STUDY REPORT ON UMID APPLICATIONS PART 1

UMID Application Principles and Best Practices

Executive Summary

This is the first study report of the TC-30MR study group on UMID applications.

The UMID (Unique Material IDentifier) is a globally unique audiovisual material identifier standardized by SMPTE as SMPTE ST 330 and RP 205. Although more than a decade has passed since its initial standardization in 2000 and it has been widely disseminated over the industry by audiovisual products using the MXF and AAF technologies, its originally intended use as a unique material identifier to associate the material with its external metadata has seldom been seen in practice.

It has been revealed in the literature that this is because of lack of additional technologies needed to be industry standardized to realize such UMID applications. To address this issue, TC-30MR study group on UMID applications has been established last on April 2012 with the project scope as:

1. To explore the best practice of UMID applications,
2. To identify typical UMID application principles and collate the fundamental rules every UMID-aware product needs to adopt,
3. To identify relevant technologies needed to be additionally standardized.

In this study report, the first two items of the project scope are discussed.

As for the UMID Application Principles, or the fundamental rules every UMID-aware product must strictly follow, the following seven principles are proposed together with implications on how to interpret each of them.

Principle 1 Definition (Section 3.2.1)

Principle 2 UMID Creation (Section 3.2.2)

Principle 3 UMID Integrity (Section 3.2.3)

Principle 4 UMID Identification (Section 3.2.4)

Principle 5 UMID Inheritance (Section 3.2.5)

Principle 6 Extended UMID (Section 3.2.6)

Principle 7 Source Pack (Section 3.2.7)

In addition, because the UMID Application Principles by themselves are abstract, how to implement them in reality, particularly for the case of UMID as a globally unique material identifier (Principle 2, 3 and 4), is demonstrated in this report by introducing the concept called UMID Managed Domain, a domain composed of materials with valid UMIDs in the sense of the UMID Application Principles (Section 4).

By its definition, the embodiment of the UMID Application Principles can be understood as an implementation of the UMID Managed Domain. Because the UMIDs in the domain must be always maintained valid in the sense of the UMID Application Principles, certain UMID treatments are usually required at every material manipulation in the domain. In this report, those UMID treatments are also described in details based on existing practices.

In order to collate the proposed UMID Application Principles with practical UMID applications, existing practices and possible UMID applications collected in the study are introduced one by one in this report, which include:

- UMID as a unique material identifier (Section 5.2),
- UMID as a linking tool (Section 5.2),
- UMID at simultaneous multiple material creations for offline/online edits (Section 5.3),
- UMID for abstract original material (Section 5.4),
- UMID for identical materials (Section 5.5),
- UMID for growing material (Section 5.6),
- UMID based material search (Section 5.7),
- UMID for cooperation of multiple MAMS (Section 5.8)
- UMID as a common material identifier in a best-of-breed media production system (Section 5.9),
- UMID based globally distributed material management (Section 5.10),
- UMID for additional metadata search (Section 5.11),
- UMID for loose coupling between Application and Media layers (Section 5.12),
- UMID Applications in Traditional VTR/SDI Environment (Section 5.13).

Finally, in order for the outcome of this report to be officially reflected on the relevant SMPTE standard document, a setup of a new project to revise the RP 205 is recommended as a conclusion of this study report.

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