IPTC Photo Metadata Conference 2024

Tuesday May 7 2024

Welcome!

- This is the 17th IPTC Photo Metadata Conference – the event has been running (almost) every year since 2007
- We have well over 200 registrants
  - from news agencies, publishers, broadcasters, software companies, museums and galleries, universities, consultants… and of course many photographers and image managers
- This conference will be recorded and made available online after the event
- Subtitles will be switched on

IPTC: Providing the technical foundation for the media ecosystem

IPTC's Voting Members
(we also have over 50 Associate, Startup and Individual members)

- The IPTC is an open, non-partisan, non-political organisation dedicated to promoting interoperable standards and best practices in the news and media industries

- We are a registered non-profit organisation funded by member subscriptions

- Our work spans many areas:
  - Standards creation in the news/media industry
  - Running events for members and the public
  - Developing software to work with our standards
  - Acting as a forum for knowledge sharing between members, building industry best practice

Today's Schedule

Time	Title	Speakers
15.00 – 15.30 UTC	Introduction and welcome: **20 years of IPTC Photo Metadata** **What's new in IPTC Photo Metadata?**	**Brendan Quinn**, Managing Director, IPTC **David Riecks**, co-lead, IPTC Photo Metadata Working Group **Michael Steidl**, co-lead, IPTC Photo Metadata Working Group
15.30 – 16.30 UTC	Panel 1: **AI and Authenticity**	**Leonard Rosenthol**, Senior Principal Scientist, PDF Architect, and CAI Architect for Adobe – Lead of the C2PA Technical Working Group and lead author of the C2PA specification **Dennis Walker**, Camera Bits, creators of Photo Mechanic **Dr. Neal Krawetz**, Computer security specialist, forensic researcher, and founder of FotoForensics **Bofu Chen**, Founder & CTO of Numbers Protocol
16.30 – 17.00 UTC	Adobe's Custom Metadata Panel	**James Lockman**, Group Manager, Digital Media Services at Adobe
17.00 – 18.00 UTC	Panel 2: **AI-Powered Asset Management: Where does metadata fit in?**	**Nancy Wolff**, Partner, Cowan, DeBaets, Abrahams & Sheppard, LLP **Serguei Fomine**, Founder and CEO, IQPlug **Jeff Nova**, Chief Executive Officer, Colorhythm **Mark Milstein**, co-founder and Director of Business Development, vAIsual

IPTC's photo metadata specific work started in 2004

State of IPTC and photo metadata in 2003:

- IPTC standard IIM (1990): combined metadata for text, photo, audio …

- … a subset of photo specific IIM fields was adopted by Adobe for Photoshop (1995) and by other software makers too.

- In 2001 Adobe created a new metadata format: XMP (RDF/XML with constraints)

- … and used the IIM format and XMP in Photoshop

- Photo businesses asked IPTC how to deal with IIM and XMP: use both? use only one where is the specification that covers which IIM and XMP fields express the same thing?

20 Years of IPTC Photo Metadata

- 2004: IPTC created a first specification of a metadata standard for photos/images only: the IPTC Core schema – in collaboration with Adobe
- … and an active communication with the photo business community was started
- 2007: first IPTC Photo Metadata Conference – in conjunction with CEPIC
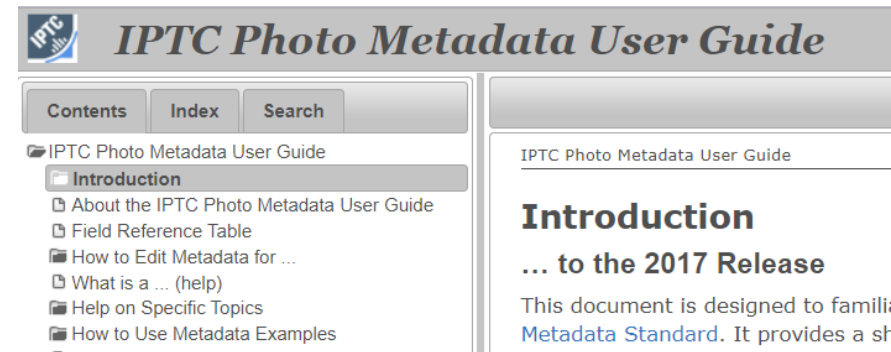
20 Years of IPTC Photo Metadata

- 2008: new set of additional metadata fields was specified: IPTC Extension schema + IPTC Core schema = IPTC Photo Metadata Standard

- 2008 – 2010: collaboration with the "Metadata Working Group" (Adobe, Apple, Canon, Microsoft, Nokia, Sony) on mapping field values across Exif, IIM and XMP.

