

SMPTE STANDARD

for Television —

Material Exchange Format (MXF) — Descriptive Metadata Scheme-1 (Standard, Dynamic)



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1 Scope

This standard defines a number of descriptive metadata frameworks collectively called the MXF descriptive metadata scheme-1 (DMS-1). Each descriptive metadata (DM) framework is defined by a logical structure of metadata sets that allows them to be used as a 'plug-in' to the header metadata of a material exchange format (MXF) file. These descriptive metadata (DM) frameworks and their associated metadata sets may be applied to any MXF operational pattern specification.

Every DM framework in this DM scheme shares the same underlying data model. The standard defines each DM framework as a set structure and includes a definition for all individual metadata sets used in this scheme. All metadata sets are defined in tabular form including a reference to the SMPTE metadata dictionary for each metadata property. The document also defines how these DM frameworks relate to the audio-visual content of the body of an MXF file to enhance the usability of the audio-visual content of an MXF file through descriptive metadata.

NOTE – This standard is a dynamic document which allows new components to be added according to the procedures described in the SMPTE 359M. Specifically, new metadata DM frameworks, sets and individual metadata properties may be added to this standard in future revisions as requirements emerge. In order to maintain backwards compatibility, no DM framework, metadata set or metadata property defined in this document shall be removed or otherwise changed in such future revisions.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

SMPTE 336M-2001, Television — Data Encoding Protocol using Key-Length-Value

SMPTE 359M-2001, Television and Motion Pictures — Dynamic Documents

SMPTE 377M-2004, Television — MXF File Format Specification

SMPTE RP 210, Metadata Dictionary Registry of Metadata Element Descriptions

3 Glossary of acronyms, terms and data types

The general glossary of acronyms, terms and data types used in the MXF specification is given in SMPTE 377M and is not repeated here.

3.1 Acronyms used in this standard

DM: Descriptive metadata.

DMS: Descriptive metadata scheme.

3.2 Terms used in this standard

Framework: A term used to describe a collection of metadata sets with a defined function. Typically one or more frameworks may be derived from a common class model.

4 Introduction

There are several parts to the MXF specification. This part defines a collection of DM frameworks known as the descriptive metadata scheme-1 (DMS-1).

The MXF file format specification has a number of structural metadata packages in the header metadata that describe the essence data and essence containers in the file body. This standard provides a number of DM frameworks that may be 'plugged' into the structural metadata packages of the header metadata based on the mechanism defined in the MXF file format specification. These DM frameworks are a part of the header metadata and provide additional editorial value to an MXF file. Further information on using descriptive metadata in MXF is given in SMPTE EG 42.

4.1 Frameworks and context

A DM framework is a grouping of related descriptive metadata properties and sets (e.g., editorial) which describe the contents of an MXF file body. The same metadata properties and sets frequently appear in different DM frameworks because they share the underlying data model of this DM scheme. The DM framework defines the context of a metadata property or set dependent upon the framework that directly, or indirectly "owns" it.

This standard defines a number of DM frameworks as follows:

- **Production framework:** containing descriptive metadata sets and properties which provide identification and ownership details of the audio-visual content in the file body. In the context of MXF, 'production' comprises metadata that applies to a complete input or output of the MXF file as a whole and is not associated with segmentation of the timeline. Note that where an MXF file forms the input to another MXF file, this still holds true. The production framework metadata relates to the MXF file content whether it be unfinished work-in progress, a completed episode of a program, a complete series of programs or a program item.
- **Clip framework:** containing descriptive metadata sets and properties that provide capture and creation information about the individual audio-visual clips in the file body. In the context of MXF descriptive metadata, a 'clip' is a continuous essence element, or essence element interleave, in the essence container. This should not be confused with the SourceClip item from the MXF format specification which is a mechanism for linking portions of package sequences to each other. This essence container may comprise of a number of interleaved audio, video, or data essence elements.

Individual clips are the input from which the editorial experience is created. Examples include:

- an instance of a stereo recording of a music performance;
- an instance of the audio and video of an interview (in this case the 'noddies' and cutaways recorded at the same interview for editing into the finished piece later would be separate clips);

- the edited interview, including noddies and cutaways, forming input to another program;
- an instance of a “take” in the movie industry – but note that one clip can contain more than one “take”.

Clips may have metadata that describes one or more ‘shots’. Note that, in the context of a clip, a shot is a description of the true nature of the audio-visual content.

- **Scene framework:** containing descriptive metadata sets and properties that describe actions and events within individual scenes of the audio-visual content of the file body. In the context of MXF, ‘scene’ is an editorial concept and describes a continuous section of content in an MXF file. Scenes are, in general, characterized by narrative or dramatic coherence. The division of the output timeline into scenes is a matter of editorial decision and, thus, varies with the criteria applied. Scenes may overlap and they may relate to a point in time rather than having a duration. Scenes may have metadata that describes one or more ‘shots’. Note that, in the context of a scene, a shot is editorial in nature and is not necessarily related to the true nature of the audio-visual content.

