its legal name or operating name. These names of an organization (either or both the legal or operating name) can be in more than one language, especially where the jurisdiction has more than one official language.
- (g) The same bank in the role of market differentiation or positioning can unambiguously identify itself in its present (or prospective) persona through a "trademark".
- (h) The same bank in the role of a registration authority in federation of debit/credit card issuer both identifies itself and person (natural or legal) to which the card is issued. {See ISO/IEC 7812 - Identification cards - Identification of Issuers as explained in Annex D}.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

- 1 (i) The same bank in E-commerce can unambiguously identify itself through an Internet  
2 domain name or Uniform Resource Locator (URL).  
3  
4

5 Example #2: A "natural person"/ "individual" with multiple personae and associated identifiers  
6

- 7 (a) A natural person/individual has perhaps the greatest variation in personae. First of all,  
8 there are variations in combinations of surnames, given names, initials, honorifics, titles,  
9 etc., which can form the personae by which individuals can and do represent and thus  
10 identify themselves. A singly and unique individual only has to look at all the variations in  
11 personae found in the different tokens, (e.g., credit cards, business card, driver's license,  
12 professional membership card, Medicare card, passport, transport pass, etc.), each  
13 individual currently has or uses in daily business transactions.  
14
- 15 (b) The same individual in the role of a buyer can unambiguously identify him/herself as a  
16 personae through one or more data elements or sets of data elements which serve as  
17 "identifiers": (1) each of which is unique and unambiguous within the schema of the  
18 registration authority who issues them; (2) others which are not considered unique or  
19 unambiguous.  
20
- 21 (c) The same individual in the role of buyer is often presented options as to method of  
22 payment, i.e., variety of (sub)-processes. Some of these require unambiguous  
23 identification, others do not, (e.g., the equivalent of a cash-based payment).  
24
- 25 (d) Within a particular method of payment such as the use of a credit or debit card, the same  
26 individual as buyer can in each instance of purchase decide to use one of several  
27 unambiguous identities, i.e., specific combinations of personae and identifiers as found on  
28 one of several credit or debit cards.  
29  
30

### 31 Rule E-5:

32  
33 **The level of unambiguity, i.e., certainty/reliability, of a persona and resulting**  
34 **identification/identity utilized by a person, must be appropriate to the goal of the business**  
35 **transaction. Most often this is a question of degree of granularity and level of specificity.**  
36

37 In different business transactions and associated processes, the same real world person may  
38 represent itself through the same or through different persona. The persona itself can meet  
39 unambiguous identification requirements for a person in a business transaction and/or other data  
40 elements may be required, i.e., an identifier. The same personae of a person in various business  
41 transactions may well have the same identifier or different identifiers.  
42

### 43 Rule E-6:

44  
45 **Business transactions having different goals may allow a person to use the same persona**  
46 **and its associated identification schema (including resulting identifiers), while others**  
47 **prohibit this.**  
48

49 Depending on the goals of the business transaction, a person can and does use the same  
50 persona in different roles and contexts. For example, the data elements comprising the name of a  
51 person can be the same on several credit cards according to the wishes of the person to whom  
52 the credit card (or similar token) pertains, or they can differ.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1  
2 Equally important is the fact that at times "sellers" in a business transaction, i.e., those providing a  
3 good or service, prescribe the persona a person must use. Prescribe means that one has no  
4 choice in personae to be utilized and must follow clear and precise criteria for the representation  
5 of a specific persona in a particular category of business transactions. Examples here include:

- 6  
7 (1) Driver's license or Medicare cards where an individual must use their "baptismal name" (or  
8 Latin-1 alphabet equivalent).  
9  
10 (2) Organizations having to use their complete, formally incorporated name, (e.g., "Information  
11 Management Services Inc." instead of "INFOMAN" or "INFOMAN Inc." or "International  
12 Business Machines Inc." instead of "IBM").

### 13 14 Rule E-7:

15  
16 **At times, the data elements comprising a persona and rules governing their values in a**  
17 **business transaction is prescribed by the party offering the good or service. A systematic**  
18 **approach here is known as a registration schema and the entity registering the persona**  
19 **known as a registration authority (RA). Usually a registration authority assigns an**  
20 **identifier unique within that identification schema to each discrete person/persona. At**  
21 **times, a RA utilizes the ID of another schema.**

22  
23 The public sector in relation to the services provided often prescribes, through law or pursuant  
24 regulation(s), the data elements comprising a person's persona and rules governing their values.  
25 For example, some government programs prescribe the use of a natural person's name as found  
26 on their birth certificate or the use of a legal person's name by which the entity was officially  
27 incorporated and registered.

### 28 29 Rule E-8:

30  
31 **A person (natural or legal) may have multiple "names" and a person may change its name.**

32  
33 ISO 1087 defines "name" as follows:

34  
35 *"name: designation of an object by a linguistic expression"*  
36

37 The name utilized by a person forms a key part of the personae. Persons (natural or legal) can  
38 and do at times change their names. Formal processes for change of name of a single, real world  
39 person and registration of such changes, exist in most jurisdictions.

40  
41 With respect to natural persons, i.e., individuals, a change in name can be considered being equal  
42 to a new persona. With respect to a name change of a legal person this may be for the same  
43 legal person or for the same person a "changed" or "different" legal, i.e., artificial person.

### 44 45 Rule E-9:

46  
47 **Names of natural persons are not unique. Many different discrete real world natural**  
48 **persons can and do share the same name (and even date of birth or mother's maiden**  
49 **name, etc.).**

### 50 51 52 Rule E-10:



## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1  
2 **A natural person can and does identify him/herself in a business transaction through a**  
3 **variety of possible data elements comprising a name, (e.g., combination of given names,**  
4 **surname(s), nicknames, titles/qualifications, etc.).**

5  
6 Even if a natural person's name is unique, a natural person can identify him/herself through a  
7 variety of possible combinations of data elements comprising such a name, (e.g., combinations of  
8 one or more given names, surnames, applicable title(s)/qualification(s), nicknames, etc.), by which  
9 that person wishes to be known, i.e., identify him/herself. In addition, there are pseudonyms,  
10 noms de plume, etc., which persons may use to identify themselves. The latter are quite common  
11 in Internet name/addresses.

### 12 13 **Rule E-11:**

14  
15 **A legal person can and does have multiple names, (e.g., legal, operating, marketing name,**  
16 **etc.), as well as various linguistic equivalents of the same.**

17  
18 Names of legal persons are not unique, i.e., possibly within a single jurisdiction but not from a  
19 global electronic business transaction perspective. A jurisdiction may have more than one official  
20 language. At times legal persons will have more than one "official" name (and quite often are  
21 required to have multiple equivalent official names in the various languages of a jurisdiction. This  
22 is especially true for "official" names for public sector organizations in jurisdictions having more  
23 than one official language.

### 24 25 **Rule E-12:**

26  
27 **A name of a person (natural or legal) does not necessarily provide for unambiguous**  
28 **identification.**

29  
30 That is:

- 31  
32 (1) Names of natural persons are not unique. Many different/discrete real world persons can  
33 and do share the same name (and even date of birth or mother's maiden name).  
34  
35 (3) Names of legal persons are not unique. It is possible that within a single jurisdiction the  
36 name of a legal person is unique but certainly not from an electronic business transaction  
37 perspective which spans multiple jurisdictions.

### 38 39 **Rule E-13:**

40  
41 **The number of types of (common) data elements pertaining to the name of a person is**  
42 **finite. A set of standard data elements can/should serve as a template or catalogue for**  
43 **capturing and exchanging name information on persons in electronic data interchange.**

44  
45 Unambiguous identification of a person and the personae utilized by that person pertaining to  
46 name and address information consist of various combinations of attributes, i.e., data elements of  
47 that person pertaining to name and address information. The number of data elements for  
48 naming persons (natural or legal) is finite and the rules governing their interworking are known  
49 (though often not explicitly stated as is required for electronic commerce). Once a particular  
50 combination of name/address data elements and their values associated with a persona are  
51 captured, those registering such data then assign an identifier which is both unambiguous and  
52 unique within that registration schema (or security domain).

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

It is assumed that different applications may well require various combinations of person name data elements drawn from the same generic template or catalogue.

### Rule E-14:

Associated with each persona of the same person can be a single identifier, or several personae can utilize the same identifier, and/or, two or more identifiers can be associated with a single persona, (e.g., use of exactly the same "name" on multiple credit cards with different identifiers).

An identifier is a unique value within an identification schema. In the day-to-day real world this is already happening. Figure E.3 (taken from Section 5.2.2) illustrates person to persona(e) to identifier links.

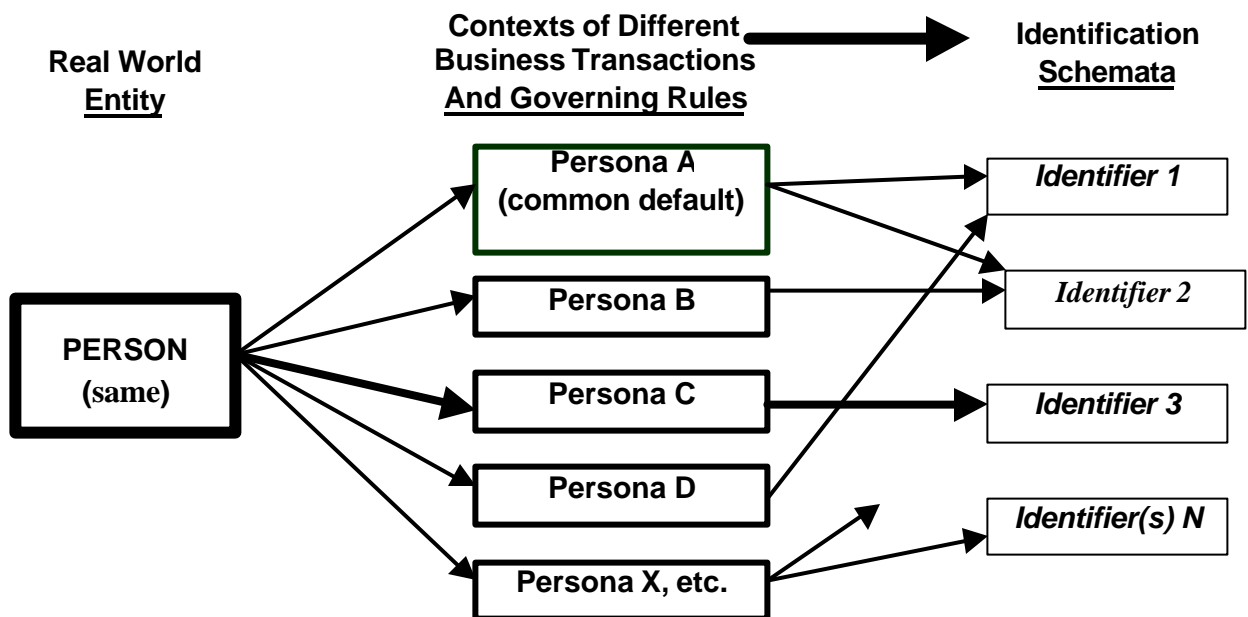


Figure E.3: Illustration of Links of a Person to Persona(e) to Identifier(s) issued through Identification Schemata applicable to the contexts of different business transactions

### E.3.2 Person Signature

#### Rule E-15:

In present day business transactions, a person can and does use different signatures.

For example, a natural person, i.e. as an individual, can use:

- (1) a signature comprised of all/full set of given names and surnames;

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

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- (2) a signature consisting of a single given name and surname;
- (3) a signature consisting of one or more initials and a surname; and/or,
- (4) a signature of the nature of an "initial", i.e., to initialize.

### Rule E-16:

**An organization person as an employee or officer acting on behalf an organization "signs", i.e., links itself, to a business transaction on behalf of that organization, in a variety of ways.**

For example, an "organization person" can and does use different signatures in different contexts and for different purposes.

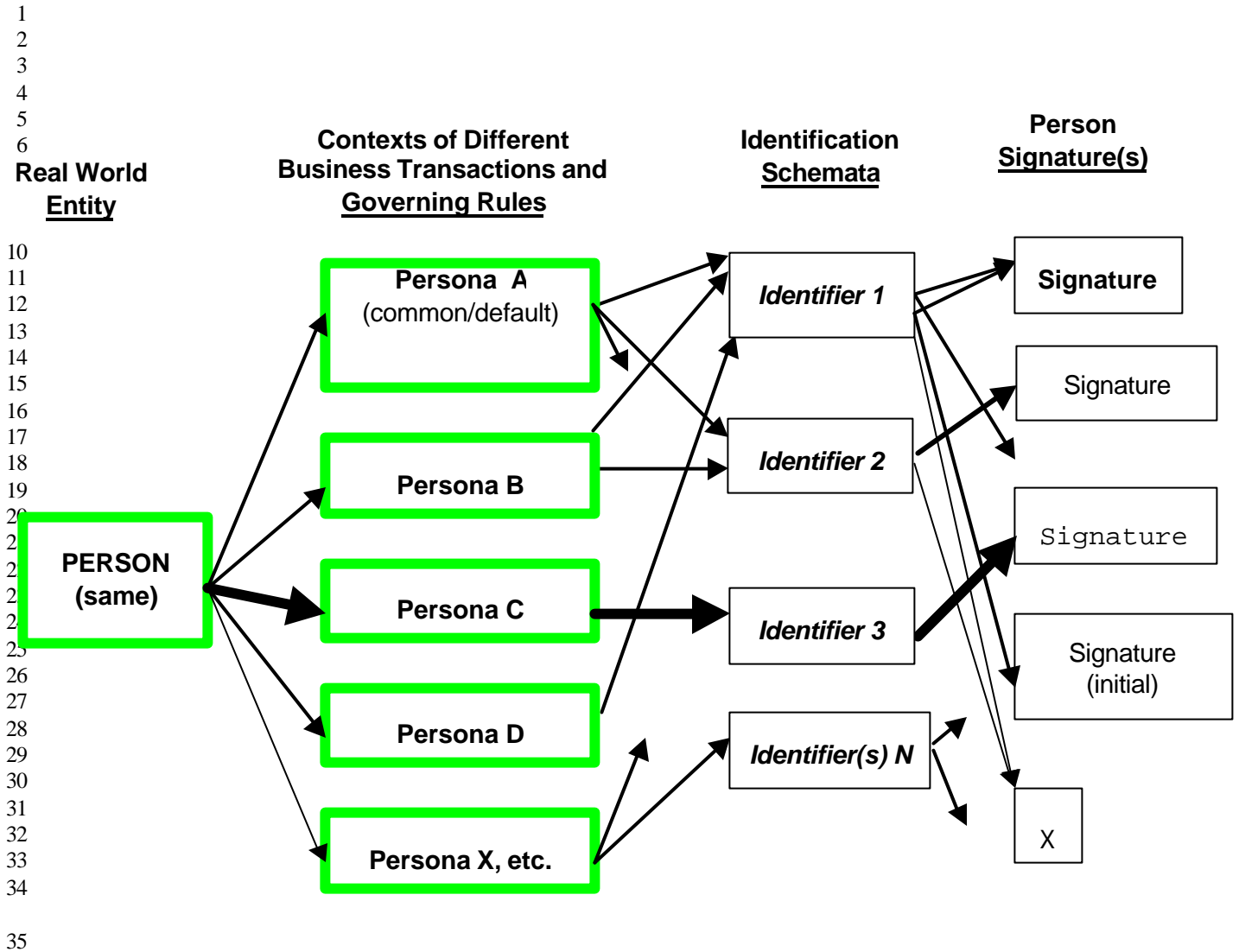
### Rule E-17:

**It is assumed that, (a) a signature belongs to a person, (and not a "technical component"); (b) is created/generated by a person; and, (c) depending on the context of the business transaction, is used either for the purposes of identification, authentication and/or authorization.**

A variety of combinations of linkages currently exist among personae, identifications and signatures for the same unique real world person. This is illustrated in Figure E.4 (as taken from Section 5.2.2).

The above three Rules, support the requirement of ensuring that the end entities in any business transaction including those which are electronic business transaction-based, are "persons", i.e., those entities which make the commitments, are held accountable/responsible for, etc.

# ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT



**Figure E.4: Illustration of Relationships of Links of a Person to (its) Persona(e) to Identification Schemata and resulting Identifiers to associated Person Signatures – in the Context of Different Business Transactions and Governing Rules**

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**Rule E-18:**

**In an (electronic) business transaction, the end entities are persons irrespective of the nature and combinations of "technical components" of the functional support services of the information infrastructure involved.**

Current definition of digital signature in the context of security services focus on ensuring the integrity of a set of digital data. For example, a "digital signature" is an asymmetric cryptographic algorithm which binds a set of digitized data the purpose of which is to ensure that no changes whatsoever occur in the contents of the set of information exchanged between original sender and ultimate recipient.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1  
2 The primary requirement for both the legal and commercial frameworks as well as that for building  
3 trust is to be able to bind a person to a signature. Quite apart from any technical solution, (e.g., in  
4 the form of electronic, digitized and/or digital signatures), the first step here is reaching agreement  
5 on a common (non-technical) concept/term and associated definition which binds a person to a  
6 signature, i.e., "person signature".

7  
8 There are several advantages to this:

- 9  
10 (1) this is a clear and precise way of binding person ↔ signature, i.e., as a special and  
11 particular type of signature, i.e., vis-à-vis the existing general/generic IT definition of a  
12 digital signature as an asymmetric encryption algorithm";  
13  
14 (2) it is media neutral and transparent vis-à-vis both digital and the non-digital world;  
15  
16 (3) it is independent of the manner, i.e., the HOW, in which a signature is recorded, (e.g.,  
17 written, stamped, electronic, use of encryption, etc.); and,  
18  
19 (4) it is a new term, i.e., coined, unambiguous and thus avoids the existing confusion in the  
20 area of signatures and (electronic) business transaction.

### 21 22 **Rule E-19:**

23  
24 **A signature which is created by and/or pertains to a person is deemed to be a "person**  
25 **signature" and is defined as follows:**

26  
27 *"person signature: a signature, i.e., a name representation, distinguishing mark or*  
28 *usual mark, which is created by and pertains to a person".*

### 29 30 Notes:

- 31  
32 (1) The purpose of this definition is to focus on and address the "WHATs" of a signature of a  
33 person, irrespective of the "HOWs", i.e., methods, means, information technology tools,  
34 etc.  
35  
36 (2) This definition assumes that a standard definition for signature exists as a "what" and one  
37 which is media neutral and IT independent.

### 38 39 **Rule E-20:**

40  
41 **A person signature can occur with respect to any set of activities or a person signature**  
42 **can occur with respect to any set of activities or processes in a business transaction.**  
43  
44

## 45 **E.4 PERSON AND ROLES: BUYER AND SELLER**

### 46 **E.4.1 Buyer and Seller**

### 47 48 **Rule E-24:**

49

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1 The two basic roles of persons involved in any business transaction are those of "buyer"  
2 and "seller".

3  
4 They are defined as:

5  
6 *"buyer: a person who aims to get possession of a good or service through  
7 providing an acceptable equivalent value, usually in money, to the person providing such a  
8 good or service."*

9  
10 *"seller: a person who aims to hand over voluntarily or in response to a demand or  
11 request, a good or service to another person and in return receives an acceptable  
12 equivalent value, usually in money, for the good or service provided."*

### 13 Notes:

14  
15  
16 (1) The use of the term "person" in these definitions means that "seller" and "buyer" inherit all  
17 the properties of a "person".

18  
19 (2) Synonyms for "buyer" are "client", "purchaser", "shopper" (and "emptor" as in "caveat  
20 emptor" = buyer beware).

21  
22 (3) Synonyms for "seller" are "dealer", "merchant", "(service) provider".

23  
24 (4) Use of terms such as "consumer" and "vendor" should be reserved as terms to be used  
25 in connection with Consumer Policy.

26  
27 (5) The phrase "providing an equivalent value, usually money" covers the following:

28  
29 (5.1) It is up to the buyer and seller to decide and mutually agree upon "an acceptable  
30 equivalent value".

31  
32 For example, the seller can set the monetary value at \$0.00 and/or for the good or service  
33 provided. The seller may provide this good or service for free in terms of monetary value  
34 but the seller can still retain other rights with respect to the good or service which the  
35 buyer upon receipt of the good or service is obliged to honour. The common example  
36 here is the seller retaining copyright or other intellectual property rights. The medical,  
37 education and social services sector represent areas where the contents of a business  
38 transaction do have value, need to be protected, etc., but such values are of a non-  
39 monetary nature.

40  
41 (5.2) The buyer and seller to decide and mutually agree upon "an acceptable equivalent value".

42  
43 (5.2) In the public sector, many goods or services are provided for "free" to buyers, increasingly  
44 known as clients.

45  
46 A primary reason the monetary value for delivery of such goods or services to persons  
47 generally or individuals specifically, is that the seller as a public administration has already  
48 been "pre-paid" with respect to an "acceptable equivalent value" through the collection and  
49 receipt of the same in the form of taxes.

50  
51 (5.4) The buyer and seller may barter, i.e., not all business transactions need to involve money.  
52

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1 (6) With respect to the seller, the phrase "to get possession of" and "to hand over" may or  
2 may not involve full transfer of ownership rights. For example, the buyer, may purchase  
3 only a (a) "right to re-sell, i.e., the seller retains the intellectual property rights on the good  
4 or service bought by the buyer; or (b) a license to use with the seller retaining the  
5 intellectual property rights, (e.g., patents, copyrights, trademarks, or industrial designs).  
6

7 (7) For Open-edi based implementations where the exchanges of equivalent values are  
8 primarily of a non-monetary nature, (e.g., as in (electronic) administration, health,  
9 education, social services, etc.), synonyms for seller and buyer are often "provider" and  
10 "recipient" or "client".  
11

12 (8) It is assumed that (1) either the "buyer" or the "seller" can use an "agent"; and, (2) that  
13 both can agree on involving a "third party".  
14

### 15 Rule E-22:

16  
17 **Rules and practices of "buyers" and "sellers" governing business transactions, including**  
18 **those via Open-edi apply, either to persons generally or distinguish between "individuals"**  
19 **and "organizations".**  
20

21 It is important to ascertain in a business transaction whether the rules and practices of "buyers"  
22 and "sellers" which govern a business transaction (1) apply to persons generally, i.e. at Level 0 -  
23 No External Constraints on the Business Transaction.; or, (2) distinguish (or need to distinguish)  
24 between "individuals" and "organizations", i.e. as a minimum common Level 1 - External  
25 Constraint.  
26

27 Where one distinguishes between "individual" and "organization", it is likely that privacy/data  
28 protection rules need to be applied to "information pertaining to an identifiable individual"  
29 associated with a business transaction.  
30

### 31 Rule E-23:

32  
33 **It is assumed that unless bound by external constraints "buyers" and "sellers" as persons**  
34 **are free to undertake any business transaction involving any good or service they mutually**  
35 **agree to.**  
36

37 The basis of Business Transaction Model is that of Level 0. It has been derived to provide a  
38 simple view of commerce for which there are no constraints on the actions of buyers and sellers.  
39 Level 1 of the Model represents external constraints on "buyers" and "sellers" by "regulators"  
40 implemented through "public administrations". {See further below}.  
41

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1  
2 The Business Transaction Model is based on the following assumptions:

- 3  
4 (a) A natural person in the role of a "buyer" is deemed to be an "individual".  
5  
6 (b) A natural person in the role of a "seller" is deemed to be an "organization".

### 7 8 Notes:

- 9  
10 (1) This is consistent with the international standard definition of "organization".  
11 (ISO/IEC 6523)  
12  
13 (2) This is consistent with a self-employed and/or unincorporated natural person  
14 offering for sale a good or service (and already being considered to be an  
15 "organization" for sales tax/value-added tax purposes).  
16  
17

## 18 **E.5 PERSON AND DELEGATION OF COMMITMENT TO "AGENT" AND/OR "THIRD** 19 **PARTIES"**

### 20 **E.5.1 Introduction**

21  
22 In many business transactions, several other parties are involved other than those in the roles of  
23 buyer and seller. Two categories of parties most commonly involved are those known as "agents"  
24 and those known as "third parties". They are separate and represent different roles. In addition,  
25 this issue is complicated by the use of various terms/words being used as synonyms, (e.g.,  
26 intermediary, service provider, service bureau, etc.).  
27

28 It may well be that in one business transaction, a service provider acts as an "agent" and in  
29 another acts as a "third party". From both a commercial and legal perspective, there is a need to  
30 differentiate between (1) "acting on behalf of another person and being responsible and  
31 accountable for associated commitments" versus (2) simply providing a "common service".  
32

### 33 **E.5.2 Agents**

#### 34 **Rule E-24:**

35  
36 **Rights or obligations arising from commitments in a business transaction can be fulfilled**  
37 **either directly by the person who is an end entity or through an agent acting on its behalf.**  
38

39 In most business transactions, the persons in the role of buyer or seller as end entities, i.e. primary  
40 parties (or as "recipient" and "providers" in public administration) can each either undertake all the  
41 activities and associated data interchanges directly or delegate a part of these to another person.  
42

43 A person who acts for another person in any capacity is defined as an "agent", (e.g., as a deputy,  
44 substitute, representative, factor, emissary, etc.) {See further Oxford/Webster dictionaries}. In  
45 commerce, politics, law, etc., there are numerous specific applications and uses of agents flowing  
46 directly from this general meaning. In the context of this standard, "agent" is defined as:  
47



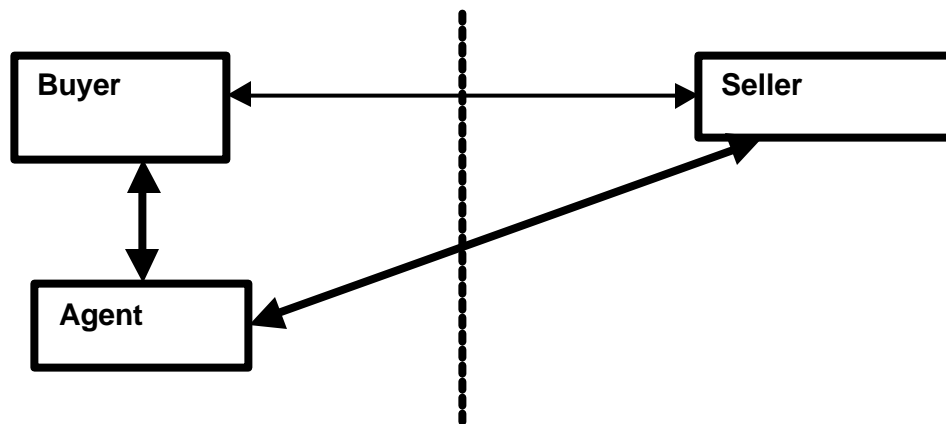
## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1       **"agent:**        a person acting for another person in a clearly specified capacity in the  
2       context of a business transaction

3  
4       *Note: Excluded here are agents as "automatons" (or robots, bobots, etc.) In ISO/IEC 14662,  
5       "automatons" are recognized and provided for but as part of the Functional Services View (FSV)  
6       where they are defined as an "Information Processing Domain(IPD)".*

7  
8       With respect to use of the term "agent", it is understood that

- 9  
10      (1)     an agent is a person and thus inherits, must have, all the properties of a person.  
11  
12      (2)     often "intermediary" is used as a synonym for agent, but could also be a "third party".  
13             Consequently, this term should not be used.  
14  
15      (3)     in a business transaction, "agents" are those persons who undertake a specific business  
16             process or function on behalf of a buyer or seller. This basic relationship of agent to a  
17             buyer or a seller is illustrated in figure E.5 (as taken from Section 5.2.4).



41  
42       **Figure E.5: Illustration of Buyer Seller Interaction with Buyer Using an Agent**

### 43 44 45       **Rule E-25:**

46  
47       **The delegation of a right or obligation of a person exercising a role in a business  
48       transaction to another person acting as an agent must be explicitly stated.**

49  
50       A basic buyer/seller agreement and associated business transaction(s) often involves the use of  
51       "Agents", (e.g., banks, carriers, logistic chain facilitators, etc.). Interactions between them, i.e., the  
52       "agents", in turn can take the form of "subsidiary buyer/seller" agreements.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1 In day-to-day business transactions, it is often implicitly understood who is responsible for what  
2 and when, i.e., where in a process, including the role of agents.<sup>9</sup> Experience, custom and  
3 precedence have established these and the Evidence Acts recognize this in the phrase "in the  
4 usual and ordinary course of business".

