



Commercial Requirements for AVMS Signalling

DVB Document C101

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DVB[®]

Intellectual Property Rights

Please refer to the IPR policy of DVB Project available at: <https://dvb.org/about/policies-procedures/>

Foreword

DVB 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. DVB dominates the digital broadcasting environment with thousands of broadcast services around the world using DVB specifications. There are hundreds of manufacturers offering DVB-compliant equipment. To date, there are over 1 billion DVB receivers shipped worldwide.

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1. Introduction

The EU's Audiovisual Media Services Directive (“AVMSD”) governs EU-wide coordination of national legislation on all audiovisual media, both traditional TV broadcasts and on-demand services. The latest review of AVMSD was completed on 6 November 2018. The final act was published in the EU Official Journal on 28 November 2018 (ref EU 2018/1808 : 14 Nov 2018).

Transposition into national legislation has begun with some EU Member States (“MS”) more advanced than others. Differences can be expected between the MS implementations which take account of national variations in the emphasis each MS places on different aspects. This is as expected.

There are two articles in the AVMSD which are of particular interest to DVB Members: Articles 7a and 7b.

Article 7a states that "Member States may take measures to ensure the appropriate prominence of audiovisual media services of general interest."

Article 7b states that “Member States shall take appropriate and proportionate measures to ensure that audiovisual media services provided by media service providers are not, without the explicit consent of those providers, overlaid for commercial purposes or modified.”

DVB established the CM-TF-AVMS group in 2021 as a Task Force (“TF”) to explore any potential need to provide DVB solutions to assist in the successful implementation of the AVMSD. The TF has already produced fairly comprehensive Problem Statement [3] and Analysis documents [4] which serve as additional background information to this Commercial Requirements (CRs) document.

The German legislation has been published and an English translation of this legislation has been analysed in some detail by the TF. Legislation from Belgium and France has also been considered. Note: The UK already had its own implementation of prominence requirements and these have been used as a reference point for some of the discussions however the UK is not expected to adopt the solution called for in this document.

The analysis carried out to date indicates that the German legislation is likely to be the basis of a superset of MS requirements for implementing Article 7a.

1.1. Scope

This version of CRs refers exclusively to implementing Article 7a of the AVMSD. Whether or not further CRs to address Article 7b will be generated is still under discussion and to be decided.

The TF considers that there are no mutual dependencies between likely solutions for 7a and 7b and so requests technical work to proceed on these CRs for 7a without waiting for finalization of the TF’s position on 7b.

The specification shall define the technical signalling capabilities to facilitate the TF’s interpretation for the implementation of the AVMS-Directive Article 7a on receivers. For the purposes of this document this shall be further simply referred to as DVB-AVMS-Signalling or “The Solution”, without constraining any technical meaning associated with the usage of this terminology.

The DVB-AVMS-Signalling Solution is intended to be implemented by horizontal platforms / operators that are distributing services that are deemed as services of general interest (“SOGIs”) and by manufacturers of horizontal reception devices that are expected to implement prominence to these SOGIs as required in markets that are subject to the AVMSD.

Vertical platforms / operators and associated reception device manufacturers may choose to implement the Solution or to select other options to achieve compliance with the provisions of the AVMSD.

In some DVB Networks existing implementations already meet their own internal prioritisation needs, for example, via an LCN based implementation. Each market / network would have to determine their need to use this Solution or not, hence why the solution to these commercial requirements may not be required in such instances. The prime purpose of this Solution is to address markets that currently do not have an existing solution to meet the requirements of the AVMSD Article 7a.

2. 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, DVB cannot guarantee their long term validity.