- 2010: the first User Guide was published. Has been updated many times since then.

Field Reference Table

This section provides a table which should help finding the guidelines for the field you are searching for:
All field names appear in alphabetical order.
Each field name is linked to the Guidelines section which describes this field. In electronic documents (Web page, PDF) click on the name and follow.

IPTC Name / Label	Other names	Scheme	XMP Id
Additional Model Information		Extension	AddlModelInfo
Address(Contact detail)		Core	CiAdrExtadr
Artwork or Object in the Image		Extension	ArtworkOrObject
City (legacy)		Core	City

2 • IPTC Core and Extension Guidelines (July 2010)

IPTC Photo Metadata User Guide

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IPTC Photo Metadata User Guide
  Introduction
  About the IPTC Photo Metadata User Guide
  Field Reference Table
  How to Edit Metadata for ...
  What is a ... (help)
  Help on Specific Topics
  How to Use Metadata Examples

IPTC Photo Metadata User Guide

Introduction

... to the 2017 Release

This document is designed to famili...
Metadata Standard. It provides a sh...

IPTC Photo Metadata User Guide

IPTC Photo Metadata Working Group – office@iptc.org – March 2024 0 | 2024-03-22

20 Years of IPTC Photo Metadata

IPTC's motto:

Talking to users – listening to needs –
specifying the standard – watching its use

- (2004, 2008) → 2009, 2010, 2014, 2016, 2017, 2019, 2021, 2022, 2023:
  the standard was extended from 25 to 62 properties

- 2010 & 2019: How is the standard used? IPTC survey about how photo businesses use (IPTC) photo metadata in their workflow

- 2013, 2016, 2019: IPTC tested photo sharing & social media systems how well embedded photo metadata are supported, are preserved - 🙂 & 😖
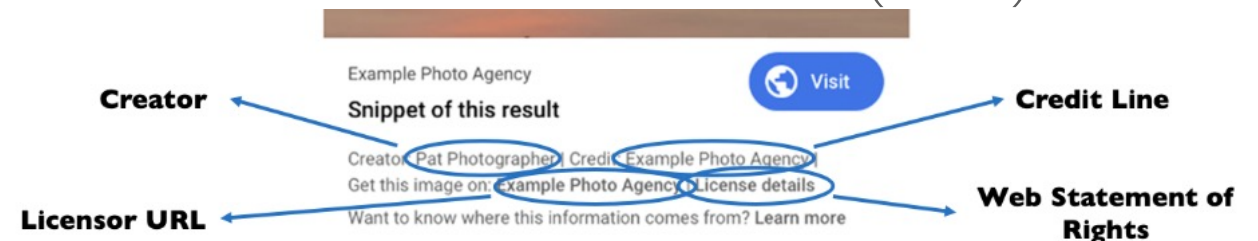
20 Years of IPTC Photo Metadata

- 2017: Get IPTC Photo Metadata site launched for reading and showing any IPTC property embedded into an image file on the web or local.

- 2018: IPTC and Google started to collaborate on photo metadata
  - Creator, Credit Line and Copyright Notice shown in search results (2018)
  - Web Statement of Rights → "Licensable", Licensor URL as link URL (2020)
    (see IPTC help page)

  - Google uses Digital Source Type to flag "AI generated images" (2023)

- 2020: IPTC gets active with Content Authenticity Initiative (CAI) and C2PA

What's new in IPTC Photo Metadata?

- Data Mining property (added in 2023.1)
- Digital Source Type vocabulary (updated in 2022, 2023)
- Updated Photo Metadata User Guide (2024)
- Updated Photo Metadata Mapping Guidelines (2023)
- IPTC Media Provenance Committee (2024)

Data Mining Property new

- Image rights owners made an urgent request to IPTC and PLUS:

- How to express that data mining is prohibited or permitted?