DM frameworks give contextual meaning to a metadata set by logically grouping metadata sets used in the same context. For example, a metadata set that describes a location can be used to describe the real location (the actual location of the camera) or the fictional location (where the scene is supposed to be set). For example, a name in the clip framework describes could be a participant’s real name, whereas a name in the scene framework could be that of a fictional character (e.g., “Falstaff”).

Figure 1 illustrates the structure of the DM frameworks contained in the header metadata and how it relates to the content of the MXF file body. Descriptions of the use of DM segments and DM SourceClips are given in the MXF descriptive metadata engineering guideline (SMPTE EG 42). This guideline also describes the use of static, event and timeline track kinds.

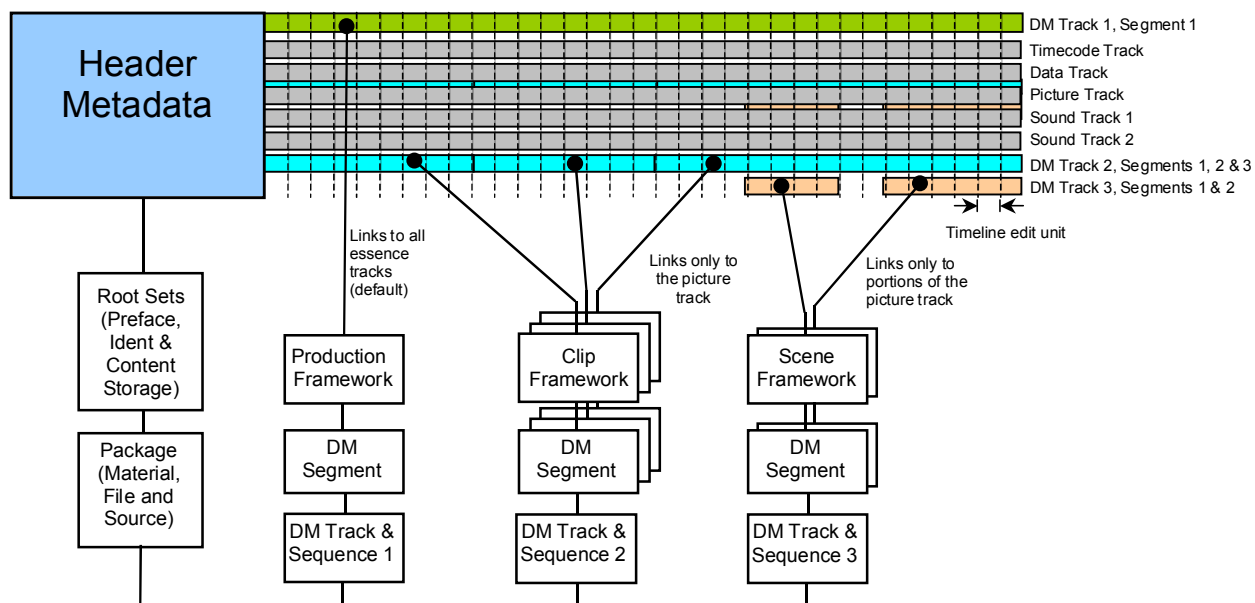


Figure 1 – Descriptive metadata frameworks and their relationship to the content of an MXF file body

4.2 Frameworks and their relationship to packages

Where a DM framework is applied to the material package, it provides descriptive metadata about the “output timeline” of the file.

Where a DM framework is applied to a file package, it provides descriptive metadata that was available for each individual input file. If there are source packages present in the file then the descriptive metadata provides historical annotation of the audio-visual content of the input files.

Clearly in the simplest case where a file has just one file package, the scene and clip frameworks relating to the file package may be copied to the material package and used directly or enhanced if desired. The production framework may be copied, or a completely new DM framework can be created if deemed necessary by the file editor.

If the essence container of a source MXF file is copied to another MXF file, either in whole or as part of a larger production, then the DM frameworks present in the material package may be copied into the new MXF file under the file package.

The mechanism for creating an audit trail of generations other than the immediately previous generation can be provided by identification through the UMID generations in the production framework.

Further information on using these frameworks in MXF files is given in annex D.

4.3 DM framework implementation

The metadata property values used in this document are defined in the SMPTE metadata dictionary (SMPTE RP 210). The implementation of these DM frameworks is optional, but where implemented, the DM frameworks shall adhere to this standard.

The metadata sets defined in this standard (including the framework sets) should be registered in the forthcoming SMPTE metadata groups registry at the earliest opportunity.

The meaning of the terms “required”, “optional” etc., as defined in SMPTE 377M, are only valid for any metadata property if the DM framework or set is implemented.