[1]	https://member.dvb.org/wg/CM-TF-AVMS/document/35037	ToRs
[2]	https://eur-lex.europa.eu/eli/dir/2018/1808/oj	AVMS Directive
[3]	https://member.dvb.org/wg/CM-TF-AVMS/document/35056	Problem Statement
[4]	https://member.dvb.org/wg/CM-TF-AVMS/document/35752	Analysis Review

3. Definitions and conventions

3.1. Terms

For the purposes of the present document, the following terms apply:

3.2. Abbreviations

For the purposes of the present document, the following abbreviations apply:

CRs	Commercial Requirements
AIT	Application Information Table
DVB CM	DVB Commercial Module
DVB TM	DVB Technical Module
DVB-C	DVB Cable
DVB-I	DVB Internet
DVB-S	DVB Satellite
DVB-T	DVB Terrestrial
HDMI	High Definition Multimedia Interface
XML	eXtensible Markup Language
LCN	Logical Channel Number
PSB	Public Service Broadcaster
SOGI	Service of General Interest
TRD	Target Region Descriptor
UI	User Interface

3.3. Conventions

Commercial Requirement tagging scheme:

Reqx	Name	Status	Priority	Use case
<p>Numeric requirement ref.</p> <p>x = sequence number</p> <p>This is a unique id within the document that could be used to refer to a requirement within a specific version of this document.</p> <p>Note that this id. is not strictly coupled to the particular requirement, could vary across different versions of this document</p>		<p>This status field can have the following states:</p> <p>Draft = work in progress</p> <p>Complete = completed and agreed in task force</p> <p>Agreed = agreed within CM-AVMS</p> <p>Accepted = accepted by CM</p>	<p>This field is the associated priority set by the CM to the requirement.</p> <p>1 → Must have</p> <p>2 → Recommended to have</p> <p>3 → Nice to have</p>	<p>Identifies the use cases that relate to this commercial requirement, if applicable.</p> <p>[UC]</p>

For the purpose of this document, the following normative conventions are used in the Commercial Requirements text:

Convention	Meaning
shall enable	The functionality shall be specified but its support is optional.
shall support	The functionality shall be specified and its support is mandatory.
should enable	The functionality is recommended to be specified and its support is optional.
should support	The functionality is recommended to be specified and supported.
may enable	The functionality may be specified and if it is then its support is optional, and it shall not have any weight in the selection or exclusion of any particular solution.
may support	The functionality may be specified and if it is then its support is recommended but it shall not have any weight in the selection or exclusion of any particular solution.
shall not preclude	The functionality shall not be prevented.
should not preclude	It is recommended not to prevent the functionality.

4. Commercial requirements

4.1. Coverage for DVB-AVMS-Signalling Specification

Req1	Coverage	ACCEPTED	1	-
The Solution shall enable implementation of DVB-AVMS-Signalling in relation to Article 7a of the AVMSD (Prominence) using additions and extensions to existing DVB specification(s) rather than a newly created standalone solution.				

4.2. Areas of applicability of DVB-AVMS-Signalling

Req2	Areas of Applicability: Horizontal broadcast business models	ACCEPTED	1	-
The Solution shall enable DVB-AVMS-Signalling in horizontal markets and should not preclude implementation in vertical markets.				

Req3	Areas of Applicability: DVB Systems	ACCEPTED	1	-
<p>The solution shall enable all known DVB networks and delivery mechanisms to implement DVB-AVMS-signalling, e.g. DVB-T/S/C/IP/DVB-I etc.</p> <p>Note: The AVMS-D is agnostic to delivery mechanism, therefore it is assumed that:</p> <ul style="list-style-type: none"> • the solution needs to be universally applicable to networks using DVB signalling. • it is assumed that the solution will probably require additions to more than just one existing DVB specification. <p>Existing specifications and signalling should be investigated for suitability, particularly the DVB Target Region Descriptor (TRD).</p> <p>Note :- It is suggested that the DVB specification(s) should consider including the following signalling methods:</p> <ol style="list-style-type: none"> a) Bitstream signalling encapsulated in the MPEG2 transport stream b) XML signalling for DVB-I Services c) AITs for Apps – inc XML-AITs 				

Req4	Areas of Applicability: Devices	ACCEPTED	1	-
The Solution shall enable any device that renders a UI for content and/or service navigation to implement DVB-AVMS-Signalling, subject to the device having general support for and compatibility with DVB networks i.e. Unconnected TVs, Smart TVs, STBs, HDMI Dongles etc.				

