

1. SCOPE

This Operational Practice (OP) recommends the method of applying metadata to digital file format interchange using either the MXF or XML exchange standard for digital television broadcasting in Australia. This document does not describe the detailed method of insertion of Metadata into the MXF or XML File format; it only describes the recommended RP210 SMPTE elements to be included in the material exchange. There are two types of metadata used in MXF file interchange, structural metadata and descriptive metadata. Structural metadata is used to describe the essence contained in the file, such as video, audio etc. while descriptive metadata describes the content of the essence. This OP is concerned mainly with the descriptive metadata.

1.1 References

The references for this document are:

SMPTE RP210 version 8 Metadata Dictionary Registry of Metadata Element Descriptions

SMPTE 335M-2001 Metadata Dictionary Structure

SMPTE 330M-2004 Unique Material Identifier (UMID)

SMPTE RP205-2000 Application of Unique Material Identifiers in Production and Broadcast Environments

SMPTE 298M-1997 Universal Labels for Unique Identification of Digital Data

SMPTE 377M-2004 Material Exchange Format (MXF) File Format Specification

SMPTE EG42-2004 Material Exchange Format (MXF) MXF Descriptive Metadata

2. BACKGROUND (RP210 METADATA DICTIONARY)

Since the introduction of the MXF File Exchange Format, there has been a strong need by Australian television broadcasters for a common method of metadata exchange along with the essence contained in the MXF file. The SMPTE W25 Project Group was established and began work on a standard metadata dictionary to achieve a common reference for metadata exchange; taking input from numerous television broadcasters and manufacturers of broadcast equipment. The result of this work led to the public release of the RP210 Metadata Dictionary. This OP document is aligned to Version 8 of the SMPTE RP210.

The RP210 Metadata Dictionary uses a hierarchical tree of information nodes structured as described in SMPTE 335M. Each node has a unique identifier consisting of 16 byte number¹ which is called a UL (Universal Label) as described in SMPTE S298M. Each byte addresses a node in the tree and are separated by a "." which designates the next level in the tree. The first byte designates the top of tree and each successive byte designates the next lowest node, the lowest of which is level 16. Each byte of the UL references either a branch node or a leaf node in the tree, the leaf node is the pointer to the data element contained in

¹ The UL is normally written as XX.XX.XX..., where XX may range from 00 to FF.

that node. Note, the UL consists of 16 bytes but only the lower 8 bytes are shown in this OP, the upper 8 bytes are reserved for the SMPTE Designator as detailed in SMPTE 335M-2001.

- Table 1 lists the core RP210 elements which are recommended for inclusion in the Australian metadata interchange.
- Table 2 lists the non-core RP210 elements recommended which match existing metadata elements used in today's broadcasting systems. These elements are not used by all television broadcasters and are optional to be included in any Australian metadata interchange.
- Tables 3, 4 & 5 list the recommended subset of the core and non-core elements for use in television commercials, program production and television news frameworks.
- Table 6 lists the UMID elements used to label video, audio and data essence in MXF structural metadata. These are included as a reference only and should not be included in any MXF descriptive metadata plug-in.

3. APPLICATION

3.1 Harmonised Core Metadata

Table 1 lists the recommended core metadata for Australian television broadcasting:

Table 1. Recommended Core metadata for Australian television broadcasting

ITEM	SMPTE Item	Data Element Name	Description
EXT CLIP UMID	01.01.15.09.00.00.00.00	Extended Clip ID	Clip ID as an Extended UMID. Note that the value includes the whole UMID including the first 12 UL bytes.
CAD Number	01.03.01.03.00.00.00.00	Item ID	Free TV Australia CAD number
CATALOG CODE	01.03.01.03.00..00.00.00	Item ID	Identifier of a content item.
Key Number	01.05.0C.01.00.00.00.00	Clip Number	The alphanumeric number of the clip
CLIP ID	01.05.0C.01.00.00.00.00	Clip Number	The alphanumeric number of the clip
Title	01.05.02.00.00.00.00.00	Main title	The main title of the clip or production
Product	01.05.03.00.00.00.00.00	Secondary title	The product title
Description	01.05.03.00.00.00.00.00	Secondary title	The product title
Episode number	01.05.05.00.00.00.00.00	Episode Number	The alphanumeric episode number
COPYRIGHT	02.05.01.02.00.00.00.00	Copyright Owner	The name of the person/organization who owns the copyright.

