# IEC/PAS 62261

**Edition 1.0**
2001-07

**Television –
Metadata Dictionary Structure**

P U B L I C L Y   A V A I L A B L E   S P E C I F I C A T I O N

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**SMPTE**

**Reference number
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# Television –
# Metadata Dictionary Structure

PUBLICLY AVAILABLE SPECIFICATION

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## TELEVISION –

## METADATA DICTIONARY STRUCTURE

# FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.

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A PAS is a technical specification not fulfilling the requirements for a standard, but made available to the public and established in an organization operating under given procedures.

IEC-PAS 62261 was submitted by the SMPTE (Society of Motion Picture and Television Engineers) and has been processed by IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this PAS is based on the following documents:

| Draft PAS | Report on voting |
|-----------|------------------|
| 100/234/PAS | 100/246/RVD |

Following publication of this PAS, the technical committee concerned will investigate the possibility of transforming the PAS into an International Standard.

# PROPOSED SMPTE STANDARD

<div align="right">**SMPTE 335M**</div>

## for Television —
# Metadata Dictionary Structure

## 1 Scope

The metadata dictionary structure defined in this standard covers the use of metadata for all types of essence (video, audio, and data in their various forms). Applications of individual dictionary entries will vary but, when used, metadata shall conform to the definitions and formats in this metadata dictionary structure standard and the associated metadata dictionary recommended practice (SMPTE RP 210). SMPTE RP 210 defines a registered set of metadata element descriptions for association with essence or other metadata and this standard and the contents practice shall be used together as a pair — neither shall be used in isolation.

## 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.

ANSI/SMPTE 298M-1997, Television — Universal Labels for Unique Identification of Digital Data

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

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

SMPTE RP 210.1-2001, Metadata Dictionary

## 3 Metadata dictionary structure

The metadata dictionary structure provides flexibility in capturing metadata and exchanging it among applications through a standardized hierarchy of universal labels for the metadata elements, grouped to aid their management within a small but comprehensive number of classes. Metadata classes are collections of metadata elements with common characteristics or attributes. Additional classes are provided for user-defined metadata.

SMPTE RP 210 references an individual item or element of metadata using a two-part 16-byte universal label that is numerical (and hence language independent) and unique. The first eight bytes label the second as a tag in a specific version of a designated metadata dictionary (tags are defined in SMPTE 336M). This tag is used to index the meaning or definition of the metadata element.

The actual metadata information described by the metadata element is the metadata value. The dictionary also contains information on the required format of metadata values and the allowable range of values (if applicable) either as a list or as a bounded range.

Individual data element values can frequently be represented in more than one way — for instance, it is possible to represent a textual value as ASCII or Unicode, where the value is identical but the particular representation different. It is important both that the representation is known and that as new representations are registered they can be accommodated. In this case, the last active word of the tag defines the representation in use — the default being $00_h$.

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The metadata dictionary is organized into nodes and leaves. The dictionary classes just described form class nodes and below these are further nodes at each subclass. To aid the management of the dictionary, these nodes and subnodes are assigned tags to which no value is assigned, so as to give clear breaks in the structure. Entries within a subclass form leaves, which are the data elements themselves.

Lower levels of the dictionary structure can be derived from the tag structure in SMPTE RP 210 and are detailed in SMPTE EG 37.

## 3.1 Compatibility with other metadata structures

The metadata dictionary structure is a framework that supports global interoperability by defining metadata tags in a way that enables the interchange of SMPTE metadata with metadata from different sources and originated by other bodies.

Many different cataloging conventions are used by communities who focus on a specific domain or subject or who have specific needs for archive and retrieval of multimedia data including, for example, intellectual rights. The metadata dictionary is not intended to replace conventions already in use, for example in textual naming or keywords. Within the framework of the metadata dictionary structure, different content creation communities, media indexing profes-

sionals, or metadata extractors and users can develop metadata conventions that meet their specific requirements.

## 3.2 Individual metadata classes

Within the metadata dictionary, metadata elements are organized into a hierarchical structure, where each is assigned to a metadata class as shown in the overview of figure 1. The initial set of metadata classes in this standard consists of:

    Class 1:  Identification and location
    Class 2:  Administration
    Class 3:  Interpretive
    Class 4:  Parametric
    Class 5:  Process
    Class 6:  Relational
    Class 7:  Spatio-temporal
    Class 13: Organizationally registered for public use
    Class 14: Organizationally registered as private
    Class 15: Experimental

The number of metadata classes can be extended in the future to a maximum of 127. Although dictionary classes can be populated with any metadata (such as that associated with still images, audio, graphics, etc.), additional new classes may be created up to that limit to deal with specific metadata characteristics or attributes.
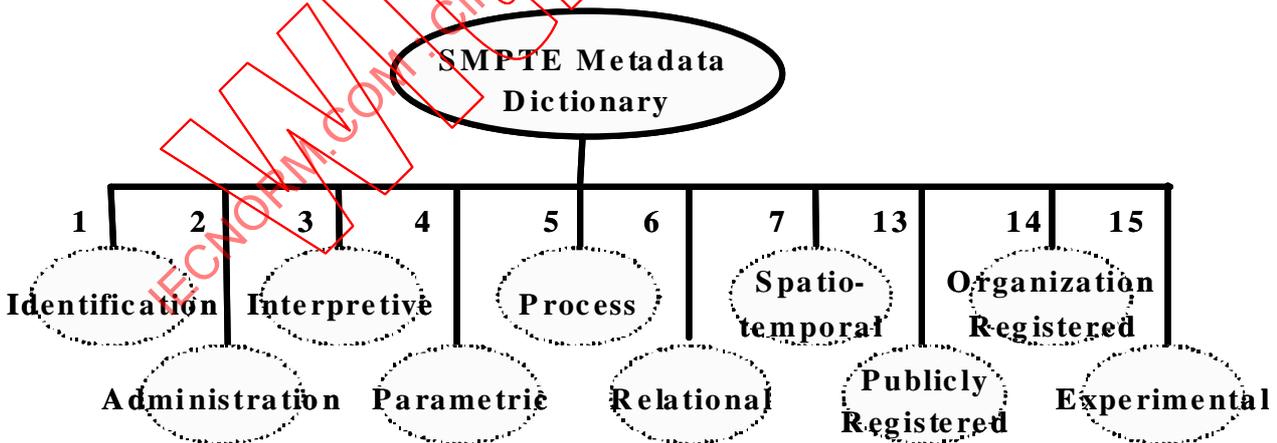


**Figure 1 – Metadata class structure**

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### 3.2.1 Class 1: Identification and location

Metadata in this class shall consist of identifying information (IDs) that describes the essence of the overall bit stream or file. A critical part of class 1 metadata is unambiguous identification of the essence using a single, recognized number or label such as the SMPTE unique material identifier (SMPTE 330M). Information in this class shall include global and local identifiers as well as identifying information about the metadata elements themselves (so-called meta-metadata). Examples of subclass titles in this class are:

- Globally unique identifiers
- ISO identifiers
- Object identifiers
- Device identifiers
- Unique IPR identifiers
- Local locators
- Titles

### 3.2.2 Class 2: Administration

Metadata in this class shall consist of administrative or business data that describe information about the essence or metadata that are relevant to its application. Information on authorized use and restrictions on use, and encryption are in this metadata class. Cost information and information needed to protect intellectual property or to protect ownership shall also be contained in class 2. Examples of subclass titles in this class are:

- Supplier
- Rights
- Financial information
- Security
- Publication outlet
- Participating parties
- Broadcast and repeat statistics

### 3.2.3 Class 3: Interpretive

Metadata in this class shall consist of descriptive information which is normally considered either a subjective or a human-generated description of the essence or a computational result from machine examination of the essence. Interpretive information shall consist of, but not be limited to, textual terms (e.g., keywords, narrative summary, titles, genre categories, scripts, etc.), or computational metrics (e.g., color histograms, texture maps, object shapes, facial features, etc.). Information in class 3 shall be principally used

for indexing, cataloging, administering, searching, and retrieving the content of essence. Examples of subclass titles in this class are:

- Fundamental (such as ISO language code, length and time systems)
- Descriptive (human-assigned)
- Categorization
- Assessments
- Descriptors (machine-assigned or computed)

### 3.2.4 Class 4: Parametric

Metadata in this class shall consist of information that describes the technical characteristics of the camera, sensor, or system that originates the essence or metadata. Information about the technical characteristics of the essence or metadata is also provided, including but not limited to its creation parameters and the configuration of the originating system. Examples of subclass titles in this class are:

- Video essence encoding characteristics
- Audio essence encoding characteristics
- Data essence encoding characteristics
- Metadata encoding characteristics
- Audio test parameters
- Film pulldown characteristics
- Fundamental sequencing and scanning
- MPEG coding characteristics
- Time code characteristics

### 3.2.5 Class 5: Process

Metadata in this class shall consist of information that describes how the essence was processed or otherwise changed or enhanced after its origination. This class shall include, but not be limited to, many of the parameters in an edit decision list. Additional information in class 5 shall be an audit trail (heritage) of all changes to the original content over time. Also included shall be a record of compression/decompression steps and any changes in storage media or format. Examples of subclass titles in this class are:

- Process indicators
- Manipulation
- Downstream processing history
- Enhancement or modification
- Audio processor settings (device-specific)
- Editing information

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### 3.2.6 Class 6: Relational

Metadata in this class shall consist of information that describes relationships among objects in the content or among any combination of essence, objects, and metadata. Examples of subclass titles in this class are:

– Generic relationships
– Relatives
– Essence-to-essence relationship
– Metadata-to-essence relationship
– Metadata-to-metadata relationship
– Object-to-object relationship
– Metadata-to-object relationship
– Related production material
– Numerical sequence
– Relationship structures

### 3.2.7 Class 7: Spatio-temporal

Metadata in this class shall consist of information about aspects of the content or the originating camera, sensor, or system relating to time, place, or space. Geospatial information in class 7 shall be any information that defines the positions or places (either absolute or relative) of objects, scenes, individuals, or any other component of the essence. Temporal elements such as dates, time codes, synchronization marks, temporal keywords, and motion (vector) parameters shall also be part of class 7 metadata. Examples of subclass titles in this class are:

– Position and space vectors
– Absolute position
– Image positional information
– Rate and direction of positional change
– Abstract locations
– Angular specifications
– Distance measurements
– Operational date and time information
– Absolute date and time
– Relative durations
– Rights date and time
– Setting date and time (characterized time period)
– Delay
– Latency

### 3.2.8 Class 13: Organizationally registered for public use

Metadata in this class shall consist of individual elements of metadata that have been registered by a specific user organization or individual and are therefore reserved and managed separately from the other classes (1 -7) of metadata. Information about publicly registered metadata shall appear in the appropriate clauses of the published metadata dictionary. Class 13 metadata shall be managed by the SMPTE Registration Authority and its approval shall be consistent with SMPTE Administrative Practices.

### 3.2.9 Class 14: Organizationally registered as private

Metadata in this class shall consist of individual elements or groups of elements of metadata that have been registered by a specific user organization or individual and are therefore reserved and managed separately from the other classes (1 -7) of metadata. Information about organizationally registered metadata shall not be made public but the metadata tags shall be publicly identified in the metadata dictionary and shall be reserved for use by the registered organization. Class 14 metadata shall be managed by the SMPTE Registration Authority and its approval shall be consistent with SMPTE Administrative Practices.

### 3.2.10 Class 15: Experimental

Metadata in this class shall consist of information whose definition and use does not need to conform to the definitions in the metadata dictionary. Class 15 metadata is intended for use in multimedia research or other limited access, experimental environments where experimentation with new metadata elements and applications does not depend on strict conformance to approved standards and which remain within a test or laboratory environment.

## 3.3 Dictionary element structure and format

The metadata dictionary shall consist of the following fields for each metadata element:

### 3.3.1 Data element tag

This has eight fields representing the eight octets or bytes of the data element tag. These uniquely identify the specific metadata element in the dictionary in an hierarchical fashion. Classes are designated with the first bye in the data element tag and subsequent bytes enable the hierarchical identification of subclasses and/or individual leaves.

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### 3.3.2 Data element name

This entry is the English language name for the element represented numerically by the data element tag.

### 3.3.3 Dictionary version at introduction

This entry records the version number of the dictionary standard (i.e., the structure standard/recommended practice pair) which first recorded the allocation of a data element against a data element tag.

### 3.3.4 Data element definition

This entry is the detailed and unambiguous English language definition of what is represented by the data element tag and element name.

### 3.3.5 Type

This entry identifies the representation category of metadata value allowed for this element in order to permit correct interpretation of that value; for example, in the case of a text string or an SMPTE time code. A compound type entry is a class or subclass node or split in the metadata dictionary hierarchy and cannot have a value associated with it. A document is under development which defines the types for each element in more detail.

### 3.3.6 Value length

This entry defines the permitted length in bytes or characters of the value of the data element. In some cases, such as a text string, the length is not defined or limited and the value length is described as variable. However, in practice, a variable length may be limited by the application specification.

### 3.3.7 Value range

This entry defines any limitations on the permitted values of a data element.

### 3.3.8 Node/leaf

This entry defines whether the dictionary entry is a node in the classification structure or a leaf as defined in 3.1.

### 3.3.9 Defining document

In cases where the data element type or other parameter is defined in another document, this entry

references that standard or the authoritative source of the information.

## 3.4 Metadata dictionary structure maintenance

The principles for maintenance and administration of the metadata dictionary structure are defined in the following clauses:

### 3.4.1 Dictionary version information

The following information shall be provided by the SMPTE Registration Authority with each update to the metadata dictionary structure and contents:

Standard name: Metadata dictionary structure standard

Standard designator: One-byte unsigned integer in the range of 1 to 127

Version number: One-byte unsigned integer in the range of 1 to 127

Effective date: TBD

Database format: Text

Summary of changes: Text

Database administrator: Text with URL or e-mail

Contact information: Text with URL or e-mail

### 3.4.2 Dictionary management and compatibility requirements

To ensure reliable and correct interpretation of legacy material in the future, changes to SMPTE RP 210 shall be additions only. Deletions or changes to entries (other than purely editorial) are not permitted. This addition process shall be speedily carried out and documented in accordance with SMPTE 359M by the SMPTE Registration Authority. It shall occur immediately on request from the appropriate SMPTE technology committee and shall be administered and scrutinized with a light but formal touch to ensure minimal delay in the availability for use of a newly required registered tag. The version number of the dictionary shall be incremented each and every time an addition (or group of additions) is made since this is critical to ensuring the operational compatibility of metadata decoders. The incrementing of the version number shall not prevent use of unaffected tags,

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structure, or contents by a decoder that conforms to the prior version.

It is inevitable, given the above addition process, that eventually the dictionary will become cluttered with legacy entries to the point where the responsible SMPTE technology committee determines it has reached the limit of its usefulness. At this stage, or when other changes to the dictionary contents, to an existing approved dictionary structure, or to relationships among metadata classes that prevent backward compatibility are necessary, a new dictionary consisting of both structure standard and contents recommended practice shall be created and the structure and contents of the new dictionary made readily accessible on-line by the SMPTE Registration Authority to

allow upgrades to decoders. The superseded standard shall then undergo no further revision unless essential under the SMPTE five-year rule.

### 3.4.3 Dictionary availability

The dictionary documents shall be available in electronic form in a defined electronic publishing format, such as XML with an accompanying document type definition.

The latest version of SMPTE RP 210 shall be made available on the SMPTE website in a noneditable format (pdf or equivalent). It is preferred that a minimum of the two immediate previous versions be also available in a clearly indicated archive.

## Annex A (normative)
## Glossary of terms

**A.1 content:** The program content will consist of the sum total of the essence (video, audio, data, etc.) and the metadata.

**A.2 data element:** An individual unit of data or metadata.

**A.3 data element definition:** The detailed and unambiguous definition of what is represented by the key and element name.

**A.4 data element name:** The English language name for the element represented numerically by the data element tag.

**A.5 data element tag:** The 8-byte tag that uniquely identifies the data element in the metadata dictionary.

**A.6 essence:** Identified by the SMPTE/EBU Task Force for Harmonized Standards for the Exchange of Program Material as Bitstreams (TFHS) as the digital representation of video, audio, and/or data information. Essence can therefore also be graphics, telemetry, photographs, or other information.

**A.7 label:** A 16-byte key that explicitly identifies a predefined value or group of values.

**A.8 metadata:** Generally referred to as data about data or data describing other data. More specifically, information

that is considered ancillary to or otherwise directly complementary to the essence. Any information that a content provider considers useful or of value when associated with the essence being provided.

**A.9 metadata class:** The broad category of metadata that forms the first level of hierarchy for all registered metadata.

**A.10 metadata dictionary:** The standard database of approved, registered data element tags and their definitions.

**A.11 metadata element:** A broad term for a unit of metadata.

**A.12 metadata tag:** The 8-byte tag that uniquely identifies the data element in the metadata dictionary.

**A.13 type:** Information about the representation of the metadata or data value. A document is under development which defines the type for each element in more detail.

**A.14 value:** The instance of information described by the metadata tag. Equivalent to description in the terminology of MPEG-7.

## Annex B (informative)
## Organization of references

The organization of standards and guidelines for metadata are illustrated in figure B.1. No single standard can contain all of the information needed to describe and encode metadata. Hence, a layered approach is used to convey the information so the user can select the applicable standard(s) for the level of implementation needed. This standard, the metadata dictionary recommended practice (SMPTE RP 210),

the standard for key-length-value (KLV) data encoding (SMPTE 336M), and the standard for the registration process (SMPTE 359M) form the SMPTE normative standards for metadata. Informative SMPTE documents supplement the standards for encoding with examples and administrative instructions on managing the data standardization and registration process via the SMPTE Registration Authority.
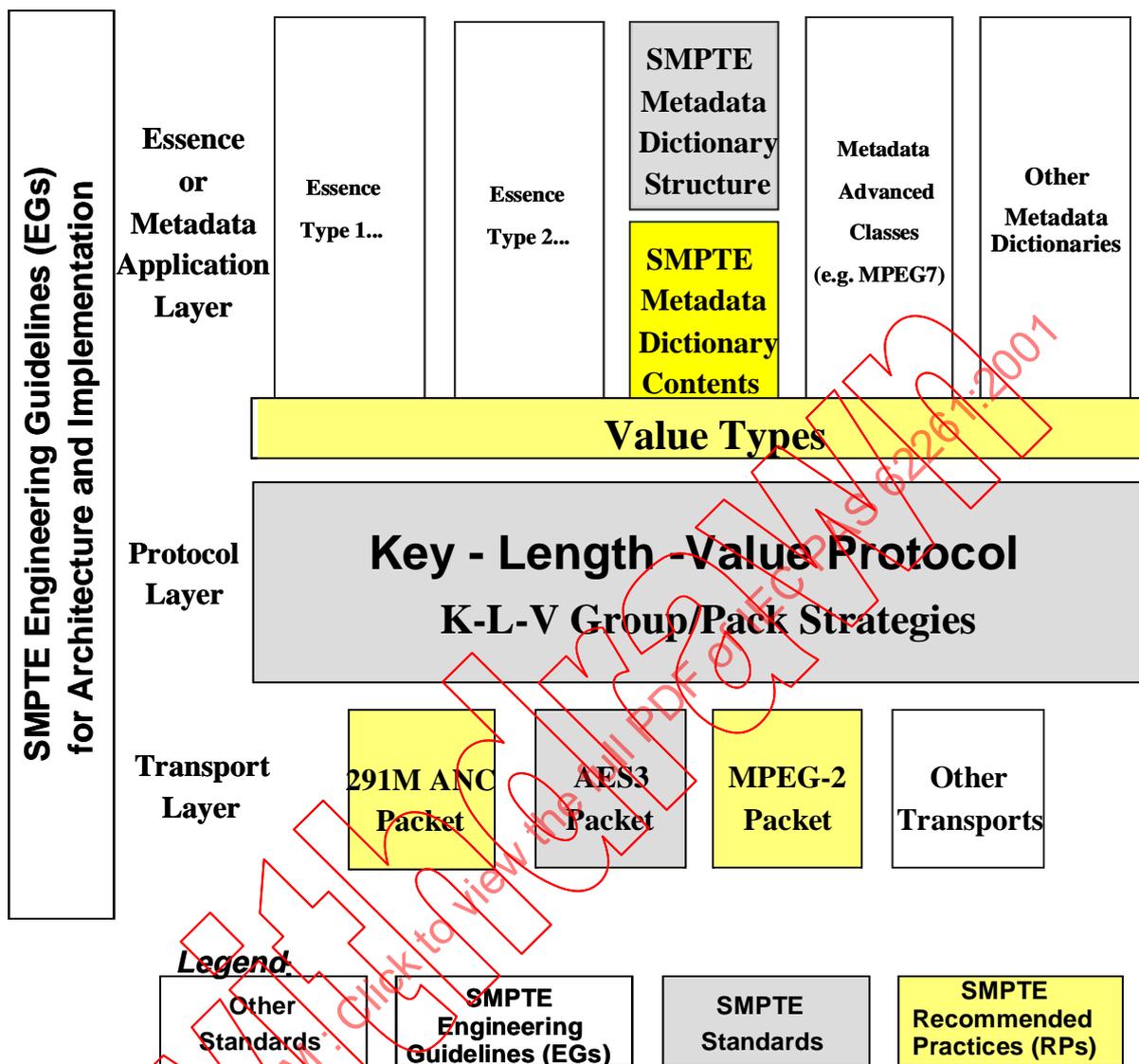
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**Figure B.1 – Organization of references**

**Annex C** (informative)
**Bibliography**

SMPTE 330M-2000, Television — Unique Material Identifier (UMID)

SMPTE 355M-2001, Television — Format for Non-PCM Audio and Data in AES3 — KLV Data Type

SMPTE RP 214, Packing KLV Encoded Metadata and Data Essence into SMPTE 291M Ancillary Data Packets

SMPTE RP XXX, Nonsynchronized Mapping of KLV Packets into MPEG-2 Systems Streams

SMPTE EG 37, Node Structure for the SMPTE Metadata Dictionary

**RP 210A-2000**

## SMPTE RECOMMENDED PRACTICE

# Metadata Dictionary Registry of Metadata Element Descriptions

## 1 Scope

This Metadata Dictionary Contents Recommended Practice defines a Registry of Metadata Element Descriptions for association with essence or other Metadata. A full explanation is contained in SMPTE Standard SMPTE 335M Metadata Dictionary Structure.

The Metadata Dictionary Structure defined in SMPTE 335M covers the use of Metadata for all types of essence (video, audio and data in their various forms). The Standard specifies that any Application must conform both to

(a) the definitions and formats in SMPTE 335M and

(b) to this Metadata Dictionary Contents Recommended Practice.

i.e. the Standard and this Recommended Practice must be used together as a pair – neither must be used in isolation.

This document contains a representation of the SMPTE Metadata Dictionary Registry contents in the form of an Excel spreadsheet and other representations will be made available as specified in SMPTE335M.

## 2 References

### 2.1 Normative References

| | |
|---|---|
| SMPTE 298M | Universal Labels for Unique Identification of Digital Data |
| SMPTE 335M | Metadata Dictionary Structure |
| SMPTE 359M | Dynamic Documents |
| SMPTE XXX | Types Dictionary Structure |
| SMPTE XXX | Metadata Values Registry Structure |

All other normative references are contained in the Registry itself as part of each metadata element description.

### 2.2 Informative References

| | |
|---|---|
| SMPTE EG-37 | Node Structure for the Metadata Dictionary |
| SMPTE 336M | Data Encoding Protocol Using Key-Length-Value (KLV) |

Approved August 24, 2000

## 3 Registry Structure

The following is intended as an informative note only.  A full explanation is contained in SMPTE Standard "Metadata Dictionary Structure"  SMPTE 335M.

For convenience of the management of the Registry, metadata elements are listed under the six distinct classes of Identification; Administration; Interpretation; Parametric; Process; Relational and Spacio-Temporal.  Two further classes are reserved for Organizationally Registered Metadata and one for Experimental use.

These classes are further broken down under Nodes, which are again for management purposes only.

Each Metadata element is listed by Name, with a Definition of what it is, its data type, length, reference to existing standards where appropriate and a unique 8 byte Key.  Although Nodes have a key allocated, this is not used - it is once again an aid for management purposes only.

