



Cross Mapping with The IPTC Video Metadata Hub

**Exploring Potential Collaboration with MESA
Members**

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Smart Content Summit February 27, 201



What! *Another* Standard!!!

Oh NO!!

You've heard, ad nauseum, 'that the good thing about standards is that there are so many to choose from....' Sigh!!

OK. So you picked one. You're done!



Who am I?



- **President & CEO**, L. A. Burman Associates Inc.
- **Member**, IPTC
- **Previously, Manager**, North Plains Systems – DAM
- **Past President**, Content Management Professionals Organization
- **Founder & Former chair**, IDEAlliance PRISM Metadata WG
- **Co-author**, *Mastering XML*, *Mastering XML PRO*
- **Instructor: Ryerson University, University of Toronto**, IDEAlliance eMedia Certificate Program, Rights Management, Metadata and Taxonomy Tutorials

- **Consulting Focus**
 - Business Analysis for DAM/CMS initiatives: workflow analysis, requirements gathering, implementation planning and vendor selection
 - Metadata and taxonomy development - Information infrastructure
 - User experience development
 - Building consensus across business units and translating between users and technologists

- **Additional Background**
 - Publishing Evangelist, Apple Computer
 - Vice President, Kinecta Inc. (now Oracle)
 - Consulting Advisor, LingoMotors, Semantic Technologies
 - Director of Marketing, SoftQuad (Xmetal)



Overview

What is the IPTC?

Members

What does IPTC do?

Are there cross-benefits with
MESA?



What is the IPTC?

- International Press Telecommunications Council
- The global technical standards body of the news media
- [A registered non-profit organisation](#)

Digital News, Enabled.

The IPTC is the global standards body of the news media. We provide the technical foundation for the news ecosystem.

OUR STANDARDS FOR DEVELOPERS

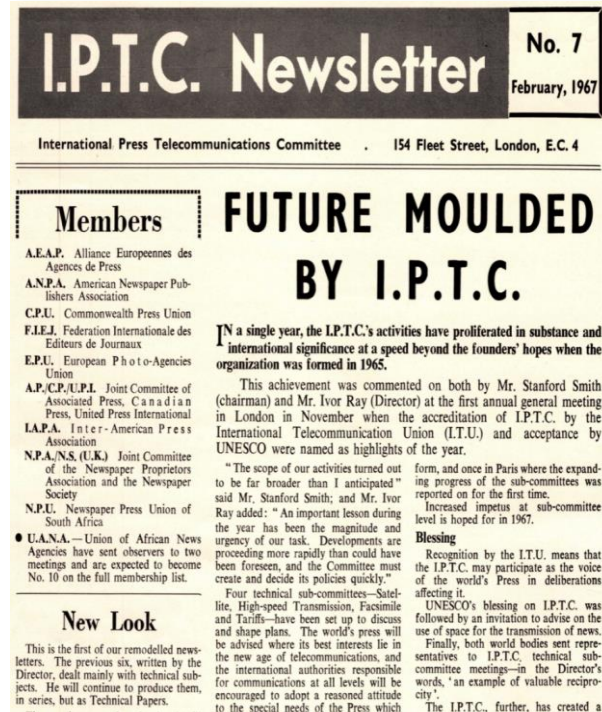
Photo Metadata Video Metadata Hub Media Topics

The image shows a screenshot of the IPTC website. It features a blue background with the title 'Digital News, Enabled.' in white. Below the title is a paragraph of text. There are two green buttons with white text: 'OUR STANDARDS' and 'FOR DEVELOPERS'. Below these are three circular icons: a photo, a video player, and a network diagram. Each icon is labeled with its respective name: 'Photo Metadata', 'Video Metadata Hub', and 'Media Topics'.



IPTC History –

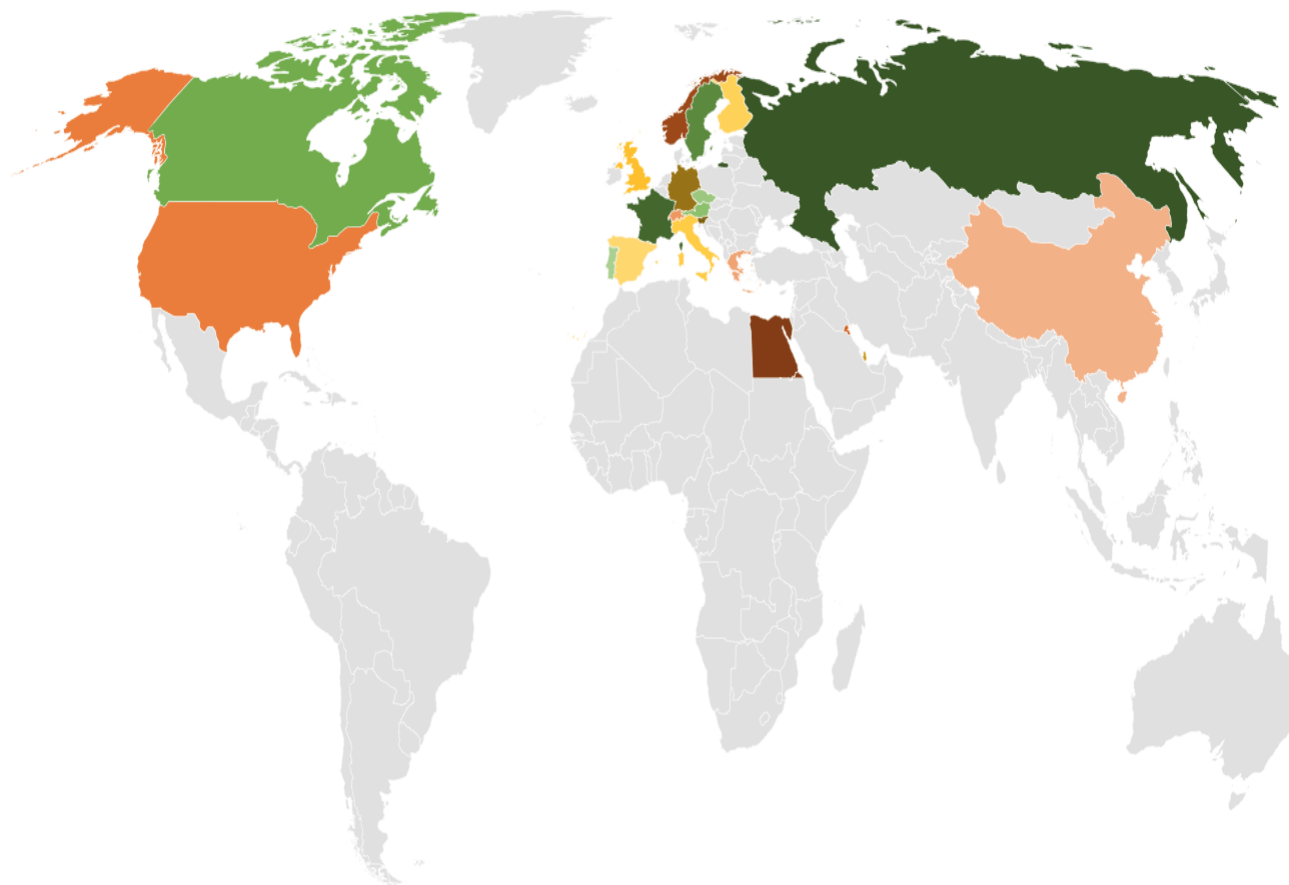
- Established in 1965, IPTC started as a group of press agencies looking to file news faster and with less effort.





