

EBU Technical Statement D92-2001

System Requirements for the unique identification of material in broadcast production

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1. Introduction

The Unique Material Identifier (UMID) [1] is defined as Class 1 Metadata within the Standard SMPTE Metadata Dictionary [2].

This particular Metadata will serve an important purpose for EBU Members within future media production because it is intended to provide an unambiguous method of identification of instances of essence and groups of essence, and will thus enable that essence to be linked with associated metadata.

The EBU is confident that all future media asset management systems¹ will depend on production equipment capable of supporting the SMPTE UMID.

However, in order to allow consistent development of future "UMID-enabled" equipment and its integration into media production systems, the EBU has identified the need for:

- Some clarification of the published SMPTE Standard [1] and the accompanying Recommended Practice [3]
- "High-level" rules to support common understanding of users' system requirements for the identification of all material types

The clarifications mentioned above and given below (together with a further document to be offered on Material Type) are expected to require a limited modification to the published SMPTE documents.

The "high-level" rules mentioned above are given in EBU Recommendation R108-2001 [4].

2. User Requirements for the Basic UMID

The EBU has agreed the following requirements for equipment and systems to support the use of UMIDs in broadcast production.

2.1. Implementation of UMIDs

The EBU requires the UMID to be implemented in all systems that create, process or store programme material, or data associated with that material.

- The Basic UMID is mandatory for all applications
- Use of the Extended UMID is optional

This requirement is made in order that any instance of material, or any instance of grouped material, can be uniquely and automatically identified - that is, identified without human intervention.

2.2. Rules for the use of UMIDs

The EBU requires that equipment which implements the UMID should follow the rules given in EBU Technical Recommendation R108-2001.

¹ "Media asset management" is defined as a business function which runs through many processes involved in the creation and distribution of media products, and consists of a defined set of activities concerned with their identification, description, storage, retrieval, up-dating and re-use.

3. Clarification of the meaning and use of the UMID

The EBU offers some clarification of the meaning and use of UMIDs in broadcast production:

3.1. What does the “UMID” identify?

The Basic UMID uniquely identifies either:

- A single instance of a clip of material, or
- A bounded group of instances of clips of related material.

The Extended UMID adds “signature” information to the Basic UMID, elements of which enable unique identification at the level of Content Unit.

References to “UMID” in the remainder of this document are to the Basic UMID unless otherwise stated.

3.2. What is a “Clip”

The Basic UMID uniquely identifies a “Clip” or a group of Clips. For example, the Basic UMID might identify an instance of any of the following:

- A single frame of video
- A phrase of audio
- A still image file
- A related sequence of 27 still images in a single file
- A continuous (two-day-long) video of an otter’s lair
- A 90-second sequence of picture and stereo sound captured by a camcorder between “record” and “stop” operations
- An editorially-complete programme “item” (comprising picture, multiple-track audio and data elements)
- A complete programme in a contiguous sequence (also comprising picture, multiple-track audio and data elements)

3.3. Material Type

Some of the examples given above of what the UMID might identify represent material of a single type - that is a single instance of audio or video or data. Other examples represent a group of material - that is, they contain more than one instance of picture and/or sound and/or data. The “Material Type” code in the UMID Universal Label handles the distinctions between the types of material that is being identified by the UMID.

The EBU is not yet able, with confidence, to offer guidance for the use of the “Material Type” code within the Universal Label.

It is recognised that there is general agreement that the type of material - or types of material in a group of material - covered by a single UMID needs to be unambiguously identified. However, common agreement has not yet been reached on a suitable method by which a system can achieve this automatically, i.e. without human intervention. The EBU considers that the existing SMPTE Standard and Recommended Practice are not sufficiently precise to allow different manufactures to guarantee interoperability between their respective systems.

The EBU is actively studying this problem and intends to offer a proposal for a candidate solution, which will probably require a limited modification of the UMID documentation, Standard SMPTE 330M-2000 [2] and Recommended Practice RP205-2000 [3].

3.4. Example application (informative) – usage history

An example systems application of the UMID might be to create an audit trail (or “history list”) of material usage. Where offered, such an application could be defined by the following requirement:

The minimum requirement for a history list is that a system that performs an editorial change must generate a new UMID and maintain a link between the new and previous UMID(s).

This audit trail may be embedded with the material as a list in a “metadata set”² or stored separately as a series of records in a database.

Bibliography

- [1] SMPTE Metadata Dictionary as specified in SMPTE RP210a
<http://www.smpte-ra.org/mdd/index.html>
 - [2] SMPTE Standard 330M-2000 for Television — Unique Material Identifier (UMID)
 - [3] SMPTE RP 205-2000 — Application of Unique Material Identifiers in Production and Broadcast Environments
 - [4] EBU Technical Recommendation R108-2001: High-level rules for systems implementing the SMPTE UMID (Unique Material Identifier)
 - [5] SMPTE Standard 336M-2001 for Television — Data Encoding Protocol using Key-Length-Value.
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² A candidate specification of Metadata sets in KLV protocol is given in SMPTE 336 [5]. Other implementations, such as XML, are expected.