Federal Agencies Digital Guidelines Initiative

Change List for AS-07: MXF Archive and Preservation Format Application Specification

This document lists changes to the specification text between the June 2016 version and the current version published in September 2017. Both versions are available from http://www.digitizationguidelines.gov/guidelines/MXF_app_spec.html

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Section Number /Page Number	Section/Paragraph	June 2016 version	Revised for September 8, 2017 version
Throughout	Throughout document	Federal Agencies Digitization Guidelines Initiative	Federal Agencies Digital Guidelines Initiative
Throughout	Footer text	Copyright © 2016 AMWA.	(Removal of Copyright notice because works of the US federal government are not covered by Copyright.)
Throughout	Footer text	(n/a)	Notes: This document builds upon the AS-07: MXF Archive & Preservation Proposed Specification published by the Advance Media Workflow Association (AMWA) in 2016. Following the rules of the CC BY-SA 4.0 license for adapted material, this updated document continues with the same CC BY-SA 4.0 license as the 2016 AMWA Proposed Specification document.
p. 1	Document Status	This document is an AMWA Proposed Specification, and the project leaders request discussion and suggestions for improvements.	This document is an Application Specification published by the Federal Agencies Digital Guidelines Initiative (FADGI), and the project leaders request discussion and suggestions for improvements.
p. 1	Abstract	Among other features, AS-07 defines a means for the carriage and labeling of multiple timecodes, the handling of captions, subtitles, and Timed Text; a minimal core metadata set; program segmentation metadata; and	Among other features, AS-07 defines a means for the carriage and labeling of multiple timecodes and **audio tracks;** the handling of captions, subtitles, and Timed Text; a minimal core metadata set; program segmentation metadata;

		embedded content integrity data.	and embedded content integrity data. (In addition, Cube-Tec was added to the list of participants and the name of AVPreserve was updated)
p. 2	Document History	(n/a)	Added link to July 2016 version
p. 2	Legacy Elements in AS-07	(n/a)	Added: Although this project has now moved back under the FADGI portfolio, these elements and naming conventions will continue.
6.4.3.2.1.1	Timecode Header Label Descriptor (informative)	The DateTimeDescriptor for AS-07 is derived from the one specified by ST 385 table 3. The list of properties of the DateTimeDescriptor, which is derived from ST 385 table 3 and updated to match ST 377-1:2011 is provided in appendix C.3. Note that a single DateTimeDescriptor can simultaneously describe a Timecode Track, an Essence Timecode, and a SystemItem Timecode, with one DateTimeSubdescriptor for each. The LinkedTrackID property specifies the ID of the Timecode Track that is described; the DateTimeEmbedded flag indicates if the timecode data is also embedded in the essence, at the DateTimeEssenceTrackID and DateTimeChannelID given in that subdescriptor; and the distinguished value 0 together with the DateTimeChannelID describe the instance within the SystemItem.	The DateTimeDescriptor for AS-07 is as specified by ST 385 table 3. The list of properties of the DateTimeDescriptor, as specified in ST 385 table 3 and updated to match ST 377-1:2011, is provided in appendix C.3. Note that a single DateTimeDescriptor can simultaneously describe a Timecode Track, an Essence Timecode, and a SystemItem Timecode, with one DateTimeSubdescriptor for each. The LinkedTrackID property specifies the ID of the Timecode Track that is described, The DateTimeEmbedded flag indicates if the timecode data is also embedded in the essence, at the DateTimeEssenceTrackID and DateTimeChannelID given in that subdescriptor. The DateTimeEssenceTrackID property specifes the Track in which the Timecode data is embedded; a distinguished value of 0 together with the DateTimeChannelID describe an instance within the SystemItem. The EssenceContainer property specifies the Essence Container in which the timecode data is embedded; a distinguished value of 16 bytes of 0 indicates that the timecode data is not in any Essence Container.
6.4.3.2.1.2	Timecode Header Label Descriptor requirements	When present, a DateTimeDescriptor shall use the Essence Container UL to identify the Essence Container in	When present, a DateTimeDescriptor shall use the Essence Container UL to identify the Essence Container in which

