

Latest Status of UMID and its Applications in File-based Workflow

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SMPTE TC-30MR SG UMID Applications

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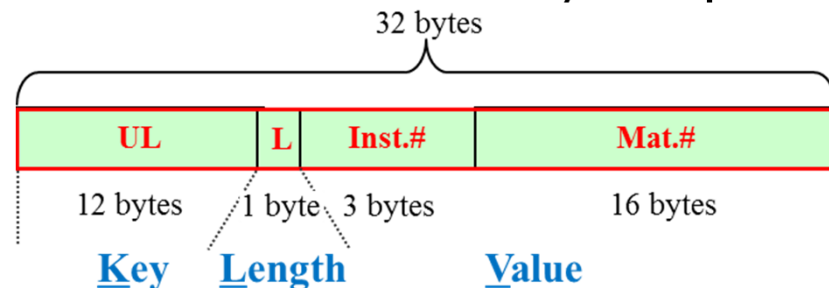
Outline

- ▶ What is the UMID ?
- ▶ Goal of UMID Applications
- ▶ UMID Applications in MXF
- ▶ UMID Application Project in SMPTE
- ▶ Conclusions

What is the UMID ?

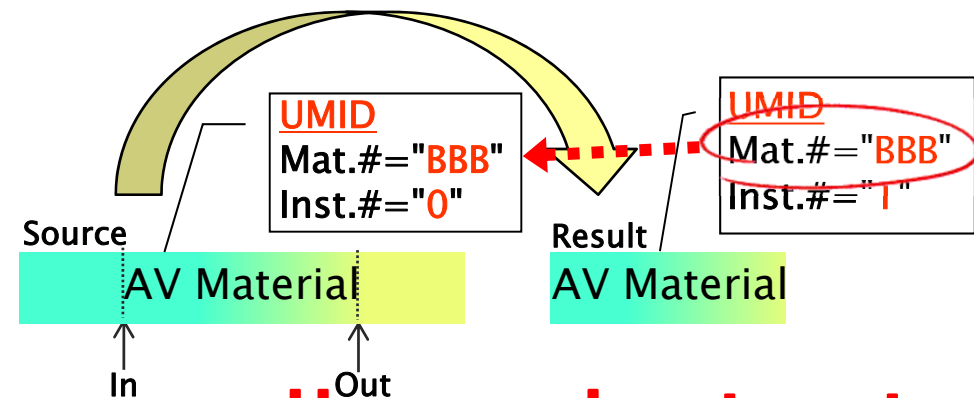
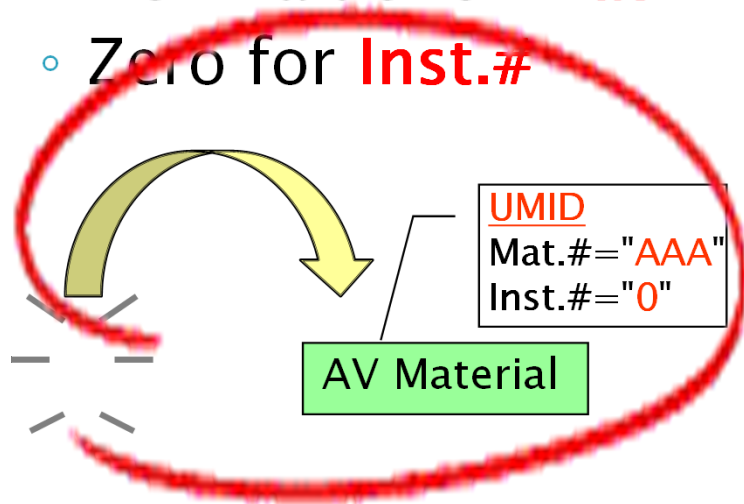
