ETSI TS 102 796 v1.2.1 Errata 2

7th August 2014

Copyright 2013-4 HbbTV Association
Table of Contents

1 Introduction ........................................................................................................................................... 4
2 Conventions ........................................................................................................................................... 4
3 Summary ................................................................................................................................................. 4
4 Changes to TS 102 796 v1.2.1 ...................................................................................................................... 7
   4.1 Clause 2 – References .......................................................................................................................... 7
      4.1.1 OIPF errata to R1 V1.2 .................................................................................................................... 7
      4.1.2 DASH video resolutions ................................................................................................................ 7
      4.1.3 DASH Technical Corrigendum 1 .................................................................................................... 7
      4.1.4 Origins for carousel delivered applications .................................................................................... 7
   4.2 Clause 4 – Overview ............................................................................................................................ 7
      4.2.1 Examples of different application types ....................................................................................... 7
   4.3 Clause 6 – Service and application model .......................................................................................... 8
      4.3.1 Missing text in 6.2.2.4 .................................................................................................................. 8
      4.3.2 Modification to application lifecycle on channel selection .......................................................... 8
      4.3.3 Remove reference to external application authorisation descriptor ............................................ 10
      4.3.4 Origins for carousel delivered applications ............................................................................... 12
      4.3.5 Clarify behaviour if AIT PID changes .......................................................................................... 12
      4.3.6 Reference to table off by one ....................................................................................................... 13
   4.4 Clause 7 - Formats and Protocols ........................................................................................................ 13
      4.4.1 HTTP User Agent ......................................................................................................................... 13
      4.4.2 Editorial correction ....................................................................................................................... 13
      4.4.3 Remove ApplicationSpecificDescriptor ................................................................................... 13
      4.4.4 Clarification on DASH video resolutions ................................................................................... 13
      4.4.5 Application types in the AIT ....................................................................................................... 13
   4.5 Clause 8 – Browser Application Environment .................................................................................. 14
      4.5.1 Mismatch in removeStreamEventListener arguments ............................................................... 14
      4.5.2 StreamEvent event description .................................................................................................. 14
   4.6 Clause 9 – System Integration ............................................................................................................ 14
      4.6.1 Clarification of URL example ....................................................................................................... 14
      4.6.2 Trick modes with adaptive bitrate content ................................................................................... 14
      4.6.3 DASH technical corrigendum .................................................................................................... 15
      4.6.4 Ambiguity when stopping broadband video ............................................................................... 15
      4.6.5 statusText attribute of XHR with DSMCC ................................................................................. 15
   4.7 Clause 10 – Capabilities ...................................................................................................................... 15
      4.7.1 Video scaling and visibility of decoded video ............................................................................. 15
      4.7.2 Errors in the example XML capabilities .................................................................................... 15
      4.7.3 Location of the DRM information in the XML capabilities ....................................................... 16

2 of 25
4.7.4 Sample application no longer provided .................................................. 16
4.7.5 Extensions to A/V object for parental rating errors .................................. 16

4.8 Annex A – OIPF DAE Specification Profile .................................................. 16
4.8.1 getSIDescriptors optional argument ....................................................... 16
4.8.2 DVB-SI parental rating ........................................................................... 17
4.8.3 Definition of programmeID ...................................................................... 18
4.8.4 Clarify support for PlaySpeedChange ...................................................... 18
4.8.5 Missing channel.nid property ................................................................. 19
4.8.6 Misspelling of countryId ........................................................................ 19
4.8.7 Incorrect section names ......................................................................... 19
4.8.8 Incorrect references to DAE Annex B ..................................................... 20
4.8.9 Missing window.onload property ......................................................... 20
4.8.10 Explicitly linking EIT to metadata search ............................................... 21
4.8.11 Mandatory argument to sendDRMMessage ......................................... 21
4.8.12 Queue management on type change .................................................... 21
4.8.13 Audio from memory ........................................................................... 21
4.8.14 Remove use of display:none ............................................................... 21
4.8.15 Extensions to A/V object for parental rating errors ................................ 22
4.8.16 ScheduledRecording constants not included ........................................ 22
4.8.17 Copy/paste error in A.2.4.2 .................................................................. 22
4.8.18 Changes to Extensions for playback of selected media components .... 22
4.8.19 Origins for carousel delivered applications ......................................... 23
4.8.20 Use of "may" in OIPF section 8.4.2 ......................................................... 23
4.8.21 onPlaySpeedChanged - Should always dispatch when play() is called ... 23

4.9 Annex B - Support for protected content delivered via broadband .............. 23
4.9.1 Flags=0 is wrong ................................................................................ 23
4.9.2 Broken reference in annex B ................................................................. 23

4.10 Annex E – Profiles of MPEG DASH ......................................................... 24
4.10.1 Dynamic MPD served with cache control off ....................................... 24
4.10.2 Missing text in E.4.2.1 ....................................................................... 24
4.10.3 Capitalisation of roles incorrect .......................................................... 24
4.10.4 DASH video resolutions .................................................................... 24
4.10.5 Segment length ................................................................................ 24
4.10.6 Switching between representations .................................................... 24
1 Introduction

This document contains the currently identified and resolved errata to ETSI TS 102 796 v1.2.1. It is a living document which will be updated based on experience of implementing receivers, services and tests. Versions of this document will periodically be made publicly available via the www.hbbtv.org web site.