# SMPTE Metadata Dictionary (RP210A) - Trial Publication July 2000

## Please read in conjunction with the cover sheet of this workbook

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Node** | 01 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **IDENTIFIERS & LOCATORS** | **Class 1 metadata is reserved for abstract Identifiers & locators** | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 01 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **Globally Unique Identifiers** | **Unique identifiers and locators** | | | | | |
| 1 | Leaf | 01 | 01 | 01 | XY | 00 | 00 | 00 | 00 | UMID Video | Unique Material Identifier for video essence.  Note - the UMID has a 12 byte SMPTE label.  XY defines the Material/Instance number creation and/or useage methods. | As per SMPTE standard | 32 | | SMPTE 330M | |
| 1 | Leaf | 01 | 01 | 02 | XY | 00 | 00 | 00 | 00 | UMID Audio | Unique Material Identifier for audio essence. Note - the UMID has a 12 byte SMPTE label.  XY defines the Material/Instance number creation and/or useage methods. | As per SMPTE standard | 32 | | SMPTE 330M | |
| 1 | Leaf | 01 | 01 | 03 | XY | 00 | 00 | 00 | 00 | UMID Data | Unique Material Identifier for data essence. Note - the UMID has a 12 byte SMPTE label.  XY defines the Material/Instance number creation and/or useage methods. | As per SMPTE standard | 32 | | SMPTE 330M | |
| 1 | Leaf | 01 | 01 | 04 | XY | 00 | 00 | 00 | 00 | UMID System | Unique Material Identifier for other material including grouped picture, audio or data essence. Note - the UMID has a 12 byte SMPTE label.  XY defines the Material/Instance number creation and/or useage methods. | As per SMPTE standard | 32 | | SMPTE 330M | |
| | Node | 01 | 01 | 10 | 00 | 00 | 00 | 00 | 00 | **International broadcasting organisation identifiers** | **Internationally recognised identifiers registered by broadcasting organisations** | | | | | |
| 1 | Leaf | 01 | 01 | 10 | 01 | 00 | 00 | 00 | 00 | Organisation Identifiers | The broadcasting organisation concerned | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | Node | 01 | 01 | 10 | 03 | 00 | 00 | 00 | 00 | **Programme Identifiers** | **Unique programme identifiers** | | | | | |
| 1 | Leaf | 01 | 01 | 10 | 03 | 01 | 00 | 00 | 00 | UPID | A Unique Program Identifier (ATSC A/57) for a programme as a Work | As per ATSC standard | | | As per ATSC standard | |
| 1 | Leaf | 01 | 01 | 10 | 03 | 02 | 00 | 00 | 00 | UPN | Unique Programme Number (ITVA) | As per ITVA standard | | | As per ITVA standard | |
| | Node | 01 | 01 | 10 | 04 | 00 | 00 | 00 | 00 | **Physical Media identifiers** | **Physical media identifiers** | | | | | |
| | Node | 01 | 01 | 10 | 04 | 01 | 00 | 00 | 00 | **Tape Identifiers** | **Tape identifiers** | | | | | |
| 1 | Leaf | 01 | 01 | 10 | 04 | 01 | 01 | 00 | 00 | IBTN | EBU International Broadcast Tape Number | As per EBU standard | | | | |
| | Node | 01 | 01 | 11 | 00 | 00 | 00 | 00 | 00 | **ISO Identifiers** | **International Standards Organisation Identifier Schemes** | | | | | |
| 1 | Leaf | 01 | 01 | 11 | 01 | 00 | 00 | 00 | 00 | ISAN | ISO Audio-Visual Number | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 02 | 00 | 00 | 00 | 00 | ISBN | ISO Book Number | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 03 | 00 | 00 | 00 | 00 | ISSN | ISO Serial Number | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 04 | 00 | 00 | 00 | 00 | ISWC | ISO Musical Work Code | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 05 | 00 | 00 | 00 | 00 | ISMN | ISO Printed Music Number | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 06 | 00 | 00 | 00 | 00 | ISCI | ISO Commercial Identifier | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 07 | 00 | 00 | 00 | 00 | ISRC | ISO Recording Code | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 08 | 00 | 00 | 00 | 00 | ISRN | ISO Report Number | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 09 | 00 | 00 | 00 | 00 | ISBD | ISO Bibliographic Despcriptor | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 11 | 0A | 00 | 00 | 00 | 00 | ISTC | ISO Textual Work Code | As per ISO standard | | | TBA | |
| | Node | 01 | 01 | 13 | 00 | 00 | 00 | 00 | 00 | **ISO-based Compound IDs** | **Compound ISO-based Identifiers** | | | | | |
| 1 | Leaf | 01 | 01 | 13 | 01 | 00 | 00 | 00 | 00 | SICI | Serial Item and Contribution Identifier | As per ISO standard | | | TBA | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 01 | 01 | 13 | 02 | 00 | 00 | 00 | 00 | BICI | Book Item and Component Identifier | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 13 | 03 | 00 | 00 | 00 | 00 | AICI | Audio-Visual Item and Component Identifier [proposed] | As per ISO standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 13 | 04 | 00 | 00 | 00 | 00 | PII | Publisher Item Identifier | As per ISO standard | | | TBA | |
| | Node | 01 | 01 | 15 | 00 | 00 | 00 | 00 | 00 | **Object identifiers** | Object identifiers | | | | | |
| 1 | Leaf | 01 | 01 | 15 | 01 | 00 | 00 | 00 | 00 | DOI | Digital Object Identifier | As per DOI standard | | | TBA | |
| 1 | Leaf | 01 | 01 | 15 | 02 | 00 | 00 | 00 | 00 | GUID | The ISO/IEC 11578 (Annex A) 16 byte Globally Unique Identifier | As per ISO 11578 standard (Annex A) | | | ISO 11578 (Annex A) | |
| 1 | Leaf | 01 | 01 | 15 | 10 | 00 | 00 | 00 | 00 | Package ID | Identifies the Metadata Object with a SMPTE label or GUID | PackageID | 32 bytes | | W25.52 | |
| | Node | 01 | 01 | 20 | 00 | 00 | 00 | 00 | 00 | **Device Identifiers** | Unique identifiers for any device used in programme production - cameras, microphones, editing, colour grading etc | | | | | |
| 1 | Leaf | 01 | 01 | 20 | 01 | 00 | 00 | 00 | 00 | Device Designation | Identifies the "house name" of the device used in capturing or generating the essence | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 01 | 20 | 03 | 00 | 00 | 00 | 00 | Device Model | Identifies the device model used in capturing or generating the essence. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 01 | 20 | 04 | 00 | 00 | 00 | 00 | Device Serial Number | Alphanumeric serial number identifying the individual device | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 01 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | **Globally Unique Locators** | Globally Unique path definitions | | | | | |
| | Node | 01 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | **UR locators** | Unique Resource Locators | | | | | |
| 1 | Leaf | 01 | 02 | 01 | 01 | 00 | 00 | 00 | 00 | URL String (ISO 7 bit) | Unique Resource Locator String | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 255 bytes max | | | |
| 1 | Leaf | 01 | 02 | 01 | 01 | 01 | 00 | 00 | 00 | URL String (Unicode) | Unique Resource Locator String | 16 bit Unicode String | variable 255 chars max. | | W25.52 | |
| 1 | Leaf | 01 | 02 | 01 | 02 | 00 | 00 | 00 | 00 | PURL | Persistent Universal Resource Locator | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 255 bytes max | | | |
| 1 | Leaf | 01 | 02 | 01 | 03 | 00 | 00 | 00 | 00 | URN | Unique Resource Name | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 256 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 01 | 03 | 00 | 00 | 00 | 00 | 00 | 00 | **Locally Unique Identifiers** | Identifier unique to the local context | | | | | |
| | Node | 01 | 03 | 01 | 00 | 00 | 00 | 00 | 00 | **Administrative identifiers** | Identifiers relating to Business and Administration | | | | | |
| 1 | Leaf | 01 | 03 | 01 | 01 | 00 | 00 | 00 | 00 | Transmission Identifier | Identifier for transmission control | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 03 | 01 | 02 | 00 | 00 | 00 | 00 | Archive Identifier | Identifier for archival purposes | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 03 | 01 | 03 | 00 | 00 | 00 | 00 | Item ID | Identifier of a content item | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 03 | 01 | 04 | 00 | 00 | 00 | 00 | Accounting Reference | Reference number for accounting purposes | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 03 | 01 | 05 | 00 | 00 | 00 | 00 | Traffic ID | Identifier for emmission management and/or billing | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| | Node | 01 | 03 | 02 | 00 | 00 | 00 | 00 | 00 | **Physical Media identifiers** | Organisationally given identifiers for physical media | | | | | |
| | Node | 01 | 03 | 02 | 01 | 00 | 00 | 00 | 00 | **Film codes** | Organisationally given identifiers for film | | | | | |
| 1 | Leaf | 01 | 03 | 02 | 01 | 01 | 00 | 00 | 00 | Reel/Roll number | An organisationally given number for a film reel or roll. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| | Node | 01 | 03 | 02 | 02 | 00 | 00 | 00 | 00 | **Tape identifiers** | Organisationally given identifiers for tape | | | | | |
| 1 | Leaf | 01 | 03 | 02 | 02 | 01 | 00 | 00 | 00 | Tape number | An organisationally given number for a tape. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| | Node | 01 | 03 | 03 | 00 | 00 | 00 | 00 | 00 | **Object identifiers** | Object identifiers | | | | | |
| 1 | Leaf | 01 | 03 | 03 | 01 | 00 | 00 | 00 | 00 | LUID | A 4 byte locally unique ID | UInt32 | 4 bytes | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 01 | 03 | 03 | 02 | 01 | 00 | 00 | 00 | Package Name | Identifies the AAF metadata object by name | 16 bit Unicode String | variable | | W25.52 | |
| | | | | | | | | | | | | | | | | |
| | Node | 01 | 04 | 00 | 00 | 00 | 00 | 00 | 00 | **Locally Unique Locators** | Locally unique path definitions | | | | | |
| | Node | 01 | 04 | 01 | 00 | 00 | 00 | 00 | 00 | **Media Locators** | Local paths for a digital media, data, metadata file etc | | | | | |
| 1 | Leaf | 01 | 04 | 01 | 01 | 00 | 00 | 00 | 00 | Local File Path | The local path to a complete digital media, data, metadata etc file | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 255 bytes max | | | |
| | Node | 01 | 04 | 07 | 00 | 00 | 00 | 00 | 00 | **Film Locators** | Location information for film | | | | | |
| 1 | Leaf | 01 | 04 | 07 | 01 | 00 | 00 | 00 | 00 | Edge Code | The edge code on the film  eg feet;frames | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 04 | 07 | 02 | 00 | 00 | 00 | 00 | Frame Code | Unique frame number for film | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 04 | 07 | 03 | 00 | 00 | 00 | 00 | Key code | Machine readable version of Frame Code | UInt32 | 4 bytes | | | |
| 1 | Leaf | 01 | 04 | 07 | 04 | 00 | 00 | 00 | 00 | Ink number | Ink number | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| | Node | 01 | 04 | 10 | 00 | 00 | 00 | 00 | 00 | **Proxy locators** | Local archival location information for key frames, keys sounds, key text etc | | | | | |
| 1 | Leaf | 01 | 04 | 10 | 01 | 00 | 00 | 00 | 00 | Key text | Local archival location information for key text | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 01 | 04 | 10 | 02 | 00 | 00 | 00 | 00 | Key Frame | Local archival location information for key frames | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 01 | 04 | 10 | 03 | 00 | 00 | 00 | 00 | Key Sound | Local archival location information for keys sounds | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 01 | 04 | 10 | 04 | 00 | 00 | 00 | 00 | Key data or program | Local archival location information for key data or program | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 01 | 05 | 00 | 00 | 00 | 00 | 00 | 00 | **Titles** | Titling metadata relating to productions | | | | | |
| 1 | Leaf | 01 | 05 | 01 | 00 | 00 | 00 | 00 | 00 | Title kind | Kind of title, i.e., project, series, item, programme, working, original item, episode, element, scene, shot etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 01 | 05 | 02 | 00 | 00 | 00 | 00 | 00 | Main title | The main title | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 01 | 05 | 03 | 00 | 00 | 00 | 00 | 00 | Secondary title | The secondary title | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 01 | 05 | 04 | 00 | 00 | 00 | 00 | 00 | Series number | The alphanumeric series number | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 05 | 05 | 00 | 00 | 00 | 00 | 00 | Episode Number | The alphanumeric episode number | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 05 | 06 | 00 | 00 | 00 | 00 | 00 | Scene number | The alphanumeric scene number | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 01 | 05 | 07 | 00 | 00 | 00 | 00 | 00 | Take Number | Take number of the instance of the shot | UInt16 | 2 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 01 | 10 | 00 | 00 | 00 | 00 | 00 | 00 | **Unique IPR Identifiers** | Unique IDs allocated by IP Rights organisations | | | | | |
| | Node | 01 | 10 | 01 | 00 | 00 | 00 | 00 | 00 | **IPI (SUISA/CISAC)** | IP Identifiers allocated by CISAC | | | | | |
| 1 | Leaf | 01 | 10 | 01 | 01 | 00 | 00 | 00 | 00 | Natural Person / legal entity | Natural person or legal entity ID in the Interested Parties system | As per CISAC standard | | | TBA | |
| | Node | 01 | 10 | 02 | 00 | 00 | 00 | 00 | 00 | **AGICOA/MPAA** | Unique Identifiers allocated by AGICOA | | | | | |
| 1 | Leaf | 01 | 10 | 02 | 01 | 00 | 00 | 00 | 00 | AGICOA/MPAA Identifier | The AGICOA ID. | As per AGICOA standard | | | TBA | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **ADMINISTRATION** | Class 2 is reserved for administrative and business related metadata | | | | | |
| | | | | | | | | | | | | | | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Node | 02 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **Supplier** | Details of the content supplying organisation | | | | | |
| 1 | Leaf | 02 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | Source Organization | The name of the content supplying organisation | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 02 | 01 | 02 | 00 | 00 | 00 | 00 | 00 | Supply contract number | The alphanumeric number for the contract for the supply of content | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 chars max | | | |
| 1 | Leaf | 02 | 01 | 03 | 00 | 00 | 00 | 00 | 00 | Original Producer Name | The name of the original content Producer. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | **Product** | Abstract information about the media product | | | | | |
| 1 | Leaf | 02 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | Total number of Episodes in a Series | Total number of Episodes in Series | UInt16 | 2 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 05 | 00 | 00 | 00 | 00 | 00 | 00 | **Rights** | Rights metadata | | | | | |
| | Node | 02 | 05 | 01 | 00 | 00 | 00 | 00 | 00 | **Copyright** | Copyright metadata | | | | | |
| 1 | Leaf | 02 | 05 | 01 | 01 | 00 | 00 | 00 | 00 | Copyright Status | Executive evaluation of copyright status | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 02 | 05 | 01 | 02 | 00 | 00 | 00 | 00 | Copyright Owner | The name of the person/organisation who owns the copyright. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | Node | 02 | 05 | 02 | 00 | 00 | 00 | 00 | 00 | **Intellectual rights** | Intellectual property rights metadata other than copyright | | | | | |
| 1 | Leaf | 02 | 05 | 02 | 01 | 00 | 00 | 00 | 00 | IP Type | A definition of the IP in freeform text | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 05 | 02 | 02 | 00 | 00 | 00 | 00 | IP Right | A freeform text definition of what use can be made of an IP | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 05 | 03 | 00 | 00 | 00 | 00 | 00 | **Legal personalities** | A person or body in whom legal responsibility can be vested | | | | | |
| 1 | Leaf | 02 | 05 | 03 | 01 | 00 | 00 | 00 | 00 | Rights Owner | A definition of who or what entity can exercise an IP right | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 02 | 05 | 03 | 02 | 00 | 00 | 00 | 00 | Rights Management Authority | Entity that manages the rights for access to the material. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 02 | 05 | 03 | 03 | 00 | 00 | 00 | 00 | Interested parties | A definition or who or what entity has an interest in the right being excercised | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | Node | 02 | 05 | 04 | 00 | 00 | 00 | 00 | 00 | **IP Right options** | A definition of what options can be excersied within the framework of using an IP Right | | | | | |
| 1 | Leaf | 02 | 05 | 04 | 01 | 00 | 00 | 00 | 00 | Maximum Number Of Usages | Maximum number of usages or repeats | UInt16 | 2 bytes | | | |
| 1 | Leaf | 02 | 05 | 04 | 02 | 00 | 00 | 00 | 00 | License options | Options for prolongation or renewal of license | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 06 | 00 | 00 | 00 | 00 | 00 | 00 | **Financial information** | Details of payments, costs, income money and other considerations | | | | | |
| | Node | 02 | 06 | 01 | 00 | 00 | 00 | 00 | 00 | **Currencies** | Information about currencies involved in transactions | | | | | |
| 1 | Leaf | 02 | 06 | 01 | 01 | 00 | 00 | 00 | 00 | Currency | The currency of the transaction | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | TBA | |
| | Node | 02 | 06 | 02 | 00 | 00 | 00 | 00 | 00 | **Payments and costing** | Payments and costing information | | | | | |
| 1 | Leaf | 02 | 06 | 02 | 01 | 00 | 00 | 00 | 00 | Royalty Financial Information | Royalty payment and other information | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | Node | 02 | 06 | 03 | 00 | 00 | 00 | 00 | 00 | **Income** | Income information | | | | | |
| 1 | Leaf | 02 | 06 | 03 | 01 | 00 | 00 | 00 | 00 | Royalty Financial Information | Royalty income and other information | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 07 | 00 | 00 | 00 | 00 | 00 | 00 | **Permitted Access** | Details of permitted access to the media product | | | | | |
| 1 | Leaf | 02 | 07 | 01 | 00 | 00 | 00 | 00 | 00 | Restrictions on Use | Identifies the type or level of restriction applied to the media product. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |

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| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Node | 02 | 08 | 00 | 00 | 00 | 00 | 00 | 00 | **Security** | Content encryption/decryption information | | | | | |
| | Node | 02 | 08 | 01 | 00 | 00 | 00 | 00 | 00 | **System Access** | Details of permitted access to the technical system or platform | | | | | |
| 1 | Leaf | 02 | 08 | 01 | 01 | 00 | 00 | 00 | 00 | Username (ISO 7-bit) | A username in a domain | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 16 chars max | | | |
| 1 | Leaf | 02 | 08 | 01 | 01 | 01 | 00 | 00 | 00 | Username (Unicode) | A username in a domain | 16 bit Unicode String | 16 chars max | | | |
| 1 | Leaf | 02 | 08 | 01 | 02 | 00 | 00 | 00 | 00 | Password (ISO 7-bit) | An individual password for access to the system | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 16 chars max | | | |
| 1 | Leaf | 02 | 08 | 01 | 02 | 01 | 00 | 00 | 00 | Password (Unicode) | An individual password for access to the system | 16 bit Unicode String | 16 chars max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 09 | 00 | 00 | 00 | 00 | 00 | 00 | **Encryption** | Content encryption/decryption information | | | | | |
| | Node | 02 | 09 | 01 | 00 | 00 | 00 | 00 | 00 | **Film Encryption** | Content encryption/decryption information for Film | | | | | |
| | Node | 02 | 09 | 01 | 01 | 00 | 00 | 00 | 00 | **Scrambling Keys** | Information about decryption keys for Film | | | | | |
| 1 | Leaf | 02 | 09 | 01 | 01 | 01 | 00 | 00 | 00 | Scrambling key kind | The programme decryption key type for Film | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | TBA | |
| 1 | Leaf | 02 | 09 | 01 | 01 | 02 | 00 | 00 | 00 | Scrambling key value | The programme decryption key value for Film | UInt 8 | 64 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 10 | 00 | 00 | 00 | 00 | 00 | 00 | **Publication Outlet** | The content publication outlet - eg Broadcast, internet etc | | | | | |
| | Node | 02 | 10 | 01 | 00 | 00 | 00 | 00 | 00 | **Broadcast** | Broadcast Outlet information | | | | | |
| | Node | 02 | 10 | 01 | 01 | 00 | 00 | 00 | 00 | **Broadcaster** | The broadcasting organisation | | | | | |
| 1 | Leaf | 02 | 10 | 01 | 01 | 01 | 00 | 00 | 00 | Name | Name of the broadcasting organisation | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 10 | 01 | 01 | 02 | 00 | 00 | 00 | Channel | Broadcast channel | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 10 | 01 | 01 | 03 | 00 | 00 | 00 | Publishing Medium | Publishing medium, including transmission (e.g., satellite, cable, terrestrial, ...) | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 10 | 01 | 01 | 04 | 00 | 00 | 00 | Broadcast Region | Target region of broadcast | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 20 | 00 | 00 | 00 | 00 | 00 | 00 | **Broadcast and Repeat Information** | Business information concerning the production | | | | | |
| | Node | 02 | 20 | 01 | 00 | 00 | 00 | 00 | 00 | **Broadcast Flags** | Flags concerning aspects of business or administration | | | | | |
| 1 | Leaf | 02 | 20 | 01 | 01 | 00 | 00 | 00 | 00 | First Broadcast Flag | First broadcast of the product | Boolean | 1 byte | 00h (FALSE) or FFh (TRUE) | | |
| | Node | 02 | 20 | 02 | 00 | 00 | 00 | 00 | 00 | **Repeat numbers** | Information about the repeat status when not a first broadcast | | | | | |
| 1 | Leaf | 02 | 20 | 02 | 01 | 00 | 00 | 00 | 00 | Current repeat number | The number of the current repeat | UInt16 | 2 bytes | | | |
| 1 | Leaf | 02 | 20 | 02 | 02 | 00 | 00 | 00 | 00 | Previous repeat number | The number of the previous repeat | UInt16 | 2 bytes | | | |
| | Node | 02 | 20 | 03 | 00 | 00 | 00 | 00 | 00 | **Ratings** | Information about audience ratings and indices | | | | | |
| 1 | Leaf | 02 | 20 | 03 | 01 | 00 | 00 | 00 | 00 | Audience rating | Audience rating as number of viewers | UInt32 | 4 bytes | | | |
| 1 | Leaf | 02 | 20 | 03 | 02 | 00 | 00 | 00 | 00 | Audience reach | The audience reach of the production | UInt32 | 4 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 02 | 30 | 00 | 00 | 00 | 00 | 00 | 00 | **Participating parties** | Details of all parties, contributing to or taking part in the production - staff, contributors, and including those receiving Credits etc | | | | | |
| | Node | 02 | 30 | 01 | 00 | 00 | 00 | 00 | 00 | **Persons (Groups and Individuals and Groups)** | Details of persons or groups of people contributing to or taking part in the production | | | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 02 | 30 | 01 | 01 | 00 | 00 | 00 | 00 | Nature of Personality (Individual or Group) | Group, Individual etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 01 | 02 | 00 | 00 | 00 | 00 | **Production** | Details of Performing talent, Non performing talent, Production Staff, Technical staff, Specialist etc | | | | | |
| 1 | Leaf | 02 | 30 | 01 | 02 | 01 | 00 | 00 | 00 | Contribution Status | Performing talent, Non performing talent, Production Staff, Technical staff, Specialist etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 01 | 03 | 00 | 00 | 00 | 00 | **Support and Administration** | Details of support and administative staff or contributors - business mangement, resource planning, archiving etc | | | | | |
| 1 | Leaf | 02 | 30 | 01 | 03 | 01 | 00 | 00 | 00 | Support/Administration Status | Cataloguing staff, finance staff etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 02 | 00 | 00 | 00 | 00 | 00 | **Organisations and Public Bodies** | Details of Organisations and Public Bodies contributing to or taking part in the production | | | | | |
| 1 | Leaf | 02 | 30 | 02 | 01 | 00 | 00 | 00 | 00 | Nature of Organisation or Public Body | Limited company, government department etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 02 | 02 | 00 | 00 | 00 | 00 | **Production** | Details of Performing contribution, Non performing contribution, Production contribution, Technical contribution, Specialism etc | | | | | |
| 1 | Leaf | 02 | 30 | 02 | 02 | 01 | 00 | 00 | 00 | Contribution Status | eg. Film Library | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 02 | 03 | 00 | 00 | 00 | 00 | **Support and Administration** | Details of support and administative contribution - business mangement, resource planning, archiving etc | | | | | |
| 1 | Leaf | 02 | 30 | 02 | 03 | 01 | 00 | 00 | 00 | Support/Administration Status | eg. Banker | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 05 | 00 | 00 | 00 | 00 | 00 | **Job Function Information** | Information about the job function or role of participating parties | | | | | |
| 1 | Leaf | 02 | 30 | 05 | 01 | 00 | 00 | 00 | 00 | Job Function | The function of the persons(s), organisation or public body eg. Editor, Actor | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 30 | 05 | 02 | 00 | 00 | 00 | 00 | Role/Identity | eg. Name of character played | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 06 | 00 | 00 | 00 | 00 | 00 | **Contact information** | Contact information for the participating party | | | | | |
| 1 | Leaf | 02 | 30 | 06 | 01 | 00 | 00 | 00 | 00 | Contact kind | Client, supplier, useful etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 30 | 06 | 02 | 00 | 00 | 00 | 00 | Contact Department | Name information for a department within an organisation where contact can be made | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 06 | 03 | 00 | 00 | 00 | 00 | **Person or Organisation Details** | The name of person(s), organisation or public body | | | | | |
| | Node | 02 | 30 | 06 | 03 | 01 | 00 | 00 | 00 | **Person names** | Name information for persons | | | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 01 | 01 | 00 | 00 | Family name | The family name of an individual | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 01 | 02 | 00 | 00 | First Given name | The first given name for an individual | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 01 | 03 | 00 | 00 | Second Given name | The second given name for an individual | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 01 | 04 | 00 | 00 | Third Given name | The third given name for an individual | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 06 | 03 | 02 | 00 | 00 | 00 | **Group names** | Name information for groups | | | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 02 | 01 | 00 | 00 | Main name | The main name by which the group is known | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 02 | 02 | 00 | 00 | Supplementary name | Supplementary naming information for a group | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 02 | 30 | 06 | 03 | 03 | 00 | 00 | 00 | **Organisation names** | Name information for organisations | | | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 03 | 01 | 00 | 00 | Main name | The main name by which an organisation is known | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 02 | 30 | 06 | 03 | 03 | 02 | 00 | 00 | Supplementary organisational name | Supplementary naming information for an organisation | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | **03** | **00** | **00** | **00** | **00** | **00** | **00** | **00** | **INTERPRETIVE** | **Class 3 is reserved for information on interpreting the data** | | | | | |
| | | | | | | | | | | | | | | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Node | 03 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | Fundamental | Fundamental defining information | | | | | |
| | Node | 03 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | Countries and Languages | Defining information about Countries and languages | | | | | |
| | Node | 03 | 01 | 01 | 01 | 00 | 00 | 00 | 00 | Country and Region Codes | Country Codes and Region Codes | | | | | |
| 1 | Leaf | 03 | 01 | 01 | 01 | 01 | 00 | 00 | 00 | ISO 3166 Country Code System | ISO country codes | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | ISO 3166 | |
| | Node | 03 | 01 | 01 | 02 | 00 | 00 | 00 | 00 | Language Codes | Language Codes | | | | | |
| 1 | Leaf | 03 | 01 | 01 | 02 | 01 | 00 | 00 | 00 | ISO Language Code | The short code that represents a language | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | TBA | |
| | Node | 03 | 01 | 02 | 00 | 00 | 00 | 00 | 00 | Data Interpretations | Defining information about data interpretation | | | | | |
| | Node | 03 | 01 | 02 | 01 | 00 | 00 | 00 | 00 | System interpretations | Interpretive information for common data systems | | | | | |
| 1 | Leaf | 03 | 01 | 02 | 01 | 01 | 00 | 00 | 00 | Operating system interpretations | 1-byte code for distinction of common operating systems | UInt 8 | 1 byte | See types dictionary | | |
| 1 | Leaf | 03 | 01 | 02 | 01 | 02 | 00 | 00 | 00 | Byte Order | Specifies the byte order of the metadata "MM"=Big endian, "II"=Little endian | Int16 | 2 bytes | | W25.52 | "MM"=Big endian, "II"=Little endian |
| 1 | Leaf | 03 | 01 | 02 | 01 | 03 | 00 | 00 | 00 | Essence Is Identified | Specifies whether the wrapper or container format identifies essence with an SMPTE label or other AUID (False=0) | Boolean | 1 byte | 00h (FALSE) or FFh (TRUE) | W25.52 | |
| | Node | 03 | 01 | 03 | 00 | 00 | 00 | 00 | 00 | Fundamental Dimensions | Information about the four basic indefinables of natural philosophy | | | | | |
| | Node | 03 | 01 | 03 | 01 | 00 | 00 | 00 | 00 | Length | Descriptive information about length  (Default is Metric system, metres) | | | | | |
| 1 | Leaf | 03 | 01 | 03 | 01 | 01 | 00 | 00 | 00 | Length System | Metric, Imperial etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See Types dictionary | | |
| 1 | Leaf | 03 | 01 | 03 | 01 | 02 | 00 | 00 | 00 | Length Units | Units of measurements of length and distance (feet, metres etc) | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See Types dictionary | | |
| | Node | 03 | 01 | 03 | 02 | 00 | 00 | 00 | 00 | Angles | Descriptive information about Angles (Default is Degrees) | | | | | |
| 1 | Leaf | 03 | 01 | 03 | 02 | 01 | 00 | 00 | 00 | Angular Unit | Degrees, Radians, Grads etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See Types dictionary | | |
| | Node | 03 | 01 | 03 | 03 | 00 | 00 | 00 | 00 | Time | Descriptive information about Time (Default is UTC system) | | | | | |
| 1 | Leaf | 03 | 01 | 03 | 03 | 01 | 00 | 00 | 00 | Time system offset | Time offset from UTC (Signed hours and minutes, colon delineated) (Default is "undefined"). | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 6 chars max | +13hours/-12hours | | |
| 1 | Leaf | 03 | 01 | 03 | 03 | 02 | 00 | 00 | 00 | Time Units | Frames, seconds, minutes etc.  (Default is seconds). | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See Types dictionary | | |
| | Node | 03 | 01 | 03 | 04 | 00 | 00 | 00 | 00 | Mass | Descriptive information about Mass (Default is Metric system, Kilogramme) | | | | | |
| | Node | 03 | 01 | 03 | 05 | 00 | 00 | 00 | 00 | Energy | Descriptive information about Energy (Default is Joule) | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 03 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | Descriptive - Human Assigned | Descriptors (Human Assigned) relating to analysis of the content | | | | | |
| | Node | 03 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | Categorisation | Analytical categorisation of the content | | | | | |
| | Node | 03 | 02 | 01 | 01 | 00 | 00 | 00 | 00 | Content Classification | Content classification | | | | | |
| 1 | Leaf | 03 | 02 | 01 | 01 | 01 | 00 | 00 | 00 | Content Coding System | The system of coding for programme classification eg Escort 2.4 | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 31 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 01 | 02 | 00 | 00 | 00 | Programme Type | Type of programme (e.g., cartoon, film, ...) | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 01 | 03 | 00 | 00 | 00 | Genre | Programme genre (e.g., entertainment, current affairs magasine, Italo Western, ...) | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 01 | 04 | 00 | 00 | 00 | Target Audience | Target audience (e.g., children, 17 to 32, elderly, ...) | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 03 | 02 | 01 | 02 | 00 | 00 | 00 | 00 | Cataloguing and Indexing | Archival analysis of the essence metadata | | | | | |
| 1 | Leaf | 03 | 02 | 01 | 02 | 01 | 00 | 00 | 00 | Status of Catalogue Data | The current status of the catalogue as a freeform text string | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 02 | 02 | 00 | 00 | 00 | Cataloguing,  Indexing, Thesaurus or Gazetter system used | The particular Cataloguing,  Indexing or Thesaurus system used | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 02 | 03 | 00 | 00 | 00 | Theme | The category of the Theme of the content | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |

SMPTE Metadata Dictionary
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| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 03 | 02 | 01 | 02 | 04 | 00 | 00 | 00 | Subject Code | Subject Code. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 02 | 05 | 00 | 00 | 00 | Key Words | Words or phrases summarizing an aspect of the data set. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 02 | 06 | 00 | 00 | 00 | Key Frames | Freeform textual reference to a key frame of video in the data set | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 02 | 07 | 00 | 00 | 00 | Key Sounds | Freeform textual reference to a key sound in the data set | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 02 | 08 | 00 | 00 | 00 | Key data | Freeform textual reference to a key piece of data or program in the data set | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | Node | 03 | 02 | 01 | 06 | 00 | 00 | 00 | 00 | Textual Description | A textual characterization of the data set. | | | | | |
| 1 | Leaf | 03 | 02 | 01 | 06 | 01 | 00 | 00 | 00 | Abstract | A brief narrative summary of the data set. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 1024 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 06 | 02 | 00 | 00 | 00 | Purpose | A summary of the intentions with which the data set was developed. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 06 | 03 | 00 | 00 | 00 | Description | A freeform textual descrition | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | variable | | | |
| 1 | Leaf | 03 | 02 | 01 | 06 | 04 | 00 | 00 | 00 | Colour descriptor | eg. Black and white, tinted etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 01 | 06 | 05 | 00 | 00 | 00 | Format descriptor | eg. Letterbox, Pillarbox etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 03 | 02 | 01 | 07 | 00 | 00 | 00 | 00 | Stratum | The descriptive stratum of the archival content analysis of the content | | | | | |
| 1 | Leaf | 03 | 02 | 01 | 07 | 01 | 00 | 00 | 00 | Stratum kind | eg.  Background, action, sound natures etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 03 | 02 | 02 | 00 | 00 | 00 | 00 | 00 | Assessments | Assesments of editorial, technical etc aspects of the content and contributors to it | | | | | |
| | Node | 03 | 02 | 02 | 01 | 00 | 00 | 00 | 00 | Awards | Awards relating to editorial, technical etc aspects of the content and contributors to it | | | | | |
| 1 | Leaf | 03 | 02 | 02 | 01 | 01 | 00 | 00 | 00 | Individual | Awards granted to individuals | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 02 | 01 | 02 | 00 | 00 | 00 | Programme | Awards granted to programme | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 03 | 02 | 02 | 02 | 00 | 00 | 00 | 00 | Qualitative Values | Assessed values relating to editorial, technical etc aspects of the content and contributors to it | | | | | |
| 1 | Leaf | 03 | 02 | 02 | 02 | 01 | 00 | 00 | 00 | Asset Values | Assessment of the programme quality | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 02 | 02 | 02 | 00 | 00 | 00 | Content Value | Assessment of the content value | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 02 | 02 | 03 | 00 | 00 | 00 | Cultural Quality | Assessment of the cultural quality | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 02 | 02 | 04 | 00 | 00 | 00 | Asthetic Value | Assessment of the asthetic quality | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 02 | 02 | 05 | 00 | 00 | 00 | Historic Value | Assessment of the historic value | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 02 | 02 | 06 | 00 | 00 | 00 | Technical Value | Assessment of the technical value | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 02 | 02 | 02 | 07 | 00 | 00 | 00 | Other Values | Assessment of other relevant qualities | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 03 | 02 | 03 | 00 | 00 | 00 | 00 | 00 | Technical comments/descriptions | Technical comments or descriptions relating to system | | | | | |
| | Node | 03 | 02 | 03 | 01 | 00 | 00 | 00 | 00 | Object comments/descriptions | Comments or descriptions relating to Objects | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 03 | 03 | 00 | 00 | 00 | 00 | 00 | 00 | Descriptors (Machine Assigned or Computed) | Descriptors (Machine Assigned or Computed) relating to analysis of the content | | | | | |
| | Node | 03 | 03 | 01 | 00 | 00 | 00 | 00 | 00 | Categorisation | Analytical categorisation of the content | | | | | |
| | Node | 03 | 03 | 01 | 01 | 00 | 00 | 00 | 00 | Content Classification | Content classification | | | | | |
| | Node | 03 | 03 | 01 | 02 | 00 | 00 | 00 | 00 | Cataloguing and Indexing | Archival analysis of the essence metadata | | | | | |
| 1 | Leaf | 03 | 03 | 01 | 02 | 01 | 00 | 00 | 00 | Status of Catalogue Data | The current status of the catalogue as a freeform text string | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 03 | 03 | 01 | 02 | 02 | 00 | 00 | 00 | Cataloguing, Indexing or Thesaurus system used | The particular Cataloguing, Indexing or Thesaurus system used | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 03 | 01 | 02 | 06 | 00 | 00 | 00 | Key Words | Words or phrases summarizing an aspect of the data set. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 03 | 01 | 02 | 07 | 00 | 00 | 00 | Key Frames | Freeform textual reference to a key frame of video in the data set | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 03 | 01 | 02 | 08 | 00 | 00 | 00 | Key Sounds | Freeform textual reference to a key sound in the data set | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 03 | 03 | 01 | 02 | 09 | 00 | 00 | 00 | Key data | Freeform textual reference to a key piece of data or program in the data set | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 03 | 03 | 01 | 06 | 00 | 00 | 00 | 00 | Textual Description | A textual characterization of the data set. | | | | | |
| | Node | 03 | 03 | 01 | 07 | 00 | 00 | 00 | 00 | Stratum | The descriptive stratum of the archival content analysis of the content | | | | | |
| 1 | Leaf | 03 | 03 | 01 | 07 | 01 | 00 | 00 | 00 | Stratum kind | eg. Background, action, sound natures etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 03 | 03 | 03 | 00 | 00 | 00 | 00 | 00 | Technical comments/descriptions | Technical comments or descriptions relating to system | | | | | |
| | Node | 03 | 03 | 03 | 01 | 00 | 00 | 00 | 00 | Object comments/descriptions | Comments or descriptions relating to Objets | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | PARAMETRIC | Class 4 is reserved for parametric and configuration metadata. | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | Video/Image Essence Characteristics | All parametric aspects of the video/image essence | | | | | |
| | Node | 04 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | Fundamental Image Characteristics | Fundamental characteristics of the image | | | | | |
| | Node | 04 | 01 | 01 | 01 | 00 | 00 | 00 | 00 | Aspect Ratios | Specifies the horizontal to vertical aspect ratio of the image. | | | | | |
| 1 | Leaf | 04 | 01 | 01 | 01 | 01 | 00 | 00 | 00 | Presentation Aspect Ratio | Specifies the horizontal to vertical aspect of the image as it is to be presented. | Rational | 8 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 01 | 01 | 02 | 00 | 00 | 00 | Capture aspect ratio | Specifies the horizontal to vertical aspect ratio of the image captured at the sensor. | Unsigned Char | 1 byte | See types dictionary | | |
| | Node | 04 | 01 | 02 | 00 | 00 | 00 | 00 | 00 | Image Source Characteristics | Fundamental characteristics of the image source | | | | | |
| | Node | 04 | 01 | 02 | 01 | 00 | 00 | 00 | 00 | Opto-electronic formulation | Fundamental opto-elecronic transfer etc characteristics | | | | | |
| | Node | 04 | 01 | 02 | 01 | 01 | 00 | 00 | 00 | Transfer Characteristics | Specifies the non-linear relationship between linear scene light levels and amplitude-compressed video signal levels. | | | | | |
| 1 | Leaf | 04 | 01 | 02 | 01 | 01 | 01 | 00 | 00 | Capture Gamma Equation (ISO 7-bit) | Specifies the non-linear relationship between linear scene light levels and amplitude-compressed video signal levels at signal origination. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 02 | 01 | 01 | 01 | 01 | 00 | Capture Gamma Equation | Specifies the non-linear relationship between linear scene light levels and amplitude-compressed video signal levels at signal origination. | Rational | 8 bytes | w25.52 | | not W25-52! |
| 1 | Leaf | 04 | 01 | 02 | 01 | 01 | 02 | 00 | 00 | Luma Equation | Specifies the equation used to derive luma and chroma from gamma-corrected RGB signals | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 02 | 01 | 01 | 03 | 00 | 00 | Colorimetry Code | The fundamental color coding that relates the scene CIE tri-stimulus values (X, Y, Z) to the linear video levels (R, G, B). | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 02 | 01 | 01 | 04 | 00 | 00 | Signal Form Code | Code specifies the component sequence for the video pixel matrix (eg RGB, YUV etc). | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 01 | 03 | 00 | 00 | 00 | 00 | 00 | Video/Image scanning parameters | Fundemental scanning and sequencing information | | | | | |
| | Node | 04 | 01 | 03 | 01 | 00 | 00 | 00 | 00 | Temporal parameters | Time dependant sequencing and scanning information | | | | | |
| 1 | Leaf | 04 | 01 | 03 | 01 | 01 | 00 | 00 | 00 | Color Field Code | Identifies the color field of the source video field for video derived from composite sources. | UInt8 | 1 byte | 00h = undefined (default), 01h ~ 08h = field number | | |
| 1 | Leaf | 04 | 01 | 03 | 01 | 02 | 00 | 00 | 00 | Field Rate | Specifies the field rate of the video scanning system. | UInt16 | 2 byte | See types dictionary | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 04 | 01 | 03 | 01 | 03 | 00 | 00 | 00 | Frame Rate | The rate that video images are captured, expressed in frames per second. | UInt16 | 2 byte | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 03 | 01 | 04 | 00 | 00 | 00 | Frame Layout | Specifies frame layout (interlaced, single frame, full frame, etc.) | LayoutType | 2 bytes | See types dictionary | W25.52 | |
| 1 | Leaf | 04 | 01 | 03 | 01 | 05 | 00 | 00 | 00 | Sampling Structure Code | A code that specifies the analogue or digital sampling structure for the video scanning system. Eg Progressive | Unsigned Char | 1 byte | See types dictionary | | |
| | Node | 04 | 01 | 03 | 02 | 00 | 00 | 00 | 00 | **Vertical parameters** | Vertical scanning information | | | | | |
| 1 | Leaf | 04 | 01 | 03 | 02 | 01 | 00 | 00 | 00 | Total Lines per Frame | Specifies the number of lines in a total frame in the video scanning system | UInt16 | 2 bytes | | | |
| 1 | Leaf | 04 | 01 | 03 | 02 | 02 | 00 | 00 | 00 | Active Lines per Frame | Specifies the total number of lines (rows) in the active portion of a frame in the video pixel matrix. | UInt16 | 2 bytes | | | |
| 1 | Leaf | 04 | 01 | 03 | 02 | 03 | 00 | 00 | 00 | Leading Lines | Specifies the number of leading lines in the processed image to be blanked before display | Int32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 03 | 02 | 04 | 00 | 00 | 00 | Trailing Lines | Specifies the number of trailing lines in the processed image to be blanked before display | Int32 | 4 bytes | | W25.52 | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 01 | 03 | 03 | 00 | 00 | 00 | 00 | **Horizontal parameters** | Horizontal scanning information | | | | | |
| | Node | 04 | 01 | 04 | 00 | 00 | 00 | 00 | 00 | **Analogue Video Coding Characteristics** | Information about the analogue coding of the essence | | | | | |
| 1 | Leaf | 04 | 01 | 04 | 01 | 00 | 00 | 00 | 00 | Analogue Video System | PAL, NTSC etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 01 | 05 | 00 | 00 | 00 | 00 | 00 | **Digital Video/Image Coding Parameters** | Information about the essence digital coding | | | | | |
| | Node | 04 | 01 | 05 | 01 | 00 | 00 | 00 | 00 | **Digital Video/Image Sampling Parameters** | Information about the digital sampling | | | | | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 01 | 00 | 00 | 00 | Luminance Sample rate | The luminance sample rate | UInt8 | 1 byte | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 02 | 00 | 00 | 00 | Active Samples per Line | Total number of samples (columns) in the active portion of a line in the video pixel matrix. | UInt16 | 2 bytes | | | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 03 | 00 | 00 | 00 | Total Samples per Line | Specifies the number of samples in a total line in the video pixel matrix. | UInt16 | 2 bytes | | | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 04 | 00 | 00 | 00 | Sampling Hierarchy Code | A code that specifies the component sampling hierarchy for the video pixel matrix. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 05 | 00 | 00 | 00 | Horizontal Sub-sampling | Specifies ratio of luminance subsampling to chrominance subsampling in horizontal direction | UInt32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 06 | 00 | 00 | 00 | Colour Siting | Specifies how to compute subsampled chrominance values | ColorSitingType | 2 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 07 | 00 | 00 | 00 | Sampled Height | Specifies the integer height of the sampled image in pixels | UInt32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 08 | 00 | 00 | 00 | Sampled Width | Specifies the integer width of the sampled image in pixels | UInt32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 09 | 00 | 00 | 00 | Sampled X-offset | Specifies the X offset of the sampled image in pixels expressed as two bytes integer plus two bytes fractional | Int32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 0A | 00 | 00 | 00 | Sampled Y-offset | Specifies the Y offset of the sampled image in pixels expressed as two bytes integer plus two bytes fractional | Int32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 0B | 00 | 00 | 00 | Presentation Height | Specifies the height of the presented image in pixels | UInt32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 0C | 00 | 00 | 00 | Presentation Width | Specifies the width of the presented image in pixels | UInt32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 0D | 00 | 00 | 00 | Presentation X-offset | Specifies the X offset of the presented image in pixels expressed as two bytes integer plus two bytes fractional | Int32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 0E | 00 | 00 | 00 | Presentation Y-offset | Specifies the Y offset of the presented image in pixels expressed as two bytes integer plus two bytes fractional | Int32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 01 | 0F | 00 | 00 | 00 | Filtering Code | Specifies the spectral filtering that has been applied to the digital samples of the video signal. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 01 | 05 | 02 | 00 | 00 | 00 | 00 | **Digital Video/Image Storage Parameters** | Information about image storage parameters. | | | | | |
| 1 | Leaf | 04 | 01 | 05 | 02 | 01 | 00 | 00 | 00 | Stored Height | Specifies the integer height of the stored image in pixels | UInt32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 02 | 02 | 00 | 00 | 00 | Stored Width | Specifies the integer width of the stored image in pixels | UInt32 | 4 bytes | | W25.52 | |
| | Node | 04 | 01 | 05 | 03 | 00 | 00 | 00 | 00 | **Digital Quantisation and Level Parameters** | Information about the digital quantisation and levels | | | | | |
| 1 | Leaf | 04 | 01 | 05 | 03 | 01 | 00 | 00 | 00 | Bits Per Pixel | The maximum number of significant bits for the value in each band of each pixel without compression. | Uint8 | 1 byte | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 04 | 01 | 05 | 03 | 02 | 00 | 00 | 00 | Rounding Method Code | Specifies the rounding method that has been applied to the digital samples of the video signal. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 05 | 03 | 03 | 00 | 00 | 00 | Black Reference Level | Specifies digital luminance associated with black | UInt32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 04 | 01 | 05 | 03 | 04 | 00 | 00 | 00 | White Reference Level | Specifies digital luminance associated with white | UInt32 | 4 bytes | | W25.52 | |
| | Node | 04 | 01 | 06 | 00 | 00 | 00 | 00 | 00 | **Digital Video/Image Compression Parameters** | **Information about the digital video compression scheme used (MPEG, DV etc)** | | | | | |
| | Node | 04 | 01 | 06 | 02 | 00 | 00 | 00 | 00 | **MPEG Coding Parameters** | **Information about MPEG video coding** | | | | | |
| | Node | 04 | 01 | 06 | 02 | 01 | 00 | 00 | 00 | **MPEG-2 Coding Parameters** | **Information about MPEG video coding** | | | | | |
| 1 | Leaf | 04 | 01 | 06 | 02 | 01 | 01 | 00 | 00 | Field Frame Type Code | Identifies the field or frame type of the source video image for video derived from compressed sources. Eg. I  B  or P | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 1 char | See types dictionary | | |
| | Node | 04 | 01 | 08 | 00 | 00 | 00 | 00 | 00 | **Film to Video characteristics** | **Information about transferring Film to Video** | | | | | |
| | Node | 04 | 01 | 08 | 01 | 00 | 00 | 00 | 00 | **Film Pulldown characteristics** | **Film transfer pulldown characteristics** | | | | | |
| 1 | Leaf | 04 | 01 | 08 | 01 | 01 | 00 | 00 | 00 | Pulldown sequence | eg. 3:2,  1:1 at 25Hz, 1:1 at 59.94Hz, 24Hz/25Hz, Videotap, etc | PulldownKind | 1 byte | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 08 | 01 | 02 | 00 | 00 | 00 | Field Dominance | Field one dominant (True) | Boolean | 1 byte | 00h (FALSE) or FFh (TRUE) | | |
| 1 | Leaf | 04 | 01 | 08 | 01 | 03 | 00 | 00 | 00 | Video/Film Frame Relationship (A Frame Sequence) | Specifies temporal correlation between video fields/frames and film frames from which they were derived | Uint 8 | 1 byte | 00000001 through 00001010 | RP-186 4.3.2; RP-197 7.5.3 | |
| | Node | 04 | 01 | 08 | 02 | 00 | 00 | 00 | 00 | **Film Frame Rates** | **Frame per second film frame rate** | | | | | |
| 1 | Leaf | 04 | 01 | 08 | 02 | 01 | 00 | 00 | 00 | Capture Film Frame rate | eg 24.00 fps | Unsigned Char | 1 byte | See types dictionary | | |
| 1 | Leaf | 04 | 01 | 08 | 02 | 02 | 00 | 00 | 00 | Transfer Film Frame rate | eg 23.976 fps | Unsigned Char | 1 byte | See types dictionary | | |
| | Node | 04 | 01 | 10 | 00 | 00 | 00 | 00 | 00 | **Image test parameters** | **Test information from the original imagery** | | | | | |
| | Node | 04 | 01 | 10 | 01 | 00 | 00 | 00 | 00 | **Video test parameters** | **Video information from the original recording** | | | | | |
| 1 | Leaf | 04 | 01 | 10 | 01 | 01 | 00 | 00 | 00 | Test parameter | eg. Starting Bit Error Rate,  Maximum BER Tolerance Level Sharpness Quality Benchmark,  Scalar Based Quality Parameter, Spatial Quality Information,  Temporal Quality Information,  Matrix Based Quality Parameter | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 01 | 10 | 01 | 02 | 00 | 00 | 00 | Test Result (real) | The result from the specified test | Floating Point | 4 bytes | | | |
| 1 | Leaf | 04 | 01 | 10 | 01 | 03 | 00 | 00 | 00 | Test Result (integer) | The result from the specified test | UInt32 | 4 bytes | | | |
| | Node | 04 | 01 | 10 | 02 | 00 | 00 | 00 | 00 | **Film test Parameters** | **Film test information from the original recording** | | | | | |
| 1 | Leaf | 04 | 01 | 10 | 02 | 01 | 00 | 00 | 00 | Test parameter | eg.  Film Frequency Response;  Telecine Gamma Correction;  Macbeth Color Checker,  Telecine Gray Scale Mirror;  Lab Aim Density;  Lab Aim Density Red/Green/Blue;  Lab Aim Density Red/Green/Blue Dmin;  etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 01 | 10 | 02 | 02 | 00 | 00 | 00 | Test Result (real) | The result from the specified test | Floating Point | 4 bytes | | | |
| 1 | Leaf | 04 | 01 | 10 | 02 | 03 | 00 | 00 | 00 | Test Result (integer) | The result from the specified test | SIMSBF | 4 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | **Audio Essence Characteristics** | **Operating characteristics of the device creating the audio essence.** | | | | | |
| | Node | 04 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | **Fundamental  Audio Characteristics** | **Fundamental audio characteristics** | | | | | |
| | Node | 04 | 02 | 01 | 01 | 00 | 00 | 00 | 00 | **Audio formulation** | **number of recording channels used, analogue or digital recording device, analog or digital mixing console** | | | | | |
| 1 | Leaf | 04 | 02 | 01 | 01 | 01 | 00 | 00 | 00 | Electro-spatial formulation | Mono, Dual mono, Stereo A+B,  Stereo M&S, Dolby surround, MPEG BC/NBC etc | Uint 8 | 1 byte | See types dictionary | | |
| 1 | Leaf | 04 | 02 | 01 | 01 | 02 | 00 | 00 | 00 | Filtering applied | eg, Academy, flat etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 02 | 01 | 01 | 03 | 00 | 00 | 00 | Audio reference level | Number of Dbm for 0VU | Int 8 | 1 byte | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Node | 04 | 02 | 01 | 01 | 10 | 00 | 00 | 00 | **Audio mix** | The number of audio channels in the mix | | | | | |
| 1 | Leaf | 04 | 02 | 01 | 01 | 10 | 01 | 00 | 00 | Mono channels | The number of mono channels in the mix | UInt8 | 1 byte | 1 to 255 | | |
| 1 | Leaf | 04 | 02 | 01 | 01 | 10 | 02 | 00 | 00 | Stereo channels | The number of stereo channels in the mix | UInt8 | 1 byte | 1 to 255 | | |
| | Node | 04 | 02 | 02 | 00 | 00 | 00 | 00 | 00 | **Analogue Audio Coding Parameters** | Information about the original analogue coding of the essence | | | | | |
| 1 | Leaf | 04 | 02 | 02 | 01 | 00 | 00 | 00 | 00 | Analogue system | Flat, Dolby-A etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 04 | 02 | 03 | 00 | 00 | 00 | 00 | 00 | **Digital Audio Coding Parameters** | Information about the essence digital coding | | | | | |
| | Node | 04 | 02 | 03 | 01 | 00 | 00 | 00 | 00 | **Digital Sampling Parameters** | **Information about the digital sampling** | | | | | |
| 1 | Leaf | 04 | 02 | 03 | 01 | 01 | 00 | 00 | 00 | Audio Sample rate | The tabulated reference clock frequency | UInt8 | 1 byte | See types dictionary | | |
| | Node | 04 | 02 | 03 | 02 | 00 | 00 | 00 | 00 | **Digital Audio Storage Parameters** | **Information about image storage parameters.** | | | | | |
| | Node | 04 | 02 | 03 | 03 | 00 | 00 | 00 | 00 | **Digital Quantisation and Level Parameters** | **Information about the digital quantisation and levels** | | | | | |
| 1 | Leaf | 04 | 02 | 03 | 03 | 01 | 00 | 00 | 00 | Bits per Sample | The maximum number of significant bits for the value without compression | UInt8 | 1 byte | | | |
| 1 | Leaf | 04 | 02 | 03 | 03 | 02 | 00 | 00 | 00 | Rounding law | The rounding law applied | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 04 | 02 | 03 | 03 | 03 | 00 | 00 | 00 | Dither | rectangular, triangular PD | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 02 | 04 | 00 | 00 | 00 | 00 | 00 | **Digital Audio Compression Parameters** | **Information about the digital audio compression scheme used (MPEG, Dolby etc)** | | | | | |
| | Node | 04 | 02 | 04 | 03 | 00 | 00 | 00 | 00 | **MPEG Coding Parameters** | Information about MPEG audio coding | | | | | |
| | Node | 04 | 02 | 04 | 03 | 01 | 00 | 00 | 00 | **MPEG-1 Coding Parameters** | Information about MPEG audio coding | | | | | |
| | Node | 04 | 02 | 08 | 00 | 00 | 00 | 00 | 00 | **Film Sound source** | Indicates the film sound source | | | | | |
| 1 | Leaf | 04 | 02 | 08 | 01 | 00 | 00 | 00 | 00 | Optical track | The kind of optical track from which the sound was recovered | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 02 | 08 | 02 | 00 | 00 | 00 | 00 | Magnetic track | The kind of magnetic track from which the sound was recovered | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 04 | 02 | 10 | 00 | 00 | 00 | 00 | 00 | **Audio test parameters** | Audio test parameters from the original recording | | | | | |
| 1 | Leaf | 04 | 02 | 10 | 01 | 00 | 00 | 00 | 00 | Signal to noise ratio | The measured signal to noise ratio of the original recording | Floating Point | 4 bytes | | | |
| 1 | Leaf | 04 | 02 | 10 | 02 | 00 | 00 | 00 | 00 | Weighting | The weighting used in measurements | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 03 | 00 | 00 | 00 | 00 | 00 | 00 | **Data Essence Characteristics** | Operating characteristics of the device creating the data essence. | | | | | |
| | Node | 04 | 03 | 01 | 00 | 00 | 00 | 00 | 00 | **Fundamental Data Essence Parameters** | Fundamental data essence characteristics | | | | | |
| | Node | 04 | 03 | 02 | 00 | 00 | 00 | 00 | 00 | **Analogue Data Essence Coding Parameters** | Information about the analogue coding of the data essence | | | | | |
| 1 | Leaf | 04 | 03 | 02 | 01 | 00 | 00 | 00 | 00 | Analogue Data Coding Kind | eg.  Teletext | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 03 | 03 | 00 | 00 | 00 | 00 | 00 | **Digital Data Essence Coding Parameters** | Information about the data essence digital coding | | | | | |
| | Node | 04 | 03 | 10 | 00 | 00 | 00 | 00 | 00 | **Data Essence test parameters** | Data test parameters from the original recording | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 04 | 00 | 00 | 00 | 00 | 00 | 00 | **Metadata Characteristics** | Operating characteristics of the device creating the metadata | | | | | |
| | Node | 04 | 04 | 01 | 00 | 00 | 00 | 00 | 00 | **Fundamental Metadata Characteristics** | Fundamental Metadata characteristics | | | | | |
| | Node | 04 | 04 | 01 | 01 | 00 | 00 | 00 | 00 | **Timecode Characteristics** | Characteristics of timecode metadata | | | | | |
| 1 | Leaf | 04 | 04 | 01 | 01 | 01 | 00 | 00 | 00 | Timecode Kind (Default = SMPTE12M) | eg. EBU, 309M,  12M etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 04 | 04 | 01 | 01 | 02 | 00 | 00 | 00 | Timecode Timebase | eg. 24, 25, 30, 60, 48 | UInt8 | 1 byte | See types dictionary | | |
| 1 | Leaf | 04 | 04 | 01 | 01 | 03 | 00 | 00 | 00 | Timecode User bits flag | User bits active = True | Boolean | 1 byte | 00h (FALSE), FFh (TRUE) | | |
| 1 | Leaf | 04 | 04 | 01 | 01 | 04 | 00 | 00 | 00 | Include Sync | Specifies whether synchronization data is included in SMPTE 12M Timecode | Boolean | 1 byte | | W25.52 | |
| 1 | Leaf | 04 | 04 | 01 | 01 | 05 | 00 | 00 | 00 | Drop Frame | Specifies whether timecode is drop frame (Non-drop Frame = 0) | Boolean | 1 byte | 00h (FALSE) or FFh (TRUE) | W25.52 | |
| | Node | 04 | 04 | 02 | 00 | 00 | 00 | 00 | 00 | **Analogue Metadata Coding Characteristics** | Information about the analogue coding of the metadata | | | | | |
| 1 | Leaf | 04 | 04 | 02 | 01 | 00 | 00 | 00 | 00 | Timecode Source Type | Specifies whether timecode is LTC or VITC | TCSource | 2 bytes | See types dictionary | W25.52 | |
| 1 | Leaf | 04 | 04 | 02 | 02 | 00 | 00 | 00 | 00 | Analogue Metadata Carrier | eg. Teletext | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 04 | 03 | 00 | 00 | 00 | 00 | 00 | **Digital Metadata Coding Characteristics** | Information about the metadata digital coding | | | | | |
| 1 | Leaf | 04 | 04 | 03 | 01 | 00 | 00 | 00 | 00 | Digital Metadata Carrier | The metadata coding type - eg. Digital VBI,  AES-3 | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 04 | 10 | 00 | 00 | 00 | 00 | 00 | **Metadata test parameters** | Data test parameters from the original recording | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 05 | 00 | 00 | 00 | 00 | 00 | 00 | **Monitoring & Control Characteristics** | Operating characteristics of the device creating the system and control information | | | | | |
| | Node | 04 | 05 | 01 | 00 | 00 | 00 | 00 | 00 | **Fundamental Monitoring & Control Characteristics** | Fundamental Monitoring and Control characteristics | | | | | |
| | Node | 04 | 05 | 02 | 00 | 00 | 00 | 00 | 00 | **Analogue Monitoring & Control Coding Characteristics** | Information about the original analogue coding of the data | | | | | |
| 1 | Leaf | 04 | 05 | 02 | 01 | 00 | 00 | 00 | 00 | Analogue Monitoring & Control Coding Kind | eg. Teletext | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 04 | 05 | 03 | 00 | 00 | 00 | 00 | 00 | **Digital Monitoring & Control Coding Parameters** | Information about the original digital coding of the data | | | | | |
| | Node | 04 | 05 | 03 | 01 | 00 | 00 | 00 | 00 | **Digital Monitoring & Control Sampling Parameters** | Information about the Monitoring and Control metadata digital sampling | | | | | |
| | Node | 04 | 05 | 10 | 00 | 00 | 00 | 00 | 00 | **Monitoring & Control test parameters** | Monitoring and Control metadata test parameters from the original recording | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 06 | 00 | 00 | 00 | 00 | 00 | 00 | **General Coding Characteristics** | Characteristics that apply to more than one type of essence or metadata | | | | | |
| | Node | 04 | 06 | 01 | 00 | 00 | 00 | 00 | 00 | **General Essence Coding Characteristics** | Characteristics that apply to more than one type of essence | | | | | |
| 1 | Leaf | 04 | 06 | 01 | 01 | 00 | 00 | 00 | 00 | Sample Rate | Specifies the sample rate of essence (any kind) | Rational | 8 bytes | | W25.52 | |
| 1 | Leaf | 04 | 06 | 01 | 02 | 00 | 00 | 00 | 00 | Length | Specifies the number of samples of essence data (any kind) | Length | 8 bytes | | W25.52 | |
| | | | | | | | | | | | | | | | | |
| | Node | **04** | **08** | **00** | **00** | **00** | **00** | **00** | **00** | **Object Characteristics** | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 04 | 10 | 00 | 00 | 00 | 00 | 00 | 00 | **Medium Characteristics** | Characteristics describing the medium containing the essence for transport or storage | | | | | |
| | Node | 04 | 10 | 01 | 00 | 00 | 00 | 00 | 00 | **Storage Medium parameters** | Characteristics that describe the physical medium such as cartridge size | | | | | |
| | Node | 04 | 10 | 01 | 01 | 00 | 00 | 00 | 00 | **Tape Medium Parameters** | Characteristics of Tape medium | | | | | |
| | Node | 04 | 10 | 01 | 02 | 00 | 00 | 00 | 00 | **Disc medium parameters** | Characteristics of Disc medium | | | | | |
| | Node | 04 | 10 | 01 | 03 | 00 | 00 | 00 | 00 | **Film Medium Parameters** | Information about the physical film medium | | | | | |
| | Node | 04 | 10 | 01 | 03 | 01 | 00 | 00 | 00 | **Generic Film Medium Parameters** | Generic Information about the film medium | | | | | |
| 1 | Leaf | 04 | 10 | 01 | 03 | 01 | 01 | 00 | 00 | Film Colour Process | The film colouring process used.  Eg Pathe Colour,  Hand Colouring,  Berthon Keller Dorian Lenticular Process | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 10 | 01 | 03 | 01 | 02 | 00 | 00 | Edge Code Format | Specifies the edge code format | EdgeType | 2 bytes | See types dictionary | W25.52 | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 04 | 10 | 01 | 03 | 01 | 04 | 00 | 00 | Film gauge and format | The gauge and format of the film eg  Neg;  Blair Viventoscope | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 10 | 01 | 03 | 01 | 05 | 00 | 00 | Film Stock type | eg. 5247 | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 10 | 01 | 03 | 01 | 06 | 00 | 00 | Film stock manufacturer | eg Kodak, Ilford | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 04 | 10 | 01 | 03 | 02 | 00 | 00 | 00 | **Specific Film Medium Parameters** | Specific Information about the film medium | | | | | |
| 1 | Leaf | 04 | 10 | 01 | 03 | 02 | 01 | 00 | 00 | Physical Media length (metres) | The physical length of the medium on which the essence was captured | UIMSBF | 4 bytes | | | |
| 1 | Leaf | 04 | 10 | 01 | 03 | 02 | 02 | 00 | 00 | Film capture aperture | eg super 16, academy etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 04 | 20 | 00 | 00 | 00 | 00 | 00 | 00 | **Device Characteristics** | Information about the devices used | | | | | |
| | Node | 04 | 20 | 01 | 00 | 00 | 00 | 00 | 00 | **Camera Characteristics** | Information about camera devices | | | | | |
| | Node | 04 | 20 | 01 | 01 | 00 | 00 | 00 | 00 | **Image Characteristics** | The specific category of imagery | | | | | |
| 1 | Leaf | 04 | 20 | 01 | 01 | 01 | 00 | 00 | 00 | Image Category | Identifies the specific category of imagery (often revealing the nature of the collector or intended use). Format is as defined in NITF v2.0 in addition to those defined here. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 04 | 20 | 01 | 02 | 01 | 00 | 00 | 00 | **Image Devices** | Information about the image device | | | | | |
| 1 | Leaf | 04 | 20 | 01 | 02 | 01 | 01 | 00 | 00 | Image Source Device | Indicates the type of image source. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 04 | 20 | 02 | 00 | 00 | 00 | 00 | 00 | **Optical Characteristics** | Information about optics | | | | | |
| | Node | 04 | 20 | 02 | 01 | 00 | 00 | 00 | 00 | **Optical Test parameters** | Optical test parameters from the original recording | | | | | |
| | Node | 04 | 20 | 02 | 01 | 01 | 00 | 00 | 00 | **Optical Device Parameters** | Information about the optical device used (e.g. lens, ice block) | | | | | |
| 1 | Leaf | 04 | 20 | 02 | 01 | 01 | 01 | 00 | 00 | Test parameter | The specific parameter under test, e.g. Flare | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 04 | 20 | 02 | 01 | 01 | 02 | 00 | 00 | Test Result (real) | The result from the specified test | Floating Point | 4 bytes | | | |
| 1 | Leaf | 04 | 20 | 02 | 01 | 01 | 03 | 00 | 00 | Test Result (integer) | The result from the specified test | UInt32 | 4 bytes | | | |
| | Node | 04 | 20 | 03 | 00 | 00 | 00 | 00 | 00 | **Microphone Characteristics** | Information about microphones used | | | | | |
| | Leaf | 04 | 20 | 03 | 01 | 00 | 00 | 00 | 00 | Sensor type | transducer principle | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 04 | 20 | 03 | 02 | 00 | 00 | 00 | 00 | Polar characteristic | polar patterns | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | **05** | **00** | **00** | **00** | **00** | **00** | **00** | **00** | **PROCESS** | **Class 5 is reserved for information about the essence or metadata processing** | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 05 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **General Process Indicators** | Flags etc indicating the process status of the essence | | | | | |
| | Node | 05 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | **Fundamental** | Information about process fundementals | | | | | |
| 1 | Leaf | 05 | 01 | 01 | 01 | 00 | 00 | 00 | 00 | Integration Indication | 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, clip, shot, item, programme etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 01 | 01 | 02 | 00 | 00 | 00 | 00 | Event Indication | A term that describes what the Event is as a part of the Process. Terms must be consistent with industry or organizational practices to be useful.  Includes project, mission, scene, in-points, trigger points, license, option, publication, cataloguing etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 01 | 01 | 03 | 00 | 00 | 00 | 00 | Quality Flag | Quality of a specific recording/physical copy (good/no good) | Boolean | 1 byte | 00h (NO GOOD), FFh (GOOD) | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 05 | 01 | 01 | 05 | 00 | 00 | 00 | 00 | Physical Instance Category | Category of physical copy (e.g., master copy, copy, broadcast copy) | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 05 | 01 | 02 | 00 | 00 | 00 | 00 | 00 | **Content Capture** | Information about how content was captured | | | | | |
| 1 | Leaf | 05 | 01 | 02 | 01 | 00 | 00 | 00 | 00 | Digital or analogue origination | The nature of the first capture of the material | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 05 | 01 | 02 | 02 | 00 | 00 | 00 | 00 | Video/Image Capture process | Information about how video content was captured | | | | | |
| | Node | 05 | 01 | 02 | 03 | 00 | 00 | 00 | 00 | Film Capture Process | Information about how film content was captured | | | | | |
| | Node | 05 | 01 | 02 | 04 | 00 | 00 | 00 | 00 | Audio Capture Process | Information about how audio content was captured | | | | | |
| 1 | Leaf | 05 | 01 | 02 | 04 | 01 | 00 | 00 | 00 | Microphone Placement techniques | spaced omnis, spaced cardioids, close miking | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 05 | 01 | 02 | 05 | 00 | 00 | 00 | 00 | Data Capture Process | Information about how data content was captured | | | | | |
| | Node | 05 | 01 | 03 | 00 | 00 | 00 | 00 | 00 | **Manipulation** | Information about content manipulation | | | | | |
| 1 | Leaf | 05 | 01 | 03 | 01 | 00 | 00 | 00 | 00 | Simple Flagging | The number of alterations to the original file | UInt16 | 2 bytes | | | |
| 1 | Leaf | 05 | 01 | 03 | 02 | 00 | 00 | 00 | 00 | Copy Number | The number of copies (i.e. not lossless clones) | UInt8 | 1 byte | 1 to 255 | | |
| 1 | Leaf | 05 | 01 | 03 | 03 | 00 | 00 | 00 | 00 | Clone number | The number of clones (i.e. digitally lossless copies) | UInt8 | 1 byte | 1 to 255 | | |
| 1 | Leaf | 05 | 01 | 03 | 04 | 00 | 00 | 00 | 00 | Work in Progress Flag | Is the essence a work in progress? Work-in-progress = True | Boolean | 1 byte | 00h (FALSE), FFh (TRUE) | | |
| | | | | | | | | | | | | | | | | |
| | Node | 05 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | **Compression Processing** | Information about payload compression. | | | | | |
| | Node | 05 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | **Video/Image Compression** | Information about video or image compression | | | | | |
| 1 | Leaf | 05 | 02 | 01 | 01 | 00 | 00 | 00 | 00 | Video/Image Compression Algorithm | Algorithm used to compress the video or image content | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 05 | 02 | 01 | 02 | 00 | 00 | 00 | 00 | **MPEG Processing** | MPEG processing performed on the essence | | | | | |
| | Node | 05 | 02 | 01 | 02 | 01 | 00 | 00 | 00 | **MPEG-2 Processing** | MPEG processing performed on the essence | | | | | |
| 1 | Leaf | 05 | 02 | 01 | 02 | 01 | 01 | 00 | 00 | Splicing Metadata | MPEG-2 splicing metadata as defined in SDTI-CP (E&M) and SMPTE 312M | as per SDTI-CP (E&M) and SMPTE 312M standard | Variable | | SMPTE 331M | |
| | Node | 05 | 02 | 02 | 00 | 00 | 00 | 00 | 00 | **Audio Compression** | Information about audio compression. | | | | | |
| 1 | Leaf | 05 | 02 | 02 | 01 | 00 | 00 | 00 | 00 | Audio Compression Algorithm | Algorithms used, bitrates used, modes used. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 05 | 02 | 03 | 00 | 00 | 00 | 00 | 00 | **Data Essence Compression** | Information about data essence compression. | | | | | |
| | Node | 05 | 02 | 04 | 00 | 00 | 00 | 00 | 00 | **Metadata Compression** | Information about metadata compression. | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 05 | 03 | 00 | 00 | 00 | 00 | 00 | 00 | **Noise Reduction Processing** | Information about any noise reduction process | | | | | |
| | Node | 05 | 03 | 01 | 00 | 00 | 00 | 00 | 00 | **Video noise reduction** | Information about any video noise reduction process | | | | | |
| 1 | Leaf | 05 | 03 | 01 | 01 | 00 | 00 | 00 | 00 | Video Noise Reduction Algorithm | Algorithm used in a noise reduction process | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | Node | 05 | 03 | 02 | 00 | 00 | 00 | 00 | 00 | **Audio noise reduction** | Information about any video noise reduction process | | | | | |
| 1 | Leaf | 05 | 03 | 02 | 01 | 00 | 00 | 00 | 00 | Audio Noise Reduction Algorithm | Algorithm used in a noise reduction process - eg Dolby SR, Telcom, other | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | | | | | | | | | | | | | | | | |
| | Node | 05 | 20 | 00 | 00 | 00 | 00 | 00 | 00 | **Enhancement or Modification** | Enhamcement or modification to the essence | | | | | |
| | Node | 05 | 20 | 01 | 00 | 00 | 00 | 00 | 00 | **Image Essence processing** | Enhamcement or modification to the image essence | | | | | |
| 1 | Leaf | 05 | 20 | 01 | 01 | 00 | 00 | 00 | 00 | Enhancement or Modification Description | Description of how video content was modified. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Node | 05 | 20 | 02 | 00 | 00 | 00 | 00 | 00 | Video processor settings (Device-specific) | The settings of a specific device in the system | | | | | |
| 1 | Leaf | 05 | 20 | 02 | 01 | 00 | 00 | 00 | 00 | Device kind | Specific description for a device - eg for the film camera, film grading, video camera, variable gain amplifier etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 20 | 02 | 02 | 00 | 00 | 00 | 00 | Device parameter | Specific parameter for the specified device eg. Overall gain, Red lift, coring | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 20 | 02 | 03 | 00 | 00 | 00 | 00 | Device parameter setting | The setting of the specific parameter for the specified device | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 05 | 20 | 03 | 00 | 00 | 00 | 00 | 00 | Audio Essence Processing | Enhamcement or modification to the audio essence | | | | | |
| 1 | Leaf | 05 | 20 | 03 | 01 | 00 | 00 | 00 | 00 | Enhancement or Modification Description | Description of how audio content was modified. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 05 | 20 | 03 | 02 | 00 | 00 | 00 | 00 | Audio First Mix-down process | The way in which the first mix down was done | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 05 | 20 | 04 | 00 | 00 | 00 | 00 | 00 | Audio processor settings (Device-specific) | The settings of a specific device in the system | | | | | |
| 1 | Leaf | 05 | 20 | 04 | 01 | 00 | 00 | 00 | 00 | Device kind | Specific description for a device - eg The Compressor, limiter, etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 20 | 04 | 02 | 00 | 00 | 00 | 00 | Device parameter | Specific parameter for the specified device eg. Attack, gating | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 20 | 04 | 03 | 00 | 00 | 00 | 00 | Device parameter setting | The setting of the specific parameter for the specified device | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 05 | 20 | 05 | 00 | 00 | 00 | 00 | 00 | Data Essence Processing | Enhamcement or modification to the data essence | | | | | |
| 1 | Leaf | 05 | 20 | 05 | 01 | 00 | 00 | 00 | 00 | Enhancement or Modification Description | Description of how data content was modified. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | Node | 05 | 20 | 06 | 00 | 00 | 00 | 00 | 00 | Data processor settings (Device-specific) | The settings of a specific device in the system | | | | | |
| 1 | Leaf | 05 | 20 | 06 | 01 | 00 | 00 | 00 | 00 | Device kind | Specific description for a device | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 20 | 06 | 02 | 00 | 00 | 00 | 00 | Device parameter | Specific parameter for the specified device | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 05 | 20 | 06 | 03 | 00 | 00 | 00 | 00 | Device parameter setting | The setting of the specific parameter for the specified device | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 05 | 20 | 07 | 00 | 00 | 00 | 00 | 00 | Metadata Processing | Enhamcement or modification to the metadata | | | | | |
| | Node | 05 | 20 | 08 | 00 | 00 | 00 | 00 | 00 | Metadata processor settings (Device-specific) | The settings of a specific device in the system | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 05 | 30 | 00 | 00 | 00 | 00 | 00 | 00 | Editing Information | Information about alterations to the original image stream to produce new editorial material. | | | | | |
| | Node | 05 | 30 | 01 | 00 | 00 | 00 | 00 | 00 | Editing version information | Information about the version of the edit | | | | | |
| | Node | 05 | 30 | 02 | 00 | 00 | 00 | 00 | 00 | Editing decision information | Information about editing decisions. | | | | | |
| 1 | Leaf | 05 | 30 | 02 | 01 | 00 | 00 | 00 | 00 | Default Fade Type | Specifies the default fade type for audio soft cuts | FadeType | 2 bytes | | W25.52 | |
| | Node | 05 | 30 | 03 | 00 | 00 | 00 | 00 | 00 | Editing matte information | Information about editing mattes | | | | | |
| | Node | 05 | 30 | 04 | 00 | 00 | 00 | 00 | 00 | Editing event information | Information about editing events | | | | | |
| 1 | Leaf | 05 | 30 | 04 | 01 | 00 | 00 | 00 | 00 | Active State | Specifies whether the device is active or not as a result of the event (Inactive = False) | Boolean | 1 byte | 00h (FALSE) or FFh (TRUE) | W25.52 | |
| | Node | 05 | 30 | 05 | 00 | 00 | 00 | 00 | 00 | Editing effect information | Information about editing effects | | | | | |
| 1 | Leaf | 05 | 30 | 05 | 01 | 00 | 00 | 00 | 00 | Fade In Type | Specifies type of audio fade in | FadeType | 2 bytes | | W25.52 | |
| 1 | Leaf | 05 | 30 | 05 | 02 | 00 | 00 | 00 | 00 | Fade Out Type | Specifies type of audio fade out | FadeType | 2 bytes | | W25.52 | |
| 1 | Leaf | 05 | 30 | 05 | 03 | 00 | 00 | 00 | 00 | Speed Change Effect | Specifies whether the effect changes the perceived speed of the essence (Slow-motion, fast-motion, and freeze effects = True) | Boolean | 1 byte | 00h (FALSE) or FFh +O580(TRUE) | W25.52 | |
| 1 | Leaf | 05 | 30 | 05 | 04 | 00 | 00 | 00 | 00 | Number of Inputs | Specifies the number of input segments | Int32 | 4 bytes | | W25.52 | |
| 1 | Leaf | 05 | 30 | 05 | 05 | 00 | 00 | 00 | 00 | Bypass | Specifies default input to play | UInt32 | 4 bytes | | W25.52 | |
| | Node | 05 | 30 | 06 | 00 | 00 | 00 | 00 | 00 | Editing web information | Information about editing for web output | | | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Node | 05 | 30 | 07 | 00 | 00 | 00 | 00 | 00 | Editing user notes | Information about editing user notes | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 05 | 40 | 00 | 00 | 00 | 00 | 00 | 00 | **Processing History** | Audit history of compression for payload. | | | | | |
| | Node | 05 | 40 | 01 | 00 | 00 | 00 | 00 | 00 | **Video Compression History** | Audit history of compression for video payload. | | | | | |
| 1 | Leaf | 05 | 40 | 01 | 01 | 00 | 00 | 00 | 00 | Video Compression Algorithm | Algorithm used to compress video content. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 05 | 40 | 01 | 02 | 00 | 00 | 00 | 00 | MPEG Video re-coding dataset | Audit history of video coding - see SMPTE327. | as per SMPTE327 standard | Variable | | | |
| | Node | 05 | 40 | 02 | 00 | 00 | 00 | 00 | 00 | **Audio Compression History** | Audit history of compression for audio payload. | | | | | |
| 1 | Leaf | 05 | 40 | 02 | 01 | 00 | 00 | 00 | 00 | Audio Compression Algorithm | Algorithms used, bitrates used, modes used. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 05 | 40 | 02 | 02 | 00 | 00 | 00 | 00 | MPEG Audio recoding dataset | Audio coding history as per SMPTEXXXX | as per SMPTEXXXX standard | Variable | | | |
| | Node | 05 | 40 | 03 | 00 | 00 | 00 | 00 | 00 | **Data Compression History** | Audit history of compression for payload. | | | | | |
| | Node | 05 | 40 | 04 | 00 | 00 | 00 | 00 | 00 | **Metadata Compression History** | Audit history of compression for payload. | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | **06** | **00** | **00** | **00** | **00** | **00** | **00** | **00** | **RELATIONAL** | **Class 6 is reserved for information about the relationships between data** | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 06 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **Generic Relationships** | Specifies relationships which are generic between items | | | | | |
| | Node | 06 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | **Essence and Metadata Relationships** | Type of relation (e.g., is part of, is an item of [programme, series], remix, remake, ...) | | | | | |
| | Node | 06 | 01 | 01 | 01 | 00 | 00 | 00 | 00 | Essence to Essence | The relationship value in terms of Parent of; Child of; Item of; Excerpt of; Version of; Compilation of; etc | | | | | |
| | Node | 06 | 01 | 01 | 02 | 00 | 00 | 00 | 00 | Metadata to Essence | The relationship between metadata and essence | | | | | |
| | Node | 06 | 01 | 01 | 03 | 00 | 00 | 00 | 00 | Metadata to Metadata | The relationship value in terms of Parent of; Child of; | | | | | |
| | Node | 06 | 01 | 01 | 04 | 00 | 00 | 00 | 00 | Object to Object | The relationship value in terms of Parent of; Child of; Item of; | | | | | |
| | Node | 06 | 01 | 01 | 05 | 00 | 00 | 00 | 00 | Metadata to Object | The relationship between metadata and an object | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 06 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | **Related production material** | Related production material | | | | | |
| 1 | Leaf | 06 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | Reference to programme support material | eg printed educational material | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 06 | 02 | 02 | 00 | 00 | 00 | 00 | 00 | Reference to programme advertising material | eg printed advertising material | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| 1 | Leaf | 06 | 02 | 03 | 00 | 00 | 00 | 00 | 00 | Reference to programme commercial material | eg. Mugs, T-shirts, recordings | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 06 | 08 | 00 | 00 | 00 | 00 | 00 | 00 | **Stream and Storage Relationships** | Relationships between data in streams and persistent storage | | | | | |
| | Node | 06 | 08 | 01 | 00 | 00 | 00 | 00 | 00 | **Stream Relationships** | Relationships between data in streams | | | | | |
| | Node | 06 | 08 | 02 | 00 | 00 | 00 | 00 | 00 | **Storage Relationships** | Relationships between data in persistent storage | | | | | |
| 1 | Leaf | 06 | 08 | 02 | 01 | 00 | 00 | 00 | 00 | Contiguous Data | Specifies if the data is stored in contiguous bytes (False=0) | Boolean | 1 byte | 00h (FALSE) or FFh (TRUE) | W25.52 | |
| | | | | | | | | | | | | | | | | |
| | Node | 06 | 10 | 00 | 00 | 00 | 00 | 00 | 00 | **Numerical sequence** | information about numerical sequences | | | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 06 | 10 | 01 | 00 | 00 | 00 | 00 | 00 | Numerical position in sequence | 1, 2, 3 etc | UInt32 | 4 bytes | | | |
| 1 | Leaf | 06 | 10 | 02 | 00 | 00 | 00 | 00 | 00 | Relative position in sequence (value) | Numerical offset | Int32 | 4 bytes | | | |
| 1 | Leaf | 06 | 10 | 03 | 00 | 00 | 00 | 00 | 00 | Relative position in sequence (descriptive) | Specifies relative Position in Sequence (previous, next etc) | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | SPATIO-TEMPORAL | Class 7 is reserved for information about space and time | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | Position and Space Vectors | Information about position in space and associated vectors (if any) | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | Positional System Information | Information about absolute system in use | | | | | |
| 1 | Leaf | 07 | 01 | 01 | 01 | 00 | 00 | 00 | 00 | Image Coordinate System | Indicates the geo-referenced coordinate system for the image. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| 1 | Leaf | 07 | 01 | 01 | 02 | 00 | 00 | 00 | 00 | Map Datum Used | Identifies the map datum used to derive the coordinates (UTM or GEO). | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | See types dictionary | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 02 | 00 | 00 | 00 | 00 | 00 | Positional Information | Information about absolute and relative position in space | | | | | |
| | Node | 07 | 01 | 02 | 01 | 00 | 00 | 00 | 00 | Absolute Position | Absolute positional information | | | | | |
| | Node | 07 | 01 | 02 | 01 | 01 | 00 | 00 | 00 | Local Datum Absolute Position | The absolute position of a local datum | | | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 01 | 01 | 00 | 00 | Local Datum Absolute Position Accuracy | The accuracy with which the measurement of absolute position of the local datum is made, (default metres) | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 02 | 01 | 02 | 00 | 00 | 00 | Device Absolute Position | The absolute position of the essence-capturing device | | | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 01 | 00 | 00 | Device Absolute Positional Accuracy | Accuracy of frame center coordinates as a Circular Error Probable (CEP) (50%), (default metres) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 02 | 00 | 00 | Device Altitude | Altitude of sensor as measured from Mean Sea Level (MSL), (default metres) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 02 | 01 | 00 | Device Altitude (concise) | Altitude of sensor as measured from Mean Sea Level (MSL), (default metres) | Binary | 4 bytes | As per SMPTE 330M (UMID) | SMPTE 330M | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 04 | 00 | 00 | Device Latitude | Specifies a sensor's geographic location in decimal degrees of latitude.  Positive values indicate northern hemisphere; negative values indicate southern hemisphere. | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 04 | 01 | 00 | Device Latitude (degrees, concise) | Specifies a sensor's geographic location in decimal degrees of latitude.  Positive values indicate northern hemisphere; negative values indicate southern hemisphere. | Binary | 4 bytes | As per SMPTE 330M (UMID) | SMPTE 330M | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 06 | 00 | 00 | Device Longitude | Specifies a sensor's geographic location in decimal degrees of longitude.  Positive values indicate eastern hemisphere, negative values indicate western hemisphere. | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 06 | 01 | 00 | Device Longitude (degrees, concise) | Specifies a sensor's geographic location in decimal degrees of longitude.  Positive values indicate eastern hemisphere, negative values indicate western hemisphere. | Binary | 4 bytes | As per SMPTE 330M +O791 UMID) | SMPTE 330M | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 10 | 00 | 00 | Device X Dimension | Specifies the sensor location along the x-axis in Earth Centered, Earth Fixed (ECEF) Cartesian coordinates,  (default metres) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 02 | 11 | 00 | 00 | Device Y Dimension | Specifies the sensor location along the y-axis in Earth Centered, Earth Fixed (ECEF) Cartesian coordinates,  (default metres) | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 02 | 01 | 03 | 00 | 00 | 00 | Subject Absolute Position | The absolute position of the subject depicted in the essence | | | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 03 | 01 | 00 | 00 | Frame Positional Accuracy | Accuracy of frame center coordinates as a Circular Error Probable (CEP) (50%),  (default metres) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 03 | 02 | 00 | 00 | Frame Center Latitude | Specifies the video frame center point geographic location in decimal degrees of latitude.  Positive values indicate northern hemisphere; negative values indicate southern hemisphere. | Floating Point | 4 bytes | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 07 | 01 | 02 | 01 | 03 | 03 | 00 | 00 | Frame Center Latitude (degrees, concise) | Specifies the video frame center point geographic location in decimal degrees of latitude. Positive values indicate northern hemisphere; negative values indicate southern hemisphere. | Binary | 4 bytes | As per SMPTE 330M +O523UMID) | SMPTE 330M | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 03 | 04 | 00 | 00 | Frame Center Longitude | Specifies the video frame center point geographic location in decimal degrees of longitude. Positive values indicate eastern hemisphere; negative values indicate western hemisphere. | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 03 | 05 | 00 | 00 | Frame Center Longitude (degrees, concise) | Specifies the video frame center point geographic location in decimal degrees of longitude. Positive values indicate eastern hemisphere; negative values indicate western hemisphere. | Binary | 4 bytes | As per SMPTE 330M (UMID) | SMPTE 330M | |
| 1 | Leaf | 07 | 01 | 02 | 01 | 03 | 06 | 00 | 00 | Frame Center Lat-Long | Specifies a video frame center point geographic location Latitude and Longitude. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 14 bytes | Specified format (see notes) | | Format is ddmmssXddmmssY, where "dd" is degrees latitude, "dd" is degrees longitude, "mm" is minutes, |
| | Node | 07 | 01 | 02 | 02 | 00 | 00 | 00 | 00 | **Relative Position** | Relative positional information | | | | | |
| | Node | 07 | 01 | 02 | 02 | 01 | 00 | 00 | 00 | **Local Datum Relative Position** | The relative position of a local datum to another specified datum | | | | | |
| 1 | Leaf | 07 | 01 | 02 | 02 | 01 | 01 | 00 | 00 | Local Datum Relative Position Accuracy | The accuracy with which the measurement of relative position of the local datum is made | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 02 | 02 | 02 | 00 | 00 | 00 | **Device Relative Position** | The relative position of the essence-capturing device | | | | | |
| 1 | Leaf | 07 | 01 | 02 | 02 | 02 | 01 | 00 | 00 | Device Relative Positional Accuracy | Accuracy of frame center coordinates | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 02 | 02 | 02 | 00 | 00 | Device Relative Position X | Defined by the X translational position of the camera from a local Datum Absolute Position. Positive values indicate translations in which the camera has physically moved from left to right, (default metres) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 02 | 02 | 03 | 00 | 00 | Device Relative Position Y | Defined by the Y translational position of the camera from a local Datum Absolute Position. Positive values indicate translations in which the camera has physically moved to a higher elevation, (default metres) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 02 | 02 | 04 | 00 | 00 | Device Relative Position Z | Defined by the Z translational position of the camera from a local Datum Absolute Position. Positive values shall indicate translations in which the camera has physically moved towards the target, (default metres) | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 02 | 02 | 03 | 00 | 00 | 00 | **Subject Relative Position** | The position of the subject depicted in the essence relative to another specified datum | | | | | |
| 1 | Leaf | 07 | 01 | 02 | 02 | 03 | 01 | 00 | 00 | Subject Relative Positional Accuracy | The accuracy with which the measurement of relative position of the subject is made, (default metres) | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 02 | 03 | 00 | 00 | 00 | 00 | **Image Positional information** | Positional information relating to a subset of the whole image | | | | | |
| 1 | Leaf | 07 | 01 | 02 | 03 | 01 | 00 | 00 | 00 | Position within viewport image x coordinate (pixels) | The position of a point (or object) within the viewed image expressed as x/y coordinates of the viewed image. | Int16 | 2 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 03 | 02 | 00 | 00 | 00 | Position within viewport image y coordinate (pixels) | The position of a point (or object) within the viewed image expressed as x/y coordinates of the viewed image. | Int16 | 2 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 03 | 03 | 00 | 00 | 00 | Source image centre x coordinate (pixels) | The x position of the centre of the captured (source) image expressed as x/y coordinates of the viewed image | Int16 | 2 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 03 | 04 | 00 | 00 | 00 | Source image centre y coordinate (pixels) | The y position of the centre of the captured (source) image expressed as x/y coordinates of the viewed image | Int16 | 2 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 03 | 05 | 00 | 00 | 00 | Viewport image centre x coordinate (pixels) | The x position of the centre of the viewed image expressed as x/y coordinates of the viewed image | Int16 | 2 bytes | | | |
| 1 | Leaf | 07 | 01 | 02 | 03 | 06 | 00 | 00 | 00 | Viewport image centre y coordinate (pixels) | The y position of the centre of the viewed image expressed as x/y coordinates of the viewed image | Int16 | 2 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 03 | 00 | 00 | 00 | 00 | 00 | **Rate and Direction of Positional Change** | Information about rate and direction of positional change | | | | | |
| | Node | 07 | 01 | 03 | 01 | 00 | 00 | 00 | 00 | **Absolute Rate and Direction of Positional Change** | Information about the absolute rate and direction of positional change | | | | | |
| | Node | 07 | 01 | 03 | 01 | 01 | 00 | 00 | 00 | **Device Rate and Direction of Positional Change** | Information about the absolute rate and direction of positional change of the capturing device | | | | | |
| 1 | Leaf | 07 | 01 | 03 | 01 | 01 | 01 | 00 | 00 | Device Absolute Speed | Defined by the relative speed of the sensor along the heading. Expressed in metres/second . Speed values shall indicate translations in which the capturing device has physically moved. | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 03 | 01 | 01 | 02 | 00 | 00 | Device Absolute Heading | Defined by the absolute heading of the sensor. Expressed in degrees and tenths of degrees. | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 03 | 01 | 02 | 00 | 00 | 00 | **Subject Rate and Direction of Positional Change** | Information about the absolute rate and direction of positional change of the subject depicted in the captured essence | | | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 07 | 01 | 03 | 01 | 02 | 01 | 00 | 00 | Subject Absolute Speed | Defined by the absolute speed of the subject along the heading, (default metres/second) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 03 | 01 | 02 | 02 | 00 | 00 | Subject Absolute Heading | Defined by the absolute heading of the subject.  Expressed in degrees and tenths of degrees. | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 03 | 02 | 00 | 00 | 00 | 00 | Relative Rate and Direction of Positional Change | Information about the relative rate and direction of positional change | | | | | |
| | Node | 07 | 01 | 03 | 02 | 01 | 00 | 00 | 00 | Device Relative Rate and Direction of Positional Change | Information about relative rate and direction of positional change of the capturing device | | | | | |
| 1 | Leaf | 07 | 01 | 03 | 02 | 01 | 01 | 00 | 00 | Device Relative Speed | Defined by the relative speed of the sensor along the heading. Speed values shall indicate translations in which the camera has physically moved. (default metres/second) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 03 | 02 | 01 | 02 | 00 | 00 | Device Relative Heading | Defined by the relative heading of the sensor.  Expressed in degrees and tenths of degrees. | Floating Point | 4 bytes | | | |
| | Node | 07 | 01 | 03 | 02 | 02 | 00 | 00 | 00 | Subject Relative Rate and Direction of Positional Change | Relative information about rate and direction of positional change of the subject depicted in the captured essence | | | | | |
| 1 | Leaf | 07 | 01 | 03 | 02 | 02 | 01 | 00 | 00 | Subject Relative Speed | Defined by the relative speed of the subject along the heading, (default metres/second) | Floating Point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 03 | 02 | 02 | 02 | 00 | 00 | Subject Relative Heading | Defined by the relative heading of the subject.  Expressed in degrees and tenths of degrees. | Floating Point | 4 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 08 | 00 | 00 | 00 | 00 | 00 | Distance measurements | Length measurements relating to distance | | | | | |
| | Node | 07 | 01 | 08 | 01 | 00 | 00 | 00 | 00 | Device to Subject distance | Length measurements relating to distance between capturing device and the subject depicted in the captured essence | | | | | |
| 1 | Leaf | 07 | 01 | 08 | 01 | 01 | 00 | 00 | 00 | Slant Range | Distance from the sensor to the center point on ground of the framed subject (image) depicted in the captured essence, (default metres) | Floating point | 4 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 09 | 00 | 00 | 00 | 00 | 00 | Dimensions | Length measurements relating to size | | | | | |
| | Node | 07 | 01 | 09 | 01 | 00 | 00 | 00 | 00 | Device Dimensions | Physical measurements relating to the size of the device used for the captured essence | | | | | |
| | Node | 07 | 01 | 09 | 02 | 00 | 00 | 00 | 00 | Subject Dimensions | Physical measurements relating to the size of the subject depicted in the captured essence | | | | | |
| 1 | Leaf | 07 | 01 | 09 | 02 | 01 | 00 | 00 | 00 | Target Width | Horizontal half width of the target frame image; used to compute the four corner points of the frame, (default metres) | Floating point | 4 bytes | | | |
| | Node | 07 | 01 | 09 | 03 | 00 | 00 | 00 | 00 | Location Dimensions | Length measurements relating to the size of the location or studio in which the essence was catured | | | | | |
| | Node | 07 | 01 | 09 | 04 | 00 | 00 | 00 | 00 | Media Dimensions | Length measurements relating to the physical size of the image formed in a capturing device | | | | | |
| | Node | 07 | 01 | 09 | 04 | 01 | 00 | 00 | 00 | Image Dimensions | Length measurements relating to the physical size of the image formed in a capturing device | | | | | |
| | Node | 07 | 01 | 09 | 04 | 01 | 01 | 00 | 00 | Pan and scan image dimensions | Length measurements relating to pan and scan subsetting of a captured image | | | | | |
| 1 | Leaf | 07 | 01 | 09 | 04 | 01 | 01 | 01 | 00 | Viewport height | The height of the viewed area within a captured image (in pixels) | UInt16 | 2 bytes | | | |
| 1 | Leaf | 07 | 01 | 09 | 04 | 01 | 01 | 02 | 00 | Viewport width | The width of the viewed area within a captured image (in pixels) | UInt16 | 2 bytes | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 10 | 00 | 00 | 00 | 00 | 00 | Angular Specifications | Information regarding angles related to positioning information | | | | | |
| | Node | 07 | 01 | 10 | 01 | 00 | 00 | 00 | 00 | Device angles | Device information regarding angles related to positioning information | | | | | |
| 1 | Leaf | 07 | 01 | 10 | 01 | 01 | 00 | 00 | 00 | Sensor Roll Angle | Specifies the roll angle of the sensor.  Expressed in degrees. | Floating point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 10 | 01 | 02 | 00 | 00 | 00 | Angle to North | Angle in degrees from the first row of the image to true north. | Floating point | 4 bytes | | | |
| 1 | Leaf | 07 | 01 | 10 | 01 | 03 | 00 | 00 | 00 | Obliquity Angle | Obliquity angle of image expressed in degrees.  The inverse of sensor depression angle. | Floating point | 4 bytes | | | |
| | Node | 07 | 01 | 10 | 02 | 00 | 00 | 00 | 00 | Subject angles | Angles relating to the subject depicted in the captured essence | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 01 | 20 | 00 | 00 | 00 | 00 | 00 | Abstract Locations | Abstract information about position | | | | | |
| | Node | 07 | 01 | 20 | 01 | 00 | 00 | 00 | 00 | Place names | Place information | | | | | |
| | Node | 07 | 01 | 20 | 01 | 01 | 00 | 00 | 00 | Abstract names | Abstract place information | | | | | |