4.3. Timeline Requirements

Req5	Timeline: Date for DVB-AVMS specification.	ACCEPTED	1	-
<p>The Solution comprising the DVB-AVMS-signalling specification(s) should ideally be completed within 4 months of the approval of the CRs –noting earlier completion would be beneficial subject to agreement with relevant TM groups.</p> <p>Note: The deadline for implementation into national regulations, according to the EC, was 18 December 2020. As such there is an urgency to complete specifications ASAP as a number of countries are starting to move forward with their transpositions. For up to date information / status on the current implementations please refer to “the two birds website” :https://www.twobirds.com/en/in-focus/implementation-tracker-avms-directive– note this information is not static.</p>				

4.4. Guidelines

Req6	Guidelines	ACCEPTED	1	-
<p>A single standalone “DVB-AVMS-guidelines” document should be produced that enables the reader to understand all application areas and specifications comprising the DVB-AVMS-Signalling Solution.</p>				

4.5. Signalling Requirements

Req7	Signalling: SOGIs	ACCEPTED	1	-
<p>The Solution shall enable individual services to be independently identified as a Service of General Interest (SOGI)</p> <p>Note: See [4] page 8 “Problem – Article 7a Implementation” for more background on SOGIs.</p> <p>Note: A Service here is defined as a DVB Service and not a DVB event</p> <p>Note: Whilst not intending to influence the technical solution that is delivered in the DVB-AVMS-Signalling specifications, this may conceptually be perceived to be the equivalent of a “single flag” that identifies each SOGI.</p>				

Req8	Signalling: SOGI Country(ies)	ACCEPTED	1	-
<p>The Solution shall enable the identification of one or more countries to which the individual SOGI status of the service applies.</p>				

Req9	Signalling: Operational Compatibility	ACCEPTED	1	-
<p>The Solution shall not preclude ongoing use of existing operational structures of DVB networks and systems.</p>				

Note:- The organisations that currently transmit such metadata would be the same for AVMS Signalling. For example, national regulators would most likely be the organisations that define which services should be SOGIs and network operators would be the organisations that set the appropriate metadata into the relevant streams.

Req10	Signalling: (CatchUp) Applications	ACCEPTED	1	-
<p>The solution shall enable the designation of Interactive Applications (Data Services) as SOGIs. See [4] page 12 “Interactive Applications” for more background.</p> <p>Note:-For Example: Catch Up Applications and Telemedia Services (as in Germany), as signalled by AIT/XML-AITs, are likely to have to be signalled as SOGIs.</p>				

Req11	Signalling: Services & Applications	ACCEPTED	1	-
<p>All requirements equally apply to services and applications, unless otherwise identified.</p>				

Req12	Signalling: Application Flexibility	ACCEPTED	1	-
<p>The Solution shall enable flexible implementations from minimal, simple implementations to full implementations.</p> <p>Note:- Different Countries, Networks etc will have different requirements to signal SOGIs. For some countries the simplest solution possible will meet the requirements (e.g. a single flag, potentially previously a reserved bit in existing signalling, for a small EU country that has a small network and a small number of SOGIs)</p> <p>Other implementations may additionally wish to apply Ranking (Req14) and/or Regionalisation (Req15) according to local needs.</p>				

Req13	Signalling: Extensibility	ACCEPTED	1	-
<p>The DVB-AVMS-Signalling shall support extensible enabling of additional optional private extensions and information.</p>				

Req14	Signalling: SOGI Ranking	ACCEPTED	1	-
<p>The AVMS Signalling Solution shall enable SOGI priority to be explicitly ranked within the identified or published collection of SOGIs on a DVB network in a single dimension ranking, e.g. 1,2,3,4,5..... etc. in which the same ranking can be allocated to individual services. i.e. two (or more) separate services may be identified as 2nd priority.</p> <p>Note: This would enable an implementation, once it knows which services are SOGIs, to order those SOGIs appropriately. This is a separate requirement in addition to the basic SOGI identifier as covered in Req7. How the end UI manages such duplication would be defined by the implementer of the UI.</p> <p>Note: Absence of such signalling implies that ranking / display order of SOGIs is undefined / implementation dependent.</p>				

Note: The Ranking Solution for SOGI only applies to services in the context of AVMSD SOGIs and not to the prioritisation of services in any other context.