Errata 2 includes all errata from errata 1 and obsoletes that document.

For avoidance of doubt, the contents of this document have not been reviewed or approved by ETSI.

2 Conventions

In this document, text quoted from other documents or to be added to other documents is indented except where it appears in a table. Fine-grained changes in text from other documents are shown using the underline and strikethrough convention.

3 Summary

The following table summarises the changes included in this document.

<table>
<thead>
<tr>
<th>HbbTV internal ref.</th>
<th>Short Description</th>
<th>Category</th>
<th>Clauses Impacted</th>
<th>Clause in this document</th>
</tr>
</thead>
<tbody>
<tr>
<td>1317</td>
<td>getSIDescriptors optional argument</td>
<td>Ambiguity</td>
<td>A.1</td>
<td>4.8.1</td>
</tr>
<tr>
<td>1356</td>
<td>Error in default xmlCapabilities re trick mode support</td>
<td>Ambiguity</td>
<td>10.2.4</td>
<td>4.7.2</td>
</tr>
<tr>
<td>1442</td>
<td>Clarification of URL example</td>
<td>Editorial</td>
<td>9.2</td>
<td>4.6.1</td>
</tr>
<tr>
<td>1443</td>
<td>Dynamic MPD served with cache control off</td>
<td>Ambiguity</td>
<td>E.2.1</td>
<td>4.10.1</td>
</tr>
<tr>
<td>1446</td>
<td>Sample application no longer provided</td>
<td>Editorial</td>
<td>10.2.5</td>
<td>4.7.4</td>
</tr>
<tr>
<td>1451</td>
<td>Incorrect section names</td>
<td>Editorial</td>
<td>A.1</td>
<td>4.8.7</td>
</tr>
<tr>
<td>1461</td>
<td>StreamEvent event description</td>
<td>Ambiguity</td>
<td>8.2.1.2</td>
<td>4.5.2</td>
</tr>
<tr>
<td>1462</td>
<td>Mismatch in removeStreamEventListener arguments</td>
<td>Editorial</td>
<td>8.2.1.1</td>
<td>4.5.1</td>
</tr>
<tr>
<td>1488</td>
<td>Misspelling of countryId</td>
<td>Editorial</td>
<td>A.1</td>
<td>4.8.6</td>
</tr>
<tr>
<td>1492</td>
<td>Missing text in 6.2.2.4</td>
<td>Editorial</td>
<td>6.2.2.4</td>
<td>4.3.1</td>
</tr>
<tr>
<td>1493</td>
<td>DVB-SI parental rating</td>
<td>Ambiguity</td>
<td>A.1</td>
<td>4.8.2</td>
</tr>
<tr>
<td>1525</td>
<td>Video scaling and visibility of decoded video</td>
<td>Editorial</td>
<td>10.2.1</td>
<td>4.7.1</td>
</tr>
<tr>
<td>HbbTV internal ref.</td>
<td>Short Description</td>
<td>Category</td>
<td>Clauses Impacted</td>
<td>Clause in this document</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------</td>
<td>--------------</td>
<td>------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>1531</td>
<td>Trick modes with adaptive bitrate content</td>
<td>Editorial</td>
<td>9.4</td>
<td>4.6.1</td>
</tr>
<tr>
<td>1531</td>
<td>Clarify support for PlaySpeedChange</td>
<td>Error</td>
<td>A.1</td>
<td>4.8.4</td>
</tr>
<tr>
<td>1544</td>
<td>Missing window.onload property</td>
<td>Implementation</td>
<td>A.2.8.1</td>
<td>4.8.9</td>
</tr>
<tr>
<td>1554</td>
<td>Errors in the example XML capabilities</td>
<td>Ambiguity</td>
<td>10.2.4</td>
<td>4.7.2</td>
</tr>
<tr>
<td>1554</td>
<td>Location of the DRM information in the XML capabilities</td>
<td>Editorial</td>
<td>10.2.4</td>
<td>4.7.3</td>
</tr>
<tr>
<td>1569</td>
<td>Missing text in E.4.2.1</td>
<td>Editorial</td>
<td>E.4.2.1</td>
<td>4.10.2</td>
</tr>
<tr>
<td>1577</td>
<td>Explicitly linking EIT to metadata search</td>
<td>Ambiguity</td>
<td>A.2.9</td>
<td>4.8.10</td>
</tr>
<tr>
<td>1581</td>
<td>Missing channel.nid property</td>
<td>Error</td>
<td>A.1</td>
<td>4.8.5</td>
</tr>
<tr>
<td>1615</td>
<td>Definition of programmeID</td>
<td>Ambiguity</td>
<td>A.1</td>
<td>4.8.3</td>
</tr>
<tr>
<td>1628</td>
<td>Location of the DRM information in the XML capabilities</td>
<td>Ambiguity</td>
<td>10.2.4</td>
<td>4.7.3</td>
</tr>
<tr>
<td>1633</td>
<td>Incorrect references to DAE Annex B</td>
<td>Editorial</td>
<td>A.1</td>
<td>4.8.8</td>
</tr>
<tr>
<td>1635</td>
<td>HTTP User Agent</td>
<td>Implementation</td>
<td>7.3.2.4</td>
<td>4.4.1</td>
</tr>
<tr>
<td>1640</td>
<td>Editorial correction</td>
<td>Editorial</td>
<td>7.3.2.5</td>
<td>4.4.2</td>
</tr>
<tr>
<td>1715</td>
