

## IEC TC100 Advisory Group on Strategy

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# Current DVB activities relevant to IEC TC 100

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## Introduction

The Digital Video Broadcasting (DVB) project is in its 20. year of existence in 2013. Although many people thought that the standards efforts would come to an end already much earlier, there is still a considerable number of standards developments in progress. This short note shall give a snap-shot to inform the members of the IEC TC 100 AGS about the current status.

Just to recall the mode of operation of DVB: there are always two steps: 1. A collection of Commercial Requirements for a specific standards project, and 2. The technical design of the needed standards to meet the requirements approved under 1.

## UHDTV

Ultra High Definition TV (also known as 4k, UHD-1) is the most recent topic of discussion. Here DVB recently joined forces with the European Broadcasting Union (EBU) to organize a fact finding workshop (to take place in London on May 23 and 24, 2013). Following that workshop, the collection of Commercial Requirements shall be the next step before any technical work will be started.

Obviously, there is considerable interest to have the potential DVB standards seamlessly interoperating with other standards already existing (e.g. ITU-R BT.2020) or under development in other standards organizations (SMPTE, ISI/IEC JTC1 WG11 (MPEG), ...)

## 3DTV

A first DVB three-part standard (TS 101 547) for frame-compatible transmission of 3DTV and service compatible transmission of 3DTV does exist. Given the commercial discussion about other potential deployments, there is an ongoing discussion whether a Frame-compatible compatible transmission is also of interest. That discussion has not come to a firm conclusion yet.

In order to have 3DTV services on air with good quality and not interfering with 2D only legacy receivers, several existing DVB standards were amended. In particular the standard on subtitling (ETSI EN 300 743 V1.4.1 (2011-10)) needed an additional chapter dedicated to 3D services.

## AVC Guidelines

Given the new application areas of 3DTV and UHD TV, the guidelines how to use the appropriate encoding standards for audio and video is also under continuous review and updating. Here especially the recent publication of H.265 (or MPEG HEVC) is one of the focus points. The DVB-AVC group is the experts body that works on the optimum choice of parameters for the use of the various standardized coding mechanisms in the digital broadcasting context.

The standard "Digital Video Broadcasting (DVB): Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream (ETSI TS 101 154 V1.11.1 (2012-11)) is now published in its 11th version.

## Next Generation Satellite Modulation

The modulation mechanisms for digital transmission (DVB-S, DVB-C, DVB-T) have all been succeeded by a second generation modulation (DVB-S2, DVB-C2, DVB-T2) of higher efficiency, all of them are in wide-spread commercial use all over the world right now.

A chapter was added on wideband transponders to facilitate satellite broadband receivers in Ka band.

The most recent discussion in DVB focusses on the question whether a further improvement of the satellite modulation is feasible. A current study mission is working on a method that shall increase the potential transmission bitrate by another 15 – 30%.

## Internet Protocol transmission

The existing set of DVB standards for Internet Protocol transmission is being worked on to create new versions. This shall enable a streamlining with other standards from the Open IPTV Forum, Hybrid Broadcast Broadband TV (HbbTV) and the UK Digital Television Group (UK DTG). The DVB-IPTV 1.6 specification is expected to be completed by end of 2013.

Furthermore, the DVB IPTV standards are modified in order to support IPv6 when it will be rolled-out.

Finally, there is work on a set of harmonized standards for IP based transmission of content in walled-garden set-ups as well as over the open Internet (over-the-top).

## Common Interface

The technical work on the Common Interface (CI) Plus 1.4 has been re-integrated into the DVB framework. Before that the standard had been developed by an outside entity called Ciplus llp.

While the Cplus v 1.4 technical specification is nearing completion, the Commercial Requirements collection on CI Plus 2.0 is ongoing. Here the most important question is to find a new form factor since the PCMCIA card with its multi-pin interface is no longer adequate.