5  
6 However, for business transactions via Open-edi, such commonly understood delegations to  
7 agents must be explicitly stated at a level of preciseness and unambiguity which:

- 8  
9 (1) facilitates maximum use of information technology among autonomous persons and their  
10 agents;  
11  
12 (2) builds trust and confidence for the digital economy; and,  
13  
14 (3) ensures re-usability of scenarios and scenario components.

### 15 16 **Rule E-26:**

17  
18 **It is recognized that certain roles and responsibilities of a person in a business transaction**  
19 **cannot be delegated to agents. Where this is so, such constraints must be explicitly**  
20 **stated.**

21  
22 This rule captures the present day requirement that certain roles, functions and associated rights  
23 and responsibilities are qualified. A person (natural or legal) may have to meet specified criteria  
24 and/or be certified to be able to act as "agent" with respect to a specific activity or function in a  
25 business transaction. For example, not any person can be a doctor, a bank, an engineer, airline  
26 company, etc.  
27

### 28 **E.5.3 Third Parties**

#### 29 **Rule E-27:**

30  
31 **The primary persons in a business transaction can agree to have another person(s) as**  
32 **third party(ies) fulfil a common specified role or function.**

33  
34 Any business transaction, including commercial agreements and contracts, always involves the  
35 two persons primarily concerned, i.e., in our case a person in the role of "buyer" and another  
36 person in the role of "seller". Quite often whether or not either person utilizes an agent(s), there  
37 still may be other persons involved, i.e., a "third party". Third parties fulfil a role or function  
38 mutually agreed upon by the two primary parties most often in a position of neutrality and of trust.  
39

40 An early example here is that of the notary, "*a person publicly authorized to draw up or attest*  
41 *contracts or similar documents, to protest bills of exchange, etc., and discharge other duties of a*  
42 *formal character*". {Oxford English Dictionary, 2} As a neutral observer and note taker, a notary

---

<sup>9</sup> Within the world of information technology, one also speaks of agents, (e.g., robots, spiders, crawlers, bobots, etc.). It is recommend that such mechanisms, software programs, applications, etc., and other technical components be referred to as "IT agents". This should reduce some of the present confusion.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

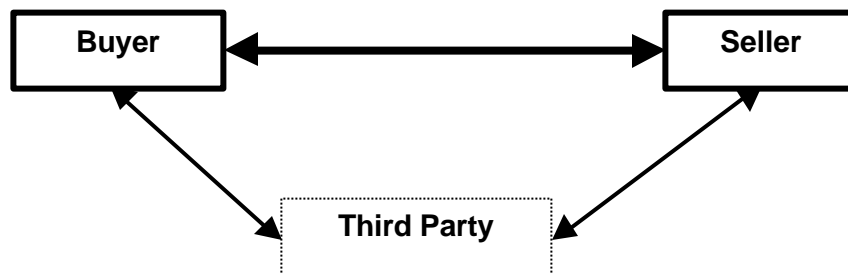
1 has the trust of all persons primarily concerned, i.e., is a trusted third party (TTP) to all the primary  
2 persons.<sup>10</sup>

3  
4 A generic definition for "third party" is:

5  
6 *"third party: a person besides the two primarily concerned in a business transaction  
7 who is agent of neither and who fulfils a specified role or function as mutually agreed to by  
8 the two primary persons".*

9  
10 Note: It is understood that more than two persons can at times be primary parties in a  
11 business transaction.

12  
13 In addition to notarial-type functions, clearinghouses and exchanges are prime examples of third  
14 parties. The nature of the linkages between buyer and seller and a common third party is  
15 illustrated in Figure E.6 (as taken from Section 5.2.4).



30  
31  
32  
33  
34  
35

Figure E.6: Illustration of Buyer and Seller with a Third Party

### 36 E.6 Basic Types of Person: "Individual" and "Organization"

#### 37 38 Rule E-28:

39  
40 **From a legal perspective, generally applicable world-wide, there are basically two types of**  
41 **persons, namely, "natural persons", and "legal persons" (a.k.a. "artificial persons").<sup>11</sup>**

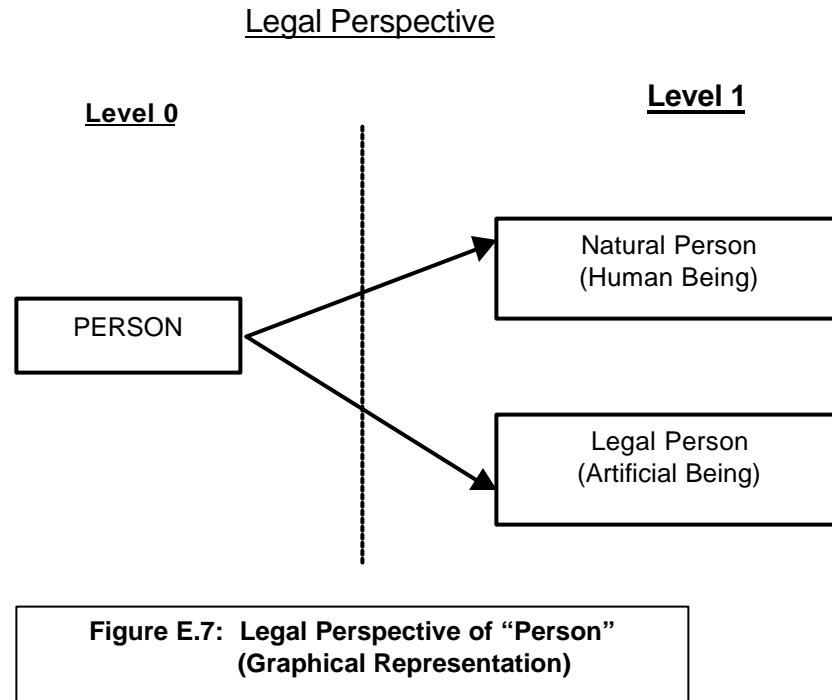
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<sup>10</sup> The introduction of paper documents as business and financial instruments (16<sup>th</sup> century) in support of commerce as a substitute for actual persons being present also required the building of trust and confidence in them at that time new information technology. This was achieved through the use of trusted third parties (TTPs), i.e., notaries. As trust and confidence in the use of paper documents increased the need for TTP services diminished.

<sup>11</sup> Historically, male human beings have always been recognized as having legal rights and duties, i.e., as "persons". For female human beings, this was an "on" and "off" situation well into the 20<sup>th</sup> century. For example, in Canada, it was not until 1921 that women were recognized as persons with a right to vote, etc., i.e., female human beings equally recognized as natural persons with the same rights and obligations as male human beings.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

Initially, "human being" and "person" were synonymous both in usage and in law. The introduction in law of the now internationally legally recognized concept of the entity of "legal person", (a.k.a., "artificial person"), means that person and "human being" are no longer synonyms and the latter have become known as "natural persons". Figure E.7 illustrates this legal perspective.



Laws, statutes, regulations, policies, etc., (whatever the jurisdiction) either:

- (1) apply to "person" in general, i.e., to both natural and legal persons and do not differentiate between the two<sup>12</sup>;
- (2) apply to only to "natural persons" or "legal persons", but not both; or,<sup>13</sup>
- (3) differentiate between "natural person" and "legal person" but apply to both<sup>14</sup>.

The need for raising capital, (e.g., building and outfitting of a ship for trade to the East Indies (other than by a King or Prince, i.e., private sector instead of public sector financing), to support the expanding global world economy in the 17<sup>th</sup> century outstripped the financial capacity of partnerships and similar structures by which natural persons formed companies, i.e., initially an agreement among two or more natural persons as "companions". Thus laws were passed in different jurisdictions creating a "legal" or "artificial" person, i.e., as limited liability joint stock companies, in order to be able to raise the substantial capital for what were the mega projects of those earlier times. See further the seminal work by W.R. Scott, The Constitution and Finance of English, Scottish, and Irish Jointstock Companies, Cambridge, 1912.

<sup>12</sup> Primary examples here are national goods and services tax or local sales taxes. These apply to any person selling a good or service irrespective of whether they are a "natural person" or a "legal person".

<sup>13</sup> A key example here is "human rights" which apply only to natural persons in their role as individuals.

<sup>14</sup> An example here is the registration of automobiles in that both natural persons and legal persons can register and own an automobile. Another example here is of laws pertaining to privacy/data protection

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

In developing the Open-edi scenarios and scenario components, it is important to ascertain where and when which of the three noted options applies.

### Rule E-29:

**At Level 1 - External Constraints, the two basic categories of persons as players in any business scenario are deemed to be:**

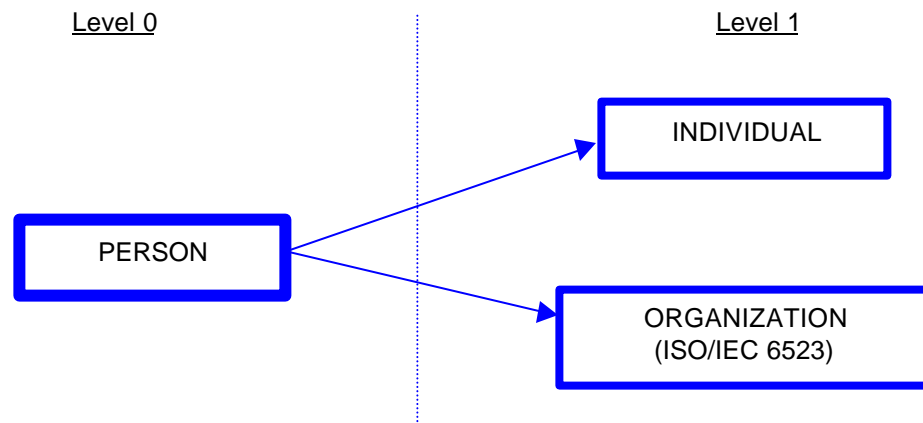
- (1) individual; and,**
- (2) organization**

While "natural person" may be a more correct term for some technical legal reasons, the term "individual" is commonly used, i.e., in the context of rights and obligations, (e.g., Charter rights, entitlements, etc.).

Similarly, "organization" is the concept/term commonly used in information technology in areas such as global unambiguous identification of organization for electronic addressing, (e.g., X.500 standards), security services, (e.g., X.509 standard on which PKI (Public Key Infrastructure) is based, etc.).

Consequently, this standard uses the terms "individual" and "organization" as the two basic categories of persons as players in any business transaction involving Level 0 - No External Constraints and minimum Level 1 External Constraints. Figure E.8 (as taken from Section 5.2.5) illustrates this.

### Business Transaction Perspective



**Figure E.8: Integrated Business Transaction Perspective of "Person" – Level 0 and Level 1**

requirements which differentiate between persons as "individuals" and "organizations" in rights and obligations.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1  
2  
3  
4 It is understood that:

- 5  
6 (1) a "natural person" can participate in a business transaction as either an "individual" or an  
7 "organization"; and,  
8  
9 (2) a "legal person" participates in business transactions only as an "organization".  
10  
11  
12

### 13 E.6.1 "Individual"

#### 14 Rule E-30:

15  
16  
17 **"Individual" is the attribution of the property of indivisibility to a natural person, i.e., in**  
18 **making commitments having rights/obligations, being accountable/responsible for, etc.**  
19

20 Individual<sup>15</sup> is defined as:

21  
22 ***"individual:** A person who is a human being, i.e., a natural person, who acts as a*  
23 *distinct indivisible entity or is considered as such".*  
24

#### 25 Notes:

- 26  
27 (1) The use of the term "person" in the definition of "individual" means that an "individual"  
28 inherits all the properties and behaviours of "person".  
29  
30 (2) The definition is neutral towards and independent of:  
31  
32 ➤ the manner in which various jurisdictions have differing rules as to what criteria  
33 must be met for an entity to be considered/qualify as a "natural person";  
34  
35 ➤ any qualifications which a jurisdiction may place on a natural person with respect  
36 to their ability to make commitments, be held responsible for, etc., (e.g., "minors",  
37 "being incapacitated", etc.).  
38  
39 (3) This definition is harmonized with basic concepts and requirements underlying  
40 Privacy/Data Protection, i.e., "personal information", which is defined as "information about  
41 an identifiable individual". This includes information provided by an individual about  
42 him/herself to another person in the context of an eventual delivery of a good or service  
43 provided by that person in the role of "seller".  
44

---

<sup>15</sup> No standard definition currently exists internationally for "individual". A review of international standards did not identify any standard which contained and defined the concept/term "individual". Rather, international standards tend to define particular roles of an individual in relation to a specific business process along with associated data elements, (e.g., as a "holder of a token" issued by an organization as in passport holder (ISO/IEC 7501), (credit) card holder (ISO/IEC 7812), etc.).

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

### 1 E.6.2 Organization

#### 2 Rule E-31:

3  
4  
5 **A legal (or artificial) person consists of one or more natural persons and/or one or more**  
6 **other legal persons. A unifying term and common concept used internationally is the**  
7 **standard term "organization" as the collective common term for all the different ways legal**  
8 **(or artificial) persons can be composed and be recognized in various jurisdictions.**

9  
10 An international standard definition for "organization" exists and is widely used especially in the  
11 areas of information technology/communications infrastructure, (e.g., OSI, X.500, Internet  
12 addressing, etc.), security services, etc. It is provided in the international standard ISO/IEC *IS*  
13 *6523, Information Technology - Structure for the identification of organizations and organization*  
14 *parts, Part 1 (1998): Identification of organization identification schemes; and, Part 2: Registration*  
15 *of organizations identification schemes*. This standard has recently been revised to meet  
16 requirements arising from increasingly widespread use of information technology. This standard  
17 defines "organization" as:

18  
19 **"3.1 organization:** *A unique framework of authority within which a person or persons*  
20 *act, or are designated to act, towards some purpose.*

21  
22 *NOTE: The kinds of organizations covered by this part of ISO/IEC 6523 include the*  
23 *following examples:*

- 24  
25 a) *an organization incorporated under law;*  
26 b) *an unincorporated organization or activity providing goods and/or services*  
27 *including:*  
28 1) *partnerships;*  
29 2) *social or other non-profit organizations or similar bodies in which ownership*  
30 *or control is vested in a group of individuals;*  
31 3) *sole proprietorships*  
32 4) *governmental bodies*  
33  
34 c) *groupings of the above types of organizations where there is a need to identify*  
35 *these in information interchange".*

36  
37  
38 [and in ISO/IEC 6523-1:1998 (F):

39  
40 **"3.1 organisation:** *Cadre unique d'autorité dans lequel une ou plusieurs personnes*  
41 *agissent ou sont désignées pour agir afin d'atteindre un certain but.*

42  
43 *NOTE: Les types d'organisations couverts par la présente partie de l'ISO/CEI 6523*  
44 *comprennent par exemple les éléments suivants:*

- 45  
46 a) *organisations constituées suivant des formes juridiques prévues par la loi;*  
47  
48 b) *autres organisations ou activités fournissant des biens et/ou des services, tel que*  
49  
50 1) *sociétés en participation;*

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

- 2) *organismes sociaux ou autres à but non lucratif dans lesquels le droit de propriété ou le contrôle est dévolu à un groupe de personnes;*
- 3) *entreprises individuelles;*
- 4) *administrations et organismes de l'état;*

c) *regroupements des organisations des types ci-dessus, lorsqu'il est nécessaire de les identifier pour l'échange d'informations.]*

This term and definition of "organization" is independent of whether the "person" here is a "natural" or "legal" person. Any combination can form a "framework of authority", which incorporates decisional/commitment capability, responsibility, traceability, accountability, etc., attributes.

It is important to highlight and bring to the fore some key aspects of this international standard definition from the perspective of a business transaction.

- The phrase *"act, or are designated to act, towards some purpose"* links into the "Process" component of the business transaction, i.e., one does not start a process without some purpose in mind especially in a business transaction.
- *"Note: a) an organization incorporated under law"*

This part of the definition recognizes that each jurisdiction (at whatever level) can have its own rules for "incorporation", i.e., qualifying and registering a legal or artificial person.

- *"Note: b) an unincorporated organization or activity providing goods and/or services including:"*

There are three key element to this definition and accompanying Note b) which should be noted; namely:

- (1) if a person provides a good or service, irrespective of the person being a "natural person" or a "legal person", the person is deemed to be an "organization".
  - (2) this definition applies irrespective of whether the person is providing the goods and/or services on a commercial basis, i.e., for-profit, or on some other basis, (e.g., public sector administrative, services to the public, with or without (some cost-recovery) fees, exchanges of information among public administrations, etc.).
  - (3) this definition applies, whether or not in a particular jurisdiction examples of entities given in "Note 3 b)" are or need to be "incorporated".
- Finally, Note c) recognizes and takes into account that "organizations" in turn can re-group themselves in relation to the outside world and thus represent themselves as another different single organization for purposes of information interchange and act as a "framework of authority".

### E.6.3 Organization Part

#### Rule E-31:



## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1  
2 **A key property of an "organization" is that unlike an "individual", it is deemed to be**  
3 **divisible, i.e., can have one or more distinct parts identified for information interchange.**

4  
5 The ISO/IEC 6523 definition for "organization part" is:

6  
7 **"3.2 organization part:** *Any department, service or other entity within an*  
8 *organization, which needs to be identified for information interchange".<sup>16</sup>*  
9

### 10 **E.6.4 Organization Person**

#### 11 **Rule E-33:**

12  
13 **From a business transaction perspective, one needs to be able to qualify and identify**  
14 **which organization parts can commit to and be held responsible/accountable with respect**  
15 **to a business transaction, i.e., on behalf of the organization.**

16  
17 Open-edi is more than just information exchange electronically. The context of business  
18 transaction adds key additional properties and behaviours. One of these is the need to be able to  
19 unambiguously identify and ascertain whether or not an "organization part" has the attributes  
20 required for it to be able to act on behalf of an organization as a "person" in a business  
21 transaction. A solution to this issue is the introduction of the concept/term "organization person"  
22 to reflect the added requirement of an "organization part" of being able to support commitment  
23 exchange aspects in a business transaction.  
24

25 Within the context of (a) the proposed definition of "person"; (b) the international standard  
26 definitions for "organization" and "organization part"; and, (c) the added requirements of  
27 commitments in a business transaction, it is necessary to introduce the concept/term and  
28 associated definition of "organization person" as follows:  
29

30 **"organization person:** *an organization part which has the properties of a person*  
31 *and thus is able to make commitments on behalf of that organization.*  
32

33 *Note: (a) an organization can have one or more organization persons.*  
34

---

<sup>16</sup> The concept/term and associated definition for "3.2 organization part" was added to this international standard when it was revised in 1998. The primary purpose was to reflect and incorporate the real world fact/requirement that an organization has sub-components which undertake specific roles or functions within that organization, i.e., "organization parts". Consequently, each "organization part" may need to be identified as an "unique address" (or addressable location) within an organization to which information is to be sent to or received from, i.e., for "information interchange". (The X.500 Directory Services standard is based on and supports this concept). This requirement exists irrespective of whether physical or virtual objects are to be interchanged.

Given the wide variety in structures of organization, scope (from local to multinational), size (from a 2-3 employee SME to a Fortune 500 company), it suffices to note that there exist a multitude of organization parts such as types of organizational units, functions, positions/titles, etc. Similarly for information exchange purposes, many organizations have one or more locations specified as physical or electronic addresses to which information can be sent to or received from. Existing standards are deemed to cover information exchange with respect to organization and organization parts.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1                   (b)    *an organization person is deemed to represent and act on behalf of the*  
2                                    *organization and to do so in a specified capacity.*

3  
4                   (c)    *an organization person can be a "natural person" such as an employee or*  
5                                    *officer of the organization.*

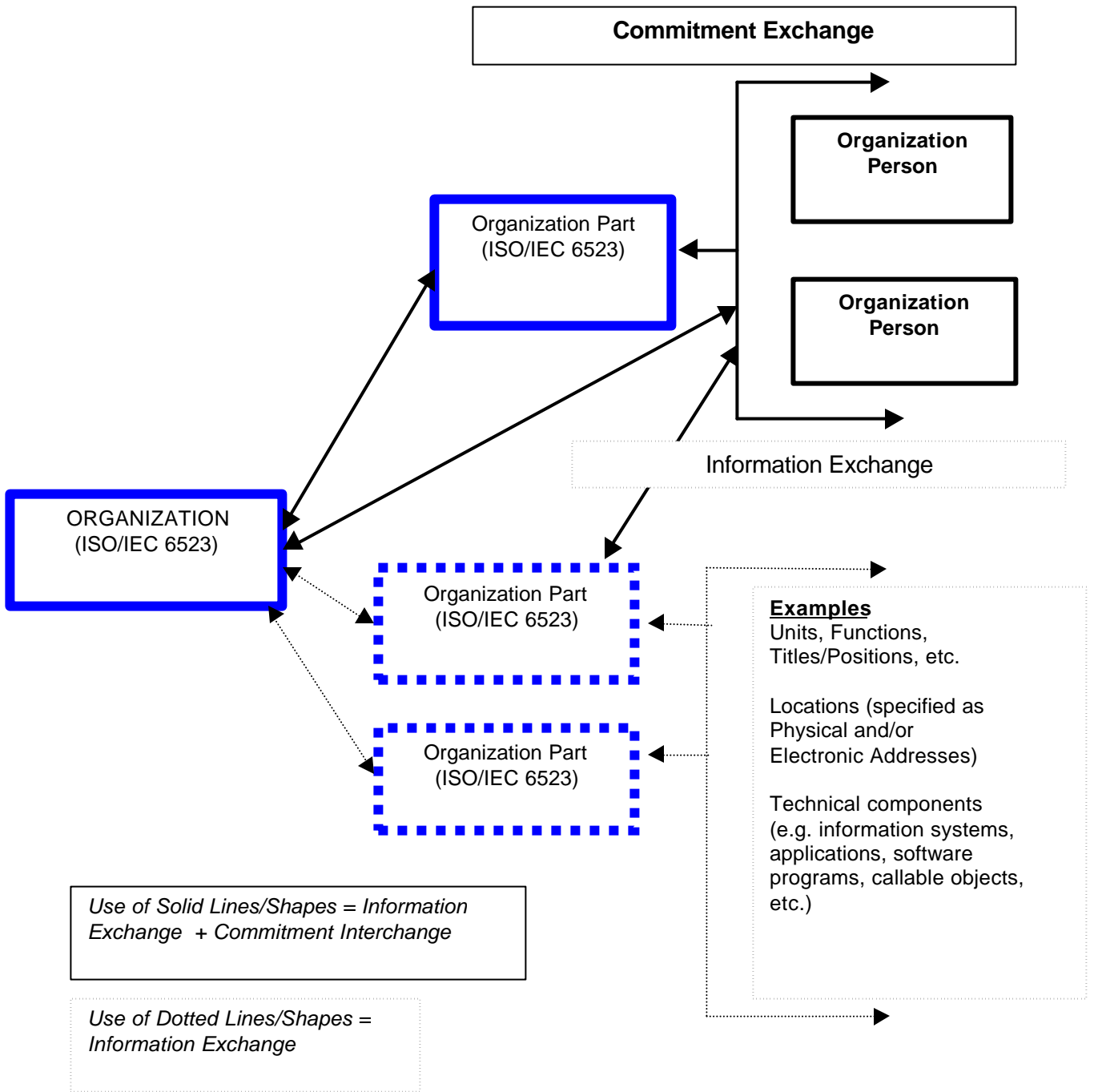
6  
7                   (d)    *an organization person can be a legal person, i.e., another organization".*  
8

9   Figure E.9 (as taken from Section 5.2.5) illustrates the linkages among "organization",  
10 "organization part", and "organization person" and does so in the context of commitment  
11 exchange versus information exchange.

12  
13   Figure E.9 differentiates between (a) using solid lines, the added legal and commercial  
14 perspectives of "organization → organization part → organization person" relation of commitment  
15 exchange plus information exchange and, (b) using dotted lines, the existing information  
16 exchange perspective of ISO/IEC 6525 of organization → organization part (and to various  
17 examples of organization parts) for the purpose of information exchange only.  
18  
19  
20

# ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

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**Figure E.9: Illustration of Commitment Exchange versus Information Exchange for Organization, Organization Part(s) and Organization Person(s)**

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

The inter-working of the previous rules represent Level 0 - No External Constraints and Level 1 - External Constraints in the Business Transaction Model with respect to the person component. Figure E-10 captures these rules in matrix form.

Basic Players	Key Roles in (Electronic) Business Transaction	
	Buyer	Seller
Level 0: Person (undifferentiated)	YES	YES
Level 1: Person (individual)	YES	NO (YES) <sup>17</sup>
Level 1: Person (organization)	YES	YES

**Figure E-10: Business Transaction Model – Basic Players and Key Roles**

### **E.7 PERSON AND LEVEL 1 - EXTERNAL CONSTRAINTS: "REGULATOR" AND "PUBLIC ADMINISTRATION"**

It is understood with respect to present day business transactions, as well as with respect to those enacted in the future based on Open-edi standards that there are external constraints on both (1) permitted behaviour of buyers and sellers; and, (2) the nature of the goods and services being provided.

#### **Rule E-34:**

**External constraints exist on the provisioning of goods and services and the behaviour of persons as players in business transactions including those provided via electronic commerce.**

**The introduction of constraints on the behaviour of persons as players, i.e., individuals and organizations, and their roles as buyers or sellers in a business transaction introduces an additional:**

- (1) third role, i.e., "regulator"; and,**
- (2) third category of player, i.e., "public administration".**

Entities which impose external constraints on market behaviour and associated business transactions of buyers and sellers are deemed to be "regulators". "Regulator" is defined as:

<sup>17</sup> From an IT standards perspective, (e.g., ISO/IEC 6523), an unincorporated activity providing a good or service is deemed to be an organization. However, there may be legal requirements in a jurisdiction, where a "natural person" in the role of a seller is deemed to be an "individual" and not an organization. It is up to such jurisdictions to resolve how such an approach is harmonized with Privacy/Data Protection requirements.

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1           **"regulator:**    *a person who has authority to prescribe external constraints which serve as*  
2           *principles, policies or rules governing or prescribing the behaviour of persons involved in a*  
3           *business transaction as well as the provisioning of goods and services interchanged."*  
4

5 Key properties of an entity known as a "regulator" are:

6  
7       (1)    that it must be a person.

8  
9            Increasingly this is a legal person, i.e., organization, instead of an individual.

10  
11       (2)   a "regulator" represents an authority who prescribes principles, policies or rules which  
12            govern or control (a) behaviours of persons, (b) the manufacture/provisioning of goods  
13            and/or services, and, (c) interchanges of the same among persons.  
14

15 The third category of players in a business transaction is that of "public administration". A "public  
16 administration" is a person who is deemed to have all the attributes of an organization plus at  
17 least one unique additional attribute, from the perspective of a business transaction. A public  
18 administrator has the attribute that in addition to being able to play the roles of an organization,  
19 i.e., "buyer" and "seller", it can also act on behalf of a "regulator".  
20

21 [Note: This role of acting on behalf of a "regulator" is unique to "public administration" and is  
22 independent of whether the latter decides to delegate or outsource such a function, i.e., to  
23 an "agent" acting on its behalf].  
24

25 The definition of "public administration" is:

26  
27           **"public administration:**    *an entity, i.e., a person, which is an organization and has*  
28           *the added attribute of being authorized to act on behalf of a regulator".*  
29

30 It is assumed that prescription(s), (e.g., laws, regulations, policies, directives, etc.), issued by  
31 public administrators in their role of regulators will be:  
32

- 33       ➤    harmonized and consistent among and between all levels of government (domestically  
34            and internationally);
- 35  
36       ➤    be clear, predictable and precise providing equal treatment for digital and non-digital  
37            transactions;
- 38  
39       ➤    promote and support the use of open standards and interoperability including these rules  
40            sets, (e.g., laws, regulations, policies, etc.); and,
- 41  
42       ➤    that external constraints prescribed by regulators on business transactions (should) have  
43            the attributes of consistency, predictability, clarity, flexibility, etc.\*<sup>18</sup>  
44  
45

---

<sup>18</sup> These and others are all objectives resulting from the OECD Ministerial Conference on Electronic Commerce (7-9 October, 1998). {See further <<[http://www.oecd.org/subject/e\\_commerce/](http://www.oecd.org/subject/e_commerce/)>> and A Global Action Plan for Electronic Commerce prepared by Business with Recommendations for Governments. {See further <<<http://www.ottawaoecd.conference.org>>>}

## ANNEX E (INFORMATIVE) - BUSINESS TRANSACTION MODEL: PERSON COMPONENT

1 Not all persons as players can perform all three roles especially the role of "regulator." For the  
 2 Business Transaction Model at Level 1- External Constraints, the permitted intersects of the  
 3 persons as players and of the three key roles is illustrated in Figure E-11.

