dpp

digital production partnership

SUBTITLE EXCHANGE FORMAT (DPP-EBU-TT)

Version 2.0

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Conformance Notation*

This document contains both normative text and informative text.

All text is normative except for that in the Introduction, any section explicitly labelled as 'Informative' or individual paragraphs which start with 'Note':

Normative text describes indispensable or mandatory elements. It contains the conformance keywords 'shall', 'should' or 'may', defined as follows:

SHALL and **SHALL NOT**:	Indicate requirements to be followed strictly and from which no deviation is permitted in order to conform to the document.
SHOULD and **SHOULD NOT**:	Indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others. **OR** indicate that a certain course of action is preferred but not necessarily required. **OR** indicate that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.
MAY and **NEED NOT**	Indicate a course of action permissible within the limits of the document.

Default identifies mandatory (in phrases containing "shall") or recommended (in phrases containing "should") presets that can, optionally, be overwritten by user action or supplemented with other options in advanced applications. Mandatory defaults must be supported. The support of recommended defaults is preferred, but not necessarily required.

Informative text is potentially helpful to the user, but it is not indispensable and it does not affect the normative text. Informative text does not contain any conformance keywords.

* The DPP wishes to thank the EBU for their kind permission to use this conformance notation wording.

Introduction

CONTEXT

UK broadcasters are required under Ofcom regulation to provide access services alongside television programmes, including closed caption subtitles for the hard of hearing and audio description.

Typically this requirement is met for pre-recorded content by commissioning the production of subtitle documents or audio description audio tracks from a specialist provider or by purchasing an existing document from another broadcaster or content distributor. These documents are then transcoded by broadcast distribution systems to suit the destination platform, e.g. into Teletext or DVB subtitles. Several file or document formats exist to support this transfer, including EBU STL (Tech 3264-E, last revised in 1991)[3] . Live subtitles are not transferred in this way and technical challenges can prevent archival of live subtitles in STL.

The EBU published a new subtitle document format in July 2012 called EBU-TT (EBU Tech 3350)[1], which constrains and extends the W3C TTML[4] 1.0 Recommendation, itself a form of XML. In preparing EBU-TT (part 1) the EBU considered the usage and requirements met by STL and ensured that the specification is sufficient to allow STL documents to be transcoded into EBU-TT without loss of information. EBU-TT Part 2[2] provides guidance for this conversion.

EBU-TT can in principle be used to carry not only prepared subtitles but also archived live subtitles and scripts used in the production of audio description tracks. However extra metadata is required to allow EBU-TT documents of these types to be distinguished. Additionally some UK broadcasters need to identify the original programme version for which any single document was prepared, a feature not present in the current version of EBU-TT Part 1.[1]

The DPP created this specification for the archive and exchange of subtitle documents and audio description scripts based on minimal usage of EBU-TT features and extension metadata to support UK broadcaster's requirements for subtitle and audio description script transfer.

This document format should be used in place of STL when both sender and recipient have the capability to support it.

SCOPE

This document defines the DPP specification for delivery and exchange of subtitle and audio description documents from authoring organisations ("Access Services Providers") to playout organisations ("Broadcasters") and between Broadcasters.

Currently in draft form, planned for publication as EBU Tech 3360 [2]

Specification

1. The documents **SHALL** be EBU-TT Part 1 documents that conform to the EBU Tech 3350[1] specification.

2. The documents **SHALL** be valid DPP-TT documents and validate against the DPP-TT XSD schema.

3. The documents **SHOULD** include an embedded STL (EBU Tech 3264) [3] binary document.

   Note: This recommendation will remain valid while most playout organisations are using equipment that cannot natively play EBU-TT documents but can play STL documents. It is intended that this recommendation will be deprecated in the future to 'may include'.

4. The documents **SHALL** include the elements and attributes listed as Mandatory in Appendix A.

   4.1 Prepared subtitle documents **SHALL** include the elements and attributes listed as Mandatory where there is an 'x' in the "Subs Prerec" column in Appendix A.