- https://iptc.org/news/exclude-images-from-generative-ai-iptc-photo-metadata-standard-2023-1/

  - For various AI/Machine Learning purposes using a standardised list?

  - Embedded in the file, like other IPTC metadata?

- In both "machine-readable" & "human-readable" forms

- By Autumn/Fall 2023 the result was a PLUS property at ns.useplus.org

- Developed cooperatively by PLUS and IPTC for 2023.1 version of the IPTC Photo Metadata Standard spec
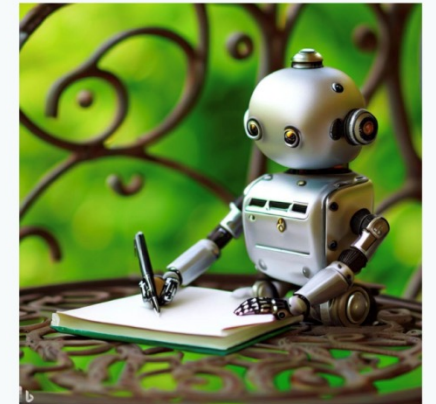
Data Mining Property new

- Allows the communication of any permissions, prohibitions, constraints and obligations both for use of a visual work for data mining purposes AND for generative AI purposes (such as image prompts).

- Complies with EU directive for use in declaring prohibitions on data mining for non-research purposes

- Intended for worldwide use

- Allows options for communicating more complex information in the form of a rights statement

- Has been supported by Exiftool and GetPMD.iptc.org since launch

OCT 12 2023 Rights holders can exclude images from generative AI with IPTC Photo Metadata Standard 2023.1

Many image rights owners noticed that their assets were being used as training data for generative AI image creators, and asked the IPTC for a way to express that such use is prohibited. The new version 2023.1 of the IPTC Photo Metadata Standard now provides means to do this: a field named "Data Mining" and a standardised list of values, adopted from the PLUS Coalition. These values can show that data mining is prohibited or allowed either in general, for AI or Machine Learning purposes or for generative AI/ML purposes. The standard was approved by IPTC members on 4th October 2023 and the specifications are now publicly available.

Image created by Brendan Quinn using Bing Image Creator.

Data Mining Property new

Values must come from the PLUS Data Mining vocabulary:

- Name: **Unspecified** – no prohibition defined
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-UNSPECIFIED

- Name: **Allowed**
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-ALLOWED

- Name: **Prohibited for AI/ML training**
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-AIMLTRAINING

- Name: **Prohibited for Generative AI/ML training**
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-GENAIMLTRAINING

Data Mining

Use this field to communicate whether data mining is prohibited or allowed either in general, for AI or Machine Learning purposes or for generative AI/ML purposes for your image. You can select one value from the standardised controlled list to express data mining permissions, constraints and prohibitions.

Values for this field — such as those related to search indexing or research — may be overruled by agreement, law or policy. See Metadata and the Law.

This field's value must come from the PLUS Data Mining vocabulary, which is shown here:

- Name: Unspecified – no prohibition defined
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-UNSPECIFIED

- Name: Allowed
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-ALLOWED

- Name: Prohibited for AI/ML training
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-AIMLTRAINING

- Name: Prohibited for Generative AI/ML training
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-GENAIMLTRAINING

- Name: Prohibited except for search engine indexing
  Note: This prohibition only permits data mining by search engines available to the public to identify the URL for an asset and its associated data (for the purpose of assisting the public in navigating to the URL for the asset), and prohibits all other uses, such as AI/ML training.
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-EXCEPTSEARCHENGINEINDEXING

- Name: Prohibited
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED

Link to section of Photo Metadata User Guide

Data Mining Property new

- Name: Prohibited except for search engine indexing*
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-EXCEPTSEARCHENGINEINDEXING

- Name: Prohibited
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED

- Name: Prohibited, see <Other Constraints> property.
  Note: Other Constraints** field must be populated if this value is set.
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-SEECONSTRAINT

- Name: Prohibited, see Embedded Encoded Rights Expression field
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-SEEEMBEDDEDRIGHTSEXPR

- Name: Prohibited, see Linked Encoded Rights Expression field
  Identifier: http://ns.useplus.org/ldf/vocab/DMI-PROHIBITED-SEELINKEDRIGHTSEXPR