Persons as Players at Level 1	Key Roles in (Electronic) Business Transaction		
	Buyer	Seller	Regulator
Individual	YES	NO (YES) <sup>19</sup>	NO
Organization	YES	YES	NO(YES) <sup>20</sup>
Public Administration	YES	YES	YES

7  
8 **Figure E-11: Business Transaction Model: - Basic Players and Key Roles**  
9 **- Level 1 - Public Administration Constraints**

<sup>19</sup> From an IT standards perspective, (e.g., ISO/IEC 6523), an unincorporated activity providing a good or service is deemed to be an organization. However, there may be legal requirements in a jurisdiction, where a "natural person" in the role of a seller is deemed to be an "individual" and not an organization. It is up to such jurisdictions to resolve how such an approach is harmonized with Privacy/Data Protection requirements.

<sup>20</sup> Increasingly products and services provided by public sector administrations on behalf of regulators are being "outsourced" to organizations which are not public administrations (e.g., private sector for-profit or not-for-profit organizations).

**Annex F (Informative) - Business Transaction Model: Process Component**

1			
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3			
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5	<b>F.2</b>	<b>PROCESS COMPONENT</b>	<b>F-4</b>
6			
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42			
43			

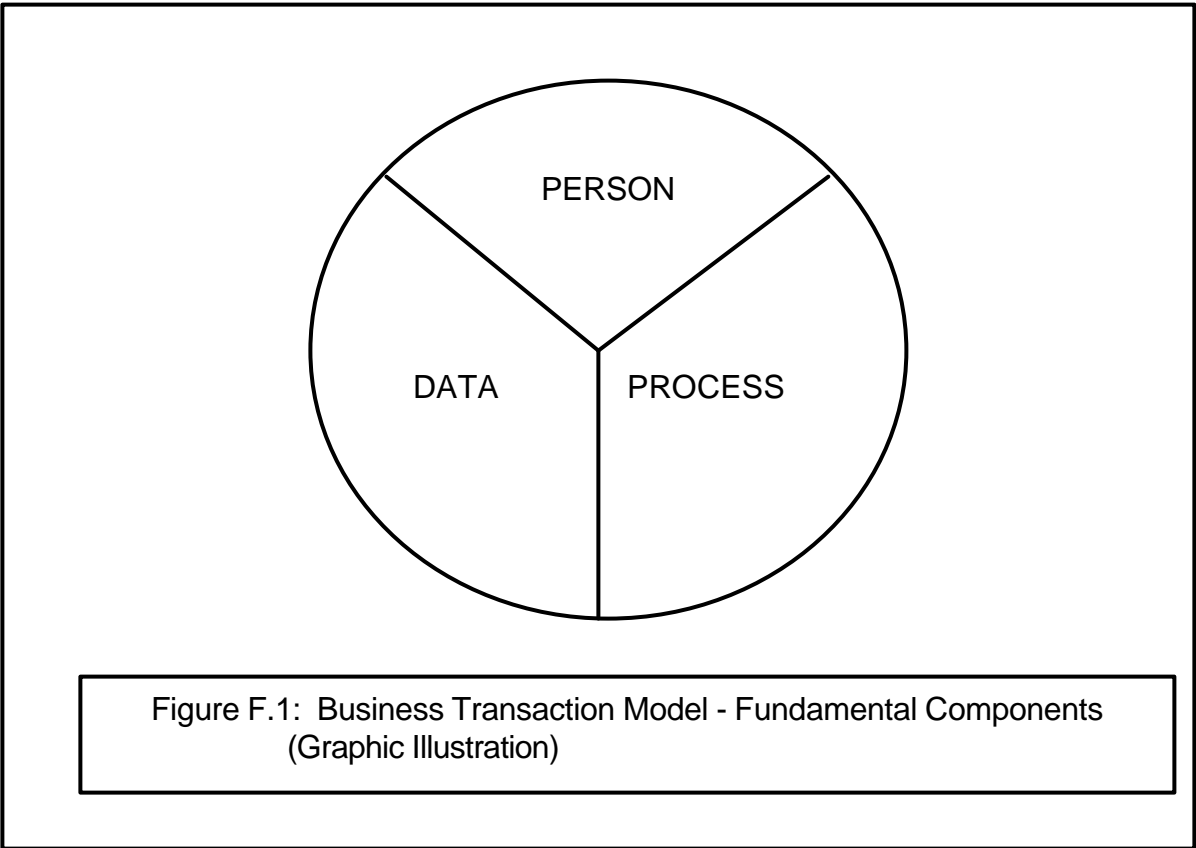
Notes:

1. The purpose of this Annex F is to provide informative and explanatory text for the rules and terms and definitions found in Sections 5.1.5 and 5.3 of the Normative part of this

**Annex F (Informative) - Business Transaction Model: Process Component**

standard. The rules as found here in this Annex F in bold are the same as those stated in these two Sections even though both have been re-numbered in this Annex.

- 2. This Annex is also meant to assist users of this standard who are either not familiar with standards in general or whose main focus to date has been on Functional Services Views (FSV) standards only.
- 3. This is one of three Annexes which provide additional information on one of the three fundamental components of a business transaction, namely, "person", "process", and "data". These three fundamental components are presented graphically in Figure F.1 (as taken from Section 5.1.5).



The Business Transaction Model has been developed to serve as a common high level and non-technical view of a business transaction. The basic assumption of this Business Transaction Model is that this view is derived from both (classical) commerce models and IT models.<sup>1</sup> These have been integrated into commonly understood (basic) processes which can be shared, from the various perspectives of the Business Operational View, i.e., commercial, legal, public policy, standardizers, IT specialist and other interested parties. {See further Figure 1 in Section 1.0 "Scope"}.

<sup>1</sup>For example, some IT models contain "system" instead of "person".



**Annex F (Informative) - Business Transaction Model: Process Component**

- 1 5. Sections F.1 through F.3 serve as the explanatory text to Sections 5.1.5, 5.1.6, 5.3 and 7
- 2 of the Normative part of this standard. Sections F.4 and F.5 serve to provide summary
- 3 information on the background study which resulted in the five phases of the Process
- 4 Component. **A key purpose here is to provide a link between the (classic)**
- 5 **economic models of the real business world and the Business Transaction Model**
- 6 **for Open-edi.** Deleting Sections F.4 and F.5 in future versions of this standard, or
- 7 summarizing their contents into 2-3 pages is a distinct possibility.
- 8
- 9

# Annex F (Informative) - Business Transaction Model: Process Component

## F.1 INTRODUCTION

Three terms and definitions in ISO/IEC Open-edi Reference Model (1997) serve as the basis and point of departure for our understanding of the process component in the Business Transaction Model; namely:

- business;
- business transaction; and,
- Business Operational View (BOV).

They are defined as follows:

**"business:** a series of processes, each having a clearly understood purpose, involving more than one organisation, realised through the exchange of information and directed towards some mutually agreed upon goal, extending over a period of time."

**"business transaction:** a predefined set of activities and/or processes of organisations which is initiated by an organisation to accomplish an explicitly shared business goal and terminated upon recognition of one of the agreed conclusions by all the involved organisations although some of the recognition may be implicit."

**"Business Operational View (BSV):** 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."

In the context of these Open-edi definitions and for this standard, a "process" is defined as:

**"process:** a series of actions or events taking place in a defined manner leading to the accomplishment of an expected result".

Many models exist and are in use for analysing and describing the processes and steps in a business transaction. This Annex F includes a survey of "buying and selling" models (including that developed by G. Zaltman whose works were the basis of earlier significant contributions to standards development work resulting in the Open-edi Reference Model).

The Process component of the Business Transaction model incorporates common elements of these models, takes into account commercial, legal and IT perspectives and integrates them into the context of this standard development work on the Business Operational View.

## F.2 PROCESS COMPONENT

### F.2.1 GENERAL RULES

Integrating these classic and current models in the context of the BOV results in five basic sets of activities or "Phases" in a business transaction; namely:

- Planning;
- Identification;

**Annex F (Informative) - Business Transaction Model: Process Component**

- 1           • Negotiation;
- 2           • Actualization; and,
- 3           • Post-Actualization<sup>2</sup>.

4  
5 Business transactions, and in particular those which are Open-edi based, can be viewed from a  
6 process perspective as five distinct activities. This perspective on the process component is  
7 linked to the making of business decisions and commitments in a business transaction. By  
8 providing this common view to business transactions, one provides a single frame of reference  
9 for discussion of many of the diverse issues as well putting these issues in a context<sup>3</sup>.

**Rule F-1:**

10  
11  
12 **A business transaction is considered to consist of five sets of distinct activities, namely;**  
13 **planning, identification, negotiation, actualization and post-actualization.**

14  
15  
16 These five basic sets of activities integrate business models taking the perspective of the seller,  
17 the perspective of buyer and that of a combined buyer-seller view as well as that of contract  
18 formation. Also incorporated is the approach of "early loose couplings" and "late bindings".  
19 Factored into this division of five phases are common external constraints of the nature of  
20 privacy/data protection, consumer protection and similar legal/regulatory requirements as  
21 external constraints on business transactions, i.e. those at Levels 1+. {See further Section  
22 5.1.6}.

23  
24  
25 This division into five phases facilitates the identification of, and mapping to, existing standards  
26 which can be utilized in support of Open-edi based implementations. It also facilitates  
27 specification and re-use of scenarios and scenario components. {See further Section F.3  
28 below}

**Rule F-2:**

29  
30  
31 **It is understood that these five basic activities need not occur in a sequential manner.**

32  
33  
34 For example, data pertaining to Post-Actualization aspects, (e.g., warranties), may well be made  
35 available as part of the Planning Phase. Or information on terms of payment often forms part of  
36 the Planning Phase.

**Rule F-3:**

---

<sup>2</sup>The terms for the five phases, i.e., Planning, Identification, Negotiation, Actualization and Post-Actualization were derived so as to provide terms which are neutral towards existing economic models, as well as existing IT models. They were also derived to map to existing commercial and legal frameworks as well as public policy requirements.

<sup>3</sup>For example, in "Identification", this may be the point to introduce the need for authentication whereas the area of "Negotiation" or "Actualization" may be the point to pursue the issue of digital signatures.

**Annex F (Informative) - Business Transaction Model: Process Component**

1  
2 **In a business transaction, any party to the transaction can terminate the business**  
3 **transaction upon one of the agreed conclusions by all those involved although some of**  
4 **the recognition may be implicit.**

5  
6 In any business transaction any party to the transaction can terminate the business transaction  
7 upon one of the agreed conclusions by all those involved although some of the recognition may  
8 be implicit. A common example here is that of one of the parties deciding not to respond  
9 anytime during the process, (e.g., a time out). It is understood that these five basic activities  
10 need not occur in a sequential manner. For example, data pertaining to post-actualization  
11 aspects, (e.g., warranties), may well be made available as part of the Planning Phase.

12  
13  
14 **Rule F-4:**

15  
16 **In an instantiation of a business transaction, these five sets of activities could be**  
17 **completed in a single continuous interactive dialogue or through several sets of**  
18 **interactions among buyer and seller and possibly involve agents and third parties as**  
19 **well.**

20  
21 For example, the Immediate Settlement Model<sup>4</sup> is a trade model where the entire business  
22 transaction process, such as planning, identification, negotiation, actualization, (e.g., delivery of  
23 merchandise and payment), is completed in real time under the Open-edi environment.

24  
25 A typical case here would be downloading a software product or music from the seller with the  
26 buyer paying with e-money or a debit account. Note that in this example the planning and  
27 identification phase can pertain only to the identification (and authentication) of the buyer is not  
28 required.<sup>5</sup> The good or service is simply delivered to the electronic address provided. This type  
29 of electronic business transaction is equivalent to a buyer walking into a store and paying with  
30 cash. Because the seller has 100% confidence in the value token being provided in exchange  
31 for the good or service provided, there is no need to identify the buyer. If at times a warranty is  
32 provided, it is up to the buyer to decide whether or not to exercise the warranty. Doing so  
33 requires the buyer to identify itself to the seller but this is at the buyer's discretion, (e.g., would be  
34 an optional information bundle(s) in the scenario for this business transaction). This would be a  
35 simple Level 0 scenario.

36  
37  
38  
39 **F.2.2 PLANNING PHASE**

40  
41 In the Planning Phase, both the buyer and seller are engaged in a process to decide what action  
42 to take for acquiring or selling a good or service. From a seller's perspective, the Planning  
43 Phase relates to all those actions or events whereby data pertaining to the availability of a good

---

<sup>4</sup>See further Section 5.6.3.2 "Trade Models by Settlement Type".

<sup>5</sup>See further Section D.4.2 "Anonymity" in Annex D "Existing Standards for the Unambiguous Identification of Persons in Business Transactions (Organizations and Individuals)".

**Annex F (Informative) - Business Transaction Model: Process Component**

1 or service is made available. It is up to the seller to decide how much data to make available and  
2 at what level of granularity without having any information on a specific buyer.

3  
4 For example, the seller may decide to limit the level of detail of information or not provide  
5 particular information about a good or service without the prospective buyer (1) identifying itself;  
6 and, (2) agreeing to maintain the confidentiality of the information provided by the buyer. All  
7 information made available on the Internet by sellers of goods and services which can be  
8 accessed free of charge and without identification, (e.g., no cookies), is a good example of the  
9 Planning Phase.

10  
11 From a seller's perspective, common examples here include advertising, market research,  
12 promotions, provision of catalogues, direct marketing, product branding and positioning of a good  
13 or service, auctions, etc.

14  
15 Many public and private sector organizations as well as individuals provide information products  
16 for free, (e.g., reports, "advice", documents, software, music, etc.). Here often the information  
17 pertaining to the Negotiation, Actualization and Post-Actualization Phase of the business  
18 transaction is included. Often this is in the form of an intellectual property protection conditions,  
19 (e.g., the product or service is available for free but for personal use only is not to be resold, use  
20 of product must identify and acknowledge the source, etc.).

21  
22 The buyer by downloading the "for free" product service, i.e., Actualization Phase, is deemed to  
23 agree to abide by the associated terms and conditions, i.e., the contract formation, and abide by  
24 them in the use of the product, i.e., Post-Actualization Phase.<sup>6</sup>

25  
26 From a buyer's perspective, the Planning Phase pertains to all those actions or events whereby:

- 27
- 28 (1) the potential buyer searches among potential suppliers of a good or service based on
- 29 information made available by these suppliers of goods and services, i.e., from a buyer's
- 30 perspective potential sellers;
- 31
- 32 (2) the potential buyer requests information, product/service literature, etc., from potential
- 33 sellers; and/or,
- 34
- 35 (3) the potential buyer makes a more explicit statement of needs in the form of a request for
- 36 proposals, for quotation, price quotes, etc. It is becoming increasingly common and
- 37 often required for public sector organization to publicly post (detailed) specifications for
- 38 the purchase of a good or service<sup>7</sup>.

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<sup>6</sup>A common example of terms and conditions attached to for free products or services are those pertaining to intellectual property rights, i.e., the product or service can be downloaded for free but the seller retains the intellectual property rights, (e.g., copyright). Common terms and conditions here include "For personal use only and not to be sold (or parts offered for sale)", "users of this product must identify and acknowledge the source where this product forms part of their work", etc. It is common practice for the seller to require a buyer to explicitly acknowledge having read, understood and agreed to abide by such terms and conditions before a download occurs.

<sup>7</sup>Where a Request for Proposal (RFP) or request for bid (RFB) contains confidentiality or intellectual property provisions, persons participating in such a RFP or RFB would be expected to ensure that conditions of this nature are adhered to in the exchange of information bundles.

**Annex F (Informative) - Business Transaction Model: Process Component**

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**F.2.3 IDENTIFICATION PHASE**

The Identification Phase pertains to all those actions or events whereby data is interchanged among potential buyers and sellers in order to establish a one-to-one linkages. These one-to-one linkages pertain to particular goods or services, availability of the same, the identification of the buyer and seller to each other on a one-to-one basis, etc.

The Identification Phase also pertains to exchanges of information bundles required to progress from the Planning Phase to the Negotiation Phase as is mutually acceptable. A key result of the Identification Phase is the transformation from a loose coupling among potential buyers and sellers to an early one-to-one binding required, and mutually agreed to, for the Negotiation Phase to begin.

From a seller's perspective, there may well be limits on the nature and level of detailed of data a seller is willing to provide on a particular good or service, i.e., in the Planning Phase, without identification of the potential buyer.

From a buyer's perspective, there may well be requirements for more detailed data on the prospective seller, especially where the seller is represented to the buyer in electronic form.

A key aspect of the Identification Phase is to ensure that "Level 1 External Constraints: Public Administration" of the nature of privacy/data protection, consumer policy, etc. can be complied with if required<sup>8</sup>. This requires the seller to determine whether the person as potential buyer is an "individual" or an "organization" (a Level 1 External Constraint) or can simply be considered a "person ( a Level 0 perspective).<sup>9</sup>

It is up to each seller to decide how much data and at what level of detail about a good or service offering to make available without knowing the identity of a particular prospective buyer.

From an electronic business transaction perspective, the Planning Phase of the Process component would include product or service information made available via the Internet WWW which a prospective buyer could view or download without "cookies".

It is also important to note that the Planning Phase covers all activities of persons including organizations or individuals as well as organizations private or public sector making freely available information about themselves or produced by the same.<sup>10</sup> The boundary of the Planning Phase to the Identification Phase is marked by characteristics such as:

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<sup>8</sup>This is independent of whether these external constraints are of a regulatory or self-regulatory nature.

<sup>9</sup>For the purposes of this standard, and in conformance with ISO/IEC 6523-1, unincorporated persons who provide a good or service, i.e., natural persons, who as role players are "sellers" in a business transaction are deemed to be an "organization".

<sup>10</sup>This includes many types and categories of public sector products documents which are available for free but where a "buyer" in downloading them in effect incorporates the negotiated element in a contract formation the primary element of which is the seller maintaining intellectual property rights.

**Annex F (Informative) - Business Transaction Model: Process Component**

- 1
- 2 • the seller requires to know the identity of the prospective buyer;
- 3
- 4 • the seller requires the prospective buyer to agree to a confidentiality arrangement before
- 5 furnishing more detailed or what is considered proprietary data on the good or service to be
- 6 provided; and/or,
- 7
- 8 • the seller requires and the prospective buyer agrees to "return" (or destroy) all
- 9 confidential/proprietary recorded information should the business transaction not be
- 10 "actualized".
- 11

12 In summary, from a seller's perspective the boundary between the Planning Phase and  
13 Identification is when the seller desires to identify on a one-to-one basis the identity of the  
14 prospective seller before providing any additional data.

15 Similarly, the boundary of the Identification Phase to the Negotiation Phase is marked by  
16 characteristics such as:

- 17
- 18
- 19 • the seller requiring no commitments from the buyer apart from the latter agreeing to keep
- 20 particular detailed information confidential and/or agree to return or provided destroy the
- 21 same should the Negotiation Phase fail to result in an agreement; and/or,
- 22
- 23 • any information provided on terms and condition, possible options, etc., before "formal"
- 24 negotiations are entered into.
- 25
- 26
- 27

**F.2.4 NEGOTIATION PHASE**

28  
29  
30 The Negotiation Phase pertains to all those actions and events involving the exchange of  
31 information bundles following the Identification Phase, i.e. a potential buyer and seller having (1)  
32 identified the nature of good(s) and/or service(s) to be provided; and, (2) identified each other at  
33 a level of certainty, i.e., unambiguity, to their mutual agreement. The process of negotiation is  
34 directed at achieving an explicit, mutually understood, and agreed upon goal of a business  
35 transaction. This may include such things as the detailed specification of the good or service,  
36 quantity, pricing, after sales servicing, delivery requirements, financing, use of agents and/or  
37 third parties, etc. This is the key to the entire process because it is during the Negotiation Phase  
38 that the direction of the remaining activities in a business transaction will be established.

39  
40 The end of the Negotiation Phase is marked by the following conditions being present.

- 41
- 42 (1) The particular good or service to be provided by the seller to the buyer has been specified
- 43 at a level of detail, i.e., granularity, mutually agreed to by both buyer and seller.
- 44
- 45 (2) The buyer and seller have unambiguously identified each other to their mutual
- 46 satisfaction. Where necessary required authentication requirements and need for
- 47 type/level of security services agreed to.
- 48

**Annex F (Informative) - Business Transaction Model: Process Component**

- 1 (3) The buyer and seller have agreed to whether or not agents or third parties are to be
- 2 involved in the business transaction and, if so, have explicitly stated the specified roles or
- 3 function these persons are to fulfil.
- 4
- 5 (4) The buyer and seller have agreed to terms and conditions pertaining to:
- 6
- 7 (4.1) the acceptable equivalent value which the buyer is to provide to the seller in exchange for
- 8 the latter providing the good or service.
- 9
- 10 If an "acceptable equivalent value" is of a monetary nature, this involves agreement on
- 11 terms of payment, method of payment, financing, etc.
- 12
- 13 (4.2) Transfer of property rights, (e.g., from full and complete ownership to a (permanent or
- 14 short term) licence to use, (e.g., as in relation to intellectual property rights).
- 15
- 16 (4.3) Post-actualization requirements, if any have been identified and agreed to {see below
- 17 Section F.2.6}
- 18
- 19 (5) Contract formation is deemed to have been concluded. Formation of contract can range
- 20 from:
- 21
- 22 (a) the seller providing an explicit summary of all the pertinent information exchanged
- 23 as information bundles exchanged during the Planning, Identification and
- 24 Negotiation Phases for sign-off by the buyer; to
- 25
- 26 (b) the totality of the exchanges of information bundles among seller and buyer
- 27 (and/or participating agents and/or third parties) during the Planning, Identification
- 28 and Negotiation Phases resulting in the formation of an implicit contract. Many
- 29 electronic business transactions will be of this nature, i.e., examples of the
- 30 "Immediate Settlement" trade model.<sup>11</sup>
- 31

32 Finally, it should be noted that the results of the Negotiation Phase may well be agreement to  
33 conduct electronic business transactions under specified terms and conditions, pre identified  
34 options and variables, (e.g., added discount on price, if volume reaches certain threshold levels,  
35 etc.). Here the Actualization Phase would in effect consist of multiple instantiations of a pre-  
36 agreed upon model of a business transaction.

**F.2.5 ACTUALIZATION PHASE**

37  
38  
39 The Actualization Phase pertains to all activities or events necessary for the execution of the  
40 results of the negotiation. Normally the seller produces or assembles the goods, starts providing  
41 the services, prepares and completes the delivery of good or service, etc., to the buyer as  
42 agreed according to the terms and conditions agreed upon at the termination of the Negotiation  
43 Phase.  
44  
45  
46

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<sup>11</sup>See further Section 5.6.3.2 "Trade Models by Settlement Type".



**Annex F (Informative) - Business Transaction Model: Process Component**

1 Normally, the buyer begins the transfer of acceptable equivalent value, usually in money, to the  
2 seller providing the good or service. Where transfers of value of a monetary nature are involved,  
3 these can range from pre-paid (P.P.D) to cash-on-delivery (C.O.D), i.e., as found in common  
4 international commercial terms (a.k.a, Incoterms), or for pre-paid deposit or no deposit, to  
5 staggered payments, financing, to payment at a mutually agreed to date after delivery of  
6 acceptance by the buyer of the product/service, (e.g., "no payment/no interest for 90 days").  
7

8 In addition, it is understood that in transport of a good or a service from a seller to a buyer and  
9 the transfer of equivalent acceptable value from buyer to seller, there are associated transfers of  
10 property rights. It is assumed that unless special conditions apply, where and how such transfer  
11 of property rights are to be transferred is governed by international accepted commercial terms,  
12 i.e., Incoterm, (e.g., "F.A.S." or Free-Along Side, or "F.O.B." Free-On-Board, etc.).  
13  
14  
15

**F.2.6 POST-ACTUALIZATION PHASE**

16  
17  
18 The Post-Actualization Phase includes all of the activities or events and associated exchanges  
19 of information bundles that occur between the buyer and the seller after the agreed upon good  
20 or service is deemed to have been delivered.  
21

22 These can be activities pertaining to warrantee coverage, service after sales, post-sales  
23 financing such as monthly payments or other financial arrangements, consumer complaint  
24 handling and redress or some general post-actualization relationships between buyer and seller.  
25

26 These can be activities pertaining to warrantee coverage, service after sales, post-sales  
27 financing such as monthly payments or other financial arrangements, consumer complaint  
28 handling and redress or some general post-actualization relationships between buyer and seller.

29 This could including ongoing communications pertaining to product recall or fixes of defects,  
30 availability of product replacements, (e.g., new models), or associated product availability,  
31 available changes in the services provided (or add-ons), available changes in the terms and  
32 conditions pertaining to the good or service provided, (e.g., prices/rates, packaging or bundling of  
33 services, extensions of warranties, or time period covered, etc.).  
34  
35  
36

**Annex F (Informative) - Business Transaction Model: Process Component**

**F.3 PROCESS COMPONENT AND CONSTRUCTION OF SCENARIOS AND SCENARIO COMPONENTS**

Section F.2 above contains several examples of business transactions or parts thereof which can be modelled into re-useable scenario and scenario components. This section provides some further information from the perspective of construction of scenarios and scenario components.

First of all, only two roles of person are presented, i.e., buyer and seller, and these are at Level 0 - No External Constraints. Further, "agents" and "third parties" are also Level 0 entities and can be from part of re-useable scenario. Category of persons are not differentiated, i.e., "individual", "organization", "public administration", which would be Level 1 External Constraints. This allows one to build generic scenarios without having to include Privacy/Data Protection requirements.

Similarly, the roles of "vendor" and "consumer" are not included since these involve adding properties and behaviours to "seller" and "buyer" pertaining to requirements arising from Level 1 external constraints in the form of Consumer Policy.

Secondly, one can develop generic base scenarios covering common aspects of the Planning and Identification Phase. For example, accompanying the sending of a catalogue is an initial identification by the seller of prospective buyers and the assignment by the seller of an (initial) customer ID, (e.g., a catalogue subscription provided for free).

Thirdly, one can combine the requirements of the Planning, Identification and Negotiation Phases into a scenario and associated scenario components to support a Mediated Trade Model and associated Basic Mediated Trade Scenario.<sup>12</sup> Here a third party is involved and performs common business activities on behalf of both buyer and seller.

Fourthly, various common business process forming part of the Actualization Phase of a business transaction can also be modelled as re-useable scenarios and scenario components. Examples here include a "Delivery Scenario," a "Payment Scenario", an "Authentication Scenario", etc.<sup>13</sup>

**F.4 SUMMARY OF BACKGROUND STUDY SUPPORTING THE FIVE PHASES OF THE PROCESS COMPONENT**

Section F.5 provides summary information on the background study which resulted in the five phases of the Process Component of the Business Transaction Model. In Section F.4.1 the Initial View is presented and in F.4.2 the combined results of the analysis of the various buying and selling models. In F.4.3 is found a selected bibliography while in F.5 the key characteristics are noted of the buying and selling models forming part of the background study.

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<sup>12</sup>See Section 5.6.3.3 "Trade Models by Participation Type" and Section 5.6.4 "Classification and Components of Open-edi Scenarios" which are part of Section 5.6 Classification and Identification of Open-edi Scenarios.