A global membership

IPTC Members by Country





Voting members





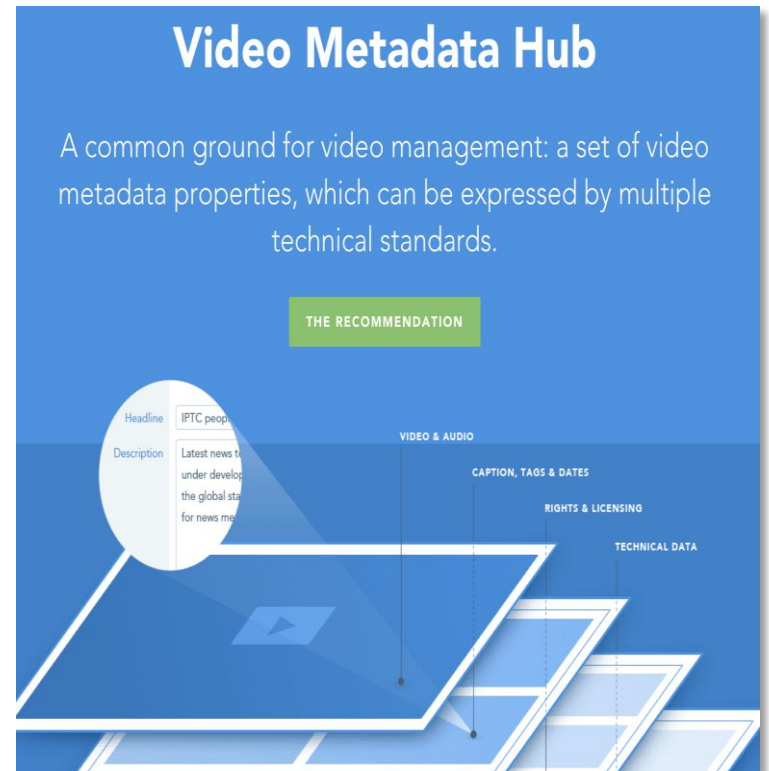
Associate members

- [Agencia EFE](#) Spain
- [Apex Content Solutions](#) USA
- [Aptoma](#) Norway
- [ATC - Athens Technology Center](#) Greece
- [BVPA](#) Germany
- [CNS - Catholic News Service](#) USA
- [Extensis](#) USA
- [CEPIC](#) Europe
- [DPP Digital Production Partnership](#) United Kingdom
- [EBU - European Broadcasting Union](#) Europe
- [Eidos Media](#) Italy
- [epa - European Pressphoto Agency](#) Europe
- [Fingerpost](#) UK
- [FotoWare](#) Norway
- [JIS - Jozef Stefan Institute](#) Slovenia
- [KNA - Kath. Nachrichten-Agentur](#) Germany
- [Korea Press Foundation](#) Korea
- [Lusa](#) Portugal
- [Mainstream Data](#) USA
- [Mecom](#) Germany
- [MENA](#) Egypt
- [Microstocksolutions LLC](#) USA
- [NEWSCYCLE Solutions](#) USA
- [NTB - Norsk Telegrambyrå](#) Norway
- [PR Newswire](#) UK
- [Profium](#) Finland
- [RelaxNews](#) France
- [SDA](#) Switzerland
- [STA - Slovenian Press Agency](#) Slovenia
- [Sourcefabric](#) Czech Republic
- [STT - Suomen Tietotoimisto](#) Finland
- [TASS](#) Russia
- [Univision Communication Inc.](#) USA
- [Visual China Group](#) China
- [XML Team Solutions](#) USA
- [Yuanben](#) China
- **NOTE: There are also Individual Members**



What does IPTC do?

- Create, maintain and promote open international technical standards such as IPTC Photo Metadata, NewsML-G2 and SportsML
- Work on newer standards for emerging technologies such as rNews, RightsML and Video Metadata Hub





What does IPTC do?

Software development

- We run development projects related to our work such as
 - The [IPTC EXTRA](#) open source rules-based text classifier
 - The PhotoMetadata Crawler to understand how publishers use IPTC Photo Metadata
 - Reference implementations of RightsML parsers
 - [SportsML parser](#) and SportsJS converter
- We work with open source developers

The screenshot shows the website for IPTC EXTRA. The header is blue with the text 'IPTC EXTRA - The EXTraction Rules Apparatus' and a subtitle 'An Open Source Platform for Rules-Based Classification of News Content'. Below the header is a navigation bar with a 'View On GitHub' button, 'DOWNLOADS' links for 'ZIP' and 'TAR', and a search icon. The main content area has a left sidebar with a navigation menu: Home, Overview (selected), DNI, Details, Innovation, Related, Budget, KPI, Commercial, Roadmap, and Plan. The main content area is titled 'EXTRA Overview' and contains the following text: 'For news publishers who are dissatisfied with either hand-tagging documents or statistical approaches to automated tagging, EXTRA is an open source, rules-based, classification system for annotating news documents with high-quality subject tags, regardless of language. Such tags allow publishers to deliver a variety of valuable services including content recommendations, improved advertising targeting and subject-specific content streams, such as alerts and topic pages. Unlike hand-tagging, EXTRA's rules-based system will allow publishers to tag their news content with consistent tags, at speed and at scale. Unlike statistical approaches, which often require numerous annotated examples, EXTRA's rules-based system allows publishers to rapidly adapt to breaking news and low-frequency topics. EXTRA's use of finely tuned rules will avoid problems with ambiguity ("Police Can't Stop Gambling") and will precisely distinguish between similar topics, which are more challenging for statistical approaches. To facilitate adoption and consistency, the IPTC will also create EXTRA extraction rules for tagging documents in two different languages with its industry standard [Media Topics](#) vocabulary.'



What does IPTC do?

Partnerships and Advocacy

- Collaborate with other standards associations
 - W3C
 - Joint work on Open Digital Rights Language (ODRL)
 - RightsML is a “profile” of ODRL
 - OASIS, JPEG, IEEE
- Help companies integrate the standards
 - Adobe, Google
 - Camera makers, newsroom software vendors, sports stats systems, etc...

The screenshot shows a blog post titled "IPTC RightsML" on the IPTC website. The page features a header with the W3C logo and the text "COMMUNITY". The main content area includes a breadcrumb trail: "Home / ODRL Community Group / ODRL Profiles (V2.2) / IPTC RightsML". The post is by Michael W Steidl, dated August 6, 2018. The text of the post states: "IPTC announced RightsML 2.0 in July 2018, a Rights Expression Language based on ODRL 2.2 and defining a profile for it. These definitions are provided by IPTC for the RightsML 2.0 profile:". Below this, there is a list of links: "Identifier of the profile: https://iptc.org/std/RightsML/odrl-profile/", "JSON-LD context: http://www.iptc.org/std/RightsML/odrl-profile/rightsml.jsonld", "Full specification document: http://www.iptc.org/std/RightsML/2.0/RightsML_2.0-specification.html", and "Ontology: http://www.iptc.org/std/RightsML/2.0/RightsML_2.0-ontology.ttl". A sidebar on the right contains a "CURRENT GROUPS" section with a person icon, a "Search blogs" input field, and an "Archives" section listing dates from August 2018 to October 2014. At the bottom of the main content area, there is a link titled "How to use the RightsML 2.0 profile".



What Does the IPTC Do?

- Best Known for IPTC Photo Metadata
- Originally based on (IIM), IPTC Information Interchange Model
- Still the ‘standard’ for many products
- Now, XMP embedded metadata framework
- Since 1995, also GIF, JPEG, PNG etc.
- Also, today, IPTC photo metadata used by:
 - All major camera manufacturers: Canon, Nikon, Sony etc
 - Photo software vendors: Adobe, etc.
 - Almost all DAM systems:
 - **AndDrum roll, please**



Jason Aldean | New York Music
Photographer Todd Owyong

Jason Aldean performing at Gillette Stadium in
Foxborough, MA on August 29, 2015.

