

# ISO/IEC 14543-5-6:2012-02 (E)

## Information technology - Home electronic system (HES) architecture - Intelligent groupin g and resource sharing for HES Class 2 and Class 3 - Part 5-6: Service type

---

Contents	Page
FOREWORD.....	6
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references.....	8
3 Terms, definitions, abbreviations and conventions.....	8
3.1 Terms and definitions.....	8
3.2 Abbreviations.....	11
3.3 Conventions.....	11
4 Conformance.....	11
5 IGRS service overview.....	12
6 Definition of service type identifier.....	12
7 Standard service type list.....	13
8 Basic service type specification.....	15
8.1 Content index service.....	15
8.1.1 Overview.....	15
8.1.2 Content index service type.....	15
8.1.3 Content index service attribute.....	15
8.1.4 Data type of content index service.....	15
8.1.5 Invocation interface set of content index service.....	17
8.1.6 Content index service error code definition.....	26
8.2 Connection management service.....	26
8.2.1 Overview.....	26
8.2.2 Connection management service type.....	26
8.2.3 Reference flow of connection management service interface invocation.....	27
8.2.4 Connection management service attribute.....	27
8.2.5 Connection management service data type.....	28
8.2.6 Connection management service invocation interface set.....	28
8.2.7 Content management service error code definition.....	31
8.3 Media server transport management service.....	31
8.3.1 Overview.....	31
8.3.2 Media server transport management service type.....	31
8.3.3 Reference flow of media server transport management service interface invocation.....	31
8.3.4 Media server transport management service attribute.....	32
8.3.5 Media server transport management service data type.....	32
8.3.6 Media server transport management service invocation interface set.....	33
8.3.7 Media server transport management service error code definition.....	38
8.4 Media client transport management service.....	38
8.4.1 Overview.....	38
8.4.2 Media client transport management service type.....	39
8.4.3 Reference flow of media client transport management service interface invocation.....	39
8.4.4 Media client transport management service attribute.....	39
8.4.5 Media client transport management service data type.....	40

8.4.6	Media client transport management service invocation interface set .....	42
8.4.7	Media client transport management service error code definition .....	49
8.5	Rendering management service .....	49
8.5.1	Overview .....	49
8.5.2	Rendering management service type .....	49
8.5.3	Rendering management service attribute .....	49
8.5.4	Rendering management service data type .....	49
8.5.5	Rendering management service invocation interface set .....	50
8.5.6	Rendering management service error code definition .....	58
8.6	File access management service .....	58
8.6.1	Overview .....	58
8.6.2	File access management service type .....	58
8.6.3	Reference flow of FAMS interface invocation .....	59
8.6.4	File access management service attribute .....	60
8.6.5	File access management service data type .....	60
8.6.6	File access management service invocation interface set .....	61
8.6.7	File access management service error codes definition .....	72
8.7	File connection management service .....	72
8.7.1	Overview .....	72
8.7.2	File connection management service type .....	72
8.7.3	Reference flow of file connection management service interface invocation .....	73
8.7.4	File connection management service attribute .....	73
8.7.5	File connection management service data type .....	74
8.7.6	File connection management service invocation interface set .....	74
8.7.7	File connection management service error codes definition .....	76
9	Back channel message TCP service .....	76
9.1	Overview of Back channel message .....	76
9.2	Interaction flow of back channel message TCP service in audio/video playback application .....	77
9.3	Interaction flow of back channel message TCP service in an audio/video multicast playback application .....	77
9.4	BCM request message format definition .....	78
9.4.1	General .....	78
9.4.2	Connection management message .....	78
9.4.3	Content selection message .....	79
9.4.4	Transport control message .....	79
9.5	BCM response message format definition .....	80
	Annex A (normative) Content representation framework of an IGRS AV content directory .....	82
A.1	Overview .....	82
A.2	IGRS metadata specification .....	83
A.2.1	IGRS metadata definition .....	83
A.2.2	Metadata of item object .....	84
A.2.3	Metadata of container object .....	88
A.2.4	Interface for vendor defined metadata .....	92
A.2.5	Extension point for the next version's metadata definition .....	92
	Annex B (normative) Specific description of metadata definitions .....	94
B.1	Basic metadata of item objects .....	94

B.2	Metadata of a specific item object.....	99
B.3	Basic metadata of the container object.....	109
B.4	Metadata of specific container object.....	110
Annex C (normative) Specific description of data type generation rules .....		114
C.1	Type_ObjectId.....	114
C.2	Type_ContentList.....	114
C.3	Type_FilterRule.....	115
C.4	Type_SortRule.....	115
C.5	Type_URI.....	116
C.6	Type_MediaFormat.....	116
C.7	Type_UserList.....	116
C.8	Type_ProtocolInfo.....	116
C.9	Type_MediaFormatList.....	117
C.10	Type_StorageMediumName.....	117
C.11	Type_TransportURI.....	117
C.12	Type_ItemList.....	118
C.13	Type_DisplayWindowInfo.....	118
C.14	Type_ObjectId in FAMS.....	119
C.15	ObjectType.....	119
Annex D (normative) Service type message format.....		120
D.1	Universal message format for IGRS service invocation.....	120
D.2	Content index service.....	127
D.3	Connection management service.....	139
D.4	Media server transport management service.....	143
D.5	Media client transport management service.....	154
D.6	Rendering management service.....	167
D.7	File access management service.....	182
D.8	File connection management service.....	194
Annex E (normative) IGRS XML schema files.....		197
E.1	igrs-cis-dt.xsd.....	197
E.2	igrs-cis-framework.xsd.....	197
E.3	igrs-cis-metadata-base.xsd.....	198
E.4	igrs-cis-metadata-container.xsd.....	200
E.5	igrs-cis-metadata-item.xsd.....	203
Annex F (normative) Connection management service description.wsdl.....		211
Annex G (normative) Content index service description.wsdl.....		217
Annex H (normative) Media client transport management service description.wsdl.....		234
Annex I (normative) Media server transport management service description.wsdl.....		251
Annex J (normative) Rendering management service description.wsdl.....		265
Annex K (informative) XML string example.....		285
Bibliography.....		286
Figure 1 – Connection establishment and release flow.....		27

Figure 2 – Transport control flow .....	31
Figure 3 – Transport control flow .....	39
Figure 4 – File access flow .....	59
Figure 5 – Connection establishment and release flow.....	73
Figure 6 – Interaction flow of back channel message TCP service in audio/video playback application .....	77
Figure 7 – Basic BCM request message format.....	78
Figure A.1 – An illustrative example of the structure of an IGRS content directory .....	82
Table 1 – Basic service type list.....	14
Table 2 – Service attribute of content index service .....	15
Table 3 – Data type of content index service.....	16
Table 4 – Service attribute of connection management service .....	27
Table 5 – Data type of connection management service.....	28
Table 6 – Service attribute of media server transport management service .....	32
Table 7 – Data type of media server transport management service .....	33
Table 8 – Service attribute of media client transport management service .....	39
Table 9 – Data type of media client transport management service .....	41
Table 10 – Service attribute of rendering management service .....	49
Table 11 – Data type of rendering management service.....	50
Table 12 – Service attribute list of file access management service .....	60
Table 13 – Data type of file access management service .....	61
Table 14 – Service attribute of file connection management service.....	73
Table 15 – Data type of file connection management service .....	74
Table 16 – Error definitions.....	81
Table D.1 – IGRS service invocation request message .....	120
Table D.2 – Service invocation response message .....	121
Table D.3 – Content directory object update notification message .....	122
Table D.4 – File/directory object update notification message.....	124
Table D.5 – Service attribute update notification message .....	126