Digital Source Type updated

Basic Digital Source Types were in the 2008 Spec

- Direct Digital Capture

- Digitized from a negative on film

- Digitized from a positive on film (includes slides)

- Digitized from a print on non-transparent medium

- ~~Created by Software (retired)~~

https://www.iptc.org/std/photometadata/documentation/userguide/#_guidance_for_using_digital_source_type

Digital Source Type updated

In 2022 Digital Source Type was revamped:

- Original media with minor human edits
- Composite of captured elements
- Algorithmically-enhanced media
- Data-driven media
- Digital art
- Virtual recording
- Composite including synthetic elements
- Trained algorithmic media (aka Generative AI)
- Composite with trained algorithmic media
- Pure algorithmic media

http://cv.iptc.org/newscodes/digitalsourcetype/

We are currently discussing further updates in alignment with C2PA and others.
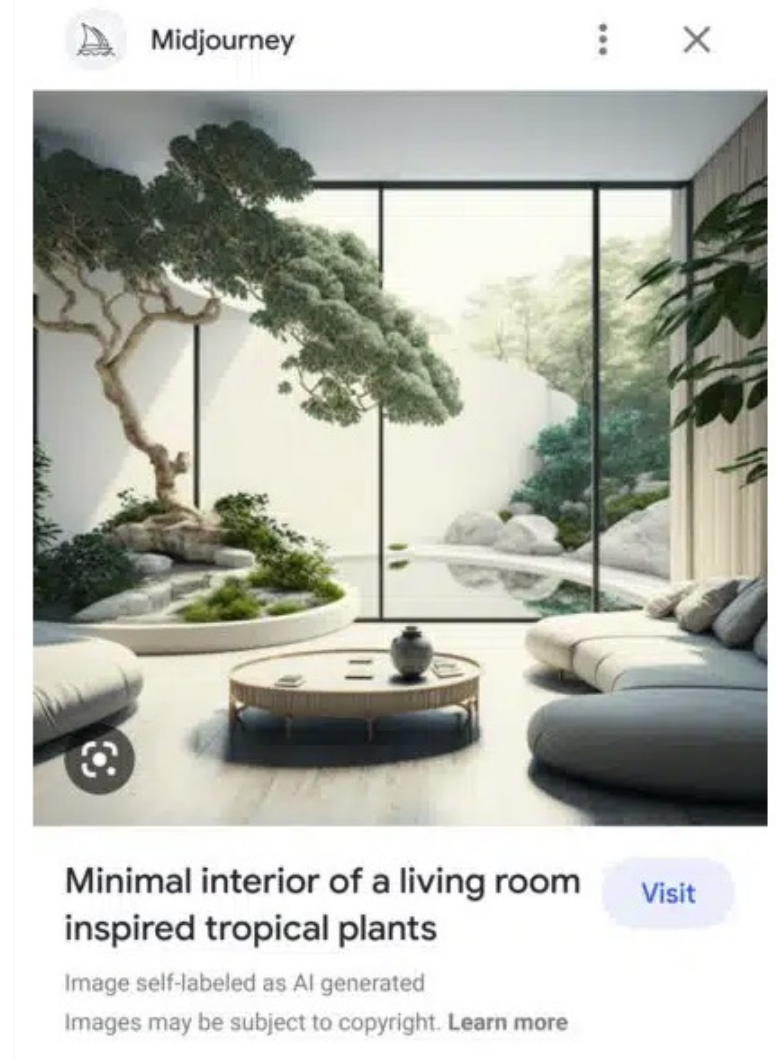
Digital Source Type updated

Google, Meta, Midjourney and Shutterstock AI announced they will use the 'Digital Source Type' property with these specific CV terms to indicate "Created by Generative AI":

- **Composite including synthetic elements** (compositeSynthetic) – at least one element is synthetic

- **Pure algorithmic media** (algorithmicMedia):
  Image was created purely by an algorithm not based on any sampled training data (for example, an image created by software using a mathematical formula like the Mandelbrot set)

- **Trained algorithmic media** (trainedAlgorithmicMedia):
  Image was created using a model derived from sampled content

Microsoft Bing Image Creator and Designer also have plans…

Also, **Google recommend that metadata tags are not stripped out** in order to preserve these fields: https://support.google.com/merchants/answer/14572008