Images may be subject to copyright. [Learn More](#)

RELATED IMAGES



Jason Aldean – Performance |

Jason Aldean – Performance |



Last September Google Announced

- Google will no longer strip off rights-related image metadata in Google images
- **Google search results** will now show Creator, Credit and Copyright
- <https://www.blog.google/products/search/image-rights-metadata-google-images/>
- Resulting from advocacy from IPTC and CEPIC

What Does IPTC Do?



Creates and maintains the IPTC NewsCodes, a huge set of multi-lingual controlled vocabularies useful for subjects in addition to news. Opportunity for collaboration with MESA members:



News Codes: concept taxonomies for news

- Media Topics
 - 1,200 terms for categorising news content
 - Terms and definitions in 6 languages:
 - (British) English, French, German, Spanish, Arabic, Swedish. Soon Portuguese and Chinese
- All freely available from cv.iptc.org in these formats:

The image shows a screenshot of the IPTC News Codes concept taxonomy for 'Architecture'. It displays two concept entries with their respective details in multiple languages.

Concept ID (QCode)	ID (URI)	Created
medtop:20000032	http://cv.iptc.org/	2009-10-22T02:00:00:00
medtop:20000031	http://cv.iptc.org/	2009-10-22T02:00:00:00

Key fields shown for each concept include:

- Type: cpnat:abstract
- Name (es): **Arquitectura**
- Name (fr): **Architecture**
- Name (en-GB): **architecture**
- Name (ar): **هندسة معمارية**
- Name (de): **Architektur**
- Definition (fr): Conception des bâtiments, des monuments et des espaces
- Definition (en-GB): The design of buildings, monuments and the spaces
- Definition (es): El diseño de edificios, monumentos y de los espacios que
- Definition (de): Entwurf und Gestaltung von Gebäuden, Denkmälern und
- Broader concept (skos:broader): [medtop:20000031](#)
- Related concept (skos:exactMatch): [medtop:20000031](#)
- Member of scheme: <http://cv.iptc.org/newscodes/mediatopic/>



What does IPTC do?

- How does the technical work get done?
- Meetings – in great places!
- Next IPTC meeting in Lisbon in April
- IPTC + CEPIC Photo Metadata Conference: Paris, June 2019



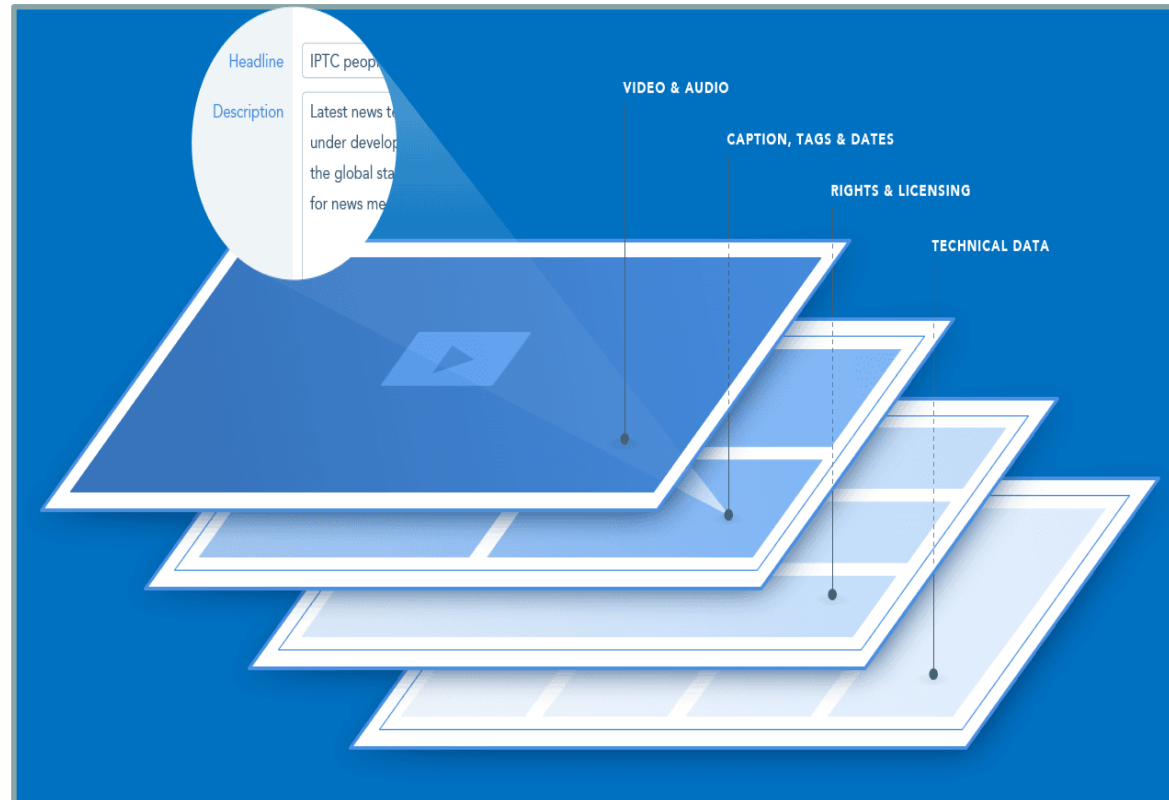
Diego Ceccarelli,
Bloomberg at IPTC
Autumn Meeting 2018,
Toronto Canada



What is the Video Metadata Hub

NOT! Yet Another Standard!!!

A single set of video metadata properties mapped across **QuickTime**, **XMP**, **MPEG4**, **MPEG7**, **MXF**, **EBUCore**, **PBCore** and **NewsML-G2** -- plus manufacturer-specific metadata formats such as **Sony XDCAM** and **Panasonic/SMPTE P2**.





IPTC Video Metadata Hub

A common ground for video management

Core properties

The Video Metadata Hub's set of metadata properties includes:

- ~ 20 properties describing what can be seen and heard in the video
- ~ 15 properties providing rights-related information
- ~ 15 properties for administrative purposes
- ~ 25 properties covering technical characteristics
- ~ 15 structures of properties which are used for the properties listed above

Broadcasters and video producers: encourage your software vendors and systems manufacturers to implement IPTC Video Metadata Hub in their systems for seamless interchange

Technical implementation

All Video Metadata Hub properties can be expressed by :

- **EBU Core** – for metadata in stand-alone documents associated with the video binary
- **XMP** – for metadata embedded into the binary video file
- **JSON** – for a stand-alone and light-weight exchange of metadata, e.g. by APIs

Recommended mappings

- **Apple Quicktime**
- **MPEG 7 (ISO 15938-5)**
- **NewsML-G2 (IPTC)**
- **EBUCore**
- **PBCore**
- **Schema.org**
- **Sony XDCAM & planning ***
- **SMPTE P2 as used by Panasonic ***
- **Canon VideoClip XML ***

* new in VMH Recommendation 1.2



Video Metadata Hub: What problem are we solving?

- Metadata is stored in different ways in existing video formats.
- For video editors it is very hard to move video metadata between systems and the semantics are not always clear.
- For example, location information can be described in all of the ways described in the table
- Includes two location fields, **Location Shot** and **Location Shown**, with very clearly defined semantics, so metadata can be moved between systems from different vendors.