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ITEM	SMPTE Item	Data Element Name	Description
AGENCY	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organization is known.
PROD HOUSE	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organization is known.
Censorship System	03.02.01.01.01.00.00.00	Content Coding System	The system of coding for programme classification e.g. Escort 2.4
Classification	03.02.01.01.10.00.00.00	Programme material classification Code	The resulting delineated classification code from the classification system
Colour	03.02.01.06.04.00.00.00	Colour descriptor	e.g. Black and white, tinted etc
Aspect Ratio	04.01.01.01.01.00.00.00	Presentation Aspect Ratio	Specifies the horizontal to vertical aspect ratio of the whole image as it is to be presented to avoid geometric distortion and hence including any black edges.
Audio Type	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
Captioned	06.01.01.01.03.00.00.00	Closed caption subtitles available flag	Flag indicating that closed caption subtitles exist.
SOM	07.02.01.02.02.01.00.00	Start (Date) Time Timecodes	Media time at start of segment, shot, clip, item etc.
Creation Date	07.02.01.10.01.04.00.00	Clip Creation date & time – DMS-1	Identifies date and time of creation of a clip.
Rights start Date	07.02.01.20.02.00.00.00	Rights Start Date & Time	Date and time of the start of a rights contract
Rights end date	07.02.01.20.03.00.00.00	Rights Stop Date & Time	Date and time of the completion of a rights contract
Duration	07.02.02.01.02.02.00.00	Time Duration - Timecodes	The absolute duration of the segment, shot, clip, item etc.

3.2 Harmonised Optional Non Core Metadata

Table 2 lists the Optional non-core metadata for Australian television broadcasting:

Table 2. None Core metadata for Australian television broadcasting

ITEM	SMPTE Item	Data Element Name	Description
ISAN CODE	01.01.11.01.00.00.00.00	ISAN	ISO Audio-Visual Number
Record Device	01.01.20.01.00.00.00.00	Device Designation	Identifies the "house name" of the device used in capturing or generating the essence
Playback Device	01.01.20.07.00.00.00.00	Device ID Type	The type of identifier used to identify the device
On Server	01.03.01.01.00.00.00.00	Transmission Identifier	Identifier for transmission control
Archive	01.03.01.02.00.00.00.00	Archive Identifier	Identifier for archival purposes
House Number	01.03.01.05.00.00.00.00	Traffic ID	Identifier for emission management and/or billing
Tape Number	01.03.02.02.01.00.00.00	Tape number	An organisationally given number for a tape.
Production Number	01.03.05.01.00.00.00.00	Organisational Programme number	An Identifier, unique only within an organisation, for a programme
Other Media	01.04.01.02.00.00.00.00	Media physical location	A description of the physical location of media - e.g. which archive, place, rack, shelf, position on shelf

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ITEM	SMPTE Item	Data Element Name	Description
Product Description or Series Story	01.05.01.00.00.00.00.00	Title kind	Kind of title, i.e., project, group of programmes, group of series, series, item, programme, working, original, item, episode, element, scene, shot etc
Episode Number	01.05.05.01.00.00.00.00	Episode Number	The alphanumeric episode number
Recorded Title	01.05.08.00.00.00.00.00	Version Title	The version title
Movie Name	01.05.0B.00.00.00.00.00	Original Title	The original title of a production
Segment Number	01.05.0C.00.00.00.00.00	Clip Number	The alphanumeric number of the Clip
Episode Number	01.07.01.01.00.00.00.00	Track ID	Specifies the particular track within a package
Origin of media	01.10.03.03.00.00.00.00	Origin Code	Code indicating the type of source of material
Agency/Distributor/Supplier name	02.01.01.00.00.00.00.00	Source Organization	The name of the content supplying organisation
Contract Number	02.01.02.00.00.00.00.00	Supply contract number	The alphanumeric number for the contract for the supply of content
Supplier Name	02.01.03.00.00.00.00.00	Original Producer Name	The name of the original content Producer.
Address	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification value
Contact person	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification value

