TECHNICAL REPORT

# ISO/IEC TR 15944-6

Second edition
2015-07-01

# Information technology — Business Operational View —

## Part 6: Technical introduction to e-Business modelling

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

*Partie 6: Introduction technique à la modélisation d'affaires électroniques*

Reference number
ISO/IEC TR 15944-6:2015(E)

© ISO/IEC 2015



**COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

# Contents

Page

Foreword ..... iv
Introduction ..... vi
1 Scope ..... 1
2 Normative references ..... 1
3 Terms and definitions ..... 1
4 Abbreviated terms ..... 10
5 Fundamentals of Business Transaction Modelling ..... 11
5.1 Introduction to Business Transaction Modelling ..... 11
5.2 Basic Aspects of Business Transaction Modelling ..... 12
5.2.1 Basic Structure of Business Transaction ..... 12
5.2.2 Collaboration Space ..... 12
5.2.3 Parties and Business Roles ..... 13
5.2.4 Goods, Services and/or Rights ..... 14
5.2.5 Payment ..... 14
5.3 Business Transaction Pattern ..... 15
6 Principles of eBusiness Modelling ..... 18
6.1 Introduction to eBusiness Modelling ..... 18
6.2 Business Role and Person ..... 19
6.3 Business Goal ..... 20
6.4 Collaboration Space and Jurisdictional Domain ..... 21
6.5 Business Transaction ..... 22
7 Key Attributes for Classification of a Business Transaction ..... 22
7.1 Introduction to Classification of Open-edi Scenarios ..... 22
7.2 Key Attributes for Classification of a Business Transaction ..... 23
7.2.1 Market Type on business boundary ..... 23
7.2.2 Settlement Type in Business Process ..... 23
7.2.3 Participation Type of Role ..... 24
7.3 Trade Model Based on the Classification Attributes ..... 24
7.3.1 Basic Trade Model ..... 24
7.3.2 Trade Model by Market Type ..... 24
7.3.3 Trade Model by Settlement Type ..... 25
7.3.4 Trade Model by Participation Type ..... 25
7.4 Classification Scheme of Open-edi Scenarios ..... 26
7.4.1 Scenario Classification and Types ..... 26
7.4.2 Scenario Types ..... 28
7.4.3 Assumption for scenario classification ..... 31
Bibliography ..... 41

© ISO/IEC 2015 – All rights reserved

# Foreword

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

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

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

In exceptional circumstances, the joint technical committee may propose the publication of a Technical Report of one of the following types:

— type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;

— type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;

— type 3, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard (“state of the art”, for example).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

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

ISO/IEC TR 15944-6, which is a Technical Report of type 2, was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

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

— *Part 1: Operational aspects of Open-edi for implementation*

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

— *Part 4: Business transaction scenarios — Accounting and economic ontology*

— *Part 5: Identification and referencing of requirements of jurisdictional domains as sources of external constraints*

— *Part 6: Technical introduction to eBusiness modelling* [Technical Report]

— *Part 7: eBusiness vocabulary*

 © ISO/IEC 2015 – All rights reserved

— *Part 8: Identification of privacy protection requirements as external constraints on business transactions*

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

The following parts are under preparation:

— *Part 9: Business transaction traceability framework for commitment exchange*

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

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

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

© ISO/IEC 2015 – All rights reserved

# Introduction

It is desired to be able to commence eBusiness by simply choosing a particular scenario from the registered set of scenarios and applying the same to the actual, i.e. instantiated, business transaction. In this context, the registered Open-edi scenario is supposed to be a generic class of various specific scenarios. In addition, if the generic scenario class were successfully obtained, it could consist of a small number of mandatory attributes and many conditional and/or optional attributes, i.e. as scenario components.

Although such a standardization idea for Open-edi scenarios seems to be a straightforward solution, it is likely to be difficult to distinguish a particular scenario from the others. In particular, the scenario description with many conditional attributes may be so complex that the semantics could not be clearly compiled even if an excellent description technique is employed. In addition, for those scenarios having the same attributes but with slightly different domains and the combinatorial, it is not evident whether they all have to be interpreted as single scenario class or not. Even if individual scenarios could be formally identified as having a unique identifier, many scenarios that are semantically equivalent may be redundantly registered. The more redundant registration increases, the more confusion occurs.

One of the effective solutions to avoid the redundant registration is to establish a classification scheme based on well-defined criteria, which may reduce the complexity of conditional attributes as much as possible.

This part of ISO/IEC 15944 discusses the fundamentals of business transaction and the principles of eBusiness modelling, from which the classification schemes are derived for Open-edi scenarios and their components. This is in addition to:

1) the use of the templates for scoping Open-edi Scenarios and the rules for specifying Open-edi scenarios and their components as stated in ISO/IEC 15944-1:2002;

2) the use of templates for registering Open-edi Scenarios and their components as stated in ISO/IEC 15944-2:2006; and,

3) the use of templates for the identification and referencing of scenarios and scenario components which are structured to be able to support the requirements of jurisdictional domains as sources of external constraints as stated in ISO/IEC 15944-5:2007.”

4) the ontology of eBusiness modelling introduced in ISO/IEC 15944-4:2007.

 © ISO/IEC 2015 – All rights reserved

# Information technology — Business Operational View —

# Part 6:
# Technical introduction to e-Business modelling

## 1 Scope

This part of ISO/IEC 15944 discusses and describes the following three topics of eBusiness modelling:

— fundamentals of business transaction modelling that describe the conceptual aspects of eBusiness;

— principles of eBusiness modelling that specify the semantic aspect of business transactions and their components and relationships involved in the business transaction;

— classification scheme of Open-edi scenarios based on eBusiness modelling.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 15944-1:2002, *Information technology — Business agreement semantic descriptive techniques — Part 1: Operational aspects of Open-edi for implementation*

## 3 Terms and definitions[1)]

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

**3.1**
**agent**
**Person** acting for another **Person** in a clearly specified capacity in the context of a **business transaction**

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

[ISO/IEC 15944-1:2002 (3.1)]

1) This clause contains a subset of key terms and definitions used in this part of ISO/IEC 15944. For the complete set of concepts and their definitions as well as associated terms used in the ISO/IEC 14662 "*Open-edi Reference Model"* as well as those used in ISO/IEC 15944, see "*Annex D (normative) Consolidated list of normative references for the eBusiness Vocabulary*" in ISO/IEC 15944-7 "*eBusiness Vocabulary*".

© ISO/IEC 2015 – All rights reserved