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| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 07 | 01 | 20 | 01 | 01 | 01 | 00 | 00 | Place Keyword | The geographic name(s) of location(s) covered by a data set. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 01 | 20 | 01 | 02 | 00 | 00 | 00 | **Country Codes** | Country code information | | | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 02 | 01 | 00 | 00 | Object Country Code | The code that represents the country depicted in the essence. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | ISO/IEC 3166-1: 1997 | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 02 | 02 | 00 | 00 | Country code of shoot | Country where shooting took place | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | ISO/IEC 3166-1: 1998 | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 02 | 03 | 00 | 00 | Country code of Setting (Characterised Place) | The country code of the country where the depicted action is set in the production | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | ISO/IEC 3166-1: 1999 | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 02 | 04 | 00 | 00 | Country code of Copyright License | The country code of a country where copyright is licensed | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | ISO/IEC 3166-1: 2000 | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 02 | 05 | 00 | 00 | Country code of IP License | The country code of a country where IP rights are licensed | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 4 chars max | | ISO/IEC 3166-1: 2001 | |
| | Node | 07 | 01 | 20 | 01 | 03 | 00 | 00 | 00 | **Regions** | Information about Regions within a country | | | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 03 | 01 | 00 | 00 | Region of Object | Region in a country where object is depicted | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 03 | 02 | 00 | 00 | Region of shoot | Region within a country where shooting took place | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 03 | 03 | 00 | 00 | Region of Setting (Characterised Place) | The region of the country where the depicted action is set in the production | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 03 | 04 | 00 | 00 | Region or area of Copyright License | The region of a country where copyright is licensed | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 03 | 05 | 00 | 00 | Region or area of IP License | The region of a country where IP rights are licensed | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 01 | 20 | 01 | 04 | 00 | 00 | 00 | **Addresses** | Information about Addresses | | | | | |
| | Node | 07 | 01 | 20 | 01 | 04 | 01 | 00 | 00 | **Postal Addresses** | Information about Postal Addresses | | | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 01 | 00 | Room Number | The room number of an address | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 02 | 00 | Street Number or Building name | An address line for the address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 03 | 00 | Street | An address line for the address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 04 | 00 | Postal Town | An address line for the address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 05 | 00 | City | The city of the address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 06 | 00 | State or Province or County | The state, province or county of the address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 07 | 00 | Postal Code | The ZIP or other postal code of the address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 01 | 08 | 00 | Country | The country of the address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 01 | 20 | 01 | 04 | 02 | 00 | 00 | **Setting Addresses (Characterised Place)** | Information about address depicted in the setting of a production | | | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 01 | 00 | Setting room number | The room number of a depicted address | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 02 | 00 | Setting Street Number or Building name | An address line for the depicted address | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 03 | 00 | Setting Street | An address line for the depicted address | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 04 | 00 | Setting Town | An address line for the depicted address | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 05 | 00 | Setting City | The city of the depicted address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 06 | 00 | Setting State or Province or County | The state, province or county of the depicted address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 07 | 00 | Setting Postal Code | The ZIP or other postal code of the depicted address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 04 | 02 | 08 | 00 | Setting Country | The country of the depicted address. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 01 | 20 | 01 | 04 | 03 | 00 | 00 | **Electronic Address** | Information about electronic addresses | | | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 10 | 03 | 01 | 00 | Telephone number | Telephone number | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 07 | 01 | 20 | 01 | 10 | 03 | 02 | 00 | Fax number | Fax number | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 01 | 20 | 01 | 10 | 03 | 03 | 00 | e-mail address | e-mail address | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 bytes max | | | |
| | Node | 07 | 01 | 20 | 02 | 00 | 00 | 00 | 00 | **Place descriptions** | Place descriptions | | | | | |
| 1 | Leaf | 07 | 01 | 20 | 02 | 01 | 00 | 00 | 00 | Setting Description | eg. "A clearing in a wood" or "Falstaff's living room" | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 127 chars max | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | **Temporal** | Information about temporal information | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 02 | 01 | 00 | 00 | 00 | 00 | 00 | **Dates and Times** | All information about dates and times | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 02 | 01 | 01 | 00 | 00 | 00 | 00 | **General Dates and Times** | General information about dates and times | | | | | |
| | Node | 07 | 02 | 01 | 01 | 01 | 00 | 00 | 00 | **User defined Date-Time stamps** | Time stamp application defined by user application | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 01 | 01 | 01 | 00 | 00 | User defined Date-Time stamp - UTC | Time stamp application defined by user application | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 01 | 01 | 02 | 00 | 00 | User defined Date-Time stamp - Local Time | Time stamp application defined by user application | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 01 | 01 | 03 | 00 | 00 | User defined Date-Time stamp - SMPTE 309M | Time stamp application defined by user application | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 309M & SMPTE 331M | The Field Flag / Phase bits and the Color Frame Flag bit shall be ignored. The Binary Group Flags and the Binary Groups shall be assumed to contain data as defined in SMPTE 309M. |
| 1 | Leaf | 07 | 02 | 01 | 01 | 01 | 04 | 00 | 00 | User defined Time stamp - SMPTE 12M | Time stamp application defined by user application | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 02 | 01 | 02 | 00 | 00 | 00 | 00 | **Absolute Dates and Times** | Absolute date and time information | | | | | |
| | Node | 07 | 02 | 01 | 02 | 01 | 00 | 00 | 00 | **Material Start True Date-Time (Date, Hours, minutes, seconds, fractions of seconds)** | Absolute time at start of creating the segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 01 | 01 | 00 | 00 | Start Date Time - UTC | Absolute time at start of creating the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 01 | 02 | 00 | 00 | Start Date Time - Local Time (default = undefined) | Absolute time at start of creating the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 02 | 01 | 02 | 02 | 00 | 00 | 00 | **Material Start Time Address** | Media time at start of segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 02 | 01 | 00 | 00 | Start (Date) Time - Timecodes | Media time at start of segment, shot, clip, item etc. | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| | Node | 07 | 02 | 01 | 02 | 03 | 00 | 00 | 00 | **Material End True Date-Time (Date, Hours, minutes, seconds, fractions of seconds)** | Absolute time at end of creating the segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 03 | 01 | 00 | 00 | End Date Time - UTC | Absolute time at end of creating the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 03 | 02 | 00 | 00 | End Date Time - Local Time (default = undefined) | Absolute time at end of creating the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 02 | 01 | 02 | 04 | 00 | 00 | 00 | **Material End Time Address** | Media time at end of segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 04 | 01 | 00 | 00 | End (Date) Time - Timecodes | Media time at end of segment, shot, clip, item etc. | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| | Node | 07 | 02 | 01 | 02 | 05 | 00 | 00 | 00 | **Material Occurance True Date-Time (Date, Hours, minutes, seconds, fractions of seconds)** | Absolute time of an occurance to the segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 05 | 01 | 00 | 00 | Last Modiification Date Time - UTC | Absolute time of the last modification of the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 07 | 02 | 01 | 02 | 05 | 02 | 00 | 00 | Last Modiification Date Time - Local Time (default = undefined) | Absolute time of the last modification of the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 02 | 01 | 02 | 06 | 00 | 00 | 00 | **Material Occurance Time Address** | Media time of the last modification of the segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 06 | 01 | 00 | 00 | Last Modiification Date Time - Timecodes | Media time of the last modification of the segment, shot, clip, item etc. | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 309M & SMPTE 331M | The Field Flag / Phase bits and the Color Frame Flag bit shall be ignored. The Binary Group Flags and the Binary Groups shall be assumed to contain data as defined in SMPTE 309M. |
| | Node | 07 | 02 | 01 | 02 | 07 | 00 | 00 | 00 | **Event Start True Date-Time (Date, Hours, minutes, seconds, fractions of seconds)** | The absolute beginning date and time of the project, mission, scene, editing event, license, publication etc | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 07 | 01 | 00 | 00 | Event Start Date and Time - UTC | The absolute beginning date and time of the project, mission, scene, editing event, license, publication etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 07 | 02 | 00 | 00 | Event Start Date and Time - Local Time (default = undefined) | The absolute beginning date and time of the project, mission, scene, editing event, license, publication etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 02 | 01 | 02 | 08 | 00 | 00 | 00 | **Event Start Time Address** | The absolute beginning date and time of the project, mission, scene, editing event, license, publication etc | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 08 | 01 | 00 | 00 | Event Start (Date) and Time - Timecodes | The absolute beginning date and time of the project, mission, scene, editing event, license, publication etc | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 309M & SMPTE 331M | The Field Flag / Phase bits and the Color Frame Flag bit shall be ignored. The Binary Group Flags and the Binary Groups shall be assumed to contain data as defined in SMPTE 309M. |
| | Node | 07 | 02 | 01 | 02 | 09 | 00 | 00 | 00 | **Event End True Date-Time (Date, Hours, minutes, seconds, fractions of seconds)** | The absolute ending date and time of the project, mission, scene, editing event, license, publication etc | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 09 | 01 | 00 | 00 | Event End Date and Time - UTC | The absolute ending date and time of the project, mission, scene, editing event, license, publication etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 09 | 02 | 00 | 00 | Event End Date and Time - Local Time (default = undefined) | The absolute ending date and time of the project, mission, scene, editing event, license, publication etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 02 | 01 | 02 | 0A | 00 | 00 | 00 | **Event End Time Address** | The absolute ending date and time of the project, mission, scene, editing event, license, publication etc | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 02 | 0A | 01 | 00 | 00 | Event End (Date and) Time - Timecodes | The absolute ending date and time of the project, mission, scene, editing event, license, publication etc | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 309M & SMPTE 331M | The Field Flag / Phase bits and the Color Frame Flag bit shall be ignored. The Binary Group Flags and the Binary Groups shall be assumed to contain data as defined in SMPTE 309M. |
| | Node | 07 | 02 | 01 | 03 | 00 | 00 | 00 | 00 | **Relative Times** | Relative time information | | | | | |
| | Node | 07 | 02 | 01 | 03 | 01 | 00 | 00 | 00 | **Material Start Relative Times** | The relative start time of the segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 01 | 01 | 00 | 00 | Start time relative to reference (Date, Hours, minutes, seconds, fractions of seconds) | The relative start time of the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 01 | 02 | 00 | 00 | Start timecode relative to reference | The relative start time of the segment, shot, clip, item etc. | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| | Node | 07 | 02 | 01 | 03 | 02 | 00 | 00 | 00 | **Material End Relative Times** | The relative end time of the segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 02 | 01 | 00 | 00 | End time relative to reference (Date, Hours, minutes, seconds, fractions of seconds) | The relative end time of the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 02 | 02 | 00 | 00 | End timecode relative to reference | The relative end time of the segment, shot, clip, item etc. | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| | Node | 07 | 02 | 01 | 03 | 03 | 00 | 00 | 00 | **Event Start Relative Times** | The relative start time of the project, mission, scene, editing event, license, publication etc | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 03 | 01 | 00 | 00 | Event start time relative to reference (Date, Hours, minutes, seconds, fractions of seconds) | The relative start time of the project, mission, scene, editing event, license, publication etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 03 | 02 | 00 | 00 | Event start timecode relative to reference | The relative start time of the project, mission, scene, editing event, license, publication etc | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Node | 07 | 02 | 01 | 03 | 04 | 00 | 00 | 00 | **Event End Relative Times** | The relative end time of the project, mission, scene, editing event, license, publication etc | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 04 | 01 | 00 | 00 | Event end time relative to reference **(Date, Hours, minutes, seconds, fractions of seconds)** | The relative end time of the project, mission, scene, editing event, license, publication etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 04 | 02 | 00 | 00 | Event end timecode relative to reference | The relative end time of the project, mission, scene, editing event, license, publication etc | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| | Node | 07 | 02 | 01 | 03 | 10 | 00 | 00 | 00 | **Offsets** | Information about offset times | | | | | |
| | Node | 07 | 02 | 01 | 03 | 10 | 01 | 00 | 00 | **Material offsets** | Information about material offset timing | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 03 | 10 | 01 | 01 | 00 | Frame Count Offset | Offset of the content from a given timecode in timecode frames. | UInt 32 | | | | |
| | Node | 07 | 02 | 01 | 08 | 00 | 00 | 00 | 00 | **Setting Date and Time (Characterised Time Period)** | Time period(s) characterized by the data set. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 08 | 01 | 00 | 00 | 00 | Time period Keyword | The name of a time period covered by a data set.  Eg Cretaceous | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| | Node | 07 | 02 | 01 | 10 | 00 | 00 | 00 | 00 | **Process Date and time** | Date and Time information relating to Process | | | | | |
| | Node | 07 | 02 | 01 | 10 | 01 | 00 | 00 | 00 | **Creation Date & Time** | Identifies date and time at the point of creation. | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 10 | 01 | 01 | 00 | 00 | Creation Date & Time - Local Time (default = undefined) | Identifies date and time at the point of creation. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 10 | 01 | 02 | 00 | 00 | Creation (Date and) Time - Timecodes | Identifies date and time at the point of creation. | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 309M & SMPTE 331M | The Field Flag / Phase bits and the Color Frame Flag bit shall be ignored. The Binary Group Flags and the Binary Groups shall be assumed to contain data as defined in SMPTE 309M. |
| | Node | 07 | 02 | 01 | 10 | 02 | 00 | 00 | 00 | **Modification Date & Time** | Identifies date and time at the point of modification | | | | | |
| 1 | Leaf | 07 | 02 | 01 | 10 | 02 | 01 | 00 | 00 | Modification Date & Time - Local Time (default = undefined) | Identifies date and time at the point of modification | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 01 | 10 | 02 | 02 | 00 | 00 | Modification (Date and) Time - Timecodes | Identifies date and time at the point of modification | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 309M & SMPTE 331M | The Field Flag / Phase bits and the Color Frame Flag bit shall be ignored. The Binary Group Flags and the Binary Groups shall be assumed to contain data as defined in SMPTE 309M. |
| | Node | 07 | 02 | 02 | 00 | 00 | 00 | 00 | 00 | **Durations** | Information about time durations | | | | | |
| | Node | 07 | 02 | 02 | 01 | 00 | 00 | 00 | 00 | **Absolute Durations** | Absolute time duration information | | | | | |
| | Node | 07 | 02 | 02 | 01 | 01 | 00 | 00 | 00 | **Edit Timeline Durations** | Time duration information | | | | | |
| 1 | Leaf | 07 | 02 | 02 | 01 | 01 | 01 | 00 | 00 | Frame Count | Length of the segment, shot, clip, item etc in frames. | UInt 32 | 4 bytes | | | |
| | Node | 07 | 02 | 02 | 01 | 02 | 00 | 00 | 00 | **Material Absolute Duration** | The absolute duration of the segment, shot, clip, item etc. | | | | | |
| 1 | Leaf | 07 | 02 | 02 | 01 | 02 | 01 | 00 | 00 | Material Absolute Duration (Days, Hours, minutes, seconds, fractions of seconds) | The absolute duration of the segment, shot, clip, item etc. | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |
| 1 | Leaf | 07 | 02 | 02 | 01 | 02 | 02 | 00 | 00 | Time Duration - Timecodes | The absolute duration of the segment, shot, clip, item etc. | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| 1 | Leaf | 07 | 02 | 02 | 01 | 02 | 03 | 00 | 00 | Textless black duration | eg.  1 minutes after end of programme | UInt 32 | 4 bytes | | | |
| | Node | 07 | 02 | 02 | 01 | 03 | 00 | 00 | 00 | **Event Absolute Durations** | The absolute duration of the project, mission, scene, editing event, license, publication etc | | | | | |
| 1 | Leaf | 07 | 02 | 02 | 01 | 03 | 01 | 00 | 00 | Event Absolute Duration Frame Count | The absolute duration of the project, mission, scene, editing event, license, publication etc | UInt 32 | 4 bytes | | | |
| 1 | Leaf | 07 | 02 | 02 | 01 | 03 | 02 | 00 | 00 | Event Absolute Time Duration (Days, Hours, minutes, seconds, fractions of seconds) | The absolute duration of the project, mission, scene, editing event, license, publication etc | ISO/IEC 646:1991 - ISO 7-Bit Coded Character Set | 32 bytes max | | | |