▶ Unique Material IDentifier

- Specified in SMPTE ST 330 & RP 205 (in 2000)
 - Universal Label (**UL**): identifying as UMID (**Key**)
 - Length (**L**): Length in byte that follows, fixed to 13_h (**Length**)
 - Instance Number (**Inst.#**): indicating its originality
 - Material Number (**Mat.#**): Globally unique value



Two Distinct Uses of the UMID

- ▶ As a unique identifier
 - New value for **Mat.#**
 - Zero for **Inst.#**
- ▶ As a linking tool
 - Shared value for **Mat.#**
 - Non-zero for **Inst.#**

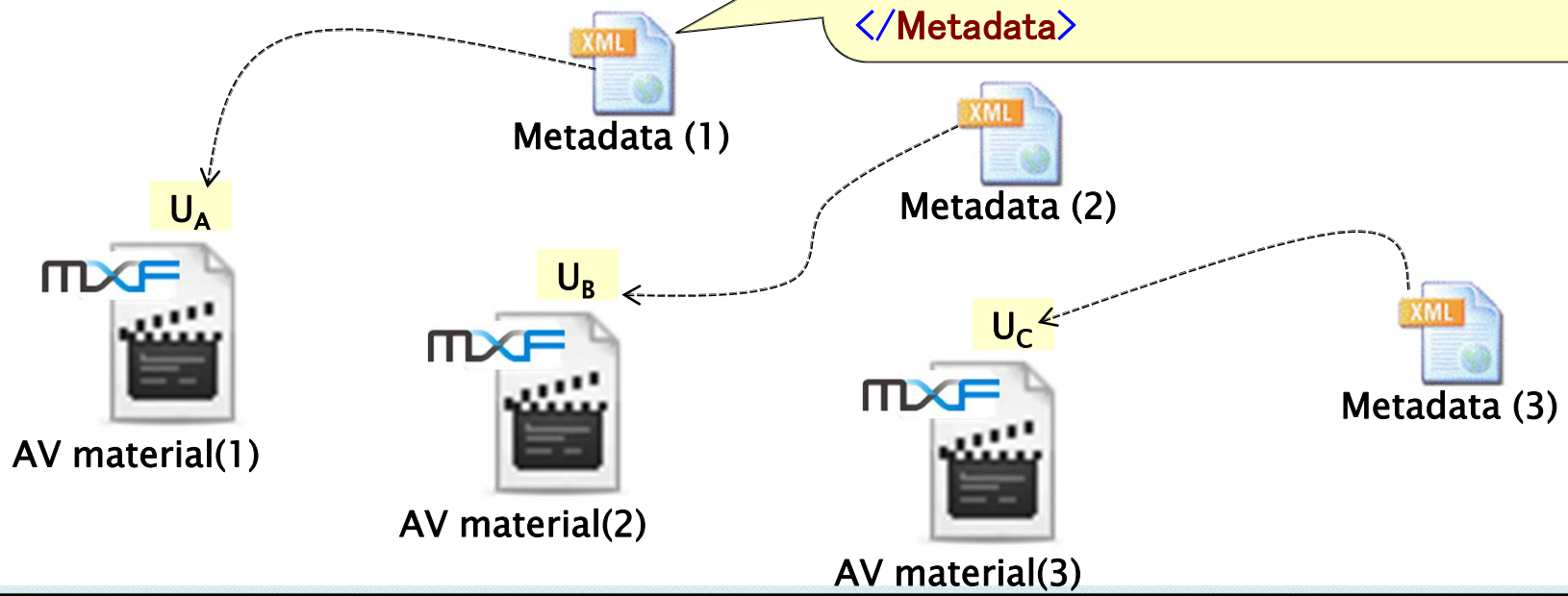


These uses are mutually exclusive !

What is the UMID For ?

- ▶ To link an AV material to its metadata

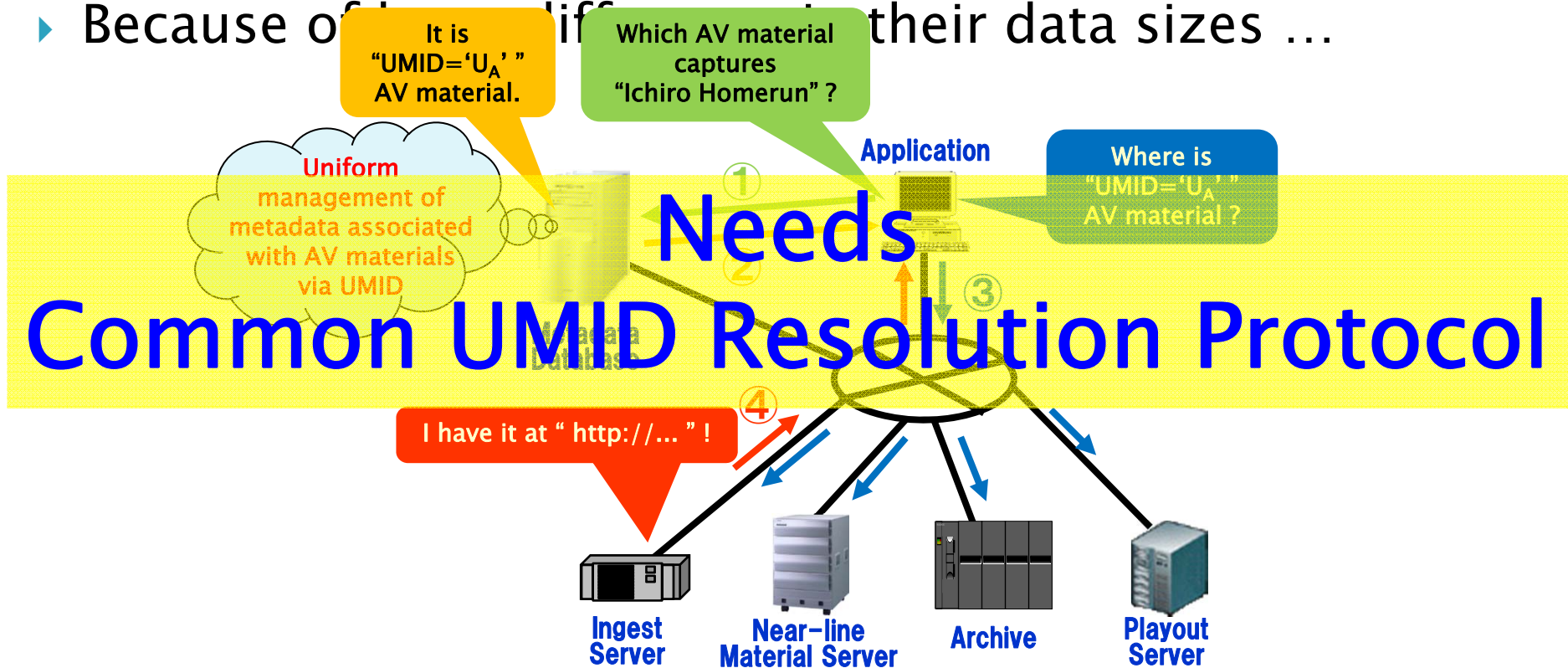
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  <Title>Major League Baseball</Title>  
  :  
</Metadata>
```



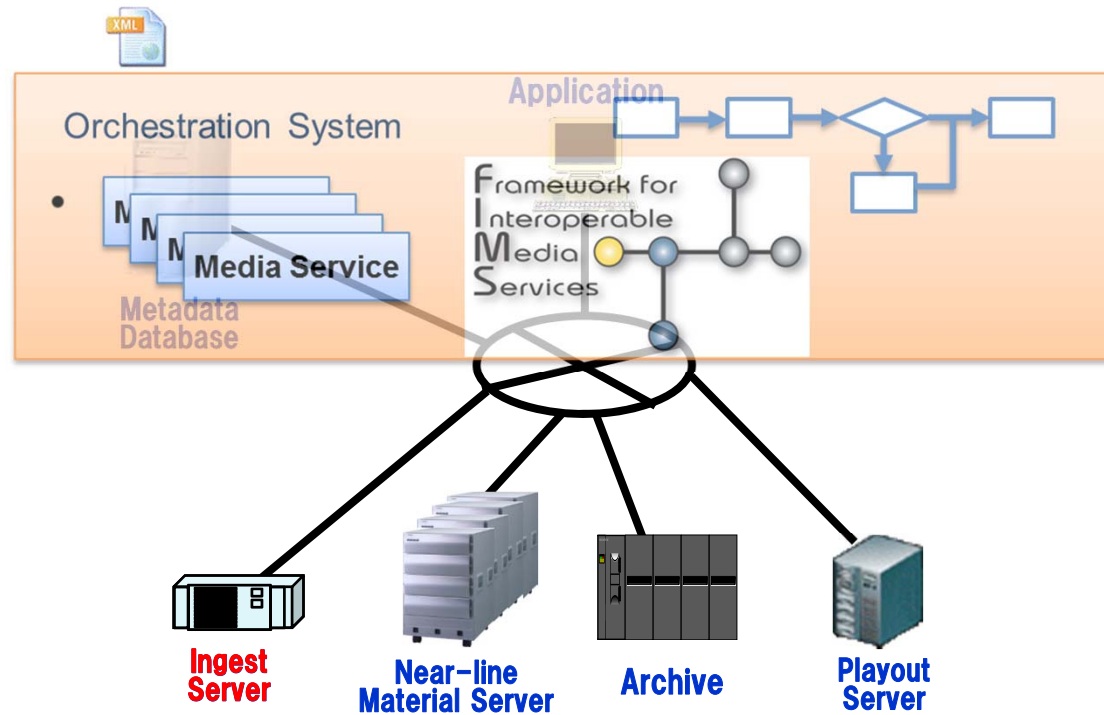
Goal of UMID Applications

UMID based AV Material Search

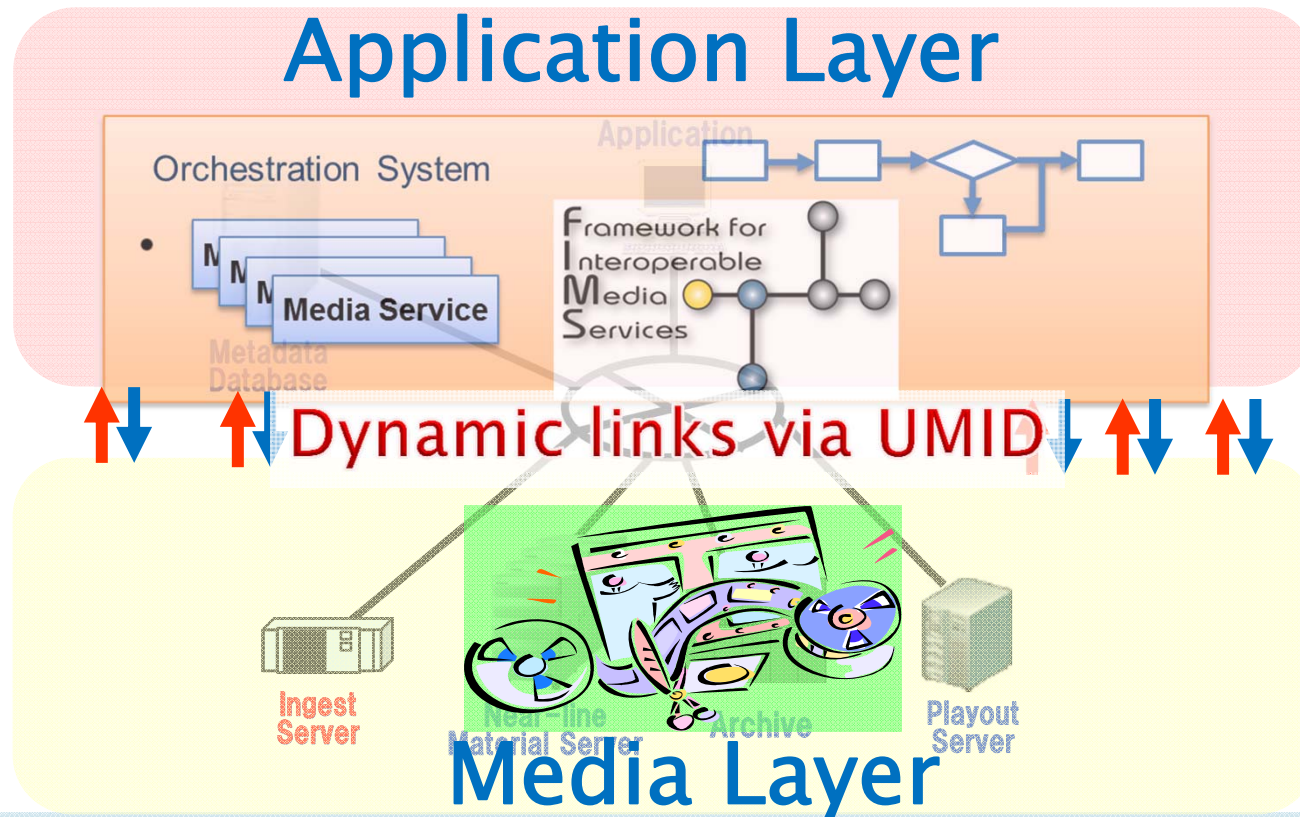
- ▶ Because of their different data sizes ...