   4.2 Captured live subtitle documents **SHALL** include the elements and attributes listed as Mandatory where there is an 'x' in the "Subs Live" column in Appendix A.

   4.3 Audio description script documents **SHALL** include the elements and attributes listed as Mandatory where there is an 'x' in the "AD Script" column in Appendix A.

   4.4 When present, those elements and attributes listed within the dpptt namespace, or equivalently those whose qualified name begins "dpptt:" with the exception of dpptt:authoredReleaseStyle, **SHALL** be located within the metadata element that is a child of the tt:head element.

   4.5 The element dpptt:authoredReleaseStyle **MAY** be located within any metadata element that is a child of the tt:body, tt:div or tt:p elements.

5. The documents **MAY** include the elements and attributes listed as Optional in Appendix A.

   5.1 The metadata elements and attributes in Table 1 **SHALL**, if included in a DPP-TT document, match their equivalent value in the DPP programme metadata specification, as listed in Table 1:

TABLE 1

DPP-TT name	DPP Programme metadata equivalent
dpptt:programmeId	Production Number
dpptt:otherId identifier and type	Other Identifier and Other Identifier Type
ebuttm:documentOriginalProgrammeTitle	Programme Title
ebuttm:documentOriginalEpisodeTitle	Episode Title/Episode No

Note: The metadata elements and attributes listed in Appendix A are intended to facilitate exchange, asset management and processing workflows.

Specification (continued)

Note: The metadata elements and attributes listed in Appendix A include those originating in W3C TTML [4], in EBU-TT part 1 [1] and those additionally specified by DPP within this document.

6. The documents **MAY** include additional elements and attributes within a local (non-DPP) namespace, as far as these are permitted in EBU-TT.

    Note: EBU-TT permits elements and attributes defined in other namespaces to be located within metadata elements only, regardless of where those metadata elements occur within the document.

    6.1   The DPP-defined elements shown as permitting "[mixed content]" in the Values permitted column in Appendix A **MAY** be extended to include child elements within a local (non-DPP) namespace.

7. For documents whose timecodeType is timeOfDay the begin and end times within the document **SHOULD** be expressed in UTC.

References

[1]   EBU-TT Part 1 (EBU Tech 3350):   **http://tech.ebu.ch/docs/tech/tech3350.pdf**

[2]   EBU-TT Part 2 (EBU Tech 3360):   **http://tech.ebu.ch/docs/tech/tech3360.pdf**

[3]   STL (EBU Tech 3264-e):   **http://tech.ebu.ch/docs/tech/tech3264.pdf**

[4]   W3C TTML 1 (Second Edition):   **http://www.w3.org/TR/ttml1/**

[5]   DPP Minimum Metadata: **http://www.digitalproductionpartnership.co.uk/download/minimum-metadata-set/**

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Appendix A: Metadata Elements

TTML metadata elements and attributes for DPP subtitle and AD contribution, and the programme metadata equivalents

Rows highlighted thus have DPP programme metadata equivalents that must be identical

Cardinality: min..max
If min=0 field is optional (within schema only),
If max=* any number of values can be included.

APPLICABLE TO:

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	Subs Prerec	Subs Live	AD Script	Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
DPP	dpptt:schemaVersion	M	1..1	x	x	x	v1.0		The version of the DPP schema used for this document. NB the value has no relationship to the DPP Shim Version.	**Similar concept to Shim Version** (see also ebuttm:documentEbuttVersion)
DPP	dpptt:timedTextType	M	1..1	x	x	x	preRecorded audioDescription recordedLive editedLive		Used to distinguish between subtitles and audio description scripts, and within subtitles, whether they were prepared in advance, created live, or created live and then edited.	
DPP	dpptt:timecodeType	M	1..1	x	x	x	programme timeOfDay		Used to specify if the timecode in the file is programme time code or time of day, the latter expected to be used for live captured subtitles only.	
DPP	dpptt:programmeId	**M** if programme is identified, otherwise **O**	0..1	x	x	x	[string]		Identifier of the programme for which this document was created. The dpptt:programmeId value must match the DPP programme metadata Production Number value if present. NB there are some broadcasters who archive live-captured subtitles for programmes that are not conventionally scheduled and do not have conformant production numbers.	**Production Number**

