ISO/IEC 15944-10:2013-02 (E)

Information technology - Business Operational View - Part 10: IT-enabled coded domains as semantic components in business transactions

Contents

Page

Foreword vi

0 Introduction vii
0.1 Overview of purpose and nature of coded domains vii
0.2 Benefits of the use of coded domains viii
0.3 Identification, mapping and IT-enablement of existing standards for widely-used code sets ix
0.4 Link to fundamental components in Business Transaction Model (BTM) xi
0.5 IT-enabled and content predefined Semantic Components xii
0.6 Coded domains as reusable business objects xiii
0.7 Use of "Person", "organization" and "party" in the context of business transaction and commitment exchange xiv
0.8 Importance and role of terms and definitions xv
0.9 Use of "identifier" as "identifier (in business transaction)" to prevent ambiguity xvi
0.10 Organization and description of document xvii

1 Scope 1
1.1 Statement of Scope 1
1.2 Exclusions 2
1.3 Aspects currently not yet addressed 2
1.3.1 Addressing "Quadrant B, C & D" in Figure 5 2
1.3.2 Use of coded domains in support of the "Process" component in the Business transaction model 2
1.3.3 Use of coded domains with respect to Persons and in particular "individuals" and associated privacy protection requirements 2
1.3.4 Use of coded domains in support of "public policy" requirements and in particular individual accessibility 2
1.3.5 Detailed levels of rules pertaining to change management aspects of coded domains 3
1.3.6 Differentiation of categories and levels of Source Authorities (SA) for coded domains 3
1.4 IT-systems environment neutrality 3

2 Normative references 3

3 Terms and definitions 4

4 Symbols and abbreviation 38

5 Fundamental principles governing coded domains 38
5.1 Introduction 38
5.2 Need to be able to use coded domains in support of commitment exchange 40
5.3 Coded domains based on clear, predefined rules, i.e., "rule-based" 41
5.3.1 Requirements of rule-based coded domains as a whole 41
5.3.2 Rule-base for IT enablement of a coded domain 43
5.3.3 Rule-base for structuring a coded domain 43
5.4 Separation of the IT interface from human interface requirements 44
5.5 Specification and representation of coded domains in an IT-platform neutral manner 45

6 Business operational view identification and description of coded domains 46
6.1 Construct of coded domain 46
6.1.1 Identification of coded domains 47
6.1.2 Levels of Semantic unambiguity 48

6.1.3 Rule-base of a coded domain 49
6.1.4 Table of ID codes and HIEs 49
6.2 Characteristics of coded domains 49
6.2.1 "for free" or "for a fee" coded domains 49
6.2.2 Exhaustiveness of coded domains 50
6.2.3 Semantic granularity 51
6.2.4 Openness of coded domains 51

7 Rules governing rule-base of coded domains 52
7.1 Introduction 52
7.2 Specification of a boundary of a coded domain and inclusion of its members 53
7.3 Specification of exclusionary rules for a coded domain 54
7.4 Source(s) of rule-base governing a coded domain 54

8 Rules for management of ID codes in coded domains 55
8.1 Introduction 55
8.2 Generic rules for the management of a coded domain 55
8.3 Rules governing assignment of ID codes 55
8.4 Rules governing the change management of entries in the coded domain 56
8.4.1 Change management of ID codes 56
8.4.2 Change management of HIEs 57
8.5 Registration of user extensions 57

9 Rules for specifying Human Interface Equivalents (HIEs) to an ID Code in a coded domain 57
9.1 Multiple Human Interface Equivalents (HIEs) for an ID code in a coded domain 57
9.2 Standard structure for semantics of a Human Interface Equivalent (HIE) 58
9.3 Rules governing linguistic (written) representations as Human Interface Equivalents (HIEs) of ID codes as required values in coded domains 59
9.4 Individual accessibility of HIEs of coded domains 59
9.5 Rules governing composite semantics 60

10 Coded domain and controlled vocabularies 60
10.1 Introduction 60
10.2 Rules common to controlled vocabularies and coded domains 61
10.3 Rules governing a controlled vocabulary 61
10.4 Rules governing a coded domain 62

11 Rules governing the registration of coded domains as re-usable business objects 63
11.1 Principles of registration 63
11.2 Process of registration 65
11.3 Coded Domain Registration scheme 65

12 IT-enablement of coded domains 66
12.1 Introduction 66
12.2 Templates for IT-enabled coded domains - Attributes for Scoping an Open-edi scenario (OeS) 66
12.2.1 Purpose 66
12.2.2 Template structure and content 66
12.3 Template for Scoping Open-edi scenarios 66
12.4 Specification and consolidated template of attributes of Open-edi scenarios, roles, information bundles (IBs) and semantic components (SCs) 70

Annex A (normative) Coded domain registration administration attributes 74

Annex B (normative) Use of IT-enabled coded domains to ensure semantic interoperability in support of the "UN Convention on the Rights of Persons with Disabilities" 79

Annex C (informative) Concept and definition of "coded domain" 81

Annex D (informative) Case Study: Example of "e-potato" 87

Annex E (informative) Case study: Example of a coded domain with two writing systems for Human Interface Equivalents (HIEs) of a set of ID codes - in Russian use of the Cyrillic alphabet and the romanized form 89

Annex F (informative) Case study: Example of coded domain in Matrix form and XML format as Annex G (informative) Determining whether the membership in a coded domain is exhaustive or non-exhaustive 99

Annex H (informative) Examples of identification of different object classes within a coded domain through the use of semantic qualifiers 104

Bibliography 112

Index of Figures Figure 1 -- Need for standard and methodologies for coded domains x

Figure 2 -- Business Transaction Model -- Fundamental components (Graphic Illustration) xi

Figure 3 -- Relation of "recorded information", "data" and "computer system" in electronic business transactions / Open-edi xii

Figure 4 -- Relations "data" and "data elements" in electronic business transactions / Open-edi xii

Figure 5 -- Purpose of coded domain as IT-enabled and content predefined semantic components xiii

Figure 6 -- Illustration of Elements of a Data Structure for Human Linguistic Equivalents of an ID Code - Written form 58

Index of Tables Table 1 -- Construct of a coded domain 46

Table 2 -- Level of Semantic Unambiguity based on the UN Convention of rights of persons with disabilities (in support of a collaboration space pertaining to commitment exchange) 48

Table 3 -- Template for specifying the scope of an Open-edi scenario 67

Table 4 -- Consolidated template of attributes of Open-edi scenarios (OeS), roles, information bundles (IBs) and semantic components (SCs) 71

Table A.1 -- A.Administrative attributes for registration of a coded domain as a business object 76

Table B.1 -- Codes representing levels of semantic unambiguity in support of semantic interoperability equivalency requirements 80

Table D.1 -- Illustrating IT Interfaces and different HIEs using the WCO HS code for "potato" 88

Table E.3 -- Use of Columns in Table E.4 89

Table E.4 -- eBusiness vocabulary terms in Russian Cyrillic Alphabetic order 90

Table E.5 -- Use of Columns in Table E.6 90

Table E.6 -- eBusiness vocabulary terms in Russian Romanized Alphabetic order 91

coded domain 100

Table H.1 -- Identification of Essential Data Elements in an ISO 3166-1 entry 106

Table H.2 -- Use of semantic qualifier codes for ISO 3166-1 in an Open-edi and eBusiness context 107

Table H.3 -- Identification of essential data elements in an ISO 4217 entry 110

Table H.4 -- Use of semantic qualifier codes for ISO 4217 in an Open-edi and eBusiness context ...111