

ETSI TS 103 770 V1.2.1 (2024-09)



**Digital Video Broadcasting (DVB);  
Service Discovery and Programme Metadata for DVB-I**

<https://standards.iteh.ai>

**Document Preview**

[ETSI TS 103 770 V1.2.1 \(2024-09\)](https://standards.iteh.ai/catalog/standards/etsi/b698d8fd-862a-4108-8592-ea234b754fe5/etsi-ts-103-770-v1-2-1-2024-09)

<https://standards.iteh.ai/catalog/standards/etsi/b698d8fd-862a-4108-8592-ea234b754fe5/etsi-ts-103-770-v1-2-1-2024-09>

**EBU DVB<sup>®</sup>**



---

**Reference**

RTS/JTC-DVB-407

---

**Keywords**

broadband, broadcasting, DVB, internet, IP, TV

**ETSI**

---

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° w061004871

---

**Important notice**

The present document can be downloaded from the  
ETSI [Search & Browse Standards application](#).

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format on [ETSI deliver](#).

Users should be aware that the present document may be revised or have its status changed,  
this information is available in the [Milestones listing](#).

If you find errors in the present document, please send your comments to  
the relevant service listed under [Committee Support Staff](#).

If you find a security vulnerability in the present document, please report it through our  
[Coordinated Vulnerability Disclosure \(CVD\)](#) program.

---

**Notice of disclaimer & limitation of liability**

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

---

**Copyright Notification**

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2024.

© European Broadcasting Union 2024.

All rights reserved.

# Contents

Intellectual Property Rights .....	10
Foreword.....	10
Modal verbs terminology.....	11
Introduction .....	11
1 Scope .....	12
2 References .....	12
2.1 Normative references .....	12
2.2 Informative references.....	14
3 Definition of terms, symbols and abbreviations.....	15
3.1 Terms.....	15
3.2 Symbols.....	15
3.3 Abbreviations .....	15
4 Architecture and System Considerations.....	17
4.1 DVB-I components and interfaces .....	17
4.2 Conceptual model of a DVB-I client.....	20
4.3 HTTP Requests .....	22
4.3.1 Introduction.....	22
4.3.2 HTTP Request Headers .....	22
4.3.2.1 Cache-Control Headers .....	22
4.3.2.2 If-Modified-Since Headers.....	23
4.3.3 HTTP Responses .....	23
4.3.3.1 Introduction.....	23
4.3.3.2 400 (Bad Request), 406 (Not Acceptable) .....	23
4.3.3.3 401 (Authentication Required), 403 (Forbidden).....	23
4.3.3.4 404 (Not Found).....	23
4.3.3.5 500 (System Error), 502 (Bad Gateway), 504 (Gateway Timeout), Connection Failure .....	24
4.3.3.6 301 (Moved Permanently) or 302 (Moved Temporarily) Response followed by 4xx or 5xx Response .....	24
4.3.3.7 Back-off algorithm.....	24
4.4 Parental Access Control .....	24
4.5 Access Services .....	25
4.5.1 Introduction.....	25
4.5.2 Access services provided by the media.....	26
4.5.2.1 Introduction.....	26
4.5.2.2 In-Vision Sign Language .....	26
4.5.2.3 Subtitles.....	26
4.5.2.4 Audio Description.....	27
4.5.2.5 Dialogue Enhancement .....	27
4.5.2.6 Spoken Subtitles.....	27
4.5.3 Access services implemented by a linked application .....	28
4.5.3.1 Introduction.....	28
4.5.3.2 Application information signalling .....	28
4.5.3.3 Magnification UI.....	28
4.5.3.4 High Contrast UI.....	28
4.5.3.5 Screen Reader .....	28
4.5.3.6 Response to a User Action .....	29
4.5.4 Examples .....	29
4.5.4.1 AccessibilityAttributes in a Service List .....	29
4.5.4.2 AccessibilityAttributes in the Content Guide Metadata.....	32
5 Service Discovery .....	33
5.1 Concepts.....	33
5.1.1 Services.....	33
5.1.2 Service Lists.....	33