<td>Queue management on type change</td>
<td>Ambiguity</td>
<td>A.2.5</td>
<td>4.8.12</td>
</tr>
<tr>
<td>1767</td>
<td>Modification to application lifecycle on channel selection</td>
<td>Ambiguity</td>
<td>6.2.2.2</td>
<td>4.3.2</td>
</tr>
<tr>
<td>1784</td>
<td>Mandatory argument to sendDRMMessage</td>
<td>Error</td>
<td>A.1</td>
<td>4.8.11</td>
</tr>
<tr>
<td>1848</td>
<td>Remove reference to external application authorisation descriptor</td>
<td>Editorial</td>
<td>6.2.2.3</td>
<td>4.3.3</td>
</tr>
<tr>
<td>1887</td>
<td>Audio from memory</td>
<td>Error</td>
<td>A.1</td>
<td>4.8.13</td>
</tr>
<tr>
<td>1894</td>
<td>OIPF errata to R1 V1.2</td>
<td>Ambiguity</td>
<td>2.1</td>
<td>4.1.1</td>
</tr>
<tr>
<td>1914</td>
<td>Examples of different application types</td>
<td>Editorial</td>
<td>4.1</td>
<td>4.2.1</td>
</tr>
<tr>
<td>2007-1</td>
<td>Reference to table off by one</td>
<td>Editorial</td>
<td>6.2.2.7</td>
<td>4.3.6</td>
</tr>
<tr>
<td>2043</td>
<td>Broken reference in annex B</td>
<td>Editorial</td>
<td>B.1</td>
<td>4.9.2</td>
</tr>
<tr>
<td>2066</td>
<td>Segment length</td>
<td>Error</td>
<td>E.3.2</td>
<td>4.10.5</td>
</tr>
<tr>
<td>2067</td>
<td>flags=0 is wrong</td>
<td>Ambiguity</td>
<td>B.2.5.1</td>
<td>4.9.1</td>
</tr>
<tr>
<td>HbbTV internal ref.</td>
<td>Short Description</td>
<td>Category</td>
<td>Clauses Impacted</td>
<td>Clause in this document</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------</td>
<td>----------</td>
<td>------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>2068</td>
<td>Remove use of display:none</td>
<td>Implementation</td>
<td>A.2.4.1, A.2.5, new A.2.14</td>
<td>4.8.14</td>
</tr>
<tr>
<td>2083</td>
<td>Extensions to A/V object for parental rating errors</td>
<td>Error</td>
<td>10.2.6, A.1</td>
<td>4.7.5, 4.8.15</td>
</tr>
<tr>
<td>2086</td>
<td>Remove ApplicationSpecificDescriptor</td>
<td>Implementation</td>
<td>7.2.3</td>
<td>4.4.3</td>
</tr>
<tr>
<td>2121</td>
<td>DASH technical corrigendum 1</td>
<td>Error</td>
<td>2.1, 9.4</td>
<td>4.1.3, 4.6.3</td>
</tr>
<tr>
<td>2130</td>
<td>DASH video resolutions</td>
<td>Implementation</td>
<td>2.1, E.4.2.1</td>
<td>4.1.2, 4.10.4</td>
</tr>
<tr>
<td>2163</td>
<td>Capitalisation of roles incorrect</td>
<td>Error</td>
<td>E.2.4</td>
<td>4.10.3</td>
</tr>
<tr>
<td>2184</td>
<td>ScheduledRecording constants not included</td>
<td>Ambiguity</td>
<td>A.1</td>
<td>4.8.16</td>
</tr>
<tr>
<td>2186</td>
<td>Copy/paste error in A.2.4.2</td>
<td>Ambiguity</td>
<td>A.2.4.2</td>
<td>4.8.17</td>
</tr>
<tr>
<td>2262</td>
<td>Ambiguity when stopping broadband video</td>
<td>Ambiguity</td>
<td>9.1.1.1</td>
<td>4.6.4</td>
</tr>
<tr>
<td>2273</td>
<td>Switching between Representations</td>
<td>Ambiguity</td>
<td>E.4.2</td>
<td>4.10.6</td>
</tr>
<tr>
<td>2282</td>
<td>statusText attribute of XHR with DSMCC</td>
<td>Implementation</td>
<td>8.2.2</td>
<td>4.6.5</td>
</tr>
<tr>
<td>2298</td>
<td>is audio channels unselect asynchronous?</td>
<td>Ambiguity</td>
<td>A.1</td>
<td>4.8.18</td>
</tr>
<tr>
<td>2309</td>
<td>Origins for carousel delivered applications</td>
<td>Error</td>
<td>6.3, A.2.8.1</td>
<td>4.3.4, 4.8.19, 4.1.4</td>
</tr>
<tr>
<td>2313</td>
<td>onPlaySpeedChanged - Should always dispatch when play() is called</td>
<td>-</td>
<td>A.1</td>
<td>4.8.21</td>
</tr>
<tr>
<td>2396</td>
<td>Clarification on DASH video resolutions</td>
<td>Ambiguity</td>
<td>7.3.1.3</td>
<td>4.4.4</td>
</tr>
<tr>
<td>2399</td>
<td>Use of &quot;may&quot; in OIPF section 8.4.2</td>
<td>Error</td>
<td>A.1</td>
<td>4.8.20</td>
</tr>
<tr>
<td>2417</td>
<td>Application types in the AIT</td>
<td>Error</td>
<td>7.2.3.1</td>
<td>4.4.5</td>
</tr>
<tr>
<td>2495</td>
<td>Clarify behaviour if AIT PID changes</td>
<td>Ambiguity</td>
<td>6.2.2.3</td>
<td>4.3.5</td>
</tr>
<tr>
<td>2497</td>
<td>Changes to the set of available components in video/broadcast object</td>
<td>Ambiguity</td>
<td>A.1</td>
<td>4.8.18</td>
</tr>
</tbody>
</table>