QuickTime	location with role=0
MPEG7	creation/location
Sony XDCAM	PlanningMetadata/Pr operties/Meta[@name ="Location"]
schema.org	locationCreated
SMPTE P2	ClipMetadata/Shoot/ Location
	coverage/spatial/lo cation + typeLink="ivqu:loca tionShot"
EBUcore	coverage/spatial/lo cation + typeLink="ivqu:loca tionShown" OR subject +



Mapping Table: Benefits

Administrative	Circa Date Created	Range of dates associated with the creation and production of a video.	Primarily for archival use if exact dates are not available.	New 1.0	Text (0..1)	date/alternative/@period="...value..." + @typeDefinition="ivqu:circaDateCreated"	iptc4xmpExt:CircaDateCreated
Administrative	Date Created	Date and optionally time when the video was created	If exact dates are not available use Circa Date Created.	New 1.0	Date (0..1)	date/created OR date + typeLink="ivqu:dateCreated"/dc:date	photoshop:DateCreated Date
Administrative	Date Modified	Date and optionally time when the video was modified last time		New 1.0	Date (0..1)	date/modified OR date + typeLink="ivqu:dateModified"/dc:date	xmp:ModifyDate Date
Administrative	Date Released	Date and optionally time of the public release of the video		New 1.0	Date (0..1)	date/released OR date + typeLink="ivqu:dateReleased"/dc:date	xmpDM:releaseDate Date
Administrative	Episode	Episode in a specific season of a TV or video series this video is a member of.		New 1.0	Episode/Season structure (0..1)	title + typeLink="ivqu:episode"/dc:title + type OR dc:alternative + typeLink="ivqu:episode"	iptc4xmpExt:Episode Episode str
Administrative	External Metadata URL	Link(s) to an external web resource for retrieval of further metadata about this video		New 1.0	URL (0..unbounded)	use relations and relatedInformationLinks for contacts/persons and organisations	iptc4xmpExt:ExternalMetadataLink Bag of URL
Administrative	Feed Identifier	Identifier of the feed/source this video was delivered by		New 1.0	Text (0..1)	identifier + typeLink="ivqu:feedId"/dc:identifier	iptc4xmpExt:FeedIdentifier Text
Administrative	Publication Event	Date and optionally the time of publishing this video with name and identifier for the event of this publication.		New 1.0	Publication Event structure (0..unbounded)	publicationEvent/publicationDate	iptc4xmpExt:PublicationEvent Bag Publication Event structure
Administrative	Rating	How the video is rated by a public source or an authority		New 1.0	Rating structure (0..unbounded)	rating	iptc4xmpExt:Rating Bag Rating structure
Administrative	Release Ready	Indicator if this		New 1.0	Boolean (0..1)	format/technicalAttributeBoolean	iptc4xmpExt:ReleaseReady Boolean
Administrative	Season			New 1.0	Text (0..1)	season/dc:title + type OR dc:alternative +	iptc4xmpExt:Season Season structure



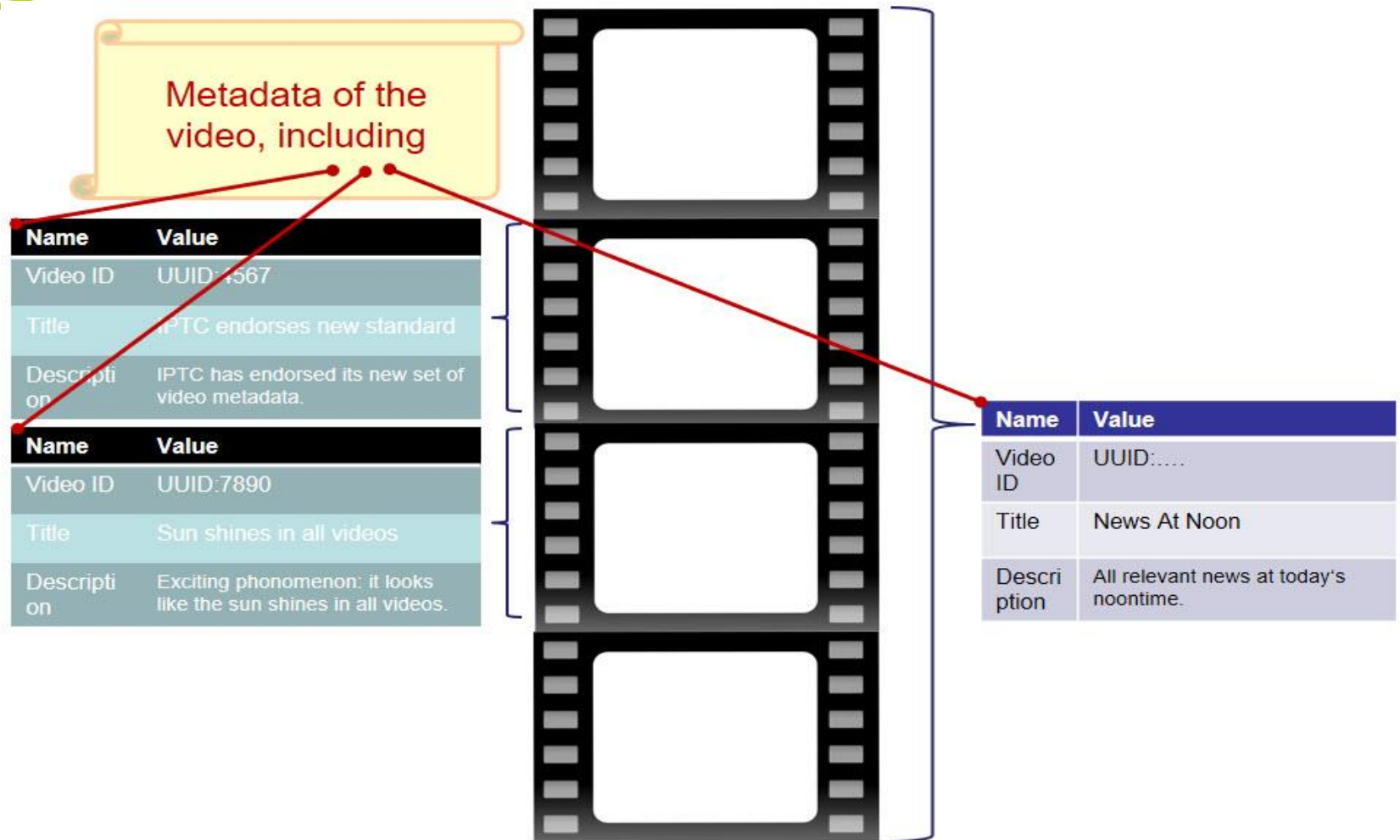
Rights & Licensing

The IPTC Video Metadata provides fields for asserting rights and licensing a use of a video:

- Many variants of Creator (director, ... of photography)
- Many variants of Contributor
- Copyright Owner + Copyright Notice + Copyright Year
- Supplier of this copy of the video
- Licensor of this video
- A structure for expressing what use of the video has been licensed



Video specific: parts = clips



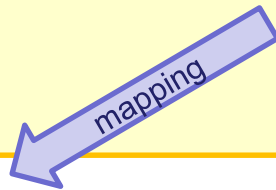


Video Metadata Hub Key Features

Area of IPTC's control

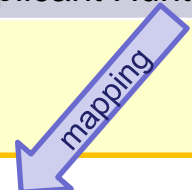
(some) IPTC Video Metadata Hub properties:

Name	Value
Video ID	10.5240/EA73-79D7-1B2B-B378-3A73-M
Title	Blade Runner
Description	Deckard (Harrison Ford) is forced by the police Boss (M. Emmet Walsh) to continue his old job as Replicant Hunter.



