

ISO/IEC TR 20943-1:2003-08 (E)

Information technology - Procedures for achieving metadata registry (MDR) content consistency - Part 1: Data elements

Contents		Page
Foreword		vii
Introduction		viii
1	Scope	1
1.1	Background	1
1.2	Purpose	1
1.3	Scope	1
1.4	Registration approach -- data elements and value domains	1
2	Normative references	2
3	Terms and definitions	2
4	Data element abstraction	2
4.1	Abstraction types	3
4.2	Example of specialization/generalization	3
4.2.1	Example of sharing a value domain	4
4.3	Example of concatenation/decomposition	4
4.4	Example of aggregation	5
5	Data element registration	6
6	Bottom-up approach to data element registration	6
6.1	General procedures for registering a data element	7
6.1.1	Understanding the data element	7
6.1.2	Content research	7
6.1.3	Data element definition	8
6.1.4	Permissible values and value domain	8
6.1.5	Representation class	9
6.1.6	Names and identifiers	9
6.1.7	Other metadata attributes	9
6.1.8	Data element concept	10
6.1.9	Classification schemes	11
6.1.10	Registration and administrative status information	11
6.2	Example of International Standard with enumerated domain	12
6.2.1	Understanding the data element	12
6.2.2	Content research	12
6.2.3	Data element definition	13
6.2.4	Permissible values and value domain	13
6.2.5	Representation Class	13
6.2.6	Identification and naming the data element	13
6.2.7	Other metadata attributes	14
6.2.8	Data element concept	15
6.2.9	Classification	15
6.2.10	Registration and administrative status information	16
6.2.11	Other names and codes from ISO 3166	16
6.2.12	Summary of metadata attributes	16
6.3	Application system data element development examples	19
6.3.1	Understanding the data element	19
6.3.2	Content research	19

6.3.3	Data element definition	19
6.3.4	Permissible values and value domain	20
6.3.5	Representation Class	20
6.3.6	Identify and name the data element	20
6.3.7	Other metadata attributes	21
6.3.8	Data element concept	22
6.3.9	Classification	22
6.3.10	Registration and administrative status information	22
6.3.11	Related data elements	23
6.3.12	Summary of metadata attributes	23
6.4	Example of International Standard with non-enumerated domain	25
6.4.1	Understanding the data element	25
6.4.2	Content research	26
6.4.3	Data element definition	26
6.4.4	Permissible values and value domain	26
6.4.5	Representation Class	27
6.4.6	Identifying and naming the data element	27
6.4.7	Other metadata attributes	28
6.4.8	Data element concept	28
6.4.9	Classification	29
6.4.10	Registration and administrative status informaiton	30
6.4.11	Other data elements in ISO 6709	30
6.4.12	Summary of metadata attributes	30
6.5	Example of a standard data element that uses a standard non-enumerated domain	33
6.5.1	Understanding the data element	33
6.5.2	Content research	33
6.5.3	Data element definition	33
6.5.4	Permissible values and value domain	33
6.5.5	Representation Class	34
6.5.6	Identifying and naming the data element	34
6.5.7	Other metadata attributes	35
6.5.8	Data element concept	36
6.5.9	Classification	36
6.5.10	Registration and administrative status information	37
6.5.11	Related data elements	37
6.5.12	Summary of attributes	37
6.6	Classification of data elements	40
6.6.1	General procedures for registering a classification of data elements	40
6.6.2	Data elements in a document	41
6.6.3	Data elements in a standard	42
6.7	Linking of data elements	43
7	Example of top-down approach to data element registration	44
7.1	Classification and Context	45
7.2	Objects and properties of data element concepts	46
7.3	Professional organization identifier example	47
7.3.1	Data element concept, conceptual domain and value meanings	47
7.3.2	Define and identify data elements	47
7.3.3	Specify value domain and permissible values	48
7.3.4	Other data element attributes	48
7.3.5	Classify the data element	49
7.3.6	Registration and administrative status information	49
7.3.7	Summary of attributes	49
7.4	Language expert identifier example	49
7.4.1	Data element concept, conceptual domain and value meanings	49
7.4.2	Define and identify data elements	49
7.4.3	Specify value domain and permissible values	50
7.4.4	Other data element attributes	50
7.4.5	Classify the data element	51
7.4.6	Registration and administrative status information	51
7.4.7	Summary of attributes	51
7.5	Language skill type identifier example	51

7.5.1	Data element concept, conceptual domain and value meanings	51
7.5.2	Define and identify data elements	52
7.5.3	Specify value domain and permissible values	52
7.5.4	Other data element attributes	53
7.5.5	Classify the data element	53
7.5.6	Registration and administrative status information	53
7.5.7	Summary of attributes	53
7.6	Natural language identifier example	53
7.6.1	Data element concept, conceptual domain and value meanings	54
7.6.2	Define and identify data elements	54
7.6.3	Specify value domain and permissible values	54
7.6.4	Other data element attributes	55
7.6.5	Classify the data element	55
7.6.6	Registration and administrative status information	55
7.6.7	Summary of attributes	56
7.7	Skill level discriminator example	56
7.7.1	Data element concept, conceptual domain and value meanings	56
7.7.2	Define and identify data elements	56
7.7.3	Specify value domain and permissible values	57
7.7.4	Other data element attributes	57
7.7.5	Classify the data element	58
7.7.6	Registration and administrative status information	58
7.7.7	Summary of attributes	58
7.8	Example summary table of attributes	58
8	Example of complex data	58
8.1	Examples	58
Annex A (informative) Tables of data element attributes for examples		65
B.1	Data element definition	75
B.1.1	Rules for definitions	75
B.1.2	Guidelines for definitions	77
B.1.3	Data element definition syntax	80
B.1.4	Terms commonly used in definitions	81
B.2	Representational attributes	81
B.2.1	Permissible values	81
B.2.2	Value domain	82
B.2.3	Representation class	83
B.2.4	Data Element Example	84
B.3	Identifying and naming a data element	85
B.3.1	Name context	85
B.3.2	Establish a naming convention	86
B.3.3	Example of a naming convention	87
B.3.4	Formulating a data element name	87
B.4	Identification	88
B.4.1	Data element identifier	88
B.4.2	Versioning	89
B.5	Conceptual relationships	90
B.5.1	Data element concept	90
B.5.2	Conceptual domain	91
B.5.3	Value meanings	91
B.6	Classification	92
B.7	Quality review	93
B.7.1	Registration status	93
B.7.2	Administrative status	93
Annex D (informative) Example of complete associated metadata item descriptions using top-down approach to data element registration		98
D.1	Example data model	98
D.2	Presentation of Information	99

D.2.1	Format of Item identifier	99
D.3	Context	100
D.4	Object classes and properties	101
D.5	Data element concepts and conceptual domains	105
D.6	Value Meanings	112
D.7	Value Domains and Representation Classes	114
D.8	Permissible Values	118
D.9	Data elements	121
Bibliography		125