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	APPLICABLE TO: Subs Prerec	Subs Live	AD Script	Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
DPP	dpptt:otherId	O	0..*	x	x	x	[string]	type [string] e.g. tapeNumber or fabricId	Mandatory for programmes with IDs. The dpptt:otherId value pairs (type + identifier) must match the DPP metadata Other Identifier and Other Identifier Type where present.	**Other Identifier + Other Identifier Type**
DPP	dpptt:houseStyle	O	0..*	-	x	-	[mixed content]	owner [xs:NCName]	Name and identifier of the house style, i.e. automatic word replacements etc. used during creation of this document.	
DPP	dpptt:recordedLiveService	**M** for live-created subtitles, otherwise **O**	0..*	-	x	-	[mixed content] - list of services	start dateTime end dateTime	Mandatory for live-created subtitles. Identifies the services on which the live subtitles were broadcast	
DPP	dpptt:OriginalADVoicer	**M** for AD scripts only	0..1	-	-	x	[string]		Name of the actor who voiced the AD soundtrack originally created from this script. NB references to the WAV files are captured within the metadata in the <body>, additionally.	

| Source Spec | Element Name | Optional/ Mandatory for DPP | Schema Cardinality | APPLICABLE TO: | | | Values Permitted | Attributes | Notes | Equivalent DPP Programme Metadata Entity |
				Subs Prerec	Subs Live	AD Script				
DPP	dpptt:authoredReleaseStyle	O	0..1	x	x	-	block scrolling		Indicates whether the subtitles contained in the associated content element were authored for release in block (i.e. line by line) or scrolling (word by word) style. This element may be present as a child of the <metadata> element whose parent is any of the content elements <body>, <div> or <p>. Its value is taken as inherited, so for example if specified as "block" on the body then every div element that does not specify this value as "scrolling" is implied also to have the value "block". This element has no initial value, and is metadata only. It has no effect on presentation or validation.	
EBU	ebuttm:documentEbuttVersion	M	1..1	x	x	x	v1.0		The version of the EBU-TT standard used by the document instance.	
EBU	ebuttm:documentIdentifier	M	0..1	x	x	x	[string]		This identifier is for the document as opposed to the programme for which the document contains information. Some broadcasters may choose to make this coincident with the programme identifier for convenience.	
EBU	ebuttm:documentOriginatingSystem	M	0..1	x	x	x	[string] e.g. "WinCaps Qu4ntum v5.0"		Software and version used to create the EBU-TT document.	

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	APPLICABLE TO: Subs Prerec	Subs Live	AD Script	Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
TTML	ttm:copyright	M	0..1	x	x	x	[string]		This attribute defines the copyright that applies to the document, and must be located on the <tt:head> element. Where different copyright applies to a subsection of the file, e.g. for song lyrics, it is permissible to specify a more local copyright value e.g. on a <div> element.	
EBU	ebuttm:documentReadingSpeed	M	0..1	x	x	-	number		The intended reading speed for the subtitles in words per minute. This is mandatory to support regulatory reporting requirements.	
EBU	ebuttm:documentTargetAspectRatio	M	0..1	x	x	-	[string] e.g. "16:9"		The aspect ratio of the video the EBU-TT document was authored for, in width by height. This should match the DPP programme metadata Picture Ratio value but only if the same aspect ratio was used to author the subtitles. If the programme version's aspect ratio is different to the subtitle authoring aspect ratio the subtitle authoring aspect ratio value should be used.	