5 Descriptive metadata definition

5.1 Metadata coding

All descriptive metadata sets shall be encoded as local sets using 2-byte tags and 2-byte lengths as defined by SMPTE 336M.

With the exception of properties that are part of the structural metadata that are statically assigned, all 2-byte local tag values used for DMS-1 properties in the header metadata of a file partition shall be dynamically assigned as defined in section 8.2 of SMPTE 377M (MXF format). Each 2-byte local tag value shall provide a unique mapping to the full SMPTE UL value defined in SMPTE RP 210 (metadata dictionary).

NOTE – The dynamic assignment of DMS-1 local tag values means that all such values will lie in the range ‘80.00h’ to ‘FF.FFh’. The instance UID and generation UID properties have statically assigned tags as defined in SMPTE 377M.

These local sets may be converted to Universal sets for interchange with other systems.

As per SMPTE 377M, all multi-byte property values shall be coded as most significant byte first (big-endian).

5.2 Universal label for descriptive metadata scheme

The DM schemes property of the preface set defined in SMPTE 377M is an unordered batch of Universal labels to allow more than one descriptive metadata scheme to be defined in the header metadata. Since this DM scheme defines DM frameworks that are not logically connected, but share a common data model, a Universal label is provided for each DM framework. For each framework from this DM scheme that is present in the header metadata, the ULs below shall be one of those present in the DM schemes property of the preface set.

Table 1 – Universal label for descriptive metadata frameworks — MXF descriptive metadata scheme-1

Byte No.	Description	Value (hex)	Meaning
1-12	See SMPTE 377M	-	As defined by MXF File Format Specification
13	Scheme Kind	01h	MXF Descriptive Metadata Scheme 1
14	Scheme Version	02h	Version 2
15	Framework Identification	01h, 02h or 03h	01h = Production Framework 02h = Clip Framework 03h = Scene Framework
16	Scheme Variant	01h or 02h	01h = no extensions 02h = extensions present

Byte 14 of the Universal label defines the version of the descriptive metadata scheme defined in this standard. Each new version shall increment the version number to identify normative changes to the coding of descriptive metadata sets or properties compared to a lower version number. For the purpose of maintaining backwards compatibility, any increase in the version number shall only add new metadata sets or properties and shall not change any part of any previous version.

NOTE – This DM scheme starts with a value of 02h. The value 01h was experimental and its use is deprecated.

There are cases where an encoder may wish to encode metadata sets or properties that are classed as 'dark' and which do not fall under the DM frameworks described in this standard. Clearly, caution must be exercised to ensure that no unexpected or deleterious effects will occur at the decoder. To define whether the encoded descriptive metadata scheme lies within, or exceeds, the version defined, the Universal label has a scheme extension word defined in byte 16. The use of this word is defined in table 1.

5.3 Generic modeling diagrams

SMPTE 377M defines the generic modeling diagram and set specifications for the structural metadata sets required to support the DM Frameworks defined in this standard.

The production framework should use a timeline track that describes the entire timeline of all the essence tracks in the package. The production framework is typically intended to be an overall description of all the essence tracks in the package. A DM track references only one sequence which, in turn, should reference a single DM segment. Note that, as defined in SMPTE 377M, the start position shall be the same as the earliest start position of any essence track in the package and the duration shall be set to define the latest position value of any essence track in the package.

The scene and clip frameworks may be associated with particular essence tracks although, by default, they associate with all essence tracks.

The clip framework should use a timeline track with one or more DM segments which together represent a linear and contiguous timeline.

The scene framework should use an event track that references DM segments that do not have to be contiguous along the timeline; they may define instants in time, they may overlap and they may leave gaps.

5.3.1 Abstract superclasses and the DM scheme data model

For consistency with object orientated design, there are implied abstract superclasses in DMS-1. This concept is shown in the class diagram in annex C. Annex C also implies a common data model to be shared by all DM frameworks in this DM scheme.

5.3.2 DM framework data models

Models of the DM frameworks (figure 2a, figure 2b, and figure 2c) define the production, clip and scene frameworks as a grouping of logically connected sets where each set has one or more properties. Each set is defined by a set name (outlined in a bold-lined box) with a set number (as defined in annex A) and includes the set properties immediately below the set name. For clarity, the key, length, instance UID, and generation UID values of each set are not shown in figure 2a, figure 2b, and figure 2c.

The full definition of each different descriptive metadata set and its properties, together with the set key and length fields are to be found in annex A. Many of the descriptive metadata sets are common to more than one DM framework.