| Dictionary Version at introduction | Node or Leaf | SMPTE label (last 8 octets following Metadata Dictionary Universal Label) | | | | | | | | Data Element Name | Data Element Definition | Type | Value Length | Value Range | Defining Document | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Leaf | 07 | 02 | 02 | 01 | 03 | 03 | 00 | 00 | Event Absolute Time Duration - Timecodes | The absolute duration of the project, mission, scene, editing event, license, publication etc | UILSBF | 8 bytes | Bitwise mapping of 64-bit timecode into 8 bytes, lsb first | SMPTE 12M & SMPTE 331M | The Binary Groups, the Binary Group Flags, the Field Flag / Phase bits and the Color Frame Flag bit shall be ignore |
| | Node | 07 | 02 | 02 | 02 | 00 | 00 | 00 | 00 | Relative Durations (scaling) | Relative time duration information (twice as long, slow speed etc.) | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 02 | 03 | 00 | 00 | 00 | 00 | 00 | Delay | Information about Delay durations | | | | | |
| | Node | 07 | 02 | 03 | 01 | 00 | 00 | 00 | 00 | Encoding/Decoding | Information about delay durations in encoding and decoding processes | | | | | |
| | Node | 07 | 02 | 03 | 01 | 01 | 00 | 00 | 00 | Codec Delay | Information about combined delay in encoding & decoding processes | | | | | |
| | Node | 07 | 02 | 03 | 01 | 02 | 00 | 00 | 00 | Encoding Delay | Information about delay durations in encoding processes | | | | | |
| | Node | 07 | 02 | 03 | 01 | 03 | 00 | 00 | 00 | Decoding Delay | Information about delay durations in decoding processes | | | | | |
| 1 | Leaf | 07 | 02 | 03 | 01 | 03 | 01 | 00 | 00 | Buffer Delay | Buffer delay per definition in SDTI-CP (E&M) | as per SDTI-CP (E&M) standard | | | SMPTE 331M | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 02 | 05 | 00 | 00 | 00 | 00 | 00 | Latency | Information about response times | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 07 | 02 | 06 | 00 | 00 | 00 | 00 | 00 | Temporal shape (Shuttering etc) | Information about temporal characteristics of processes | | | | | |
| | Node | 07 | 02 | 06 | 01 | 00 | 00 | 00 | 00 | Shutter characteristics | Shutter characteristics. | | | | | |
| | Node | 07 | 02 | 06 | 01 | 01 | 00 | 00 | 00 | Shutter speed | Shutter speed | | | | | |
| | Node | 07 | 02 | 06 | 01 | 02 | 00 | 00 | 00 | Shutter Gating | Shutter Gating characteristics | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 0D | 00 | 00 | 00 | 00 | 00 | 00 | 00 | USER ORGANISATION REGISTERED FOR PUBLIC USE | Class 13 is reserved for metadata registered by an Organisation for public use | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 0E | 00 | 00 | 00 | 00 | 00 | 00 | 00 | USER ORGANISATION REGISTERED FOR PRIVATE USE | Class 14 is reserved for metadata registered by an Organisation for their private use | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 0E | 01 | 00 | 00 | 00 | 00 | 00 | 00 | DoD Metadata | Metadata for U.S. Department of Defense agencies. | | | | | |
| | Node | 0E | 02 | 00 | 00 | 00 | 00 | 00 | 00 | UAV Metadata | UAV Metadata | | | | | |
| | Node | 0E | 03 | 00 | 00 | 00 | 00 | 00 | 00 | RQ1A Metadata | RQ1A Metadata | | | | | |
| | Node | 0E | 03 | 01 | 00 | 00 | 00 | 00 | 00 | RQ1A Closed Caption Set | RQ1A Metadata Set containing metadata information from analog closed caption | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | Node | 0F | 00 | 00 | 00 | 00 | 00 | 00 | 00 | EXPERIMENTAL METADATA | Class 15 Metadata is for experimental metadata. Users may create their own structures consistent | | | | | |

# PROPOSED SMPTE STANDARD

## for Television —
# Data Encoding Protocol using Key-Length-Value

## 1 Scope

This standard defines an octet-level data encoding protocol for representing data items and data groups. This protocol defines a data structure which is independent of the application or transportation method used.

The standard defines a key-length-value (KLV) triplet as a data interchange protocol for data items where the key identifies the data, the length specifies the length of the data, and the value is the data itself. The KLV protocol provides a common interchange point for all compliant applications irrespective of the method of implementation or transport.

The standard also provides methods for combining associated KLV triplets in data sets where the set of KLV triplets is itself coded with KLV data coding protocol. Such sets can be coded in either full form (universal sets) or in one of four increasingly bit-efficient forms (global sets, local sets, variable-length packs, and fixed-length packs). The standard provides a definition of each of these data constructs.

The encoding octet range (length of the payload) specified in this standard may generate unusually large volumes of data. Consequently, a specific application of KLV encoding may require only a limited operating data range and those details shall be defined in a relevant application document.

## 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.

ANSI/SMPTE 298M-1997, Television — Universal Labels for Unique Identification of Digital Data

ISO/IEC 8825-1:1998 (ITU-T X.690), Information Technology — ASN.1 Encoding Rules — Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER), and Distinguished Encoding Rules (DER)

## 3 Key-length-value (KLV) protocol

Table 1 and figure 1 present an introductory view of the key-length-value (KLV) protocol for encoding data. The data encoded may be a single data item or a data group. The coding of data items is described in clause 4 while the coding of data groups is described in clause 5 of this standard.

The KLV coding protocol is composed of a universal label (UL) identification key (UL key), followed by a numeric length (value length), followed by the data value.

The composition of the UL key is described in 3.1 of this standard. The length of the full UL key shall be 16 octets. The length field is described in 3.2 of this standard. The octet length of the length field varies as defined in 3.2 of this standard. The value is described in 3.3 of this standard. The value is a sequence of octets of the data type as specified in a relevant standard and is not further encoded by the KLV protocol. The length of the value field is variable and any limitations are defined in a relevant defining standard.

**Table 1 – Key-length-value (KLV) fields for encoding of data**

| Field | Description | Length | Content/Format |
|-------|-------------|--------|----------------|
| UL key | Universal label for identification of the value | 16 octets | Clause 3.1 |
| Length | Length of the value field | Defined in a relevant dictionary, essence, application standard, but variable length | Clause 3.2 |
| Value | Value associated with the UL key | Variable | Clause 3.3 |
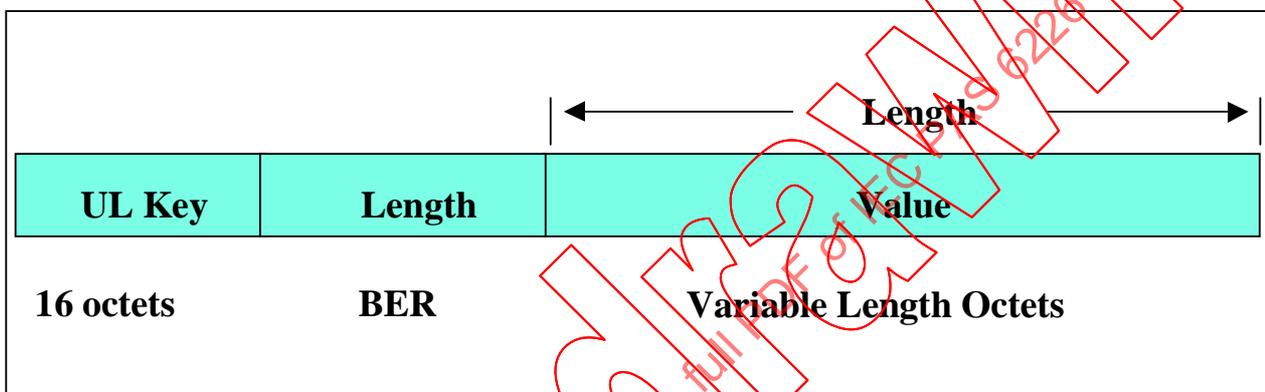


**Figure 1 – Key-length-value (KLV) encoding**

The bit-order (lsb or msb first) for KLV encoding shall be that of the transport used to carry the information.

**3.1 ANSI/SMPTE 298M universal label key**

KLV coding protocol shall use a 16-word universal label (UL) according to SMPTE 298M as the UL key to identify the data in the value field.

Each word in the SMPTE 298M UL is coded using the basic encoding rules (BER) for the encoding of an object identifier value specified in ISO/IEC 8825-1, paragraph 8.19. Each word of the UL key shall be limited to the range 0×00 to 0×7f and can be represented by a single octet. The UL key shall have left-to-right significance with the first octet as the most significant. The leftmost octet of value 0ö00 in the UL key shall define the termination of the label and all octets of lower significance shall also be set to 0ö00. Octets of value 0×00 shall have no significance to the meaning of the UL key.

The full UL key shall consist of a 16-octet field including an object ID (OID) and the UL size (0×0e indicating a total UL key size of 16 octets) followed by a UL code and a series of subidentifiers which shall define the UL designators. The first two UL designators shall have reserved values for the KLV coding protocol according to this standard.

NOTE – The SMPTE UL itself adopts KLV coding with the object ID as the key and the UL size as the length and the UL designators and data element tag as the value.

When applying the SMPTE UL to the coding of data according to this standard, these fields shall be categorized as the UL header, UL designators, and item designator as shown in table 2.

**Table 2 – Field descriptions for the universal label key for the KLV encoding of data**

| No. | Field | Description | Length | Content/Format |
|---|---|---|---|---|
| | UL header: | | | |
| 1 | OID | Object identifier | 1 octet | Always 0×06 |
| 2 | UL size | 16-octet size of the UL | 1 octet | Always 0×0E |
| | UL designators: | | | |
| 3 | UL code | Concatenated subidentifiers ISO, ORG | 1 octet | Always 0×2B |
| 4 | SMPTE designator | SMPTE subidentifier | 1 octet | Always 0×34 |
| 5 | Registry category designator | Registry category designator identifying the category of registry described (e.g., dictionaries) | 1 octet | See table 3 |
| 6 | Registry designator | Registry designator identifying the specific registry in a category (e.g., metadata dictionary) | 1 octet | See table 3 |
| 7 | Structure designator | Designator of the structure variant within the given registry | 1 octet | Clause 3.1.2 |
| 8 | Version number | Version of the given registry which first defines the item specified by the item designator | 1 octet | Incrementing number |
| 9-16 | Item designator | Unique identification of the particular item within the context of the UL designator | 8 octets | See relevant standard and version |

Annex C shows an informative example of a metadata UL key from the SMPTE metadata dictionary in tabular and figure formats.

Note that decoders which recognize the UL key but do not want to, or cannot, decode the associated value may ignore the item and shall continue the decoding process of subsequent items using the length value to skip the value of the undecoded item. If decoders store or forward the item, they shall forward the item unaltered.

### 3.1.1 UL designators

Table 3 defines octet values for the designators to be used in octets 5 through 7 of the UL designators. SMPTE standards and recommended practices which define a UL key with the value of octet 5 (registry category designator) in the range 0×01 to 0×03 shall register the full UL key or keys used with the SMPTE Registration Authority in the registry identified by octets 6 and 7 (registry designator and structure designator).

#### 3.1.1.1 Dictionaries

SMPTE standards and recommended practices which define the value of word 5 of the UL key as 0×01 are dictionary standards and shall be used to define single data items with the KLV data construct.

The coding of individual items is defined in clause 4.

#### 3.1.1.2 Sets and packs

SMPTE standards and recommended practices which define the value of word 5 of the UL key as 0×02 are set and pack standards and shall be used to define groups of KLV coded data items.

The coding of data groups is defined in clause 5.

#### 3.1.1.3 Wrappers and containers

SMPTE standards and recommended practices which define the value of word 5 of the UL key as 0×03 are wrapper and container standards and use the UL key to identify the wrapper or container and its contents. Wrappers and containers differ from sets and packs in that they do not necessarily employ an overall KLV data construct for the entire contents of the wrapper or container. It is recommended that individual parts of a wrapper or container encode data using the KLV coding protocol, but these parts may be bound together by other techniques. In some cases, a wrapper or container may employ an overall KLV

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**Table 3 – UL designators for octets 5 through 7**

| Registry category Octet 5 | Registry Octet 6 | Structure Octet 7 | Described in |
|---|---|---|---|
| 01 – Dictionaries | | | Clause 4 |
| | 01 – Metadata dictionaries | 0×01-0×7f – Structure designator | Other standard/practice |
| | 02 – Essence dictionaries | 0×01-0×7f – Structure designator | Other standard/practice |
| | 03 – Control dictionaries | 0×01-0×7f – Structure designator | Other standard/practice |
| | 04 – Types dictionaries | 0×01-0×7f – Structure designator | Other standard/practice |
| 02 – Groups (sets and packs) | | | Clause 5 |
| | 01 – Universal sets | 0×01-0×7f – Structure designator | Clause 5.1 |
| | 02 – Global sets (default) | 0×01-0×7f – Structure designator | Clause 5.2 |
| | 03 – Local sets (default) | 0×01-0×7f – Structure designator | Clause 5.3 |
| | 04 – Variable-length packs (default) | 0×01-0×7f – Structure designator | Clause 5.4 |
| | 05 – Fixed-length packs | 0×01-0×7f – Structure designator | Clause 5.5 |
| 03 – Wrappers and containers | | | |
| | 01 – Simple wrappers | 0×01-0×7f – Structure designator | Other standard/practice |
| | 02 – Complex wrappers | 0×01-0×7f – Structure designator | Other standard/practice |
| 04 – Labels | | | Clause 6 |
| | 01 – Labels dictionary | 0×01-0×7f – Structure designator | Other standard/practice |

construct in certain applications (such as a streaming interface) but employ another technique in other applications (such as a storage container). In these cases, the wrapper or container is not redefined as a set or a pack but retains the definition as a container or wrapper for consistency of identification.