## Companion Screen

The most recent activity in DVB is looking into the need of DVB standards for use of second screen applications in the consumer's house. Most obviously, there is the need of Discovery of, Identification of and Synchronisation with second screen devices that shall be used together with the main living room TV set.

Here currently an intensive discussion about commercial requirements is taking place. In parallel a study mission has pulled together a status report about the technologies existing and first deployments rolled-out into the market.






## Summary






This short note gives an overview about the currently active standards discussion within DVB with relevance to IEC TC 100. It goes without saying that it should be of interest to have IEC standards for devices and DVB standards for transmission as streamlined and in synch as possible. This is especially valid for the new topics of 3DTV, UHDTV, and Companion Screen.




















The annex provides a list of the DVB standards that have been published by ETSI in the years 2012 and 2013.

Annex:

List of DVB Standards published by ETSI in the years 2012/2013

	IDENTIFICATION	TITLE (Formal & Working)	STATUS
1 	Doc. Nb. <b>EN 302 755</b> Ver. 1.3.1 Ref. <b>REN/JTC-DVB-308</b> Technical Body: <b>BROADCAST</b> <a href="#">Details and Download</a>	<b>Digital Video Broadcasting (DVB); Frame structure channel coding and modulation for a second generation digital terrestrial television broadcasting system (DVB-T2)</b>  DVB-T2 Mixed mode	<b>Published</b>  Current Status: <a href="#">Publication (2012-04-13)</a>
2 	Doc. Nb. <b>EN 302 307</b> Ver. 1.3.1 Ref. <b>REN/JTC-DVB-319</b> Technical Body: <b>BROADCAST</b> Directives: <a href="#">Details and Download</a>	<b>Digital Video Broadcasting (DVB); Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications (DVB-S2)</b>  DVB-S2 wideband	<b>Published</b>  Current Status: <a href="#">Publication (2013-03-08)</a>
3 	Doc. Nb. <b>EN 301 545-2</b> Ver. 1.1.1 Ref. <b>DEN/JTC-DVB-295-2</b> Technical Body: <b>BROADCAST</b> <a href="#">Details and Download</a>	<b>Digital Video Broadcasting (DVB); Second Generation DVB Interactive Satellite System (DVB-RCS2); Part 2: Lower Layers for Satellite standard</b> DVB-RCS2 LLS	<b>Published</b>  Current Status: <a href="#">Publication (2012-01-09)</a>
4 	Doc. Nb. <b>EN 300 468</b> Ver. 1.13.1 Ref. <b>REN/JTC-DVB-314</b> Technical Body: <b>BROADCAST</b> <a href="#">Details and Download</a>	<b>Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems</b>  DVB-SI	<b>Published</b>  Current Status: <a href="#">Publication (2012-08-16)</a>