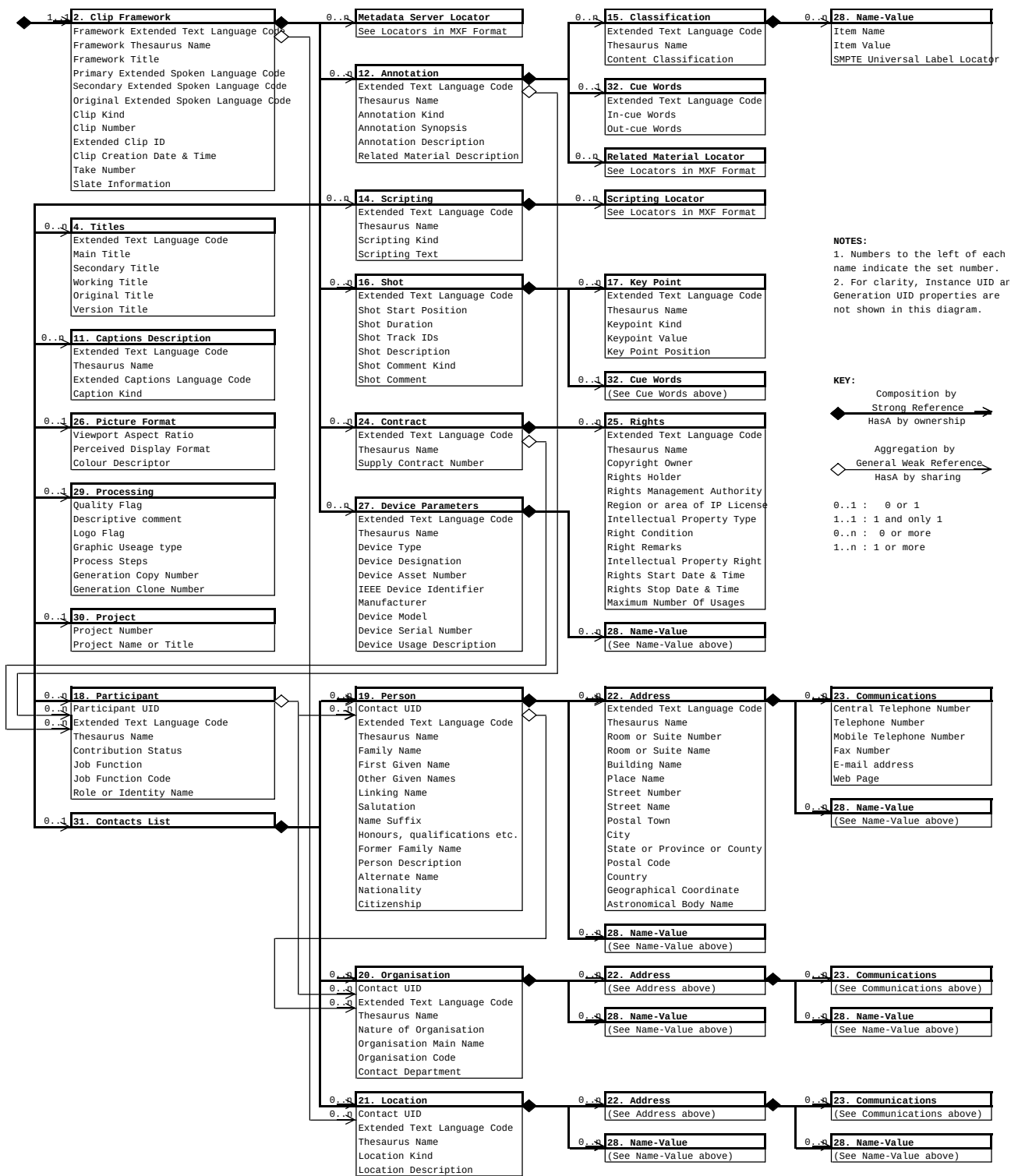
Metadata properties in annex A are described in abbreviated form. Every set has a column for the UL of the SMPTE metadata dictionary entry, and it is the dictionary that provides the full normative definition of each property. This column shows only the last 8 field entries of the UL in common with the SMPTE metadata dictionary definitions.

NOTES

1 Any new set or individual metadata property may be added to figure 2a, figure 2b, and figure 2c in accordance with the type 1 procedures defined in SMPTE 359M. Such new additions shall retain backwards compatibility with any earlier versions of this document.

2 Figure 2a, figure 2b, and figure 2c are originated in an Excel spreadsheet for ease of development. These figures are thus limited by the constraints imposed by the Excel capabilities, although the tool itself has been found to be very useful for the development and maintenance of the DM frameworks.