Simple wrappers and containers are defined as embedding all the data into a single framework with no external references.

Complex containers and wrappers are defined by frameworks where individual data items may be included in a file by reference rather than embedding. Complex containers and wrappers can be more efficient and are suited to local environments where references can be easily resolved.

The definition of wrappers and containers is outside the scope of this standard and can be found in other documents.

### 3.1.2 Structure designator

Octet 7 shall contain the structure designator for the given registry.

Structure designators are allocated to distinguish between incompatible versions of the same registry. They may be thought of as a major version number.

NOTE – Different structure designators may be assigned when a registry becomes so cluttered that it has outlived its usefulness, or when changes to the contents, structure, or class relationships of the registry are necessary which prevent backward compatibility.

Different structure designators may also be assigned to distinguish between different syntax rules for construction and interpretation of values.

Different structure designators may also be assigned when more than one standard or practice is used to define the contents of a specific registry.

The precise discipline for allocation of structure designators is described for each specific registry in the clauses below.

### 3.1.3 Version number

Octet 8 shall contain the version number of the given registry which first defines the item specified by the item designator.

New items may be added to registries after initial approval of the controlling standard or practice. Each time a set of item definitions is added, the current version number of the particular registry is incremented. Each entry in a registry includes the version number in which the item was first defined. It is this number which is carried in octet 8.

Parsers may use the version number as an additional guide and consistency check in the process of parsing a UL key.

### 3.1.4 Item designator

Octets 9 through 16 of the UL key comprise the item designator.

The item designator field is fixed 8 octets in length. Item designators are from 1 to 8 bytes long, and are padded on the right with zero octets to fill the 8-byte field. ASN.1 object identifier coding is used to provide for allocation of varying quantities of subidentifiers in a hierarchical manner.

The precise meaning and construction of the item designator depends upon the specific registry and structure variant, and is described further in the clause below.

### 3.2 Encoding of the KLV length field

In the KLV coding protocol, the value of the length field shall be encoded using the basic encoding rules (BER) for either the short form or long form encoding of length octets specified in ISO/IEC 8825-1, paragraph 8.1.3. This method of value length encoding is self-contained and allows for efficient parsing of KLV encoded data. When the KLV coding protocol is applied to groups of KLV coded units, the length field for individual units may adopt a different method as defined by the standard for the coding of that group (see clause 5).

### 3.2.1 BER short-form length encoding

The following normative section (including example) is quoted from ISO/IEC 8825-1:

8.1.3.4 In the short form, the length octets shall consist of a single octet in which bit 8 is zero and bits 7 to 1 encode the number of octets in the contents [value] octets (which may be zero), as an unsigned binary integer with bit 7 as the most significant bit.

Example: $L = 38$ can be encoded as $00100110_2$.

The short form for length encoding shall be used whenever the data value length is less than 128 octets.

### 3.2.2 BER long-form length encoding

The following normative section (including example) is quoted from ISO/IEC 8825-1:

8.1.3.5 In the long form, the length octets shall consist of an initial octet and one or more subsequent octets. The initial octet shall be encoded as follows:

a) bit 8 shall be one;

b) bits 7 to 1 shall encode the number of subsequent octets in the length octets, as an unsigned binary integer with bit 7 as the most significant bit;

c) the value $11111111_2$ shall not be used.

NOTE – This restriction is introduced for possible future extensions.

Bits 8 to 1 of the first subsequent octet, followed by bits 8 to 1 of the second subsequent octet, followed in turn by bits 8 to 1 of each further octet up to and including the last subsequent octet, shall be the encoding of an unsigned binary integer equal to the number of octets in the value field, with bit 8 of the first subsequent octet as the most significant bit.

NOTE – This is sometimes known as big-endian byte order.

Example:

$L = 201$ can be encoded as:

Octet $1 = 10000001_2$   Octet $2 = 11001001_2$  [b8 ... b1]

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NOTES

1 While there are no restrictions in this standard on the maximum number of octets in the data value length field, the presence of large data value lengths can be determined from the first octet in the BER long-form length encoding.

2 It is required that the short form of BER be used for all values smaller than or equal to 127 (0x7f).

Where appropriate, individual application standards and recommended practices may define the maximum octet length of the length field or may place limitations on the value range of the length field in order to simplify decoder requirements.

Implementations shall make every effort to apply a valid value to the length field. However, in certain operations, it may prove impractical to establish the length of the value field. Such a case is an incoming data stream which is assigned a key and a length field at the start point. In this case, the value of the length cannot be established until the termination of the stream and at that point, it may prove impossible to return to the length field to enter the value. In such cases, the length field shall be set to [0×80] which shall indicate a nondeterministic length of the value field. Any application document which allows the length of the value field to be undefined must define an alternative method of locating the end of the value field.

NOTE – The length value [0×80] is used because it is normally meaningless as a BER long-form value as it indicates zero subsequent octets.

### 3.3 Encoding of data values

Data values may be either individual data items or data groups. In either case, the data is an octet string whose length is specified by the length value. The last octet of the value shall be the terminating octet of the data sequence.

### 3.4 Empty metadata items

Specifications for contiguity of KLV packets including any gaps between KLV packets are outside the scope of this standard, and are addressed in the appropriate transport layer documents.

However, should applications so require it, breaks in the data sequence can be inserted by the use of a specific empty metadata item. Use of empty metadata items is not mandatory.

The empty metadata item is a KLV coded packet which shall define a length value followed by an empty value field. No attempt should be made to interpret the data in the value field.

The empty metadata item shall be defined in the metadata dictionary.

Empty metadata items may be coded as individual items or within sets, when allowed by the specific set definition.

Applications may delete or skip any or all empty metadata items upon receipt. Applications may insert empty metadata items, but shall not require other applications to preserve such items.

## 4 KLV coding of individual data items

The KLV coding of individual data items is a simple application of the key, length, and value as defined in clause 3.

The UL key of individual data items is defined in a dictionary together with the ranges of length and the specification of the value itself. For individual data items, the value of word 5 of the UL key shall be 0×01.

### 4.1 Identification of value data representations

The value of many dictionary items can be represented in more than one way. For example, a start time in the metadata dictionary can be represented as a character string of the time code or as an efficient bit-packed form. The first offers direct mapping to a display whereas the second offers high-transmission efficiency for use in narrow-band data channels. There are many such dictionary items which have multiple data representations for the same descriptor.

Where a dictionary item has more than one data representation for the value, one representation shall be designated as the default representation and shall be assigned a key with at least one trailing zero octet. Alternate representations shall be assigned keys by replacing the leftmost trailing zero octet with nonzero values, which shall be assigned sequentially. Each representation shall be documented in the dictionary.

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Example:

01.02.03.04.00.00.00.00 is name (default data representation in 16-bit unicode characters);

01.02.03.04.01.00.00.00 is name (different data representation in ISO 7-bit characters);

01.02.03.04.02.00.00.00 is name (another data representation in 32-bit unicode characters).

The parser treats all representations as the same item; i.e., it recognizes 01.02.03.04.00, then looks for xx in place of the 00 to identify different encodings. Since the default representation is defined, the extra non-zero term in the fifth position is known to be a new data representation of the default dictionary item and not a new dictionary entry.

Many dictionary values share a common set of definitions for multiple data representations. To simplify the dictionary definitions, a types dictionary shall be used to define these data representations. The types dictionary shall be used as a shared resource for all other dictionaries.

Annex D shows an example of KLV coding for a single metadata item.

# 5 KLV group coding

Group coding of data elements can be used to reduce the overhead of repeating redundant information that appears in the key of each unit. Group coding also allows logical groups of individual data elements, or groups of elements, to be encoded together and provides options for increased bit-frequency. In order of increasing coding efficiency, the KLV coding protocol can be used to support universal sets, global sets, local sets, variable-length packs, and fixed-length packs described as follows:

– *Universal sets* shall be used to construct a logical grouping of data elements and other KLV encoded items. Universal sets use the full KLV coding construct throughout.

– *Global sets* are defined as per universal sets, but offer coding efficiency by sharing a common key header. This coding gain is lossless and every UL key can be fully recovered from the data in the global set alone.

– *Local sets* are defined as per universal sets, but offer coding efficiency through the use of short local tags whose meaning is defined only within the context of the local set. Local sets retain the KLV data construct, but require a separate standard or recommended practice to define the meaning of the local tags and to provide a map from the local tag value to the UL key value.

– *Variable-length packs* are defined as a further grouping of data elements that eliminates the use of UL keys and local tags for all individual elements within the group. Variable-length packs, therefore, rely on a standard or recommended practice which defines the order of data elements within the pack.

– *Fixed-length packs* are the most efficient (and least flexible) grouping of data elements that eliminates the use of both UL keys and local tags and removes the length for all individual elements within the group. Thus, fixed-length packs rely on a standard or recommended practice which defines both the order of data elements and the length of each data element within the pack.

Sets and packs shall consist of a number of individual data elements which are coded as a group by the KLV set or pack data construct. The set or pack shall be defined by a full UL key whose value shall be registered with the SMPTE Registration Authority. A set may encode data elements which are themselves sets or packs as well as individual dictionary items. This is called KLV recursive coding and this standard provides no limit on the number of levels of recursion which may be used by any particular application. A pack shall only encode a group of individual dictionary items; i.e., packs shall not use recursive coding.

The presence of sets or packs shall be indicated by 0×02 in the registry category designator field (octet 5) of the set or pack UL key. The registry designator field (octet 6) shall be used to identify the type of set or pack. The set or pack standard or practice and registry shall be identified by the structure designator field (octet 7) and the version of the registry shall be identified by the version number field (octet 8).

The length of a set or pack shall be encoded as either ASN.1 short-form or long-form coding. Application standards or recommended practices may provide an upper bound to the value of the ASN.1 coded length to ease decoder requirements.

Application standards or recommended practices may also provide a fixed-length coding scheme specific to the application for sets or packs embedded within sets or packs. However, this is discouraged.

The set or pack value shall be comprised of a number of individual data elements with coding as defined by the set or pack type.

The following clauses define how the data elements are encoded for universal sets, global sets, local sets, variable-length packs, and fixed-length packs.

## 5.1 Universal sets

The UL key of a universal set shall be defined by an accompanying standard or recommended practice including a structure designator and an accompanying universal set registry including a version number.

The UL key of a universal set shall be 16 octets in length.

The length of a universal set shall be coded as per ASN.1 notation; long or short form as required.

The value of a universal set shall be a sequence of KLV-encoded elements whose total length is given by the length field. Each and every data element in a universal set shall apply KLV data coding protocol including the full UL key value.

Relevant application standards or practices may specify constraints upon the value of a universal set such as the number and size of items, the allowed sequence of items, and whether any items are mandatory or optional.

The UL key for universal sets is described in table 4. Figure 2 illustrates the data structure for the encoding of universal sets.

## 5.2 Global sets

The UL key of a global set shall be defined by an accompanying standard or recommended practice including a structure designator and an accompanying global set registry including a version number.

The UL key of a global set shall be 16 octets in length.

The length of a global set shall be coded as per ASN.1 notation; long or short form as required.

The value of a global set shall be a sequence of KLV-encoded elements whose total length is given by the length field. Each and every data element in a global set shall apply KLV data coding protocol, but with a shortened global tag value replacing the UL key as described next.

The global set UL shall be defined in two parts:

– The first group of 8 octets (UL header and UL designator) shall be registered with the SMPTE Registration Authority and shall be used to identify the global set standard or recommended practice including the structure designator. Each entry in the global set registry shall record the version number in which it was first defined.

– The second group of 8 octets is called the global set designator and shall be used to define the common UL header and UL designator for all the UL keys within the global set. This second group of 8 octets shall include the UL header fields together with as much of the UL designator as is common to all items in the global set. The global set designator may be terminated by a zero-value octet to indicate termination of the common UL designator root. The significant length of the second group to the zero value terminator shall be 2 to 8 octets. If the length of the second group is 8 octets, then the zero-value terminator octet is not required.

Each global tag is from 2 to 12 words in length. Global tags of length less than 12 words shall be terminated by a single zero value thus removing redundant UL data.

The full 16-octet UL key of each item in the global set can be losslessly recreated by concatenating the nonzero octets of the global set designator and the global tag of the item. If the resulting concatenation is less than 16 octets in length, the remaining octets in the 16-octet space shall be zero filled.

Relevant application standards or recommended practices may specify constraints upon the value of a global set such as the number and size of items, the allowed sequence of items, and whether any items are mandatory or optional.

The UL key for global sets is described in table 5.

Figure 3 illustrates the structure for the encoding of global data sets.

**Table 4 – Field descriptions for the UL key for the KLV encoding of universal sets**

| No. | Field | Description | Length | Content/Format |
|---|---|---|---|---|
| | UL header: | | | |
| 1 | OID | Object identifier | 1 octet | Always 0×06 |
| 2 | UL size | 16-octet size of the UL | 1 octet | Always 0×0E |
| | UL designators: | | | |
| 3 | UL code | Concatenation of subidentifiers ISO, ORG | 1 octet | Always 0×2B |
| 4 | SMPTE designator | SMPTE subidentifier | 1 octet | Always 0×34 |
| 5 | Registry category designator | Sets and packs | 1 octet | Always 0×02 |
| 6 | Registry designator | Universal sets | 1 octet | Always 0×01 |
| 7 | Structure designator | Designator of the structure variant within the universal set registry | 1 octet | Incrementing number |
| 8 | Version number | Version of the given registry which first defines the item specified by the item designator | 1 octet | Incrementing number |
| 9-16 | Universal set designator | Unique identification of the particular universal set | 8 octets | See universal set registry |
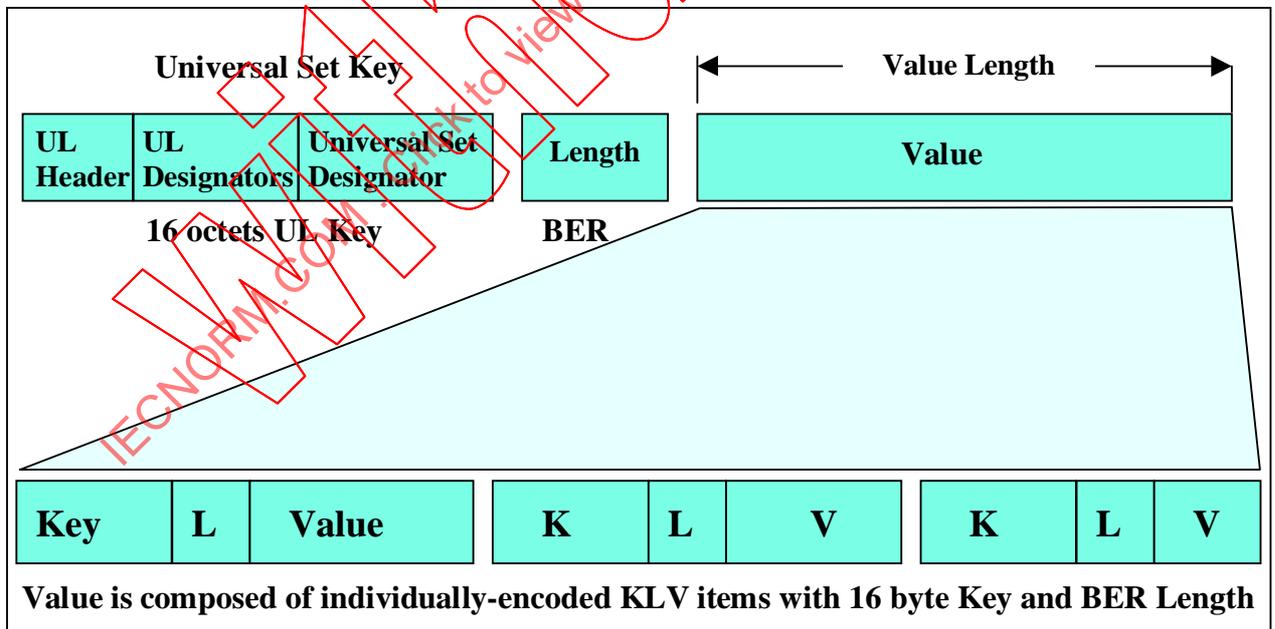


**Figure 2 – KLV coded universal set data structure**

**Table 5 – Field descriptions for the UL key for global set encoding**

| No. | Field | Description | Length | Content/Format |
|-----|-------|-------------|--------|----------------|
| | UL header: | | | |
| 1 | OID | Object identifier | 1 octet | Always 0×06 |
| 2 | UL size | 16-octet size of the UL | 1 octet | Always 0×0E |
| | UL designators: | | | |
| 3 | UL code | Concatenation of subidentifiers ISO, ORG | 1 octet | Always 0×2B |
| 4 | SMPTE designator | SMPTE designator | 1 octet | Always 0×34 |
| 5 | Registry category designator | Sets and packs | 1 octet | Always 0×02 |
| 6 | Registry designator | Global sets | 1 octet | See table 6 |
| 7 | Structure designator | Designator of the structure variant within the global set registry | 1 octet | See the accompanying standard or practice |
| 8 | Version number | Version of the global set registry which first defines the item specified by the global set designator | 1 octet | Incrementing number |
| | Global set designator: | | | |
| 9-16 | Global set designator | The common portion of the UL key shared by all global tags | 8 octets | Active number defines the octets needed to establish the common root for all global tags (2-8 octets) |
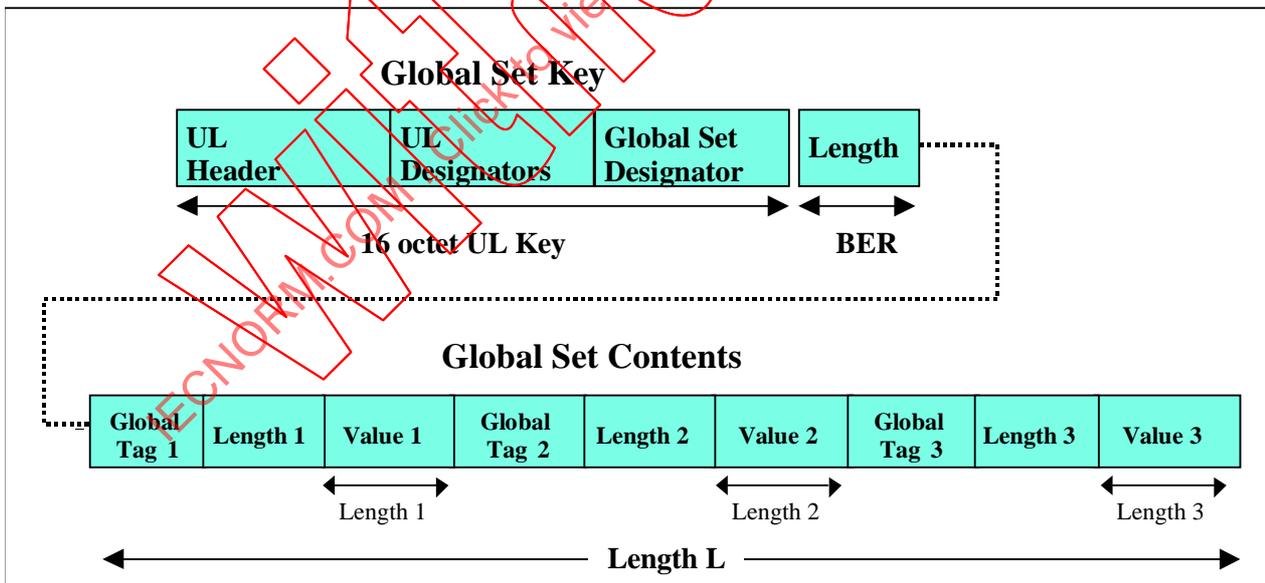


**Figure 3 – KLV coded global set data structure**

The 16-octet global set UL key is followed by the global set length (encoded using ASN.1 BER length encoding) which is followed by a number of elements which shall each be triplets of global tag, length, and value.

The preferred specification of the length fields of individual elements is ASN.1 BER short- or long-form encoding. The full range of allowed length field lengths is defined by the registry designator, according to table 6. All length fields in the global set shall follow the same syntax.

Global sets can accommodate recursion, so that the UL key linked to a global tag may identify either a single data element from a dictionary or a data set or pack from a set or pack standard or recommended practice and the corresponding registry.

An informative example of the operation of global sets is given in annex F.

## 5.3 Local sets

A local set is defined as a number of data elements that are grouped to reduce the length of the keys for each element within the set. Elements may be in any order within the local set and may be present or absent.

The UL key of a local set shall be defined by an accompanying standard or recommended practice including a structure designator and an accompanying local set registry including a version number.

The UL key of a local set shall be 16 octets in length.

The length of a local set shall be coded by default as per ASN.1 BER length notation; long or short form as required.

The value of a local set shall be a sequence of KLV-encoded elements whose total length is given by the length field.

The UL key for local sets is described by table 7. The local set designator is defined within the last 8 octets in the local set UL key. The 16-octet local set key shall be defined in an associated standard or recommended practice and the local set UL key value shall be registered with the SMPTE Registration Authority to guarantee a unique local set UL key value.

The data structure for the encoding of local sets is illustrated in figure 4.

The 16-octet local set UL key is followed by the set length, which is followed by a number of elements, which shall each be triplets of local tag, length, and value.

The preferred size of the local tag fields is 1 octet, and the preferred specification of the length fields is ASN.1 BER short- or long-form encoding. The full range of allowed combinations of tag and length field lengths is defined by the registry designator, according to table 8.

A relevant local set standard or recommended practice shall define the link between the local tag of each element and the corresponding UL key value. This link shall be defined in a relevant local set standard or recommended practice that provides for each local tag the UL key of the defining element. This linking definition is a mechanism that gives users of this standard the flexibility to define their own aliases for highly efficient coding. Developers of local sets shall provide the mapping between each tag in a local set and the defining UL key. Unlike universal sets and global sets, where the UL key of each element in the set can be losslessly recreated, the UL key of each local set tag cannot be reconstructed without recourse to the defining standard or recommended practice and the corresponding registry.

Local sets can accommodate recursion so that the UL key linked to a local tag may identify either a single data element from a dictionary or a data set or pack from a set or pack standard or recommended practice and the corresponding registry.

Figure 5 is an informative illustration of the linking between a local tag and a full UL key.

## 5.4 Variable-length packs

A variable-length pack is similar to a local set, but does not have local tags. Thus, each element of a variable-length pack comprises only a length field and a value field. Elements in a variable-length pack must appear in the defined order.

The UL key of a variable-length pack shall be defined by an accompanying standard or recommended practice including a structure designator and an accompanying variable-length pack registry including a version number.

The UL key of a variable-length pack shall be 16 octets in length.

### Table 6 – Coding of registry designator (octet 6) for global set syntax

| Octet 6 value | Length fields | Description |
|---|---|---|
| 0×02 | BER short or long | Any length |
| 0×22 | 1 octet | Length up to 255 |
| 0×42 | 2 octets | Length up to 65535 |
| 0×62 | 4 octets | Length up to $2^{32}$-1 |

### Table 7 – Field descriptions for the UL key for local set encoding

| No. | Field | Description | Length | Content/Format |
|---|---|---|---|---|
| | UL header: | | | |
| 1 | OID | Object identifier | 1 octet | Always 0×06 |
| 2 | UL size | 16-octet size of the UL | 1 octet | Always 0×0E |
| | UL designators: | | | |
| 3 | UL code | Concatenation of subidentifiers ISO, ORG | 1 octet | Always 0×2B |
| 4 | SMPTE designator | SMPTE designator | 1 octet | Always 0×34 |
| 5 | Registry category designator | Sets and packs | 1 octet | Always 0×02 |
| 6 | Registry designator | Local sets | 1 octet | See table 8 |
| 7 | Structure designator | Designator of the structure variant within the local set registry | 1 octet | Defined by the local set registry and standard or practice |
| 8 | Version number | Version of the local set registry which first defines the item specified by the local set designator | 1 octet | Incrementing number |
| | Local set designator: | | | |
| 9-16 | Local set designator | Defines the local set placement in a hierarchical structure | 8 octets | Defined by the local set registry and standard or practice |
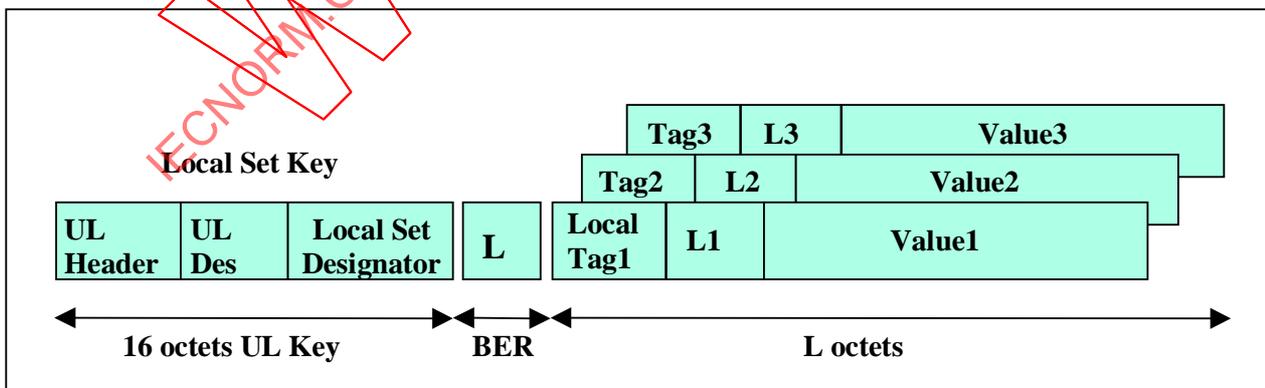


**Figure 4 – KLV coded local set structure**

**Table 8 – Coding of registry designator (octet 6) for local set syntax**

| Octet 6 value | Length fields | Local tag fields length | Description |
|---|---|---|---|
| 0×03 | BER short or long | 1 octet | Any length |
| 0×13 | BER short or long | 2 octets | |
| 0×1B | BER short or long | 4 octets | |
| 0×23 | 1 octet | 1 octet | Length up to 255 |
| 0×33 | 1 octet | 2 octets | |
| 0×3B | 1 octet | 4 octets | |
| 0×43 | 2 octets | 1 octet | Length up to 65535 |
| 0×53 | 2 octets | 2 octets | |
| 0×5B | 2 octets | 4 octets | |
| 0×63 | 4 octets | 1 octet | Length up to $2^{32}-1$ |
| 0×73 | 4 octets | 2 octets | |
| 0×7B | 4 octets | 4 octets | |
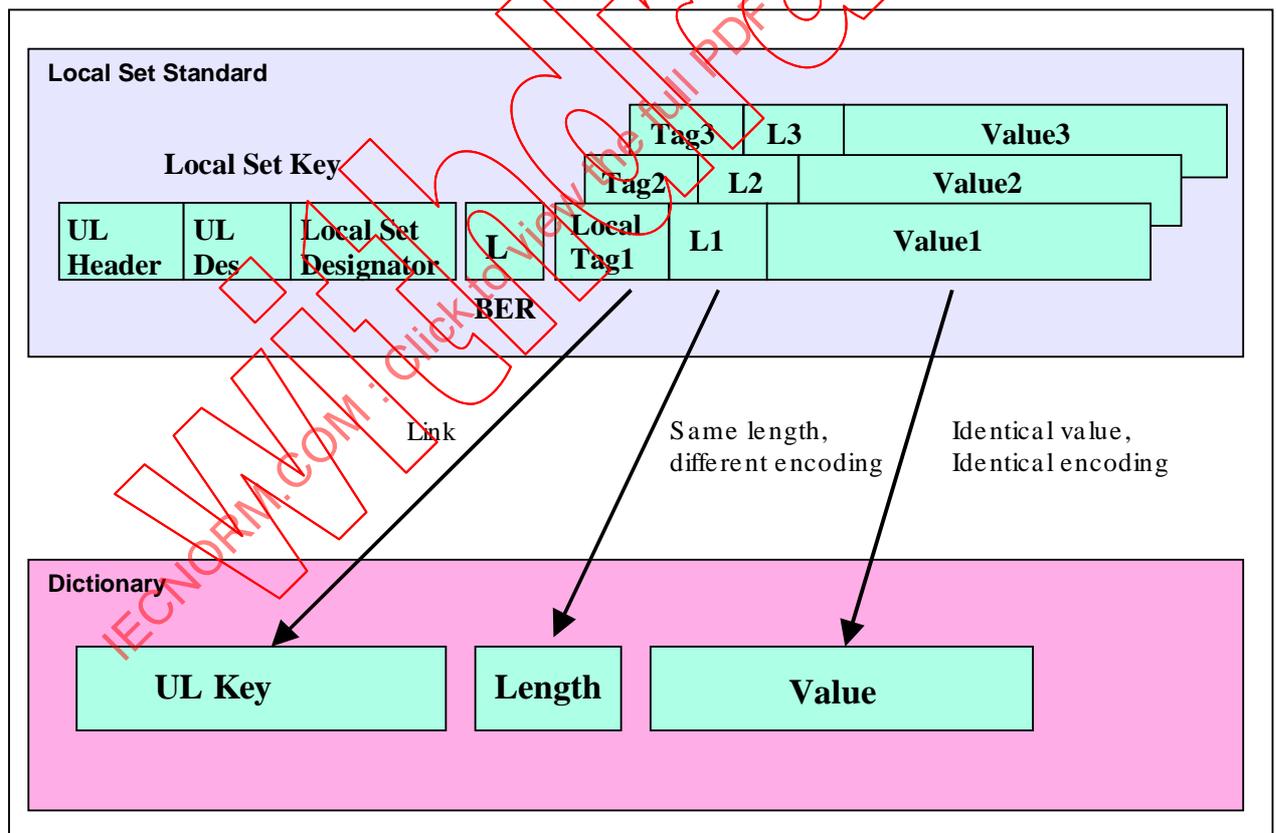


**Figure 5 – Informative illustration of local set label to global key linking**

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The length of a variable-length pack shall be coded by default as per ASN.1 BER length notation; long or short form as required.

The value of a variable-length pack shall be a sequence of KLV-encoded elements whose total length is given by the length field.