5.1.3	Service List Discovery .....	34
5.1.3.1	Client options for Service List Discovery .....	34
5.1.3.2	Service List Registry .....	35
5.1.3.3	Announcement of a DVB-I service list in a broadcast channel .....	36
5.1.3.4	Announcement of a Service List by a CICAM .....	37
5.1.3.5	Announcement of a Service List hosted by a CICAM .....	37
5.1.3.6	Announcement of an updated Service List hosted by a CICAM .....	38
5.1.3.7	Announcement of an updated Service List HTTP URL by a CICAM .....	38
5.1.3.8	Announcement of a Service List hosted by a broadcast carousel .....	38
5.1.4	Relationships .....	39
5.1.5	Subscription Packages .....	39
5.1.6	Linked applications .....	40
5.1.7	Service List Updates .....	41
5.2	Procedures .....	41
5.2.1	Service Instance Matching .....	41
5.2.2	Service Identifiers .....	43
5.2.3	Signalling of Applications in the Service List .....	43
5.2.3.1	General .....	43
5.2.3.2	Applications and Media Presentation .....	44
5.2.3.3	Dynamic Application Signalling in Services .....	45
5.2.3.4	Application Signalling Precedence .....	45
5.2.3.5	Example .....	46
5.2.4	Signalling of Applications in the Content Guide .....	46
5.2.4.1	General .....	46
5.2.4.2	Application Priority .....	48
5.2.4.3	On Demand deep-linked XML AIT .....	49
5.2.4.4	Template XML AIT .....	50
5.2.4.4.1	Introduction .....	50
5.2.4.4.2	On Demand Programmes .....	50
5.2.4.4.3	Restart .....	50
5.2.4.4.4	Box Sets .....	50
5.2.4.4.5	Template XML AIT Refreshing .....	51
5.2.4.4.6	Contextual Parameters .....	52
5.2.5	Signalling of Part Time Services .....	52
5.2.5.1	General .....	52
5.2.5.2	Scheduled Service Hours .....	52
5.2.5.3	Service selection outside Scheduled Service Hours .....	53
5.2.6	Graphical Elements .....	53
5.2.6.1	Service List Logos .....	53
5.2.6.2	Service Logos .....	54
5.2.6.3	Content Guide Source Logos .....	54
5.2.6.4	Service Banners .....	54
5.2.7	Description of DVB-I linear services and playlists .....	55
5.2.7.1	General .....	55
5.2.7.2	DVB-I client behaviour .....	55
5.2.7.3	Handling and end of playlist or VoD content .....	55
5.2.7.4	Examples .....	55
5.2.8	Images .....	56
5.2.8.1	Introduction .....	56
5.2.8.2	Image Processing Requests .....	57
5.2.8.2.1	Image Variants .....	57
5.2.8.2.2	Image Resolution .....	57
5.2.8.3	Image Response .....	58
5.2.9	Extensibility .....	58
5.2.9.1	Introduction .....	58
5.2.9.2	Extensibility Base .....	58
5.2.10	Natural Language Processing .....	59
5.2.11	Interpreting Service Prominence .....	59
5.2.12	Instant Setup and Direct Tuning for DVB-S/S2/S2X Services .....	59
5.2.12.1	Introduction .....	59
5.2.12.2	First Time Installation: Instant setup .....	60
5.2.12.3	Direct Tuning .....	60