<p>5</p> <p><del>FINALIZED</del></p>	<p>Doc. Nb. <a href="#">TS 103 127</a> Ver. 1.1.1  Ref. <a href="#">DTS/JTC-DVB-322</a>  Technical Body: <a href="#">BROADCAST</a>  <a href="#">Details and Download</a></p>	<p>Digital Video Broadcasting (DVB);  Content Scrambling Algorithms for DVB-IPTV Services using MPEG2 Transport Streams</p> <p>DVB-IPTV-Scrambler</p>	<p><b>Published</b>   Current Status:  <a href="#">Publication (2013-05-15)</a></p>
<p>6</p> <p><del>FINALIZED</del></p>	<p>Doc. Nb. <a href="#">TS 102 851</a> Ver. 1.3.1  Ref. <a href="#">RTS/JTC-DVB-311</a>  Technical Body: <a href="#">BROADCAST</a>  <a href="#">Details and Download</a></p>	<p>Digital Video Broadcasting (DVB);  Uniform Resource Identifiers (URI) for DVB Systems</p> <p>DVB-URI</p>	<p><b>Published</b>   Current Status:  <a href="#">Publication (2012-01-05)</a></p>
<p>7</p> <p><del>FINALIZED</del></p>	<p>Doc. Nb. <a href="#">TS 102 831</a> Ver. 1.2.1  Ref. <a href="#">RTS/JTC-DVB-316</a>  Technical Body: <a href="#">BROADCAST</a>  <a href="#">Details and Download</a></p>	<p>Digital Video Broadcasting (DVB);  Implementation guidelines for a second generation digital terrestrial television broadcasting system (DVB-T2)</p> <p>DVB-T2 IG v1.2.1</p>	<p><b>Published</b>   Current Status:  <a href="#">Publication (2012-08-29)</a></p>
<p>8</p> <p><del>FINALIZED</del></p>	<p>Doc. Nb. <a href="#">TS 102 812</a> Ver. 1.3.1  Ref. <a href="#">RTS/JTC-DVB-172</a>  Technical Body: <a href="#">BROADCAST</a>  <a href="#">Details and Download</a></p>	<p>Digital Video Broadcasting (DVB);  Multimedia Home Platform (MHP) Specification 1.1.3</p> <p>Multimedia Home Platform (MHP) Specification 1.1.3</p>	<p><b>Published</b>   Current Status:  <a href="#">Publication (2012-05-09)</a></p>
<p>9</p> <p><del>FINALIZED</del></p>	<p>Doc. Nb. <a href="#">TS 102 773</a> Ver. 1.3.1  Ref. <a href="#">RTS/JTC-DVB-312</a>  Technical Body: <a href="#">BROADCAST</a>  <a href="#">Details and Download</a></p>	<p>Digital Video Broadcasting (DVB);  Modulator Interface (T2-MI) for a second generation digital terrestrial television broadcasting system (DVB-T2)</p> <p>DVB-T2 MI v1.3.1</p>	<p><b>Published</b>   Current Status:  <a href="#">Publication (2012-01-05)</a></p>
<p>10</p> <p><del>FINALIZED</del></p>	<p>Doc. Nb. <a href="#">TS 102 323</a> Ver. 1.5.1  Ref. <a href="#">RTS/JTC-DVB-310</a></p>	<p>Digital Video Broadcasting (DVB);</p>	<p><b>Published</b>   Current Status:</p>

	Technical Body: <b><u>BROADCAST</u></b> <b><u>Details and Download</u></b>	<b>Carriage and signalling of TV-Anytime information in DVB transport streams</b>  DVB TV Anytime	<b><u>Publication (2012-01-05)</u></b>
11 	Doc. Nb. <b><u>TS 101 600</u></b> Ver. 1.1.1 Ref. <b><u>DTS/JTC-DVB-317</u></b> Technical Body: <b><u>BROADCAST</u></b> <b><u>Details and Download</u></b>	<b>Digital Video Broadcasting (DVB); GEM Profile for Plano-Stereoscopic 3DTV</b>  DVB-GEM 3D APIs	<b>Published</b>    Current Status: <b><u>Publication (2012-05-03)</u></b>
12 	Doc. Nb. <b><u>TS 101 547-3</u></b> Ver. 1.1.1 Ref. <b><u>DTS/JTC-DVB-321-3</u></b> Technical Body: <b><u>BROADCAST</u></b> Directives: <b><u>Details and Download</u></b>	<b>Digital Video Broadcasting (DVB); Plano-stereoscopic 3DTV; Part 3: HDTV Service Compatible Plano-stereoscopic 3DTV</b> DVB 3DTV Multipart	<b>Published</b>   Current Status: <b><u>Publication (2012-11-22)</u></b>
13 	Doc. Nb. <b><u>TS 101 547-2</u></b> Ver. 1.2.1 Ref. <b><u>RTS/JTC-DVB-321-2</u></b> Technical Body: <b><u>BROADCAST</u></b> Directives: <b><u>Details and Download</u></b>	<b>Digital Video Broadcasting (DVB); Plano-stereoscopic 3DTV; Part 2: Frame Compatible Plano-stereoscopic 3DTV</b> DVB 3DTV	<b>Published</b>   Current Status: <b><u>Publication (2012-11-22)</u></b>
14 	Doc. Nb. <b><u>TS 101 547-1</u></b> Ver. 1.1.1 Ref. <b><u>DTS/JTC-DVB-321-1</u></b> Technical Body: <b><u>BROADCAST</u></b> Directives: <b><u>Details and Download</u></b>	<b>Digital Video Broadcasting (DVB); Plano-stereoscopic 3DTV; Part 1: Overview of the multipart</b> DVB 3DTV Multipart	<b>Published</b>   Current Status: <b><u>Publication (2012-11-22)</u></b>
15 	Doc. Nb. <b><u>TS 101 547</u></b> Ver. 1.1.1 Ref. <b><u>DTS/JTC-DVB-296</u></b> Technical Body: <b><u>BROADCAST</u></b> <b><u>Details and Download</u></b>	<b>Digital Video Broadcasting (DVB); Frame Compatible Plano-stereoscopic 3DTV</b>  DVB 3D Phase 1	<b>Published</b>   Current Status: <b><u>Publication (2012-01-31)</u></b>
16 	Doc. Nb. <b><u>TS 101 545-3</u></b> Ver. 1.1.1 Ref. <b><u>DTS/JTC-DVB-295-3</u></b> Technical Body: <b><u>BROADCAST</u></b> <b><u>Details and Download</u></b>	<b>Digital Video Broadcasting (DVB); Second Generation DVB Interactive Satellite System</b>	<b>Published</b>   Current Status: <b><u>Publication (2012-05-03)</u></b>