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	APPLICABLE TO: Subs Prerec	Subs Live	AD Script	Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
EBU	ebuttm:documentTargetActiveFormatDescriptor	O	0..1	-	-	-	[string]		EBU documentation: "The code for the Active Format Descriptor (AFD) that specifies the active image in the active video (see "Definitions of terms"). The code shall be one of the AFD codes specified in SMPTE ST 2016 1:2009 "Format for Active Format Description and Bar Data" Table 1." The DPP permits the values 9, 10 and 14 for the AFD metadata field. If present, this should match the DPP value but this is not essential. It should reflect what the subtitles were authored to, which may be different from the delivered programme version.	**AFD**
EBU	ebuttm:documentIntendedTargetBarData	O	0..1	-	-	-	topBottom or leftRight pairs of non-negative integers		EBU documentation: "When an ebuttm:documentTargetActiveFormatDescriptor element is used in an EBU-TT document, an ebuttm:documentIntendedTargetBarData element may be used whenever the AFD alone is insufficient to describe the extent of the image (i.e. AFD values 0000 and 0100). The Bar Data shall be specified in accordance with SMPTE ST 2016 1:2009 "Format for Active Format Description and Bar Data" Table 3."	

| Source Spec | Element Name | Optional/ Mandatory for DPP | Schema Cardinality | APPLICABLE TO: | | | Values Permitted | Attributes | Notes | Equivalent DPP Programme Metadata Entity |
				Subs Prerec	Subs Live	AD Script				
EBU	ebuttm:documentIntendedTargetFormat	M	0..1	x	x	x	[string]	link [to a URI reference to a term in a classification scheme]	Indicates the subtitle format an author had in mind when authoring an EBU-TT document or transforming another format to an EBU-TT document. Examples include "WSTTeletextSubtitles" or "AudioDescription". Other sensible values should be used if appropriate.	
EBU	ebuttm:documentOriginalProgrammeTitle	M	0..1	x	x	x	[string]		The programme title in the original language. STL mapping: Original Programme Title (OPT). This value must match the DPP programme metadata Programme Title value provided. Should the programme title subsequently be changed this is expected to generate a new version; however the Programme Title is present in the subtitle document for information and is not a master source of the value. Production Number should be the key used to match subtitles with programme versions.	**Programme Title**

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	APPLICABLE TO:			Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
				Subs Prerec	Subs Live	AD Script				
EBU	ebuttm:documentOriginalEpisodeTitle	M	0..1	x	x	x	[string]		The title of the episode of the programme in the original language. STL mapping: Original Episode Title (OET). This value must match the DPP programme metadata Episode Title/Episode No value provided. Should the episode title or number subsequently be changed this is expected to generate a new version; however the Episode Title/No is present in the subtitle document for information and is not a master source of the value. Production Number should be the key used to match subtitles with programme versions.	**Episode Title/ Episode No**
EBU	ebuttm:documentTranslatedProgrammeTitle	O	0..1	-	-	-	[string]		The programme title in the local language. STL mapping: Translated Programme Title (TPT).	
EBU	ebuttm:documentTranslatedEpisodeTitle	O	0..1	-	-	-	[string]		The title of the episode of the programme in the local language. STL mapping: Translated Episode Title (TET).	

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	APPLICABLE TO:			Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
				Subs Prerec	Subs Live	AD Script				
EBU	ebuttm:documentTranslatorsName	O	0..1	-	-	-	[string]		Name of the translator. STL mapping: Translator's Name (TN).	
EBU	ebuttm:documentTranslatorsContactDetails	O	0..1	-	-	-	[string]		The translator's contact details. STL mapping: Translator's Contact Details (TCD).	
EBU	ebuttm:documentSubtitleListReferenceCode	O	0..1	x	-	-	[string]		This is provided for workflow compatibility reasons only and should be considered secondary to the other programme and document identifiers defined above. Free-format character string which may be used to provide an additional reference for the subtitle list. Note: This attribute is provided to support conversion of STL subtitle files and to retain the metadata from the GSI block. STL mapping: Subtitle List Reference Code (SLR)	
EBU	ebuttm:documentCreationDate	M	0..1	x	x	x	date		The date of creation of the EBU-TT document. STL mapping: Creation Date (CD).	