When Generalized...



When Generalized...



To Make it Happen in Practice

- ▶ Needs industry common **UMID resolution protocol**
 - To resolves a given UMID of AV material to its URL
- ▶ Clarifies **UMID Application Principles**
 - To realize UMID based AV material management

UMID Application Principles

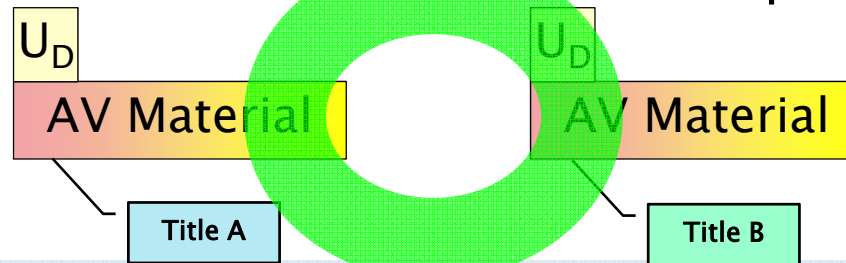
▶ Principle 1: UMID Integrity

- Different AV materials shall be identified by different UMIDs



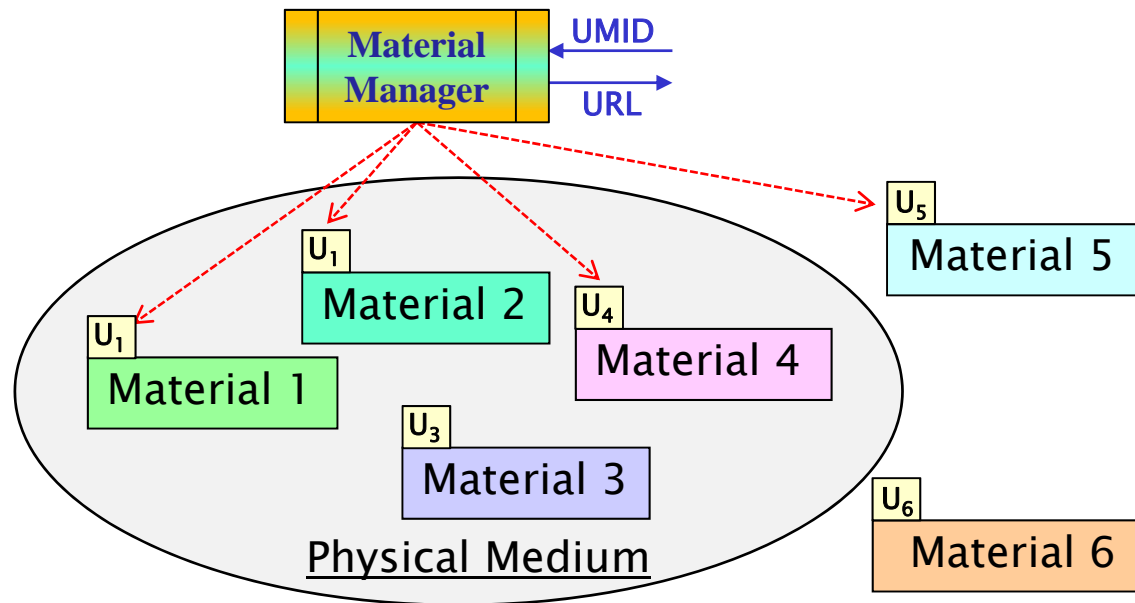