Note: This requirement is independent of and not the same as LCNs – it cannot be assumed that LCNs are a sufficient means of prioritising SOGIs (nor could it be assumed that any network already implements LCNs) and LCNs should not be used as proxies for SOGI prioritisation. See [3] page 9 “Logical Channel Numbers” for more background information.

Note: In some DVB Networks existing implementations already meet their prioritisation needs solely via an LCN implementation. Each market / network would have to determine their need to use this Solution for SOGI ranking data or not, hence why the solution to this commercial requirement is not mandated.

Note: From an AVMSD perspective it does not matter which order equally ranked services are rendered; some networks might want to determine this for other reasons (which may include integration with local LCN list) - but that is outside scope of AVMSD.

Note: Implementers in markets that already implement alternative non-DVB defined methods, such as LCNs, may need to review their internal adoption methods (maybe rules) if they wish to also adopt this SOGI Ranking Solution in order to address potential coexistence issues.

Req15	Signalling: SOGI Regionalisation within a Country	ACCEPTED	1	-
<p>The Solution shall enable SOGIs and their ranking to be assigned to a Region / Sub Region within a country.</p> <p>The Solution shall enable the sizing and depth capabilities of the regionalisation solution to at least match the capabilities of the existing DVB Target Region Descriptor, in which a country can be divided into up-to 256 primary regions, and each of them can be sub-divided into 256 secondary regions, and each of those can be sub-divided further into up-to 65535 tertiary regions.</p> <p>Note: TM should consider if the Solution to this commercial requirement could be integrated with the Solution to Req8 above.</p> <p>Note: This DVB-AVMS-Signalling would only be implemented in countries and networks that require this functionality.</p> <p>Note : The Task Force has reviewed the capabilities of the DVB Target Region Descriptor (TRD) and believe it can form the basis of, if not the entire solution to this requirement, in which case the Solution may only need a simple reference to an implementation of the TRD – to be confirmed by TM.</p> <p>Note: This signalling is not mandatory – absence of such signalling implies the SOGI identification applies to all regions.</p> <p>Note: Examination of the emerging regulation being transposed in Germany strongly suggests the need for a SOGI regionalisation solution. For more background information see Annex B of [3], which also notes that the UK has already implemented its own solution to this requirement and would most likely not need to add this add this additional solution. Many other DVB Networks are regionally structured with regional PSB services.</p>				

Req16	Signalling: Backwards Compatibility	ACCEPTED	1	-
<p>The Solution shall not impact existing DVB implementations in devices that do not implement DVB-AVMS-Signalling.</p>				

4.6. Receiver-Oriented Requirements

Req17	Receiver	ACCEPTED	1	-
<p>The Solution shall not preclude any receiver to receive and process the DVB-AVMS-Signalling according to the design criteria of that receiver.</p> <p>Note: The design criteria of receivers includes the entire user interface and is out of scope of the Solution.</p>				

4.7. Trust and Security Requirements

Req18	Trust & Security & Authentication	ACCEPTED	1	-
<p>Signing techniques for authentication of DVB-AVMS Signalling should not be precluded by design.</p> <p>Note: Authentication has been considered and specified in signalling / metadata projects, however as far as can be established no one has ever in practice implemented such signed data techniques and they are not thought to be explicitly any more applicable to DVB-AVMS Signalling but should not be made incompatible by design. (External monitoring, policing and mutually agreed corrective action will also meet these requirements).</p> <p>Note: Trust and Security has been considered, but there are no specific, additional such requirements for DVB-AVMS Signalling. Existing Trust and Security applied to delivery of relevant metadata is considered to be fit for purpose. There is no requirement to add any layers of additional security onto DVB-AVMS Signalling. i.e. Existing DVB networks are normally considered to be sufficiently secure and robust. The appropriate existing entities who set such metadata are considered trusted and it is not foreseen that any additional protection is required to address incorrectly set SOGI signalling.</p>				

4.8. Testability Requirements

Req19	Testability of receivers	ACCEPTED	1	-
<p>V&V CRs will be developed separately to these CRs.</p>				

5. History

Doc No	Month Year	[Milestone]
C101	February 2022	BlueBook publication