<sup>13</sup>See further Section 5.6.4

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**F.4.1 INITIAL VIEW OF PROCESS COMPONENT**

In any business transaction there appear to be at least five parts to a process. Each part provides a distinct set of actions or sub-parts for the completion of the business transaction. However, these actions do not occur necessarily sequentially. They are:

- (1) **Identification** - the act of positively identifying buyer and seller, plus other objects to be used in the process.
- (2) **Negotiation** - the process of settling on price, quantity and other elements of the good or service.
- (3) **Transaction** - the process of exchanging monetary instruments for the good or service.
- (4) **Delivery** - the act of placing the good or service into the hands of the buyer.
- (5) **Client Service** - the actions after the delivery is completed; post-delivery activities, replacement and exchange policies, redress of consumer grievance, to name a few.

Identification

In this part of the process, both buyer and seller need to positively identify themselves. If we take the situation where a buyer enters a store, say, to buy clothing, his or her presence is indication to the seller of intent. However, in a distance-selling situation, both the buyer and the seller need positive identification of the other. Identification can include, for example, product validation or service validation -- I represent a particular clothing line or I am the value-added reseller of Microsoft products. The seller may use this type of identification in the selection of the seller of choice.

Likewise, the seller needs some assurance of the identity of the buyer. As the process continues to the next steps, it will become increasingly more important to assure the correct identity of the buyer.

Negotiation

The most important part of the process is that of negotiation. Here the individual and the organization determine the good or service needed by the individual, the quantity and the price. Other factors such as payment schedules, financing and delivery schedules are also determined. At the conclusion of this stage, both individual and organization will have completed a contract for the good or service and established the mechanism for payment and delivery.

Transaction

Following the negotiation for the service, the next step is the actual production of the good or service and the exchange of payment. In this stage, the good or service is prepared for exchange and payment is made or arranged. The process of this phase has been simplified if the negotiation has been complete and comprehensive.

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Delivery

Once the transaction is completed, the good or service is delivered to the individual by the organization. It is not until or the individual receives the good or service, can a basic commerce activity be considered complete.

Client Service

There is an obligation of the organization to provide service after the completion of the transaction and delivery. Normally, this is called client service or post-delivery service. In the negotiation stage, the individual and the organization may agree to conditions of the quality and workmanship, which are warranted by the organization. The organization may also provide post-delivery maintenance of the good or service. There may be other follow-up agreements, which may have been negotiated between individual and organization.

**F.4.2 RESULTS OF ANALYSIS OF BUYING AND SELLING MODELS**

**F.4.2.1 OVERVIEW**

A study of several commerce models has identified several models that are quite similar to the initial model proposed above. The models fell into three categories; that of the organization or seller, the buyer and a combined buyer-seller view. A review of these models can be found in the sections under F.5.2 below. This review identified key attributes that constitute the flow of commerce. Here is a summary of the findings organized in tabular form presented in Figure F.2.<sup>14</sup>

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<sup>14</sup>The columns are the following:

- (1) Column (1) is a listing of key attributes taken from the various models.
- (2) Column (2) is the Original Perspective described in F.4.1 "Initial View of Process Component".
- (3) Column (3) represents the "Depth Selling Model" described below in F.5.1.
- (4) Column (4) represents the "Stages in Making a Sale" described below in F.5.2..
- (5) Column (5) represents "The Dyadic Sales Process" described below in F.5.4..
- (6) Column (6) represents the "Industrial Buyer Behaviour" described below in F.5.5.
- (7) Column (7) represents the "Corporate Industrial-Buying Process for Selected Items of Capital Equipment" described in below in F.5.6.
- (8) Column (8) represents "The Cycle of Industrial-Buying Process" described below in F.5.3.
- (9) Column (9) represents the combined and integrated E-Commerce Model view described above in F.2.

**Annex F (Informative) - Business Transaction Model: Process Component**

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2

Attribute (1)	Original Perspective (2)	Seller Perspective			Buyer Perspective			Combined Perspective
		Depth Selling (3)	Stages in Making a Sale (4)	Dyadic Sales Process (5)	Industrial Buyer Behaviour (6)	Corporate I-B Process (7)	Cycle of I-B Process (8)	Business Transaction Model (9)
Planning		X	X			X	X	X
Establish Need					X	X		
Search					X		X	
Contact		X	X			X		
Source Legitimization				X				
Identification	X			X				X
Discussion		X	X					
Negotiation	X	X	X		X	X		X
Terms				X				
Values				X				
Actualization								X
Transaction	X				X	X		
Delivery	X					X		
Post-Delivery	X	X						X
Evaluation		X	X		X	X		
Relationship maintenance				X				

3  
4

**Figure F.2: Summary Table of Buying and Selling Models**

5  
6

The original model can now be extended to include three new elements; namely:

7  
8

- (a) Planning;
- (b) Actualization; and,
- (c) Post-Actualization.

9  
10

**Planning**

11  
12

In this phase, both the buyer and the seller are engaged in a process to decide what actions to take for acquiring or selling a good or service. This is where the buyer may be engaged in determining budgets, gathering information on products and their suppliers, comparing potential suppliers, and brand discrimination, to name a few.

13  
14

On the other hand, the seller is gathering intelligence about potential customers, market analysis, product acceptance, branding, etc. He or she may also be building potential client lists

**Annex F (Informative) - Business Transaction Model: Process Component**

1 and establishing pricing discrimination based on client hierarchies (good risk, frequent buyer,  
2 financially sound, etc.).

3  
4 **Actualization**

5  
6 Actualization is the combination of what was originally thought to be two separate activities --  
7 transaction and delivery. The boundary between these two appears to be somewhat blurred and  
8 not meaningful. Actualization is essentially the execution of the negotiated work both in terms of  
9 exchanging products for payment and the delivery of the products to the buyer.

10  
11 **Post-Delivery (or Post-Actualization)<sup>15</sup>**

12  
13 This is similar in nature to the originally proposed client service phase. The extension includes  
14 actions such as post-sales review, product warranties, payment plans, return policies, or other  
15 consumer-related post purchasing actions.

16  
17 *ADDITIONAL SUB-ACTIVITIES*

18  
19 In deriving the common model, we identified several key sub-activities. However, this is not an  
20 exhaustive list and it is recognized that there are others that need to be identified. For example,  
21 in looking at the area of Planning, several of the models referred to such activities as establishing  
22 need, searching for information, developing contact lists, and the identification of product or  
23 service sources. Here is a partial list of the sub-activities:

24  
25 **Planning:** Establish Need. Initiation: The organization first markets its products to potential  
26 sellers; Precipitation: The buyer determines there is a need to purchase.

27  
28 *Buyer:* Search among and identify potential suppliers; Evaluate the marketing mix of potential  
29 suppliers.

30  
31 *Contact:* No "ploys" are used to contact potential buyers.

32  
33 *Identify Needs (For the buyer):* Strategy formulation; Project planning; Make-buy analysis;  
34 Requirements determination; Specification development.

35  
36 *Arrange to Provide (For the seller):* Strategy formulation; Market forecasting; Research and  
37 development; Service process design; Information acquisition.

38  
39 *Information Exchange:* Market queries; Requests for information; Product/service  
40 literature; Requests for quotation; Price quotes.

41  
42 *Precipitating Decisions:* Marketing activities; Need for purchase; Timing and financial  
43 constraints (i.e. economic situation and market information).

44  
45  
46 **Identification:**

47  

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<sup>15</sup> Post-Actualization was the eventual term chosen since "delivery" , like payments, could take in several stages after a business transaction was instantiated.

**Annex F (Informative) - Business Transaction Model: Process Component**

1 *Buyer:* Determine the requirements for the product or service; Estimate the budget and obtain  
2 approval; Determine who the potential sellers are.

3  
4 *Seller:* Estimate costs; Determine method of acquiring the product.

5  
6 *Source Legitimization:* Different tasks involved if buyer is repurchasing from supplier, or if  
7 it is a new relationship; Information from the seller must be transmitted to the buyer to establish  
8 itself (a) as an expert, (b) as being similar to the buyer.

9  
10 *Information Exchange:* The buyer transmits information as to the product needed, and  
11 which attributes are important; This information varies with the relationship between the buyer  
12 and seller; The seller attempts to differentiate its product from the competition, and to have an  
13 advantage when negotiating.

14  
15 *Product Decisions:* Determine similarities between product needed and products available;  
16 Quality and expected life constraints on the product;

17  
18 *Supplier Decisions:* Two possible outcomes: (a) Product is differentiated, therefore selection  
19 of supplier occurs when product is selected, (b) Products are similar, therefore supplier  
20 characteristics need to be selected; Purchasing policy constraints.

21  
22  
23 **Negotiation:**

24  
25 *Buyer:* Preliminary discussion with sellers; Technical negotiations;  
26 Modification; Commercial negotiations; Select seller.

27  
28 *Seller:* Contact manufacturer, or select possible agents; Select agent; Place order with  
29 manufacturer or agent.

30  
31 *Discussion:* Discussion of tangible and intangible products; Both the buyer and the seller  
32 participate.

33  
34 *Doubts:* The buyer expresses "doubts, beliefs, statements, ideas, and concepts" about  
35 the product.

36  
37 *Attribute Delineation:* Explicitly: product features, credit terms, (a) Product quality, (b) Delivery;  
38 Implicitly: attribute determination and evaluation.

39  
40 *Attribute Value Negotiation:* Determine "limits" (a) Important for the seller: price, delivery dates,  
41 product features, (b) For the buyer: price, style, product features.

42  
43 **Actualization:**

44  
45 *Payment:* Methods, terms

46  
47 *Delivery:* Post-delivery inspection; Acceptance; Post-Delivery; Performance Feedback;  
48 Relationship Maintenance.

49

## Annex F (Informative) - Business Transaction Model: Process Component

1 *New attributes:* Implicit bargaining over attributes; Commitment Decisions; Changes in  
2 price, quality, and service constraints from the supplier.  
3  
4

### 5 F.4.2.2 CONCLUSIONS

6  
7 It appears that a business transaction, and in particular an electronic business transaction, can  
8 be viewed from a process perspective as five distinct activities. By viewing the process through  
9 these activities, we can derive the components of each activity and begin to map the standards  
10 needs. By providing this common view to business transactions, we can provide a single frame  
11 of reference for discussing many of the diverse issues and putting those issues into a context.  
12 For example, in Identification, this may be the point to introduce the need for authentication  
13 whereas the area of either Negotiation or Transaction may be the point to pursue the issue of  
14 digital signatures.  
15

### 16 17 F.4.3 BIBLIOGRAPHY

18  
19 Key sources which were utilized for the background study include:  
20

#### 21 **Books:**

22 Bonoma, T. V. & Zaltman G. (1978). "Dyadic Interactions: Some Conceptualizations."  
23 Organizational Buying Behaviour. Chicago: American Marketing Association, 39-45.  
24

25 Hill, R. W., Hillier, T. J. (1977) "Focal Points of Buying Activity." Organizational Buying Behaviour:  
26 The Key to More Effective Selling. London: The MacMillan Press Ltd., 30-46.  
27

28 Johnston, W. J. (1981) "Introduction, A State of the Art Review." Patterns in Industrial Buying  
29 Behaviour. New York: Praeger Publishers, New York, 1-51.  
30

31 Moriarty, R. T. (1983) "Foundations of Organizational Buying Behaviour." Industrial Buying  
32 Behaviour: Concepts, Issues, and Applications. Lexington: Lexington Books, 23-37.  
33

34 Thompson, J. W. (1973) "The Contact ? I." Selling: A Managerial and Behavioral Science  
35 Analysis. New York: McGraw-Hill Book Company, 383.  
36

#### 37 **Articles:**

38 Thompson, J. W. & Evans, W. W. (1969) "Behavioral Approach to Industrial Selling." Harvard  
39 Business Review. Mar-Apr 1969, 137-151.  
40

#### 41 **Internet:**

42  
43 Nissen, Mark E. (1997) "The Commerce Model for Electronic Redesign." Journal of Internet  
44 Publishing. <http://www.arraydev.com/commerce/JIP/9702-01.htm>  
45

46 Bloch, Michael et al. (1996) "On the Road of Electronic Commerce ? a Business Value  
47 Framework, Gaining Competitive Advantage and Some Research Issues."  
48 <http://haas.berkeley.edu/~citm/road-ec/ec.htm>  
49  
50



**Annex F (Informative) - Business Transaction Model: Process Component**

**F.5 SURVEY OF BUYING AND SELLING MODELS FORMING PART OF BACKGROUND STUDY**

Several economic process models are widely known and in use. They serve as a basis for the Process Component. The models are grouped into three perspectives; that of the organization or seller, the buyer and a combined view of both buyer and seller.

**F.5.1 "DEPTH SELLING MODEL"**

This model was found in J.W. Thompson’s Selling: A Managerial and Behavioral Science Analysis<sup>16</sup>. The stages of the model are:

- Planning
- Contact
- Discussion
- Doubts
- Completion of Negotiations
- Follow-up

This is a model from the organization’s perspective, since the stages concern the selling of goods or services.

**Planning**

This stage involves all activities performed by the salesman prior to contacting the potential buyer. This could include the preparation of arguments to encourage the individual to purchase the product, anticipation of the individual’s doubts about buying, and the formation of counter-arguments to these doubts. The organization must determine what need the individual has that can be satisfied with a purchase.

**Contact**

This stage is the responsibility of the organization. It is the moment of initial contact between the buyer and the seller (the individual and the organization via the salesman). Although the organization initiates the contact, the individual must decide to become a partner for the exchange to take place. For the purpose of this paper, the contact stage could be referred to as a closing sub-stage of the planning activity.

**Discussion**

During the discussion stage, the organization must raise the benefits of the product or service to the individual. At this step, the organization presents the arguments determined during the planning stage. The individual participates with questions about the purchase. This stage includes two-way communication between the individual and the organization, which implies that this stage is a part of the negotiation process.

---

<sup>16</sup>Thompson, 1973

**Annex F (Informative) - Business Transaction Model: Process Component**

**Doubts**

At this point, the individual raises doubts about making a purchase and the organization, in turn, must ease these doubts. This is the stage when the organization convinces the individual to purchase. It can be implied that this is a later sub-process of negotiation.

**Completion of Negotiation Stage**

This is when the organization and the individual determine the terms of the transaction. These could include terms of payment, delivery, and contractual obligations for each party. This model does not include the actual transaction or delivery of the product. The reasoning may be that this is a model for the salesman, and once the purchase is established, the role of the salesman is complete.

**Follow-up**

The follow-up stage is when the organization must determine the effectiveness of the sales process. This may include whether the organization correctly estimated the individual’s need to be satisfied through product purchase, if any of the stages need to be modified for other potential buyers.

**F.5.2 "STAGES IN MAKING A SALE"**

This model is from the article Behavioral approach to industrial selling<sup>17</sup> by J.W. Thompson and W.W. Evans. It is accredited to either a salesman or the sales manual for Carborundum Company. The stages of the model are:

- Planning
- Contact
- Discussion
- Negotiation
- Post Sale Analysis

This model is similar to the Depth Selling Model, except that person-to-person interaction, readiness, empathy, and source credibility are applied to this model. The stages of planning, contact, and discussion are identical to the depth selling approach, while the negotiation stage is a combination of the doubts and completion of negotiations stages, and the post sale analysis is the same as the follow-up stage from the Depth Selling Model. For this paper, it is assumed that the stages in this model are attributed to the individual and the organization according to the equivalent stages in the Depth Selling Model.

The concepts that need to be analyzed according to the roles of the organization and the individual are person-to-person interaction, readiness, empathy, and source credibility.

**Person-to-person Interaction**

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<sup>17</sup>Thompson & Evans, 1969

**Annex F (Informative) - Business Transaction Model: Process Component**

1  
2 For the model, interaction occurs from the beginning of the contact stage to the end of the  
3 negotiation stage. This implies that both the individual and the organization are active members  
4 of the process from the point of contact through to the end of negotiation.

5  
6 **Readiness**

7  
8 This concept occurs from the planning stage to the end of the contact stage. Readiness refers  
9 to the individual’s interest in participating in the exchange, but it is one of the organization’s roles.  
10 The seller must plan for attracting the interest of the potential buyer. During the contact stage,  
11 the organization must then modify the plan according to feedback provided by the individual in  
12 order to maintain this interest.

13  
14 **Empathy**

15  
16 Empathy is the responsibility of the seller (the organization). This occurs from the contact stage  
17 to the end of the negotiation stage. The organization must anticipate the individual’s needs, with  
18 respect to how they can be satisfied by purchase, and interpret any feedback about the sales  
19 process.

20  
21 **Source Credibility**

22  
23 The notion of source credibility occurs from the start of the contact stage up to the end of the  
24 post sale analysis (i.e. the end of the exchange process). Source credibility refers to the  
25 organization’s credibility as a selling partner from the perspective of the individual. It is the  
26 responsibility of the organization to ensure that it is viewed as a competent, reliable, and  
27 trustworthy trading partner.

28  
29  
30 **F.5.3 "THE CYCLE OF INDUSTRIAL-BUYING PROCESS"**

31  
32 This model is from the Roy W. Hill and Terry J. Hillier text, Organizational Buying Behaviour: The  
33 Key to More Effective Selling to Industrial Markets<sup>18</sup>. This is a buyer-behaviour model,  
34 interpreting the decision-making stages involved in buying a product.

- 35  
36 • Commitment Decisions  
37 • Precipitating Decisions  
38 • Product Decisions  
39 • Supplier Decisions  
40 • Commitment Decisions

41  
42 **Precipitating Decisions**

43  
44 According to Hill and Hillier, the first stage in the process it when the organization first markets its  
45 products to the supplier (i.e. the initiation stage). However, the first stage in the buying process is  
46 actually the precipitation stage. This is when the organizational buyer determines that there is a

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<sup>18</sup>Bonoma & Zaltman, 1978

**Annex F (Informative) - Business Transaction Model: Process Component**

1 need to purchase. For the purposes of this paper, an organization whose role is that of the buyer  
2 can be referred to as an individual.

3  
4 **Product Decisions**

5  
6 The product-specification stage is when the individual compares product needs with the  
7 products available from selling organizations. The buyer is responsible for finding the various  
8 products available on the market, and determining which needs can be met by each selling  
9 organization.

10  
11 **Supplier Decisions**

12  
13 The supplier-specification stage is when the buyer chooses the best supplier.

14  
15 **Commitment Decisions**

16  
17 This stage occurs at the end of the exchange process. The individual must decide whether or  
18 not to continue the relationship with the organization. This decision is made by analysing whether  
19 all of the purchase requirements and expectations have been met by the exchange with this  
20 supplier.

21  
22  
23 **F.5.4 "THE DYADIC SALES PROCESS"**

24  
25 This model is from Organizational Buying Behaviour edited by Thomas Bonoma and Gerald  
26 Zaltman, in the chapter "Dyadic Interaction: Some Conceptualizations" by David T. Wilson. The  
27 stages of the model are:

- 28  
29 • Source Legitimization  
30 • Information Exchange  
31 • Attribute Delineation  
32 • Attribute Value Negotiation  
33 • Relationship Maintenance  
34

35 This is also a buyer behaviour model, therefore the buying organization is referred to as the  
36 individual and the seller can be referred to as the organization.

37  
38 **Source Legitimization**

39  
40 For this model, source legitimization refers to the point when the seller is accepted as a  
41 "legitimate and credible partner." (p. 43) Both the individual and the organization must participate  
42 in this stage, however it is the responsibility of the organization to ensure that it is viewed as a  
43 trusted party.

44  
45 **Information Exchange**

46  
47 At this stage, the buyer is responsible for conveying to the seller what its requirements for the  
48 product are, i.e., what "problem" can be solved with a purchase. This may be interpreted as a  
49 part of the identification process.

**Annex F (Informative) - Business Transaction Model: Process Component**

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**Attribute Delineation**

At this point, both the buyer and the seller participate, and determine the terms of the exchange. Some terms discussed may be features of the product, terms of credit and payment, delivery, etc. This may be a sub-process in negotiation.

**Attribute Value Negotiation**

Both the buyer and the seller are responsible for attribute value negotiation. They must determine the numerical value of the terms of the exchange, and which of the traits are the most important. The end of this stage signifies the completion of the negotiation process.

**Relationship Maintenance**

During the relationship maintenance stage, the individual and the organization must decide whether or not to continue their relationship. If both parties decide to continue their exchange relationship, "implicit bargaining over exchange values may take place, particularly if problems with performance attributes arise." (p. 45)

**F.5.5 "INDUSTRIAL BUYER BEHAVIOUR"**

This model was found in Patterns in Industrial Buying Behaviour<sup>19</sup> by W.J. Johnston, and accredited to Bonoma, Zaltman, and Johnston.

- Establish the Need for Products or Services
- Search Among and Identify Potential Suppliers
- Evaluate the Marketing Mix (product, price, promotion, distribution) of Potential Suppliers
- Negotiate for and Enter Agreement About Purchase Terms
- Complete a Purchase
- Evaluate the Purchase's Utility in Facilitating Organizational Goals

No further explanation of this model was found in Johnston's text, and attempts to locate the book the model was referenced to were unsuccessful. Therefore the following conclusions about the stages of the model were assumed.

*Establish the Need for Products or Services:* This stage is the sole responsibility of the organizational buyer (i.e. individual).

*Search Among and Identify Potential Suppliers:* Although it is only the individual who must actively participate in this stage, the organization is responsible for ensuring that the buyer will be capable of finding information about the seller's products. This stage may be implied to be the beginning of the search phase.

---

<sup>19</sup>Johnson, 1981.

**Annex F (Informative) - Business Transaction Model: Process Component**

1 *Evaluate the Marketing Mix of Potential Suppliers:* This step, performed by the individual, can  
2 be implied to be the end of the search phase. It is the last step prior to contact of the selling  
3 organization.

4  
5 *Negotiate for and Enter Agreement About the Purchase Terms:* This is the first stage with  
6 both the individual and the organization are actively participating and communicating with each  
7 other. For this paper, this is simply the negotiation process.

8  
9 *Complete a Purchase:* This stage can also be referred to as the transaction. Both the  
10 buyer and the seller must fulfil the agreement they negotiated in the previous step. Although both  
11 parties are participating in this stage of the model, there may not be any two-way  
12 communication, depending upon the terms of the agreement.

13  
14 *Evaluate the Purchase's Utility in Facilitating Organizational Goals:* Because the majority  
15 of the model involves only the buyer, it may be assumed that this step is meant to be an  
16 evaluation from the individual's perspective of the effectiveness of the exchange process.

17  
18  
19 **F.5.6 "THE STAGES OF THE CORPORATE INDUSTRIAL-BUYING PROCESS FOR  
20 SELECTED ITEMS OF CAPITAL EQUIPMENT"**

21  
22 This model was originally developed to demonstrate the results of a study, and was found in  
23 Organizational Buying Behaviour: The Key to More Effective Selling to Industrial Markets<sup>20</sup> by  
24 Roy W. Hill and Terry J. Hillier. For the purposes of this paper, we have simplified the model.

- 25
- 26 • Initiation
- 27 • Precipitation
- 28 • Identification of Terms and Requirements
- 29 • Contact
- 30 • Negotiation
- 31 • Delivery
- 32 • Acceptance
- 33 • Payment
- 34 • Completion
- 35 • Performance Feedback

36  
37 **Initiation and Precipitation:** These two stages are similar and may be combined to form one  
38 step (i.e. establish need). This modified stage would can be considered to be one step with two  
39 parts; the buyer perspective and the seller perspective.

40  
41 **Identification of Terms and Requirements:** This is when the buying organization  
42 determines the desired features of the good. This may be implied to be a search function.

43  
44 **Contact:** This is the first point where the buyer and seller communicate.

45  

---

<sup>20</sup>Hill & Hillier, 1977. For the complete view, see pages 32 and 33 of the text.

**Annex F (Informative) - Business Transaction Model: Process Component**

1 **Negotiation:** At this stage, the buyer and seller undergo a series of steps to determine  
2 acceptable terms of the product, delivery, and especially payment.

3  
4 **Delivery:** This is the only model with mention of the delivery stage. It can be assumed that  
5 the party that is responsible for the delivery of the product or service was a term negotiated in the  
6 previous stage.

7  
8 **Acceptance, Payment and Completion:** These three stages, which are the responsibility of  
9 the buying organization, can be combined in order to form the transaction stage. These first two  
10 components may be sub-processes in the stage, whereas completion may be assumed to be  
11 the completion of the transaction.

12  
13 **Performance Feedback:** This final stage is when the buyer and seller must evaluate  
14 whether their expectations for the exchange.

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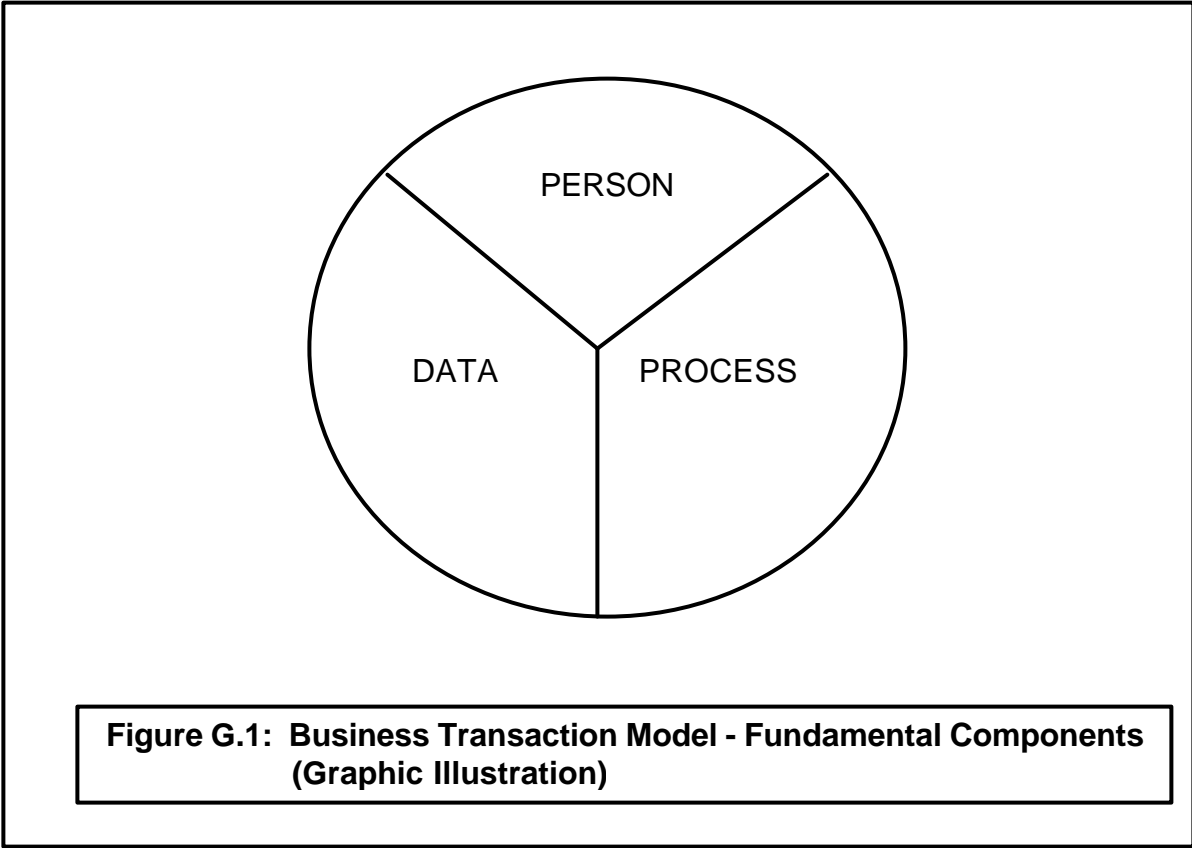
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**G.0 INTRODUCTION**

1. Annex G provides necessary and explanatory text for (1) the rules; and,(2) the terms and definitions, as well as the figures, found in Section 5.4 pertaining to the Data Component of the Normative Part of this standard. The rules as stated here in Annex G in bold are the same as those stated in Section 5.4 as well as for the figures even though both have been re-numbered in this Annex G (e.g. Rules 51 through 61 in Section 5. 4, here are Rules G-1 through G-11).
2. A major basis for this Annex G is the result of work on requirements for standards in support of e-commerce involving participation of various business sectors (e.g. banking, retail, transport, telecommunications, IT, etc.),public policy makers at various levels of government, consumers associations, lawyers (private and public sector with expertise in common and civil law as well as international trade law, ISO and ISO/IEC JTC1 standardizers, etc. This work identified gaps between existing international standards and the need for an integrated approach incorporating requirements of commercial and legal frameworks into electronic business transactions.
3. This is one of three Annexes which provide additional required information on one of the three fundamental components of a business transactions, namely "person", "process", and "data". These three fundamental components are presented graphically in Figure G.1 (as taken from Section 5.1.5)



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4. This Annex is also meant to assist users of this standard who are either not familiar with standards in general or whose main focus to date has been on Functional Services View (FSV) standards only.