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ITEM	SMPTE Item	Data Element Name	Description
Telephone no	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Fax - Intl Prefix	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Fax - Country Code	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Fax - Area Code	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Fax - Number	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Banking Name	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Bank Account	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Bank Address 1	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Bank Address 2	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Bank Address 3	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Bank Address 4	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Bank Address 5	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification

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ITEM	SMPTE Item	Data Element Name	Description
Bank Address 6	02.01.06.00.00.00.00.00	Supplier Identification value	The value of supplier identification
Supplier code	02.01.07.00.00.00.00.00	Supplier account number	The number of the supplier account
Number of Episodes	02.02.01.00.00.00.00.00	Total number of Episodic items	Total number of episodic items in a series
Episode Type (COM, ENT, NEWS,...)	02.02.03.00.00.00.00.00	Kind of programming group	The kind of programme group of which the programme forms a part - e.g. Anthology, Serial, Series, Themed Cluster, Repeating Series etc.
Starting Episode Number	02.02.04.00.00.00.00.00	Episode item start number	The episodic number at the start of a series
Deal Name	02.03.01.00.00.00.00.00	Purchasing Organization	The name of the content purchasing organisation
Deal Code	02.03.02.00.00.00.00.00	Sales contract number	The alphanumeric number for the contract for the sale of content
Embargo Date	02.05.04.03.00.00.00.00	Right condition	Optional condition which restrict a Right - e.g. embargo periods
Bank A/C (foreign\$) in Australia Y or "	02.06.01.01.00.00.00.00	Currency	International Standards Organisation Codes for the representation of currencies and funds
Local cost	02.06.01.02.00.00.00.00	Total currency amount	The currency amount
Contract requirement	02.07.01.00.00.00.00.00	Restrictions on Use	Identifies the type or level of restriction applied to the media product.

ITEM	SMPTE Item	Data Element Name	Description
Presentation Director	02.08.02.03.00.00.00.00	Classified By	Original classification authority name and position or personal identifier; the title of the document or security classification guide used to classify the information
Note Type	02.08.02.04.00.00.00.00	Classification Reason	Narrative text explaining the reason for assigning the classification
Instructions	02.08.02.04.00.00.00.00	Classification Reason	Narrative text explaining the reason for assigning the classification
Censors comments 0...n	02.08.02.07.00.00.00.00	Classification Comment	Narrative text further explaining the classification assignment
Content code	02.08.02.08.00.00.00.00	Classification and Marking System	Classification and marking system used
Station	02.10.01.01.01.01.00.00	Name	Name of the broadcasting organisation as text.
Channels / Station / Market	02.10.01.01.02.00.00.00	Channel	Broadcast channel
Transmission Channel	02.10.01.01.02.01.00.00	Service	The Broadcast Service - eg News 24
Medium Code / Content Source / Version Copy Type / Delivery Format / Source	02.10.01.01.03.00.00.00	Publishing Medium	Publishing medium, including transmission (e.g., satellite, cable, terrestrial, ...)
Telecast Network Flag / Channel Group	02.10.01.01.05.00.00.00	Broadcast Region	Target region of broadcast
(F)irst or (R)epeat run	02.20.01.01.00.00.00.00	First Broadcast Flag	First broadcast of the product