XMP specified for embedded metadata

EBUcore specified for non-embedded metadata



Property	Value

com.apple.quicktime.title	See above
com.apple.quicktime.description	See above

Genuine md processor

Property	Value
dc:identifier	See above
dc:title	See above
dc:description	See above

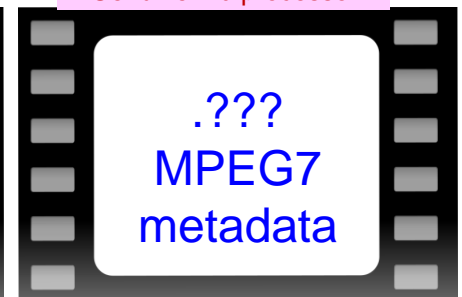
Genuine md processor

Property (ebucore: ...)	Value
identifier + @typeLink	See above
title + @typeLink	See above
description + @typeLink	See above

Genuine md processor

Property	Value
Object Identifiers/GUID	See above
Titles/Main title	See above
Textual Description/Description	See above

Genuine md processor



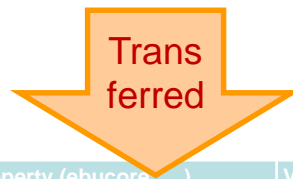
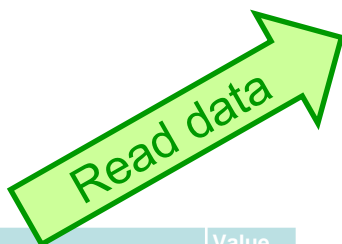
EBUcore metadata



The Semantic Hub

(some) IPTC Video Metadata Hub properties:

Name	Value
Director	Ridley Scott
Title	Blade Runner
Description	Deckard (Harrison Ford) is forced by the police Boss (M. Emmet Walsh) to continue his old job as Replicant Hunter.



Property	Value
com.apple.quicktime.director	Ridley Sch
com.apple.quicktime.title	Blade Run
com.apple.quicktime.description	Deckhard

Genuine md processor

Property	Value
dc:creator + role=„director“	See above
dc:title	See above
dc:description	See above

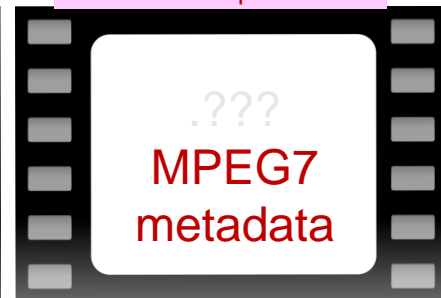
Genuine md processor

Property (ebucore: ...)	Value
creator + @typeLink	See above
title + @typeLink	See above
description + @typeLink	See above

Genuine md processor

Property	Value
Prod Key People/Director	See above
Titles/Main title	See above
Textual Description/Description	See above

Genuine md processor



EBUcore metadata



Use Case 1: Footage



generic & maker-specific metadata

generic & maker-specific metadata

generic & maker-specific metadata

generic & maker-specific metadata

Transform differently named/identified metadata fields into a single set of metadata fields
→ the Video Metadata Hub

People at your company have to know only a single set.



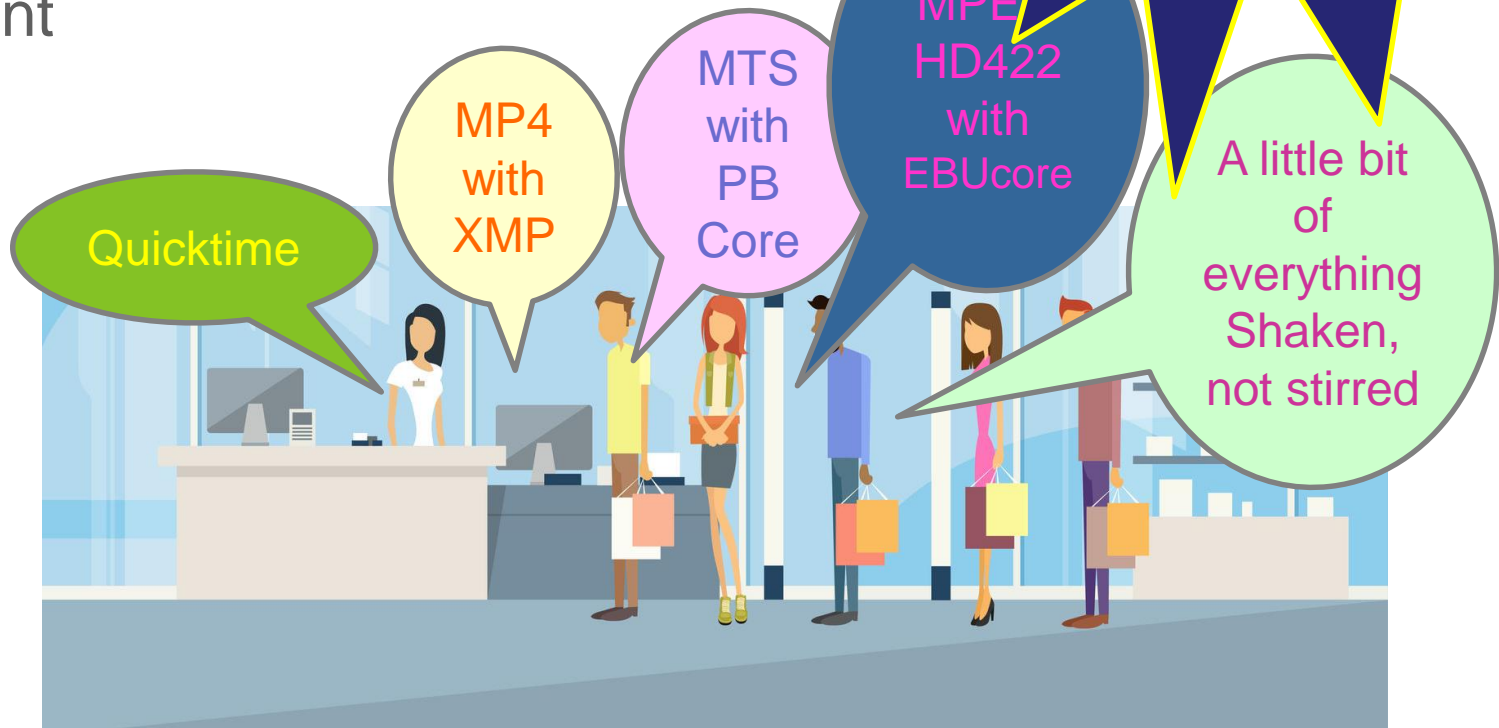
Use Case: Export

Video Metadata (Hub)



Field mapping solves that!!

Your dear customers have different needs ...