Midjourney

Minimal interior of a living room inspired tropical plants

Visit

Image self-labeled as AI generated
Images may be subject to copyright. Learn more

Digital Source Type updated

Google AI Test Lab's Image FX is currently embedding:

- Link for "trainedAlgorithmicMedia" in 'Digital Source Type'
- The text "Made with Google AI" in 'Credit Line'

Prompt: *Group photo of a diverse group of people wearing various colored lab coats, and arranged to mimic the Beatles cover for the "Sgt. Pepper's Lonely Hearts Club Band" album but showing the word " Metadata " at the bottom of the image, aspect ratio 1:1*
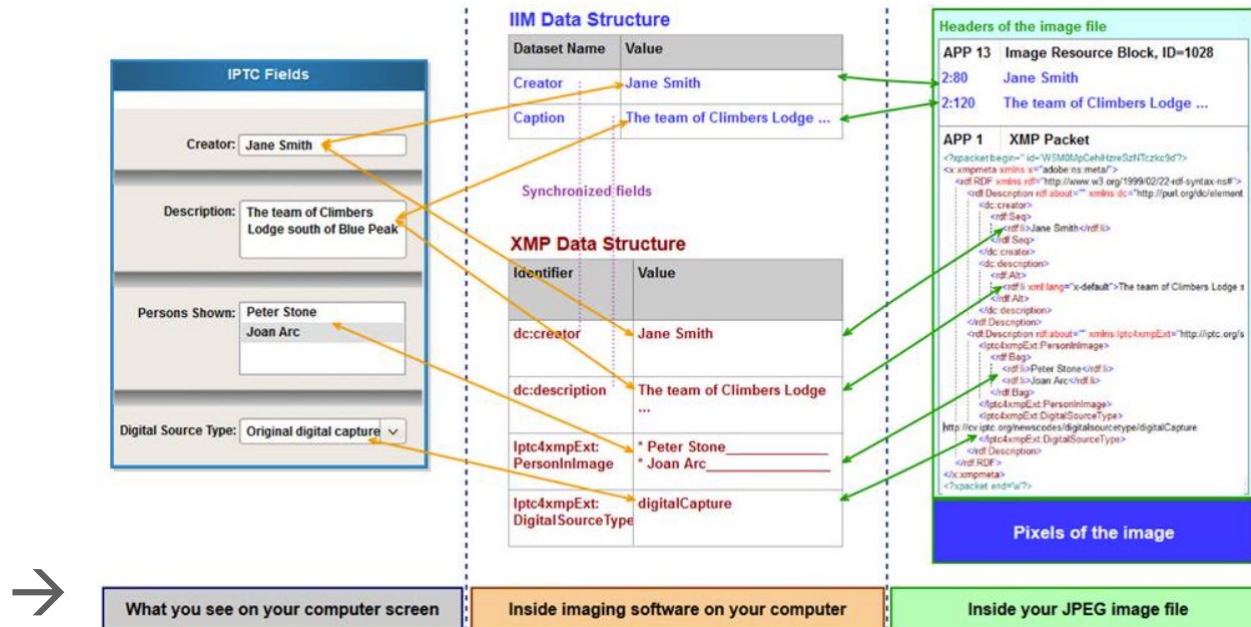
Updated User Guide (2024)

- NEW: guide for using Accessibility fields
- NEW: guide for applying metadata to AI-generated images
- Guides for NEW fields added: Event Identifier, Product/Identifier, Contributor, Data Mining

Guides a user in …

➢ … using fields properly

➢ … dealing with use cases

➢ … understanding technical details

Updated [Mapping Guidelines](#) (2023)

The Mapping Guidelines cover equivalent IPTC, Exif & schema.org fields

- CIPA introduced Exif 3.0 in May 2023 …

- … IPTC updated its Mapping Guidelines to cover the new 3.0 version and the old 2.3x versions in October 2023

Exif Note on Copyright Notice

Note on Exif 2.3x:

The Exif specification document notes that the Copyright tag can be used to cover the copyright of the photographer of the image as well as the copyright of an editor of the image.