▶ Principle 2: UMID Identification

- What the UMID identifies is the essence representation at its payout



UMID Managed Domain

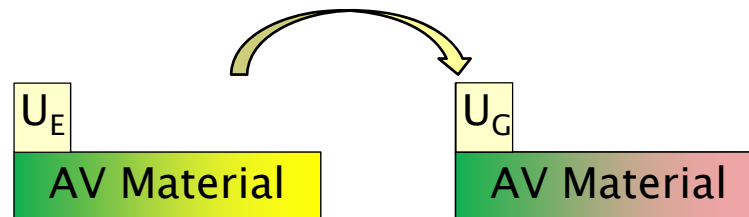
- ▶ Embodiment of “UMID Application Principles”



Material 1, 2, 4 and 5 constitute “UMID Managed Domain”

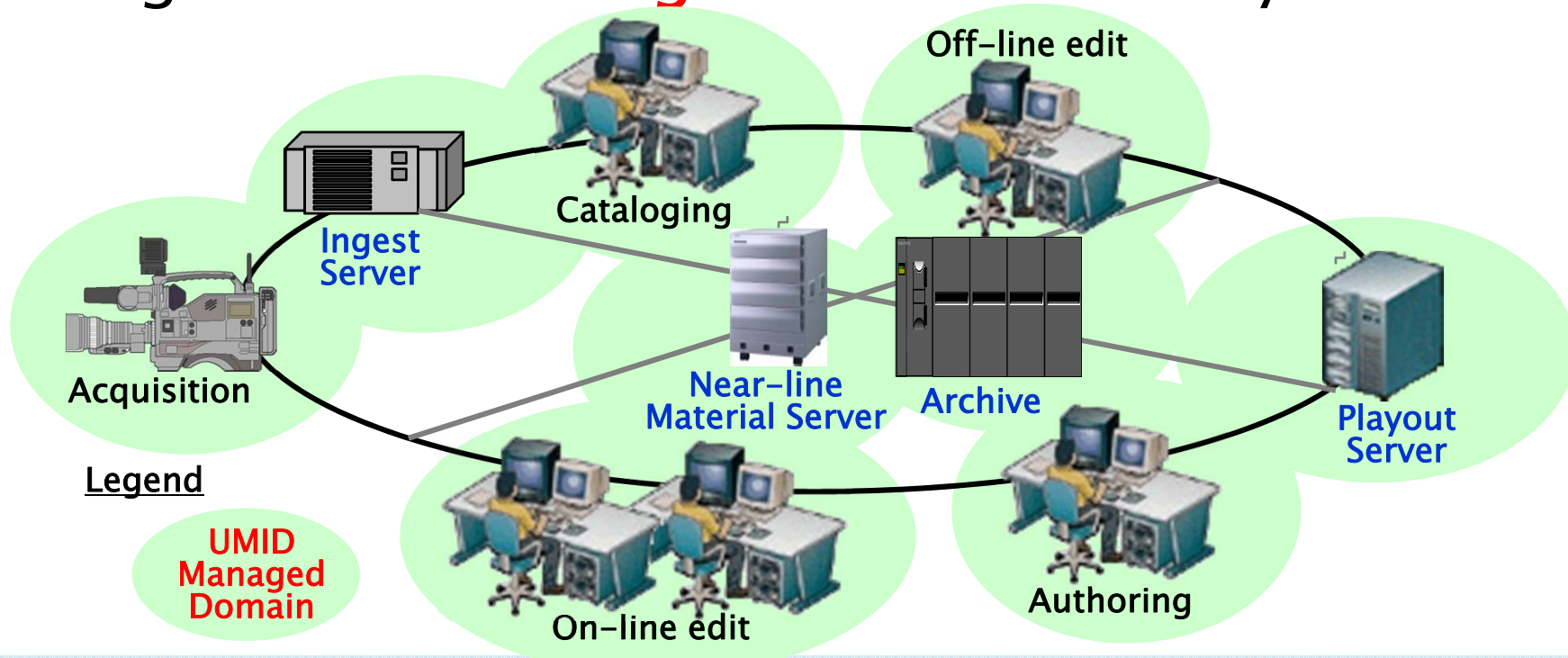
How Material Manager Behaves

- ▶ For AV material import into UMID Managed Domain
 - Attach a newly created UMID
 - Except for AV materials from other **UMID Managed Domains**
- ▶ For AV material modification
