

**CONTENT  
AUTHENTICITY  
INITIATIVE**



**EDUCATION**

**DETECTION**

**ATTRIBUTION**

# SETTING THE INDUSTRY STANDARD FOR DIGITAL CONTENT ATTRIBUTION



# WHY ATTRIBUTION?

- It's not an arms race
- Edits are good!
- It's another signal for detection



**ATTRIBUTION IS  
THE WHO\*, THE WHAT, THE  
WHEN AND THE HOW**





AN ADOBE PERSPECTIVE

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# From Capture to Distribution



5:24



DNG



AUTO




DSC\_081682114117642371117631476991.jpeg

### Export As

**Scale All**

Size: 1x Suffix: @1x  
2x @2x

DSC\_0816.jpg  
PNG 3008 x 2000 4.8 MB



**File Settings**

Format: PNG  
 Transparency  
 Smaller file (8-bit)

**Image Size**

Width: 750 px  
Height: 1334 px  
Scale: 100%  
Resample: Bicubic Automatic

**Canvas Size**

Width: 750 px  
Height: 1334 px  
Reset

**Attribution and authenticity**

Copyright and creation info  
 Preview data  
 Connect social/other accounts  
[Learn more at Adobe.com](#)

**Color Space**

Convert to sRGB  
 Embed Color Profile

[Learn more about export options.](#)

Cancel Export All...

33.33%



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Cancel
Export All...

### Metadata Preview

**Creator**  
**Scott Belsky**

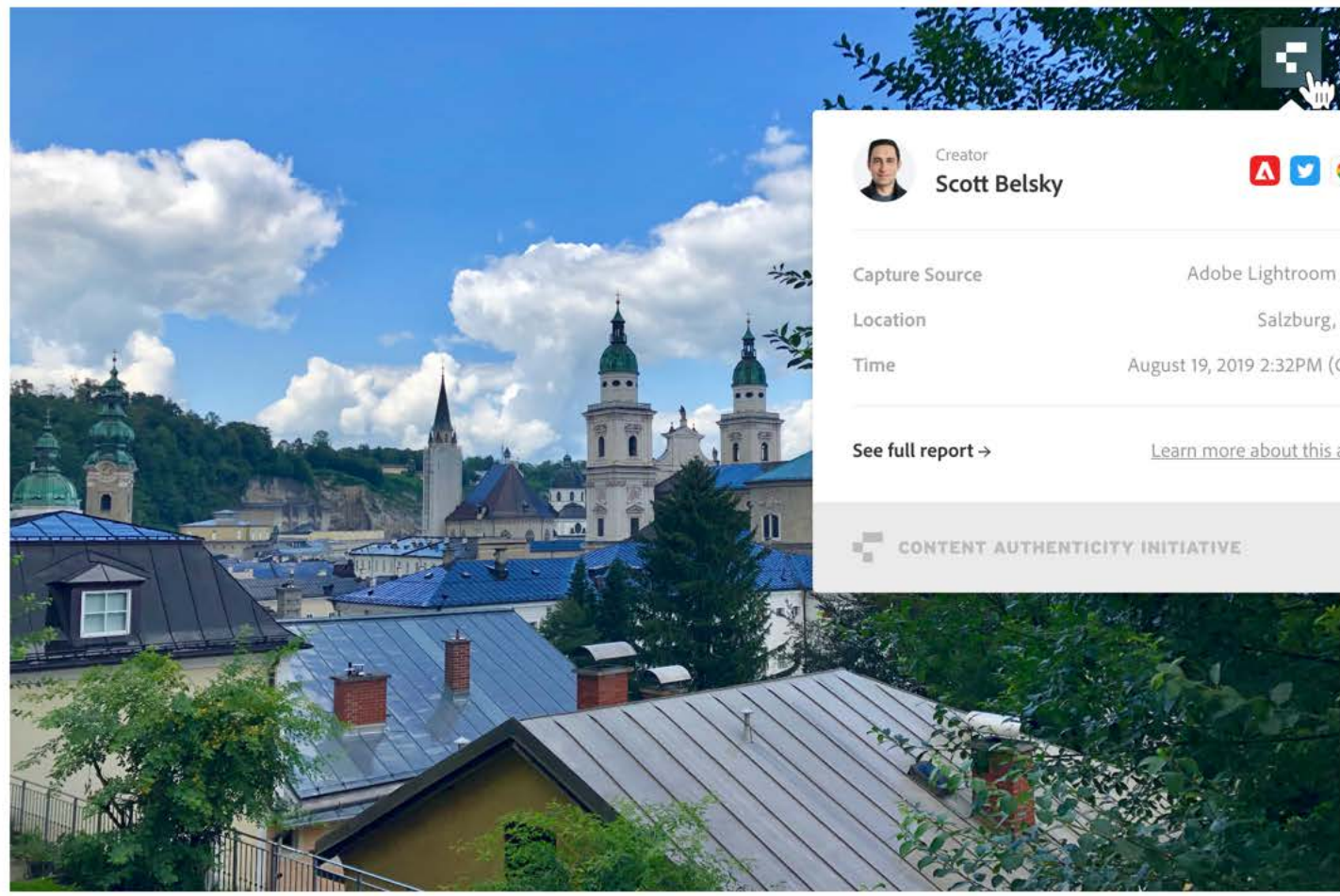
**Capture Source** Adobe Lightroom Mobile

**Location** Salzburg, Austria

**Time** August 19, 2019 2:32PM (GMT+1)

1:00 2:47

[See full report →](#)



Creator **Scott Belsky**

Capture Source Adobe Lightroom Mobile

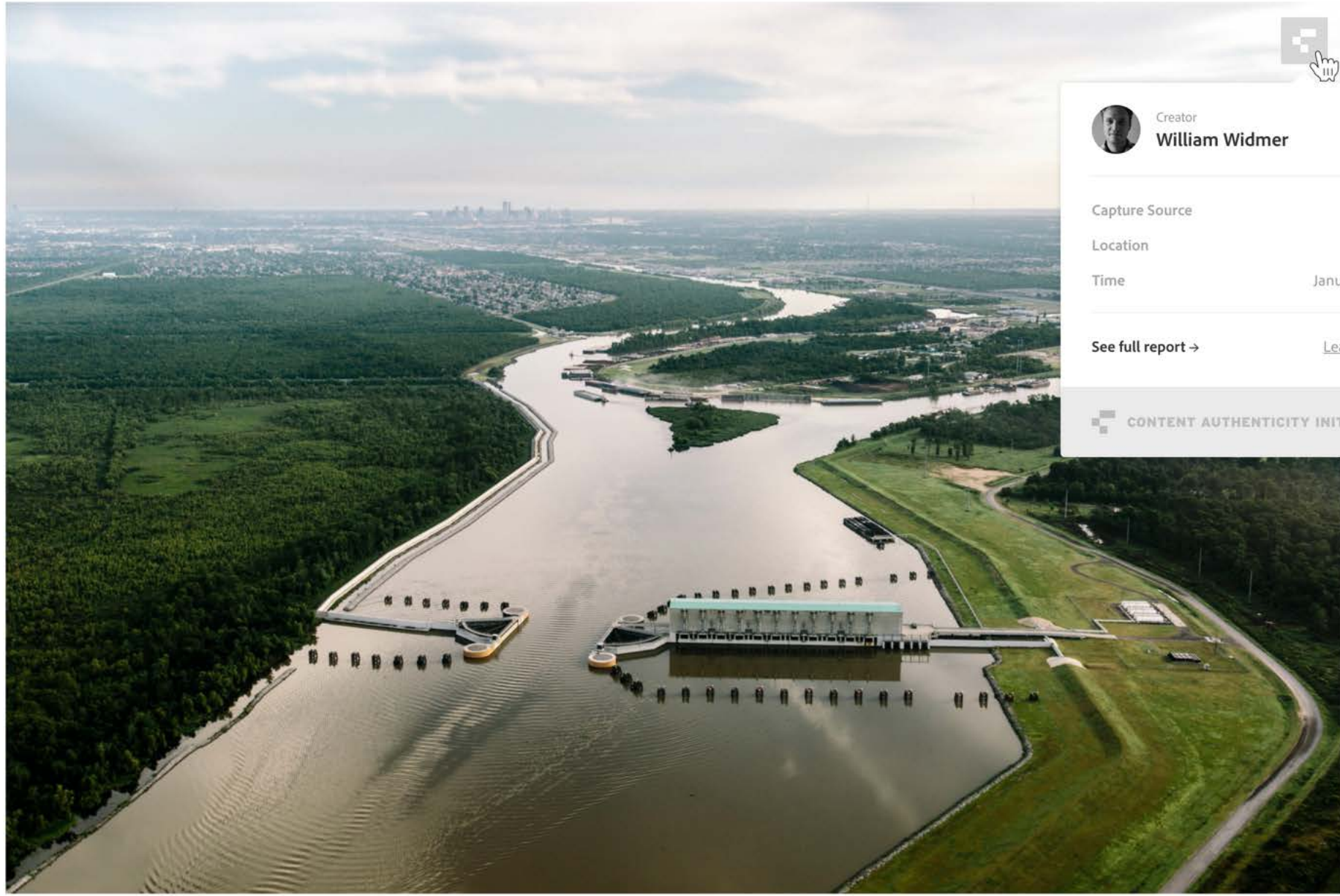
Location Salzburg, Austria


Time August 19, 2019 2:32PM (GMT+1)

[See full report →](#) [Learn more about this analysis](#)

CONTENT AUTHENTICITY INITIATIVE






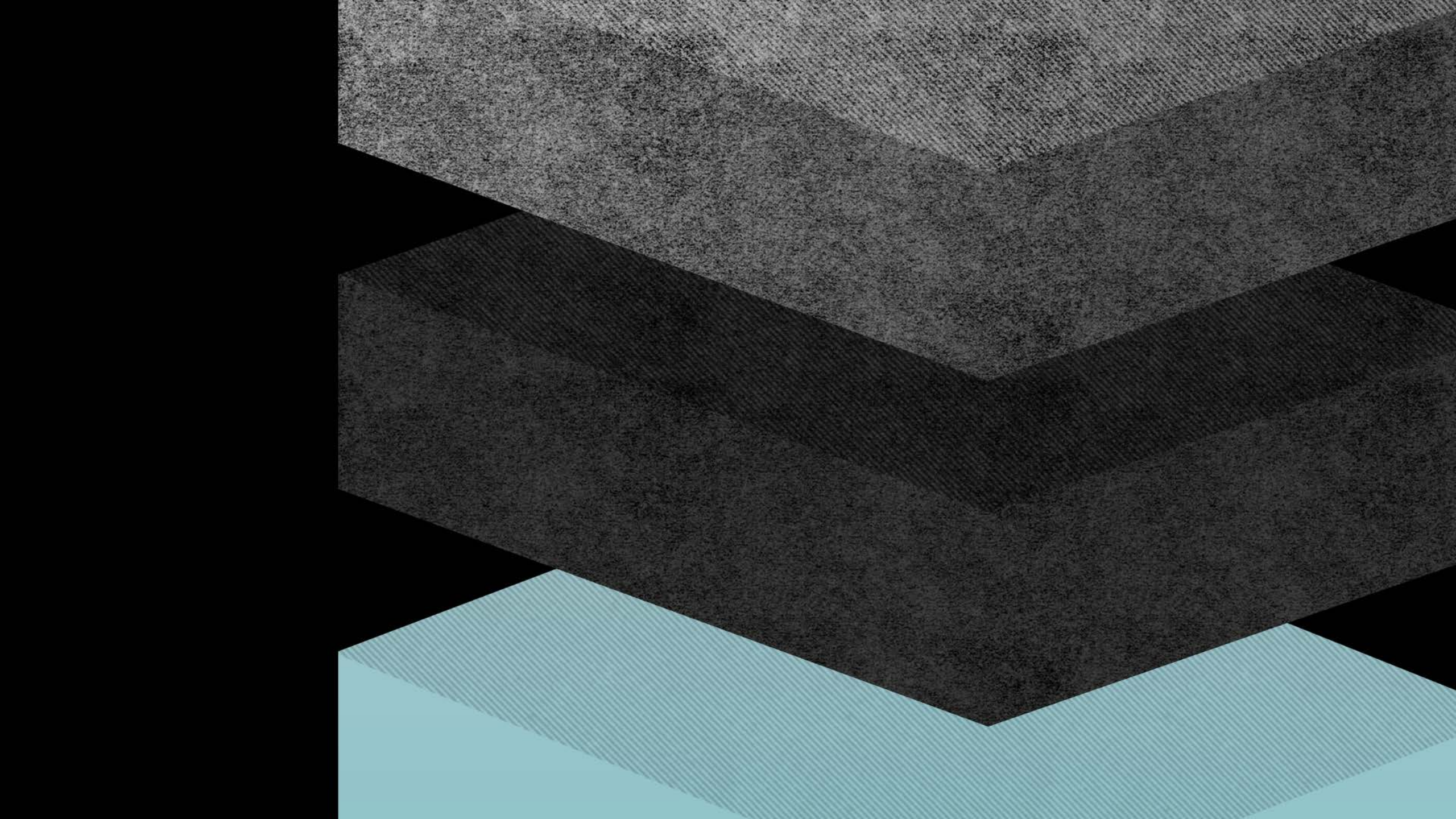
Creator **William Widmer** 

Capture Source	Nikon D850 Digital SLR
Location	New Orleans, LA, USA
Time	January 12, 2020 11:32AM (EST)

[See full report →](#)      [Learn more about this analysis](#)

 CONTENT AUTHENTICITY INITIATIVE

The Gulf Intracoastal West Closure Complex is a part of the New Orleans Drainage System. It consists of a



# It's all about Open Standards: XMP (ISO 16684)

- Developed by Adobe in 2001
- Open Source implementation in 2007
- ISO Standard in 2012
- Embedded metadata format used by all common media types & formats
  - Images (JPG, PNG, WebP, etc.)
  - Video (MOV, M4V, AVI, etc.)
  - Audio (MP3, WAV, etc.)
  - Documents (PDF, EPUB)
- Supported natively by web & platform search engines (Google, Cortana/Bing, Spotlight, etc.)



Adding Intelligence to Media

**ISO 16684-3 is introducing a JSON-LD serialization of XMP (which we plan to leverage in CAI)**

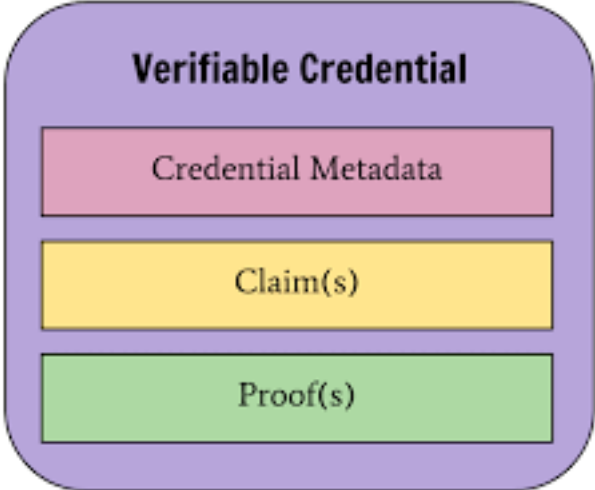
# XMP supports the Who, What, When & How

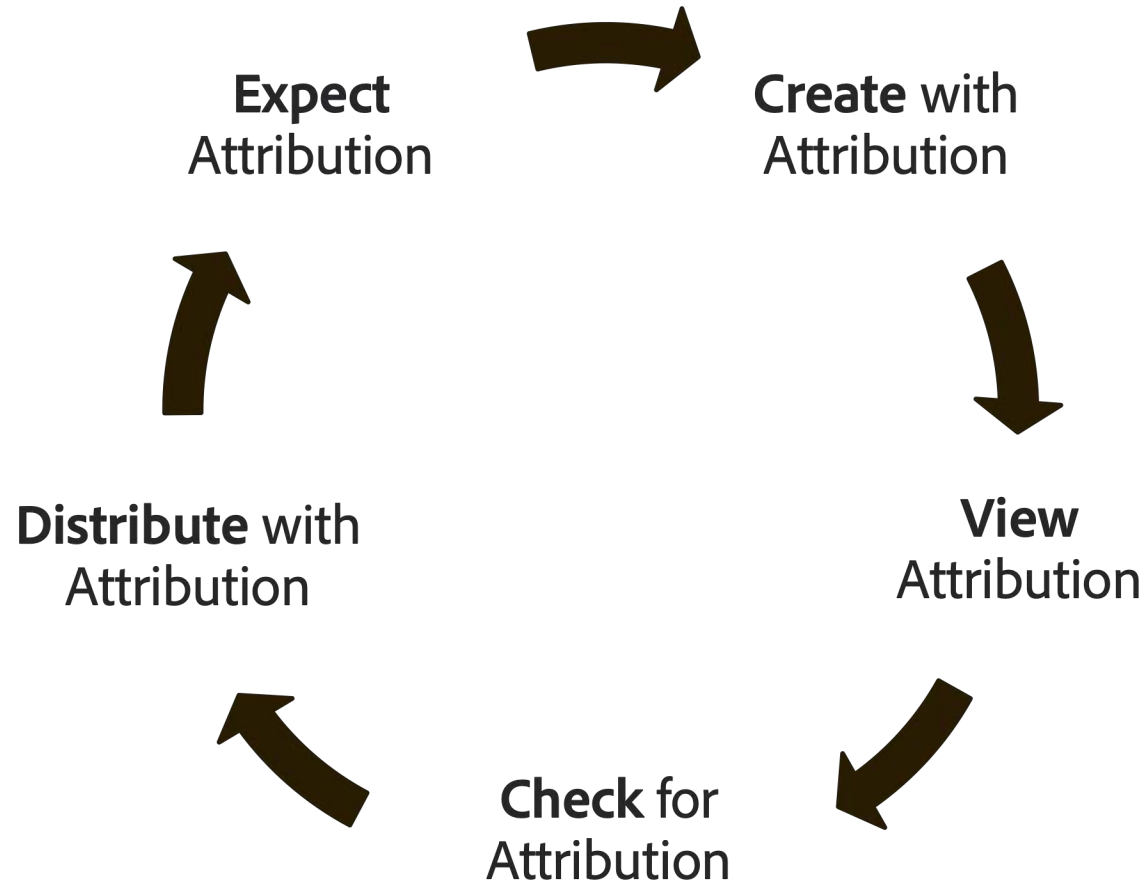
```
<x:xmpmeta xmlns:x="adobe:ns:meta/" x:xmptk="Adobe XMP Core 5.6-c148 79.164036, 2019/08/13-01:06:57" >
  <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
    <rdf:Description rdf:about=""
      xmlns:xmp="http://ns.adobe.com/xap/1.0/"
      xmlns:xmpMM="http://ns.adobe.com/xap/1.0/mm/"
      xmlns:stEvt="http://ns.adobe.com/xap/1.0/sType/ResourceEvent#"
      <xmp:CreateDate>2020-02-24T13:22:54-05:00</xmp:CreateDate>
      <xmp:ModifyDate>2020-02-24T13:25:47-05:00</xmp:ModifyDate>
      <xmpMM:InstanceID>xmp.iid:21cbe493-4ba8-4515-93bd-7c2eb8bee91a</xmpMM:InstanceID>
      <xmpMM:DocumentID>xmp.did:4c23444a-a6cf-470f-afae-772f0f619c2f</xmpMM:DocumentID>
      <xmpMM:OriginalDocumentID>xmp.did:4c23444a-a6cf-470f-afae-772f0f619c2f</xmpMM:OriginalDocumentID>
      <xmpMM:History>
        <rdf:Seq>
          <rdf:li rdf:parseType="Resource">
            <stEvt:action>Gaussian Blur Applied</stEvt:action>
            <stEvt:instanceID>xmp.iid:21cbe493-4ba8-4515-93bd-7c2eb8bee91a</stEvt:instanceID>
            <stEvt:when>2020-02-24T13:25:47-05:00</stEvt:when>
            <stEvt:softwareAgent>Adobe Photoshop 21.0 (Macintosh)</stEvt:softwareAgent>
            <stEvt:changed></stEvt:changed>
          </rdf:li>
        </rdf:Seq>
      </xmpMM:History>
```

```
<xmpMM:Ingredients>
  <rdf:Bag>
    <rdf:li rdf:parseType="Resource">
      <stRef:linkForm>ReferenceStream</stRef:linkForm>
      <stRef:filePath>cloud-asset://3bc71010-953e-11e4-8930-21404e1366af;node=87a81343-b444-4c98-ale3-5deld3753cf3</stRef:filePath>
      <stRef:DocumentID>176589372</stRef:DocumentID>
    </rdf:li>
    <rdf:li rdf:parseType="Resource">
      <stRef:linkForm>ReferenceStream</stRef:linkForm>
      <stRef:filePath>cloud-asset://3bc71010-953e-11e4-8930-21404e1366af;node=d56d987c-e3cf-44c3-bf9d-c9c72383d04c</stRef:filePath>
    </rdf:li>
  </rdf:Bag>
</xmpMM:Ingredients>
<dc:format>application/vnd.adobe.photoshop</dc:format>
<photoshop:ICCProfile>sRGB IEC61966-2.1</photoshop:ICCProfile>
<tiff:XResolution>3000000/10000</tiff:XResolution>
<tiff:YResolution>3000000/10000</tiff:YResolution>
<exif:PixelXDimension>2100</exif:PixelXDimension>
<exif:PixelYDimension>1500</exif:PixelYDimension>
</rdf:Description>
</rdf:RDF>
</x:xmpmeta>
```

# Open Standard: Verifiable Claims/Credentials + JWT

```
{
  "jti": "3e061079a991071a5d2dcfd2ee1c6794",
  "iss": "http://cai.adobe.com",
  "iat": 1516239022,
  "vc" : {
    "@context": [
      "https://www.w3.org/2018/credentials/v1",
      "https://ns.adobe.com/cai"
    ],
    "type": ["VerifiableCredential", "AuthenticContent"],
    "credentialSubject": {
      "actions": [ { "stEvt:action": "filter_applied", "stEvt:when": "2020-02-11T09:00:00" } ],
      .. .. .
    }
  }
}
```





# A virtuous cycle