The use for a copyright for the editor is quite rare; but if you do need to include it be aware that the Exif specification directs you to terminate the string with the photographer copyright with a NULL byte and to concatenate the copyright for the editor following. An alternate solution that does not require a NULL byte is to prefix the copyright claim of the photographer with the string *Photographer:* and the claim of the editor with the string *Editor:*.

Be aware that all Exif tag values of type ASCII must have a NULL-byte at the end, read the details in the [Exif](#) specification.

Be aware that Exif defines ASCII as the type of this tag, read more about [the use of ASCII and UTF-8](#) above.

Note on Exif 3.0:

The Exif specification changed the semantics of the tag to "It is the copyright notice of the person or organization holding rights to the image" which is much closer to the definition of the IPTC Copyright Notice than the Exif 2.3x definition (see above).

- **Exif to IPTC mapping:** copy the value of the Exif tag to the IPTC property.
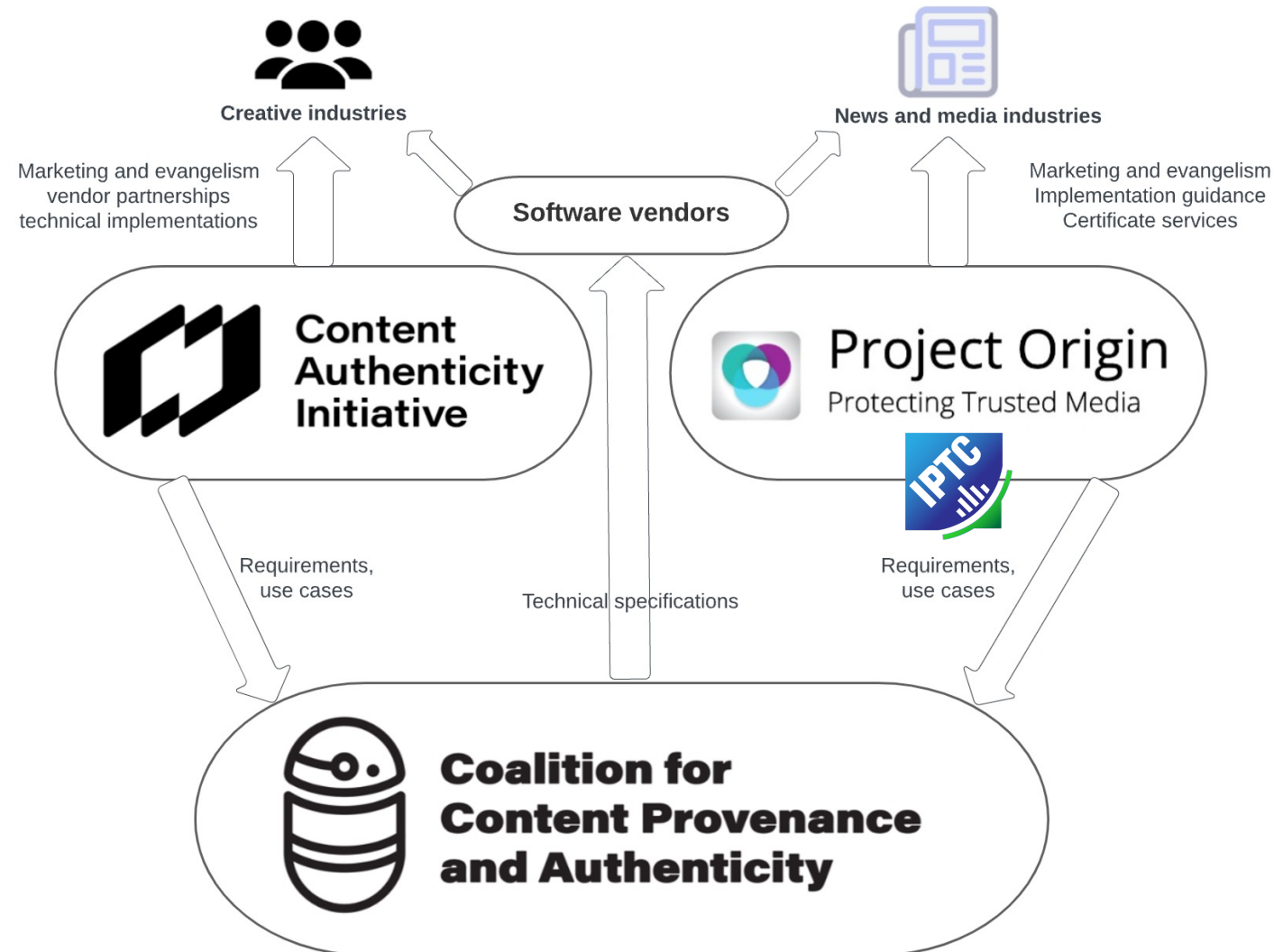- **IPTC to Exif mapping:** copy the value of the IPTC property to the Exif tag and use the UTF-8 data type with Exif 3.0.