The UL key for variable-length pack is described in table 9. The variable-length pack designator is defined within the last 8 octets in the local set UL key. The variable-length pack key shall be defined in an associated standard or recommended practice and the variable-length pack UL key value shall be registered with the SMPTE Registration Authority to guarantee a unique variable-length pack UL key value.

The data structure for the encoding of variable-length packs is illustrated in figure 6.

The 16-octet variable-length pack UL key is followed by the variable-length pack length (encoded using ASN.1 BER length encoding) which is followed by a number of elements which shall each be doublets of length and value.

The default specification of the length fields of individual elements is ASN.1 BER short- or long-form encoding. The full range of allowed length field lengths is defined by the registry designator, according to table 10. All length fields in the variable-length pack shall follow the same syntax.

Because the elements within a pack do not have a local tag, the order of the elements shall be specified by the defining standard or recommended practice.

A relevant variable-length pack standard or recommended practice shall define the link between each element and the corresponding UL key value by providing the UL key of the defining element. This linking definition is a mechanism that gives users of this standard the flexibility to define their own aliases for highly efficient coding. Developers of variable-length packs shall register the mapping between each tag in a variable-length pack and the defining UL key. Unlike universal sets and global sets, where the UL key of each element in the set can be losslessly recreated, the UL key of each element in a variable-length pack cannot be reconstructed without recourse to the defining standard or recommended practice and the corresponding registry.

Variable-length packs can accommodate recursion so that the UL key linked to an element may identify either a single data element from a dictionary or a data group from a set or pack standard or recommended practice and the corresponding registry.

## 5.5 Fixed-length packs

A fixed-length pack is defined as per the local set section, but does not have local tags. Thus, each element of a fixed-length pack is comprised of only a value field.

A fixed-length pack is similar to a variable length pack, but does not have length fields. Thus, each element of a fixed-length pack comprises only a value field. Elements in a fixed-length pack must appear in the defined order.

The UL key of a fixed-length pack shall be defined by an accompanying standard or recommended practice including a structure designator and an accompanying fixed-length pack registry including a version number.

The UL key of a fixed-length pack shall be 16 octets in length.

The length of a fixed-length pack shall be coded as per ASN.1 BER length notation; long or short form as required.

The value of a fixed-length pack shall be a sequence of elements whose total length is given by the length field.

The UL key for a fixed-length pack is described in table 11. The fixed-length pack designator is defined within the last 8 octets in the local set UL key. The fixed-length pack key shall be defined in an associated standard or recommended practice and the fixed-length pack UL key value shall be registered with the SMPTE Registration Authority to guarantee a unique fixed-length pack UL key value.

The data structure for the encoding of fixed-length packs is illustrated in figure 7.

Because the elements within a fixed-length pack do not have a local tag, the order of the elements shall be specified by the defining standard or practice.

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**Table 9 – Field descriptions for the UL key for variable-length pack encoding**

| No. | Field | Description | Length | Content/Format |
|---|---|---|---|---|
| | UL header: | | | |
| 1 | OID | Object identifier | 1 octet | Always 0×06 |
| 2 | UL size | 16-octet size of the UL | 1 octet | Always 0×0E |
| | UL designators: | | | |
| 3 | UL code | Concatenation of subidentifiers ISO, ORG | 1 octet | Always 0×2B |
| 4 | SMPTE designator | SMPTE designator | 1 octet | Always 0×34 |
| 5 | Registry category designator | Sets and packs | 1 octet | Always 0×02 |
| 6 | Registry designator | Variable-length packs | 1 octet | See table 10 |
| 7 | Structure designator | Designator of the structure variant within the variable-length pack registry | 1 octet | Defined by the variable-length pack registry and standard or practice |
| 8 | Version number | Version of the variable-length pack registry which first defines the item specified by the variable-length pack designator | 1 octet | Incrementing number |
| | Variable-length pack designator: | | | |
| 9-16 | Variable-length pack designator | Defines the variable-length pack placement in a hierarchical structure | 8 octets | Defined by the variable-length pack registry and standard or practice |
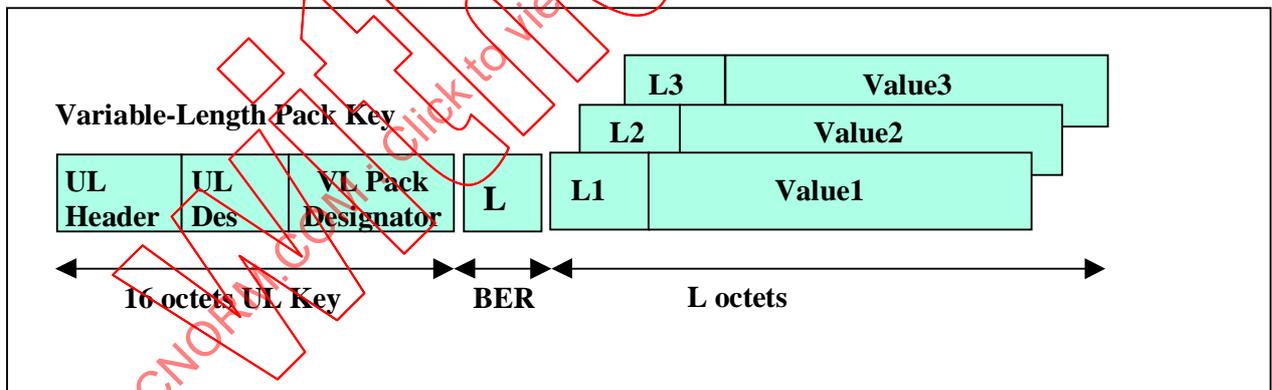


**Figure 6 – KLV coded variable-length pack structure**

**Table 10 – Coding of registry designator (octet 6) for variable-length pack syntax**

| Octet 6 value | Length fields | Description |
|---|---|---|
| 0×04 | BER short or long | Default |
| 0×24 | 1 octet | Length up to 255 |
| 0×44 | 2 octets | Length up to 65535 |
| 0×64 | 4 octets | Length up to $2^{32}$-1 |

**Table 11 – Field descriptions for the UL key for fixed-length pack encoding**

| No. | Field | Description | Length | Content/Format |
|---|---|---|---|---|
| | UL header: | | | |
| 1 | OID | Object identifier | 1 octet | Always 0×06 |
| 2 | UL size | 16-octet size of the UL | 1 octet | Always 0×0E |
| | UL designators: | | | |
| 3 | UL code | Concatenation of subidentifiers ISO, ORG | 1 octet | Always 0×2B |
| 4 | SMPTE designator | SMPTE designator | 1 octet | Always 0×34 |
| 5 | Registry category designator | Sets and packs | 1 octet | Always 0×02 |
| 6 | Registry designator | Fixed-length packs | 1 octet | Always 0×05 |
| 7 | Structure designator | Designator of the structure variant within the fixed-length pack registry | 1 octet | Incrementing number |
| 8 | Version number | Version of the fixed-length pack registry which first defines the item specified by the fixed-length pack designator | 1 octet | Incrementing number |
| | Fixed-length pack designator: | | | |
| 9-16 | Fixed-length pack designator | Defines the fixed-length pack placement in a hierarchical structure | 8 octets | Defined by the fixed-length pack registry and standard or practice |
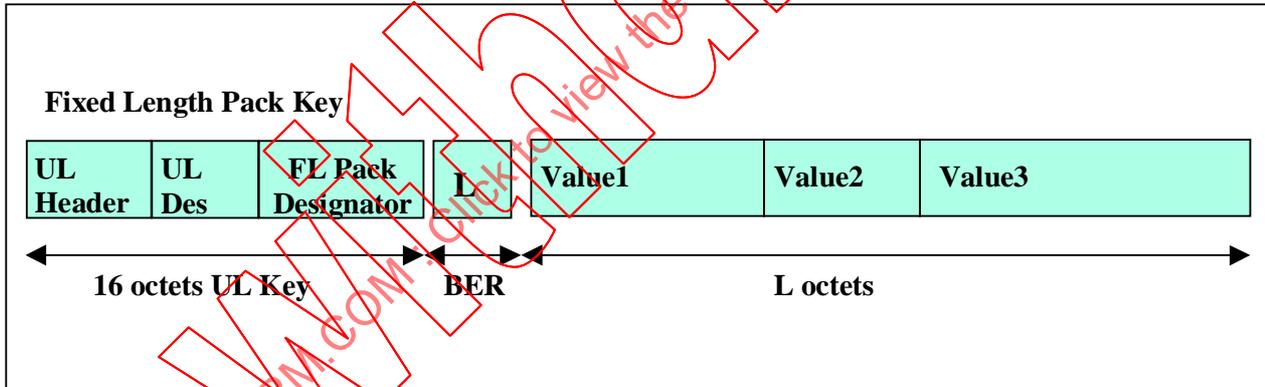


**Figure 7 – KLV coded fixed-length pack structure**

A relevant fixed-length pack standard or recommended practice shall define the link between each element and the corresponding UL key value by providing the UL key of the defining element. This linking definition is a mechanism that gives users of this standard the flexibility to define their own aliases for highly efficient coding. Developers of fixed-length pack packs shall register the mapping between each tag in a fixed-length pack pack and the defining UL key. Unlike universal sets and global sets, where the UL key of each element in the set can be losslessly recreated, the UL key of each element in a fixed-length pack pack cannot be reconstructed without recourse to the defining standard or recommended practice and the corresponding registry.

Fixed-length packs can accommodate recursion so that the UL key linked to an element may identify either a single data element from a dictionary or a data group from a set or pack standard or recommended practice and the corresponding registry.

# 6 Labels

Labels shall be used to identify any object whose meaning is entirely conveyed by the label itself, and there is no requirement for an independent value. Thus, a label does not need either a length field or a value field. Labels shall be defined in the labels dictionary. A label is illustrated in figure 8.

Within wrappers and containers, and sometimes even in sets, there is sometimes the need to identify aspects of the data contents which are not identified by the set, wrapper, or container UL key. Such an aspect can be identified by including a label in the set, wrapper, or container as a data item. It is necessary to define the presence of a label at a high level in the UL key so that decoders are aware that the item is a label only and not a KLV coded item.

The structure of the UL key for labels is defined by table 12.

**Label**



**16 octet UL Key**
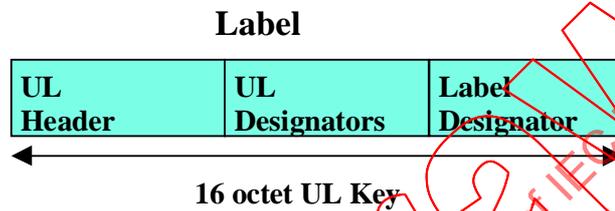
**Figure 8 – UL key for labels**

**Table 12 – Field descriptions for the UL key for labels**

| No. | Field | Description | Length | Content/Format |
|---|---|---|---|---|
| | UL header: | | | |
| 1 | OID | Object identifier | 1 octet | Always 0×06 |
| 2 | UL size | 16-octet size of the UL | 1 octet | Always 0×0E |
| | UL designators: | | | |
| 3 | UL code | Concatenation of subidentifiers ISO, ORG | 1 octet | Always 0×2B |
| 4 | SMPTE designator | SMPTE designator | 1 octet | Always 0×34 |
| 5 | Registry category designator | Labels | 1 octet | Always 0×04 |
| 6 | Registry designator | Specific labels registry | 1 octet | Incrementing number |
| 7 | Structure designator | Designator of the structure variant within the labels registry | 1 octet | Incrementing number |
| 8 | Version number | Version of the labels registry which first defines the item specified by the label designator | 1 octet | Incrementing number |
| | Label designator: | | | |
| 9-16 | Label designator | Defines the label's placement in a hierarchical structure | 8 octets | Defined by the labels registry and standard or practice |

## Annex A (normative)
## Glossary of terms

**A.1 basic encoding rules (BER):** An ISO standard encoding for various constructs in ASN.1. Includes the encoding of object identifiers and also of length fields. The length octets of the KLV packet shall conform to the basic encoding rules (BER) for either the short-form or long-form encoding specified in ISO/IEC 8825-1, pars. 8.1.3.4 and 8.1.3.5.

**A.2 container:** A generic name for a data object which provides a framework to contain different kinds of information. The term is commonly applied to multimedia where audio, video, data essence, and metadata are formed into a single data object.

**A.3 essence:** Identified by the EBU/SMPTE Task Force for Harmonized Standards for the Exchange of Program Material as Bitstreams as video, audio, and/or data information. Essence could also be graphics, telemetry, photographs, or other information.

**A.4 metadata:** Generally referred to as data about data or data describing other data. More specifically, information that is considered ancillary to or otherwise directly complementary to the essence. Any information that a content provider considers useful or of value when associated with the essence being provided.

**A.5 metadata dictionary:** The standard database of approved, registered data element tags, their definitions, and their allowed formats.

**A.6 metadata item:** A broad term for a unit of metadata.

**A.7 object identifier (OID):** The first octet in the UL that identifies it as a UL — abbreviated OID. Always 06 in hexadecimal (hex) notation (0×06).

**A.8 octet:** An 8-bit word; directly equivalent to the commonly used byte.

**A.9 primitive encoding:** In ASN.1 notation, a definite-length encoding method that applies to simple encoding types and types derived from simple types by implicit tagging. It requires that the length of subidentifiers be known in advance.

**A.10 SMPTE Registration Authority:** A registration organization which keeps a record of the use of ANSI/SMPTE 298M UL keys and other reference data.

**A.11 type or data type:** Information about the representation of the data value.

**A.12 wrapper:** Identified by the EBU/SMPTE Task Force for Harmonized Standards for the Exchange of Program Material as Bitstreams as a means of wrapping video, audio, data essence, and metadata information into a common framework. In this definition, it is identical to the definition of a container, but wrappers may further be used to wrap further metadata around an already defined container. In this sense, a container is a multipurpose box which has audio-visual information and a wrapper is the packaging around the box including labeling and other supporting metadata.

## Annex B (informative)
## Organization of references

The organization of SMPTE standards and recommended practices addressing the coding of individual data items such as essence and metadata is illustrated in figure B.1. No single standard can contain all of the information needed to describe and encode all data. This encoding protocol standard and the metadata dictionary standards form the SMPTE normative standards for defining metadata and its coding. Informative SMPTE documents supplement the standards for encoding with examples and administrative instructions on managing the data standardization and registration process.
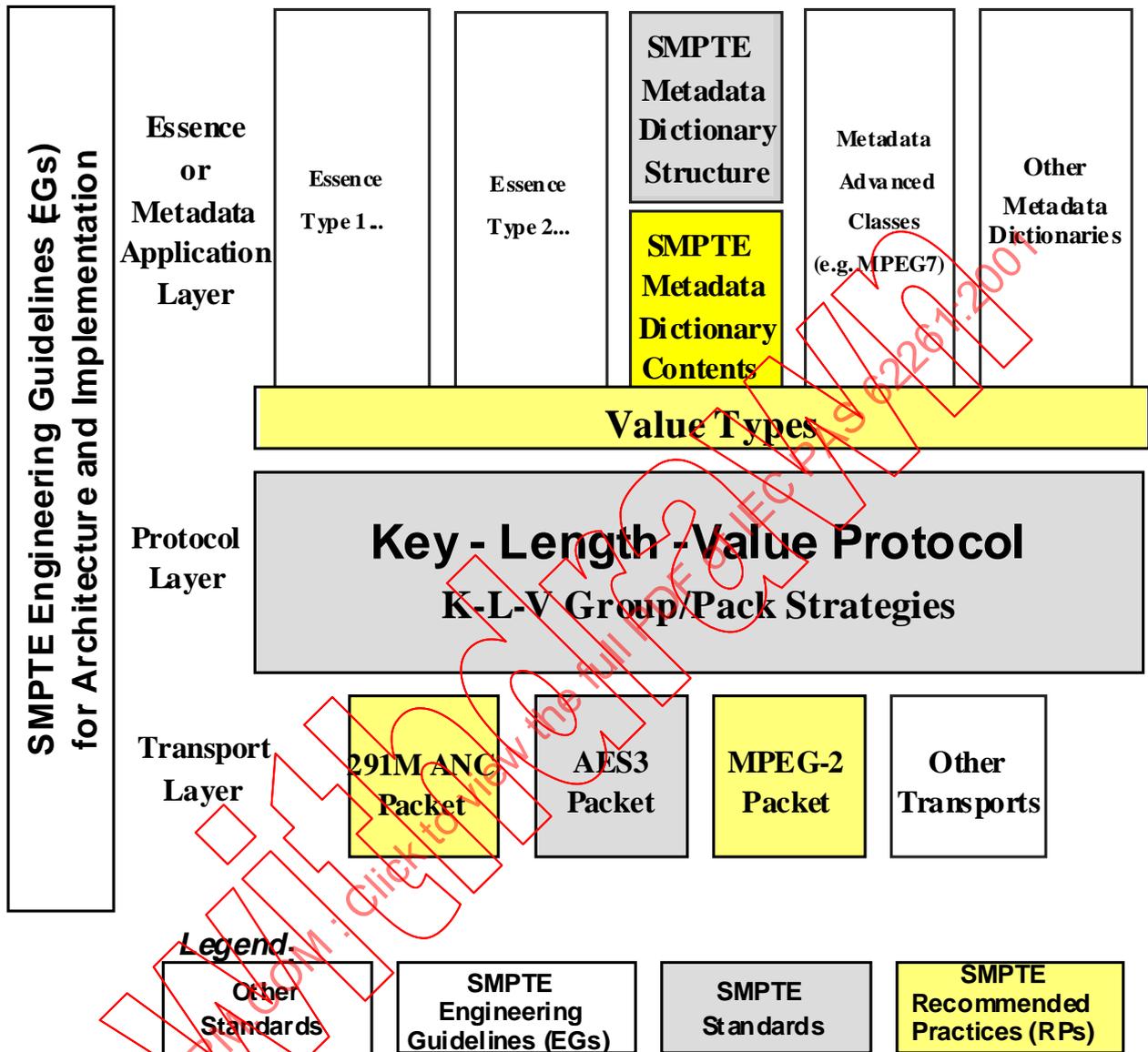
Figure B.1 – Organization of references

**Annex C** (informative)
**Example usage of SMPTE UL**

An expanded example of SMPTE universal label fields for metadata encoding is shown in table C.1. An example of SMPTE universal label fields for metadata encoding is shown in figure C.1

**Table C.1 – Expanded example of SMPTE universal label fields for metadata encoding**

| Octet No. | Value (hex) | Example explanation | Reference |
|-----------|-------------|---------------------|-----------|
| 1 | 0×06 | UL object identifier | ANSI/SMPTE 298M |
| 2 | 0×0E | UL size | ANSI/SMPTE 298M |
| 3 | 0×2B | Concatenation of designators ISO, ORG | ANSI/SMPTE 298M |
| 4 | 0×34 | SMPTE designator | ANSI/SMPTE 298M |
| 5 | 0×01 | SMPTE dictionaries designator | SMPTE Registration Authority |
| 6 | 0×01 | Metadata dictionary designator | SMPTE Registration Authority |
| 7 | 0×01 | Structure standard reference number | SMPTE Registration Authority |
| 8 | 0×01 | Standard version number | SMPTE Registration Authority |
| 9 | 0×01 | Metadata class: Identifiers and locators | Metadata dictionary |
| 10 | 0×01 | Unique identifier subclass | Metadata dictionary |
| 11 | 0×11 | ISO identifiers | Metadata dictionary |
| 12 | 0×01 | ISO audio-visual number (ISAN) | Metadata dictionary |
| 13 | 0×00 | Unused | Metadata dictionary |
| 14 | 0×00 | Unused | Metadata dictionary |
| 15 | 0×00 | Unused | Metadata dictionary |
| 16 | 0×00 | Unused | Metadata dictionary |

06 0E 2B 34   01 01 01 01   01 01 11 01   00 00 00 00

NOTE – Hex-encoded octets; 0x removed and separated for readability.

**Figure C.1 – Example SMPTE universal label fields for metadata encoding**

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**Annex D** (informative)
**Example of the KLV encoding of a single metadata item**

Table D.1 shows an example of the fields that comprise the KLV protocol used for an individual value encoding of a human-assigned main title for a video segment. For clarity, each octet of the UL key is separated by spaces.

**Table D.1 – Informative example of K-L-V individual value encoding of metadata**

| Key (hex encoded) | 06 0E 2B 34   01 01 01 01   01 05 01 02   00 00 00 00h |
|---|---|
| Description | Main title (ISO 7-bit char) |
| Length (binary) [hex] | 0×10 |
| Value (ASCII) | Yesterday's World |

**Annex E** (informative)
**Example of a universal set**

In the example universal metadata set in table E.1, the three elements of main title, ISAN number, and supply organization can be in any order and each entry is self-contained with its own individual universal key-length-value. Similarly, if one or more of the elements of the defined universal set is missing, the remaining valid parts of the universal set can still be recovered because each has its own key-length-value combination.

**Table E.1 – Informative example of K-L-V universal set encoding of metadata**
**(octets separated by spaces for readability)**

| Universal set UL | 06 0E 2B 34   02 01 01 01   01 01 01 01   00 00 00 00 |
|---|---|
| Universal set length | 0×59 |
| Universal key 1 | 06 0E 2B 34   01 01 01 01   01 05 01 02   00 00 00 00 |
| Description | Main title (ISO 7-bit char) |
| Length 1 | 0×10 |
| Value 1 | Yesterday's World |
| Universal key 2 | 06 0E 2B 34   01 01 01 01   01 01 11 00   00 00 00 00h |
| Description | ISAN number |
| Length 2 | 0×10 |
| Value 2 | 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 |
| Universal key 3 | 06 0E 2B 34   01 01 01 01   02 01 01 00   00 00 00 00h |
| Description | Supply organization (ISO 7-bit char) |
| Length 3 | 0×06 |
| Value 3 | WXYZ15 |

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**Annex F** (informative)
**Example of a global set**

In the example global metadata set in table F.1, the three elements of main title, ISAN number, and supply organization can be in any order and each entry is self-contained with its own individual global tag-length-value. Similarly, if one or more of the elements of the defined global set is missing, the remaining valid parts of the global set can still be recovered because each has its own tag-length-value combination.

**Table F.1 – Informative example of K-L-V global set encoding of metadata
(octets separated by spaces for readability)**

| | |
|---|---|
| Global set UL | 06 0E 2B 34    02 02 01 01    06 0E 2B 34    01 01 01 01 |
| Global set length | 0×36 |
| Global tag 1 | 01 05 01 02 00 |
| Original UL key | 06 0E 2B 34    01 01 01 01    01 05 01 02    00 00 00 00 |
| Description | Main title (ISO 7-bit char) |
| Length 1 | 0×10 |
| Value 1 | Yesterday's World |
| Global tag 2 | 01 01 11 00 |
| Original UL key | 06 0E 2B 34    01 01 01 01    01 01 11 00    00 00 00 00 |
| Description | ISAN number |
| Length 2 | 0×10 |
| Value 2 | 01 02 03 04    05 06 07 08    09 10 11 12    13 14 15 16 |
| Global tag 3 | 02 01 01 00 |
| Original UL key | 06 0E 2B 34    01 01 01 01    02 01 01 00    00 00 00 00 |
| Description | Supply organization (ISO 7-bit char) |
| Length 3 | 0×06 |
| Value 3 | WXYZ15 |

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**Annex G** (informative)
**Example of a local set**

In the example local metadata set in table G.1, the three elements of main title, ISAN number, and supply organization can be in any order and each entry is self-contained with its own individual local tag-length-value. Similarly, if one or more of the elements of the defined local set is missing, the remaining valid parts of the local set can still be recovered because each has its own local tag-length-value combination.

**Table G.1 – Informative example of K-L-V local set encoding of metadata**
**(octets separated by spaces for readability)**

| | |
|---|---|
| Local set UL | 06 0E 2B 34   02 03 01 01   06 0E 2B 34   01 01 01 01 |
| Local set length | 0×2c |
| Local tag 1 | 0×01 |
| Original UL key | Specified by defining standard or practice |
| Description | Main title (ISO 7-bit char) |
| Length 1 | 0×10 |
| Value 1 | Yesterday's World |
| Local tag 2 | 0×02 |
| Original UL key | Specified by defining standard or practice |
| Description | ISAN number |
| Length 2 | 0×10 |
| Value 2 | 01 02 03 04   05 06 07 08   09 10 11 12   13 14 15 16 |
| Local tag 3 | 0×03 |
| Original UL key | Specified by defining standard or practice |
| Description | Supply organization (ISO 7-bit char) |
| Length 3 | 0×06 |
| Value 3 | WXYZ15 |

## Annex H (informative)
## Example of a variable-length pack

In the example variable-length pack in table H.1, the three elements of main title, ISAN number, and supply organization must be in the order specified and must all be present.

If one or more of the elements of the defined variable-length pack is missing, the remaining valid parts of the variable-length pack cannot be recovered.

**Table H.1 – Informative example of K-L-V variable-length pack encoding of metadata
(octets separated by spaces for readability)**

| | |
|---|---|
| VL pack UL | 06 0E 2B 34    02 04 01 01    06 0E 2B 34    01 01 01 01 |
| VL pack length | 0×29 |
| Original UL key | Specified by defining standard or practice |
| Description | Main title (ISO 7-bit char) |
| Length 1 | 0×10 |
| Value 1 | Yesterday's World |
| Original UL key | Specified by defining standard or practice |
| Description | ISAN number |
| Length 2 | 0×10 |
| Value 2 | 01 02 03 04    05 06 07 08    09 10 11 12    13 14 15 16 |
| Original UL key | Specified by defining standard or practice |
| Description | Supply organization (ISO 7-bit char) |
| Length 3 | 0×06 |
| Value 3 | WXYZ15 |

## Annex I (informative)
## Example of a fixed-length pack

In the example fixed-length pack in table I.1, the three elements of main title, ISAN number, and supply organization must be in the order and of the length specified. If one or more of the elements of the defined fixed-length pack is missing, the remaining valid parts of the fixed-length pack cannot be recovered.

**Table I.1 – Informative example of K-L-V fixed-length pack encoding of metadata
(octets separated for readability)**

| | |
|---|---|
| FL pack UL | 06 0E 2B 34    02 01 01 01    06 0E 2B 34    01 01 01 01 |
| FL pack length | 0×26 |
| Original UL key | Specified by defining standard or practice |
| Description | Main title (ISO 7-bit char) |
| Value 1 | Yesterday's World |
| Original UL key | Specified by defining standard or practice |
| Description | ISAN number |
| Value 2 | 01 02 03 04    05 06 07 08    09 10 11 12    13 14 15 16 |
| Original UL key | Specified by defining standard or practice |
| Description | Supply organization (ISO 7-bit char) |
| Value 3 | WXYZ15 |

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**Annex J** (informative)
**Example of a label**

An example of a label is given in table J.1.

**Table J.1 – Example of a label**

| Label UL | 06 0E 2B 34     04 01 01 01     11 22 33 44     55 00 00 00 |
|---|---|
| Description | 1/2-in type J cassette |
| NOTE – Octets separated by spaces for readability. | |

**Annex K** (informative)
**Bibliography**

ISO/IEC 8824-1:1998 (ITU-T X.680), Information Technology — Abstract Syntax Notation One (ASN.1) — Specification of Basic Notation

Final Report: Analyses and Results, EBU/SMPTE Task Force for Harmonized Standards for the Exchange of Program and Material as Bitstreams, July 1998. SMPTE J.107:605-815

# PROPOSED
# SMPTE STANDARD

**SMPTE 359M**

## for Television and Motion Pictures —
# Dynamic Documents

## 1 Scope

**1.1** There is a need in the field of information technology for the unambiguous identification of objects to provide interoperability among information systems. Individual standards committees have divined, as part of their development of technical standards, classes of objects. Specific objects are the individual members of the class of objects. Registration is the process whereby unambiguous names are formally associated with objects. This may be done by an organization, a standard, or an automated facility.

**1.2** Within the television and motion-picture industries, there is a need for engineering documents (standards, recommended practices, and engineering guidelines) which can easily and rapidly be extended to cover new requirements (dynamic documents). Such documents typically contain tables of values, parameters, or other entities that cannot be fully defined at the time the document is written.

**1.3** Through a process described in this standard, the dynamic tables described above are established as registers to be administered by the SMPTE Registration Authority (SMPTE RA).

**1.4** Dynamic documents are created using the same administrative practices as conventional SMPTE documents. Once a dynamic document is adopted as an engineering document, only designated entities within a dynamic document are subject to change by the dynamic document process. As with conventional engineering documents, the base document can be modified, but only in accordance with existing administrative practices.

**1.5** Four types of registers are defined. These types differ in their procedures for adding or modifying the data contained within the registers.

**1.6** In this standard, *shall* denotes a mandatory provision of the standard, *should* denotes a provision that is recommended but not mandatory, and *may* denotes a provision that is optional.

## 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.

ISO/IEC JTC 1 Directives, Procedures for the Technical Work of IS0/IEC JTC 1 on Information Technology, Third Edition, 1995

Society of Motion Picture and Television Engineers Administrative Practices, Section XIII, Engineering

## 3 Definitions

**3.1 data:** A representation of facts, concepts, or instructions in a formalized manner, suitable for communication, interpretation, or processing by humans or automatic means.

**3.2 data element:** A unit of data for which the definition, identification, representation, and permissible values are specified by means of a set of attributes.

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**3.3 engineering document:** A SMPTE standard, recommended practice, or engineering guideline, or equivalent document from another organization.

**3.4 register:** A set of files (paper, electronic, or a combination) containing the assigned data elements and the associated information. (Definition adapted after that in annex E of the ISO/IEC Directives.)

**3.5 registered data element:** A data element that has been entered into a register kept by a registration authority.

**3.6 registration authority (RA):** The organization established by the SMPTE Registration Authority, LLC which is authorized to register data elements.

**3.7 registration authority board (RA Board):** The registration authority board consists of the board of directors of the SMPTE Registration Authority, LLC.

# 4 Types of data elements

## 4.1 Type

Dynamic documents shall specify the type to which each registered data element within that document belongs, together with the information that must be supplied with each request for registration. The Standards Committee shall specify which technology committee or other body is charged with reviewing the request.

## 4.2 Data set

An engineering document establishing a dynamic document shall specify an original set of data to be entered into the register once the engineering document has been approved.

## 4.3 Extension or change

Portions of the dynamic document that are subject to extension or change shall be clearly labeled as such, and shall be classified according to type as defined below. Assignment of registered data element type shall be subject to ballot and approval per applicable SMPTE administrative practices as is the rest of the document.