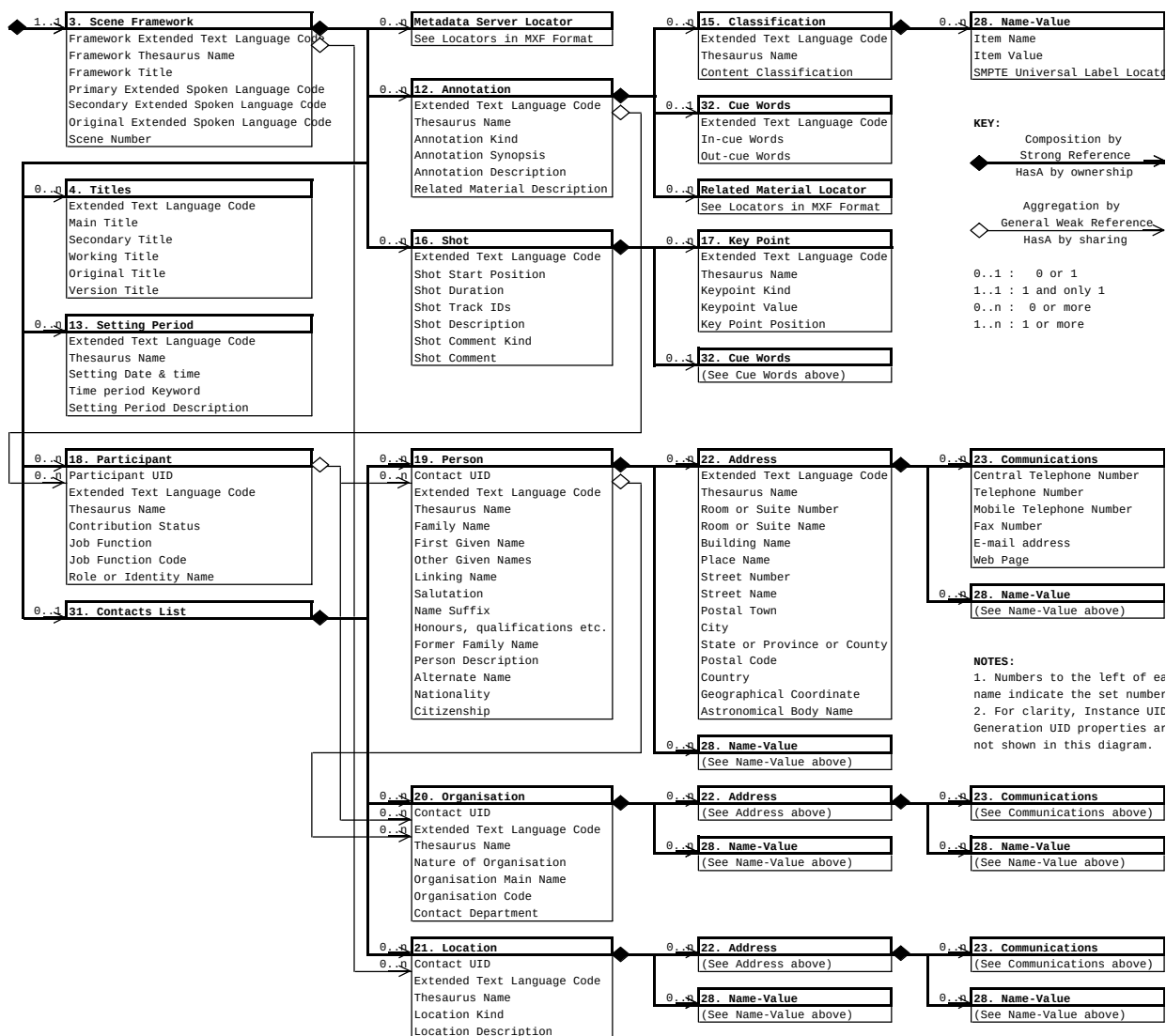


Figure 2c – Model of the scene frameworks, sets and properties

The descriptive metadata sets are defined in annex A.

Note that in annex A only one definition is provided for any set in the DM frameworks described in figure 2a, figure 2b, and figure 2c.

Each metadata set in figure 2a, figure 2b, and figure 2c is related to its respective table in the annexes by the name of each set.

5.4 Descriptive metadata set keys

All sets in this descriptive metadata scheme shall be encoded as KLV local sets using 2-byte tags and 2-byte lengths and shall have a common key structure defined as follows:

Table 2 – Common key value for all descriptive header metadata sets

Byte No.	Description	Value (hex)	Meaning
1~12	As defined in SMPTE 377M		MXF File Format Specification
13	Structure / Scheme Kind	01h	Descriptive Metadata Scheme 1
14	MXF Set Definition	xxh	See Table 3
15	MXF Set Definition	yyh	See Table 3
16	Reserved	00h	

NOTE – When a set is used for interchange with other systems, universal sets may be required and for this, the value of byte 6 must be changed to a value of '01h'. Furthermore, all local set tags should be set to the full 16-byte value based on the metadata dictionary (SMPTE RP 210). For information, the last 8-bytes of the metadata dictionary key are supplied for each metadata property in the annexes where known at the time of publication. All zero byte key values are truncated. Byte 7 of the metadata dictionary key identifies the dictionary version number and is not defined in this document. Users should investigate all versions of the metadata dictionary for the defined key value.

The definitions of bytes 14 and 15 of the keys for the descriptive metadata sets are given in table 3.