Be aware that Exif 3.0 defines ASCII or UTF-8 as the data type of this tag.
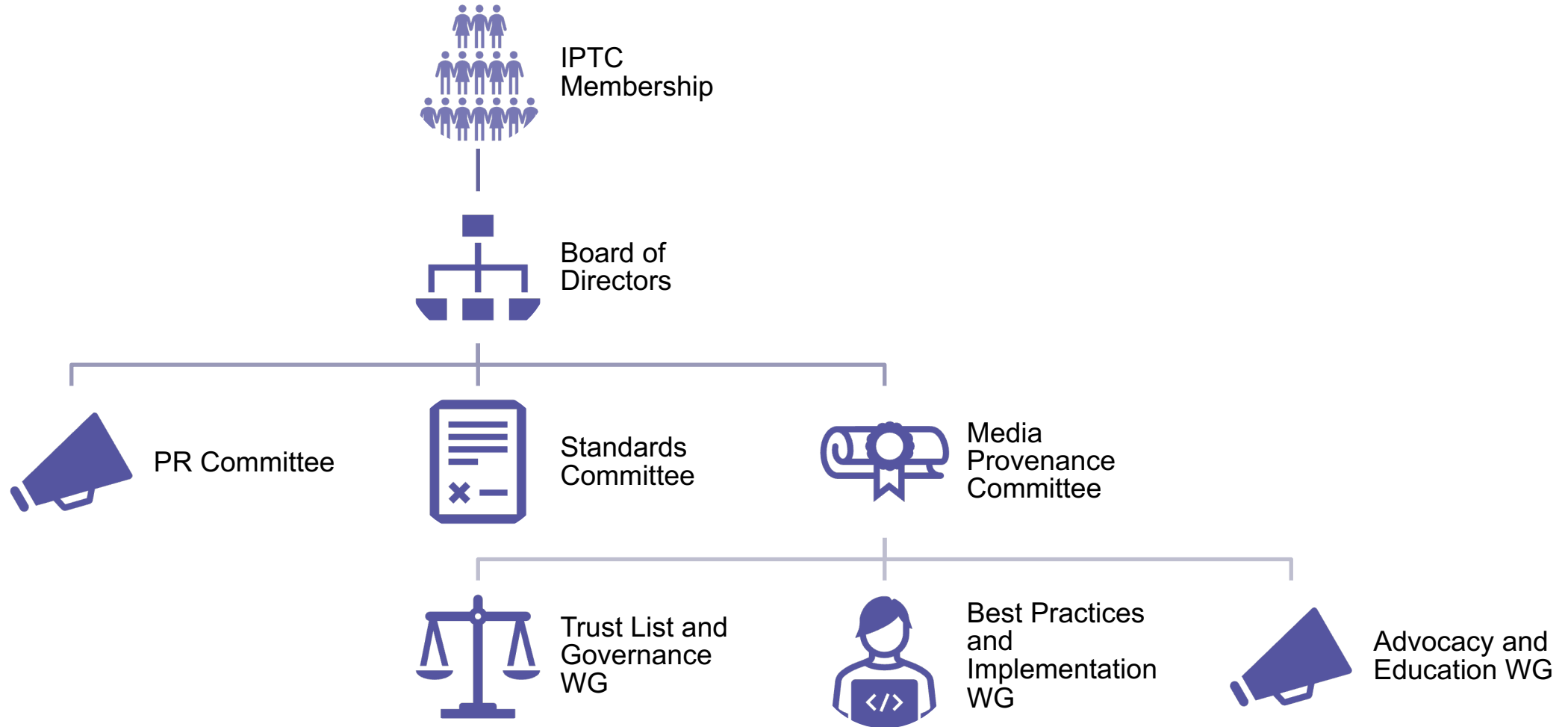
IPTC Media Provenance Committee