 - Replace existing UMID with a new UMID value



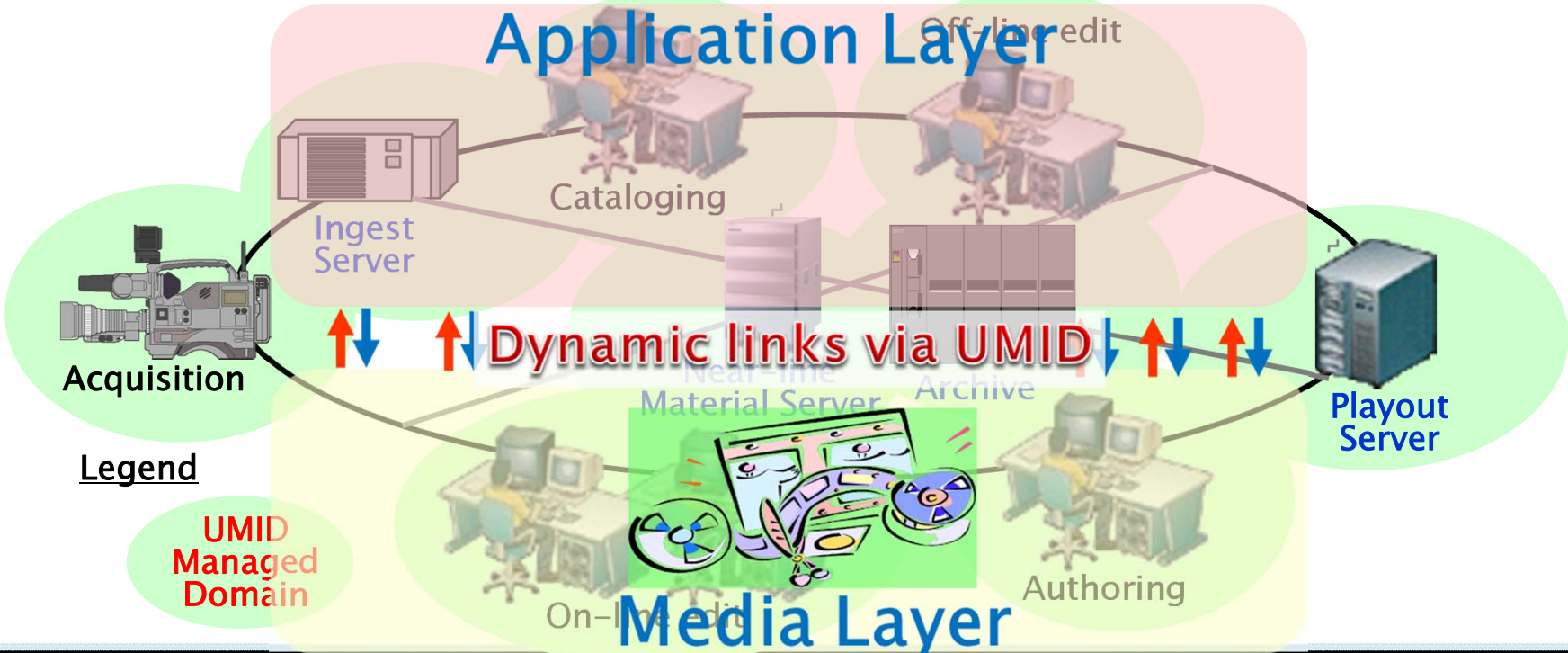
UMID as Common ID in System

- ▶ Merged **UMID Managed Domains** for system



UMID as Common ID in System

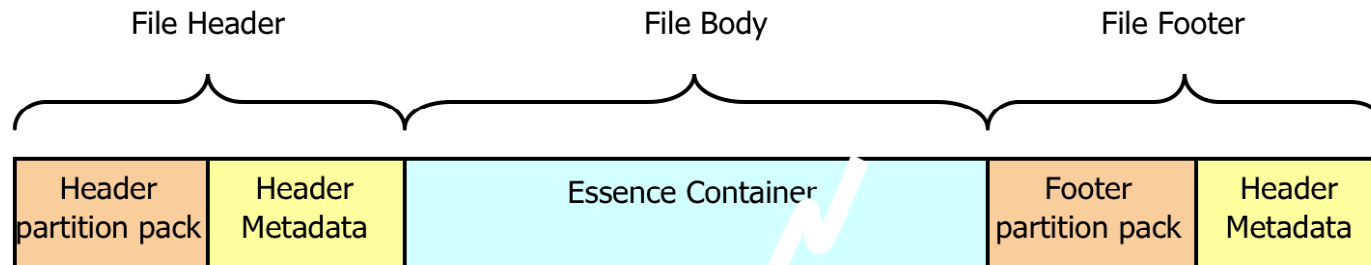
- ▶ Merged **UMID Managed Domains** for system



UMID Applications in MXF

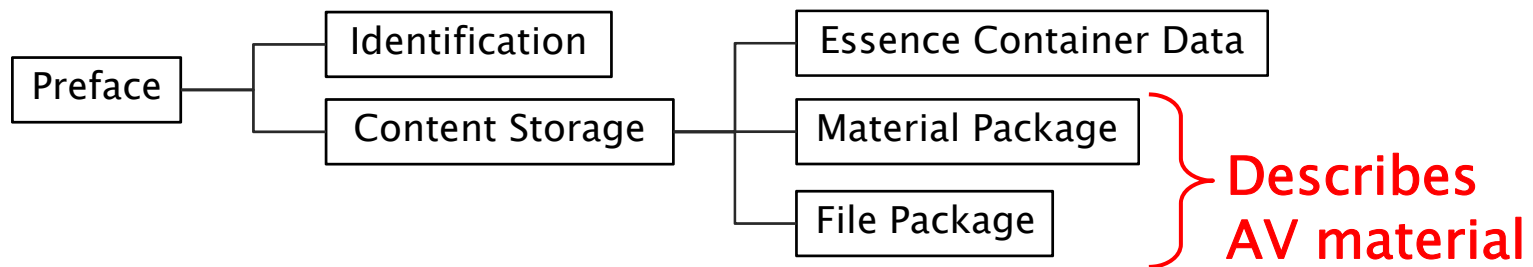
MXF Overview

- ▶ Material eXchange Format
 - Specifies in SMPTE ST 377, etc.
 - Physically: Sequence of KLV(Key–Length–Value) packets
