ISO/IEC 21000-5:2004-04 (E)

Information technology - Multimedia framework (MPEG-21) - Part 5: Rights Expression Language

Contents

Page

Foreword viii

Introduction ix

1 Scope 1

2 Normative references 1

3 Terms, definitions, symbols, and abbreviated terms 2

4 Namespaces and conventions 6
4.1 Namespaces 6
4.2 Namespace conventions 7
4.3 Special typographical conventions 7
4.4 XML structural notation conventions 8
4.5 Authorization context conventions 8

5 Authorization model 8
5.1 General 8
5.2 Authorization request 9
5.3 Authorization context 10
5.4 Authorization story 10
5.5 Authorizer 10
5.6 Authorization model authorization context properties 10
5.7 Authorization proof 11
5.8 License Semantics 12

6 Architectural concepts 12
6.1 Equality 12
6.2 License syntax 12
6.3 License parts 12
6.4 License issuers 13
6.5 Variables 14
6.5.1 Variable definition 14
6.5.2 Variable referencing 14
6.6 Conceptually abstract elements and types 15
6.7 Revocable 15
6.8 Principal surpassing 15
6.8.1 General 15
6.8.2 Principal set representation 15
6.9 Derived grants and grant groups 15
6.9.1 General 15
6.9.2 One-step-derived grants and grant groups 15
6.10 Encrypted Elements 17

7 Core 17
7.1 General 17
7.2 Core authorization context properties 17
7.3 General core elements and types 18
7.3.1 License 18
7.3.2 LicenseGroup 20

7.3.3 ForAll 20
7.3.4 DelegationControl 20
7.3.5 NonSecureReference 21
7.3.6 EncryptedContent 21
7.4 Core conceptually abstract elements and types 21
7.4.1 LicensePart 21
7.4.2 Principal 21
7.4.3 Right 21
7.4.4 Resource 21
7.4.5 Condition 22
7.4.6 AnXmlPatternAbstract 22
7.4.7 DcConstraint 22
7.4.8 TrustRoot 23
7.4.9 ServiceDescription 23
7.4.10 PropertyAbstract 23
7.5 Core principals 23
7.5.1 AllPrincipals 23
7.5.2 KeyHolder 23
7.6 Core rights 24
7.6.1 Issue 24
7.6.2 Obtain 24
7.6.3 PossessProperty 24
7.6.4 Revoke 25
7.7 Core resources 25
7.7.1 DigitalResource 25
7.7.2 Grant 26
7.7.3 GrantGroup 26
7.7.4 Revocable 26
7.7.5 ServiceReference 27
7.8 Core conditions 27
7.8.1 AllConditions 27
7.8.2 ExerciseMechanism 28
7.8.3 ExistsRight 28
7.8.4 Fulfiller 29
7.8.5 PrerequisiteRight 29
7.8.6 RevocationFreshness 29
7.8.7 ValidityInterval 30
7.9 Core patterns 30
7.9.1 General patterns 30
7.9.2 Principal patterns - PropertyPossessor 31
7.9.3 Right patterns 31
7.9.4 Resource patterns 31
7.9.5 Condition patterns 33
7.10 Core delegation constraints 33
7.10.1 ConditionIncremental 33
7.10.2 ConditionUnchanged 33
7.10.3 DepthConstraint 33
7.10.4 ToConstraint 34
7.11 Core trust roots 35
7.11.1 TrustedRootGrants 35
7.11.2 TrustedRootIssuers 35
7.12 Core service descriptions 35
7.13 Core properties 35

8 Standard extension 35
8.1 General 35
8.2 Standard extension authorization context properties 35
8.3 General standard extension elements and types 38
8.3.1 AccountPayable 38
8.3.2 ProfileCompliance 38
8.3.3 Rate 39
8.3.4 StateDistinguisher 39