- C2PA was created by both the Content Authenticity Initiative and Project Origin working together

- Until now, Project Origin has been the project driving advocacy and implementation of C2PA technology to the news and media industries

- But Project Origin is/was a collaboration agreement between a small number of companies - it couldn't scale

- So we established the IPTC Media Provenance Committee

- Project Origin will remain as a brand name – exact brand relationship is to be determined

How the Media Provenance Committee fits within IPTC's structure

IPTC Membership

Board of Directors

PR Committee

Standards Committee

Media Provenance Committee

Trust List and Governance WG

Best Practices and Implementation WG

Advocacy and Education WG

Origin Trust List – "Origin Verified Publisher"

- The first IPTC Media Provenance Committee deliverable is an IPTC-hosted "Trust List" of verified news publishers – currently only BBC and CBC/Radio Canada

- We also have launched a simple validator at https://originverify.iptc.org/

- One of the main tasks of the Committee is to work out how this will scale to a large number of media publishers

APR 14 2024 IPTC to create a C2PA-compatible list of Verified News Publishers, including BBC and CBC

The International Press Telecommunications Council, in conjunction with Project Origin, has established a working group to create and manage a C2PA compatible list of verified news publishers.

The open C2PA 2.0 Content Credentials standard for media provenance is widely supported as a strong defence against misinformation. Recent announcements OpenAI, Meta, Google and other evident way of confirming the

Project Origin, as a co-founder community to the forefront of of a C2PA 2.0 compatible Origin securely create a cryptographic able through the IPTC, who wi

Origin Verified Publisher

The group has created the "Origin Verified Publisher" graphic to convey the fact that content has been signed by a certificate granted to a publisher that has been verified according to the Project Origin process.

Origin Verify
News Provenance Verification

Content Credentials
File
bbc-haiti.mp4
Issued by
British Broadcasting Corporation

The signer of this Content Credential has had their identity verified by Project Origin. It should not be mistaken for verification of the content, which is the responsibility of the publisher.

Issued on
Monday, 4 March 2024 at 17:02:55 EET
Produced with
BBC News Labs CR Exporter

Select a file from your device
or drag and drop anywhere

IPTC Media Provenance Committee: who should join?

"I work for a media organisation.
Should we join the IPTC and the Media Provenance Committee?"

- If you want to help to shape the policies and procedures around the Origin Verified Publisher Trust List, and to be a super-early adopter, understanding the work that that entails:

  ➤ Join IPTC (if you're not already a member) and take part in the work of the Media Provenance Committee

- If you don't want to be on the bleeding edge, and want to wait until we have established procedures for getting verified, getting a certificate and getting on the trust list:

  ➤ Wait for a while, then you can be a "customer" of the system when we have it finalised, and you can simply follow the steps to get a Verified Publisher certificate.

The IPTC Photo Metadata Working Group

A great bunch of photo metadata people (in random order)

Annette Feldman, AP

Alison Sullivan

Philippe Mougin (AFP)

Brendan Quinn, IPTC MD

Jeff Sedlik, PLUS

Michael Steidl, IPTC (co-lead)

Honor Craig-Bennett

*..and more.
Come and
join us!*

Karl Csoknyay, Keystone-SDA

David Riecks, PLUS (co-lead)

Serguei Fomine, CEPIC

Margaret Warren

IPTC Photo Metadata resources (with links)

- IPTC Photo Metadata landing page on the IPTC site
- IPTC Photo Metadata Standard latest specification
- IPTC Photo Metadata User Guide
- IPTC Photo Metadata Mapping Guidelines
- Quick Guide to IPTC Photo Metadata and Google Images
- List of software supporting IPTC Photo Metadata
- Get IPTC Photo Metadata Service
- The public IPTC Photo Metadata email discussion group
- Digital Source Type Newscodes

Thanks, until next time!

Thanks for coming, for contributing, for presenting, for asking questions, for listening!

Videos of all sessions will be made available on iptc.org within the next week. Look out for a news post!

Thanks to the IPTC Photo Metadata Working Group, and especially to **David Riecks** and **Michael Steidl** for organising this event

Please contact IPTC for more information on anything you heard today