Key to categories

| Ambiguity | Feature where different implementations may behave in different ways. This includes under-specified features as well as inconsistencies within the specification. |
4 Changes to TS 102 796 v1.2.1

4.1 Clause 2 – References

4.1.1 OIPF errata to R1 V1.2
Implementations shall take into account any changes to the OIPF specifications as indicated in the OIPF Release 1 IPTV Solution V1.2 Errata 1.

4.1.2 DASH video resolutions
The following additional normative reference shall be added;

[36] Digital Video Broadcasting (DVB); MPEG-DASH Profile for Transport of ISO BMFF Based DVB Services over IP Based Networks

NOTE: Currently available as DVB Blue Book A168

4.1.3 DASH Technical Corrigendum 1
The following additional normative reference shall be added.


4.1.4 Origins for carousel delivered applications
The following additional normative reference shall be added.


4.2 Clause 4 – Overview

4.2.1 Examples of different application types
Modify the first set of bullets as follows:

- Broadcast-independent application (i.e. not associated with any broadcast service). This type of application is downloaded via broadband and accesses all of its associated data via broadband.
  - Examples of this type of service are catch-up services and games where the application does not need access to any broadcast resources.
- Broadcast-related application (i.e. associated with one or more broadcast services or one or more
broadcast events within a service) that may be launched automatically ("autostart") or explicitly upon user request. This type of application may be downloaded via broadband or broadcast and may access its data via either method.

- Examples of this type of service are electronic program guides and teletext-like services where the application may wish to present the broadcast video in a window and access other broadcast resources (e.g. EIT metadata).

4.3 Clause 6 – Service and application model

4.3.1 Missing text in 6.2.2.4

Modify the text in section 6.2.2.4 as follows:

- The timeShiftSynchronized property of the Configuration class shall be set to true (see clause A.2.4.3).

4.3.2 Modification to application lifecycle on channel selection

Replace Figure 13 with:
Note: The change is that “Is it signalled in the new service?” has been replaced by “Is it signalled in the new service with the same transport protocol?”

4.3.3 Remove reference to external application authorisation descriptor

Replace Figure 14 with:
4.3.4 Origins for carousel delivered applications

The following changes shall be made to clause 6.3.

- The existing text shall be renumbered to 6.3.2 “Application boundary”
- The heading for 6.3 itself shall be renamed to “Origins and application boundary”
- A new clause 6.3.1 shall be inserted as below.

6.3.1 Origin
An origin can be derived for each document or other resource loaded by the terminal.

- For resources loaded via HTTP or HTTPS, the origin shall be derived from the URL as defined in the "The Web Origin Concept" specification [].
- For resources loaded via DSMCC object carousel, the origin shall be the DVB URI in the form (as defined in TS 102 851 [xx] section 6.3.1):

  "dvb" ":" "//" original_network_id "." transport_stream_id "." service_id "." component_tag

  NOTE 1: In this case, the "host" is the DVB triplet plus the component_tag.

For resources loaded via DSM-CC, this origin shall be used in all cases where a document or resource origin is used in web specifications including but not limited to cross-origin resource sharing [38].