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ITEM	SMPTE Item	Data Element Name	Description
Count times played	02.20.02.01.00.00.00.00	Current repeat number	The number of the current repeat
Ratings potential 0..n	02.20.03.01.00.00.00.00	Audience rating	Audience rating as number of viewers
Journalist Family Name	02.30.06.03.01.01.01.00	Family Name	The family name of an individual.
Journalist Given Name	02.30.06.03.01.02.01.00	First Given Name	The first given name of an individual.
Editor Family Name	02.30.06.03.01.01.01.00	Family Name	The family name of an individual.
Editor Given Name	02.30.06.03.01.02.01.00	First Given Name	The first given name of an individual.
AUDIO HOUSE	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organization is known.
SUPPLIER	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organization is known.
Editorial Description	03.02.01.01.00.00.00.00	Theme	The category of the Theme of the content
Notes Comment	03.02.01.02.0B.00.00.00	Shot list	Freeform textual listing of shots, for example indexed against time or frame count
Synopsis / Package Story / Story Line	03.02.01.06.01.00.00.00	Abstract	A brief narrative summary of the data set.
Annotation	03.02.01.06.01.00.00.00	Abstract	A brief narrative summary of the data set.
Episode remarks / Description / Synopsis	03.02.01.06.03.00.00.00	Description	A freeform textual description
In-House Comments	03.02.02.02.06.00.00.00	Technical Value	Assessment of the technical value

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ITEM	SMPTE Item	Data Element Name	Description
AFD	04.01.03.02.09.00.00.00	Active Format Descriptor	Specifies the intended framing of the content within the displayed image (4:3 in16:9 etc.)
Bit Rate (kb/s)	04.01.05.01.11.00.00.00	Video Average Bitrate	The Average bit rate in bits per second
Audio	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
Caption Type	04.03.01.01.00.00.00.00	Caption kind	Specifies the kind of caption – e.g. teletext subtitles, closed captions subtitles, embedded sports scores, name captions etc.
Edit Suite	04.30.01.00.00.00.00.00	System Name or Number	A text string with the name or number of the integrated system of sensors or devices that acquired the data
Conclusion / Released State	05.01.01.03.00.00.00.00	Quality Flag	Quality of a specific recording/physical copy (good/no good)
Type	05.01.01.05.00.00.00.00	Physical Instance Category	Category of physical copy (e.g., master copy, copy, broadcast copy)
Edit Complete	05.01.03.04.00.00.00.00	Work in Progress Flag	Is the essence a work in progress? Work-in-progress = True
Movie number within contract	06.10.10.03.00.00.00.00	Current number in sequence	The current number in a sequence
Venue for Specials (sports)	07.01.20.01.01.01.01.00	Place Keyword	The geographic name(s) of location(s) covered by a data set.

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ITEM	SMPTE Item	Data Element Name	Description
Date	07.02.01.01.01.02.00.00	User defined Date-Time stamp - Local Time	Time stamp application defined by user application
EOM	07.02.01.02.04.01.00.00	End (Date) Times – Timecodes.	Media time at end of segment, shot, clip, item etc.
Edit date	07.02.01.02.05.02.00.00	Last Modification Date Time - Local Time (default = undefined)	Absolute time of the last modification of the segment, shot, clip, item etc.
Creation Date	07.02.01.10.01.01.00.00	Creation Date & Time - Local Time (default = undefined)	Identifies date and time at the point of creation.
Creation Date	07.02.01.10.01.04.00.00	Clip Creation date & Time – DMS-1	Identifies date and time of creation of a clip.
Last change date	07.02.01.10.02.05.00.00	Package Last Modification Date & Time	Identifies date and time at the point of most recent modification of the package
Expiry Date	07.02.01.20.03.00.00.00	Rights Stop Date & Time	Date and time of the completion of a rights contract

3.3 Television commercial metadata

Table 3 lists the recommended harmonised metadata for exchange of television commercial content within Australian television broadcasting. Core metadata is shaded green, non-core is shaded blue.