**G.1 CONTEXT: - BUSINESS TRANSACTION**

The context of the "Data Component" is that of data in an electronic business transaction (as needed to facilitate widespread adoption and use of Open-edi in support of application areas such as electronic commerce, electronic administration, electronic business, etc.). Two key attributes here are that: (1) it is "business transaction"-based; and, (2) takes place through "electronic data interchange". The definitions for these terms are found in ISO/IEC 14662:1997 (E) "Information Technologies - Open-edi Reference Model".

**"3.1.4 business transaction:** a predefined set of activities and/or processes of organisations which is initiated by an organisation to accomplish an explicitly shared business goal and terminated upon recognition of one of the agreed conclusions by all the involved organisations although some of the recognition may be implicit".

**"3.1.4 transaction d'affaires :** ensemble prédéterminé d'activités menées par des organisations et/ou de procédures qu'elles suivent, déclenché par une organisation qui vise

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1 à atteindre dans les affaires un but expressément partagé, terminé lorsqu'est observée une  
2 des conclusions convenues par toutes les organisations prenantes, bien que cette  
3 observation puisse être partiellement implicite".

4  
5 This definition of business transaction is:

- 6  
7 ➤ generic, i.e., independent of whether it is executed through electronic or non-electronic  
8 means;
- 9  
10 ➤ sector independent, i.e., it applies within and among sectors, (e.g., public/private, industrial,  
11 geographic, etc.); and,
- 12  
13 ➤ independent of whether the business transaction pertains to "for profit" or "not-for-profit"  
14 based exchanges of values.

15  
16  
17 "Electronic data interchange"

18  
19 **"3.1.5 Electronic Data Interchange (EDI):** the automated exchange of any predefined  
20 and structured data for business purposes among information systems of two or more  
21 organisations".

22  
23 **"3.1.5 Echange de Données Informatisé (EDI, Electronic Data Interchange) :** échange  
24 automatisé de données structurées et prédéfinies pour traiter des affaires entre les  
25 systèmes d'information de deux ou plusieurs organisations".

26  
27 This definition of EDI is independent of the multiple data types which may be interchanged such as  
28 numbers, characters, images and sound.

29  
30 In the context of the previous business transaction, the "data" component of the Business  
31 Transaction Model integrates the following factors:

- 32  
33 (1) Existing commercial and legal frameworks for business transactions allow for and use both  
34 information which is recorded and that which is not, i.e., that known to and used by natural  
35 persons in making commitments but not (yet) recorded.
- 36  
37 (2) Data is a category of recorded information which has specific qualities and particular  
38 attributes.
- 39  
40 (3) Within data as a category of recorded information, there is a particular sub-category known  
41 as "data element" also with its specific qualities and particular attributes.
- 42  
43 (4) There is a category of data element which is structured and for which the permitted values,  
44 i.e., contents, are predefined.

45  
46 Existing business-to-business applications, consists of rule-based business transactions  
47 which make extensive and widespread use of code sets, often through tables. These code  
48 sets represent common business practices and serves as building blocks of business  
49 transactions.

- 50  
51 (5) A key thrust of this standard is to build confidence and trust, and clarify rules (marketplace,  
52 legal, etc.). A major success factor here is the degree to which existing ambiguities in

## ANNEX G (Informative) - Business Transaction Model: Data Component

business transactions, can be removed through development of (re-useable) Open-ed scenarios and their components. A major characteristic of cost-effective and efficient business operations, customer service, etc., is "paying attention to details". From a "data" perspective, this need for preciseness in data elements is known as "granularity". The higher the degree of granularity, the greater the precision. Precision is necessary to avoid ambiguity.

### G.2 BUSINESS INFORMATION TO RECORDED INFORMATION

A standard definition for "information" exists independent of whether the information is recorded or not. It is also medium neutral and serves as the basis, i.e., point of departure for this standard.

ISO/IEC 2382 "Information technology - vocabulary Part 1 - Fundamental Terms" defines "information" as:

**"0.1.01.01 information (in information processing):** *knowledge concerning objects, such as facts, events, things, processes, or ideas, including concepts, that within a certain context has a particular meaning.*<sup>1</sup>

**01.01.01 information (en traitement de l'information):** *connaissance concernant un objet tel qu'un fait, un événement, une chose, un processus ou une idée, y compris une notion, et qui, dans un contexte déterminé, a une signification particulière".*

#### Rule G-1:

**In a business transaction, information is either recorded or it is not.**

Basically, information exists in two states:

- (1) that which is "known" to a natural person, but is not yet recorded in any form; or,
- (2) that which is recorded on some medium.

Both states are acceptable in the present legal and commercial frameworks and business practices. In essence, a "contract" is a "meeting of the minds" of the natural persons involved. Orally exchanged information resulting from face-to-face meetings and use of the telephone play, etc., and will continue to play, an important role in the planning, negotiating and actualization of business transactions. Judicial proceedings rely heavily on oral presentation and (cross) examination of natural persons, i.e., as "witnesses", i.e., having knowledge of facts, events, things, processes or ideas, including concepts, that within a certain context has a particular meaning. (The admission of written/paper documents containing recorded information as evidence in judicial procedures is an exception to the "Hearsay Rule").

---

<sup>1</sup>ISO/IEC 1087 "Terminology - vocabulary" defines object as:

**"2.1 object:** *any part of the perceivable or conceivable world"*

**"2.1 objet:** *élément de la réalité qui peut être perçu ou conçu".*

## ANNEX G (Informative) - Business Transaction Model: Data Component

1  
2 One should note that, business transactions may or may not include recorded information.

3  
4 In everyday commerce, a contractual agreement, (e.g., the result of the Negotiation Phase  
5 Process<sup>2</sup> in a business transaction), need not involve any recorded information, i.e., can be a  
6 verbal contract, (e.g., based on a handshake). Similarly, in court or similar proceedings, evidence is  
7 presented orally by natural persons and hearsay is not admissible. One exception to the Hearsay  
8 Rule is that written records or documents, i.e., recorded information, may be admitted.

9  
10 Finally, many present day business transactions especially those involving individual consumers  
11 and cash<sup>3</sup>-based involve little or no recorded information interchange between buyer or seller,<sup>4</sup> and  
12 the buyer can remain anonymous.<sup>5</sup>

### 13 14 **Rule G-2:**

#### 15 16 **Electronic business transactions require "recorded information".**

17  
18 Within the existing legal framework (international, national, and local laws and regulations), multiple  
19 different definitions exist for "record", "document", "recording", etc. The concept/term "recorded  
20 information", can serve as a common bridge term among existing differences in definitions in the  
21 legislative framework as well as those of information technology standards.

22  
23 Unlike business transactions in general, electronic business transactions are based on and require  
24 "recorded information" which is defined as:

25  
26 *"recorded information: any information that is recorded on or in a medium  
27 irrespective of form, recording medium or technology utilized, and in a manner allowing for  
28 storage and retrieval".*

#### 29 30 *Notes:*

- 31  
32 (1) *This is a generic definition and is independent of any ontology, (e.g., those of "facts" versus*  
33 *"data" versus "information" versus "intelligence" versus "knowledge", etc.).*
- 34  
35 (2) *Through the use of the term "information" all attributes of this term are inherited in this*  
36 *definition.*
- 37  
38 (3) *This definition covers:*
- 39  
40 (a) *any form of recorded information, means of recording, and any medium on which*  
41 *information can be recorded; and,*
- 42

---

<sup>2</sup>On the five process phases in a business transaction, see further above Clause 5.3 titled "Process Component".

<sup>3</sup>It is assumed that "e-cash" has the same attributes/properties and behaviours as "cash".

<sup>4</sup>This is not to say that recorded information is not produced to record a completed business transaction. But this is primarily, one of the seller recording the sale of a good or service, (e.g., to comply with external constraints of a regulator such as sales tax).

<sup>5</sup>On the issue of anonymity, see further Annex D.

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1 (b) all types of recorded information including all data types, instructions or software,  
2 databases, etc.  
3

4 Current laws and regulations governing government and business operations are mostly "paper-  
5 based" and presume the presence of paper records. "Medium neutrality" encapsulates two key  
6 attributes: (1) neutrality towards, i.e., independent of, the means, method or technology used to  
7 record information; and, (2) neutrality, independent of the type of "medium" on which the  
8 information is recorded.  
9

10 The meaning and use of the term "medium" often gets confused with form, format, type of  
11 representation and use, etc. It is therefore necessary to have a common understanding of the  
12 concept/term "medium", i.e., from legal, commercial, information technology, standardization, etc.,  
13 perspectives.  
14

15 The concept/term "medium"<sup>6</sup> is defined as:

16  
17 **"medium:** physical material which serves as a functional unit, in or on which  
18 information or data is normally recorded, in which information or data can be retained and  
19 carried, from which information or data can be retrieved, and which is non-volatile in  
20 nature".  
21

22 Notes:

- 23  
24 (1) This definition is independent of the material nature on which the information is recorded  
25 and/or technology utilized to record the information, (e.g., paper, photographic, i.e.,  
26 chemical, magnetic, optical, ICs (integrated circuits), as well as other categories no longer  
27 in common use such as vellum, parchment (and other animal skins), plastics, (e.g., bakelite  
28 or vinyl), textiles, (e.g., linen, canvas), metals, etc.)  
29  
30 (2) The inclusion of the "non-volatile in nature" attribute is to cover latency and records  
31 retention requirements.  
32  
33 (3) This definition of "medium" is independent of:  
34  
35 a) form or format of recorded information;  
36 b) physical dimension and/or size; and,  
37 c) any container or housing that is physically separate from material being housed and  
38 without which the medium can remain a functional unit.  
39  
40 (4) This definition of "medium" also captures and integrates the following key properties:  
41  
42 a) the property of medium as a material in or on which information or data can be recorded  
43 and retrieved;  
44 b) the property of storage;  
45 c) the property of physical carrier;  
46 d) the property of physical manifestation, i.e., material;  
47 e) the property of a functional unit; and,

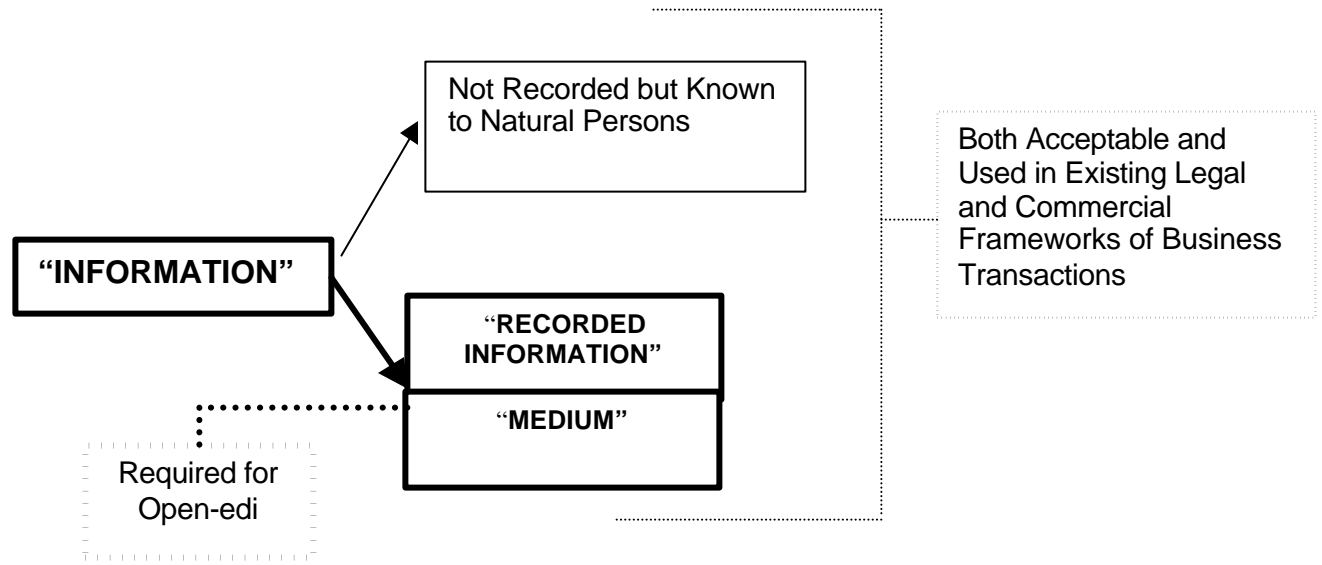
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<sup>6</sup>This is a "media neutral" definition. The inclusion of "non-volatile in nature" criteria is to cover latency and records retention requirements. The primary reason for the numerous notes is to capture as completely as possible as attributes the properties and behaviours of "medium".

**ANNEX G (Informative) - Business Transaction Model: Data Component**

f) *the property of (some degree of) stability of the material in or on which the information or data is recorded.*

The relation of “information” to “recorded information” and medium to existing legal and commercial frameworks for business transactions is illustrated in Figure G.2 (as taken from Section 5.4.1).



**Figure G.2: Relation of “Information,” Recorded Information” & “Medium” in Business Transactions – Legal, Commercial and Open-edi Requirements**

**G.3 RECORDED INFORMATION TO ELECTRONIC DATA**

**Rule G-3:**

**Not all recorded information is data, but all data is recorded information.**

Not all recorded information is data but all data is a category of recorded information. Data is a particular category of recorded information which has certain properties.

The definition of "data" in the context of an electronic business transaction is:<sup>7</sup>

<sup>7</sup>This definition integrates definitions of "data" from IT, commercial and a legal perspectives. The use of the term "computer systems" links to the Open-edi Reference Model definitions "3.1.5 "Electronic Data Interchange (EDI)" and "3.1.8 Information Technology System (IT system)".

This definition is compatible with that found in the ISO/IEC 2382 -- Information Technology - Vocabulary. This definition includes representation of recorded information "suitable for communication, interpretation, or processing by human means. Open-edi pertains to automated exchanges, i.e., IT-interface perspective and considers "human means" the linguistic equivalent value from a human interface perspective.

## ANNEX G (Informative) - Business Transaction Model: Data Component

**"data (business transaction):** means representations of recorded information that are being prepared or have been prepared in a form suitable for use in a computer system".

**"donnée (transaction d'affaires):** représentations d'informations enregistrés qui sont préparés ou l'ont été de façon à pouvoir être utilisés dans un ordinateur".

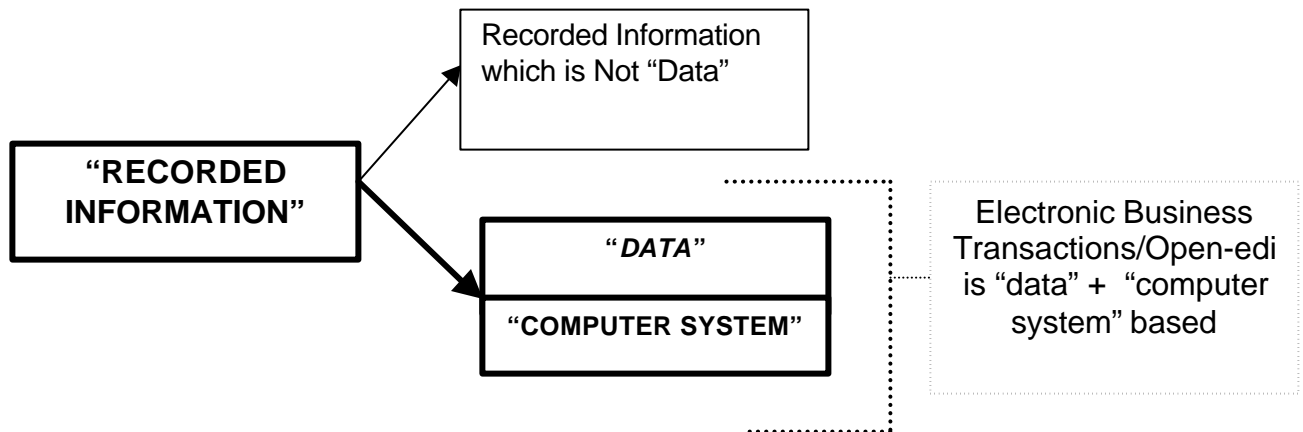
Notes:

- (1) Under this definition of "data", software is a subset or category of data.
- (2) This definition of "data" is presented from the perspectives of both the legal framework and standardization framework and is of a generic nature. It is applicable to all categories of information exchanges involving computer systems and telecommunication networks.
- (3) Use of the term "recorded information" in this definition means that all attributes of this term are inherited.

**Rule G-4:**

**Electronic business transactions involve (1) data; and, (2) data that is recorded or stored on any medium in or by a computer system.**

A electronic business transaction by definition requires the utilization of information technology and particularly that of a computer system. Any recorded information which does not have the properties of "data" and cannot be utilized in a computer system<sup>8</sup> does not form part of an Open-edi business transaction. This is illustrated in Figure G.3.



**Figure G.3: Relations of "Recorded Information", "Data" and "Computer System" in Electronic Business Transactions/ Open-edi**

<sup>8</sup>The definition of "data (business transaction)" combined with that of "computer system" is not specific to any particular information technology. As information technology advances, the scope of record information "prepared in a form suitable for use in a computer system" will also advance and expand accordingly.

## ANNEX G (Informative) - Business Transaction Model: Data Component

### Rule G-5:

The definition of "data", and related information technology terms and definitions found in this standard must be mappable into legal frameworks.

Information technology standards also define "data". The international standard ISO/IEC 2382 "Information Technology Vocabulary," Part 1, defines "data" as follows:

**01.01.02** **data:** *A reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing.*

NOTES - 1 Data can be processed by humans or by automatic means.

**01.01.02** **données:** *Représentation réinterprétable d'une information sous une forme conventionnelle convenant à la communication, à l'interprétation.*

NOTES - 1 Les données peuvent être traitées par des moyens humains ou automatiques.

The current version of ISO/IEC 11179-3 "Information Technology Specification and Standardization of Data Elements"<sup>9</sup> defines "data" as:

**"data:** *a representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation or processing by human or automatic means".*

These international standard definitions of "data" are compatible with that found in this standard apart from the "or processing by humans". The definition of data in the context of Open-edi and business transactions makes "by automatic means" a must and implicitly considers, i.e., implies, "processing by humans" to be a human interface issue.

As such, the term/definition "data (in business transaction)" serves as a bridge between existing IT standard definitions for "data" and Open-edi requirements on electronic business transactions from legal and commercial perspectives.

## G.4 PREDEFINED AND STRUCTURED DATA ELEMENTG

### G.4.1 Data to Data Elements

#### Rule G-6:

**Business transactions are primarily data element-based.<sup>10</sup>**

---

<sup>9</sup>This international standard is currently undergoing revision, i.e., via ISO/IEC JTC1/SC32/WG2. SC32 = Sub-committee - Data Management and Interchange, WG2 = Working Group - Metadata.

<sup>10</sup> It is recognized that there are business transactions which are not "data element-based". This rule reflects the fact that the overwhelming majority of business transactions executed daily, i.e., 90%+, are form-based (paper or electronic) and that, on the whole, these forms are data element-based, i.e., 80%+.



## ANNEX G (Informative) - Business Transaction Model: Data Component

1 Traditional business transactions are (paper) form-based. This is true for most sectors, (e.g.,  
2 trade,government, medicine, transport, etc.), and business processing, (e.g., ordering, invoicing,  
3 payment, etc.). The focus and purpose of forms is to minimize "free text" and maximize a  
4 structured approach within a defined business process through the use of defined data elements.  
5 Figure G.4 provides an illustration of this rule.

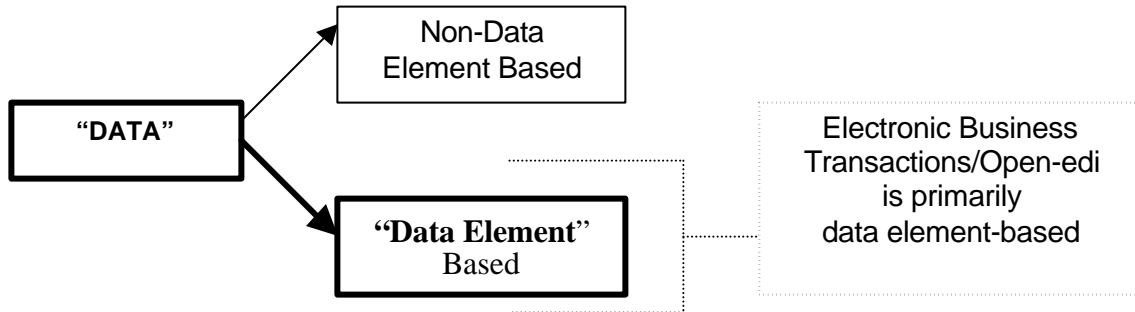


Figure G.4: Relations "Data" and "Data Elements" in Electronic Business Transactions/Open-edi

### Rule G-7:

Having a standard definition of "data element" supports requirements of unambiguousness in electronic commerce.

On the whole business transactions are considered to be not only data element-based, but also is based on the use of various combinations of predefined and structured data (elements).

The current version of ISO/IEC 11179-3 "Information Technology Specification and Standardization of Data Elements" defines data element as:

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

It suffices to note that the more complete and precise the specification of the set of attributes<sup>11</sup> pertaining to a data element, the higher the level of certainty, i.e., unambiguousness, of the meaning and use of a data elements in electronic business transactions.

### Rule G-8:

<sup>11</sup> See further below Section 7.5.5. "Rules for the specification of semantic components and semantic components attributes"

## ANNEX G (Informative) - Business Transaction Model: Data Component

1 **The greater the degree to which data is structured and predefined, i.e., is "data-element-**  
2 **based", the less ambiguity and the higher the degree of cost-effectiveness and efficiencies**  
3 **in the utilization of information technologies in support of Open-edi.**

4  
5 Open-edi is more than just information exchange. It is business transaction-based, i.e., "involves  
6 predefined sets of activities and/or processes... to accomplish an explicitly shared goal...". In  
7 addition, Open-edi involves the..."automated exchange of any predefined and structured data for  
8 business purposes".

9  
10 "Data element" is the term assigned to the concepts of predefined, structured, explicitness, etc., as  
11 applied to "data" in EDI and Open-edi.  
12  
13

### 14 **G.4.2 Unambiguity in Data Elements**

#### 15 **Rule G-9:**

16  
17 **The degree to which "ambiguity" in (electronic) business transactions can be minimized is**  
18 **directly related to the ability to realizing the opportunities in and potential of Open-edi as**  
19 **well as its widespread adoption and use in various application areas, (e.g, e-commerce, e-**  
20 **administration, e-government, e-logistics, e-business, etc.).**

21  
22  
23 A recurring requirement and common thread in the business requirements is the need for a rule-  
24 based approach consisting of clear and precise rules governing business transactions. Key terms  
25 used include "consistent", "predicable", "clarify", "interoperability", "open standard-based", etc. All  
26 of these objectives imply, explicitly or implicitly, the maximization of "unambiguousness" in all  
27 aspects of Open-edi.  
28

29 The issue of "unambiguous identification" while initially focused on that of "persons", is not unique  
30 to the identification of persons (and goods or services) in (electronic) business transactions. Issues  
31 of unambiguousness apply to all aspects of a business transaction (and especially to data elements  
32 (which are the building blocks of semantic components and information bundles).  
33

34 Further, as already noted in Chapter n.n.n above a business transaction consists of "a predefined  
35 set of activities and/or processes to accomplish an explicitly shared business goal...". And  
36 electronic data interchange (EDI) consists of "...any predefined and structured data for business  
37 purposes".  
38  
39

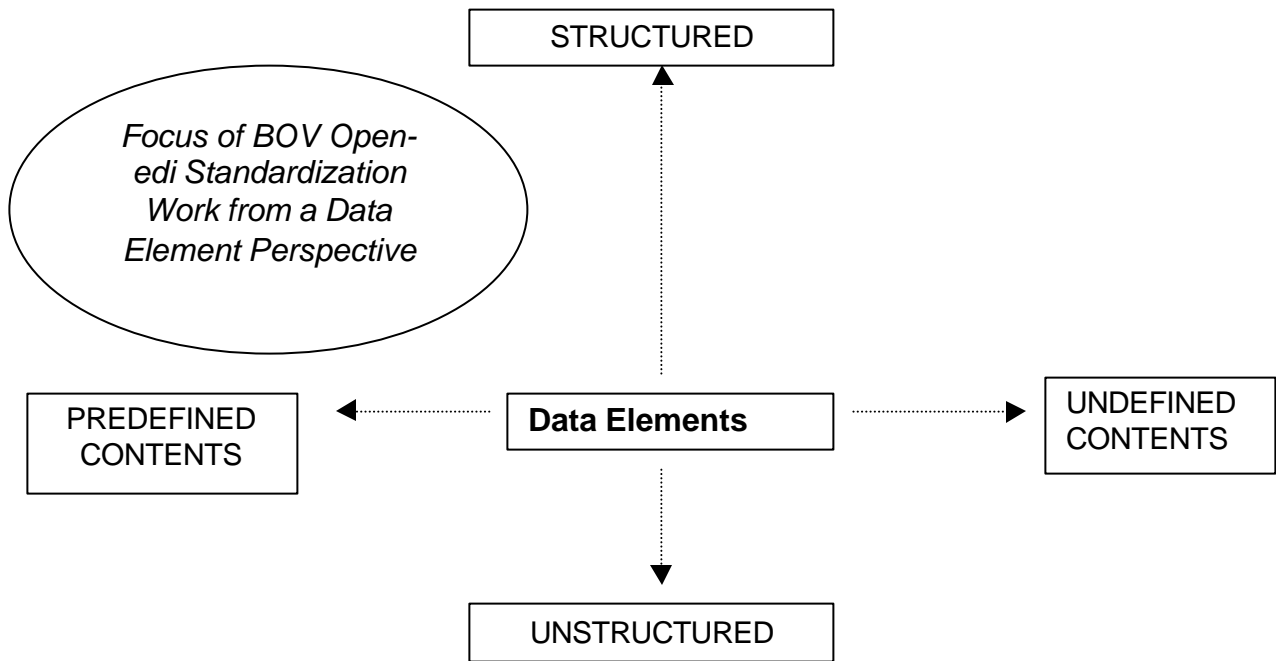
### 40 **G.4.3 Predefined and Structured**

#### 41 **Rule G-10:**

42  
43 **With respect to Open-edi standards development pertaining to the data component, the**  
44 **priority is be placed on data which is of the nature of data elements and within this context,**  
45 **data elements which are (or should be) predefined and structured.**  
46  
47  
48

**ANNEX G (Informative) - Business Transaction Model: Data Component**

Rule G-10 is graphically represented in the following illustration, i.e. in Figure G.5 (as taken from Section 5.4.2):



**Figure G.5: Focus of BOV Open-edi Standardization Work from Data Element Perspective – Predefined and Structured Data Elements**

Data of this nature already exists and is used extensively in commerce world-wide. It is a category commonly known as "code sets". A priority of standardization work in support of Open-edi includes development of on a new standard focused on transforming data elements of the nature of code sets used in commerce into IT-enabled tables supporting localization and multilingual equivalency requirements.<sup>12</sup>

A fundamental condition of Open-edi is that it involves business transactions which must be IT-enabled. Commercial, legal/jurisdictional as well as consumer (human interface) requirements result in the need to be able to support "localization and multilingualism".

