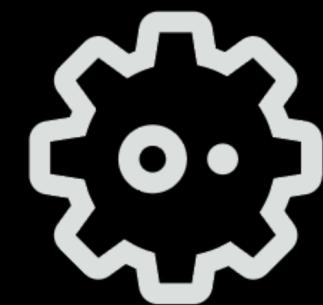




Creator Assertions Working Group

Content Authenticity Summit

Eric Scouten · Identity Standards Architect · Adobe
4 June 2025



Topics for today

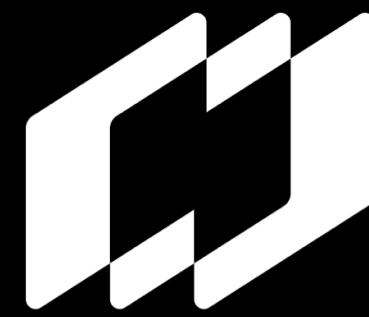
Who's who

C2PA conceptual overview

CAWG identity assertion overview

Upcoming work in CAWG

First-person credential project (Drummond)



Who's who?



**Content
Authenticity
Initiative**



**Coalition for
Content
Provenance
and Authenticity**



**Creator
Assertions
Working Group**



Who's who?



**Content
Authenticity
Initiative**



Coalition for
Content
Provenance
and Authenticity



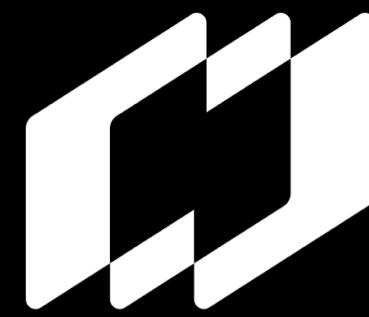
Creator
Assertions
Working Group

Outreach · Advocacy · Open Source

** also name of Adobe's team*

Technical Standards: What / How

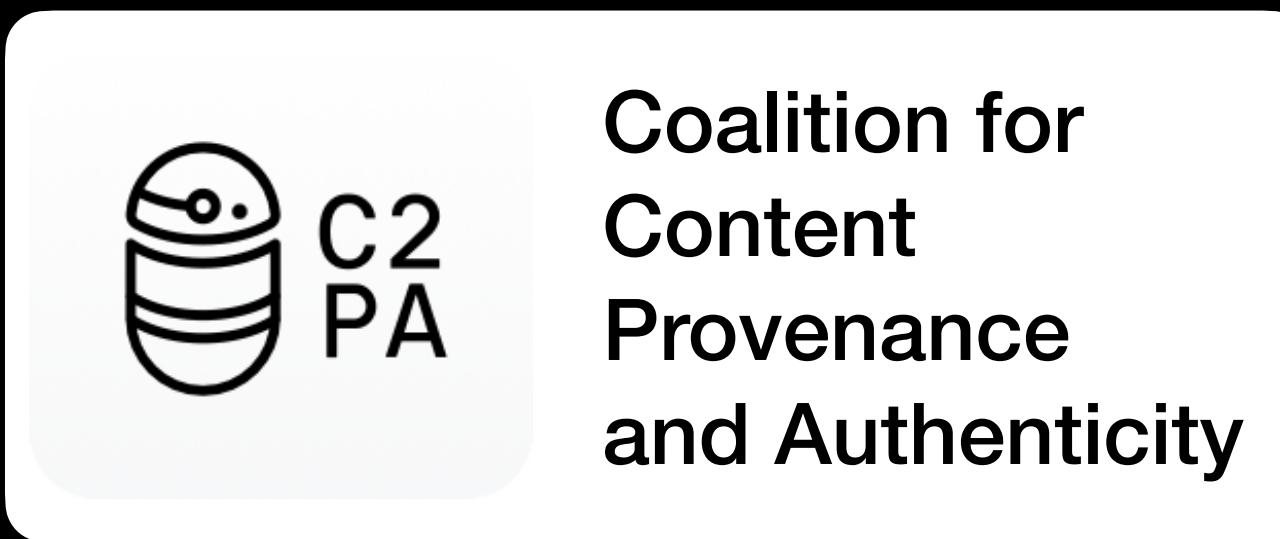
Technical Standards: Who



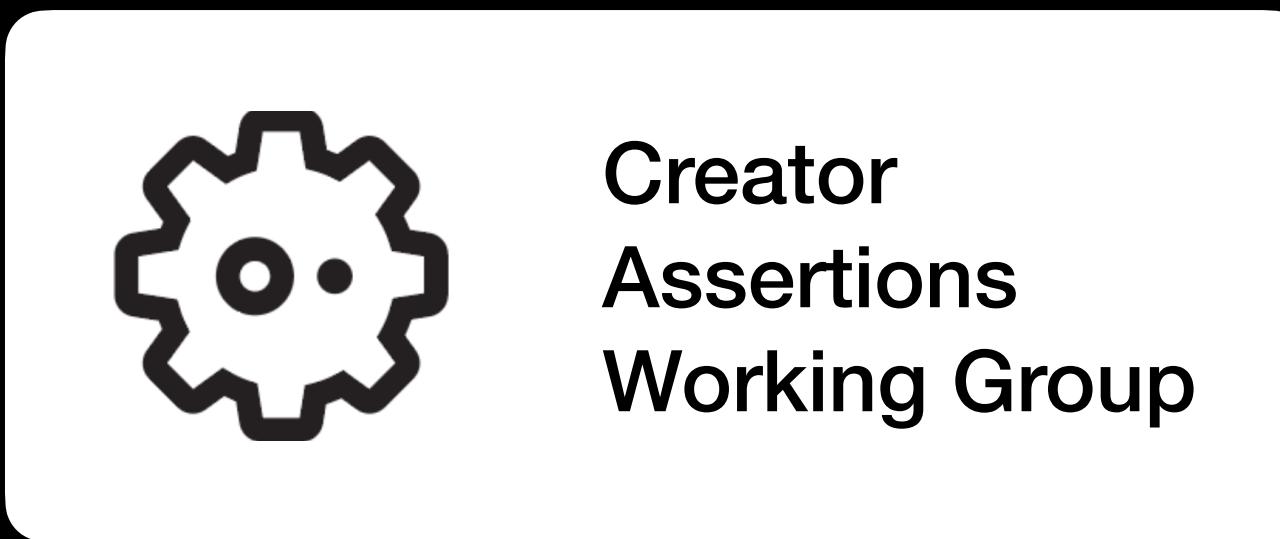
Who's who?



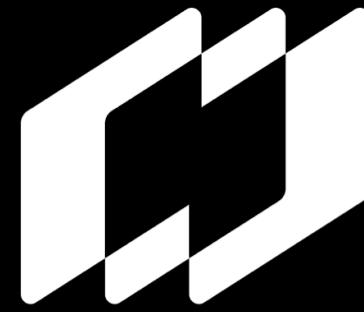
contentauthenticity.org



c2pa.org



cawg.io



Who's who?



**Content
Authenticity
Initiative**

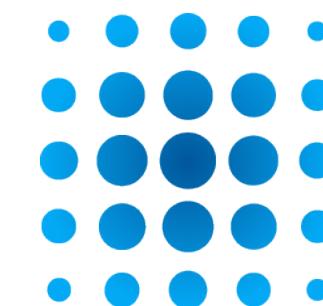


**Coalition for
Content
Provenance
and Authenticity**



**Creator
Assertions
Working Group**

**New: As of
March 2025, part of**



**Decentralized
Identity
Foundation**



C2PA data model



C2PA + CAWG use case

Consider **broadcast (internet) transmission of digital media to unknown/unforeseen recipients**. A recipient might ask:

- Who produced this? Are they a reputable news source / entertainer / motion picture producer / business / government? Is that statement of source accurate and trustworthy?
- How / when / where did they produce this content?
- Has it been altered since (reputable org) produced it?
- What content did this producer incorporate? How did they alter/compose it?



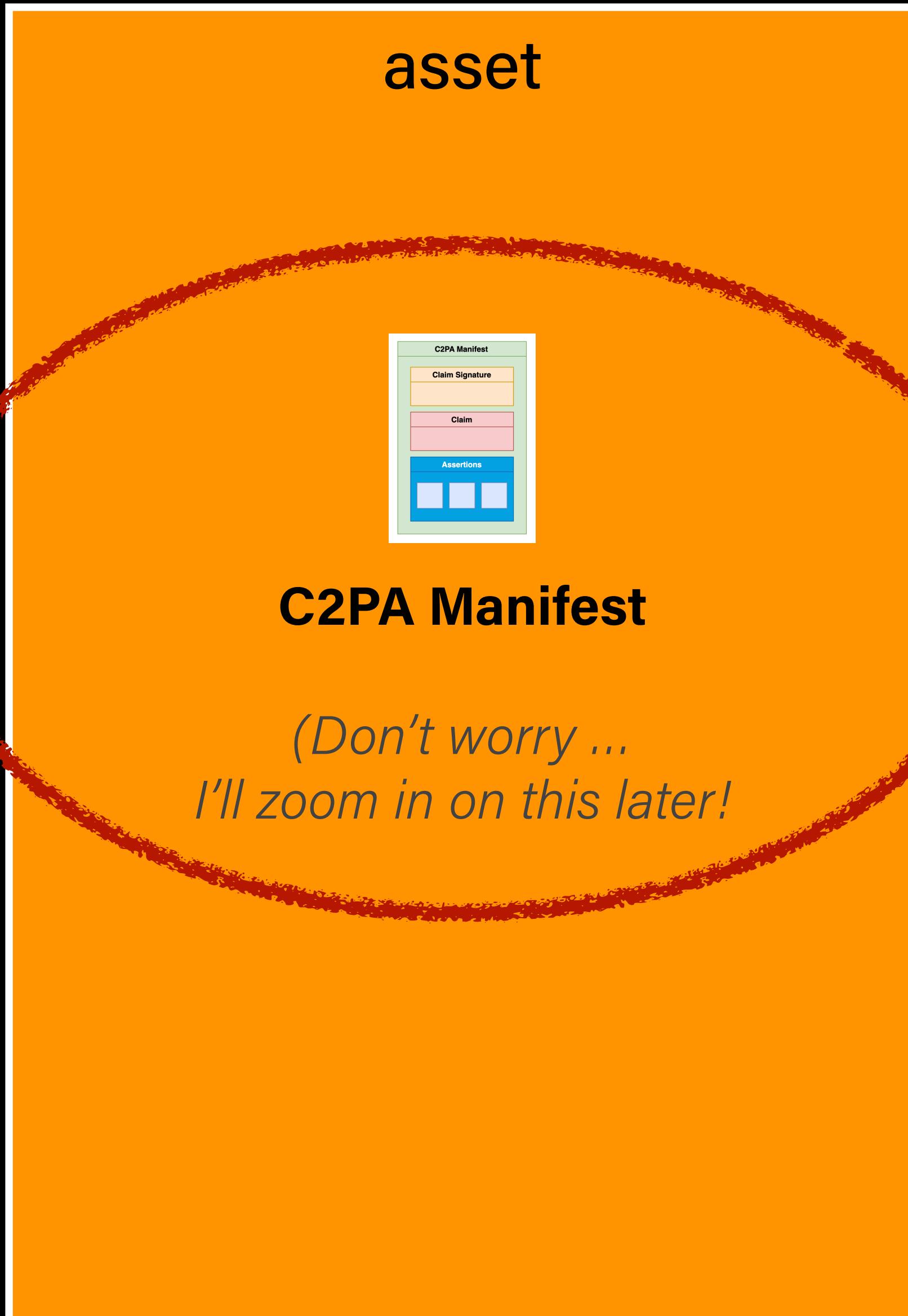
C2PA data model

Overview

An **asset** is any piece of digital media that we wish to describe.

Currently, we support still images, motion pictures, recorded audio, documents (PDF), fonts, and more.

An asset is described by a **C2PA Manifest**.

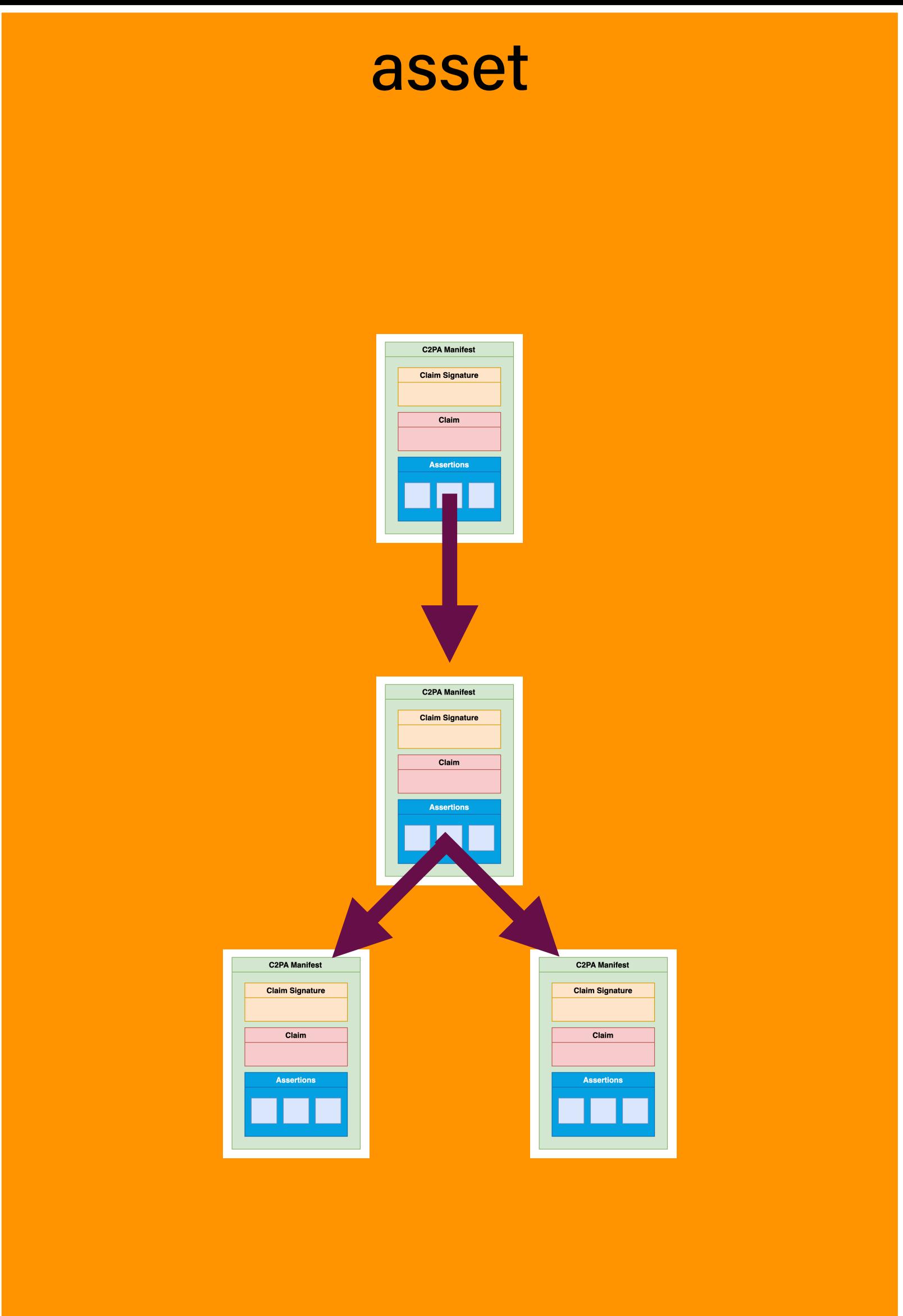




C2PA data model

Overview

A C2PA Manifest can refer to any number of *ingredient manifests* when earlier content is incorporated and composed into a new asset.





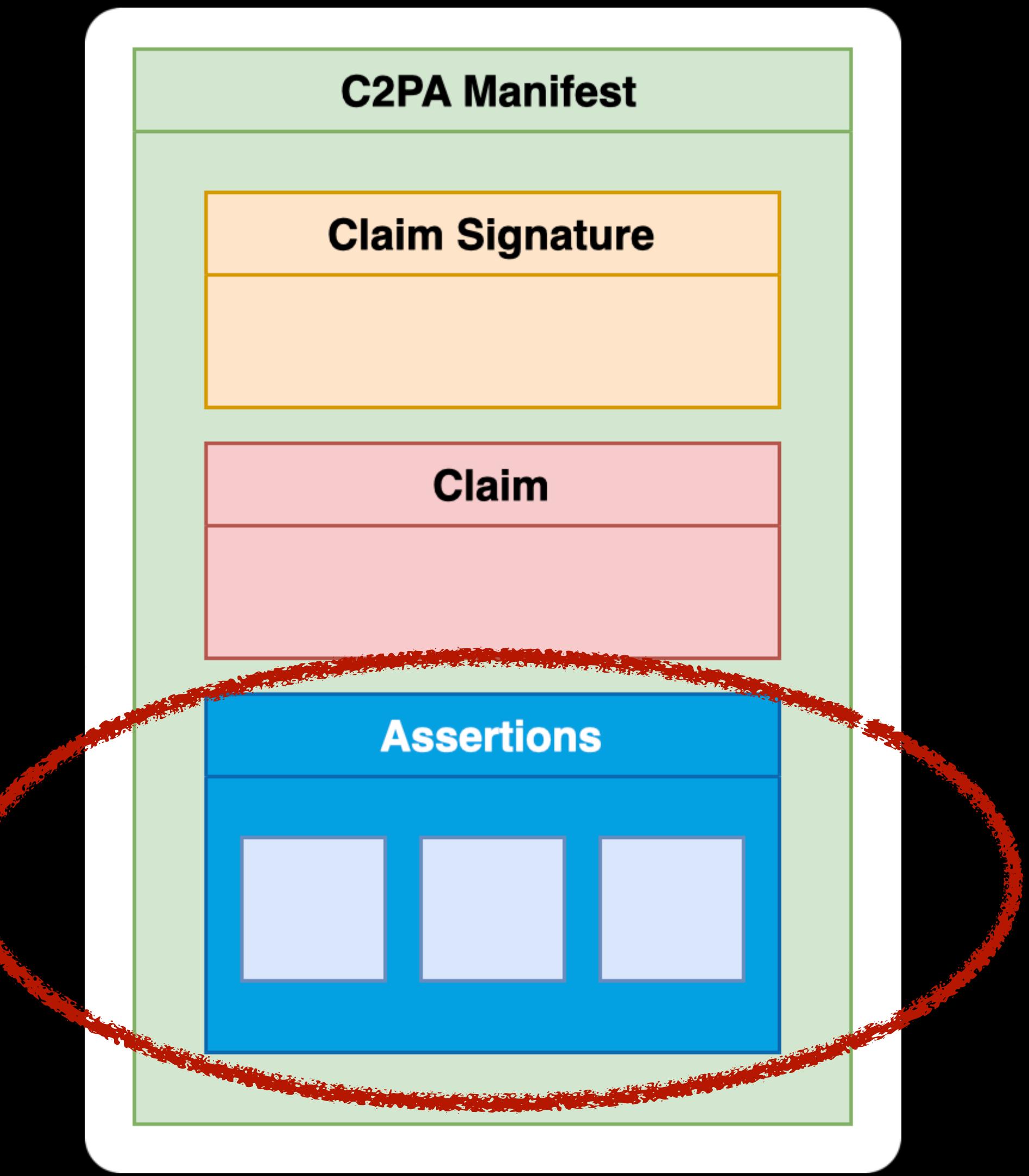
C2PA data model

Assertions

Assertions are opt-in statements that cover areas such as:

- hard binding to asset's binary content
- capture device details
- edit actions
- thumbnail of the content
- other content (ingredients) that were incorporated into this content

This mechanism is **extensible**.



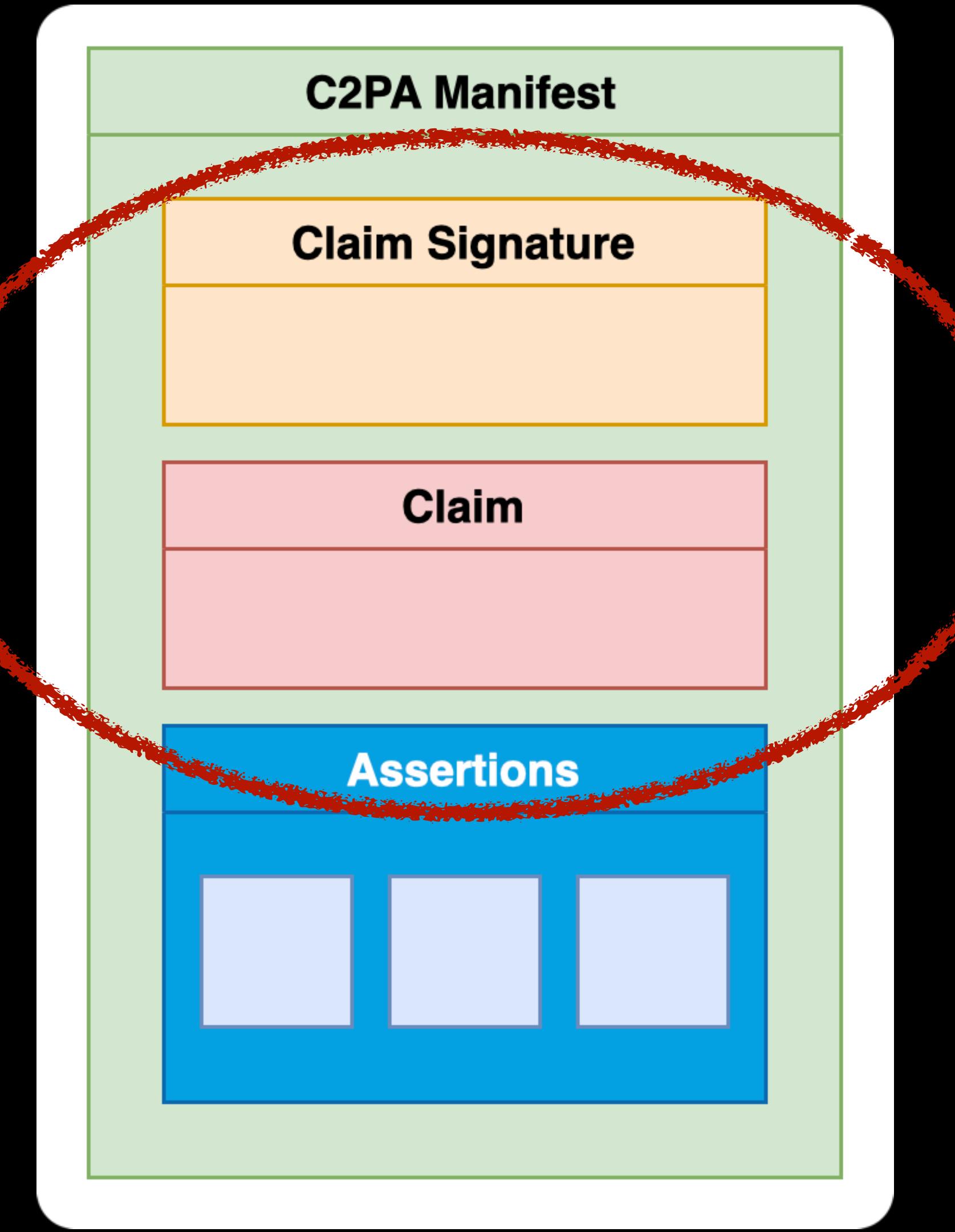


C2PA data model

Claim

Every C2PA Manifest has exactly one **claim**, which lists the assertions and describes the claim generator (tool that built the Manifest).

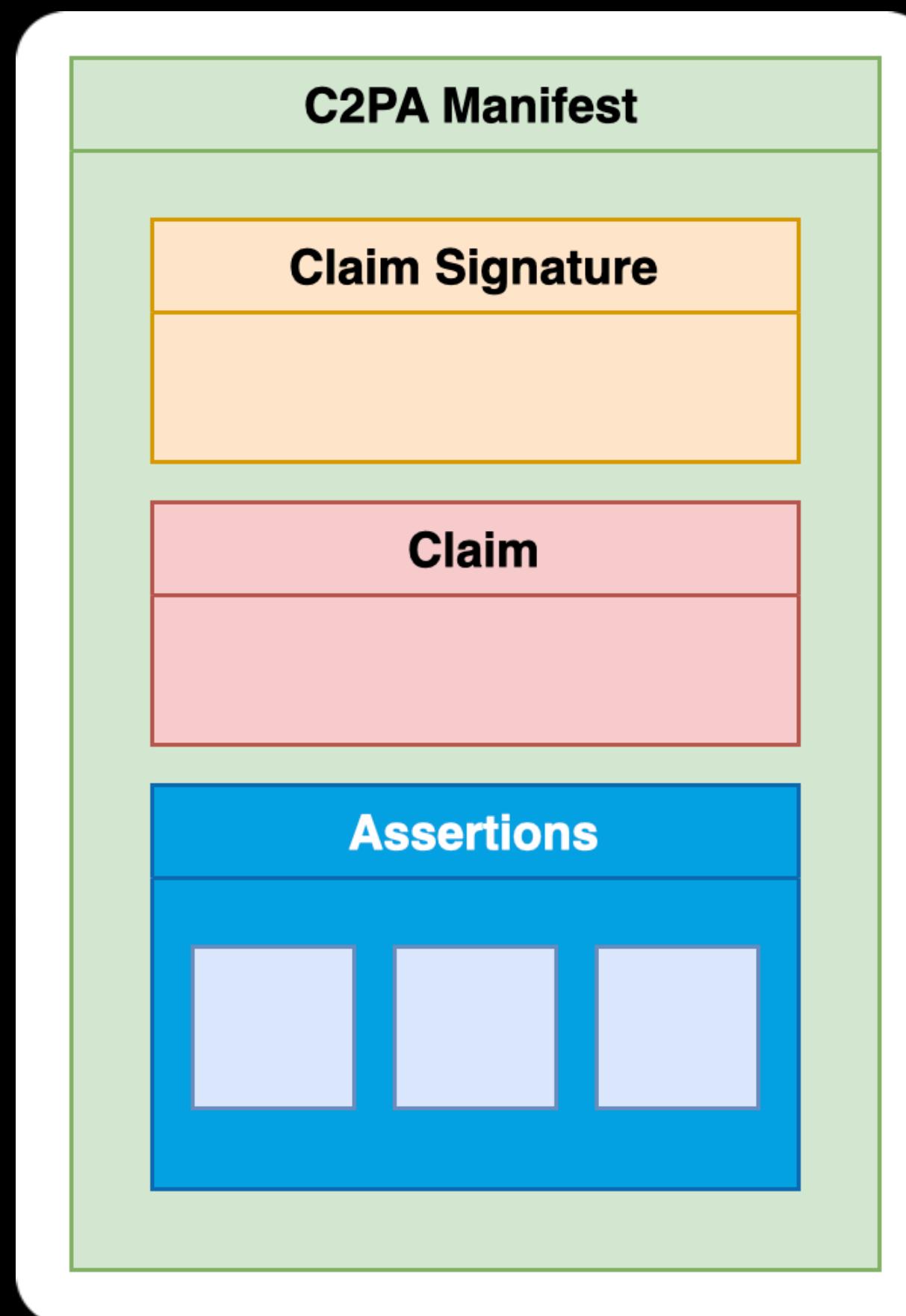
This claim is signed using an X.509 certificate, which provides evidence of who signed it and provides tamper evidence if a third party attempts to change the claim after the fact.





C2PA data model

How we display it



contentauthenticity.adobe.com/inspect

20241127-162852-R-es-4703-039.jpg
Recorded by Adobe Inc.

Contributor details

Information shared by people involved in making this content.

Behance ericscouten1

LinkedIn Eric Scouten

I request that generative AI models not train on or use my content

Content details

Information about this content and how it was made.

App or device used

Adobe Content Authenticity

Recorded by

Adobe Inc. on Jun 3, 2025

Actions

Opened
Opened a pre-existing file

Watermarked
Applied an invisible watermark to improve this Content Credential's durability

Ingredients

20241127-162852-R-es-4703-039.j...
No Content Credentials

claim generator (C2PA)

thumbnail assertion (C2PA)

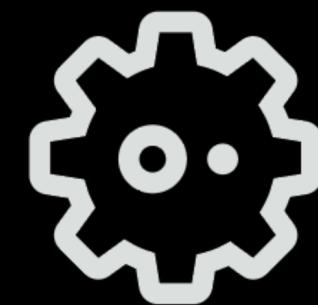
identity assertion (CAWG)

training + data mining assertion (CAWG)

claim generator (C2PA)

actions assertion (C2PA)

ingredients assertion (C2PA)

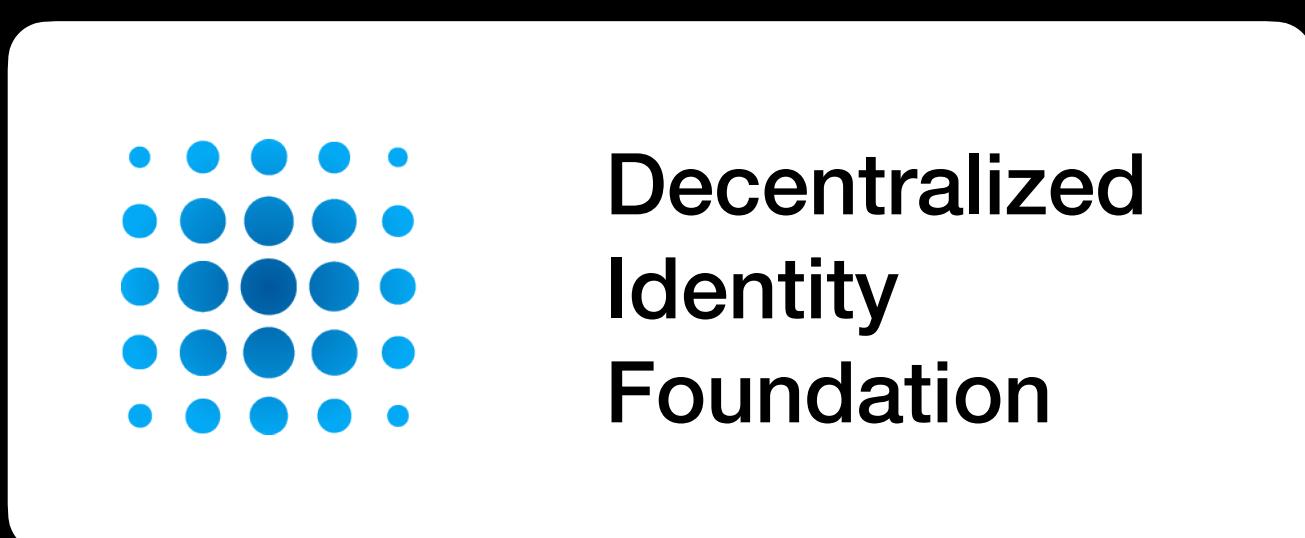


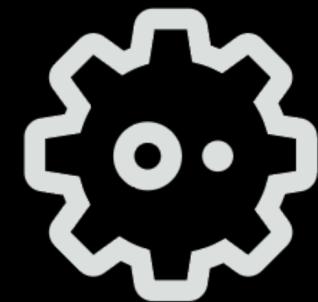
Introducing CAWG

CAWG (Creator Assertions Working Group)

was created in early 2024 to create technical standards to house metadata sourced from individual and organizational content creators.

CAWG became a working group within DIF in March 2025.

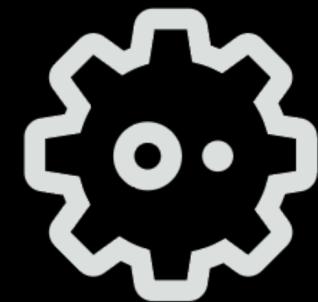




What does CAWG do?

Four assertion standards, building on C2PA technical spec:

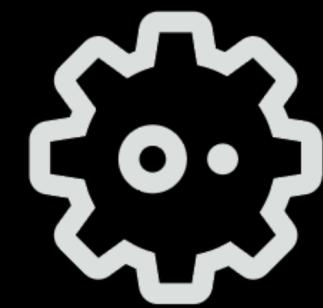
- **Endorsement** ► Forward permission for CDN-style renditions on C2PA assets
- **Identity** ► Binding digital identity credentials to C2PA assets
- **Metadata** ► Associate user-generated metadata with C2PA assets
- **Training and Data Mining** ► Express permissions regarding AI training and data mining usage



What does CAWG do?

Four assertion standards, building on C2PA technical spec:

- **Endorsement** ▶ Forward permission for CDN-style renditions on C2PA assets
- **Identity** ▶ Binding digital identity credentials to C2PA assets
- **Metadata** ▶ Associate user-generated metadata with C2PA assets
- **Training and Data Mining** ▶ Express permissions regarding AI training and data mining usage



Identity assertion

is a framework

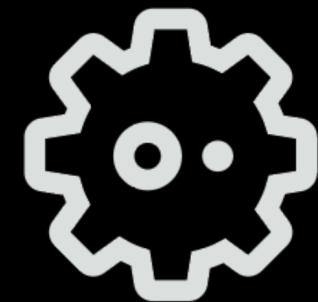
The actor* described by ... *`${credential}`*

using a credential issued by ... *`${issuer}`*

produced the content described by ... *`${signer_payload}`*

Signed by ... *`${credential_holder}`*

*actor can be human, non-human, or organization of humans



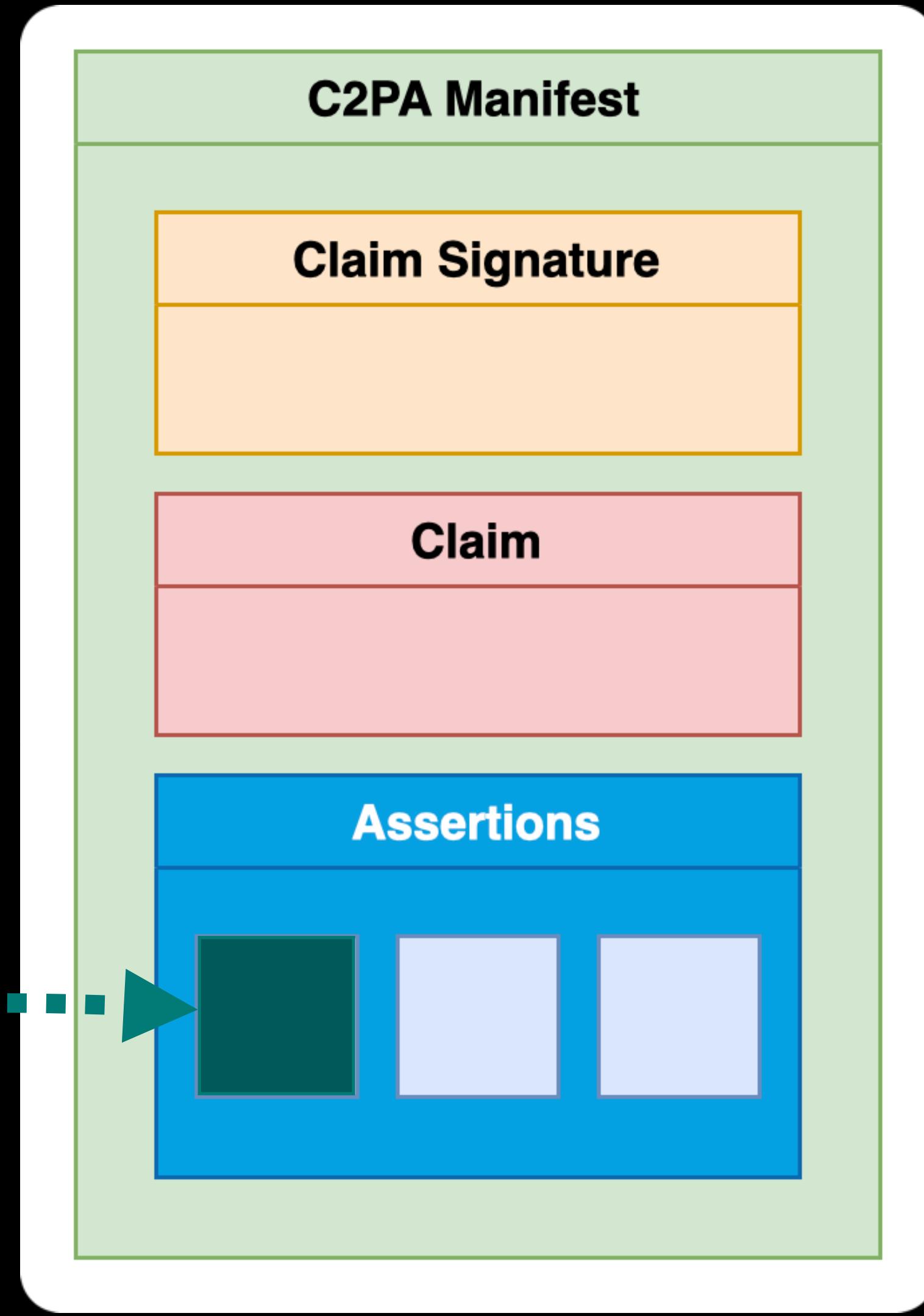
Identity assertion in the C2PA data model

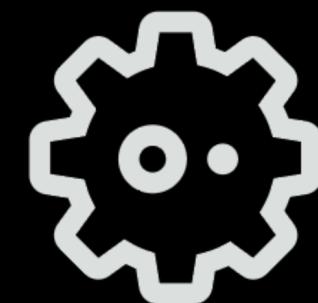
A **CAWG identity assertion** is typically meant to indicate subject's **authorization of** or **active participation in** production of the asset.

It provides a **tamper-evident binding** between a digital credential and the asset described by the C2PA Manifest *and* potentially other assertions in the same C2PA Manifest.

The actor* described by ... \${credential}
using a credential issued by ... \${issuer}
produced the content described by ... \${signer_payload}

Signed by ... \${credential holder}



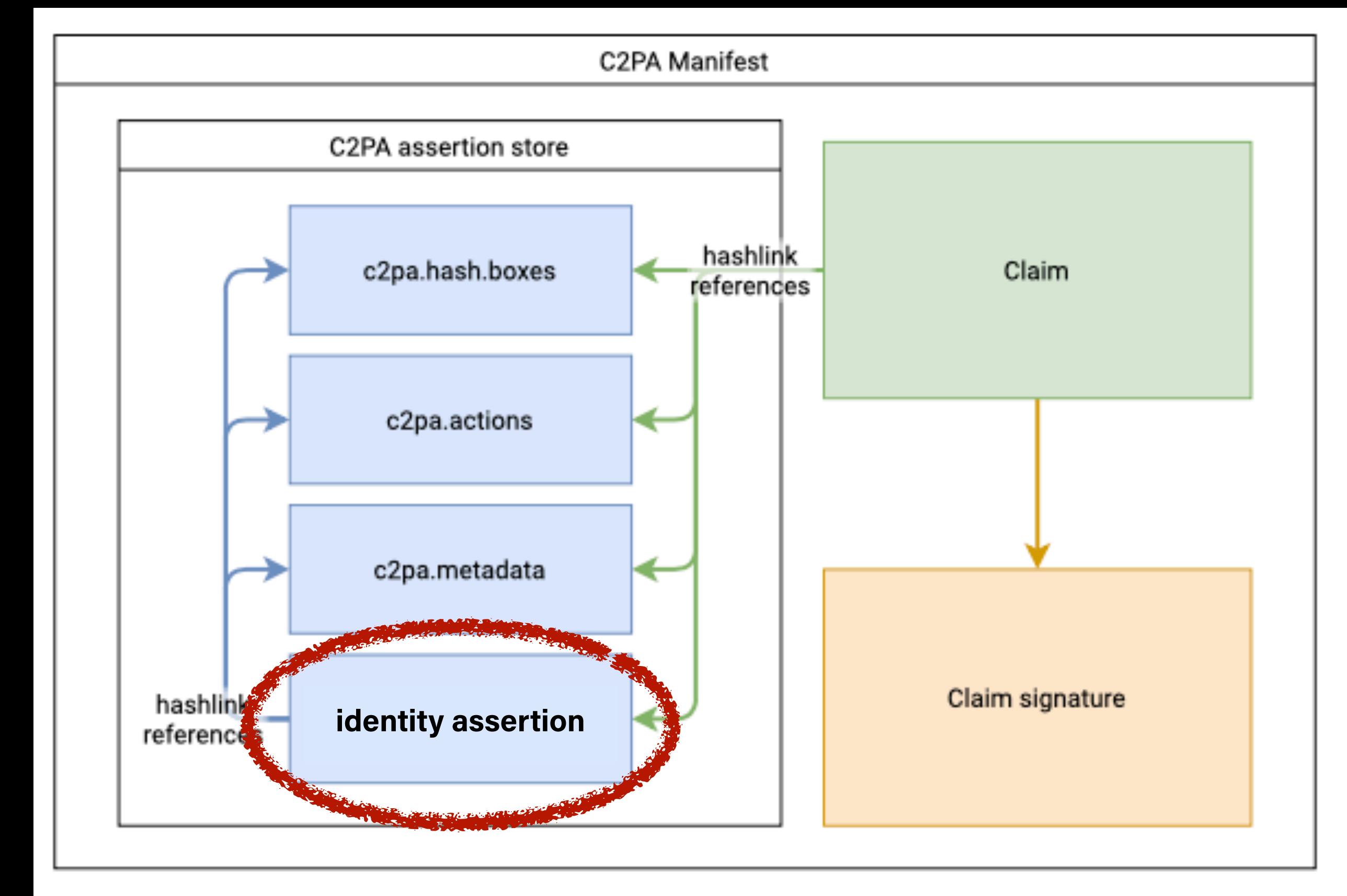


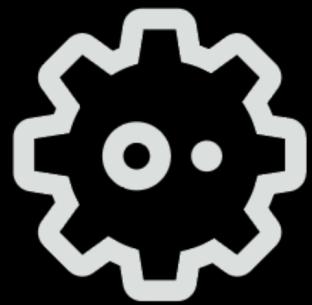
Identity assertion

Overview

Identity assertion allows a credential holder to sign a **signer payload** data structure which contains tamper-evident references to one or more other assertions in the same C2PA Manifest (including hard-binding assertion).

New trust signal separate from C2PA claim generator.





Identity assertion

Two flavors (so far)

- **X.509 certificate**

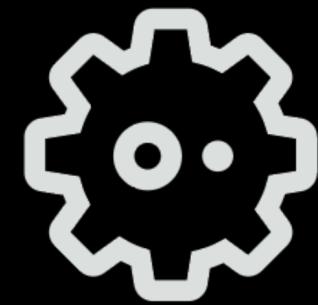
Typically used for institutional content creators such as news media. (More discussion in breakout part 2.)

- **Identity claims aggregation**

*Targeted for individual content creators;
contains links to social media, web site, etc.*

- **Extensible**

Are there other credential formats we should consider?

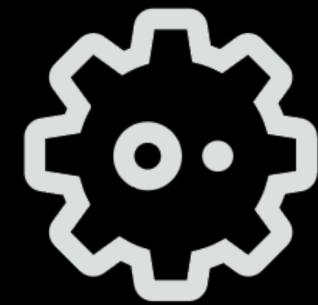


Identity assertion

Individual content creators

- Instagram
- Twitter
- Other social media
- Web site
- Identity document (mDL or physical drivers license, etc.)

Problem: These credentials can generally be *observed* or *gathered* temporarily, but they generally don't have autonomous signing capability.

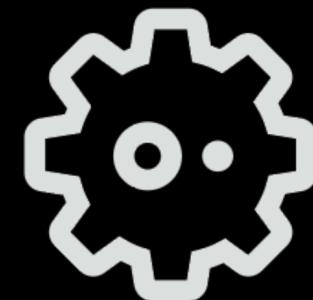


Identity assertion

Individual content creators

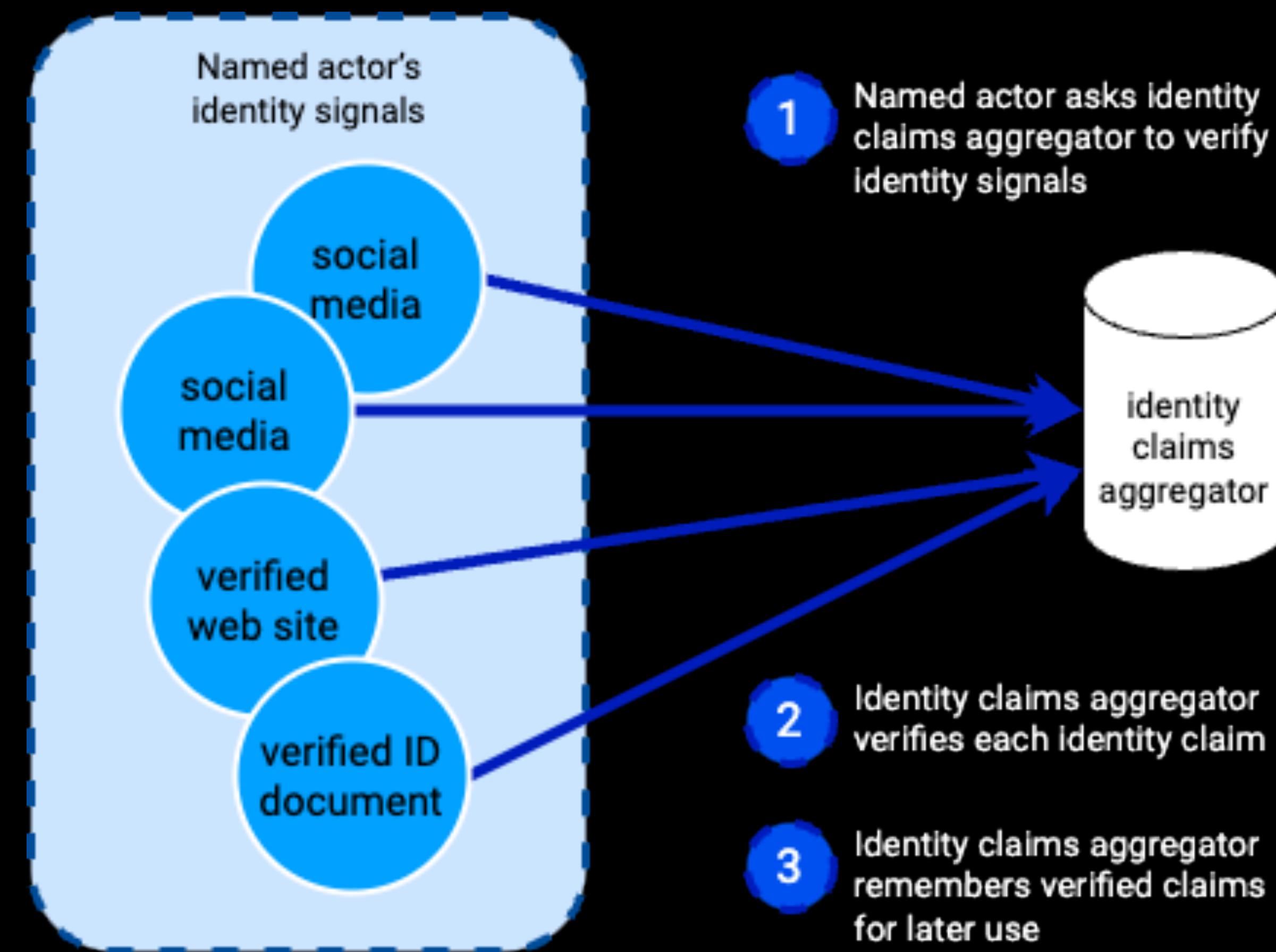
- Instagram
- Twitter
- Other social media
- Web site
- Identity document (mDL or physical drivers license, etc.)

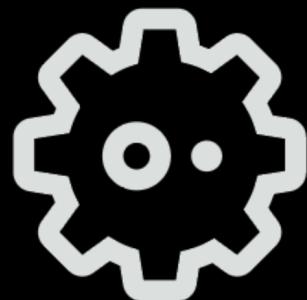
Solution: Describe how a platform vendor can *aggregate* these identity signals and attest to them on behalf of their customer.



Identity assertion

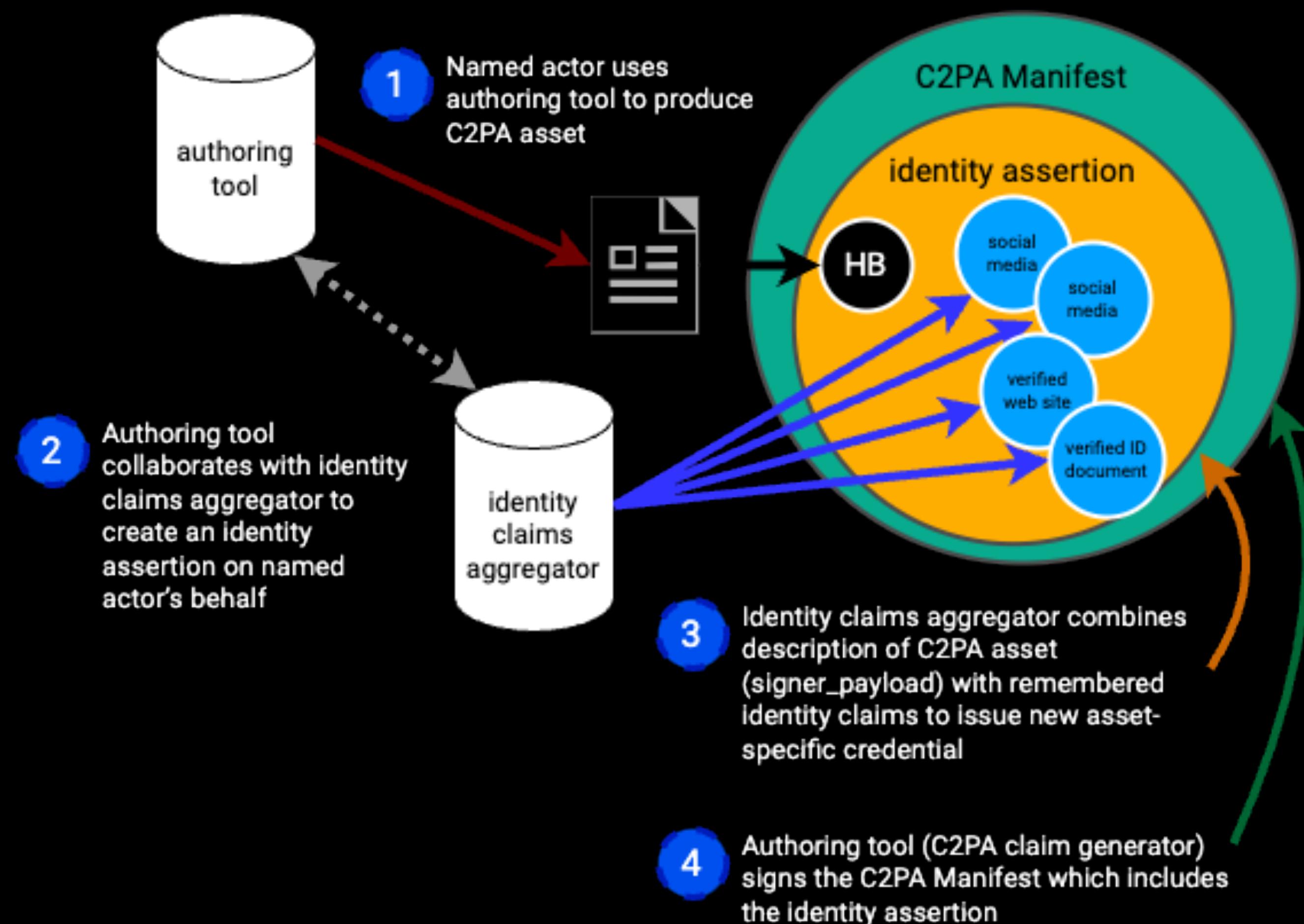
Individual content creators: Verifying identity attestations

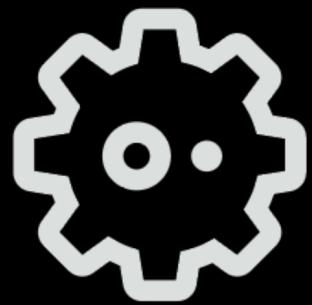




Identity assertion

Individual content creators: Creating content





Adobe Content Authenticity

UX for CAWG identity claims aggregation

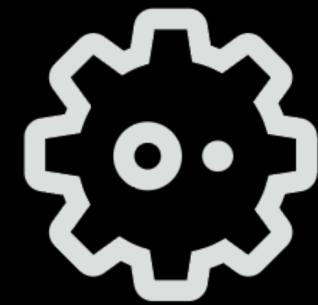
contentauthenticity.adobe.com/preferences

The screenshot shows the 'Preferences' page for Content Authenticity. It includes a heading 'Social media accounts' and four listed accounts: Behance (ericscouten1), Instagram, LinkedIn (Eric Scouten), and X (Twitter). Each account has a 'Connect' button and a three-dot menu icon. A note at the bottom says: 'Add social media accounts to your Content Credentials by logging in to prove that they're yours.'

contentauthenticity.adobe.com/inspect

The screenshot shows the 'inspect' page for Content Authenticity. It features a large image of a polar bear in a snowy environment. Below it, under 'Contributor details', is a section for 'Jane Smith' (verified by LinkedIn) with links to her Behance and Instagram profiles. A red bracket on the left points to this section with the text 'Data sourced from CAWG identity assertion'. At the bottom, there's a note about AI content requests and a 'Content details' link.

Data sourced from
CAWG identity
assertion



Identity assertion

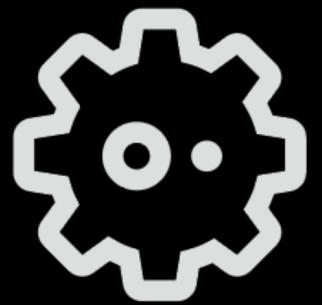
Individual content creators

The actor described by ... VC with aggregated ID signals

using a credential issued by ... identity claims aggregator

produced the content described by ... \${signer_payload}

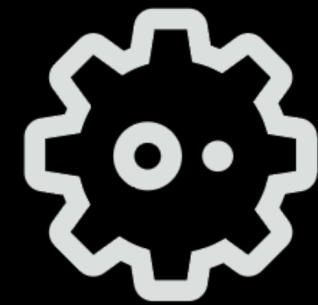
Signed by ... identity claims aggregator



Caution

Identity claims aggregation is *one way* to provide information about a content creator.

It's useful as a bridge between the identity signals mentioned before and current credential technology, but it is *not* fundamental to the identity assertion.



Identity assertion

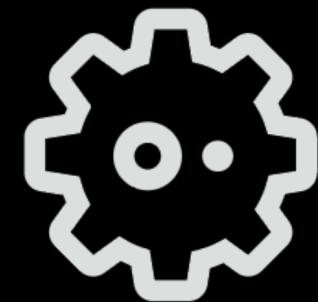
Organizational identity via CAWG X.509

The actor described by ... **X.509 certificate**

using a credential issued by ... **certificate authority**

produced the content described by ... **`${signer_payload}`**

Signed by ... **X.509 credential holder**



Adobe Content Authenticity

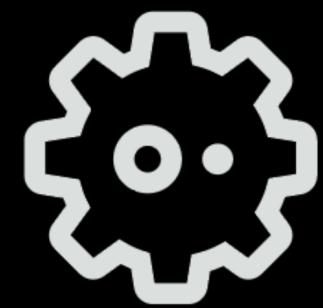
Proposed UX for Origin verified publisher content

contentauthenticity.adobe.com/inspect
(for individual-created content)

A screenshot of the Adobe Content Authenticity interface for individual-created content. At the top is a placeholder image of pyramids and a polar bear. Below it is a section titled "Contributor details" which includes a "Name" field with "Jane Smith" and a "Verified by LinkedIn" badge, social media links for Behance and Instagram, and a note about AI training. A red bracket on the left side groups the placeholder image and the "Contributor details" section.

contentauthenticity.adobe.com/inspect
(for news media content)

A screenshot of the Adobe Content Authenticity interface for news media content. At the top is a placeholder image of cows in a field. Below it is a section titled "Publisher details" which includes the BBC logo and URL, and a "Verified news media organization" badge. A red bracket on the right side groups the placeholder image and the "Publisher details" section. A red callout box labeled "Data sourced from CAWG identity assertion" points to the BBC entry.



Adobe Content Authenticity

Publisher provides additional metadata



Publisher details ▾

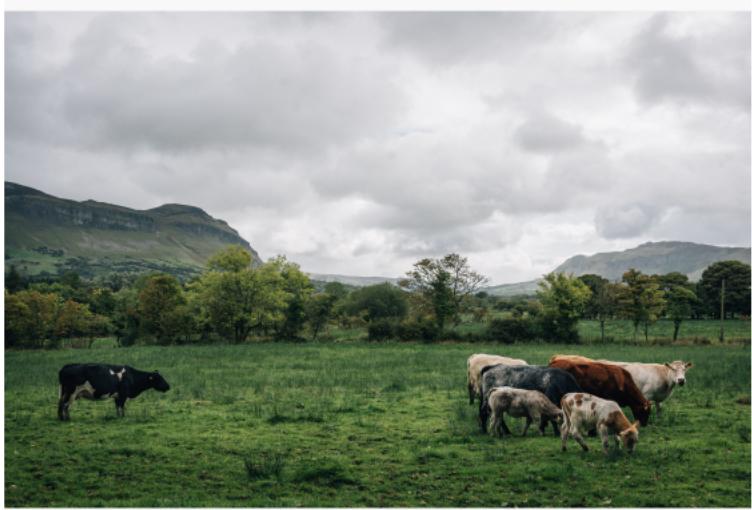
 BBC
bbc.co.uk

Verified news media organization

 Origin Verified Publisher ↗

Content details >

Data sourced from
CAWG metadata
assertion



Publisher details ▾

 BBC
bbc.co.uk

Title
Cattle Grazing Beneath Stormy Skies in County Sligo

Description
A group of cows graze in a green pasture surrounded by rolling hills and cloudy skies in a rural landscape, likely in a temperate region.

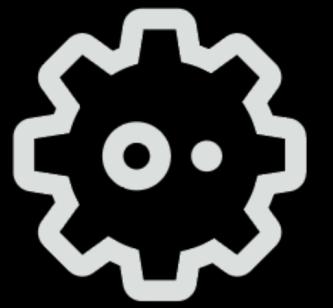
Credit
Photo by Jane McConnell / Reuters

Published on September 15, 2012

Verified news media organization

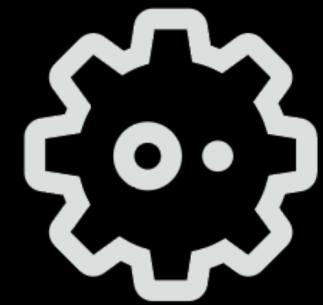
 Origin Verified Publisher ↗

Content details >



Upcoming work

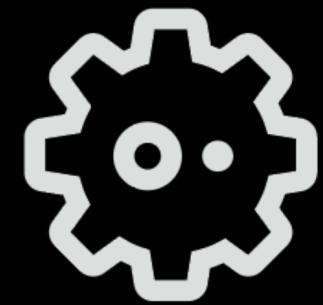
Identity and metadata 1.2



Identity assertion 1.2

Proposed goals – still under discussion

- Identity evolution
- Self-control of identity signals
- Privacy preservation

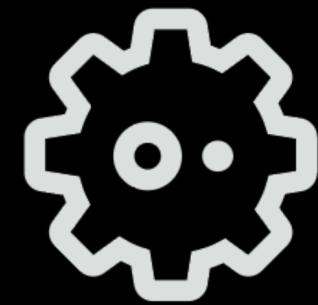


Identity assertion 1.2

Proposed goals – **identity evolution**

- Name changes
- New social media / web site / contact

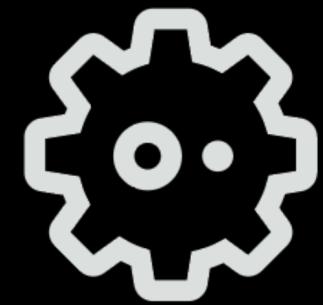
Allow content creators to provide new information – or remove existing information – about their identity for existing C2PA assets, *even if no information was provided at time of asset creation.*



Identity assertion 1.2

Proposed goals – **self-control**

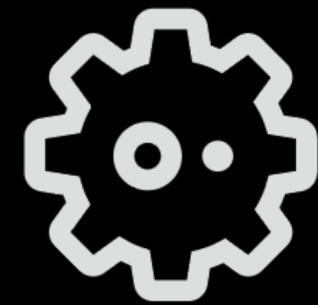
- Allow content creators to control their own identity signals.
- Allow content creators to use the same identity signals across authoring tools.
- Allow content creators the ability to choose when/if to disclose aspects of their identity.



Identity assertion 1.2

Proposed goals - **privacy preservation**

- Allow content creators to control whether identity signals among C2PA assets are correlatable.
- Avoid unintended identity signals through unintended correlation between identity assertions.
- Allow content creators the ability to choose when/if to disclose aspects of their identity. (*repeat*)

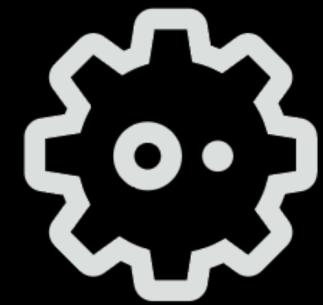


Identity assertion 1.2 - media identifiers TF

Problem space 1 of 2

There are many media industry identifiers commonly associated with various individual talent professionals (musicians, actors, directors, etc.) and organizations that should be associated with content that they are involved in producing.

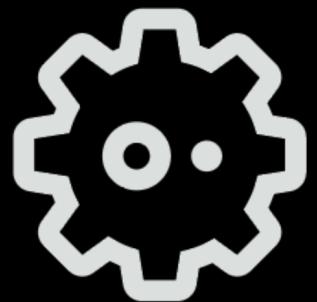
Examples: EIDR, HAND, ISNI



Identity assertion 1.2 - media identifiers TF

Problem space 2 of 2

Most of the individuals and organizations which need to be identified are not typically involved in the content distribution workflow, so it's not feasible to have them contribute individual signatures.

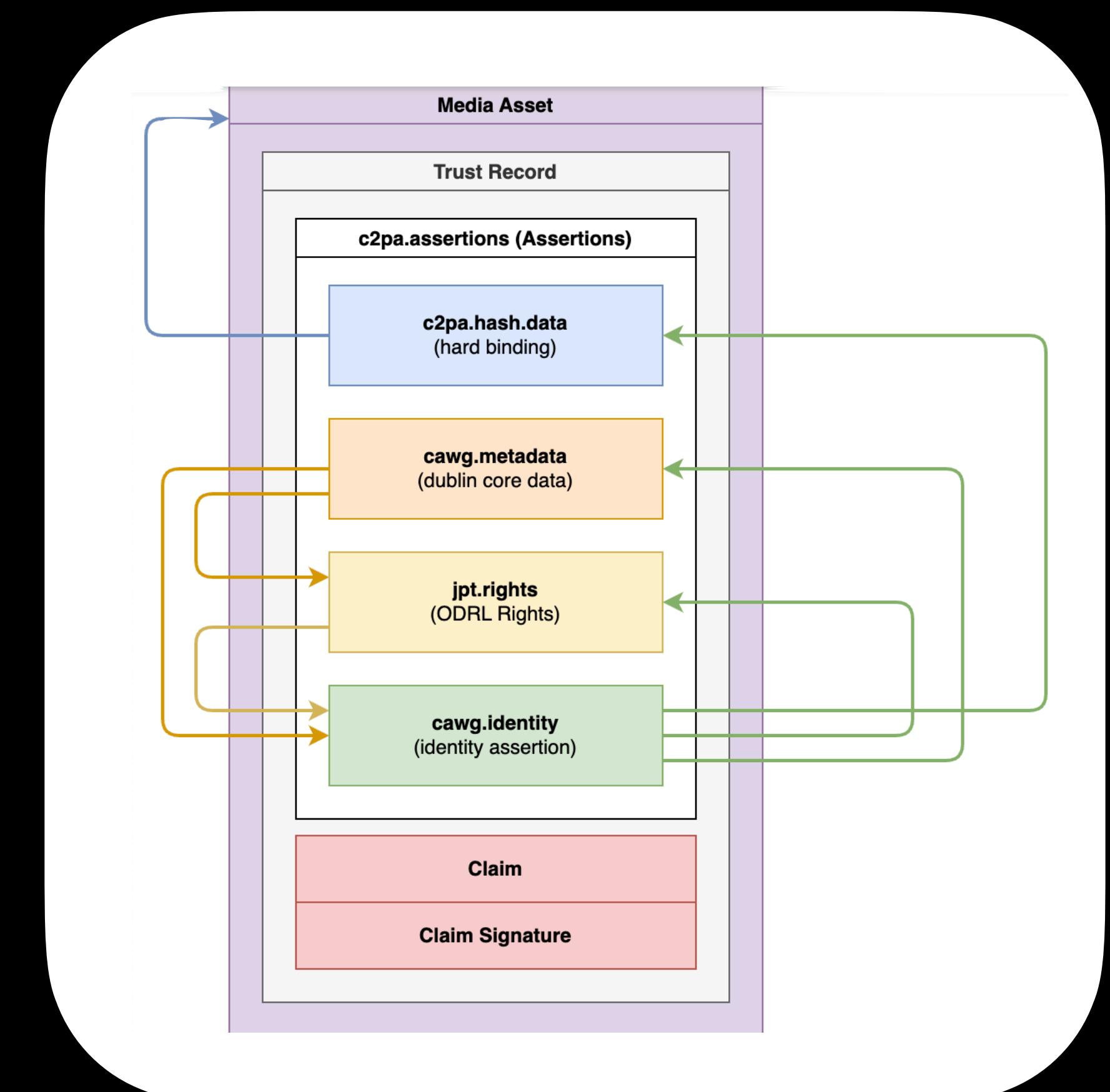


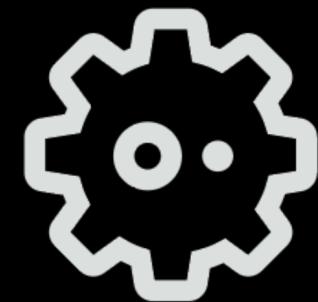
Identity assertion 1.2 - media identifiers TF

Proposed solution

Use a CAWG metadata assertion to house industry-specific identifiers.

Use a CAWG identity assertion signed by trusted industry organization to sign the metadata and thus vouch for validity of ID assignments.



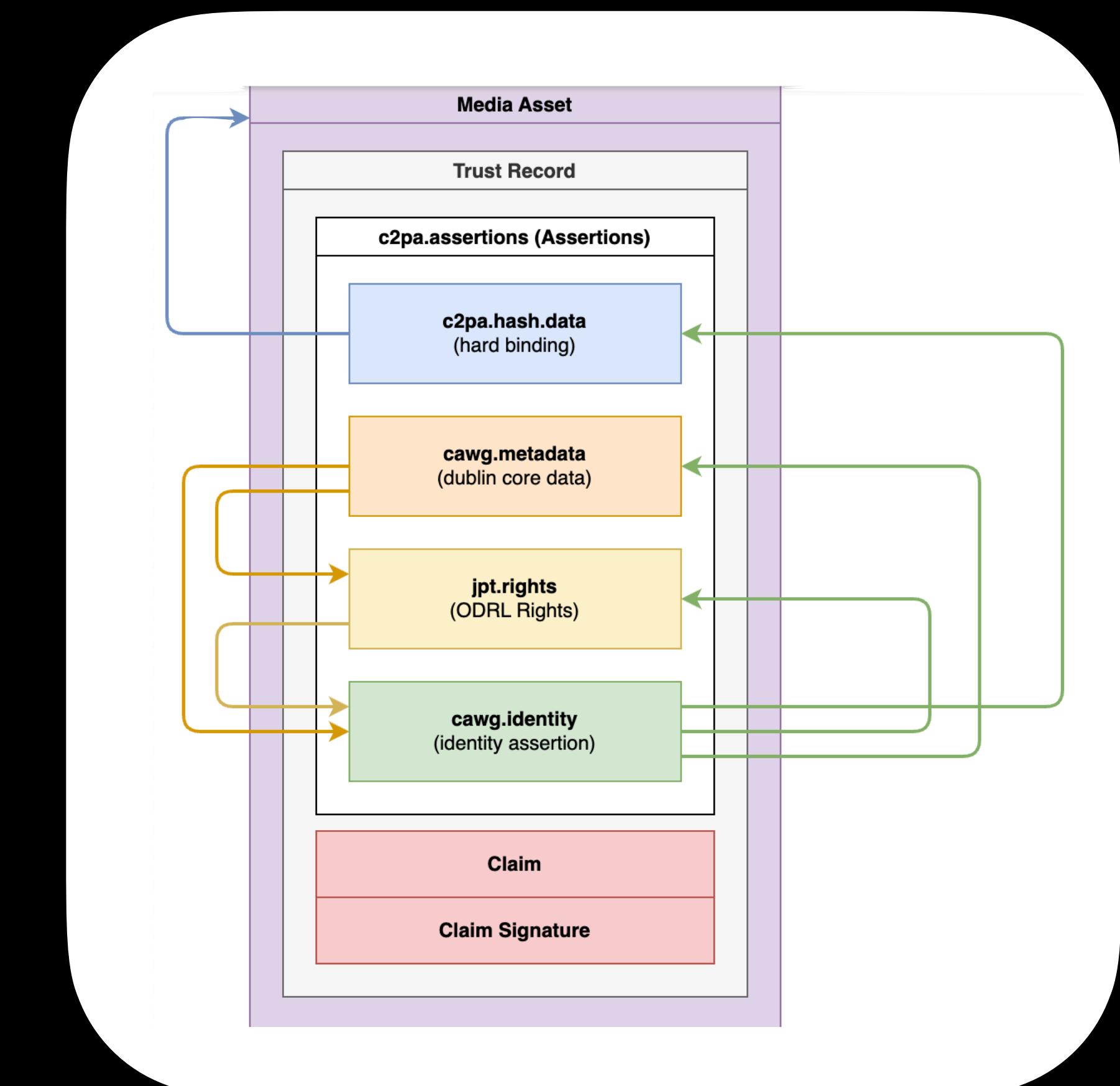


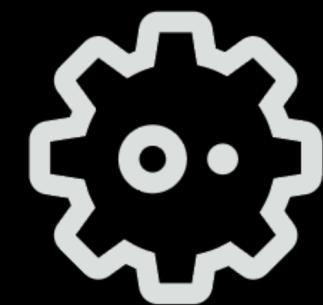
Identity assertion 1.2 - media identifiers TF

Status report: Early days

Just now organizing this group and creating initial drafts.

Comments welcome, of course!

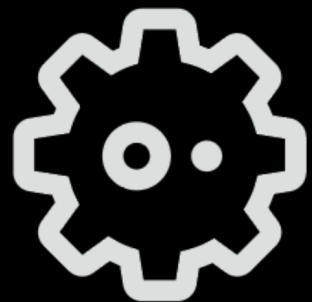




Identity assertion 1.2

Proposed technical approaches – still under discussion

- Identity hooks
- First-person credentials



Identity assertion 1.2

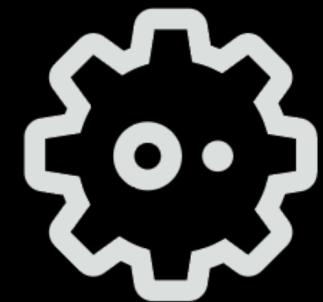
Proposed technical approaches – **identity hooks**

Core idea: **Automatically create an “identity hook” (a public-private key pair or DID) for every C2PA asset created and privately remember the association between private key and asset.**

This allows the content creator to subsequently release information that is associated with that specific asset of the form: “I can prove that I created the specific asset in question and I would now like you to know ____.”

... without inadvertently proving that you created any *other* C2PA asset.

More info: github.com/decentralized-identity/cawg-identity-assertion/issues/216



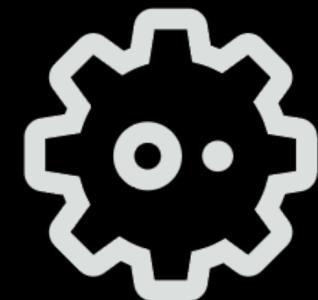
Identity assertion 1.2

Proposed technical approaches – **first-person credentials**

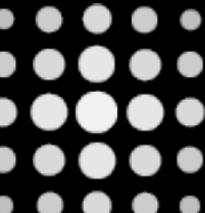
Core idea: **Establish a self-controlled credential that is based on verifiable relationships.**

Allow content creators to associate reputation-based credentials with the content they create.

More info coming in a moment (Drummond).



Come help us bind content provenance with identity!

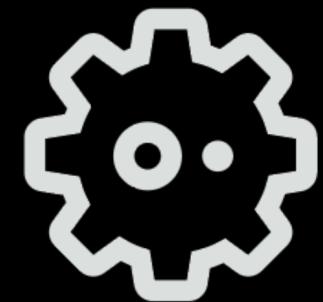
CAWG is part of  **DIF**

Meetings are every other Monday at:

- NA/EU: 0800 Pacific / 1100 Eastern / 1500 UTC
- APAC: 1800 Pacific / 0100* UTC / 1100* Sydney

Next meeting: 16 June*

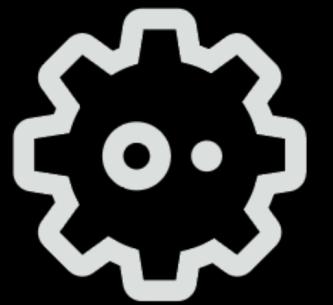
* APAC times are in the following Tuesday



Discussion / Q&A (after Drummond's talk)

- Who are the **next wave** of content creators?
- **What credentials** will support their authenticity?

Contact info: scouten@adobe.com · cawg.io



First-person credential project

Drummond Reed, FPP project lead