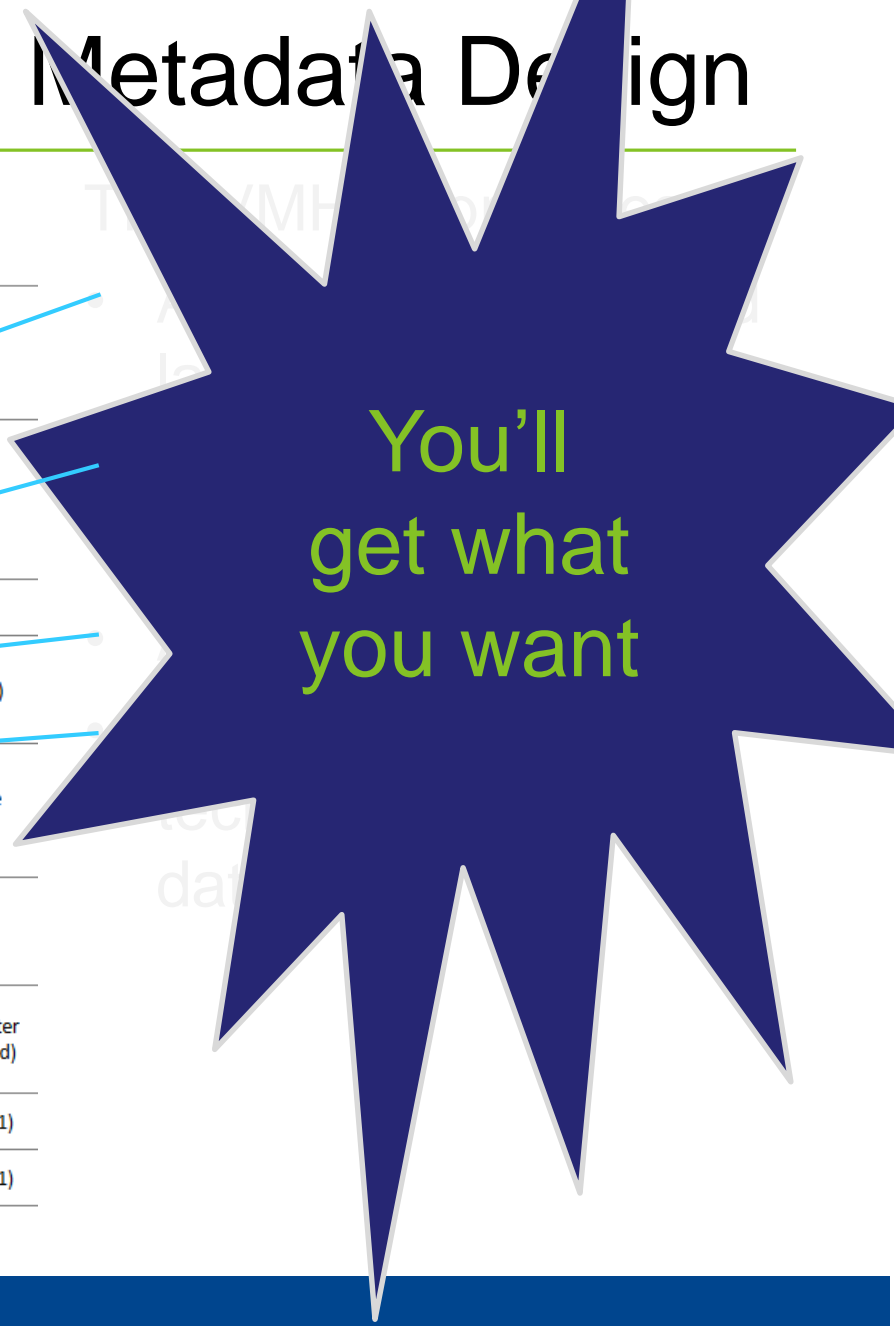


Use Case: DAM Metadata Design

You can pick metadata fields

Video Identifier	Globally unambiguous identifier of the video regardless of renditions, formats, encodings etc. This identifier should be shared across all renditions.	IPTC advises to follow the guidelines by ISAN (http://www.isan.org)	Text (0..1)
Video Rendition	Unambiguous identifier of the video specific to a rendition.	Definitions of specific renditions are not provided by IPTC. Definitions of renditions may be based on format or encoding etc and can be set by producers of videos and/or system vendors.	Text (0..1)
Video Version	Version of the video identified by the Video Identifier		Text (0..1)
Workflow Tag	Indicator for the role of this video in a production workflow.	Could be used to indicate footage, edited video, program masters, etc. Values are typically codes defined by a production company.	Concept structure (0..1)
Registry Entry	Identifier of the video issued by an identified registry.	What is considered a registry can be interpreted in a wide sense as the controlled management of assets with asset-specific identifiers	Registry Entry structure (0..unbounded)
CV Term About the Content	What the video is about expressed by term(s) selected from taxonomies or controlled vocabularies		Concept structure (0..unbounded)
Data Displayed on Screen	Text or other data shown in some region of the image.		Text with region delimiter structure (0..unbounded)
Description	Textual description of the content of the video		Text + language tag (0..1)
Dopesheet	Shotlist with descriptions		Text + language tag (0..1)

Some VMHUB fields





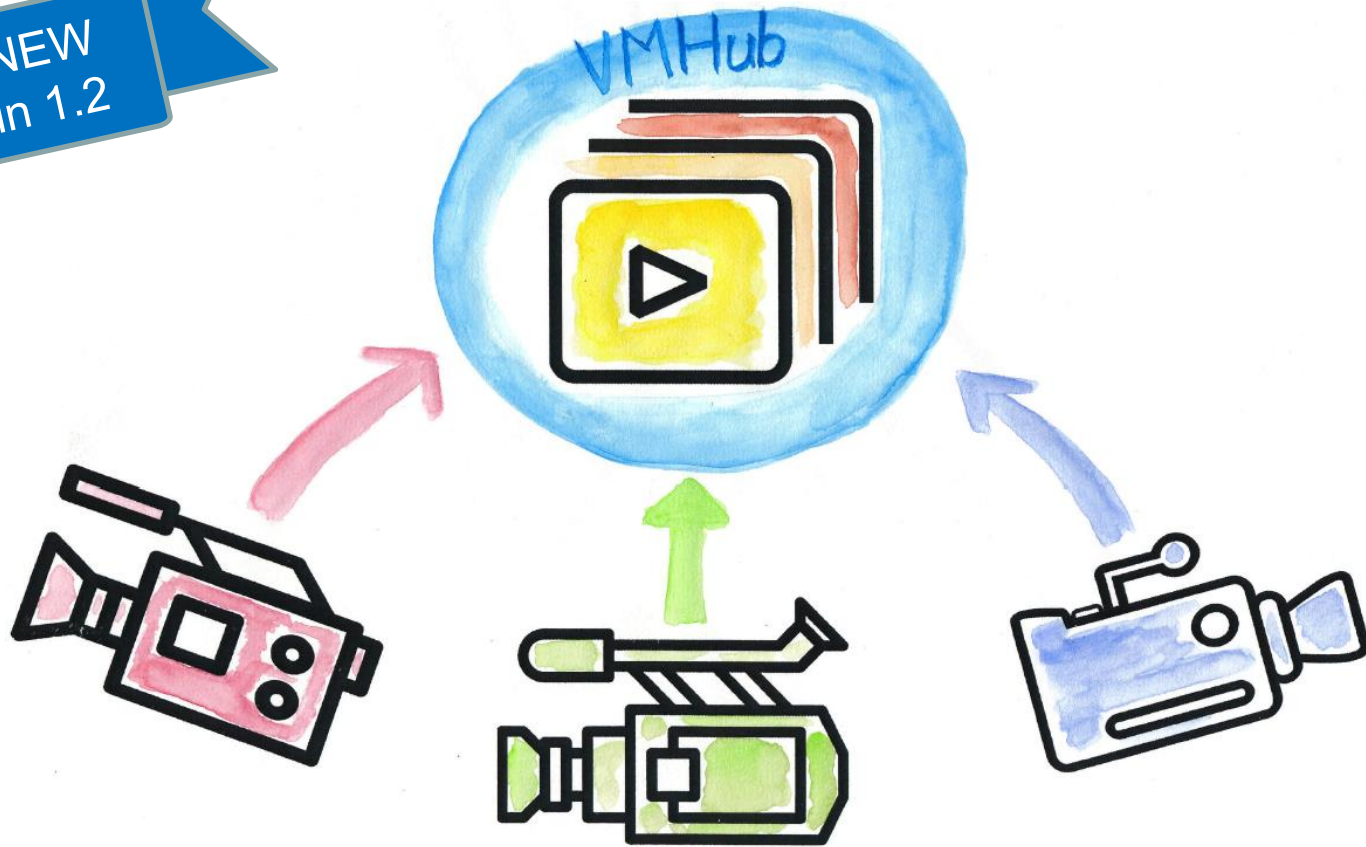
Just for fun...