Table 3 – (Dynamic) Values for bytes 14 and 15 of the descriptive metadata set keys

Set Name	Byte 14	Byte 15	Annex A
Production Framework	01h	01h	A1
Clip Framework	01h	02h	A2
Scene Framework	01h	03h	A3
Titles	10h	01h	A4
Identification	11h	01h	A5
Group Relationship	12h	01h	A6
Branding	13h	01h	A7
Event	14h	01h	A8
Publication	14h	02h	A9
Award	15h	01h	A10
Caption Description	16h	01h	A11
Annotation	17h	01h	A12
Setting Period	17h	02h	A13
Scripting	17h	03h	A14
Classification	17h	04h	A15
Shot	17h	05h	A16
Key Point	17h	06h	A17
Participant	18h	01h	A18
Person	1Ah	02h	A19
Organisation	1Ah	03h	A20
Location	1Ah	04h	A21
Address	1Bh	01h	A22
Communications	1Bh	02h	A23
Contract	1Ch	01h	A24
Rights	1Ch	02h	A25
Picture Format	1Dh	01h	A26
Device parameters	1Eh	01h	A27
Name-Value	1Fh	01h	A28
Processing	20h	01h	A29
Project	20h	02h	A30
Contacts List	19h	01h	A31
Cue Words	17h	08h	A32
Reserved for abstract superclasses	7Fh	xxh (>00h)	
DMS-1 Framework	7Fh	01h	See annex C
Production/Clip Framework	7Fh	02h	See annex C
DMS-1 Set	7Fh	10h	See annex C
TextLanguage	7Fh	11h	See annex C
Thesaurus	7Fh	12h	See annex C
Contact	7Fh	1Ah	See annex C

NOTE – Any new set may be added to this table in accordance with the type 1 procedures defined in SMPTE 359M. Such new additions shall retain backwards compatibility with any earlier versions of this standard.

5.5 Recommended minimum implementation

Although the DM frameworks are optional, they should be included in order to get the full benefit from a MXF file. The preferred implementations of descriptive metadata are as follows:

- For a single clip, the descriptive metadata should comprise at least the clip framework together with the clip title set and other sets for the purpose of clip identification.
- For a production entity comprising more than one clip, the descriptive metadata should comprise at least the production framework set together with the title set and other sets for the purpose of production identification, plus any clip frameworks for each clip in the production.

Annex E illustrates a minimum implementation together with the appropriate structural metadata sets to support the production and clip frameworks.

5.6 Language inheritance

For all DM frameworks, there is a 'framework extended text language' property in the framework set which defines the default language for all the text strings in all sets in the framework.

Many sets may have multiple instances of a set, one for each text language required. In any set that has no text language property, or an optional text language property that is not present, all the strings in that set shall inherit the text language of the antecedent set.

NOTE – Up to 12 bytes are provided for the extended language code. ISO 3166 defines both 2-byte and 3-byte language codes and optionally allows country codes for regional language variations. In this specification, only the required number of bytes are encoded. For compatibility with XML-based metadata schemes, the separator symbol between the language and country codes should be a '-' (Latin "minus"). See <http://www.w3.org/TR/REC-xml#sec-lang-tag> for more details.

5.7 Controlled or enumerated values

Other standards that are not a part of the MXF specification may define values or ranges of values for some of the properties specified in this document. This is most likely to affect the values of strings in which specific string values can be attributed to a specific interpretation. Some sets include a 'thesaurus name' property that can be used to enumerate such values. The thesaurus value is inherited in the same manner as defined for text language.

Specific text enumerations are beyond the scope of this standard.

5.8 Dynamic document requirements

Any addition of metadata properties to an existing set or addition of a new set to a framework or addition of a new framework to this scheme shall cause the version number of this document to be incremented by one. Any such additions shall be backwards compatible with any previous version.

5.8.1 Addition of new metadata sets to an existing framework

Any new metadata set together with its property values may be added to a DM framework provided it meets the requirements laid down for a type 1 entity as specified in SMPTE 359M. Any new metadata set should retain compatibility with the underlying data model of DMS-1.

Any new metadata set shall be added as a new part to the model of the frameworks of figure 2 and added to annex A. The set key shall be added to table 2, with a new value for bytes 14 and 15 in table 3. Any new

properties added by this set shall be added to annex B. Other figures, tables and annexes shall be updated as appropriate.

Any new metadata set shall use the same format as used in this standard.

5.8.2 Addition of new metadata properties to an existing set

Any new metadata property may be added to a metadata set in any DM framework provided it meets the requirements laid down for a type 1 entity as specified in SMPTE 359M. Any new metadata property should retain compatibility with the underlying data model of DMS-1.

Any new metadata property shall be added as a new part to the model of the frameworks of figure 2 and added to annex A and annex B. Other figures, tables and annexes shall be updated as appropriate.