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	APPLICABLE TO:			Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
				Subs Prerec	Subs Live	AD Script				
EBU	ebuttm:documentRevisionDate	O	0..1	x	-	-	date		We expect revisions only for pre-recorded subtitle documents, not live subtitles or audio description. The date of the most-recent modifications to the EBU-TT document. STL mapping: Revision Date (RD).	
EBU	ebuttm:documentRevisionNumber	M	0..1	x	x	x	non-negative integer		We expect revisions only for pre-recorded subtitle documents, so the revision number for live subtitles and AD scripts is expected to be 1. The revision number of the EBU-TT document may be used to specify a particular version of the subtitle list. STL mapping: Revision Number (RN).	
EBU	ebuttm:documentTotalNumberOfSubtitles	M	0..1	x	x	-	non-negative integer		Included for 'sanity checking' subtitles only. The number of subtitles. STL mapping: Total Number of Subtitles (TNS).	

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	APPLICABLE TO: Subs Prerec	Subs Live	AD Script	Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
EBU	ebuttm:documentMaximumNumberOfDisplayableCharacterInAnyRow	M	0..1	x	x	-	non-negative integer, usually 40		Value of 40 reflects Teletext subtitles (though in practice the actual number is probably 37 due to control codes). Maximum number of displayable rows per television frame, which could be occupied at any one time by the subtitles, defined in the TTI blocks. STL mapping: Maximum Number of Displayable Characters in any text row (MNC).	
EBU	ebuttm:documentStartOfProgramme	M for pre-recorded subtitles only	0..1	x	-	-	SMPTE timecode		Only required for pre-recorded subtitles. The time code of the first frame of the recorded video signal, which is intended for transmission. Note: When the referenced start timecode of the video material the subtitles were authored for is greater than 00:00:00:00 (e.g. 10:00:00:00) it is recommended to specify the attribute ebuttm:documentStartOfPrograme. STL mapping: Timecode: Start-of-Programme (TCP).	
EBU	ebuttm:documentCountryOfOrigin	M	0..1	x	x	-	[string] e.g. "UK"		The country of origin of the subtitle list. STL mapping: Country of Origin (CO).	

Source Spec	Element Name	Optional/ Mandatory for DPP	Schema Cardinality	Subs Prerec	Subs Live	AD Script	Values Permitted	Attributes	Notes	Equivalent DPP Programme Metadata Entity
				APPLICABLE TO:						
EBU	ebuttm:documentPublisher	M	0..1	x	x	x	[string]		Name of the publisher of the subtitle list. STL mapping: Publisher (PUB).	
EBU	ebuttm:documentEditorsName	M	0..1	x	x	x	[string]		Name of the editor of the subtitle list. STL mapping: Editor's Name (EN).	
EBU	ebuttm:documentEditorsContactDetails	-	0..1	-	-	-	[string]		Information about the editor named in the metadata element documentEditorsName. STL mapping: Editor's Contact Details (ECD).	
EBU	ebuttm:documentUserDefinedArea	-	0..1	-	-	-	[string]		This field may be used to carry information about the programme or subtitle list, or other relevant details. STL mapping: User-Defined Area (UDA).	
TTML	ttm:agent	O	0..*	x	-	-	Contains ttm:name @type="other", contents are a string containing the person's name.	type= "person"	See TTML spec for details at http://www.w3.org/TR/ttaf1-dfxp/#metadata-vocabulary-agent This element is for the description of people whose dialogue is subtitled within a programme. Actor names and agent types more specific than "other" are not required	