Table 3. Television Commercial Metadata

ITEM	SMPTE Item	Data Element Name	Description
EXTD CLIP UMID	01.01.15.09.00.00.00.00	Extended Clip ID	Clip ID as an Extended UMID. Note that the value includes the whole UMID including the first 12 UL bytes
Key Number	01.05.0C.01.00.00.00.00	Clip Number	The alphanumeric number of the Clip
CAD Number	01.03.01.03.00.00.00.00	Item ID	Free TV Australia CAD number
Title	01.05.02.00.00.00.00.00	Main title	The main title
Product	01.05.03.00.00.00.00.00	Secondary title	The product title
SOM	07.02.01.02.02.01.00.00	Start (Date) Time - Timecodes	Media time at start of segment, shot, clip, item etc.
Creation Date	07.02.01.10.01.04.00.00	Clip Creation Date & Time - DMS-1	Identifies date and time of creation of a clip.
Duration	07.02.02.01.02.02.00.00	Time Duration - Timecodes	The absolute duration of the segment, shot, clip, item etc.
AGENCY	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organisation is known
COPYRIGHT	02.05.01.02.00.00.00.00	Copyright Owner	The name of the person/organisation who owns the copyright.
PROD HOUSE	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organisation is known
AUDIO HOUSE	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organisation is known
Rights Start Date	07.02.01.20.02.00.00.00	Rights Start Date & Time	Date and time of the start of a rights contract
Rights end date	07.02.01.20.03.00.00.00	Rights Stop Date & Time	Date and time of the completion of a rights contract

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ITEM	SMPTE Item	Data Element Name	Description
Classification	03.02.01.01.10.00.00.00	Programme material classification Code	The resulting delineated classification code from the classification system
Captioned	06.01.01.01.03.00.00.00	Closed caption subtitles available flag	Flag indicating that closed caption subtitles exist.
Caption Type	04.03.01.01.00.00.00.00	Caption kind	Specifies the kind of caption - e.g. teletext subtitles, closed captions subtitles, embedded sports scores, name captions etc.
Aspect ratio	04.01.01.01.01.00.00.00	Presentation Aspect Ratio	Specifies the horizontal to vertical aspect ratio of the whole image as it is to be presented to avoid geometric distortion and hence including any black edges.
Colour	03.02.01.06.04.00.00.00	Colour descriptor	eg. Black and white, tinted etc
Audio Type	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
AFD	04.01.03.02.09.00.00.00	Active Format Descriptor	Specifies the intended framing of the content within the displayed image (4:3 in 16:9 etc.)

3.4 Television program production metadata

Table 4 lists the harmonised metadata for exchange of program production content. Core metadata is shaded green, non-core is shaded blue.

Table 4. Television Program Production Metadata

ITEM	SMPTE Item	Data Element Name	Description
EXT CLIP UMID	01.01.15.09.00.00.00.00	Extended Clip ID	Clip ID as an Extended UMID. Note that the value includes the whole UMID including the first 12 UL bytes
CATALOG CODE	01.03.01.03.00.00.00.00	Item ID	Identifier of a content item
ISAN CODE	01.01.11.01.00.00.00.00	ISAN	ISO Audio-Visual Number
Title	01.05.02.00.00.00.00.00	Main title	The main title
Episode Number	01.05.05.00.00.00.00.00	Episode Number	The alphanumeric episode number
Description	01.05.03.00.00.00.00.00	Secondary title	The secondary title
Annotation	03.02.01.06.01.00.00.00	Abstract	A brief narrative summary of the data set.
Creation Date	07.02.01.10.01.04.00.00	Clip Creation Date & Time - DMS-1	Identifies date and time of creation of a clip.
SOM	07.02.01.02.02.01.00.00	Start (Date) Time - Timecodes	Media time at start of segment, shot, clip, item etc.
EOM	07.02.01.02.04.01.00.00	End (Date) Times - Timecodes	Media time at end of segment, shot, clip, item etc.
Duration	07.02.02.01.02.02.00.00	Time Duration - Timecodes	The absolute duration of the segment, shot, clip, item etc.
SUPPLIER	02.30.06.03.03.01.01.00	Organization Name	The main name by which an organisation is known
CONTRACT NUMBER	02.01.02.00.00.00.00.00	Supply contract number	The alphanumeric number for the contract for the supply of content
COPYRIGHT	02.05.01.02.00.00.00.00	Copyright Owner	The name of the person/organisation who owns the copyright.

