ISO/IEC 19773:2011-09 (E)

Information technology - Metadata Registries (MDR) modules

Contents

Page

Foreword ix

Introduction x

1 Scope 1

2 Normative references 1

3 Terms, definitions, and abbreviations 1
3.1 Signifiers, referencing, and their associations 1
3.2 Fundamental datatypes 3
3.3 Generic implementation-related concepts 4
3.4 Terminology applicable to more than one module 5
3.5 Reserved for future use 5
3.6 Reserved for future use 5
3.7 Reserved for future use 5
3.8 Reserved for future use 5
3.9 Reserved for future use 5
3.10 Module 10-specific terminology: Data structure for reference-or-literal (reflit) 5
3.11 Module 11-specific terminology: Data structure for multiple internationalized/localized values and data 6
3.12 Module 12-specific terminology: Data structure for multiple internationalized/localized strings and texts 6
3.13 Module 13-specific terminology: Data structure for slot tuple 6
3.14 Module 14-specific terminology: Data structure for unstructured table of slot tuples 7
3.15 Module 15-specific terminology: Data structure for reified relationships and relationships systems 7
3.16 Module 16-specific terminology: Data structure for UPU postal data 7
3.16.1 Terminology from UPU S42a-6 7
3.16.2 Postal address segments 13
3.16.3 Postal address constructs 14
3.16.4 Postal address elements 16
3.16.5 Postal address element sub-types 26
3.16.6 Other terms and definitions 29
3.17 Module 17-specific terminology: Data structure for ITU-T E.164 phone number data 29
3.18 Module 18-specific terminology: Data structure for who-what-where-when-why-how (W5H) event data 30
3.19 Module 19-specific terminology: Data structure for entity-person-group (EPG) contact data 30
3.20 Module 20-specific terminology: Data structure for entity-person-group (EPG) security credentials data 30
3.21 Module 21-specific terminology: Data structure for entity-person-group (EPG) relationships and grouping data 31

4 Structure of this International Standard 31

5 Bindings 32

6 Conformance 32

7 Designation of internationally standardized items 32
7.1 Designation suffix syntax 32

7.2 Designation suffixes for profiles 32

8 Profile designations 33

9 Clause reserved for future use 33

10 Module 10: Data structure for reference-or-literal (reflit) 33
10.1 Introduction to module 33
10.2 Scope of module 33
10.3 Functional capabilities 33
10.4 Abstract model 34
10.4.1 General 34
10.4.2 reflit(of_type) 35
10.4.3 reference_type(of_type) 36
10.4.4 literal_type(of_type) 38
10.5 Computational description and datatypes 39
10.5.1 General 39
10.5.2 reflit(of_type) 39
10.5.3 reference_type(of_type) 40
10.5.4 literal_type(of_type) 40
10.6 Additional provisions for bindings 40
10.7 Additional provisions for conformity 41

11 Module 11: Data structure for multiple internationalized/localized values and data 41
11.1 Introduction to module 41
11.2 Scope of module 41
11.3 Functional capabilities 41
11.3.1 General 41
11.3.2 The multivalue data structure 41
11.3.3 The multidata data structure 42
11.4 Abstract model 43
11.4.1 General 43
11.4.2 multivalue 43
11.4.3 multidata 45
11.5 Computational description and datatypes 46
11.5.1 General 46
11.5.2 multivalue 46
11.5.3 multidata 46
11.6 Additional provisions for bindings 47
11.7 Additional provisions for conformity 47

12 Module 12: Data structure for multiple internationalized/localized strings and texts 47
12.1 Introduction to module 47
12.2 Scope of module 47
12.3 Functional capabilities 47
12.3.1 General 47
12.3.2 The multistring data structure 47
12.3.3 The multitext data structure 48
12.4 Abstract model 50
12.4.1 General 50
12.4.2 multistring 50
12.4.3 multitext 52
12.5 Computational description and datatypes 53
12.5.1 General 53
12.5.2 multistring 53
12.5.3 multitext 53
12.6 Additional provisions for bindings 54
12.7 Additional provisions for conformity 54

13 Module 13: Data structure for slot tuple 54
13.1 Introduction to module 54
13.2 Scope of module 54

13.3 Functional capabilities 54
13.4 Abstract model 55
13.4.1 General 55
13.4.2 slot_tuple components 55
13.4.3 slot_tuple and variants 56
13.4.4 slot_tuple 57
13.4.5 slot_tuple_as_ttt 57
13.4.6 slot_tuple_as_ttrl 58
13.4.7 slot_tuple_as_ttmd 58
13.4.8 slot_tuple_as_bbb 58
13.4.9 slot_tuple_as_btb 58
13.4.10 slot_tuple_as_btmd 59
13.5 Computational description and datatypes 59
13.5.1 General 59
13.5.2 Datatypes 59
13.6 Additional provisions for bindings 60
13.7 Additional provisions for conformity 60

14 Module 14: Data structure for unstructured table of slot tuples 60
14.1 Introduction to module 60
14.2 Scope of module 60
14.3 Functional capabilities 60
14.4 Abstract model 61
14.4.1 General 61
14.4.2 slot_tuple_table and related classes 61
14.5 Computational description and datatypes 61
14.5.1 General 61
14.5.2 Datatypes 61
14.6 Additional provisions for bindings 62
14.7 Additional provisions for conformity 62

15 Module 15: Data for reified relationships and relationship systems 62
15.1 Introduction to module 62
15.2 Scope of module 62
15.3 Functional capabilities 62
15.4 Abstract model 62
15.4.1 General 62
15.4.2 The reified_relationship_system and the reified_relationship 63
15.5 Computational description and datatypes 63
15.5.1 General 63
15.5.2 reified_relationship_system 63
15.5.3 reified_relationship 64
15.5.4 object_role_pair 64
15.6 Additional provisions for bindings 64
15.7 Additional provisions for conformity 64