Let's have a look
at a full video production workflow



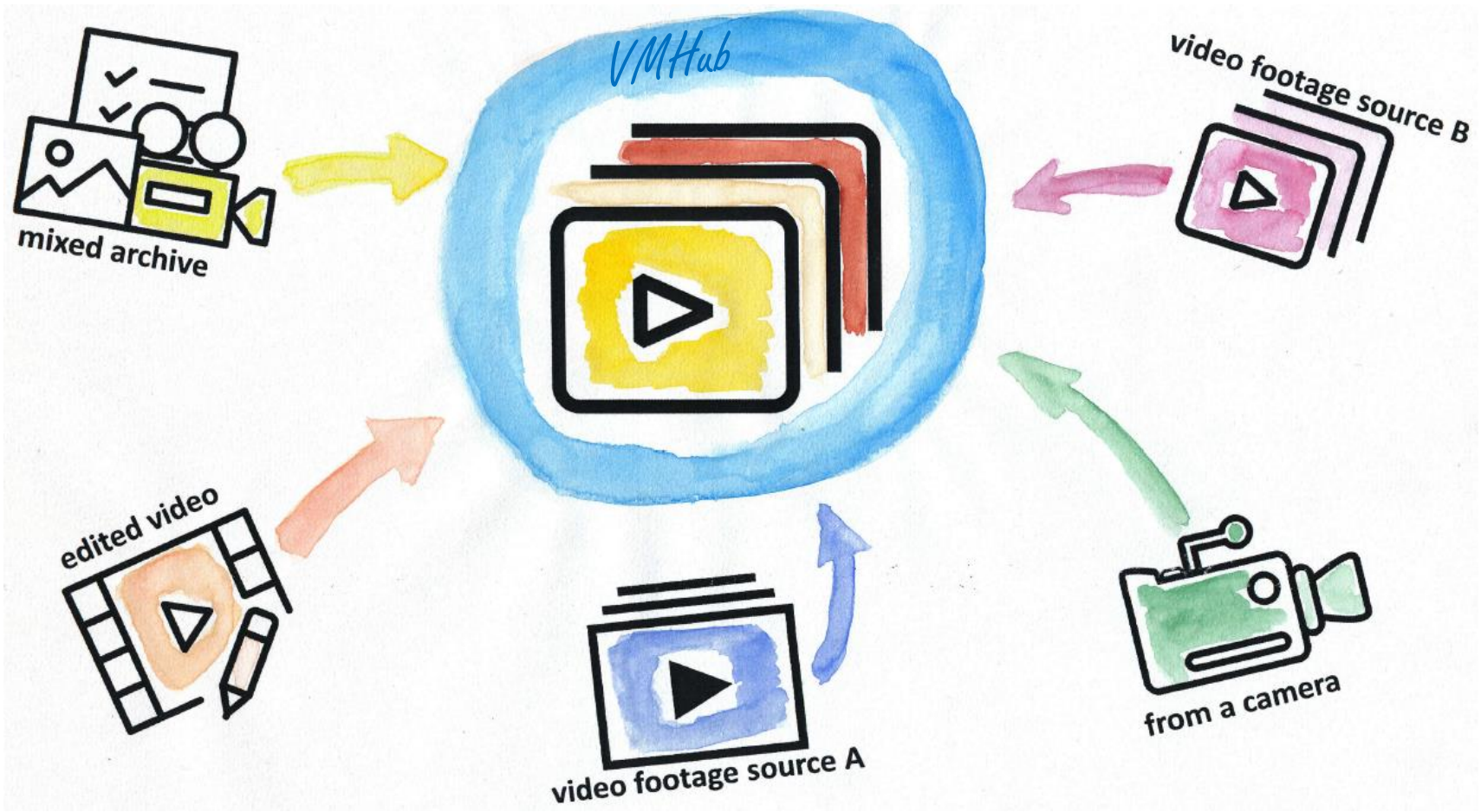
Videos from many cameras can be ingested