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ITEM	SMPTE Item	Data Element Name	Description
MARKET	02.10.01.01.02.00.00.00	Channel	Broadcast channel
Rights Start Date	07.02.01.20.02.00.00.00	Rights Start Date & Time	Date and time of the start of a rights contract
Rights end date	07.02.01.20.03.00.00.00	Rights Stop Date & Time	Date and time of the completion of a rights contract
Censorship System	03.02.01.01.01.00.00.00	Content Coding System	The system of coding for programme classification eg Escort 2.4
Classification	03.02.01.01.10.00.00.00	Programme material classification Code	The resulting delineated classification code from the classification system
Captioned	06.01.01.01.03.00.00.00	Closed caption subtitles available flag	Flag indicating that closed caption subtitles exist.
Caption Type	04.03.01.01.00.00.00.00	Caption kind	Specifies the kind of caption - e.g. teletext subtitles, closed captions subtitles, embedded sports scores, name captions etc.
Aspect ratio	04.01.01.01.01.00.00.00	Presentation Aspect Ratio	Specifies the horizontal to vertical aspect ratio of the whole image as it is to be presented to avoid geometric distortion and hence including any black edges.
Color	03.02.01.06.04.00.00.00	Colour descriptor	eg. Black and white, tinted etc
Audio Type	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

3.5 Television news metadata

Table 5 lists the harmonised core metadata for exchange of news material.

Table 5. Television News Metadata

ITEM	SMPTE Item	Data Element Name	Description
EXT CLIP UMID	01.01.15.09.00.00.00.00	Extended Clip ID	Clip ID as an Extended UMID. Note that the value includes the whole UMID including the first 12 UL bytes
CLIP ID	01.05.0C.01.00.00.00.00	Clip Number	The alphanumeric number of the Clip
Title	01.05.02.00.00.00.00.00	Main title	The main title
Description	01.05.03.00.00.00.00.00	Secondary title	The secondary title
Annotation	03.02.01.06.01.00.00.00	Abstract	A brief narrative summary of the data set.
Creation Date	07.02.01.10.01.04.00.00	Clip Creation Date & Time - DMS-1	Identifies date and time of creation of a clip.
SOM	07.02.01.02.02.01.00.00	Start (Date) Time - Timecodes	Media time at start of segment, shot, clip, item etc.
EOM	07.02.01.02.04.01.00.00	End (Date) Time - Timecodes	Media time at end of segment, shot, clip, item etc.
Duration	07.02.02.01.02.02.00.00	Time Duration - Timecodes	The absolute duration of the segment, shot, clip, item etc.
COPYRIGHT	02.05.01.02.00.00.00.00	Copyright Owner	The name of the person/organisation who owns the copyright.
MARKET	02.10.01.01.02.00.00.00	Channel	Broadcast channel
Classification	03.02.01.01.10.00.00.00	Programme material classification Code	The resulting delineated classification code from the classification system
Captioned	06.01.01.01.03.00.00.00	Closed caption subtitles available flag	Flag indicating that closed caption subtitles exist.

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ITEM	SMPTE Item	Data Element Name	Description
Caption Type	04.03.01.01.00.00.00.00	Caption kind	Specifies the kind of caption - e.g. teletext subtitles, closed captions subtitles, embedded sports scores, name captions etc.
Aspect ratio	04.01.01.01.01.00.00.00	Presentation Aspect Ratio	Specifies the horizontal to vertical aspect ratio of the whole image as it is to be presented to avoid geometric distortion and hence including any black edges.
Audio Type	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
Journalist Family Name	02.30.06.03.01.01.01.00	Family name	The family name of an individual
Journalist Given Name	02.30.06.03.01.02.01.00	First Given name	The first given name for an individual
Editor Family Name	02.30.06.03.01.01.01.00	Family name	The family name of an individual
Editor Given Name	02.30.06.03.01.02.01.00	First Given name	The first given name for an individual

3.6 Mandatory MXF metadata

Table 6 lists the mandatory metadata for exchange of MXF essence metadata. These items would be created by the MXF authoring tool and are shown here for information only. It is not recommended to include these items in MXF plug-in metadata sets.

