ISO/IEC 29341-3-12:2008-11 (E)

Information technology_- UPnP Device Architecture_- Part_3-12: Audio Video Device Control Protocol_- Content Directory Service

CONTENTS

FOREWORD 5

ORIGINAL UPNP DOCUMENTS (informative) 7

1. Overview and Scope 9

1.1. Introduction 9

2. Service Modeling Definitions 10

2.1. Service Type 10
2.2. References 10
2.3. Terms 11
2.3.1. Notation: Strings Embedded in Other Strings 12
2.3.2. Notation: Extended Backus-Naur Form 13
2.4. Class Hierarchy 13
2.4.1. Class name syntax 13
2.4.2. Base Properties 14
2.4.3. Class 'object' (Base Class) 15
2.4.4. Class 'item' : 'object' 15
2.4.5. Class 'container' : 'object' 15
2.5. State Variables 16
2.5.1. Derived data types 16
2.5.2. TransferIDs 18
2.5.3. A_ARG_TYPE_ObjectID 19
2.5.4. A_ARG_TYPE_Result 19
2.5.5. A_ARG_TYPE_SearchCriteria 19
2.5.6. A_ARG_TYPE_BrowseFlag 21
2.5.7. A_ARG_TYPE_Filter 21
2.5.8. A_ARG_TYPE_SortCriteria 21
2.5.9. A_ARG_TYPE_Index 21
2.5.10. A_ARG_TYPE_Count 21
2.5.11. A_ARG_TYPE_UpdateID 22
2.5.12. A_ARG_TYPE_TransferID 22
2.5.13. A_ARG_TYPE_TransferStatus 22
2.5.14. A_ARG_TYPE_TransferLength 22
2.5.15. A_ARG_TYPE_TransferTotal 22
2.5.16. A_ARG_TYPE_TagValueList 22
2.5.17. A_ARG_TYPE_URI 22
2.5.18. SearchCapabilities 22
2.5.19. SortCapabilities 22
2.5.20. SystemUpdateID 23
2.5.21. ContainerUpdateIDs 23
2.6. Eventing and Moderation 25
2.7. Actions 26
2.7.1. GetSearchCapabilities 26
2.7.2. GetSortCapabilities 27
2.7.3. GetSystemUpdateID 27
2.7.4. Browse 28
2.7.5. Search 30
2.7.6. CreateObject 32
2.7.7. DestroyObject 34
2.7.8. UpdateObject 35
2.7.9. ImportResource 38
2.7.10. ExportResource 39
2.7.11. StopTransferResource 40
2.7.12. GetTransferProgress 41
2.7.13. DeleteResource 42
2.7.14. CreateReference 43
2.7.15. Non-Standard Actions Implemented by an UPnP Vendor 43
2.7.16. Common Error Codes 43

2.8. Theory of Operation (Informative) 45
2.8.1. Introduction 45
2.8.2. Content setup for Browsing and Searching 45
2.8.3. Browsing 46
2.8.4. Searching 50
2.8.5. Browsing, Searching, and References 53
2.8.6. Browsing, Searching, and Filtering 54
2.8.7. Object Creation 55
2.8.8. File Transfer of a resource in Objects 56
2.8.9. Playlist Manipulation 58
2.8.10. Internet Content Representation 60
2.8.11. Vendor Metadata Extensions 60

3. XML Service Description 61

4. Test 68

Annex A (normative) **DIDL-Lite 69**

Annex B (normative) **AV Working Committee Extended Properties 74**

Annex C (normative) **AV Working Committee Class Definitions 84**

C.1 audioItem : item 85
C.1.1 musicTrack : audioItem 86
C.1.2 audioBroadcast : audioItem 86
C.1.3 audioBook : audioItem 86
C.2 videoItem : item 87
C.2.1 movie : videoItem 87
C.2.2 videoBroadcast: videoItem 87
C.2.3 musicVideoClip: videoItem 88
C.3 imageItem : item 88
C.3.1 photo: imageItem 88
C.4 playlistItem : item 89
C.5 textItem : item 90
C.6 album : container 90
C.6.1 musicAlbum : album 91
C.6.2 photoAlbum : album 91
C.7 genre : container 91
C.7.1 musicGenre : genre 91
C.7.2 movieGenre : genre 91
C.8 playlistContainer : container 92
C.9 person : container 92
C.9.1 musicArtist : person 92
C.10 storageSystem : container 93
C.11 storageVolume : container 93
C.12 storageFolder : container 94

LIST OF TABLES

Table 1: Terms 11
Table 2: Base properties 14
Table 3: Object properties 15
Table 4: Item properties 15
Table 5: Container properties 15
Table 6: CSV Examples 17
Table 7: State variables 18
Table 8:ContainerUpdateIDs Example 24
Table 9: Event moderation 25
Table 10: Actions 26
Table 11: Update examples 36
Table 12: Common error codes 44