		which the timecode data is embedded. In the case where the same timecode data is contained in several Essence Containers encoders may specify any one of the Essence Container ULs; it is recommended that encoders use the Essence Container that was encoded most recently. If the timecode data is only in the GC System Item, the EssenceContainerUL shall be 0 (zero). Note that an alternate non-zero UL could be assigned in RP224 by SMPTE in the future.	the timecode data is embedded. In the case where the same timecode data is contained in several Essence Containers encoders may specify any one of the Essence Container ULs; it is recommended that encoders use the Essence Container that was encoded most recently. If the timecode data is not in any Essence Container, the EssenceContainerUL shall be the distinguished value of 16 bytes of 0 (zero). This distinguished value shall not be copied into the EssenceContainers batch of the Preface of the file. Note that an alternate non-zero registered UL could be assigned in the Labels Register by SMPTE in the future.
6.4.5.4	Historical Source Timecode Tracks in Header Metadata for TLSP	When Historical Source Timecode tracks are to be placed in Top Level Source Packages, AS-07 encoders shall accommodate discontinuities in incoming Historical Source Timecode. Discontinuous timecode shall be represented as a Sequence of TimecodeComponents (ST 377-1 annex B.16). Continuous timecode shall be represented as a TimecodeComponent with Start Time and Length (ST 377-1 annex B.17). Segments with no timecode or undecodable timecode shall be represented as Filler (ST 377-1 annex B.10). Encoders should encode a DateTimeDescriptor as specified in 6.4.3 above (Labeling Timecode in Header Metadata).	When Historical Source Timecode tracks are to be placed in Top Level Source Packages, AS-07 encoders shall accommodate discontinuities in incoming Historical Source Timecode. Discontinuous timecode shall be represented as a Sequence of TimecodeComponents (ST 377-1 annex B.16). Continuous timecode shall be represented as a TimecodeComponent with Start Time and Length (ST 377-1 annex B.17). If Segments with no timecode or undecodable timecode are encountered while building the Header Metadata Top Level Source package, AS-07 encoders shall end the current TimecodeComponent, start a Filler (ST 377-1 annex B.10), and put a data value into the ST405 array for that edit unit. Regarding the data value, AS-07 encoders may either (a) repeat the last known good timecode value, (b) store the spurious data from the timecode reader, (c) store zero as the value, or (d) store any other fixed value, include as an option the value 0xFFFFFFFF. For subsequent edit units, the AS-07 encoder shall either (a) increment the length of the Filler if the error persists or, if decodable timecode data is recovered, (b) end the Filler and start a new TimecodeComponent.

			Encoders should encode a DateTimeDescriptor as specified in 6.4.3 above (Labeling Timecode in Header Metadata).
Appendix A	Historical Source Timecode, Description: what may be constrained	One or more Historical Source Timecode tracks, with Descriptors and with Track Numbers 2 or greater.	One or more Historical Source Timecode tracks, with Descriptors, and assigned the Track Number 0 (zero).
Appendix C.1.2.2	Master TC in two places, thus two Subdescriptors	GCSys with Master, in element 0 (zero) of the GCSys, symbolic label Sys 0	GCSys with Master, in element 0 (zero) of the GCSys, symbolic label Sys_0
Appendix C.1.2.2	VITC in three places, thus three Subdescriptors	VITC ingested into the GCSys, symbolic label Sys 2	VITC ingested into the GCSys, symbolic label Sys_2
Appendix C.3	Timecode Header Label Descriptor	The DateTimeDescriptor for AS-07, described in 6.4.3, is derived from the one specified by SMPTE ST 385 table 3.	The DateTimeDescriptor for AS-07, described in 6.4.3, is as specified by SMPTE ST 385 table 3. This table is repeated below with additional informative notes.
Appendix C.3	Essence Container	Standard MXF element and values	A distinguished value of 16 bytes of 0 indicates that the Timecode data is not in any EssenceContainer
Appendix C.3	DateTimeDropFrame	Flag to indicate whether the timecode is drop frame or not.	Flag to indicate whether the timecode is drop frame or not. If this optional property is not present, decoders shall assume non-drop frame.
Appendix D.1 (table)	AS_07_Core_DMS_PictureFormat	The signal standard (frame resolution and aspect ratio) of the encoded file.	The signal standard (frame resolution and aspect ratio) of the encoded file. Human readable, not controlled vocabulary, see note following this table for suggested format.
Appendix D.1 (note following table)		(n/a)	Note regarding AS_07_Core_DMS_PictureFormat in the preceding table. This item provides human readable metadata and there is no required controlled vocabulary. The list that follows offers illustrative examples based on the machine-readable terminology required by MXF picture essence descriptors (see sections 6.2.10.2.4 and 6.2.10.3.4). • 486i 4:3 (30 Hz fps) • 486i 4:3 (29.97 Hz fps) • 486i 16:9 (30 Hz fps) • 486i 16:9 (29.97 Hz fps) • 576p 4:3 (50 Hz fps) • 576p 4:3 (25 Hz fps) • 576p 16:9 (50 Hz fps) • 576p 16:9 (25 Hz fps)

Appendix F	AS_07_GSP_DMS_MIME MediaType	IANA MIME type shall be used if one has been extablished.	IANA MIME type shall be used if one has been established.
Appendix F	AS_07_GSP_DMS_DataDescription	A controlled vocabulary string identifying the role of the data within the AS-07 file: • Graphic/image • Related document • Supplementary Metadata • Associated Material • Trailer/preview • Quality control/review data • Other (explain in AS_07_GSP_DMS_Note)	A controlled vocabulary string identifying the role of the data within the AS-07 file: • Graphic/image • RelatedDocument • SupplementaryMetadata • AssociatedMaterial • Trailer/preview • QualityControl/ReviewData • Other (explain in AS_07_GSP_DMS_Note)
Appendix H	AS-07 Manifest XML Schema	<xs:element name="FileID" type="mft:UUID"/>	<xs:element name="FileID" type="mft:IdType"/>
Appendix H	AS-07 Manifest XML Schema	<xs:element name="FileIDType" type="mft:IdType"/>	<xs:element name="FileIDTypeType" type="mft:IdTypeType"/>
Appendix H	AS-07 Manifest XML Schema	<xs:element name="PartID" type=" mft:IdType"/>	<xs:element name="PartID" type="mft:IdType"/> <xs:element name="PartIDType" type="mft:IdTypeType"/>