5.2.12.4	DVBSDeliveryParameters for Instant Setup and Direct Tuning .....	60
5.2.13	Service Instance Precedence .....	60
5.2.14	Extensions to the XML AIT .....	61
5.3	Service List Entry Points .....	62
5.3.1	Service List Entry Point schema .....	62
5.3.2	ServiceListEntryPoints .....	63
5.3.3	OrganizationType .....	63
5.3.4	ProviderOfferingType .....	64
5.3.5	ServiceListOfferingType .....	65
5.3.6	DeliveryType .....	66
5.3.6.1	Overview .....	66
5.3.6.2	AbstractDeliveryType .....	68
5.3.6.3	AbstractIPDeliveryType .....	68
5.3.6.4	NoAdditionalIPPParametersType .....	68
5.3.6.5	DVBTDeliveryType .....	69
5.3.6.6	DVBCTDeliveryType .....	69
5.3.6.7	DVBSDeliveryType .....	69
5.3.6.8	ApplicationTypeListType .....	70
5.3.6.9	ApplicationType .....	70
5.4	Schema .....	71
5.4.1	Schema Declaration .....	71
5.4.2	Entity Definitions .....	71
5.5	Service Lists .....	72
5.5.1	ServiceList .....	72
5.5.2	ServiceType .....	73
5.5.3	Convenience Types .....	75
5.5.3.1	ServiceIdentifierType .....	75
5.5.3.2	SubscriptionPackageType .....	75
5.5.4	ServiceInstanceType .....	75
5.5.5	ContentAttributesType .....	78
5.5.6	ContentGuideSourceListType .....	79
5.5.7	ContentGuideSourceType .....	79
5.5.8	DVBTripletType .....	80
5.5.9	ExtendedURIType and ExtendedURIPathType .....	80
5.5.10	LCNTableEntryType .....	81
5.5.11	LCNTableListType .....	82
5.5.12	LCNTableType .....	82
5.5.13	McastType .....	83
5.5.14	RTSPURLType .....	83
5.5.15	ServiceAvailabilityType .....	83
5.5.16	ServiceDaysList .....	84
5.5.17	ZuluTimeType .....	84
5.5.18	Delivery Parameters .....	84
5.5.18.1	DVBTDeliveryParametersType .....	84
5.5.18.2	DVBSDeliveryParametersType .....	84
5.5.18.3	DVBCTDeliveryParametersType .....	87
5.5.18.4	RTSPDeliveryParametersType .....	87
5.5.18.5	MulticastTSDeliveryParametersType .....	88
5.5.18.6	DASHDeliveryParametersType .....	88
5.5.18.7	SATIPDeliveryParametersType .....	89
5.5.18.8	IdentifierBasedDeliveryParametersType .....	89
5.5.19	FTACContentManagementType .....	89
5.5.20	ContentProtectionType .....	90
5.5.21	Void .....	91
5.5.22	Void .....	91
5.5.23	ExtensionBaseType .....	91
5.5.24	VideoAttributesType .....	92
5.5.25	SubscriptionPackageListType .....	92
5.5.26	NVODType .....	92
5.5.27	Service Prominence .....	93
5.5.28	ParentalRatingType .....	93
5.5.29	LCNRangeType .....	95

5.6	Service Regionalization.....	97
5.6.1	General.....	97
5.6.2	RegionList.....	97
5.6.2.1	General.....	97
5.6.2.2	RegionListType XML Schema .....	101
5.6.2.3	Region List Examples .....	103
5.6.3	Region Selection (informative).....	105
5.6.3.1	General.....	105
5.6.3.2	Server-side Region Selection .....	105
5.6.3.3	Client-side Region Selection .....	105
5.6.4	Server-side Region Selection using Client Provided Information .....	106
5.6.4.1	General.....	106
5.6.4.2	Server-side Region Selection using Postcode Information .....	107
5.6.4.3	Server-side Region Selection using reception information .....	107
5.6.4.3.1	Introduction .....	107
5.6.4.3.2	SRS ServiceList Multiplex Info Endpoint.....	108
5.6.4.4	Server-side Region Selection using region identifier.....	109
5.6.4.5	SRS Response Status.....	109
5.7	Play Lists .....	110
5.7.1	Playlist .....	110
6	Content Guide Metadata.....	110
6.1	Introduction .....	110
6.2	Access and Query Language .....	111
6.2.1	Introduction.....	111
6.2.2	URL Format.....	111
6.2.3	HTTP Request Headers .....	111
6.2.4	HTTP Responses .....	111
6.3	Regionalization.....	111
6.4	Endpoint Queries.....	112
6.4.1	Introduction.....	112
6.4.2	ContentGuideSource Example.....	112
6.4.3	Language Information.....	112
6.5	Schedule Information Requests.....	113
6.5.1	Introduction.....	113
6.5.2	Timestamp Filtered Schedule Request.....	113
6.5.2.1	Introduction.....	113
6.5.2.2	Request Schedule by Service ID .....	114
6.5.3	Now/Next Filtered Schedule Request .....	115
6.5.3.1	Introduction.....	115
6.5.3.2	Polling of Now/Next Filtered Schedule Request end-point .....	115
6.5.4	Response.....	115
6.5.4.1	Introduction.....	115
6.5.4.2	Metadata Merging for Hybrid platforms .....	117
6.5.4.3	Example Schedule responses .....	118
6.5.4.3.1	Timestamp Filtered Schedule Response.....	118
6.5.4.3.2	Now/Next Filtered Schedule Response .....	120
6.5.4.3.3	Now/Next (window) Filtered Schedule Response.....	122
6.5.4.4	Grouping in a Now/Next Filtered Schedule Response.....	124
6.5.5	Restart Application Linking.....	125
6.6	Programme Information Request .....	126
6.6.1	Introduction.....	126
6.6.2	Request .....	126
6.6.3	Response.....	126
6.7	More Episodes Request .....	129
6.7.1	Introduction.....	129
6.7.2	Request .....	129
6.7.3	Response.....	130
6.8	Group Information (Box Set) Request.....	133
6.8.1	Introduction.....	133
6.8.2	Box Set Categories.....	133
6.8.2.1	Introduction.....	133