8.3.5 UddiKey 39
8.3.6 Uuid 39
8.4 Standard extension conceptually abstract elements and types 39
8.4.1 Name 39
8.4.2 StatefulCondition 39
8.5 Standard extension principals 39
8.6 Standard extension rights - RightUri 40
8.7 Standard extension resources 40
8.8 Standard extension conditions 40
8.8.1 CallForCondition 40
8.8.2 ExerciseLimit 40
8.8.3 FeeFlat 40
8.8.4 FeeMetered 41
8.8.5 FeePerInterval 41
8.8.6 FeePerUse 42
8.8.7 FeePerUsePrePay 42
8.8.8 SeekApproval 42
8.8.9 Territory 43
8.8.10 TrackQuery 43
8.8.11 TrackReport 43
8.8.12 TransferControl 44
8.8.13 ValidityIntervalFloating 44
8.8.14 ValidityIntervalStartsNow 44
8.8.15 ValidityTimeMetered 45
8.8.16 ValidityTimePeriodic 45
8.9 Standard extension patterns 46
8.9.1 General patterns 46
8.9.2 Principal patterns 46
8.9.3 Right patterns 46
8.9.4 Resource patterns - X509SubjectNamePattern 47
8.9.5 Condition patterns - ValidityIntervalDurationPattern 47
8.10 Standard extension delegation constraints 47
8.11 Standard extension trust roots 47
8.12 Standard extension service descriptions 47
8.12.1 AnonymousStateService 47
8.12.2 Uddi 48
8.12.3 WsdlAddress 48
8.12.4 WsdlComplete 49
8.13 Standard extension properties - PropertyUri 49
8.14 Standard extension name properties 49
8.14.1 CommonName 49
8.14.2 DnsName 49
8.14.3 EmailName 49
8.14.4 X509SubjectName 49

9 Multimedia extension 50
9.1 General 50
9.2 Multimedia extension authorization context properties 50
9.3 General multimedia extension elements and types - resource attribute set definitions 51
9.3.1 Complement 51
9.3.2 Intersection 51
9.3.3 Set 52
9.3.4 Union 52
9.4 Multimedia extension conceptually abstract elements and types 52
9.5 Multimedia extension principals 52
9.6 Multimedia extension rights 52
9.6.1 Adapt 52
9.6.2 Delete 53
9.6.3 Diminish 53
9.6.4 Embed 53
9.6.5 Enhance 53
9.6.6 Enlarge 54

9.6.7 Execute 54
9.6.8 Install 54
9.6.9 Modify 54
9.6.10 Move 55
9.6.11 Play 55
9.6.12 Print 55
9.6.13 Reduce 55
9.6.14 Uninstall 56
9.7 Multimedia extension resources 56
9.7.1 DiItemReference 56
9.7.2 DiReference 56
9.8 Multimedia extension conditions 56
9.8.1 Digital Item conditions 56
9.8.2 Marking conditions 57
9.8.3 Security conditions 57
9.8.4 Transaction 59
9.8.5 Resource attribute conditions 59
9.9 Multimedia extension patterns 60
9.10 Multimedia extension delegation constraints 60
9.11 Multimedia extension trust roots 60
9.12 Multimedia extension service descriptions 60
9.13 Multimedia extension properties 60
9.14 Multimedia extension name properties 60

Annex A (normative) W3C XML Schemas 61

A.1 General 61
A.2 Schema for the Core Namespace 61
A.3 Schema for the Standard Extension Namespace 72
A.4 Schema for the Multimedia Extension Namespace 80

Annex B (normative) Country, region, and currency Qualified Names 87

B.1 Namespace URI structure 87
B.2 Country Qualified Names 87
B.3 Region Qualified Names 87
B.4 Currency Qualified Names 88

Annex C (informative) Simplified equality algorithm 89

C.1 General 89
C.2 The equalQuickItem function 89
C.3 The equalQuickList function 91
C.4 The equalQuickSimple function 91

Annex D (informative) Example Rights Expressions 92

D.1 Overview of examples 92
D.2 Simple end-user License example 92
D.3 Distribution License example 94

Annex E (informative) Design philosophy concerning extensions and profiles of this part of E.1
General 99

E.2 Definition of extension 99
E.3 Definition of profile 99
E.4 Extensibility points 99

Annex F (informative) Extension mechanisms for introducing new rights 101

F.1 General 101
F.2 Use existing rights and conditions 101

F.3 Use rightUri 102
F.4 Use type extension 103
F.5 Use element extension 103

G.1 General 104
G.2 Profile elements 104
G.3 Profile schema 105
G.3.1 General 105
G.3.2 Example profile schema for the Core Namespace 105
G.3.3 Example profile schema for the Standard Extension Namespace 106
G.3.4 Example profile schema for the Multimedia Extension Namespace 107
G.4 Profile signalling 107
G.5 Profile expressiveness 107
G.5.1 General 107
G.5.2 Everyone can play a song for the year of 2004 107
G.5.3 A key holder can play a song three times within the year of 2004 108

Annex J (informative) Example revocation mechanism 113

J.1 General 113
J.2 Designing a revocation mechanism 113
J.3 Indicating a revocation mechanism and freshness Condition when issuing a License 114
J.4 Checking for freshness 115
J.5 Delegating revoke Right 116
J.6 Requesting revocation 117
J.7 Latency until revocation goes into effect 119
J.8 Latency until freshness duration passes 119

Annex K (informative) Patent statements 120

Bibliography 121