- “An application boundary is a set of URL origins and object carousels” shall be replaced with
  “An application boundary is a set of URL origins as defined in clause 6.3.1”
- “default” shall be added in the following point as shown;
  “For applications loaded via object carousel, the default application boundary shall include the carousel from which the first page of the application was loaded”
- The following point shall be deleted;
  “For files requested with XMLHttpRequest, the Same-Origin Policy shall be extended using the application boundary i.e. any origin in the application boundary will be considered of same origin”.

4.3.5 Clarify behaviour if AIT PID changes

In clause 6.2.2.3, the following text shall be added immediately following note 3.

The PID on which an AIT component is carried may change. Terminals shall treat this in the same manner defined in clause 5.3.4.2 of ETSI TS 102 809 for the case where an AIT is removed from the PMT and then reinstated. This means that the sub-table shall be considered to have changed, regardless of whether the AIT version number changes, and the normal “AIT updated” sequence
defined in Figure 14 shall be followed.

4.3.6 Reference to table off by one
In clause 6.2.2.7, the table in table "State transitions for the video/broadcast embedded object" of the OIPF DAE specification [1] is table 12 and not table 11 as shown.

4.4 Clause 7 - Formats and Protocols

4.4.1 HTTP User Agent
Add a note after the first paragraph of 7.3.2.4:

NOTE: This does not apply to HTTP requests made by the MPEG DASH player or the DRM agent.

4.4.2 Editorial correction
Change the first sentence of 7.3.2.5 to:

HTTP redirects as defined in [HTTP] in response to a HTTP request shall be supported as described in this clause.

4.4.3 Remove ApplicationSpecificDescriptor
Clause 7.2.3 is changed as follows;

- In Table 7 “Contents of XML AIT for Broadcast-independent applications”, the row for “applicationSpecificDescriptor” is changed to read as follows;

<table>
<thead>
<tr>
<th>applicationSpecificDescriptor/</th>
<th>Optional</th>
<th>Outside the scope of the present document.</th>
</tr>
</thead>
</table>

- The following text at the end of the clause is removed.

TS 102 809 [3] requires the definition of an "application specific descriptor" which is not used by the present document.

The following applicationSpecificDescriptor shall be supported;

```xml
<xs:complexType name="HBBTVApplicationSpecificDescriptor">
  <xs:complexContent>
    <xs:extension base="mis:ApplicationSpecificDescriptor">
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

4.4.4 Clarification on DASH video resolutions
The following shall be added at the end of clause 7.3.1.3:

Different requirements on video resolutions apply to content delivered using MPEG DASH as defined in Annex E.

4.4.5 Application types in the AIT
In Table 5: “Supported application signalling features”, in the row "5.3.4 Application Information
Table", the following text shall be added to the “Notes” column;

Terminals shall ignore AIT sub-tables within the selected service which have an application_type that the terminal cannot decode.

4.5 Clause 8 – Browser Application Environment

4.5.1 Mismatch in removeStreamEventListener arguments
Change the definition of the removeStreamEventListener method in section 8.2.1.1 to:

```java
void removeStreamEventListener(String targetURL, String eventURL, String eventName, EventListener listener)
```

4.5.2 StreamEvent event description
Change the description of the status property in section 8.2.1.2 to:

Equal to "trigger" when the event is dispatched in response to a trigger in the stream or "error" when an error occurred (e.g. attempting to add a listener for an event that does not exist, or when a StreamEvent object with registered listeners is removed from the carousel).

Circumstances under which an event shall be dispatched with an error status include:

- the StreamEvent object pointed to by targetURL is not found in the carousel or via broadband;
- the StreamEvent object pointed to by targetURL does not contain the event specified by the eventName parameter;
- the carousel cannot be mounted;
- the elementary stream which contains the StreamEvent event descriptor is no longer being monitored (e.g. due to another monitoring request or because it disappears from the PMT).

Once an error is dispatched, the listener is automatically unregistered by the terminal.

4.6 Clause 9 – System Integration

4.6.1 Clarification of URL example
Change the text of the third sub-bullet of examples of URLs:

The application is signaled in a DSMCC Carousel with a Component Tag of 4 and a Base URL of /index.php?param1=value1 and the current service location is dvb://1.2.3

createApplication URL: dvb://current.ait/1.1?param2=value2#foo

Resulting URL: dvb://1.2.3.4/index.php?param1=value1&param2=value2#foo

Add new text at the end of the section:

NOTE: Some browsers may use the filename suffix as a means for detecting the content type for files not served via HTTP. Application authors should be careful about filename suffixes used as incorrect suffixes may result in unexpected behaviour.

4.6.2 Trick modes with adaptive bitrate content
Change the text in section 9.4:

If the terminal supports trick modes, the behaviour defined in clause A.2.3 shall be supported including the generation of a PlaySpeedChange event reporting the actual speed of fast forwards and fast rewind. It is optional for a terminal to support trick modes for adaptive bitrate content.
4.6.3 DASH technical corrigendum
In clause 9.4, the references to “DASH [29]” shall all be replaced with references to “DASH [29] and the DASH Corrigendum [37]”.

4.6.4 Ambiguity when stopping broadband video
The following text shall be added after the third bullet in clause 9.1.1.1.

NOTE: An AV Control object that is not presenting video can obscure other parts of the application UI, including video being presented by other elements in the application or in the background.

4.6.5 statusText attribute of XHR with DSMCC
In clause 8.2.2, in the line referring to statusText, “Set to an empty string” shall be replaced with “Implementation dependent”.

4.7 Clause 10 – Capabilities

4.7.1 Video scaling and visibility of decoded video
Change Table 11 in section 10.2.1 to:

| Video scaling | Terminals shall be able to present video at sizes down to 1/8 by 1/8 of the width and height of the logical video plane - equivalent to 160 x 90 pixels in the Hybrid Broadcast Broadband TV application graphics plane. Terminals shall be able to scale video down to 1/4 by 1/4 and should be able to scale video down to 1/8 by 1/8. For sizes between 1/4 by 1/4 and 1/8 by 1/8, terminals which cannot scale video shall crop the video instead and display it centered in the according video object of the Hybrid Broadcast Broadband TV application graphics plane. Terminals shall be able to scale video up to 2 x 2 of the width and height of the logical video plane. Within these limits, any arbitrary scaling factor shall be allowed. The aspect ratio of decoded video shall be preserved such that all of the decoded video is visible within the area of the video/broadcast or AV Control object. The aspect ratio of the video shall be preserved at all scaling factors. See OIPF DAE Annex H.2 for more information. |

4.7.2 Errors in the example XML capabilities
Change the xml text in section 10.2.4 to:

```xml
```
4.7.3 Location of the DRM information in the XML capabilities

Modify the paragraph following Table 13 to:

The support of the DRM feature shall be indicated by the addition of one or more <drm> elements in the OIPF extension to the <profileList> as defined in section 9.3.10 and Annex F of the OIPF DAE specification [1] to the end of the profilelist element in the above XML. For example:

4.7.4 Sample application no longer provided

Section 10.2.5 is deleted.

4.7.5 Extensions to A/V object for parental rating errors

In clauses 10.2.6.3 and 10.2.6.4, the paragraphs beginning “If playback which was initiated by an Hybrid Broadcast Broadband TV application is blocked” shall be extended with “and an onParentalRatingChange event posted”.

4.8 Annex A – OIPF DAE Specification Profile

4.8.1 getSIDescriptors optional argument

Change Table A.1 in Annex A.1 to:
<table>
<thead>
<tr>
<th>Basics</th>
<th>7.16.2.1, 7.16.2.2</th>
<th>M(*)</th>
<th>Broadcast-related</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following properties are required:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- name</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- programmeID</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- programmeIDType</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- description</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- longDescription</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- startTime</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- channelID</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- parentalRatings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All other properties and methods are not included.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The constants defined in clause 7.16.2.1 shall be supported however support for CRIDs is outside the scope of the present document.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The following method is required for Programme objects returned by the programmes property of the video/broadcast object:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- getSIDescriptors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metadata extensions to Programme</th>
<th>7.16.2.3</th>
<th>NI</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The optional argument descriptorTagExtension to the method getSIDescriptors is mandatory when descriptorTag is 0x7f and ignored in all other cases.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DVB-SI extensions to Programme</th>
<th>7.16.2.4</th>
<th>NI M</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8.2 DVB-SI parental rating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change Table A.1 in Annex A.1 to:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The ParentalRatingScheme class

A scheme supporting DVB-SI age based rating shall be supported.

The description of the “dvb-si” rating scheme in the name property is changed to:

- the string value “dvb-si”: this means that the scheme of a minimum recommended age encoded as per ratings 0x01 to 0x0f in the parental rating descriptor from [EN300468], is used to represent the parental rating values.

NOTE: If the broadcaster defined range from 0x10 to 0xff is used then that would be a different parental rating scheme and not “dvb-si”.

4.8.3 Definition of programmeID

Change Table A.1 in Annex A.1 to:

<table>
<thead>
<tr>
<th>Programme, ScheduledRecording, Recording and Download</th>
<th>8.4.4</th>
<th>M(*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only for properties that are required by the present document. The property programmeID shall contain a DVB URI including the event id and not an integer.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.8.4 Clarify support for PlaySpeedChange

Change Table A.1 in Annex A.1 to:

<table>
<thead>
<tr>
<th>Extensions for recording and timeshift</th>
<th>7.13.2</th>
<th>M(*), M-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminals that support time-shift of broadcast video shall support the following events and properties even if they do not support the full PVR option:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- onRecordingEventRecordingEvent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- recordingState</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- playPosition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- onPlayPositionChanged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- playSpeed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- onPlaySpeedChanged</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extensions to AV object for</th>
<th>7.14.3</th>
<th>M(*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only the onPlayPositionChanged property and event and onPlaySpeedChanged properties and events are required.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

None
### 4.8.5 Missing channel.nid property

Change Table A.1 in Annex A.1 to:

| Channel class | 7.13.11 | M(*) | The following properties shall be supported:  
- channelType  
- ccid  
- dsd  
- nid  
- onid  
- tsid  
- sid  
- name  
All other properties and methods are not included. |