		(DVB-RCS2); Part 3: Higher Layers Satellite Specification DVB-RCS2 HLS	
17 	Doc. Nb. <u>TS 101 545-1</u> Ver. 1.1.1 Ref. <u>DTS/JTC-DVB-295-1</u> Technical Body: <u>BROADCAST</u> <u>Details and Download</u>	Digital Video Broadcasting (DVB); Second Generation DVB Interactive Satellite System (DVB-RCS2); Part 1: Overview and System Level specification DVB-RCS2 OSL	<b>Published</b>  Current Status: <u>Publication (2012-05-03)</u>
18 	Doc. Nb. <u>TS 101 211</u> Ver. 1.11.2 Ref. <u>RTS/JTC-DVB-318</u> Technical Body: <u>BROADCAST</u> <u>Details and Download</u>	Digital Video Broadcasting (DVB); Guidelines on implementation and usage of Service Information (SI)  DVB-SI Guidelines	<b>Published</b>  Current Status: <u>Publication (2012-05-16)</u>
19 	Doc. Nb. <u>TS 101 211</u> Ver. 1.11.1 Ref. <u>RTS/JTC-DVB-313</u> Technical Body: <u>BROADCAST</u> <u>Details and Download</u>	Digital Video Broadcasting (DVB); Guidelines on implementation and usage of Service Information (SI)  DVB-SI Guidelines	<b>Published</b>  Current Status: <u>Publication (2012-04-12)</u>
20 	Doc. Nb. <u>TS 101 162</u> Ver. 1.5.1 Ref. <u>RTS/JTC-DVB-309</u> Technical Body: <u>BROADCAST</u> <u>Details and Download</u>	Digital Video Broadcasting (DVB); Allocation of identifiers and codes for Digital Video Broadcasting (DVB) systems  DVB-SI Allocation	<b>Published</b>  Current Status: <u>Publication (2012-01-05)</u>
21 	Doc. Nb. <u>TS 101 154</u> Ver. 1.11.1 Ref. <u>RTS/JTC-DVB-320</u> Technical Body: <u>BROADCAST</u> Directives: <u>Details and Download</u>	Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream	<b>Published</b>  Current Status: <u>Publication (2012-11-22)</u>

		MPEG IG v11	
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