Annex A (normative and dynamic)

Descriptive metadata set definitions

Tables used in this standard use the conventions and definitions defined in SMPTE 377M.

A.1 DMS-1 Frameworks

1. Production Framework

UL Designator	Name	Type	Length	Req	Definition
Defined in Table 2	Production Framework	Set UL	16	Req	Defines the Production Framework
	Length	BER Length	var	Req	See SMPTE 377M
01.01.15.02.00.00.00.00	Instance UID	UUID	16 bytes	Req	Unique ID of the instance of this set
05.20.07.01.08.00.00.00	Generation UID	UUID	16 bytes	Opt	Identifier that references the Identification set for the modification
03.01.01.02.02.13.00.00	Framework Extended Text Language Code	ISO 7-bit char string	12 chars max	E/req	The ISO language code and optional country variant of the text in this set and the default language code of all sets contained in this framework
03.02.01.02.15.01.00.00	Framework Thesaurus Name	UTF-16 char string	Variable	Opt	The name of the default specialized vocabulary of selected words or concepts for a particular field used in a framework, e.g. a particular cataloguing, indexing or thesaurus system
01.05.0F.01.00.00.00.00	Framework Title	UTF-16 char string	Variable	Opt	A human readable title for this instance of the Production Framework (e.g. "Wilco Productions version 3")
03.01.01.02.03.11.00.00	Primary Extended Spoken Language Code	ISO 7-bit char string	12 chars max	Opt	ISO 639 Extended Language Code for the current primary spoken language with optional country variant
03.01.01.02.03.12.00.00	Secondary Extended Spoken Language Code	ISO 7-bit char string	12 chars max	Opt	ISO 639 Extended Language Code for the current secondary spoken language with optional country variant
03.01.01.02.03.13.00.00	Original Extended Spoken Language Code	ISO 7-bit char string	12 chars max	Opt	ISO 639 Extended Language Code for the original primary spoken language with optional country variant
05.01.01.01.01.00.00.00	Integration Indication	UTF-16 char string	Variable	Opt	A term that describes what the essence is as a unit status of the essence. Terms must be consistent with industry or organizational practices to be useful. Includes segment, item, programme etc.
06.01.01.04.06.0C.00.00	Metadata Server Locators	StrongReferenceArray (Metadata Server Locators)	8+16n	Opt	Specifies a vector of an ordered set of references to Locators for metadata servers
06.01.01.04.05.40.04.00	Titles Sets	StrongReferenceBatch (Titles)	8+16n	D/req	An unordered list of strong references to Titles sets
06.01.01.04.05.40.0D.00	Annotation Sets	StrongReferenceBatch (Annotation)	8+16n	D/req	An unordered list of strong references to Annotation sets

06.01.01.04.05.40.13.00	Participant Sets	StrongReferenceBatch (Participant)	8+16n	D/req	An unordered list of strong references to Participant sets
06.01.01.04.02.40.22.00	Contacts List Set	StrongReference (Contacts List)	16 bytes	D/req	A strong reference to the Contacts List set
06.01.01.04.03.40.16.00	Location Sets	GlobalReferenceBatch (Location)	8+16n	D/req	An unordered list of generalised weak (global) references to Location sets
06.01.01.04.05.40.0C.00	Captions Description Sets	StrongReferenceBatch (Captions Description)	8+16n	D/req	An unordered list of strong references to Captions Description sets
06.01.01.04.05.40.19.00	Contract Sets	StrongReferenceBatch (Contract)	8+16n	D/req	An unordered list of strong references to Contract sets
06.01.01.04.02.40.1D.00	Picture Format Set	StrongReference (Picture Format)	16 bytes	D/req	A strong reference to the Picture Format set
06.01.01.04.02.40.21.00	Project Set	StrongReference (Project)	16 bytes	D/req	A strong reference to the Project set
06.01.01.04.05.40.06.00	Identification Sets	StrongReferenceBatch (Identification)	8+16n	D/req	An unordered list of strong references to Identification sets
06.01.01.04.05.40.05.00	Group Relationship Sets	StrongReferenceBatch (Group Relationship)	8+16n	D/req	An unordered list of strong references to Group Relationship sets
06.01.01.04.05.40.08.00	Branding Sets	StrongReferenceBatch (Branding)	8+16n	D/req	An unordered list of strong references to Branding sets
06.01.01.04.05.40.09.00	Event Sets	StrongReferenceBatch (Event)	8+16n	D/req	An unordered list of strong references to Event sets
06.01.01.04.05.40.0B.00	Award Sets	StrongReferenceBatch (Award)	8+16n	D/req	An unordered list of strong references to Award sets
06.01.01.04.05.40.0E.01	Setting Period Sets (Production)	StrongReferenceBatch (Setting Period)	8+16n	D/req	An unordered list of strong references to Setting Period sets