|---------------|---------|------|-----------------------------------------------------------------|

### 4.8.6 Misspelling of countryId

Change Table A.1 in Annex A.1 to:

| The Configuration class | 7.3.2 | M(*) | Support for read-only access to the following properties is mandatory:  
- preferredAudioLanguage  
- preferredSubtitleLanguage  
- preferredUILanguage  
- countryID countryId  
All other properties and methods are optional. |
|--------------------------|------|------|-----------------------------------------------------------------|

### 4.8.7 Incorrect section names

Change Table A.1 in Annex A.1 to:

<table>
<thead>
<tr>
<th>IMS Related Communication Services APIs</th>
<th>7.8</th>
<th>NI</th>
<th>None</th>
</tr>
</thead>
</table>

19 of 25
### Broadcast video Scheduled content and hybrid tuner APIs

| video/broadcast embedded object | 7.13.1 | M(*) | In the setChannel() method, the optional contentAccessDescriptorURL parameter may be ignored. The setVolume() and getVolume() methods are not included. The modifications in clause A.2.4 shall be supported. | See clause A.2.4 |
| Extensions to video/broadcast for recording and timeshift | 7.13.2 | M(*), M-P | Terminals that support time-shift of broadcast video shall support the following events and properties even if they do not support the full PVR option: - RecordingEvent - recordingState - playPosition - playSpeed | Broadcast-related |
| Extensions to video/broadcast for access to DVB-SI EIT p/f | 7.13.3 | M | | |

#### Extensions to video/broadcast for channel scan current channel information

| 7.13.7 | M | Access to the currentChannel property by broadcast-independent applications shall return null. | Broadcast-related |

#### Extensions to video/broadcast for creating Channel lists from SD&S fragments

| 7.13.8 | NI | | |

#### ChannelConfig object class

| 7.13.9 | M(*) | The channelList property shall be supported. Other properties, methods and events are not included. | Broadcast-related |

### IMS Communication Services API Support

| 9.3.9 | NI | | |

### 4.8.8 Incorrect references to DAE Annex B

Change Table A.1 in Annex A.1 to:

| 5.4 Compatibility with CEA-2027-A | B | M |
| 5.4 Window scripting object changes | B | M(*) | See clause A.2.8 |
| 5.4 Omit Window.download() | B | M |

| 5.7 addition modifications to 5.7.1.f and 5.7.1.g | B | M | None |

### 4.8.9 Missing window.onload property

Change the text in section A.2.8.1 to:

The window object shall be supported as defined in annex B of the OIPF DAE specification [1] except as follows. The following properties shall be supported on the window object:
4.8.10 Explicitly linking EIT to metadata search

Add new section A.2.9:

A.2.9 Access to EIT Schedule Information

The Metadata APIs listed in table A.1 of this document shall allow access to DVB-SI EIT event schedule information for the actual transport stream and for the other transport streams (as defined in EN 300 468 [16]) that are carried on the transport stream of the currently selected broadcast service, unless access to broadcast resources is suspended according to 6.2.2.7. The terminal shall use EIT-schedule information if it is present, or EIT-present/following information otherwise. If both EIT-schedule and EIT-present/following information are present, it is implementation dependent which shall be used in cases where there are conflicts.

4.8.11 Mandatory argument to sendDRMMessage

Change Table A.1 in Annex A.1 to:

| Content Service Protection AP | 7.6 | M-C, M-M | Mandatory if the DRM feature is supported or if the terminal supports CI+. The DRMSystemID argument for the sendDRMMessage method shall be specified and shall not be null. | Trusted |

4.8.12 Queue management on type change

Make the following change in Annex A.2.5:

Calling stop(), modifying the data and/or type property or entering the error state shall cause any queued media item to be discarded.

4.8.13 Audio from memory

Change Table A.1 in Annex A.1 to:

| Media control | 4.4.5 | M(*) | Shall be modified as defined in clause A.2.1. In addition, all references to playing audio from memory in this clause shall not apply. |

4.8.14 Remove use of display:none

In clause A.2.4.1, the following changes shall be made:

- The introduction to the clause shall have “a set of changes to the state machine” changed to “a set of changes to the state machine and following text”.
- The following text shall be added to the end of the clause
A video/broadcast object with a CSS rule of display:none shall not be loaded and hence shall not be decoding audio or video.

In clause A.2.5, the following changes shall be made:

- The current text of clause A.2.5 shall be renumbered to become A.2.5.1 by the insertion of a new heading “A.2.5.1 New queue method”.

A new clause A.2.10 shall be added as follows;

A.2.10 Modification to application visibility

Clause 4.4.6 of the OIPF DAE specification [1] suggests setting the BODY element of an application to display:none when it does not ever need to be visible. Instead of this method, it is suggested that visibility:hidden would be more appropriate.