Code sets used in many business sectors today represent current intersections of predefined and structured data elements representing the level of granularity appropriate to their purpose and scope of use in business transactions which are primarily paper-based. These code sets represent agreed upon common business practices and rules. These code sets represent only the "tips of icebergs" of the common business practices and rules, many of which are not even explicitly stated. Even if these code sets are distributed in electronic form, they cannot be "plugged in" for use in electronic business transactions. Much of the intelligence in ISO (and non-ISO) code sets is human understandable or discernable explicitly or implicitly. From an analytical/logical IT

<sup>12</sup> See further ISO/IEC 18022 -Information technology- Identification, Mapping and IT-enablement of Standards for Widely Used Coded Value Domains". This standard is under development by ISO/IEC JTC1/SC32 WG2 - Metadata.

## ANNEX G (Informative) - Business Transaction Model: Data Component

1 perspective, (e.g.entity-relationship or object-oriented modelling), these code sets each lack  
2 computer processability and integrity, i.e, have not formally been described using Formal  
3 Description Techniques (FDTs).

4  
5 Consequently, each organization (private or public sector) using these code sets has to spend  
6 considerable time and effort to: (1) figure them out and interpret them; (2) build applications; and (3)  
7 pray that their interpretation is interoperable when their interpretation, as imbedded in their  
8 application, is interoperable when they interwork with networks of other enterprises on a global and  
9 multi-sector basis.

10  
11 One key objective of the needed new standard as a mechanism to support IT-enablement with  
12 localization and multilingualism is to ensure that code sets used in commerce, and e-commerce,  
13 will become "callable objects", i.e. as "dapplets" in a manner similar to that for application  
14 programming code or "applets"<sup>13</sup>.

### 16 G.4.4 Granularity

17 Main thrusts of business strategies are to build confidence and trust, and clarify rules (marketplace,  
18 legal, etc.). A key success factor here is the degree to which existing ambiguities can be removed.  
19 A major characteristic of cost-effective and efficient business operations, customer service, etc., is  
20 "paying attention to details". From a "data" perspective, this need for preciseness in data elements  
21 is known as "granularity". The higher the degree of granularity, the greater the precision. Precision  
22 is necessary to avoid ambiguity.

23  
24 "Unambiguousness" has been defined as "the level of certainty and explicitness required in the  
25 completeness of the semantics of the information interchange appropriate to the goal of a business  
26 transaction"<sup>14</sup>.

#### 29 Rule G-11:

30  
31 **Standards development work in support of electronic business transactions must**  
32 **incorporate and support data granularity requirements. Granularity pertains to the need to**  
33 **work at the data element level to a degree of detail appropriate to the level of certainty**  
34 **required in the data being interchanged among the parties participating in a business**  
35 **transaction.**

36  
37 For example, the name of an individual at the lowest level of granularity could consist of a single  
38 (variable length data element) consisting of 35 characters. At a very high level of granularity, the  
39 name of an individual would consist of a set of more numerous discrete and tightly focused data  
40 elements including:

- 41
- 42 ➤ individual surname;
- 43
- 44 ➤ individual surname suffix;
- 45

---

<sup>13</sup> See further the article by Dr. Jake V. Th. Knoppers titled "Global electronic commerce through localization and multilingualism" in Computer Standards and Interfaces, 20(1998)101-109.

<sup>14</sup>See above Section 5.1.4

## ANNEX G (Informative) - Business Transaction Model: Data Component

- 1 ➤ individual surname status code, (e.g., whether the surname is that as found on the birth  
2 certificate, the Latin-1 alphabet equivalent of the "original" birth name, maiden name,  
3 current legal name, etc.);
- 4
- 5 ➤ individual given name(s) (and a data element for given name sequence code); and,
- 6
- 7 ➤ individual given nickname.
- 8

9 Similarly, at a very low level of granularity a street address can consist of a single data element  
10 while at the highest level of granularity a "street address" can consists of 23 separate and discrete  
11 data elements.

12

13 Finally, "granularity" also pertains to the need for data elements:

- 14
- 15 ➤ to have a clearly defined, specified and complete set of data element attributes;
- 16
- 17 [Note: Most of the attributes specified for a data element are to support an information  
18 technology (and data management) perspectives, i.e., the "HOWs". Those required  
19 for a business operational and legal perspective are often not specified let alone  
20 identified, i.e., the "WHYs" and "WHATs"].<sup>15</sup>
- 21
- 22 ➤ to have as high a level of granularity as possible including a modular and "lego-type"  
23 building approach;
- 24
- 25 ➤ to facilitate information sharing and electronic data interchange, (e.g., of "bricks" and "lego"  
26 blocks not (large) cement blocks"); and,
- 27
- 28 ➤ to support localization and multilingual requirements.
- 29

30 In summary, the term "granularity" refers to the principle that the greater the simplicity and  
31 "smallness" (or atomicity) of one's building blocks, the more flexible one can be in building  
32 database and data interchange. Experience has shown that one can always build-up a particular  
33 set of information, (e.g., a name of a person), from several more discrete, i.e, granular data  
34 elements, (e.g., title, given name(s), surname, etc.). However, the reverse is not true, i.e., if the  
35 data element for a "name of a person" (or a street address) is captured as a single data element, it  
36 cannot be decomposed, i.e., "parsed" (or if so only with difficulty and significant added and costly  
37 effort).

38

39 Further, the higher the degree of granularity of data elements, the easier, more cost-effective and  
40 efficient, it is to implement and maintain data integrity and quality assurance.

41

42 Pivotal to successful implementation of Open-edi based application is the degree to which the  
43 "granularity" principle and that of maximizing the use of "predefined" and "structured" data elements  
44 can implemented.

45

46

47

48

---

<sup>15</sup>One should note that this major deficiency has been recognized in the standards development world of ISO/IEC JTC1/SC32/WG1 "Open-edi" and SC32/WG2 "Metadata".

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## G.5 Linking data element to information bundle and semantic component

ISO/IEC 11179-3:1994 defines data element as:

**"data element:** a unit of data for which the definition, identification, representation and permissible values are specified by means of a set of attributes". {3.3}

[and in French]

**"élément de données:** unité d'information dont la définition, l'identification, la représentation et les valeurs autorisées sont spécifiées au moyen d'un ensemble d'attributs". {3.4}

ISO/IEC 2382-04:1998 "Information Technology - Vocabulary Part 4: Organization of data" defines in Section 04.07. "Structuring of data/Structuration des données":

**"data element (in organization of data):** a unit of data that is considered in context to be indivisible.

*Example: The data element "age of a person" with values consisting of all combinations of 3 decimal digits.*

*NOTE - Differs from the entry 17.06.02 in ISO/IEC 2382-17". {04.07.01}*

[and in French]

**"élément de données (en organisation de données):** Donnée considérée comme indivisible dans un certain contexte.

*Exemple: L'élément de données «âge d'une personne» avec des valeurs comprenant toutes les combinaisons de trois chiffres décimaux,*

*NOTE - Cette notion est différente de celle de l'article 17.06.02 dans la norme ISO/CEI 2382-17". {04.07.01}*

Further ISO/IEC 2381-1 defines:

**"information (in information processing):** knowledge concerning objects, such as facts, events, things, processes, or ideas, including concepts, that within a certain context has a particular meaning". {01.01.01}

[and in French]

**"information (en traitement de l'information):** connaissance concernant un objet tel qu'un fait, un événement, une chose, un processus ou une idée, y compris une notion, et qui, dans un contexte déterminé, a une signification particulière". {01.01.01}

## ANNEX G (Informative) - Business Transaction Model: Data Component

1 This standard builds on and integrates these above noted standard terms and definitions and  
2 progresses these further based on the following principles.

- 3
- 4 (1) The context of any recorded information or data element that is to be treated as an  
5 indivisible unit is the explicitly stated and mutually agreed upon goal of a business  
6 transaction by all the involved organizations.
- 7
- 8 (2) Open-edi is defined as "electronic data interchange among multiple autonomous  
9 organizations to accomplish an explicit shared business goal according to Open-edi  
10 standards".
- 11
- 12 (3) An Open-edi Scenario is "a formal specification of a class of business transaction having  
13 the same business goal.
- 14
- 15 (4) Open-edi scenarios include the following components:
  - 16
  - 17 ➤ role(s);
  - 18 ➤ information bundle(s); and,
  - 19 ➤ scenario attribute(s).
  - 20
- 21 (5) It is assumed that the specifications of Open-edi scenarios and Open-edi scenario  
22 components is to be "explicitly" defined through attributes as properties and/or behaviours.  
23 It is also assumed here that properties include the complete set of characteristics required  
24 and that "behaviours" include characteristics pertaining to rule-base(s) governing permitted  
25 "state(s)", "triggers", "event(s)", "action(s)".
- 26
- 27 (6) Further, it is also assumed that (1) the attributes of "properties" and/or "behaviours" are  
28 rule-based; (2) that such rule-base(s) are explicitly stated; and, (3) that the referencing to  
29 any Open-edi scenario and/or its components by an autonomous organization in an Open-  
30 edi business transaction represents a commitment by that organization to the rule-base  
31 referenced, a.k.a., common business practices.<sup>16</sup>
- 32

33 Based on the above noted principles and an hierarchical decomposition approach, the following  
34 rules and definitions apply.

- 35
- 36 (A) **Information Bundle (IB):** *the formal description of the semantics of the recorded*  
37 *information to be exchanged through electronic data interchange by Open-edi Parties*  
38 *playing roles in an Open-edi scenario. An Information Bundle consist of one or more*  
39 *Semantic Components.*
- 40

### 41 Notes:

- 42
- 43 (1) *The word "information" replaced by the term "recorded information" to meet legal*  
44 *requirements. The use of the term "recorded information" implies that the formal*  
45 *description of the semantics of the recorded information can exist in both paper-based and*  
46 *electronic form.*

---

<sup>16</sup>For example, if in an instantiation of an Open-edi Scenario, the referencing of that Open-edi Scenario and the referencing of a particular combination of roles and information bundles invoked in such an instantiation by the participating autonomous persons is to be considered an explicit commitment to the terms and conditions in the associated rule-bases and thus forms a legally binding contract.

## ANNEX G (Informative) - Business Transaction Model: Data Component

1  
2 (2) *The reasons for insertion of the phrase through "electronic data interchange (EDI)" are*  
3 *three-fold:*

4  
5 (2.1) *It invokes the attributes of the definition of EDI as found in ISO/IEC 14662.*

6  
7 (2.2) *In addition to allowing the formal description of the semantics of the recorded*  
8 *information to be exchanged via paper-based interchange, it ensures that all*  
9 *business requirements are specified with the degree of explicitness required to*  
10 *ensure the level of certainty required for EDI.*

11  
12 (B) **Semantic Component (SC):** *a unit of recorded information unambiguously defined in the*  
13 *context of the explicitly stated business goal of a business transaction.*

### 14 Notes:

15  
16  
17 (1) A Semantic Component may be atomic or composed of other semantic  
18 components.

19  
20 (2) A mandatory attribute of a Semantic Component is its identifier. This identifier  
21 combined with the identifier for the issuing authority provides the unique reference to  
22 the distinguishing characteristics, i.e., properties and/or behaviours of the SC  
23 referenced.

24  
25 (3) A Semantic Component can be:

26  
27 ➤ a single data element or compound data element;

28  
29 ➤ an object class as a root node and/or branching node in a rule-based  
30 Information Bundle structure (which can be hierarchical, relational and/or  
31 object oriented);

32  
33 ➤ (others?)  
34



## ANNEX H (INFORMATIVE) EFFECT OF CLASSIFICATION OF SCENARIO CONSTRUCTS

Tab. H-1 illustrates the effect of scenario classification on the scenario constructs. In the table, only the following basic attributes are mentioned, and the others, which may be required in the real-world business transactions depending on the merchandises and/or business types, are omitted for easy understandings:

**Scenario Class ID:** the unique identifier to specify a particular scenario class. Scenario Class ID is mandatory and should be globally unique for any scenario class in order to be able to properly identify the scenario class.

**Transaction ID:** the unique identifier to specify a particular business transaction. Transaction ID is mandatory for a separate settlement scenario to keep the relationship among the separated activities of a business transaction, but not applicable for a immediate settlement scenario of which the transaction is coincidentally completed as a whole without separation of partial activities. The ID should be globally unique for an unbounded market scenario to avoid the confusion of identification, and locally unique within the market for a defined market scenario.

**Agreement Date:** the date when a business transaction is agreed with the all participants involved in the transaction. Agreement Date is mandatory for a agreement scenario to confirm the fact of agreement, and conditional for a separate delivery and payment scenario. An authentication scenario may conditionally require the date in a certain case of transactions.

**Participant ID:** the unique identifier to specify participants involved in the transaction. Participant ID is mandatory for a agreement and membership registration scenario to confirm the fact of participation, and optional for a basic trade scenario. A separate delivery, separate payment and authentication scenario may conditionally require the ID in a certain case of transactions. The ID should be globally unique for an unbounded market scenario and membership registration scenario, and locally unique for other types of scenario.

**Participant Name:** the name of participant involved in the transaction. The Participant Name is mandatory for an agreement scenario of unbounded market and membership registration scenario to confirm the fact of participation, and optional for an unbounded market trade scenarios. A separate delivery, separate payment, authentication and defined agreement scenario may conditionally require the name in a certain case of transactions. The name may not be unique at all.

**Merchandise ID:** the unique identifier to specify a particular merchandise for the transaction. Merchandise ID is mandatory for an unbounded agreement scenario to confirm the fact of agreement, and optional for an unbounded market trade scenario. A separate delivery, separate payment and authentication scenario and defined market scenario may conditionally require the ID in a certain case of transactions. The ID should be globally unique for an unbounded market scenario, and locally unique for other scenarios.

**Merchandise Name:** the name of merchandise for the transaction. Merchandise Name is optional for an unbounded trade scenario to mention the merchandise of transaction. Any other scenarios may conditionally require the name in a certain case of transactions. The name may not be unique at all.

**Merchandise Description:** the description of merchandise. Merchandise Description is optional for an unbounded trade scenario to understand the property of merchandise. Any other scenarios may

conditionally require the description in a certain case of transactions.

**Quantity Terms:** the quantity at a relevant measurement unit of merchandise for the transaction. Quantity Terms is mandatory for an unbounded trade scenario and an agreement and separate delivery scenario to confirm the quantity of merchandise. And, a separate payment, authentication and membership registration scenario may conditionally require the terms in a certain case of transaction.

**Price Terms:** the price of merchandise at a relevant currency unit for the transaction. Price Terms is mandatory for an unbounded trade scenario and an agreement and separate payment scenario to confirm the price of merchandise. And a separate delivery, authentication and membership registration scenario may conditionally require the terms in a certain case of transaction.

**Delivery Place:** the place and/or address where the merchandise is delivered. Delivery Place is mandatory for an agreement and separate delivery scenario to confirm the place of delivery. And, a separate payment, authentication and membership registration scenario may conditionally require the place in a certain case of transaction.

**Delivery Date:** the date when the delivery of merchandise is practiced. Delivery Date is mandatory for an agreement and separate delivery scenario to confirm the date of delivery. And, a separate payment and authentication scenario may conditionally require the place in a certain case of transaction.

**Delivery Terms:** the other terms and condition of delivery than the delivery place and date. Delivery Terms may be conditionally required for all other scenarios than unbounded trade scenarios in a certain case of transaction.

**Payment Value:** the value of payment for the merchandise. Payment Value is mandatory for an unbounded trade scenario and an agreement and separate payment scenario to confirm the payment value of merchandise. And a separate delivery, authentication and membership registration scenario may conditionally require the value in a certain case of transaction.

**Payment Date:** the date when the payment is practiced. Payment Date is mandatory for an agreement and separate payment scenario to confirm the payment date. And, a separate delivery and authentication scenario may conditionally require the date in a certain case of transaction.

**Payment Account:** the receivables account for the payment of transaction. Payment Account may be conditionally required for all the other scenarios than unbounded and defined trade scenarios and separate delivery scenarios in a certain case of transaction. The Account should be globally unique to properly identify the payment account.

**Payment Terms:** the other terms and conditions than the payment account and date. Payment Terms may be conditionally required for all the other scenarios than unbounded and defined trade scenarios in a certain case of transaction.

**Warranty Terms:** the terms and conditions of warranty for the merchandise. Warranty Terms is optional for an unbounded and defined trade scenario. The terms may be conditionally required for all the other scenarios than unbounded and defined trade scenarios in a certain case of transaction to confirm the warranty terms of merchandise.

**Regulatory Constraints:** the constraints under the control of regulation. Regulatory Constraints may be conditionally required for every scenario in a certain case of transaction.

**Authentication ID:** the unique identifier to specify the authentication of object relevant to the business transaction. Authentication ID is mandatory for an authentication scenario to properly identify the object, and optional for unbounded trade scenarios. Any other scenario may conditionally require the ID to denote the authentication status in a certain case of transaction. The ID should be globally unique for unbounded market scenarios, and locally unique for the other scenarios.

**Authentication Date:** the date when the authentication is practiced. Authentication Date is mandatory for an authentication scenario to confirm the fact of authentication, and optional for unbounded trade scenarios. Any other scenario may conditionally require the date to denote the authentication status in a certain case of transaction.

**Authentication Terms:** the other terms and conditions of authentication than the authentication date. Authentication Terms is mandatory for an authentication scenario to confirm the content of authentication, and optional for unbounded trade scenarios. Any other scenario may conditionally require the ID to denote the authentication content in a certain case of transaction.

**Registration ID:** the unique identifier to specify the membership registration of participant involved in the business transaction. Registration ID is mandatory for a membership registration and defined market agreement to properly identify the membership of participants. Any other defined market scenarios may conditionally require the ID to confirm the membership in a certain case of transaction. The ID should be locally unique to avoid the confusion of identification.

**Registration Date:** the date when the membership registration is practiced. Registration Date is mandatory for a membership registration scenario to confirm the fact of registration. Any other defined market scenarios may conditionally require the date in a certain case of transaction.

**Registration Terms:** the other terms and conditions of membership registration than the registration date. Registration Terms is mandatory for a membership registration scenario to confirm the content of registration. Any other defined market scenarios may conditionally require the terms in a certain case of transaction.

**Tab. H-1 Effect of Classification on Scenario Constructs**

<b>Legend</b> M: mandatory C: conditional O: optional -: not applicable _: underscore indicates the uniqueness at global level	Registration Terms	Registration Date	Registration ID	Authentication Terms	Authentication Date	Authentication ID	Regulatory Constraints	Warranty Terms	Payment Terms	Payment Account	Payment Date	Payment Value	Delivery Terms	Delivery Date	Delivery Place	Price Terms	Quantity Terms	Merchandise description	Merchandise Name	Merchandise ID	Participant Name	Participant ID	Agreement Date	Transaction ID	Scenario Class ID
<b>a) U-I-B Class</b> -Basic Bilateral Trade	-	-	-	O	O	O	O	O	-	-	M	M	-	-	-	M	M	O	O	O	O	O	-	M	
<b>b) U-I-M Class</b> -Basic Mediated Trade	-	-	-	O	O	O	O	O	-	-	M	M	-	-	-	M	M	O	O	O	O	O	-	M	
<b>c) U-S-B Class</b> -Bilateral Agreement -Separate Delivery -Separate Payment -Authentication	-	-	-	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	M
<b>d) U-S-M Class</b> -Mediated Agreement -Separate Delivery -Separate Payment -Authentication	-	-	-	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	M
<b>e) D-I-B Class</b> -Membership Registration -Defined Bilateral Trade	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	M	
<b>f) D-I-M Class</b> -Membership Registration -Defined Mediated Trade	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	M	
<b>g) D-S-B Class</b> -Membership Registration -Defined Bilateral Agreement -Separate Delivery -Separate Payment -Defined Authentication	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	M	
<b>h) D-S-M Class</b> -Membership Registration -Defined Mediated Agreement -Separate Delivery -Separate Payment -Defined Authentication	M	M	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	M	

Definition for Chapter 5.6

**market type:** a classification concept of market where the market is unbounded or defined for a specific types of business transactions under the Open-edi environment

**settlement type:** a classification concept of settlement where the delivery and payment an Open-edi transaction are simultaneously settled through the network, or separately performed through different channels.

**participation type:** a classification concept of participation of Open-edi parties where intermediate(s) other than either buyer(s) or seller(s) is involved in an Open-edi transaction, or not.

**trade model:** a structured concept that abstracts a generic construct of trade activities relevant to business transaction.

**Basic Trade Model:** a trade model that describes the most fundamental business transaction.

**Unbounded Market Model:** a trade model, conforming to the description of Basic Trade Model, which is performed in an unbounded market under the Open-edi environment.

**Defined Market Model:** a trade model where buyer(s) and seller(s) accept the entry terms of market in advance and then commence the actual business transaction in the market under the Open-edi environment.

**market administrator:** a role that is responsible for the administration of defined market for Open-edi transactions.

**Immediate Settlement Model:** a trade model where the entire business transaction process, i.e. planning, identification, negotiation, actualization (delivery and payment), is completed in real-time under the Open-edi environment.

**Separate Settlement Model:** a trade model that the business transaction is performed under the Open-edi environment, and that the delivery and/or payment are separated from the agreement process.

**Bilateral Trade Model:** a trade model where buyer(s) and seller(s) are directly involved in the business transaction without any involvement of any intermediary party.

**Mediated Trade Model:** a trade model where a third party mediates a specified role(s) or function(s) as mutually agreed to by the buyer(s) and seller(s) for a certain business transaction.

**U-I-B Class:** a scenario class of business transactions, which is attributed by Unbounded Market, Immediate Settlement and Bilateral Trade Model.

**U-I-M Class:** a scenario class of business transactions, which is attributed by Unbounded Market, Immediate Settlement and Mediated Trade Model.

**U-S-B Class:** a scenario class of business transactions, which is attributed by Unbounded Market, Separate Settlement and Bilateral Trade Model.

**I-S-I Class:** a scenario class of business transactions, which is attributed by Unbounded Market, Separate Settlement and Mediated Trade Model.

**D-I-B Class:** a scenario class of business transactions, which is attributed by Defined Market, Immediate Settlement and Bilateral Trade Model.

**D-I-M Class:** a scenario class of business transactions, which is attributed by Defined Market, Immediate

Settlement and Mediated Trade Model.

**D-S-B Class:** a scenario class of business transactions, which is attributed by Defined Market, Separate Settlement and Bilateral Trade.

**D-S-M Class:** a scenario class of business transactions, which is attributed by Defined Market, Separate Settlement and Mediated Trade Model.

**Continuous Transaction:** a series of transactions of which the terms and conditions are constant.

**Services Transaction:** a business transaction that services is procured.

**Goods Transaction:** a business transaction that goods is procured.

**Auction Bidding Transaction:** a business transaction relevant to auction.

**Bidding Transaction:** a business transaction relevant to bidding.

**Credit/debit Payment Transaction:** a business transaction that is settled by a credit card or debit card.

# Annex I (Informative) Scenario descriptions using the Open-edi scenario template

## *I.1 Introduction*

### **I.1.1 Purpose**

The purpose of Informative ANNEX I is to provide examples of Open-edi scenario specifications based on the templates of Section 6.3 and Chapter 8.

### **I.1.2 Choice of modeling tool**

Editor's Note

A UML modelling methodology, referred to as Unified Modelling Methodology, is currently under development by the UN/CEFACT Methodologies and Techniques Working Group (TMWG) ., UN/CEFACT intends to contribute the Unified Modelling Methodology, using the Catalog Order example, as an illustration of the use of an Open-edi Descriptive Technique in the specification of an Open-edi scenario. At this point the UN/CEFACT work is premature to include in this CD. Section I.2.3 briefly describes the modelling artifacts that are candidates to be included in the Unified Modelling Methodology, but does not yet provide illustrative examples. However, Sections I.2.1 and I.2.2 provide the business case and Open-edi scenario description of the Catalog Order example.

## *I.2 Example 1 Catalog Order*

In this example the business case for each Open-edi scenario is described as a business case or problem statement, followed by the Open-edi scenario description in terms of the template.

### **I.2.1 Business case description**

The problem statement is described by five business sub-scenarios depicting the process of a Buyer executing a catalog order with a Seller. "Request Catalog" is an optional sub-scenario. A Seller may offer to provide to any potential Buyer an electronic version of the current Seller's catalog on request. "Register" depicts a first time Buyer initiating a relationship with a Seller by providing required buyer information, confirmed by receiving a Seller's Buyer ID from the Seller. "Request Price" (provide a price quote to the Buyer for selected product(s) on request) is an optional sub-scenario where the Seller may offer a price quote to a Buyer after a valid Seller's Buyer ID has been assigned. "Order Product" depicts the process of a Buyer ordering items from a catalog, having previously established a relationship with the Seller by providing Buyer information and receiving a Seller's Buyer ID (refer to "Register"). "Request Order Status" is an optional sub-scenario where the Seller provides order status information to the Buyer on request.

1 ***1.2.1.1 Detailed Explanation of Sub-Scenario A, Request Catalog***

2 A potential Buyer is interested in finding out information about products from a Seller. The Buyer  
3 requests an electronic version of a product catalog from the Seller. The Buyer expects that the  
4 Seller will unconditionally honor a catalog request, but in exceptional circumstances the catalog  
5 request may be rejected.

6 The Buyer starts the sub-scenario by sending to the Seller a request for the Seller's catalog:

7 a. Catalog Request to include:

- 8 • Date [Final date on which the Seller can respond to the Buyer before the sub-scenario  
9 is terminated]

10 Is it assumed that the Buyer's name and address for catalog delivery are provided implicitly with  
11 the transmission of the Catalog Request.

12 The Seller responds by sending the requested catalog to the Buyer or rejects the request (stating  
13 the reason) by sending a Reject Catalog Request Notice to the Buyer to complete the sub-  
14 scenario:

15 b. Catalog Information

- 16 • Catalog Reference ID [Unique identification of the Seller's catalog]  
17 • Product Identifier [Unique identification of a product]  
18 • Amount [Monetary amount cost per single item (or per unit of measure) of the product]  
19 • Currency Code (if required; is required when the catalog offers the product in multiple  
20 currencies) [Identification of the currency of the Amount]  
21 • Unit of Measure Identifier (if required) [Unit of measure for selling bulk products]  
22 • Product Characteristics Type (if required) [Product variation such as color, size, etc.]  
23 • Product Characteristics Code (if required) [Product offerings within a product variation]

24 OR

25 c. Reject Catalog Request Notice to include:

- 26 • Type [Code for the Seller's reason for rejecting the order]  
27 • Reason [Seller stated reason for rejecting the catalog request, e.g. policy, political or  
28 legal constraint]

29



1 ***1.2.1.2 Detailed Explanation of Sub-Scenario B, Register***

2  
3 A Buyer finds one or more items in a Catalog that the Buyer needs. However, since the Buyer  
4 has never conducted business with the Seller before, the Seller requires buyer information before  
5 any catalog order can be placed. Upon receiving the required buyer information, including  
6 verification of credit, the Seller assigns the Seller's Buyer ID. This identification can then be used  
7 to receive price quotes on products offered by the Seller, or to place a catalog order. The benefit  
8 of a Buyer having provided information about itself prior to ordering is that the amount of  
9 information to be exchanged and the number of steps required to subsequently request a price  
10 quote or place a catalog order are reduced. This results in saving both the Buyer and the Seller  
11 processing time, reducing the cost of doing business..