 - Logically: File Header, File Body and File Footer



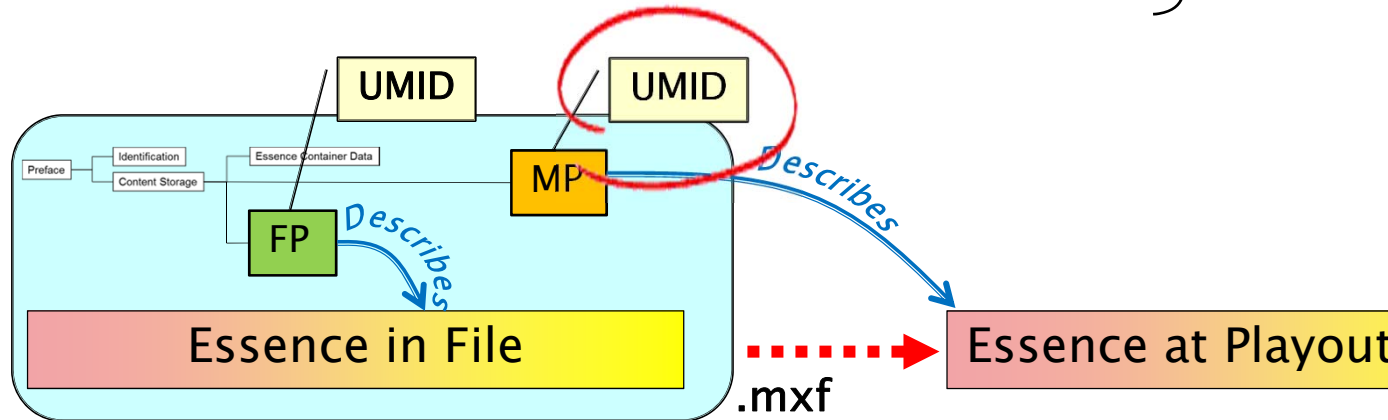
MXF Header Metadata

- ▶ Two kinds of metadata for Header Metadata
 - Structural Metadata
 - Descriptive Metadata
- ▶ Structural Metadata tree



MXF Characteristics and UMID

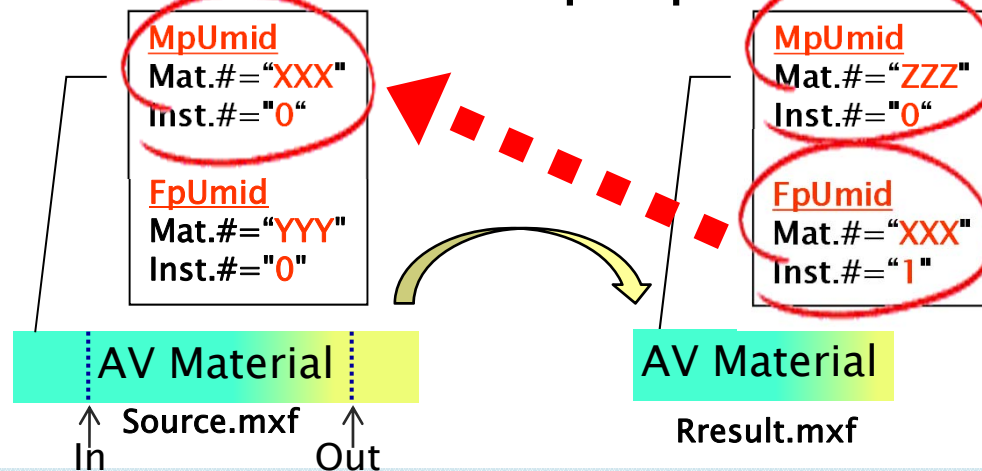
- ▶ Material Package (MP) and File Package (FP)
 - FP: Describes material within a file
 - MP: Describes material at its playout } **Not always the same**



UMID@MP must be a unique material ID !