6.8.2.2	Request .....	133
6.8.2.3	Response .....	134
6.8.3	Box Set Lists .....	135
6.8.3.1	Introduction .....	135
6.8.3.2	Request .....	135
6.8.3.3	Response .....	136
6.8.4	Box Set Contents .....	138
6.8.4.1	Introduction .....	138
6.8.4.2	Request .....	138
6.8.4.3	Response .....	139
6.9	Pagination of results .....	142
6.10	Metadata Profile .....	143
6.10.1	Schema Overview .....	143
6.10.1.1	Introduction .....	143
6.10.1.2	Language Information .....	144
6.10.2	Void .....	145
6.10.3	Table Syntax .....	145
6.10.4	ProgramInformation Element .....	145
6.10.5	BasicDescription Elements .....	145
6.10.5.1	Introduction .....	145
6.10.5.2	ProgramInformation.BasicDescription Element [Schedules] .....	146
6.10.5.3	ProgramInformation.BasicDescription Element [Detailed Programme Information] .....	147
6.10.5.4	ProgramInformation.BasicDescription Element [Box Set Contents] .....	148
6.10.5.5	ProgramInformation.BasicDescription Element [More Episodes] .....	149
6.10.5.6	GroupInformation.BasicDescription Element [Box Set List, Box Set Contents] .....	150
6.10.5.7	GroupInformation.BasicDescription Element [More Episodes] .....	150
6.10.5.8	GroupInformation.BasicDescription Element [Box Set Categories] .....	151
6.10.6	Schedule Element .....	151
6.10.7	ScheduleEvent Element .....	152
6.10.8	OnDemandProgram Element .....	153
6.10.8.1	Introduction .....	153
6.10.8.2	OnDemandProgram Element [Schedules, Detailed Programme Information] .....	153
6.10.8.3	OnDemandProgram Element [More Episodes] .....	154
6.10.8.4	OnDemandProgram Element [Box Set Contents] .....	155
6.10.9	AVAttributes Element .....	156
6.10.10	AudioAttributes Element .....	157
6.10.11	VideoAttributes Element .....	157
6.10.12	Void .....	158
6.10.13	RelatedMaterial Element .....	158
6.10.14	CreditsItem Element .....	158
6.10.15	ParentalGuidance Element .....	159
6.10.16	InstanceDescription Element .....	160
6.10.17	GroupInformation Element .....	161
6.10.17.1	Introduction .....	161
6.10.17.2	GroupInformation Element [Box Set Categories, Box Set Lists, Box Set Contents] .....	162
6.10.17.3	GroupInformation Element [Now/Next Filtered Schedules] .....	163
6.10.17.4	GroupInformation Element [More Episodes] .....	163
6.11	Classification Terms .....	163
6.11.1	Introduction .....	163
6.11.2	Audio Mix Types .....	164
6.11.3	Audio Purpose .....	164
6.11.4	Void .....	164
6.11.5	Content Genre .....	164
6.11.6	Credit Role .....	164
6.11.7	Media Availability .....	170
6.11.8	Forward EPG Availability .....	170
6.11.9	Relationship .....	171
6.11.10	Restart Links .....	171
6.11.11	Restart Availability .....	171
6.11.12	Box Sets .....	172
6.11.13	More Episodes Available Genre .....	172
6.12	Media Metadata Precedence .....	172