NEW
in 1.2

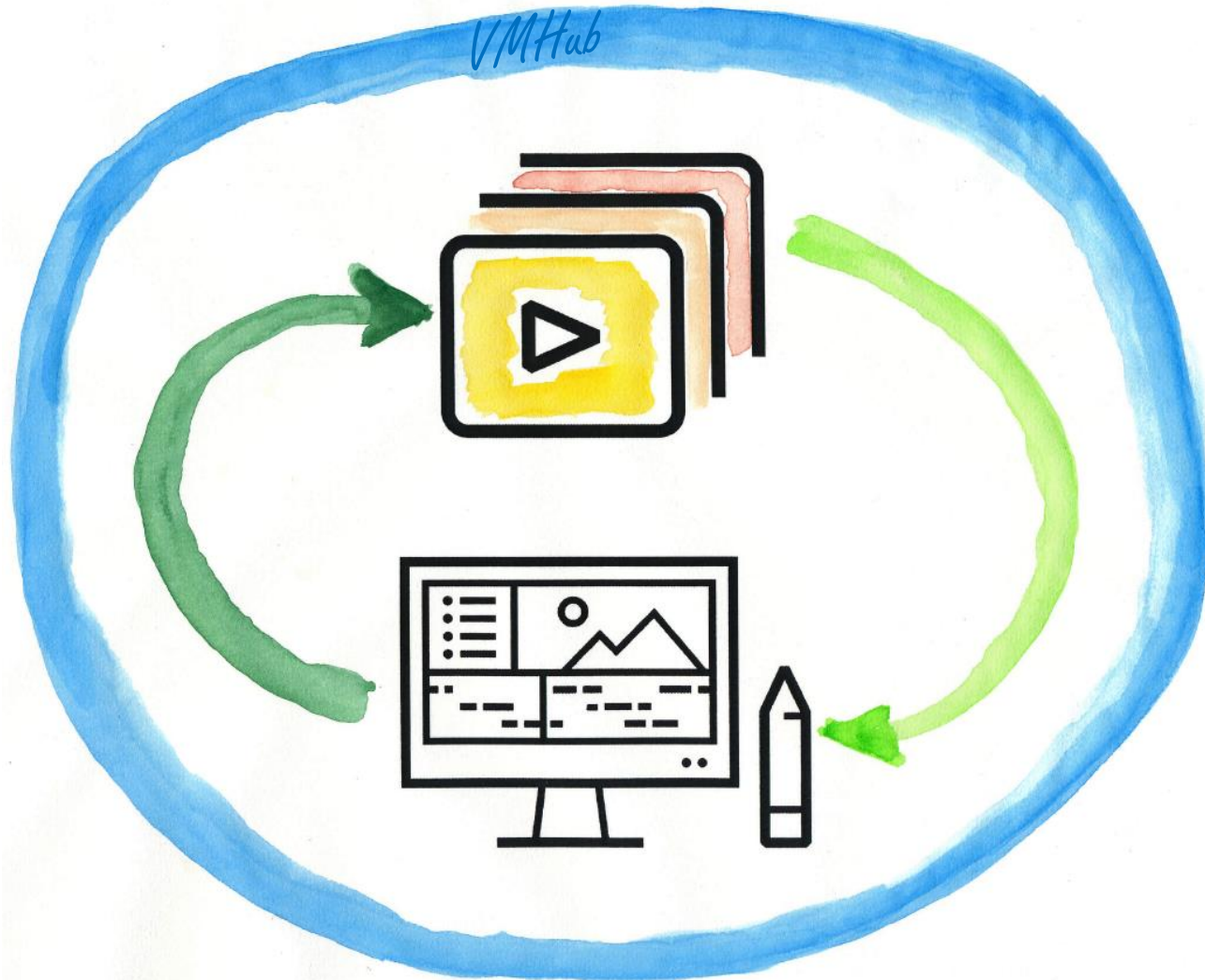




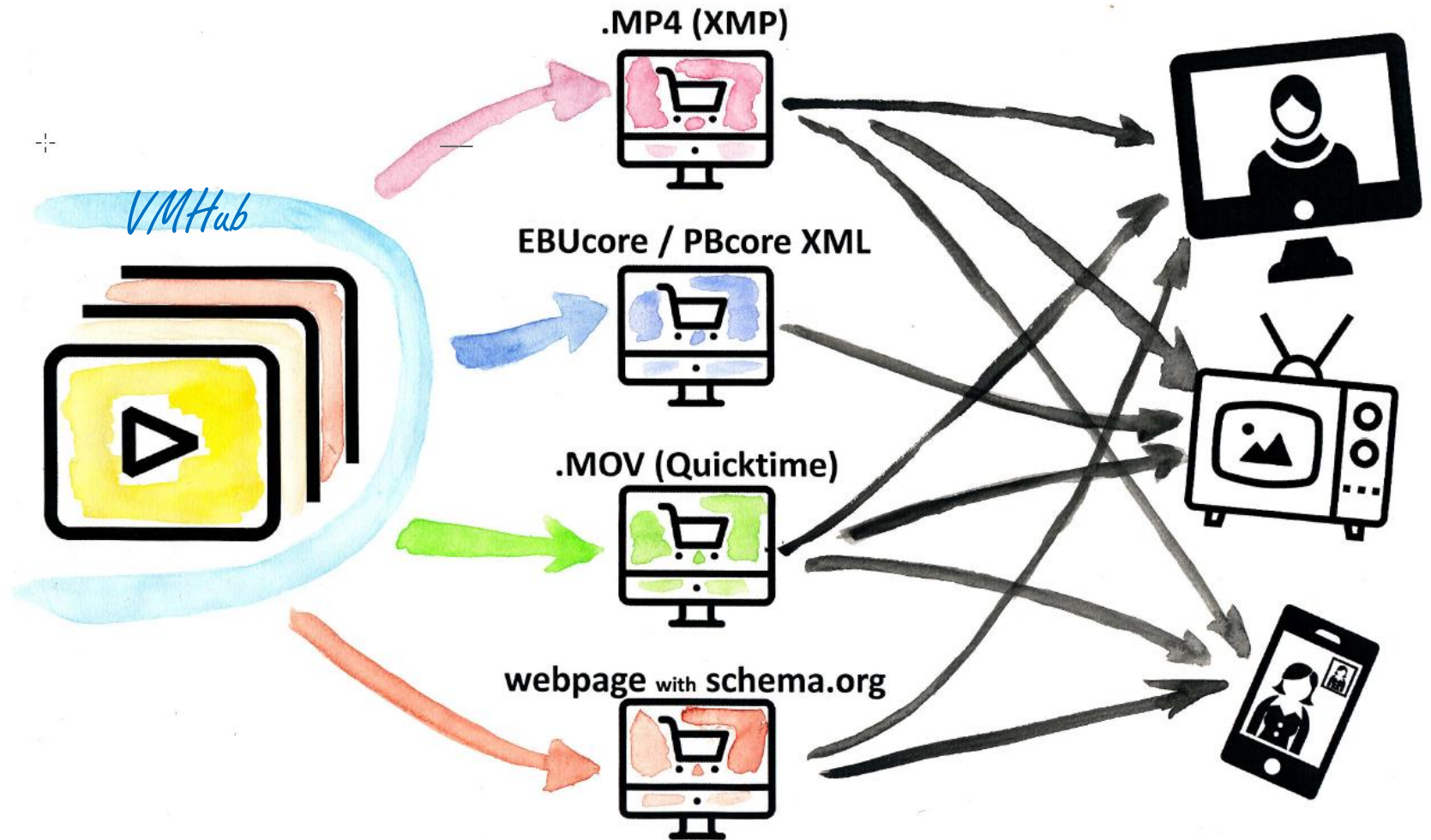
Videos from many sources can be ingested



System-internal editing is supported



Many delivery formats are supported



The Goal



Video Metadata – still flexible but more consistent



Our standards

- **Photo (and Video) Metadata**
 - Used since 1995 to store descriptive, administrative and rights metadata embedded in image files
 - Originally based on IPTC IIM standard, now based on XMP in-file metadata platform
- **Video Metadata Hub**
 - Canonical mapping between video metadata standards: IPTC Photo/Video, EBUCore,
- **News Codes, Media Topics**
 - Hierarchical taxonomies of subjects for describing news content
- **NewsML-G2 and NewsML-1**
 - Exchange of packages of text, images, video, audio, events and/or sports data
 - NewsML-G2 is newer, extensible version but NewsML-1 is still maintained
- **RightsML**
 - Machine-readable rights format
- **NinJS**
 - News markup in JavaScript
- **rNews**
 - Linked Data news markup
- **SportsML-G2**
 - Syndication of sports results and sports data
- **EventsML-G2**
- **Historical standards**
 - NewsML-1
 - Subject Codes
 - IPTC7901
 - IIM format



Wrap UP

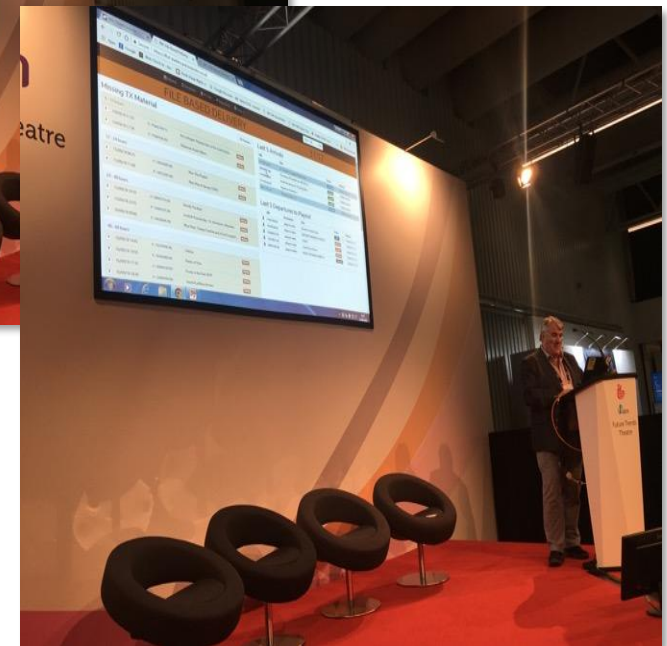
- The Video Data Hub
 - Provides a single set of metadata for videos in many different formats
 - Maps to many of the file and formats your customers and partners
 - However, there are considerable gaps in metadata for broadcast video including language-specific fields such as those being specified by the LMT working group.
 - We look forward to working with you to add the additional fields and values that you need.



Thank You!!!!

Demo of DPP file delivery system

- BBC's work for Digital Production Partnership standards
- Showed a live demo of the queue of programmes, how playout staff can view problems and rectify them





DPP Metadata Exchange for News – using NewsML-G2