12  
13 The Buyer starts the sub-scenario by sending to the Seller the following information:

14  
15 a. Buyer Information to include:

- 16
  - Buyer name [Business name by which the Buyer wants to be known by the Seller]

17 b. Bill-to Details to include:

- 18
  - Address [Address to which the Buyer wants the bill to be sent]
  - Contact Name [Name of the person to whom the Buyer wants billing inquiries to be directed]
  - Contact Phone Number [Telephone number of the person to whom the Buyer wants billing inquiries to be directed]

21  
22 c. Ship-to Details to include (only required if different from Bill-to Details):

- 23
  - Address [Address to which the Buyer wants ordered goods to be shipped]
  - Contact Name [Name of the person to whom the Buyer wants shipping inquiries to be directed]
  - Contact Phone Number [Telephone number of the person to whom the Buyer wants shipping inquiries to be directed]

24  
25 d. Credit Card Details (signed and encrypted) to include:

- 26
  - Credit Card Number [Identification of the credit account that the Buyer chooses to provide to the Seller as a credit reference]
  - Credit Card Holder Name [Name of the owner of the credit account the Buyer chooses to provide to the Seller as a credit reference]
  - Credit Card Issuer Name [Name of the financial institution issuing the card]
  - Credit Card Type [Type of credit account, recognised by the credit card industry, that the Buyer chooses to provide to the Seller as a credit reference]

- 1 • Date [Date on which the credit account that the Buyer chooses to provide to the Seller  
2 as a credit reference is no longer valid]

3 To conclude the exchange the Buyer sends to the Seller the Buyer ID Respond-By Date  
4 Information to indicate by what date a response is expected from the Seller. If no response is  
5 received the sub-scenario is terminated.

6 e. Buyer ID Respond-By Date Information to include:

- 7 • Date [Final date on which the Seller can respond to the Buyer with a Seller's Buyer ID  
8 before the sub-scenario is terminated]

9  
10 When the Respond-By Date Information is received, the Seller assigns a Seller's Buyer ID or  
11 rejects the request (stating the reason) and sends it to Buyer to complete the sub-scenario:  
12

13 f. Buyer Identification to include:

- 14 • Seller's Buyer ID [Seller assigned identification by the which the Seller uniquely  
15 recognises a Buyer]

16  
17 OR

18 g. Reject Buyer Information Notice to include:

- 19 • Type [Code for Seller's reason for not assigning a Seller's Buyer ID]
- 20 • Reason [Seller stated reason for not assigning a Seller's Buyer ID to the Buyer, e.g.  
21 insufficient Billing Information, invalid credit account, etc.]

22

23 ***1.2.1.3 Detailed Explanation of Sub-Scenario C, Request Price***

24 A Buyer requests a Price Quote when the Unit Price Amount of a product is not specified in the  
25 Seller's catalog or when the Buyer is aware that the Seller may offer special purchase prices and  
26 volume discounts to certain customers. The request for Price Quote requires the Seller's Buyer  
27 ID, Product Identifier(s), and Price Quote Respond-By Date Information. The Seller will respond  
28 to the request with a Price Quote, which includes a Reference Number, or the Seller will reject the  
29 request with an explanation.

30

31 The Buyer starts the sub-scenario by sending to the Seller the following information:

32 a. Buyer ID

- 33 • Seller's Buyer ID [See prior definition]

34 b. Price Quote Request

- 35 • Catalog Reference ID [See prior definition]

- 1           • Product Identifier [See prior definition]
- 2           • Currency Code (if required; is required when the unit price for the product is offered in
- 3           multiple currencies) [See prior definition]
- 4           • Quantity [Number of items (or units of measure) of the product to be considered in the
- 5           price quote]
- 6           • Unit of Measure Identifier (if required) [See prior definition]
- 7           • Product Characteristics Type (if required) [See prior definition]
- 8           • Product Characteristics Code (if required) [See prior definition]

9 To conclude the exchange the Buyer sends to the Seller the Price Quote Respond-By Date to  
10 indicate by what date a response is expected from the Seller. If no response is received the sub-  
11 scenario is terminated.

12           c. Price Quote Respond-By Date to include:

- 13           • Date [Final date on which the Seller can respond to the Buyer with a Price Quote
- 14           before the sub-scenario is terminated]

15 When the Price Quote Respond-By Date is received, the Seller provides a Price Quote Response  
16 or rejects the request (stating the reason) and sends it to the Buyer to complete the sub-scenario:

17           d. Price Quote Response to include:

- 18           • Product Identifier [See prior definition]
- 19           • Amount [Quoted monetary amount cost per single item (or per unit of measure) of the
- 20           product]
- 21           • Currency Code (if required; is required when the price is quoted for the product in
- 22           multiple currencies) [Identification of the currency of the quoted Unit Price Amount]
- 23           • Unit of Measure Identifier (if required) [Unit of measure for quoted price on bulk
- 24           products]
- 25           • Product Characteristics Type (if required) [See prior definition]
- 26           • Product Characteristics Code (if required) [See prior definition]
- 27           • Price Quote Reference Number [Seller assigned identification of a Price Quote for a
- 28           product, to be used by the Buyer as a reference when ordering]
- 29           • Date [Date on which a Price Quote for a product is no longer valid]

30           OR

31           e. Reject Price Quote Notice to include:

- 1           • Type [Code for the Seller’s reason for rejecting the price quote request]
- 2           • Reason [Seller stated reason for not providing a Price Quote Response, e.g., no
- 3           Seller’s Buyer ID, insufficient Price Quote Request Information, etc.]

4

5   ***1.2.1.4 Detailed Explanation of Sub-Scenario D, Order Product***

6

7   A Buyer, having a Seller assigned Seller’s Buyer ID, finds one or more items in a Seller’s Catalog  
8   that the Buyer needs. (It is assumed that the Buyer has a copy of the Seller’s catalog, provided  
9   electronically via sub-scenario A, or otherwise.) Since the Seller knows the Buyer, the Buyer only  
10   needs to provide the Seller the Seller assigned Seller’s Buyer ID, the Ordering information and  
11   Order ID Respond-By Date.. The Seller will respond either with an assigned Order Identification  
12   or reject the request (stating the reason) and send it to the Buyer to complete the sub-scenario.

13

14   The Buyer starts the sub-scenario by sending to the Seller the following information:

15

16       a. Buyer ID:

- 17           • Seller’s Buyer ID [See prior definition]

18

19       b. Order Information to include:

- 20           • Catalog Reference ID [See prior definition]
- 21           • Product Identifier [See prior definition]
- 22           • Price Quote Reference Number (if required; is required when an order is based on a
- 23           Price Quote)[See prior definition]
- 24           • Amount (if required; is not required when it can be calculated from the unit price
- 25           amount in the catalog and the line item quantity ordered; is required when the catalog
- 26           offers the product in multiple currencies) [Monetary amount cost per single item (or per
- 27           unit of measure) of the product as stated in the Seller’s catalog]
- 28           • Currency Code (if required; is required when the price quote or catalog offering for the
- 29           product is in multiple currencies) [Previously defined]
- 30           • Line Item Quantity [Number of items (or units of measure) of the product to be ordered]
- 31           • Line Item Unit of Measure ID (if required) [Unit of measure as stated in the Seller’s
- 32           catalog or in the quoted price for bulk products]
- 33           • Product Characteristics Type (if required) [See prior definition]
- 34           • Product Characteristics Code (if required) [See prior definition]

- 1           • Delivery Method [Means and timing of delivery per order as selected by the Buyer from  
2           Seller provided options]

3  
4 To conclude the exchange the Buyer sends to the Seller the Order ID Respond-By Date to  
5 indicate by what date a response is expected from the Seller. If no response is received the sub-  
6 scenario is terminated.

7  
8           c. Order ID Respond-by Date to include:

- 9           • Date [Final date on which the Seller can respond to the Buyer with an Order ID before  
10           the sub-scenario is terminated]

11  
12 When the Order ID Respond-By Date is received, the Seller assigns an Order Identification or  
13 rejects the request (stating the reason) and sends it to Buyer to complete the sub-scenario:  
14

15           d. Order Identification Information to include:

- 16           • Order Reference ID [Seller assigned order identification for tracking the status of an  
17           order in a Buyer's account until payment is made]

- 18           • Order Total Cost [Seller computed total cost for order confirmation and validation]

19  
20           OR

21           e. Order Rejection Notice to include:

- 22           • Type [Code for the Seller's reason for rejecting the order]  
23           • Reason for [Seller stated reason for not assigning an order from the Buyer, e.g., no  
24           Buyer Identification, insufficient Order Information, insufficient credit, etc.]

25           ***1.2.1.5 Detailed Explanation of Sub-Scenario E, Request Order Status***

26 A Buyer, having received an Order Reference ID in the Order Identification, wants to determine  
27 the status of the order. Upon requesting an order status report, the Seller will respond either with  
28 Order Status Report Information or reject the request (stating the reason) and send it to the Buyer  
29 to complete the sub-scenario.

30 The Buyer starts the sub-scenario by sending the Seller the following information:

31           a. Order Status Request:

- 32           • Seller's Buyer ID [See prior definition]  
33           • Order Reference ID [See prior definition]

1 To conclude the exchange, the Buyer sends to the Seller the Order Status Request Respond-By  
2 Date to indicate by what date a response is expected from the Seller. If no response is received  
3 the sub-scenario is terminated.

4 b. Order Status Request Respond-By Date to include:

- 5 • Date [Final date on which the Seller can respond to the Buyer with Order Status  
6 Report Information before the sub-scenario is terminated]

7 When the Order Status Request Respond-By Date is received, the Seller provides Order Status  
8 Report Information or rejects the request (stating the reason) and sends it to the Buyer to  
9 complete the sub-scenario:

10 c. Order Status Report Information to include:

- 11 • Order Reference ID [See prior definition]
- 12 • Product Identifier [See prior definition]
- 13 • Order Processing Date [Date on which the order is processed and the Buyer's credit  
14 card debited, establishing the commitment for the Seller to ship]
- 15 • Order Shipping Date [Scheduled date for the product(s) to be shipped by the Seller to  
16 the Buyer]
- 17 • Order Status Report Date [Date of issuance of the Order Status Report]

18 OR

19 d. Reject Order Status Report Request Notice to include:

- 20 • Type [Code for the Seller's reason for rejecting the request]
- 21 • Reason [Seller stated reason for not providing Order Status Report Information]

22

## 23 **I.2.2 Open-edi scenario description**

24

25 The five sub-scenarios for catalog order are described according to the proposed Open-edi  
26 scenario template in the following Sections.

27

### 28 ***I.2.2.1 Sub-Scenario A, Request Catalog***

29

#### 30 **Scenario Registration and Management**

31 **Name:** Request Catalog (Sub-Scenario A)

32 **Purpose (may state exclusions):** to request and receive the Seller's product catalog.

33 **Class(es) of business requirements:** none (there's no classification of business requirements at  
34 the moment. An issue is raised regarding this subject)

1 **Laws and regulations:** none  
2 **Cross reference to other sub-scenarios:** none  
3  
4 **Role Registration and Management**  
5 **Name:** Buyer  
6 **Purpose:** request and receive a product catalog from the Seller  
7 **Business goal(s):** send information to the Seller so the Seller can provide a catalog  
8 **Business rules:** must provide to the Seller sufficient information for catalog delivery  
9 **Regulations:** none  
10 **Demands on OeP:** Buyer acts as OeP  
11 **Constraints on OeP characteristics:** none  
12 **Constraints on maximum number of OePs playing a role:** only the Buyer can play this role  
13 **Constraints imposing a role to be conditional:** none  
14 **Constraints on different OePs playing this role:** none  
15 **Demands on interoperability**  
16 **IBs for role:**  
17 Input IBs  
18 - Catalog Information OR Reject Catalog Request Notice  
19 Output IBs:  
20 - Catalog Request and implicit information on the Buyer's name and address  
21 **Timer expiration:** handled explicitly by Catalog Request IB  
22 **Error conditions:** none  
23 **IB sequence:**  
24 

<b>Buyer</b>	<b>Seller</b>
>> Catalog Request >>	
<< Catalog Information OR Reject Catalog Request Notice <<	

  
27 **Demands on Open-edi Support Infrastructure**  
28 - **From checklist:** 8859-1 character set limitation for all IBs  
29  
30 **Role Registration and Management**  
31 **Name:** Seller  
32 **Purpose:** Provide catalogs on demand to potential buyers  
33 **Business goal(s):** Validate catalog requests and respond appropriately  
34 **Business rules:** If a Catalog Request cannot be validated the Seller responds with a Reject  
35 Catalog Request Notice  
36 **Regulations:** none  
37 **Demands on OeP:** Seller acts as OeP  
38 **Constraints on OeP characteristics:** none  
39 **Constraints on maximum number of OePs playing a role:** only the Seller can play this role  
40 **Constraints imposing a role to be conditional:** none  
41 **Constraints on different OePs playing this role:** none  
42 **Demands on interoperability**  
43 **IBs for role:**  
44 Input IB's:  
45 - Catalog Request  
46 Output IB's:  
47 - Catalog Information or Reject Catalog Request Notice  
48 **Timer expiration:** handled explicitly by Catalog Request IB  
49 **Error conditions:** none  
50 **IB sequence:**  
51 

<b>Seller</b>	<b>Buyer</b>
---------------	--------------

1 << Catalog Request <<  
2 >> Catalog Information or Reject Catalog Request Notice >>  
3 **Demands on Open-edi Support Infrastructure**  
4 - **From checklist:** none  
5  
6 **Information Bundle Registration and Management**  
7 **Name:** Catalog Request  
8 **Purpose:** to specify information to the Seller so that the Seller can provide the catalog  
9 **Business rules controlling content or concept(s) of IB:** Buyer expects that the Seller will  
10 unconditionally honor a catalog request. Buyer expects Catalog Information or a Reject Catalog  
11 Request Notice within the given time.  
12 **Regulations governing content or concept(s) of IB:** none  
13 **Information for interoperability**  
14 **List of SCs and definitions:**  
15 Date [Final date on which the Seller can respond to the Buyer before the sub-scenario is  
16 terminated] (date)  
17  
18 **Relationships of SCs within IBs:** It is assumed that the Buyer's name and address for catalog  
19 delivery are provided implicitly with the transmission of the Catalog Request  
20  
21 **Demands on Open-edi Support Infrastructure**  
22 - **From checklist:** none  
23  
24 **Information Bundle Registration and Management**  
25 **Name:** Catalog Information  
26 **Purpose:** To provide information about the Seller's products so that they can be ordered  
27 **Business rules controlling content or concept(s) of IB:** The Seller is expected to provide  
28 Catalog Information to Buyers before orders can be received  
29 **Regulations governing content or concept(s) of IB:** none  
30 **Information for interoperability**  
31 **List of SCs and definitions:**  
32 Catalog Reference ID [Unique identification of the Seller's catalog] (identifier)  
33 Product Identifier [Unique identification of a product] (identifier)  
34 Amount [Monetary amount cost per single item (or per unit of measure) of the product] (amount)  
35 Currency Code (if required; is required when the catalog offers the product in multiple currencies)  
36 [Identification of the currency of the Amount] (code)  
37 Unit of Measure Identifier ( if required) [Unit of measure for selling bulk products] (identifier)  
38 Product Characteristics Type ( if required) [Product variation such as color, size, etc.] (code)  
39 Product Characteristics Code (if required) [Product offerings within a product variation] (code)  
40 **Relationships of SCs within IBs:** none  
41 **Demands on Open-edi Support Infrastructure**  
42 - **From checklist:** none  
43  
44 **Information Bundle Registration and Management**  
45 **Name:** Reject Catalog Request Notice  
46 **Purpose:** to indicate to a Buyer that the Catalog Request was rejected.  
47 **Business rules controlling content or concept(s) of IB:** The Seller can reject the Catalog  
48 Request for any reason without liability  
49 **Regulations governing content or concept(s) of IB:** none  
50 **Information for interoperability**  
51 **List of SCs and definitions:**



1 Type [Code for the Seller's Reason for rejecting the request] (code)  
2 Reason [Seller stated reason for rejecting the catalog request, e.g. policy, political or legal  
3 constraint] (character string)

4 **Relationships of SCs within IBs:** One and only one Reason is mandatory.

5 **Demands on Open-edi Support Infrastructure**

6 - **From checklist:** none

7

8 **Scenario attributes**

9 **Demands on OePs:** both Buyer and Seller must be present

10 **Demands on interoperability**

11 - **Relationships among roles:**

12 When the Catalog Request **IB** is sent, the Seller is expected to respond by sending Catalog  
13 Information or a Reject Catalog Request Notice.

14

15 The Buyer initiates the scenario by sending a Catalog Request **IB** to the Seller.

16

17 - **Relationships among SCs of different Ibs:** none

18 **Demands on Open-edi Support Infrastructure**

19 -**From checklist:** none

## 20 ***1.2.2.2 Sub-Scenario B, Register***

21

22 **Scenario Registration and Management**

23 **Name:** Register

24 **Purpose (may state exclusions):** to establish Seller's Buyer ID with Seller. Excluded are any  
25 requirements related to jurisdictional and geographical constraints, etc. because they are not part  
26 of sub-scenario B.

27 **Class(es) of business requirements:** none (there's no classification of business requirements at  
28 the moment. An issue is raised regarding this subject)

29 **Laws and regulations:** none

30 **Cross reference to other sub-scenarios:** none

31

32 **Role Registration and Management**

33 **Name:** Buyer

34 **Purpose:** establish a trading relationship with a Seller

35 **Business goal(s):** send Buyer information and receive Seller's Buyer ID

36 **Business rules:** must contact Seller to supply buyer information; must have Seller assigned  
37 Seller's Buyer ID before requesting a price quote or placing an order

38 **Regulations:** none

39 **Demands on OeP:** Buyer acts as OeP

40 **Constraints on OeP characteristics:** none

41 **Constraints on maximum number of OePs playing a role:** only the Buyer can play this role

42 **Constraints imposing a role to be conditional:** none

43 **Constraints on different OePs playing this role:** none

44 **Demands on interoperability**

45 **IBs for role:**

46 Input IBs

47 - Buyer Identification OR Reject Buyer Information Notice

48 Output IBs:

49 -Buyer Information

- 1 -Bill-to Details
- 2 -Ship-to Details
- 3 -Credit Card Details
- 4 -Buyer ID Respond-By Date Information

5 **Timer expiration:** handled explicitly by Buyer ID Respond-By Date Information IB

6 **Error conditions:** none

7 **IB sequence:**

	<b>Buyer</b>	<b>Seller</b>
8	>> Buyer Information >>	
9	>> Bill-to Details >>	
10	>> Ship-to Details >>	
11	>> Buyer Information >>	
12	>> Credit Card Details >>	
13	>> Buyer ID Respond-By Date >>	
14	<< Buyer identification OR Reject Buyer Information Notice<<	

16 **Demands on Open-edi Support Infrastructure**

17 - From checklist: 8859-1 character set limitation for all IBs

19 **Role Registration and Management**

20 **Name:** Seller

21 **Purpose:** establish trading relationships with buyers

22 **Business goal(s):** receive buyer information and send Seller's Buyer ID

23 **Business rules:** must have buyer information prior to qualifying a buyer; must have a catalog; assignment of Seller's Buyer ID is a prerequisite to receiving a price quote request of an order; must issue Reject Buyer Information Notice if Buyer not qualified.

26 **Regulations:** none

27 **Demands on OeP:** Seller acts as OeP

28 **Constraints on OeP characteristics:** none

29 **Constraints on maximum number of OePs playing a role:** only the Seller can play this role

30 **Constraints imposing a role to be conditional:** none

31 **Constraints on different OePs playing this role:** none

32 **Demands on interoperability**

33 **IBs for role:**

34 Input IB's:

- 35 -Buyer Information
- 36 -Bill-to Details
- 37 -Ship-to Details
- 38 -Credit Card Details
- 39 -Buyer ID Respond-By Date Information

40 Output IB's:

- 41 - Buyer Identification OR Reject Buyer Information Notice

42 **Timer expiration:** handled explicitly in acting on Buyer ID Respond-By Date IB

43 **Error conditions:** none

44 **IB sequence:**

	<b>Seller</b>	<b>Buyer</b>
45	<< Buyer Information <<	
46	<< Bill-to Details <<	
47	<< Ship-to Details <<	
48	<< Credit Card Details <<	
49	<< Buyer ID Respond-By Date Information <<	
50	>> Buyer identification OR Reject Buyer Information Notice >>	

1 **Demands on Open-edi Support Infrastructure**  
2 - **From checklist:** none  
3  
4 **Information Bundle Registration and Management**  
5 **Name:** Buyer Information  
6 **Purpose:** to specify the Buyer name  
7 **Business rules controlling content or concept(s) of IB:** Required information for the  
8 assignment of a Seller's Buyer ID  
9 **Regulations governing content or concept(s) of IB:** none  
10 **Information for interoperability**  
11 **List of SCs and definitions:**  
12 Buyer name [Business name by which the Buyer wants to be known by the Seller]  
13 (any character string)  
14 **Relationships of SCs within IBs:** none **Demands on Open-edi Support Infrastructure**  
15 - **From checklist:** This IB must be signed and encrypted for security.  
16 -  
17 **Information Bundle Registration and Management**  
18 **Name:** Bill-to Details  
19 **Purpose:** to specify information required for billing  
20 **Business rules controlling content or concept(s) of IB:** Required information for the  
21 assignment of a Seller's Buyer ID  
22 **Regulations governing content or concept(s) of IB:** none  
23 **Information for interoperability**  
24 **List of SCs and definitions:**  
25 Address [Address to which the Buyer wants the bill to be sent] (one or more character strings)  
26 Contact Name [Name of the person to whom the Buyer wants billing inquiries to be directed] (character  
27 string)  
28 Contact Phone Number [Telephone number of the person to whom the Buyer wants billing inquiries to  
29 be directed] (character string)  
30 **Relationships of SCs within IBs:** Contact Phone Number is associated with Contact Name; one  
31 Contact Name and Contact Phone Number must be provided per IB.  
32 **Demands on Open-edi Support Infrastructure**  
33 - **From checklist:** This IB must be signed and encrypted for security.  
34  
35 **Information Bundle Registration and Management**  
36 **Name:** Ship-to Details  
37 **Purpose:** to specify information required for shipping  
38 **Business rules controlling content or concept(s) of IB:** Required information for the  
39 assignment of a Seller's Buyer ID  
40 **Regulations governing content or concept(s) of IB:** none  
41 **Information for interoperability**  
42 **List of SCs and definitions:**  
43 Address [Address to which the Buyer wants ordered goods to be shipped] (one or more character  
44 strings)  
45 Contact Name [Name of the person to whom the Buyer wants shipping inquiries to be directed]  
46 (character string, optional)  
47 Contact Phone Number [Telephone number of the person to whom the Buyer wants shipping inquiries  
48 to be directed] (character string)  
49 **Relationships of SCs within IBs:** Contact Phone Number is associated with Contact Name; one  
50 Contact Name and Contact Phone Number must be provided per IB.  
51 **Demands on Open-edi Support Infrastructure**

1 - **From checklist:** This IB must be signed and encrypted for security.

2

### 3 **Information Bundle Registration and Management**

4 **Name:** Credit Card Details

5 **Purpose:** to specify information required for the Seller to check the Buyer's credit

6 **Business rules controlling content or concept(s) of IB:** Required information for the  
7 assignment of a Seller's Buyer ID

8 **Regulations governing content or concept(s) of IB:** none

9 **Information for interoperability**

10 **List of SCs and definitions:**

11 Credit Card Number [Identification of the credit account that the Buyer chooses to provide to the Seller  
12 as a credit reference] (identifier)

13 Credit Card Holder Name [Name of the owner of the credit account the Buyer chooses to provide to the  
14 Seller as a credit reference] (one or more character strings)

15 Credit Card Issuer Name [Name of the financial institution issuing the card] (character string)

16 Credit Card Type [Type of credit account, recognized by the credit card industry, that the Buyer  
17 chooses to provide to the Seller as a credit reference] (character string)

18 Date [Date on which the credit account that the Buyer chooses to provide to the Seller as a credit  
19 reference is no longer valid] (date)

20 **Relationships of SCs within IBs:** none

21 **Demands on Open-edi Support Infrastructure**

22 - **From checklist:** This IB must be signed and encrypted for security.

23

### 24 **Information Bundle Registration and Management**

25 **Name:** Buyer ID Respond-By Date Information

26 **Purpose:** to specify the timer expiration date for the sub-scenario

27 **Business rules controlling content or concept(s) of IB:** Buyer expects Seller's Buyer ID  
28 assignment or a rejection back within the given time.

29 **Regulations governing content or concept(s) of IB:** none

30 **Information for interoperability**

31 **List of SCs and definitions:**

32 Date [Final date on which the Seller can respond to the Buyer with a Seller's Buyer ID before the  
33 scenario is terminated] (date)

34 **Relationships of SCs within IBs:** none

35 **Demands on Open-edi Support Infrastructure**

36 - **From checklist:** This IB must be signed and encrypted for security.

37

### 38 **Information Bundle Registration and Management**

39 **Name:** Buyer Identification

40 **Purpose:** to indicate that a buyer is qualified to buy. Seller assigns a Seller's Buyer ID to the  
41 Buyer in order to identify the Buyer / to allow the Buyer to later reference the ID assigned by the  
42 Seller.

43 **Business rules controlling content or concept(s) of IB:** Buyer must have a Seller's Buyer ID  
44 before a price quote or an order can be placed with the Seller.

45 **Regulations governing content or concept(s) of IB:** none

46 **Information for interoperability**

47 **List of SCs and definitions:**

48 Seller's Buyer ID [Seller assigned identification by the which the Seller uniquely recognizes a  
49 Buyer] (identifier)**Relationships of SCs within IBs:** One and only one Seller's Buyer ID is  
50 mandatory.

51 **Demands on Open-edi Support Infrastructure**

1 - **From checklist:** none

2

### 3 **Information Bundle Registration and Management**

4 **Name:** Reject Buyer Information Notice

5 **Purpose:** to indicate to a Buyer that an attempt to establish a trading relationship with the Seller  
6 has failed. Subsequent price quote requests or orders will be rejected.

7 **Business rules controlling content or concept(s) of IB:** Buyer can only place a price quote  
8 request or an order with a Seller's Buyer ID. Any price quote request or order placed without a  
9 Seller's Buyer ID will be rejected.

10 **Regulations governing content or concept(s) of IB:** none

#### 11 **Information for interoperability**

##### 12 **List of SCs and definitions:**

13 Type [Code for Seller's reasons for not assigning a Seller's Buyer ID] (code)

14 Reason [Seller stated reason for not assigning a Seller's Buyer ID to the Buyer, e.g., insufficient  
15 Billing Information, invalid credit account, etc.]  
16 (character string)

17 **Relationships of SCs within IBs:** One and only one Reason is mandatory.

#### 18 **Demands on Open-edi Support Infrastructure**

19 - **From checklist:** none

20

#### 21 **Scenario attributes**

22 **Demands on OePs:** both Buyer and Seller must be present

#### 23 **Demands on interoperability**

##### 24 - **Relationships among roles:**

25 Some of the IB's are optional and the sequence may vary. The first four IB's must be sent by the  
26 Buyer but there's no particular order between those four, yet all those IB's must be sent. When  
27 the Buyer ID Respond-By Date Information **IB** is sent, the Seller is expected to respond by  
28 sending the "Buyer Identification **IB**" or a Reject Buyer Information Notice.

29

30 Several options are possible: either all the first four IBs must be sent together or one or more IB's  
31 can be sent. In the latter case one more component (a common factor) must be included in all the  
32 Bundles in order to make it possible for the receiver to combine the information Bundles and  
33 understand that they belong together. This new component belongs to the FSV level (i.e. the  
34 receiving system must keep track where the IB's came from).

35

36 The role "buyer" gets the Buyer Identification from the role "seller" by sending the first four IB's to  
37 the role "seller". The Buyer initiates the scenario by sending an **IB** to the role "seller".

38

39 When the Seller receives Buyer ID Respond-By Date Information, it is known that all IBs have  
40 been received from the Buyer.

##### 41 - **Relationships among SCs of different IBs**

42 Billing-to Details is used as a default in the absence of Ship-to Details

43 Billing Information Contact Name equals Credit Card Holder Name

#### 44 **Demands on Open-edi Support Infrastructure**

45 - **From checklist:** none

46

### 47 **1.2.2.3 Sub-Scenario C, Request Price**

#### 48 **Scenario Registration and Management**

49 **Name:** Request Price

1 **Purpose (may state exclusions):** Seller provides price quotes to registered Buyers Excluded are  
2 any requirements related to jurisdictional and geographical constraints, etc. because they are not  
3 part of Sub-Scenario C.