7	Security.....	174
7.1	Introduction .....	174
7.2	Risks and mitigations (informative) .....	174
7.2.1	Ensuring users get the expected (correct) service .....	174
7.2.1.1	One Service List Provider impersonating another.....	174
7.2.1.2	One service impersonating another - social engineering.....	174
7.2.1.3	One service impersonating another - hybrid .....	175
7.2.1.4	Compromising Service List Registry servers or service list servers .....	175
7.2.1.5	Man in the middle attack on Service List Provider - broadcast.....	175
7.2.2	Ensuring content is only available to users allowed to consume it .....	175
7.2.3	Leakage of content.....	176
7.2.4	Protecting user identification information .....	176
7.3	Use of HTTP over TLS .....	176
8	Interoperability Points .....	176
8.1	Introduction .....	176
8.2	Interoperability Point - IP0.....	177
8.3	Interoperability Point - IP1 .....	177
8.4	Interoperability Point - IP2.....	178
8.5	Service Features .....	179
8.5.1	Introduction.....	179
8.5.2	Service Delivery .....	179
8.5.3	Service Discovery.....	180
8.5.3.1	Service list discovery during installation phase .....	180
8.5.3.2	Support of service discovery metadata.....	180
8.5.4	Other Service Characteristics.....	193
8.5.4.1	Automatic update .....	193
8.6	Content Guide Features .....	193
9	Carriage .....	193
9.1	Introduction .....	193
9.2	Carriage in DVB-SI.....	193
9.3	Carriage in MBMS System .....	193
9.3.1	Service class signalling.....	193
9.3.2	MBMS Client behaviour.....	194
9.3.3	DVB-I client behaviour .....	194
	<b>Annex A (normative): Schemas .....</b>	<b>195</b>
A.1	DVB-I Service Discovery schema .....	195
A.2	DVB-I Service List Discovery schema .....	207
A.3	DVB-I Data Types schema.....	208
A.4	XML AIT extension schema .....	211
	<b>Annex B (normative): Electronic Attachments .....</b>	<b>212</b>
	<b>Annex C (informative): Examples.....</b>	<b>214</b>
C.1	Regional Inserts.....	214
C.2	SAT>IP .....	215
C.3	Content Guide Source .....	218
C.4	Responses to queries to a Service List Registry for Service List discovery .....	219
	<b>Annex D (normative): Classification Schemes.....</b>	<b>224</b>
D.1	HowRelatedCS .....	224
D.2	LinkedApplicationCS .....	225
D.3	RecordingInfoCS.....	225
D.4	ServiceTypeCS .....	226
D.5	ContentSubject .....	229
D.6	ColorimetryCS .....	234
	<b>Annex E (normative): Implementation Considerations .....</b>	<b>236</b>

E.1	Interface between DVB-I client and DVB-DASH player .....	236
E.2	Handling multiple service lists .....	236
<b>Annex F (informative):</b>	<b>A typical service installation .....</b>	<b>237</b>
<b>Annex G (informative):</b>	<b>Signalling of services delivered with HLS .....</b>	<b>238</b>
G.1	Introduction .....	238
G.2	Service Instance.....	238
G.2.1	Use of Linked Applications .....	238
G.2.2	Use of OtherDeliveryParameters .....	238
G.2.3	Use of IdentifierBasedDeliveryParameters.....	239
G.3	On Demand Programmes .....	239
G.4	Common Media Segments .....	239
G.5	Examples .....	239
<b>Annex H (normative):</b>	<b>List of Uniform Resource Names (URN) .....</b>	<b>241</b>
History .....		242

i T h S t a n d a r d s  
 ( h t t p s : / / s t a n d a r d s . i t e  
 D o c u m e n t i e P w r

E T S I 1 0 3 7 7 0 V 1 . 2 . 1 ( 2 0 2 4 - 0 9 )

h t t p s : / / s t a n d a r d s . i t e h . a i / c a t a l o g / s t a n c

---

# Intellectual Property Rights

## Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

## Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

**HbbTV®** is a registered trademark of HbbTV Association.

---

## Foreword

This Technical Specification (TS) has been produced by Joint Technical Committee (JTC) Broadcast of the European Broadcasting Union (EBU), Comité Européen de Normalisation ELEctrotechnique (CENELEC) and the European Telecommunications Standards Institute (ETSI).

**NOTE:** The EBU/ETSI JTC Broadcast was established in 1990 to co-ordinate the drafting of standards in the specific field of broadcasting and related fields. Since 1995 the JTC Broadcast became a tripartite body by including in the Memorandum of Understanding also CENELEC, which is responsible for the standardization of radio and television receivers. The EBU is a professional association of broadcasting organizations whose work includes the co-ordination of its members' activities in the technical, legal, programme-making and programme-exchange domains. The EBU has active members in about 60 countries in the European broadcasting area; its headquarters is in Geneva.