16 Module 16: Data structure for UPU postal data 64
16.1 Introduction to module 64
16.2 Scope of module 65
16.3 Functional capabilities 65
16.4 Abstract model 65
16.4.1 General 65
16.4.2 Postal Address 65
16.4.3 Unrendered postal data 66
16.4.4 Contextualized Rendered Postal Address 71
16.5 Computational description and datatypes 72
16.5.1 General 72
16.5.2 postal_address 72
16.5.3 unrendered_postal_address_class 72
16.5.4 contextualized_rendered_postal_address_class 73
16.6 Additional provisions for bindings 73
16.7 Additional provisions for conformity 73

17 Module 17: Data structure for ITU-T E.164 phone number data 74
17.1 Introduction to module 74
17.2 Scope of module 74
17.3 Functional capabilities 74
17.4 Abstract model 75
17.4.1 General 75
17.4.2 phone_number_class 76
17.4.3 phone_number_element 76
17.5 Computational description and datatypes 77
17.5.1 General 77
17.5.2 phone_number_class 77
17.5.3 phone_number_element 77
17.6 Additional provisions for bindings 77
17.7 Additional provisions for conformity 77

18 Module 18: Data structure for who-what-where-when-why-how (W5H) event data 78
18.1 Introduction to module 78
18.2 Scope of module 78
18.3 Functional capabilities 78
18.4 Abstract model 79
18.4.1 General 79
18.4.2 w5h_event_class 79
18.4.3 w5h_event_extent 79
18.4.4 extent_descriptor 80
18.5 Computational description and datatypes 80
18.5.1 General 80
18.5.2 w5h_event_class 80
18.5.3 w5h_event_extent 81
18.5.4 event_descriptor 81
18.6 Additional provisions for bindings 82
18.7 Additional provisions for conformity 82

19 Module 19: Data structure for entity-person-group (EPG) contact data 82
19.1 Introduction to module 82
19.2 Scope of module 82
19.3 Functional capabilities 82
19.4 Abstract model 83
19.4.1 General 83
19.4.2 contact_data_class 84
19.4.3 event_localized_contact_data 84
19.5 Computational description and datatypes 84
19.5.1 General 84
19.5.2 contact_data_class 85
19.5.3 event_localized_contact_data 85
19.6 Additional provisions for bindings 85
19.7 Additional provisions for conformity 85

20 Module 20: Data structure for entity-person-group (EPG) security credentials data 85
20.1 Introduction to module 85
20.2 Scope of module 86
20.3 Functional capabilities 86
20.4 Conceptual model and object model 87
20.4.1 General 87
20.4.2 security_credentials_data 87
20.4.3 event_localized_security_credentials_data 87
20.4.4 security_credential_element 87
20.5 Computational description and datatypes 88
20.5.1 General 88
20.5.2 security_credentials_data 88
20.5.3 event_localized_security_credentials_data 88
20.5.4 security_credential_element 88

20.6 Additional provisions for bindings 89
20.7 Additional provisions for conformity 89

21 Module 21: Data structure for entity-person-group (EPG) relationships and grouping data 89
21.1 Introduction to module 89
21.2 Scope of module 89
21.3 Functional capabilities 89
21.4 Conceptual model and object model 89
21.4.1 General 89
21.4.2 epg_relationship_data 90
21.4.3 relationship_node_edge_element 90
21.5 Computational description and datatypes 90
21.5.1 General 90
21.5.2 epg_relationship_data 91
21.5.3 relationship_node_edge_element 91
21.6 Additional provisions for bindings 91
21.7 Additional provisions for conformity 91

Annex A (informative) Index of definitions 92

22 Index of definitions 92

Bibliography 95

Figure 1: UML presentation of: reflit, reference_type, literal_type 35

Figure 2: UML presentation of: multivalue, contextualized_value 44

Figure 3: UML presentation of: multidata, contextualized_data 45

Figure 4: UML presentation of: multistring, contextualized_string 50

Figure 5: UML presentation of: multitext, contextualized_text 52

Figure 6: UML presentation of slot_tuple datatype 57

Figure 7: UML presentation of slot_tuple_as_ttt datatype 57

Figure 8: UML presentation of slot_tuple_as_ttrl datatype 58

Figure 9: UML presentation of slot_tuple_as_ttmd datatype 58

Figure 10: UML presentation of slot_tuple_as_bbb datatype 58

Figure 11: UML presentation of slot_tuple_as_btb datatype 58

Figure 12: UML presentation of slot_tuple_as_btmd datatype 59

Figure 13: UML presentation of slot_tuple_table datatype 61

Figure 14: UML presentation of Reified Relationship Systems 63

Figure 15: UML presentation of Postal Address Structure 65

Figure 16: Postal Address Structure [diagram from UPU S42] 66

Figure 17: Perspective of segments, constructs, and postal address elements 66

Figure 18: UML presentation of the classes: unrendered postal address, postal address segment, postal address construct, address element 67

Figure 19: Postal Address -- All Components [diagram from UPU S42] 68

Figure 20: UML presentation of Phone Number Structure 76

Figure 21: UML presentation of Who-What-Where-When-Why-How (W5H) Event Structure 79

Figure 22: UML presentation of Who-What-Where-When-Why-How (W5H) Event Structure 84

Figure 23: UML presentation of Security Credentials Data 87

Figure 24: UML presentation of EPG Relationship Data Class 90