4 **Class(es) of business requirements:** none (there's no classification of business requirements at  
5 the moment. An issue is raised regarding this subject)

6 **Laws and regulations:** none

7 **Cross reference to other sub-scenarios:** Register (Sub-Scenario B)

8

## 9 **Role Registration and Management**

10 **Name:** Buyer

11 **Purpose:** request and receive price quote(s) on product(s) in the Seller's catalog

12 **Business goal(s):** obtain a price quote from the Seller as a registered Buyer

13 **Business rules:** Buyer must have Seller's catalog; must contact Seller to supply buyer  
14 information; must have Seller's assigned Seller's Buyer ID before placing a price quote request.

15 **Regulations:** none

16 **Demands on OeP:** Buyer acts as OeP

17 **Constraints on OeP characteristics:** must have Seller's Buyer ID

18 **Constraints on maximum number of OePs playing a role:** only the Buyer can play this role

19 **Constraints imposing a role to be conditional:** none

20 **Constraints on different OePs playing this role:** none

21 **Demands on interoperability**

22 **IBs for role:**

23 Input IB's

24 - Price Quote Response

25 - Reject Price Quote Notice

26 Output IB's:

27 - Buyer ID

28 - Price Quote Request

29 - Price Quote Respond-By Date

30 **Timer expiration:** handled explicitly by Price Quote Respond-By Date IB

31 **Error conditions:** none

32 **IB sequence:**

33 **Buyer**

**Seller**

34 >> Buyer ID >>

35 >> Price Quote Request >>

36 >> Price Quote Respond-By Date >>

37 << Price Quote Response OR Reject Price Quote Notice <<

38 **Demands on Open-edi Support Infrastructure**

39 - **From checklist:** 8859-1 character set limitation for all IBs

40

## 41 **Role Registration and Management**

42 **Name:** Seller

43 **Purpose:** provide price quotes on products in the Seller's catalog

44 **Business goal(s):** respond to a price quote request from a registered Buyer

45 **Business rules:** Buyer must have a catalog; assignment of Seller's Buyer ID is a prerequisite to  
46 receiving a price quote request; upon acceptance of a price quote request, a price quote  
47 response is transmitted; a negative acknowledgement is transmitted for any rejected price quote  
48 request.

49 **Regulations:** none

50 **Demands on OeP:** Seller acts as OeP

1 **Constraints on OeP characteristics:** none  
2 **Constraints on maximum number of OePs playing a role:** only the Seller can play this role  
3 **Constraints imposing a role to be conditional:** none  
4 **Constraints on different OePs playing this role:** none

5 **Demands on interoperability**

6 **IBs for role:**

7 Input IB's:

8 -Buyer ID

9 -Price Quote Request

10 -Price Quote Respond-By Date

11 Output IB's:

12 - Price Quote Response OR Reject Price Quote Notice

13 **Timer expiration:** handled explicitly in acting on Price Quote Respond-By Date IB

14 **Error conditions:** none

15 **IB sequence:**

16 **Seller**

**Buyer**

17 << Buyer ID <<

18 << Price Quote Request <<

19 << Price Quote Respond-By Date <<

20 >> Price Quote Response OR Reject Price Quote Notice >>

21 **Demands on Open-edi Support Infrastructure**

22 - **From checklist:** none

23

24 **Information Bundle Registration and Management**

25 **Name:** Buyer ID

26 **Purpose:** to identify Buyer by Seller's Buyer ID previously assigned

27 **Business rules controlling content or concept(s) of IB:** none

28 **Regulations governing content or concept(s) of IB:** none

29 **Information for interoperability**

30 **List of SCs and definitions:**

31 Seller's Buyer ID [See prior definition] (identifier)

32 **Relationships of SCs within IBs:** none

33 **Demands on Open-edi Support Infrastructure**

34 - **From checklist:** none

35

36 **Information Bundle Registration and Management**

37 **Name:** Price Quote Request

38 **Purpose:** to specify information about a price quote request

39 **Business rules controlling content or concept(s) of IB:** content is controlled by the Seller's catalog. Seller's Buyer ID must be previously assigned by the Seller (see Buyer ID IB)

40 **Regulations governing content or concept(s) of IB:** none

41 **Information for interoperability**

42 **List of SCs and definitions:**

43 Catalog Reference ID [See prior definition]

44 Product Identifier [See prior definition]

45 Currency Code (if required; is required when the unit price for the product is offered in multiple currencies) [See prior definition]

46 Quantity [Number of items (or units of measure) of the product to be considered in the price quote] (number)

47 Unit of Measure Identifier (if required) [See prior definition]

48 Product Characteristics Type (if required) [See prior definition]

49

1 Product Characteristics Code (if required) [See prior definition]  
2 **Relationships of SCs within IBs:** One or more Product Identifiers; one or more of the set  
3 (Currency Code, Quantity, Unit of Measure, Product Characteristics Type and Product  
4 Characteristics Code) per Product Identifier

5 **Demands on Open-edi Support Infrastructure**  
6 - **From checklist:** none

7

#### 8 **Information Bundle Registration and Management**

9 **Name:** Price Quote Respond-By Date

10 **Purpose:** to inform the Seller about the required time period for the price quote

11 **Business rules controlling content or concept(s) of IB:** Buyer expects Price Quote Response  
12 IB or Reject Price Quote Notice IB within the given time.

13 **Regulations governing content or concept(s) of IB:** none

#### 14 **Information for interoperability**

##### 15 **List of SCs and definitions:**

16 Date [Final date on which the Seller can respond to the Buyer with a price quote before the sub-  
17 scenario is terminated] (date)

18 **Relationships of SCs within IBs:** One and only one time is mandatory.

19 **Demands on Open-edi Support Infrastructure**

20 - **From checklist:** none

21

#### 22 **Information Bundle Registration and management**

23 **Name:** Reject Price Quote Notice

24 **Purpose:** to inform the Buyer the Price Quote Request was rejected

25 **Business rules controlling content or concept(s) of IB:** If the price quote request is rejected  
26 the Buyer expects the reason to be provided in an Reject Price Quote Notice IB.

27 **Regulations governing content or concept(s) of IB:** none

#### 28 **Information for interoperability**

##### 29 **List of SCs and definitions:**

30 Type [Code for the Seller's reason for rejecting the price quote request] (code)

31 Reason [Seller stated reason for not providing a Price Quote Response, e.g., no Seller's Buyer  
32 ID, insufficient Price Quote Request Information, etc.] (character string)

33 **Relationships of SCs within IBs:** One and only one Reason is mandatory.

34 **Demands on Open-edi Support Infrastructure**

35 - **From checklist:** none

36

#### 37 **Scenario attributes**

38 **Demands on OePs:** both Buyer and Seller must be present

#### 39 **Demands on interoperability**

40 - **Relationships among roles:** Date in Credit Card Details must not precede the date on which  
41 the Price Quote Request is received

42 - **Relationships among SCs of different IBs:** none

43 **Demands on Open-edi Support Infrastructure**

44 - **From checklist:** none

45

### 45 ***1.2.2.4 Sub-Scenario D, Order Product***

46

#### 47 **Scenario Registration and Management**

48 **Name:** Order Product



1 **Purpose (may state exclusions):** to order from a catalog. Excluded are any requirements  
2 related to jurisdictional and geographical constraints, etc. because they are not part of Sub-  
3 Scenario D.

4 **Class(es) of business requirements:** none (there's no classification of business requirements at  
5 the moment. An issue is raised regarding this subject)

6 **Laws and regulations:** none

7 **Cross reference to other sub-scenarios:** Register (Sub-Scenario B)

8

## 9 **Role Registration and Management**

10 **Name:** Buyer

11 **Purpose:** purchase articles from a catalog

12 **Business goal(s):** place an order and receive acknowledgement

13 **Business rules:** must have Seller's catalog; must contact Seller to supply buyer information;  
14 must have Seller's assigned Seller's Buyer ID before placing an order; Buyer has internal order  
15 reference number.

16 **Regulations:** none

17 **Demands on OeP:** Buyer acts as OeP

18 **Constraints on OeP characteristics:** must have Seller's Buyer ID

19 **Constraints on maximum number of OePs playing a role:** only the Buyer can play this role

20 **Constraints imposing a role to be conditional:** none

21 **Constraints on different OePs playing this role:** none

## 22 **Demands on interoperability**

### 23 **IBs for role:**

24 Input IB's

25 - Order Identification OR Reject Order Notice

26 Output IB's:

27 - Buyer ID

28 - Order Information

29 - Order ID Respond-By Date

30 **Timer expiration:** handled explicitly by Order ID Respond-By Date IB

31 **Error conditions:** none

### 32 **IB sequence:**

33 **Buyer**

**Seller**

34 >> Buyer ID >>

35 >> Order Information >>

36 >> Order ID Respond-By Date >>

37 << Order identification OR Reject Order Notice <<

## 38 **Demands on Open-edi Support Infrastructure**

39 - **From checklist:** 8859-1 character set limitation for all IBs

40

## 41 **Role Registration and Management**

42 **Name:** Seller

43 **Purpose:** sell articles from a catalog

44 **Business goal(s):** receive an order and acknowledge the order

45 **Business rules:** Buyer must have Seller's catalog; assignment of Seller's Buyer ID is a  
46 prerequisite to receiving an order; upon acceptance of an order, an Order Reference ID is  
47 assigned and transmitted; a negative acknowledgement is transmitted for any rejected order.

48 **Regulations:** none

49 **Demands on OeP:** Seller acts as OeP

50 **Constraints on OeP characteristics:** none

51 **Constraints on maximum number of OePs playing a role:** only the Seller can play this role

1 **Constraints imposing a role to be conditional:** none  
2 **Constraints on different OePs playing this role:** none  
3 **Demands on interoperability**  
4 **IBs for role:**  
5 Input IB's:  
6 -Buyer ID  
7 -Order Information  
8 -Order ID Respond-By Date  
9 Output IB's:  
10 - Order Identification OR Reject Order Notice  
11 **Timer expiration:** handled explicitly in acting on Order ID Respond-By Date IB  
12 **Error conditions:** none  
13 **IB sequence:**

Seller	Buyer
<< Buyer ID <<	
<< Order Information <<	
<< Order ID Respond-By Date <<	
>> Order Identification OR Reject Order Notice >>	

19 **Demands on Open-edi Support Infrastructure**  
20 - From checklist: none

#### 22 **Information Bundle Registration and Management**

23 **Name:** Buyer ID  
24 **Purpose:** to identify Buyer by Seller's Buyer ID previously assigned  
25 **Business rules controlling content or concept(s) of IB:** none  
26 **Regulations governing content or concept(s) of IB:** none

#### 27 **Information for interoperability**

28 **List of SCs and definitions:**  
29 Seller's Buyer ID [See prior definition]  
30 **Relationships of SCs within IBs:** none  
31 **Demands on Open-edi Support Infrastructure**  
32 - From checklist: none

#### 34 **Information Bundle Registration and Management**

35 **Name:** Order Information  
36 **Purpose:** to specify information about an order  
37 **Business rules controlling content or concept(s) of IB:** content controlled by the Seller's  
38 catalog. Seller's Buyer ID must be previously assigned by the Seller (see Buyer ID IB)  
39 **Regulations governing content or concept(s) of IB:** none

#### 40 **Information for interoperability**

41 **List of SCs and definitions:**  
42 Catalog Reference ID [See prior definition]  
43 Product Identifier [See prior definition]  
44 Price Quote Reference Number (if required; is required when an order is based on a price quote)  
45 [See prior definition]  
46 Amount (if required; is not required when it can be calculated from the unit price in the catalog  
47 and the Line Item Quantity ordered; is required when the catalog offers the product in  
48 multiple currencies) [Monetary amount cost per single item (or per unit of measure) of the  
49 product as quoted or stated in the Seller's catalog] (amount)  
50 Currency Code (if required; is required when the price quote or catalog offering for the product is  
51 in multiple currencies) [Previously defined]

1 Line Item Quantity [Number of items (or units of measure) of the product to be ordered](number)  
2 Line Item Unit of Measure ID (if required) [Unit of measure as stated in the Seller's catalog or in  
3 the quoted price for bulk products](code)  
4 Product Characteristics Type (if required) [See prior definition]  
5 Product Characteristics Code (if required) [See prior definition]  
6 Delivery Method [Means and timing of delivery per order as selected by the Buyer from Seller  
7 provided options] (code)  
8 **Relationships of SCs within IBs:** Only one delivery method allowed; one or more Product  
9 Identifiers; one or more of the set (Amount, Currency Code, Line Item Quantity, Line Item Unit of  
10 Measure ID, Product Characteristics Type and Product Characteristics Code) per Product  
11 Identifier

**Demands on Open-edi Support Infrastructure**

- **From checklist:** none

**Information Bundle Registration and Management**

**Name:** Order ID Respond-By Date

**Purpose:** to inform the Seller about the time period over which the order is valid

**Business rules controlling content or concept(s) of IB:** Buyer expects Order Identification IB  
or Reject Order Notice IB within the given time.

**Regulations governing content or concept(s) of IB:** none

**Information for interoperability**

**List of SCs and definitions:**

Date [Final date on which the Seller can respond to the Buyer with an Order Identification  
before the scenario is terminated](date)

**Relationships of SCs within IBs:** One and only one time is mandatory.

**Demands on Open-edi Support Infrastructure**

- **From checklist:** none

**Information Bundle Registration and management**

**Name:** Reject Order Notice

**Purpose:** to inform the Buyer the order was rejected

**Business rules controlling content or concept(s) of IB:** If the order is rejected the Buyer  
expects the reason to be provided in an Reject Order Notice IB.

**Regulations governing content or concept(s) of IB:** none

**Information for interoperability**

**List of SCs and definitions:**

Type [Code for the Seller's reason for rejecting the order] (code)

Reason [Seller stated reason for not assigning an order from the Buyer, e.g., no Seller's Buyer  
ID, insufficient Order Information, insufficient credit, etc.](character string)

**Relationships of SCs within IBs:** One and only one Reason is mandatory.

**Demands on Open-edi Support Infrastructure**

- **From checklist:** none

**Scenario attributes**

**Demands on OePs:** both Buyer and Seller must be present

**Demands on interoperability**

- **Relationships among roles:** none

- **Relationships among SCs of different IBs:** Date in Credit Card Details must not precede the  
Order Processing Date in Order Status Report Information.

**Demands on Open-edi Support Infrastructure**

- **From checklist:** none

-

1 ***1.2.2.5 Sub-Scenario E, Request Order Status***

2 **Scenario Registration and Management**

3 **Name:** Request Order Status

4 **Purpose (may state exclusions):** Buyer wants to know when the order will be fulfilled. Excluded  
5 are any requirements related to jurisdictional and geographical constraints, etc. because they are  
6 not part of Sub-Scenario D.

7 **Class(es) of business requirements:** none (there's no classification of business requirements at  
8 the moment. An issue is raised regarding this subject)

9 **Laws and regulations:** none

10 **Cross reference to othersub-scenarios:** Order Product (Sub-Scenario D)

11 **Role Registration and Management**

12 **Name:** Buyer

13 **Purpose:** determine status of the order

14 **Business goal(s):** determine when product(s) are shipped and when credit card is debited

15 **Business rules:** must have received Order Identification from the Seller

16 **Regulations:** none

17 **Demands on OeP:** Buyer acts as OeP

18 **Constraints on OeP characteristics:** must have Seller's Buyer ID and Order Reference ID

19 **Constraints on maximum number of OePs playing a role:** only the Buyer can play this role

20 **Constraints imposing a role to be conditional:** none

21 **Constraints on different OePs playing this role:** none

22 **Demands on interoperability**

23 **IBs for role:**

24 Input IB's

25 - Order Status Report Information OR Reject Order Status Report Request Notice

26 Output IB's:

27 - Order Status Request

28 - Order Status Request Respond-By Date

29 **Timer expiration:** handled explicitly by Order Status Request Respond-By Date IB

30 **Error conditions:** none

31 **IB sequence:**

32 **Buyer**

**Seller**

33 >> Order Status Request >>

34 >> Order Status Request Respond-By Date >>

35 << Order Status Report Information OR Reject Order Status Report Request <<

36 **Demands on Open-edi Support Infrastructure**

37 - **From checklist:** 8859-1 character set limitation for all IBs

38 **Role Registration and Management**

39 **Name:** Seller

40 **Purpose:** provide order status information to the Buyer

41 **Business goal(s):** confirm the order to the Buyer by providing order processing and shipping  
42 information

43 **Business rules:** Buyer must have a Seller's Buyer ID and Order Reference **Regulations:** none

44 **Demands on OeP:** Seller acts as OeP

45 **Constraints on OeP characteristics:** none

46 **Constraints on maximum number of OePs playing a role:** only the Seller can play this role

47 **Constraints imposing a role to be conditional:** none

48 **Constraints on different OePs playing this role:** none

1 **Demands on interoperability**  
2 **IBs for role:**  
3 Input IB's:  
4 -Order Status Request  
5 -Order Status Request Respond-By Date  
6 Output IB's:  
7 - Order Status Report Information OR Reject Order Status Report Request Notice  
8 **Timer expiration:** handled explicitly in acting on Order Status Request Respond-By Date IB  
9 **Error conditions:** none  
10 **IB sequence:**  
11 

<b>Seller</b>	<b>Buyer</b>
<< Order Status Request <<	
<< Order Status Request Respond-By Date <<	
>> Order Status Report Information OR Reject Order Status Report Request Notice >>	

  
12  
13  
14  
15 **Demands on Open-edi Support Infrastructure**  
16 - From checklist: none  
17  
18 **Information Bundle Registration and Management**  
19 **Name:** Order Status Request  
20 **Purpose:** to provide the Seller with sufficient information to respond with order status  
21 **Business rules controlling content or concept(s) of IB:** none  
22 **Regulations governing content or concept(s) of IB:** none  
23 **Information for interoperability**  
24 **List of SCs and definitions:**  
25 Seller's Buyer ID [See prior definition]  
26 Order Reference ID [See prior definition]  
27 **Relationships of SCs within IBs:** none  
28 **Demands on Open-edi Support Infrastructure**  
29 - From checklist: none  
30  
31 **Information Bundle Registration and Management**  
32 **Name:** Order Status Request Respond-By Date  
33 **Purpose:** to inform the Seller about the time period over which a response is expected from the  
34 Seller  
35 **Business rules controlling content or concept(s) of IB:** Buyer expects Order Status Report  
36 Information IB or Reject Order Status Report Request Notice IB within the given time.  
37 **Regulations governing content or concept(s) of IB:** none  
38 **Information for interoperability**  
39 **List of SCs and definitions:**  
40 Date [Final date on which the Seller can respond to the Buyer with Order Status Report  
41 Information before the sub-scenario is terminated](date)  
42 **Relationships of SCs within IBs:** One and only one time is mandatory.  
43 **Demands on Open-edi Support Infrastructure**  
44 - From checklist: none  
45  
46 **Information Bundle Registration and management**  
47 **Name:** Reject Order Status Report Request Notice  
48 **Purpose:** to inform the Buyer the order status request was rejected  
49 **Business rules controlling content or concept(s) of IB:** If the order status request is rejected  
50 the Buyer expects the reason to be provided in an Reject Order Status Report Request Notice IB.  
51 **Regulations governing content or concept(s) of IB:** none

1 **Information for interoperability**

2 **List of SCs and definitions:**

3 Type [Code for the Seller's reason for rejecting the request] (code)

4 Reason [Seller stated reason for not providing Order Status Report] (character string)

5 **Relationships of SCs within IBs:** One and only one Reason is mandatory.

6 **Demands on Open-edi Support Infrastructure**

7 - **From checklist:** none

8

9 **Scenario attributes**

10 **Demands on OePs:** both Buyer and Seller must be present

11 **Demands on interoperability**

12 - **Relationships among roles:** none

13 - **Relationships among SCs of different IBs:** Date in Credit Card Details must not precede the  
14 Order Processing Date in Order Status Report Information.

15 **Demands on Open-edi Support Infrastructure**

16 - **From checklist:** none

17 -

18 **I.2.3 Scenario description using Unified Modeling Language (UML) methodology**

19 Ten UML specification and modeling artifacts are currently under investigation within the  
20 UN/CEFACT Techniques and Methodologies Working Group for use in the business process and  
21 information modeling methodology as follows:

- 22 • Problem statement (per scenario)
- 23 • Requirements specification (per scenario)
- 24 • Use case specification (per sub-scenario)
- 25 • Use case diagram (per scenario)
- 26 • Object Class identification and description (using CRC job aid)
- 27 • Class diagram (per scenario)
- 28 • Activity diagram (per scenario)
- 29 • Sequence diagram (per use case)
- 30 • Collaboration diagram (per use case)
- 31 • Use case state diagram (per use case)

32 The following sections provide a summary description of these UML specification and modeling  
33 artifacts. Refer to UML Notation Guide Version 1.1, starting with 4.2.5, to obtain a complete  
34 description of the UML notation.

1 ***1.2.3.1 Problem Statement***

2 A problem statement states in prose the requirements that are to be explicitly modeled. It is  
3 meant to be understood by anyone, whether or not they are trained in a formalized notation. It is  
4 based on source documents and interviews with problem domain experts; therefore it is usually  
5 incomplete and needs to be rewritten. The requirements specification is that rewrite. The primary  
6 purpose for the problem statement is that it supports explicit requirement traceability. A glossary  
7 of terms and acronyms should support the problem statement, and be maintained throughout the  
8 modeling process.

9 ***1.2.3.2 Requirements Specification***

10 Requirements specifications are formal sentences, uniquely identified and structured according to  
11 well-defined guidelines, that express the problem statement in a way that facilitates business  
12 process and information modeling. Requirements are defined in five basic categories:

- 13 I. Structural information - includes information about objects, concepts and events in the  
14 problem statement, their attributes, and the structuring relationships in which they are  
15 involved.
- 16 II. Dynamics information - includes information about the normal sequence of occurrences,  
17 including behaviors and interactions, focusing on what happens, not on how it happens.
- 18 III. Abnormal conditions – includes information about a deviation from normal operations.
- 19 IV. Expectations and non-functional requirements – cannot be modeled explicitly, but include  
20 performance considerations and downstream constraints, e.g., constraints on the  
21 implementation or run-time environments.
- 22 V. System administration requirements – specify the customer’s need to modify, configure  
23 and tune the previously stated requirements.

24 ***1.2.3.3 Use Case Specification***

25 A use case is a description of the possible sequences of interactions among a system and one or  
26 more actors in response to some initial event from an actor to the system. A use case includes  
27 events and system operations that are visible to the actors. A use case specification contains use  
28 case name, use case summary, actors, preconditions, use case sequence, exceptions, post –  
29 conditions and traceability. Most importantly, traceability is an explicit list of the requirements  
30 specifications, by category and sentence number, that are either partially or completely satisfied  
31 by a use case.

32 ***1.2.3.4 Use Case Diagram***

33 A use case diagram shows the actors (persons, organizations or external systems that interact  
34 with the scenario being modeled) and use cases they are involved with. Actors are shown as  
35 stick figures, use cases are shown as ovals, and the scenario itself is shown as a box. Arrows  
36 indicate which actor is involved in which use cases, and the direction of the arrows indicates the  
37 dominant flow of communication.

### 1 ***1.2.3.5 Object Class Description***

2 Object classes that are involved in a scenario become apparent in the development of the  
3 requirements specification. There is no automatic process for identifying object classes, but good  
4 candidates are “things” that are described by word (nouns) phrases, that have characteristics (or  
5 attributes) that take on values, and have responsibilities or (behaviors). Examples are persons,  
6 places, concepts or situations, independent of how the phrase is used in a particular sentence.  
7 The Class Responsibility Collaborator (CRC) card job aid is an effective tool for interacting with  
8 problem domain experts to determine their business needs through the identification of object  
9 classes. For each object class, a CRC card contains a unique identifier or name for the class,  
10 definition of the class, sub-classes, super-classes, attributes, responsibilities, and collaboration  
11 with other classes. There is particular interest in identifying common business object (CBO)  
12 classes that can be used in different instances within a scenario, or reused in different scenarios.

13 Classes are documented with a description of what they do. Attributes are documented by a  
14 description of what they contain, their type, and an indication of a set of values (if applicable).  
15 Methods are documented with a description of their logic (good candidates are responsibilities  
16 from the CRC cards).

17 In order for an object class to be specified in a class diagram, it must first be defined in a class  
18 library. Only higher level classes are shown in a class diagram such as C-2. However, the class  
19 library is comprised of primitive classes, foundation classes, core business classes and common  
20 business object classes.

21 Primitive classes are at the lowest level in terms of attributes and methods, and deal with basic  
22 data types, (e.g., character, integer, Boolean values *and/or/not*) and run time operations  
23 performed directly by the language. Foundation classes use the primitive classes (and foundation  
24 classes) to build fundamental, reusable classes, (e.g., name, description, code list, identifier,  
25 quantity, currency) and are referred to as attributes in a class diagram for a scenario. (Note,  
26 Diagram C-2 specifies the attributes for each business class, but does not depict the primitive and  
27 foundation classes as bubbles along with their associations.) Sometimes referred to as abstract  
28 data types, foundation classes are prime candidates for standardization. Within the context of  
29 core business classes, foundation classes provide references for permitted values of attributes  
30 and formatting rules against which values of instantiated attributes are validated when a scenario  
31 is executed.

32 A core business class is a business super-class defined at a generalized level, allowing for  
33 specialized business subclasses, (i.e., common business object classes) to inherit its attributes  
34 and methods. A core business class consists of one or more foundation class(es) and methods  
35 and/or one or more other core business class(es). Common business object classes are defined  
36 as required for a scenario. Sometimes they can be reused within a scenario or other scenarios,  
37 and thus may also be candidates for standardization.

38 Classes are defined within class hierarchies whenever possible in order in order to use the power  
39 of inheritance. Although not illustrated in this example, object technology provides additional  
40 flexibility in the construction of a class diagram by allowing attributes and methods to be added to  
41 the attributes and methods already contained in standard classes in the class library. Conversely,  
42 attributes and methods that are part of standard classes may be nulled out in class diagrams.



1 ***1.2.3.6 Class Diagram***

2 A class diagram is the primary UML artifact used for structure (static) modeling of a scenario. A  
3 class diagram identifies the elements (object classes or actors) in the scenario environment, the  
4 elements that comprise the scenario itself, the attributes of all those elements, and the structuring  
5 relationships involving the scenario elements. Relationships between classes are documented  
6 with a description of their purpose and an indication of their cardinality (how many objects are  
7 involved in the relationship) and their optionality (whether or not an object must be involved in the  
8 relationship). Class diagrams are typically drawn by a team of people led by an experienced OO  
9 modeler.

10 ***1.2.3.7 Activity Diagram***

11 An activity diagram is useful to dynamics modeling. It shows the sequence of activities in the  
12 scenario, where activities are taken to be the methods defined in the object class descriptions.  
13 Activities that can occur in parallel are represented graphically, showing the threads of activity  
14 that can occur concurrently and when they need to be synchronized. Decision points are also  
15 used to show alternative threads.

16 ***1.2.3.8 Sequence Diagram***

17 A sequence diagram, also part of dynamics modeling, is used to rigorously show the interactive  
18 logic among object classes for a use case. Sequence diagrams show the object classes involved  
19 in a use case, the messages they send to each other, and any return values associated with the  
20 messages. Object classes are shown as vertical lines. Boxes on the vertical lines called method-  
21 invocation boxes represent the execution of methods in the respective classes. Methods in a  
22 sequence diagram should be traceable to the appropriate methods in the class diagram. The  
23 internal logic of the methods and possible return values should be described in each object class  
24 description.

25 ***1.2.3.9 Collaboration Diagram***

26 Collaboration diagrams show the message flow between object classes and imply the basic  
27 associations between classes. Rectangles represent the classes involved in a use case, and the  
28 lines between the classes represent the associations between them. Messages are shown as a  
29 label followed by an arrow indicating the flow of the message. Return values are shown as labels  
30 with arrow-circles beside them.

31 UML collaboration diagrams are important for showing messages, since messages are not  
32 included in UML class diagrams.

33 ***1.2.3.10 Use Case State Diagram***

34 As described in a use case specification, a use case sequence outlines the actions executed in  
35 the use case. These actions are graphically illustrated by a use case state diagram, where the  
36 condition or state of the use case is shown at the completion of each action.

37  
38  
39