European Broadcasting Union  
CH-1218 GRAND SACONNEX (Geneva)  
Switzerland  
Tel: +41 22 717 21 11  
Fax: +41 22 717 24 81

The DVB Project is an industry-led consortium of broadcasters, manufacturers, network operators, software developers, regulators and others from around the world committed to designing open, interoperable technical specifications for the global delivery of digital media and broadcast services. DVB specifications cover all aspects of digital television from transmission through interfacing, conditional access and interactivity for digital video, audio and data. The consortium came together in 1993.

---

## Modal verbs terminology

In the present document "shall", "shall not", "should", "should not", "may", "need not", "will", "will not", "can" and "cannot" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"must" and "must not" are **NOT** allowed in ETSI deliverables except when used in direct citation.

---

## Introduction

DVB-I represents the intersection of linear broadcast television and internet media streaming, offering the possibility for linear television services to be delivered to internet connected devices. The present document defines the mechanisms to be used to find sets of linear television services delivered through broadband or broadcast mechanisms as well as methods to retrieve electronic programme data for those services.

i T h S t a n d a r d s  
( h t t p s : / / s t a n d a r d s . i t  
D o c u m e n t i e P w r

E T S I 1 0 3 7 7 0 V 1 . 2 . 1 ( 2 0 2 4 - 0 9 )

h t t p s : / / s t a n d a r d s . i t e h . a i / c a t a l o g / s t a n c

---

# 1 Scope

The present document defines the following:

- signalling of linear TV or radio services and content that are delivered over broadband;
- access linear TV services that are delivered by broadband in a way that is consistent with their access to linear TV services delivered by RF-based DVB technologies;
- the metadata and mechanisms to present electronic programme guides;
- the integration of linear services delivered by the RF-based DVB tuner and linear services delivered by broadband into a single coherent offering that is accessed through a single consistent UI; and
- a method for national TV regulators or their representatives, operators and trademark licensors to offer a list of trusted/legitimate/authorized/regulated services.

---

## 2 References

### 2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

- [1] [ETSI TS 103 285](#): "Digital Video Broadcasting (DVB); MPEG-DASH Profile for Transport of ISO BMFF Based DVB Services over IP Based Networks".
- [2] [CI Plus™ specification \(V1.3.2\)](#): "Content Security Extensions to the Common Interface".
- [3] [IETF RFC 4151](#): "The 'tag' URI Scheme".
- [4] [ETSI TS 102 034](#): "Digital Video Broadcasting (DVB); Transport of MPEG-2 TS Based DVB Services over IP Based Networks".
- [5] [ETSI TS 102 809](#): "Digital Video Broadcasting (DVB); Signalling and carriage of interactive applications and services in Hybrid broadcast/broadband environments".
- [6] [ETSI EN 300 468](#): "Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems".
- [7] [ETSI TS 102 822-3-1](#): "Digital Video Broadcasting (DVB); Broadcast and On-line Services: Search, select, and rightful use of content ("TV-Anytime"); Part 3: Metadata; Sub-part 1: Phase 1 - Metadata schemas".
- [8] [ISO/IEC 646](#): "Information technology - ISO 7-bit coded character set for information interchange".
- [9] [National Imagery and Mapping Agency Technical Report 8350.2](#), Third Edition, 3 January 2000.
- [10] [EN 50585 \(2014-05\)](#): "Communications protocol to transport satellite delivered signals over IP networks", (produced by CENELEC).