Table 6. Mandatory MXF Metadata

ITEM	SMPTE Item	Data Element Name	Description
VIDEO UMID	01.01.01.10.00.00.00.00	UMID Video	Unique Material Identifier for video essence. Note - this is a 12 byte SMPTE label.
AUDIO UMID	01.01.02.10.00.00.00.00	UMID Audio	Unique Material Identifier for audio essence. Note - this is a 12 byte SMPTE label.
DATA UMID	01.01.03.10.00.00.00.00	UMID Data	Unique Material Identifier for data essence. Note - this is a 12 byte SMPTE label.
SYSTEM UMID	01.01.04.10.00.00.00.00	UMID System	Unique Material Identifier for other essence. Note - this is a 12 byte SMPTE label.

4. APPLICATION OF HARMONISED CORE METADATA BY OPERATOR/BROADCASTERS

4.1 Broadcasters Use of Additional Metadata

The metadata sets contained in this OP is only a small subset of the metadata available in RP210. This OP does not preclude television broadcasters from applying additional metadata obtained from RP210 in their internal systems. However, any additional metadata used which is not contained in this OP will be considered “in-active/dark” metadata that will be ignored by other metadata applications and decoders outside of the television broadcasters internal system. It is highly recommended that if television broadcasters require new metadata to be shared outside of their organization that they apply to Free TV to consider having the new metadata included in future releases of this OP. Only then will any television broadcasters’ metadata be turned into “active/light’ metadata that can be visible to all other television broadcasters’ applications and decoders.

4.2 ISAN

The ISAN element in RP210 can be used by the television broadcasters for the purposes of storage for incoming ISANs (and not for the creation of ISANs) where the ISAN has been originally created from the original source of the material that chooses to use the ISAN, which avoids the requirement for television broadcasters to be licensed by the relevant ISAN authority.

4.3 Broadcaster Registration

Before implementing the metadata sets contained in this OP, it is highly recommended that television broadcasters apply for registration of an extended UMID (Unique Material Identifier) source pack “Organization” code with Free TV Australia, who will then register your application with SMPTE on your behalf. This registration will enable a television broadcaster to uniquely identify their material by incorporating a registered 4 byte Organization code within the UMID source pack in their metadata interchange. *SMPTE 330M-2004* document describes in detail how the registered Organization data is conveyed in the extended UMID. The core Metadata set described in this document contains a 64 byte UMID, the [EXT CLIP UMID] which has been selected to carry this registered organization code.

5. INTEGRATION INTO MXF

4.4 MXF Header

The Metadata elements described in this document can be incorporated into an MXF file using the MXF Header – Descriptive Metadata plug-in mechanism as described in *SMPTE 377M-2004* section 8.7. MXF Descriptive Metadata requires the use of a DM schema to arrange the Metadata into logical frameworks. The detailed technical description of this method is outside the scope of this document and developers should consider studying *SMPTE 377M-2004* and *SMPTE EG42-2004* for further information.

4.5 More Than One Descriptive Metadata Framework

Depending on the MXF operational pattern used, there will be at least one or more descriptive metadata frameworks for each essence contained within the MXF file. For example, in the case of Commercial interchange where a single commercial is wrapped using Operational Pattern 1a, only one descriptive metadata Commercial framework is required for that essence.

4.6 Use of XML

To format metadata for plug-in to MXF it has been recommended by SMPTE to use an XML schema to import data from broadcasters' databases into an XML file, which can then be ingested with an MXF wrapping application that will create the MXF plug-in metadata framework. The detail of the XML schema required is beyond the scope of this document, however SMPTE are currently working on a standard for the basic XML schema to assist developers.