2. Clip Framework

UL Designator	Name	Type	Length	Req	Definition
Defined in Table 2	Clip Framework	Set UL	16	Req	Defines the Clip Framework
	Length	BER Length	var	Req	See SMPTE 377M
01.01.15.02.00.00.00.00	Instance UID	UUID	16 bytes	Req	Unique ID of the instance of this set
05.20.07.01.08.00.00.00	Generation UID	UUID	16 bytes	Opt	Identifier that references the Identification set for the modification
03.01.01.02.02.13.00.00	Framework Extended Text Language Code	ISO 7-bit char string	12 chars max	E/req	The ISO language code and optional country variant of the text in this set and the default language code of all sets contained in this framework
03.02.01.02.15.01.00.00	Framework Thesaurus Name	UTF-16 char string	Variable	Opt	The name of the default specialized vocabulary of selected words or concepts for a particular field used in a framework, e.g. a particular cataloguing, indexing or thesaurus system
01.05.0F.01.00.00.00.00	Framework Title	UTF-16 char string	Variable	Opt	A human readable title for this instance of the Production Framework (e.g. "Wilco Productions version 3")

03.01.01.02.03.11.00.00	Primary Extended Spoken Language Code	ISO 7-bit char string	12 chars max	Opt	ISO 639 Extended Language Code for the current primary spoken language with optional country variant
03.01.01.02.03.12.00.00	Secondary Extended Spoken Language Code	ISO 7-bit char string	12 chars max	Opt	ISO 639 Extended Language Code for the current secondary spoken language with optional country variant
03.01.01.02.03.13.00.00	Original Extended Spoken Language Code	ISO 7-bit char string	12 chars max	Opt	ISO 639 Extended Language Code for the original primary spoken language with optional country variant
03.02.05.04.00.00.00.00	Clip Kind	UTF-16 char string	Variable	Req	The kind of clip as an enumerated string (e.g. still, graphic, moving pictures, sound etc.)
01.05.0C.00.00.00.00.00	Clip Number	ISO 7-bit char string	32 chars max	Opt	The alphanumeric number of the Clip
01.01.15.09.00.00.00.00	Extended Clip ID	UMID	32 or 64 bytes	Opt	Clip ID as a basic or extended UMID. Note that the value includes the whole UMID including the first 12 UL bytes
07.02.01.10.01.04.00.00	Clip Creation Date & Time	TimeStamp	8 bytes	Opt	Identifies date and time of creation of a clip.
01.05.07.00.00.00.00.00	Take Number	UInt16	2 bytes	Opt	Take number of the instance of the shot
03.02.05.03.00.00.00.00	Slate Information	UTF-16 char string	Variable	Opt	Slate information as a text string
06.01.01.04.06.0C.00.00	Metadata Server Locators	StrongReferenceArray (Metadata Server Locators)	8+16n	Opt	Specifies a vector of an ordered set of references to Locators for metadata servers
06.01.01.04.05.40.04.00	Titles Sets	StrongReferenceBatch (Titles)	8+16n	D/req	An unordered list of strong references to Titles sets
06.01.01.04.05.40.0D.00	Annotation Sets	StrongReferenceBatch (Annotation)	8+16n	D/req	An unordered list of strong references to Annotation sets
06.01.01.04.05.40.13.00	Participant Sets	StrongReferenceBatch (Participant)	8+16n	D/req	An unordered list of strong references to Participant sets
06.01.01.04.02.40.22.00	Contacts List Set	StrongReference (Contacts List)	16 bytes	D/req	A strong reference to the Contacts List set
06.01.01.04.03.40.16.00	Location Sets	GlobalReferenceBatch (Location)	8+16n	D/req	An unordered list of generalised weak (global) references to Location sets
06.01.01.04.05.40.0C.00	Captions Description Sets	StrongReferenceBatch (Captions Description)	8+16n	D/req	An unordered list of strong references to Captions Description sets
06.01.01.04.05.40.19.00	Contract Sets	StrongReferenceBatch (Contract)	8+16n	D/req	An unordered list of strong references to Contract sets
06.01.01.04.02.40.1D.00	Image Format Set	StrongReference (Image Format)	16 bytes	D/req	A strong reference to the Image Format set
06.01.01.04.02.40.21.00	Project Set	StrongReference (Project)	16 bytes	D/req	A strong reference to the Project set
06.01.01.04.05.40.0F.00	Scripting Sets	StrongReferenceBatch (Scripting)	8+16n	D/req	An unordered list of strong references to Scripting Metadata sets
06.01.01.04.05.40.11.02	Shot Sets (Clip)	StrongReferenceBatch (Shot)	8+16n	D/req	An unordered list of strong references to Shot sets
06.01.01.04.05.40.1E.00	Device Parameters Sets	StrongReferenceBatch (Device Parameters)	8+16n	D/req	An unordered list of strong references to Device Parameters sets