- [11] [ETSI TS 101 162](#): "Digital Video Broadcasting (DVB); Allocation of identifiers and codes for Digital Video Broadcasting (DVB) systems".
- [12] [IETF RFC 1738](#): "Uniform Resource Locators (URL)".
- [13] [IETF RFC 3986](#): "Uniform Resource Identifier (URI): Generic Syntax".
- [14] [IETF RFC 9110](#): "HTTP Semantics".
- [15] [IETF RFC 9111](#): "HTTP Caching".
- [16] [ETSI TS 102 851](#): "Digital Video Broadcasting (DVB); Uniform Resource Identifiers (URI) for DVB Systems".
- [17] [ISO 639](#): "Code for individual languages and language groups".
- [18] Void.
- [19] [ISO 8601-1](#): "Date and time -- Representations for information interchange -- Part 1: Basic rules".
- [20] [ISO/IEC 15938-5](#): "Information technology -- Multimedia content description interface -- Part 5: Multimedia description schemes".
- [21] [ETSI TS 102 796](#): "Hybrid Broadcast Broadband TV".
- [22] [ETSI TS 101 154](#): "Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcast and Broadband Applications".
- [23] [ISO/IEC 23001-7](#): "Information technology - MPEG systems technologies - Part 7: Common encryption in ISO base media format files".
- [24] Void.
- [25] [IETF RFC 8446](#): "The Transport Layer Security (TLS) Protocol Version 1.3".
- [26] [IETF RFC 5246](#): "The Transport Layer Security (TLS) Protocol Version 1.2".
- [27] [IETF RFC 1918](#): "Address Allocation for Private Internets".
- [28] [ETSI TS 102 323](#): "Digital Video Broadcasting (DVB); Carriage and signalling of TV-Anytime information in DVB transport streams".
- [29] W3C® Recommendation: "[HTML 5.1 2nd Edition](#)".
- [30] [IETF RFC 5646](#): "Tags for Identifying Languages".
- [31] [IETF RFC 2397](#): "The "data" URL Scheme".
- [32] [ETSI TS 103 205](#): "Digital Video Broadcasting (DVB); Extensions to the CI Plus™ Specification".
- [33] [CI Plus™ Specification \(V1.4.4\) \(2021-09\)](#): "Content Security Extensions to the Common Interface".
- [34] [DVB Bluebook A184](#): "Implementation Guidelines for DVB-I".
- [35] [ETSI EN 302 307-2](#): "Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications; Part 2: DVB-S2 Extensions (DVB-S2X)".
- [36] [ISO/IEC 13818-6](#): "Information technology -- Generic coding of moving pictures and associated audio information -- Part 6: Extensions for DSM-CC".
- [37] [ETSI EN 301 192](#): "Digital Video Broadcasting (DVB); DVB specification for data broadcasting".
- [38] [IETF RFC 7595](#): "Guidelines and Registration Procedures for URI Schemes".

- [39] [ETSI TS 126 346](#): "Universal Mobile Telecommunications System (UMTS); LTE; 5G; Multimedia Broadcast/Multicast Service (MBMS); Protocols and codecs (3GPP TS 26.346)".
- [40] [ETSI TS 126 347](#): "LTE; Multimedia Broadcast/Multicast Service (MBMS); Application Programming Interface and URL (3GPP TS 26.347)".
- [41] [CTA-5000](#): "Web Application Video Ecosystem - Web Media API Snapshot".

## 2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TS 103 769: "Digital Video Broadcasting (DVB); Adaptive media streaming over IP multicast".
- [i.2] [EN 50494](#): "Satellite signal distribution over a single coaxial cable in single dwelling installations" (produced by CENELEC).
- [i.3] [EN 50607](#): "Satellite signal distribution over a single coaxial cable - Second generation" (produced by CENELEC).
- [i.4] [List of EU Audiovisual Regulators: Audiovisual and Media Services Directive \(AVMSD\)](#).
- [i.5] W3C® Recommendation: "[Encrypted Media Extensions](#)".
- [i.6] W3C® Recommendation: "[XML Schema Definition Language \(XSD\) 1.1 Part 2: Datatypes](#)".
- [i.7] W3C® Recommendation: "[XML Schema Definition Language \(XSD\) 1.1 Part 1: Structures](#)".
- [i.8] ISO 3166: "Country Codes".
- [i.9] ETSI TS 101 547-2: "Digital Video Broadcasting (DVB); Plano-stereoscopic 3DTV; Part 2: Frame Compatible Plano-stereoscopic 3DTV".
- [i.10] ETSI TS 101 547-4: "Digital Video Broadcasting (DVB); Plano-stereoscopic 3DTV; Part 4: Service frame compatible Plano-stereoscopic 3DTV for HEVC coded services".
- [i.11] Digital UK: "Freeview Play Business-to-Consumer Metadata Specification".

NOTE: Additional information is available at <https://www.freeview.co.uk/corporate/platform-management/what-we-do>.

- [i.12] CTA-5001-B: "Web Application Video Ecosystem - Content Specification".
- [i.13] IETF RFC 8216: "HTTP Live Streaming".
- [i.14] CTA-5005: "Web Application Video Ecosystem - DASH-HLS Interoperability Specification".
- [i.15] [Directive \(EU\) 2018/1808](#) of the European Parliament and of the Council of 14 November 2018 amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive) in view of changing market realities.