UMID Applications in MXF

- ▶ Material Package UID (**MpUmid**)
 - Used to uniquely identify an AV material (MXF file)
- ▶ File Package UID (**FpUmid**)
 - May be used for other purposes



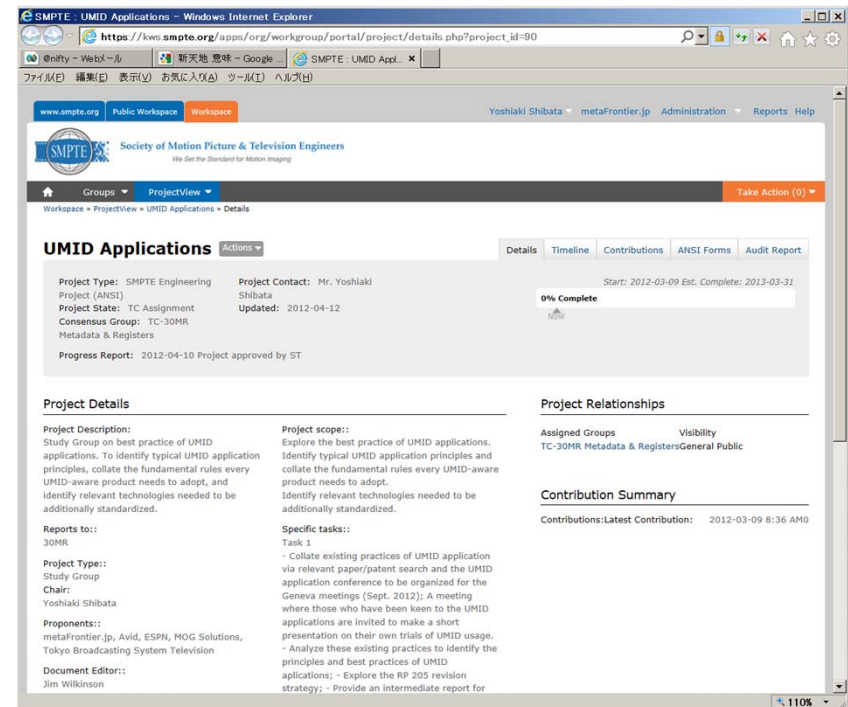
UMID Application Project in SMPTE

TC-30MR SG UMID Applications

- ▶ Proposed on March 8
- ▶ Approved on April 10
- ▶ Ready to go on May 15

- ▶ Chair
 - Yoshi Shibata
- ▶ Editor
 - Jim Wilkinson

SG: Study Group



The screenshot shows a web browser window displaying the SMPTE website. The page title is "SMPTE: UMID Applications" and the URL is "https://www.smpte.org/apps/org/workgroup/portals/project/details.php?project_id=90". The page content includes the SMPTE logo and the text "Society of Motion Picture & Television Engineers". The main content area is titled "UMID Applications" and shows project details for "Project (ANSI) Shibata". The project type is "SMPTE Engineering", the project contact is "Mr. Yoshiaki Shibata", and the project state is "TC Assignment". The project was updated on "2012-04-12". The progress report indicates that the project was approved on "2012-04-10". The project description, project scope, and specific tasks are also visible.

Scope of the Study Group (SG)

- ▶ Explore **the Best Practice** of UMID applications.
 - UMID based AV Material Management, etc.
- ▶ Identify typical **UMID Application Principles**
 - How to implement “UMID Managed Domain”
- ▶ Identify relevant **Technologies** needed to be **Additionally Standardized**.
 - UMID Resolution Protocol, UMID App. in MXF, etc.

SG Action Plan



Action

2012									2013		
Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.

Promotions



Bristol

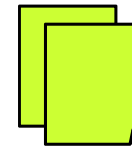


Geneva

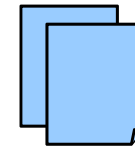
UMID App. Conference



Melbourne



???



Paper/patent survey

Intermediate report

- UMID app. principles
- Best practices

Final report

- Future standardization

PLEASE JOIN US!

Conclusions

- ▶ UMID can be much more useful !
 - Under appropriate common rules for its applications
- ▶ MXF adopts UMID as its mandatory component
 - To be the media IT infrastructure for the future file-based media production system
- ▶ SMPTE TC-30MR SG UMID Applications
 - Has just begun
 - We need your expertise!

Contact to: info@metafrontier.jp