## 4.4 Maintenance

An engineering document establishing a dynamic document shall specify the RA responsible for maintenance and upkeep of any registered data elements specified in the engineering document. The engineering document may also specify locations where registers and registered data elements may be found in electronic form.

Table 1 outlines the difference among registered data element types.

**Table 1 – Characteristics of registered data element types**

| Registered data element type | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Supporting engineering document | ✓ | | | |
| Technical comment period | ✓ | | | |
| Review for technical merit | ✓ | | | |
| Ballot for technical merit | ✓ | | | |
| Public notice of ballot | ✓ | ✓ | | |
| Consensus | ✓ | ✓ | | |
| Standards Committee procedural review and approval | ✓ | ✓ | | |
| Trial publication for public comment | ✓ | ✓ | ✓ | |
| Detailed format description | ✓ | ✓ | * | |
| Statement of intention to apply and date of first use | | | ✓ | 3 |
| Complete application required | ✓ | ✓ | 3 | 3 |
| NOTE – ✓ = required;  * = may be required. | | | | |

## 4.5 Type 1 registers

Additions to a type 1 register shall be subject to review for technical merit, adequacy of information provided, nonconflict with existing engineering documents, and compliance with type 1 requirements. Additions to a type 1 register shall require an underlying engineering document to support any addition (see figure 1).

Example: If a document is extended to include a new type of ancillary data, at least a first draft of a SMPTE engineering document must exist describing the new ancillary data.

### 4.5.1 Information required for additions to type 1 registers

The following information shall be provided by any organization, individual, or committee wishing to make additions to a type 1 register:

1) Contact information for the organization, individual, or committee requesting the addition;

2) The supporting engineering document used as the basis for the submission;

3) A request specifying the addition to the register;

4) Identification of the specific register to which the addition is to be made;

5) Detailed information regarding the purpose and use of the addition to the register;

6) Name of authorized representative of the organization requesting the addition.

## 4.6 Type 2 registers

Additions to a type 2 register shall be subject to review for adequacy of information, including technical description, nonconflict with existing engineering documents, and compliance with type 2 requirements. Additions to a type 2 register shall not be subject to review for technical merit. Additions to a type 2 register shall not require a supporting SMPTE engineering document (see figure 2).

During the ballot process for a change in a type 2 registered data element, negative votes based upon procedural issues, including adequacy of technical description, shall be accepted. Negative votes based upon technical merit shall not be considered. Exam-

ple: The addition of a term to the metadata dictionary is an example of a type 2 data element.

### 4.6.1 Information required for additions to type 2 registers

The following information shall be provided by any organization, individual, or committee wishing to make additions to a type 2 register:

1) Contact information for the organization, individual, or committee requesting the addition;

2) A request specifying the addition to the register;

3) Detailed information regarding the purpose and use of the addition to the register;

4) Name of authorized representative of the organization requesting registration.

## 4.7 Type 3 registers

Additions to a type 3 register shall be reviewed for adequacy of information and compliance with type 3 requirements. Additions to a type 3 register shall not be subject to due process review (see figure 3).

Example: An example of a type 3 data element is an item in the portion of the metadata dictionary assigned for prototype purposes.

### 4.7.1 Information required for additions to type 3 registers

The following information shall be provided by any organization, individual, or committee wishing to make additions to a type 3 register:

1) Contact information for the organization, individual, or committee requesting the addition;

2) A request specifying the addition to the register;

3) Detailed information regarding the purpose and use of the addition to the register;

4) A detailed description of the format specification may be required;

5) Statement of intention to apply the registered data element, and intended date of first use;

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6) Name of authorized representative of the organization requesting the addition.

## 4.8 Type 4 registers

Additions to a type 4 register shall be reviewed for adequacy of information and compliance with type 4 requirements. Additions to a type 4 register may require a fee payment before changes or additions will be accepted. Additions to a type 4 register shall not be examined for technical merit. Additions to a type 4 register shall not be subject to consensus review or trial publication (see figure 4).

Example: The registration of an MPEG RID or UPID root number would be a type 4 data element.

### 4.8.1 Information required for additions to type 4 registers

The following information shall be provided by any organization, individual, or committee wishing to make an addition to a type 4 register:

1) Contact information for the organization, individual, or committee requesting the addition;

2) Statement of intention to apply the registered data element, and intended date of first use;

3) Name of authorized representative of the organization requesting the addition to the registry.

## 5 Deletion of registered data elements

**5.1** Any request for deletion of a registered data element shall result in the posting of an appropriate public notice giving the specifics of the proposed deletion. The following information shall be required before a deletion shall be considered:

1) Contact information for the organization, individual, or committee requesting the deletion;

2) Any supporting document that may have been used as the basis for an original request for creation of the registered data element;

3) A request specifying the deletion of the registered data element along with a complete justification for the deletion;

4) Identification of the specific register to which the deletion is to be made;

5) Name of authorized representative of the organization requesting the deletion.

**5.2** To give users an opportunity to disagree with the deletion, the registered data element to be deleted will be marked as such for a one-year period. If, after this period, nobody identifies himself as a user, the registered data element shall be deleted from the register. If even one objection is received concerning deletion of the registered data element, the data element shall not be deleted.

**5.3** In the event that it is discovered after the fact that an application for a registered data element contained false or misleading information, the registered data element may be immediately deleted from the register at the sole discretion of the SMPTE Registration Authority.

**5.4** With the exception of 5.3 above, a registered data element shall not be deleted from a register earlier than one year from the time public notice is given of the deletion.

**5.5** Individual engineering documents may impose restrictions on deletion of a registered data element that are more restrictive than those specified here.

## 6 Deletion of a register

**6.1** A register can only be deleted by a revision to a register's establishing engineering document, or through withdrawal of the engineering document establishing the register.

**6.2** Any request for deletion of a registered data element shall result in the posting of an appropriate public notice giving the specifics of the proposed deletion.

**6.3** To give users an opportunity to disagree with the deletion, the register to be deleted will be marked as such for a one-year period. If, after this period, nobody identifies himself as a user, the register shall be deleted. If even one objection is received concerning deletion of the register, the register shall not be deleted.
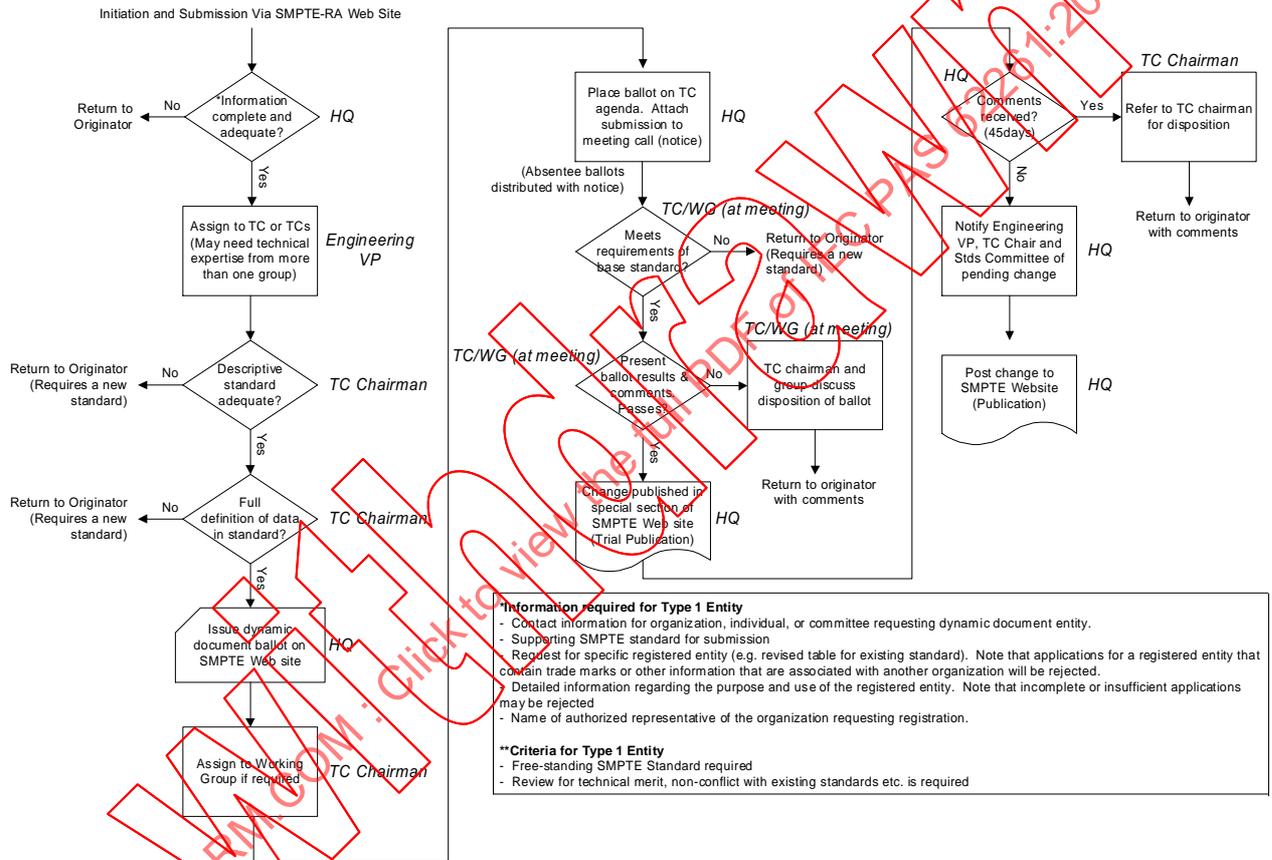
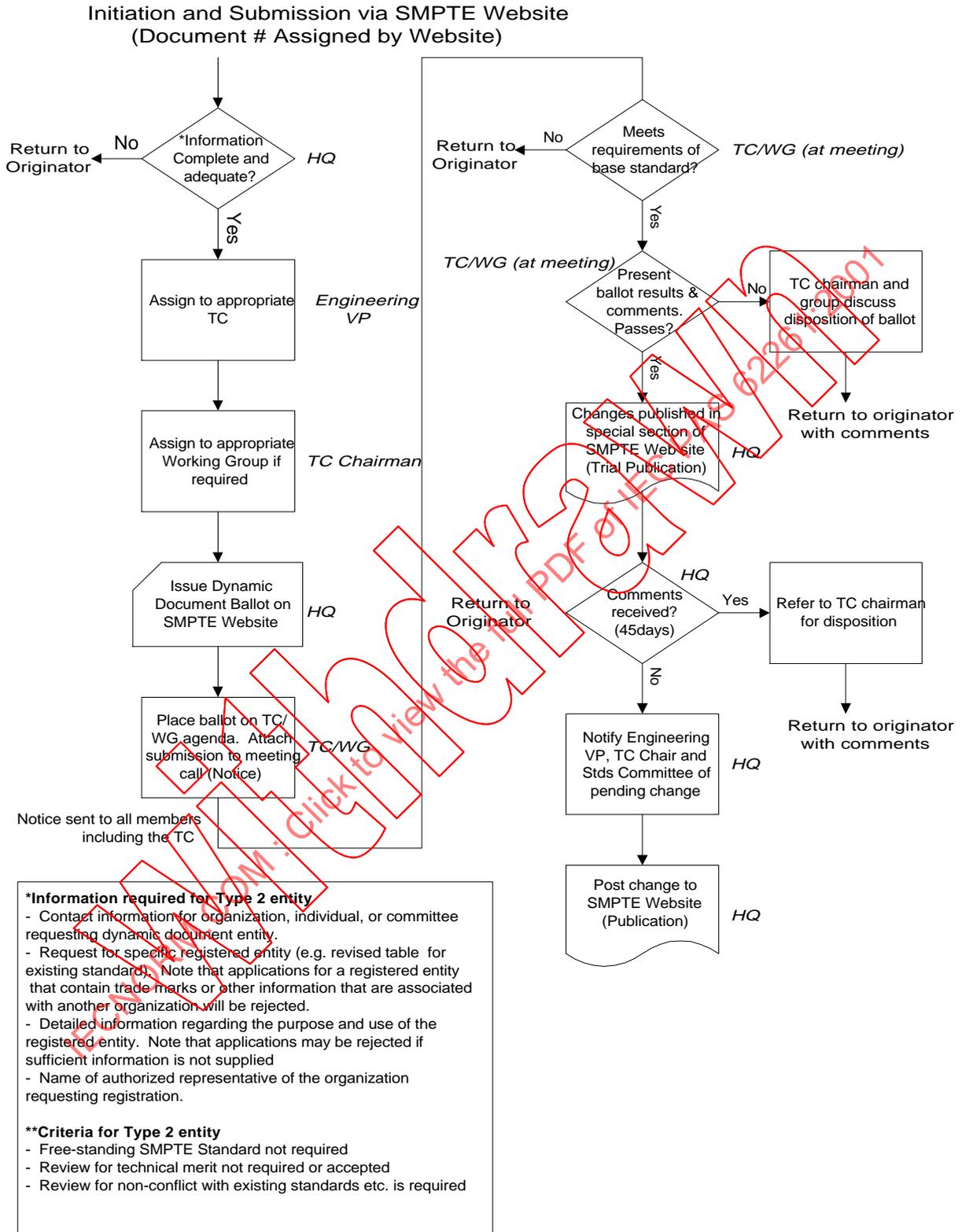**Figure 1 – Flow diagram for type 1 SMPTE dynamic document entity**

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## Initiation and Submission via SMPTE Website
## (Document # Assigned by Website)



**\*Information required for Type 2 entity**
- Contact information for organization, individual, or committee requesting dynamic document entity.
- Request for specific registered entity (e.g. revised table for existing standard). Note that applications for a registered entity that contain trade marks or other information that are associated with another organization will be rejected.
- Detailed information regarding the purpose and use of the registered entity. Note that applications may be rejected if sufficient information is not supplied
- Name of authorized representative of the organization requesting registration.

**\*\*Criteria for Type 2 entity**
- Free-standing SMPTE Standard not required
- Review for technical merit not required or accepted
- Review for non-conflict with existing standards etc. is required

**Figure 2 – Flow diagram for type 2 SMPTE dynamic document entity**

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Initiation and submission via SMPTE FTP site
(Document # obtained via SMPTE Web site)

Return to Originator — No ← *Information Complete? — HQ

Yes

Return to Originator — No ← **Meets Criteria for Type 3 entity? — HQ

Yes

Notify Engineering VP and Stds Committee of pending change via email — HQ

Notice of change published in a special section of SMPTE Web site — HQ

Post changes to SMPTE Web site — HQ

**\*Information required for Type 3 entity**
- Contact information for organization, individual, or committee requesting registration.
- Request for specific registered entity (e.g. revised table for existing standard). Note that applications for a registered entity that contain trade marks or other information that are associated with another organization will be rejected.
- Detailed information regarding the purpose and use of the registered entity. Note that applications may be rejected if sufficient information is not supplied
- Detailed format specification may be required
- Name of authorized representative of the organization requesting registration.

**\*\*Criteria for Type 3 entity**
- Free-standing SMPTE Standard not required
- Review for technical merit, non-conflict with existing standards etc. not required
- Payment not required

**Figure 3 – Flow diagram for type 3 SMPTE dynamic document entity**

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Initiation and submission via SMPTE FTP site

Return to
Originator — No — *Information Complete? — *HQ*

Yes

Return to
Originator — No — **Meets criteria
for Type 4
entity? — *HQ*

Yes

Return to
Originator — No — Appropriate
Fees
Paid? — *HQ*

Yes

Notify Engineering VP and
Stds Committee of pending
change via email — *HQ*

Notice of change published in
a special section of SMPTE
Web site — *HQ*

Post changes to SMPTE Web
site — *HQ*

**\*Information required for Type 4 Entity**
- Contact information for organization or individual requesting registration.
- Statement of intention to apply the registered entity, and intended date of first use
- Name of authorized representative of the organization requesting registration.

**\*\*Criteria for Type 4 Document**
- Free-standing SMPTE Standard not required
- Review for technical merit, non-conflict with existing standards etc. not required
- Payment required

**Figure 4 – Flow diagram for type 4 SMPTE dynamic document entity**

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**6.4** In any event, a register shall not be deleted sooner than one year from the time public notice is given of the deletion.

**6.5** Individual engineering documents may impose restrictions on deletion of registers that are more restrictive than those specified here.

## 7 Reuse of names

Names that have been previously published in the register may never be reused.

## 8 Changes to registered data elements

Any change to a registered data element shall be treated procedurally as a deletion of a registered data element followed by an addition of a new data element.

## 9 Changes to organization contact information for previously registered data elements

**9.1** Applications for changes to organization contact information for previously registered data elements shall be accepted by the RA.

**9.2** If the organization of record is still in existence, the request for the change must come from that organization. If the organization of record is not in existence, the organization requesting the change shall provide a statement in writing certifying that it has attempted to contact the organization of record on at least three occasions using different delivery methods without success.

**9.3** The RA shall not accept any request for changes to organization contact information without either an authorization from the organization of record, or, should the requester be different from the organization of record, a statement in writing from the requester as described above.

**9.4** The RA shall collect information related to a change in contact information for a previously registered data element in accordance with clauses 10 and 11.

**9.5** The RA shall acknowledge receipt of a request for a change in contact information within five business days of receipt.

**9.6** The RA shall publish a change in contact information in the appropriate register within 30 days of approval of such request.

## 10 Minimum content of all registers

At a minimum, all registers shall contain:

– the assigned name;

– name of initial applicant;

– address of initial applicant;

– date of original assignment;

– date of last transfer of assignment, if allowed (updateable);

– name of current owner (updateable);

– address of current owner (updateable);

– if the owner is an organization, the name, title, postal and email address, and telephone and facsimile number of a contact person within the organization (updateable);

– date of last update (updateable);

– where required by the technical standard, a technical definition of the object.

Note that, in the case where the name of the initial applicant is SMPTE, only the name of the initial applicant is required.

## 11 Minimum content of forms

**11.1** The contents of forms (paper, electronic, or a combination of both) for registration application, request for update, notification of assignment or update, and rejection of application shall include:

– name of applicant;

– address of applicant;

– if the applicant is an organization, the name, title, postal and email address, and telephone and facsimile number of a contact person within the organization.

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Depending on the type of form, additional information to be included shall be:

– data to be updated, old and new values (request for update);

– authorization to release specific data (registration application);

– any justification required for the assignment (registration application);

– reasons for action taken (notification of assignment or update, and rejection of application);

– where required by the technical standard, a technical definition of the object to be registered (registration application).

**11.2** Any supporting engineering document shall define any additional information required.

## 12 Multiple types permitted

**12.1** Only portions of an engineering document designated as registered data elements shall be subject to addition, deletion, or change according to the dynamic document process. The rest of the document shall be modified according to existing SMPTE administrative procedures for nondynamic documents.

**12.2** A dynamic document may include several registers.

**12.3** A dynamic document may include registered data elements of several types.

## 13 Rejection of application

**13.1** Applications for registration of data elements that contain trademarks or other information that is associated with organizations other than the submitting organization shall be rejected.

**13.2** Applications for registration of data elements that contain incomplete, insufficient, or incomprehensible information, as determined during the review process, may be rejected.

**13.3** Applications that do not conform to technical requirements of the supporting standards may be rejected.

**13.4** Applications that duplicate existing applications or existing registered data elements may be rejected.

**13.5** Where fees are required, applications not accompanied by the appropriate fee will be rejected.

**13.6** Applications containing false or misleading information may be rejected.

**13.7** Failure to follow the procedures contained in this standard may cause the application to be rejected.

**13.8** Applications from applicants that are ineligible to file an application may be rejected.

**13.9** Where a justification is required, applications that contain inadequate justification as determined during the review process may be rejected.

## 14 Submission, review and appeal process

**14.1** New registers and original registered data elements shall be created when an engineering document containing such items is formally approved.

**14.2** Submission of additions, deletions, and changes to a registered data element shall follow the procedures described above.

## 15 Registration Authority function and responsibilities

### 15.1 General

**15.1.1** The RA shall be responsible for maintaining all registers for the Society of Motion Picture and Television Engineers and other organizations as agreed to by the RA Board, in a way agreed to by the RA board.

**15.1.2** The current RA is listed in annex A.

**15.1.3** The RA recognizes that its interests and those of its members and subscribers cannot take precedence over the general interests of users of the RA information worldwide. The effectiveness of the RA depends on the ability to

support the needs of all users in all countries and the recognition that all participants in the system should benefit equally.

**15.1.4** The address of the RA Board is listed in annex B.

**15.1.5** The RA shall submit to the RA Board a registration authority report two weeks prior to any scheduled meeting or as required. The report will summarize the activity of the RA between reporting periods. The detailed information contained in these reports will be determined between the RA and the RA Board.

**15.1.6** The RA shall submit to the RA Board a registration management report consisting of any appeals or complaints acknowledged by the RA within the reporting period. The report will be produced at least six weeks prior to any meeting of the RA Board.

**15.1.7** The RA shall maintain records of all completed requests for a minimum of three years. Requests shall include all additions, changes, and deletions.

**15.1.8** The RA shall maintain standard operating procedures (SOPs) to be submitted to the RA Board for annual review. Any changes to the SOPs shall be approved by the RA Board.

**15.1.9** The RA shall maintain strict confidentiality between the RA operating functions and other parts of its organization.

**15.1.10** The RA shall comply with the appeals process administered by the RA Board.

**15.1.11** The RA shall make available to any interested parties any registered information administered by the RA in both electronic and paper form. The RA shall keep accurate distribution records pertaining to its publications.

**15.1.12** The RA's performance shall be monitored by the RA Board in accordance with the conditions documented in both this standard and the service level definition in annex C of this standard.

**15.1.13** The RA may appeal to the RA Board for arbitration if it regards a request as being frivolous or unreasonable for any reason.

**15.1.14** The RA may consult with the technical group responsible for the engineering document and the group responsible for development of this standard. In addition, it may consult with the RA Board.

# 16 RA responsibilities to requesters

**16.1** The RA shall be responsible to requesters as follows:

**16.1.1** Assisting the requester with completion of the request form;

**16.1.2** Provide timely response to all requests. This includes confirmation and processing of the request;

**16.1.3** Provide detailed explanation of all responses, if required, in English;

**16.1.4** Provide assistance for general information and service issues;

**16.1.5** Fulfill the duties of providing additions, amendments, and deletions;

**16.1.6** Advise the requester of the appeals process if the requester is dissatisfied with the RA determination.

# 17 Ownership of data

The data which constitutes any registered entities are the property of the SMPTE Registration Authority, LLC.

# 18 Procedural changes

The service level definition set forth to maintain registries established in engineering documents shall be the responsibility of the RA and the RA Board. Any subsequent changes will require the approval of the RA Board. The service level definition supporting this standard is included in annex C.

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# 19 Appeals

**19.1** Requesters should make reasonable efforts to resolve problems directly with the RA outside of this appeals process.

**19.2** If there is a dispute between an applicant and the RA, the RA will make reasonable efforts to resolve the dispute.

**19.3** Requesters should review clause 13 of this standard for criteria applicable to the rejection of a registration application.

**19.4** Any requester who believes that his application for registration has been unjustly denied shall have the right to appeal the matter at any stage of the process by notice to the RA. Such notice shall be delivered to the RA and shall contain the name and contact information for the applicant, a copy of the registration application, a written description of the circumstances involved, and why the applicant believes that his application should be approved.

**19.5** If, in the opinion of the requester, the appeal is not satisfactorily resolved by the RA, a written appeal may be submitted within 30 days after the RA's decision to the RA Board, which shall act as the RA's board of appeals, for appropriate disposition. The appeal shall be submitted to the RA Board through the office of the RA. The appeal shall be forwarded by mail by the RA to the RA Board within 15 days after receipt and it shall have a disposition period of 30 days for RA

Board action, unless the next scheduled meeting of the RA Board is within 60 days after the filing of the appeal. If a meeting of the RA Board is scheduled within that time period, the requester may appear before the RA Board to make an oral presentation of his viewpoint.

**19.6** Any member of the RA Board who participated in any way in the submission of the registration shall not be eligible to participate in the RA Board's consideration of an appeal.

**19.7** The eligible members of the RA Board shall vote on the appeal. A vote of at least two-thirds of those casting ballots and at least a majority of the eligible members shall be required to overturn the decision of the RA.

**19.8** The disposition of a formal appeal by the RA Board shall be reported within 10 days to the requester and to the RA at the next scheduled meeting of these groups. In the event a meeting of the RA is not scheduled within 30 days after the disposition action, a report shall be forwarded to the RA by mail within 10 days of the RA Board decision.

# 20 Complaints

Complaints may be sent to the RA Board regarding the service provided by the RA. All complaints shall be in written form. Complaints shall be service oriented and will not be considered as part of the appeals process. The RA Board will aim to respond to complaints within 90 calendar days of receipt.

**Annex A** (normative)
**Designation of the registration authority**

The organization appointed as the registration authority is:

SMPTE Registration Authority, LLC
595 W. Hartsdale Avenue
White Plains, NY 10607-1824

**Annex B** (normative)
**Designation of the registration authority board**

The registration authority board is:

Board of Directors
SMPTE Registration Authority, LLC
595 W. Hartsdale Ave.
White Plains, NY 10607-1824

**Annex C** (normative)
**Service level definition**

The service level definition highlights the changes to the registered entities that may be requested of the Registration Authority (RA), together with the expected response times.

**C.1 Request for a new registered entity**

Requests for the creation of a new entity must include all the items which are required by this standard for establishing the registered entity.

The RA will validate the completeness of the request and return a positive or negative acknowledgment of receipt within two weeks of receipt of the request. In cases where the request is invalid, the acknowledgment will state the reason or reasons for rejection of the request.

The RA will not take more than ten business days to analyze a request for a single registered entity. In the case of multiple concurrent demands, the RA will treat applications on a first-come first-served basis.

The RA may refuse to create a new registered entity in the following, nonlimitative, list of cases:

– The registered entity does not comply with requirements of the establishing standard;

– The registered entity does not comply with requirements of another SMPTE standard;

– A registered entity already exists which meets the request;

– A registered entity already exists which can be altered to meet the request.

**C.2 Maintenance**

The RA will maintain the integrity of all registers including adequate backup (such as off-premises storage) as may be agreed between the RA and the RA Board.

**C.2 Exceptional circumstances**

In exceptional circumstances, the RA Board may agree to allow the RA to modify the response times and priorities in the service level definition.

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## Annex D (normative)
## Accessing RA registries

The registration authority (RA) is responsible for providing access to registers to interested parties. The exact method and facilities may be modified from time to time provided there is prior written agreement with the RA Board.

**D.1** The RA will make the registered entities available over the Internet, or an agreed substitute network. In doing so, the RA will generally follow the procedures set forth in annex H of the Procedures for the Technical Work of ISO/IEC JTC 1 on Information Technology, third edition, 1995. There is no restriction on who can access the information. The RA will not charge for the service.

NOTE - Annex H of the JTC 1 Procedures is a web-based document intended to be navigated with a web browser. It is available at URL www.jtc1.org/ (first select committee JTC 1, then select PROCE-DURES).

**D.2** The user screens will include the SMPTE logo and the wording *SMPTE Registration Authority, LLC*. This wording will appear on all screens. When provided in paper form by the RA, it shall include that same information on each page.

**D.3** The RA will ensure that it is capable of satisfactorily handling the peak traffic that is expected under normal conditions.

**D.4** The information available on the Internet, or an agreed substitute network, will be the latest master copy of the registered entities. The RA will not be entitled to publish in any way information that is later than that on the Internet master version. In particular, the RA will not be entitled to

publish provisional or interim information if this is not on the Internet version.

**D.5** Detailed browsing and searching facilities will be agreed between the RA Board and the RA. It is expected that they will include:

– an ability to download registered entities;

– an ability to search for specific information within registered entities;

– an ability to review the revision history of a registered entity.

**D.6** The RA will provide general administrative information over the Internet. This will include:

– information about accessing the information;

– how to request a new registered entity;

– the response times for specific requests;

– the complaints procedure;

– forms for requesting new registered entities;

– information on how to obtain the latest relevant SMPTE standards.

**D.7** The RA may provide registered entities in another format. The RA may charge a reasonable amount for such services.

## Annex E (informative)
## Bibliography

ISO/IEC 2382-1:1993, Information Technology — Vocabulary — Part 1: Fundamental Terms

ISO/IEC 2382-4: 1999, Information Technology — Vocabulary — Part 4: Organization of Data

ISO/IEC 11179, Information Technology — Specification and Standardization of Data Elements

# SMPTE STANDARD

**SMPTE 330M-2000**

## for Television —
## Unique Material Identifier (UMID)

## 1 Scope

This standard specifies the format of the unique material identifier (UMID). The UMID is a unique identifier for picture, audio, and data material which is locally created but globally unique. It differs from many unique identifiers in that the number does not depend wholly upon a registration process, but can be generated automatically at the point of creation without reference to a central database.

The UMID consists of an ordered set of components each providing a key aspect to the identification of material, be it picture, audio, or data. The UMID may exist in one of two forms:

– A basic UMID which contains the minimum components necessary for the unique identification of a material clip; and

– An extended UMID which attaches metadata to the basic UMID to define a unique signature for each content unit within a clip.

This standard specifies the formats of each component in both the basic UMID and the extended UMID.

## 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.

ANSI/SMPTE 298M-1997, Television — Universal Labels for Unique Identification of Digital Data

SMPTE 309M-1999, Television — Transmission of Date and Time Zone Information in Binary Groups of Time and Control Code

Forthcoming SMPTE 336M, Television — Data Encoding Protocol Using Key-Length-Value

Forthcoming SMPTE RP 210, Metadata Dictionary

ISO 3166-1:1997, Codes for the Representation of Names of Countries and Their Subdivisions — Part 1: Country Codes

ISO/IEC 8859-1:1998, Information Technology — 8-Bit Single-Byte Coded Graphic Character Sets — Part 1: Latin Alphabet No. 1

ISO/IEC 11578-1:1996, Information Technology — Open Systems Interconnection — Remote Procedure Call (RPC), Annex A, Universal Unique Identifier

## 3 General specification

A unique material identifier (UMID) allows the unique identification of all material so that it can always be recognized whether streamed or stored locally or remotely or archived.

For the purpose of this standard, both a content unit and a clip shall be defined as follows:

– A content unit is a quantum duration of material. The quantum duration of a content unit depends on the type of material and may vary from an audio