4.8.15 Extensions to A/V object for parental rating errors

Change table A.1 in annex A.1 as shown;

| Extensions to A/V object for parental rating errors | 7.14.5 | O-M, M-D, M-P | The description of how a particular DRM technology integrates with the present document may make this mandatory | None |

4.8.16 ScheduledRecording constants not included

The following text shall be added before table A.1 in annex A.1.

Where constants are defined in in the OIPF specification as input parameters and/or return values for methods or as values for properties, these constants shall be supported if any method or property is supported that uses them and if the constant is not explicitly excluded by name above. Although the constants defined in the OIPF specification are expressed in JavaScript as properties, statements in the table above that “Only the following properties shall be supported” do not apply to these constants.

4.8.17 Copy/paste error in A.2.4.2

The following changes shall be made to the second paragraph of clause A.2.4.2.

Broadcast-related applications shall have full access to the video/broadcast object. If a new broadcast service is selected then this may result in the broadcast-related application being killed as defined in clause 6.2.2.24. As defined in clause 6.2.2.2, selecting Access to MPEG programs which are not broadcast services and which do not contain an AIT will not have these consequences cause the running broadcast-related application to be killed.

4.8.18 Changes to Extensions for playback of selected media components

Change Table A.1 in Annex A to;
4.8.19 Origins for carousel delivered applications
The following sentence shall be added at the end of clause A.2.8.1.

The support for XMLHttpRequest shall include cross-origin resource sharing (CORS) as defined in CORS [38].

4.8.20 Use of "may" in OIPF section 8.4.2
Change Table A.1 in Annex A to;

<table>
<thead>
<tr>
<th>AVComponent</th>
<th>8.4.2</th>
<th>M(*)</th>
</tr>
</thead>
</table>

Only for properties that are required by the present document. Statements that a property “may” be derived in a particular way shall be read as “shall” be derived in that way.

4.8.21 onPlaySpeedChanged - Should always dispatch when play() is called
Change Table A.1 in Annex A to;

<table>
<thead>
<tr>
<th>State diagram for A/V control objects</th>
<th>7.14.1.1</th>
<th>M(*)</th>
</tr>
</thead>
</table>

An onPlaySpeedChanged event shall be generated for all calls to the play() method regardless of the value returned by the method call and whether the play speed changes or not.

4.9 Annex B - Support for protected content delivered via broadband

4.9.1 Flags=0 is wrong
In clause B.2.5.1, in the definition of the syntax of the SampleEncryptionBox, “flags=0” shall read “flags”.

4.9.2 Broken reference in annex B
In clause B.1, the reference to “table 10 of the OIPF Metadata specification [18];” shall be replaced with “table 6 (“DRMControlInformation Type Semantics”) of the OIPF Metadata specification [18];”
4.10 Annex E – Profiles of MPEG DASH

4.10.1 Dynamic MPD served with cache control off

Add new text at the end of Annex E.2.1:

If a dynamic MPD is not served with "Cache-Control: no-cache" then terminals may not be able to acquire the updated version.

4.10.2 Missing text in E.4.2.1

Between the first set of numbered bullets and the lettered bullets, add the following text:

Notes:

4.10.3 Capitalisation of roles incorrect

In table E.2, “Role and Accessibility descriptor values for Audio Description”, in the “Role descriptor” column, “Alternate” shall be “alternate” and “Commentary” shall be “commentary”.

4.10.4 DASH video resolutions

In clause E.4.2.1, the following text;

4) Between Representations with the same full-screen resolution but different luminance resolutions as defined in table 9 “Table 9: Resolutions for Full-screen Display from 25 Hz H.264/AVC SDTV IRD and supported by 25 Hz H.264/AVC HDTV IRD, 50 Hz H.264/AVC HDTV IRD, 25 Hz SVC HDTV IRD and 50 Hz SVC HDTV IRD” and table 12 "Resolutions for Full-screen Display from H.264/AVC HDTV IRD and SVC HDTV IRD" of TS 101 154 [] (e.g. 1 920 × 1 080 and 1 440 × 1 080) (note b).

Shall be replaced as follows;

4) Between Representations with the same full-screen resolution but different luminance resolutions as follows
- as defined in clause 10.3 of the DVB DASH profile [35]
- The resolution of 720x576 for interlaced content only

4.10.5 Segment length

In E.3.2, “Segments shall be at least 1s long, except for the last segment in an MPD which may be shorter” shall be replaced with “Segments shall be at least 1s long, except for the last segment of a Period which may be shorter.”

4.10.6 Switching between representations

In clauses E.4.2.1 and E.4.2.2, “in the same Adaptation Set” shall be added as shown. In E.4.2.1;

During playback of adaptively streamed content encoded using AVC, terminals shall support transitions between video Representations in the same Adaptation Set as follows:

Likewise in E.4.2.2:
During playback of adaptively streamed content encoded using HE-AAC or E-AC3, terminals shall support transitions between audio Representations in the same Adaptation Set as follows: