From Open Annotations to W3C Web Annotations (and the impact on IIIF Presentation API 3.0)

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(errors belong to Simeon though)
Open Annotation

- W3C “Community Draft” 2013
- Basis for annotations in IIIF Presentation API v2.1 (and prior versions)
W3C Web Annotation

- Cluster of W3C Recommendations – real standards – released 2017-02
Basic model - no change

- Identical *picture* used in Open Annotation and Web Annotation
- An annotation (resource) has:
  - zero or more bodies (e.g. highlight may have zero)
  - one or more targets
- Same namespace [http://www.w3.org/ns/oa#](http://www.w3.org/ns/oa#) and same suggested `oa:` prefix (in serializations other than JSON-LD)
Cleaner JSON – mirrored in Presentation 3

- Focus on developer/user friendliness: better documentation, use cases for each feature, and...
- No prefixes, better terms, fewer @ signs
- Stricter definition of values and cardinality
- Downside of improvements... numerous changes in the JSON-LD

v2 example 5.4

v3 example 5.5
Web Annotation splits Model and Vocabulary

- Combined in Open Annotation specification
- No direct impact on IIIF but cleaner (model examples all JSON-LD whereas the vocabulary uses Turtle)
Adds Protocol for Annotations

- Separate “Web Annotation Protocol” specification
- Not included in the Open Annotation specifications
- Describes the rest of REST: create, update and delete

Web Annotation Protocol
W3C Recommendation 23 February 2017

This version:
https://www.w3.org/TR/2017/REC-annotation-protocol-20170223/

Latest published version:
https://www.w3.org/TR/annotation-protocol/

Latest editor's draft:
https://w3c.github.io/web-annotation/protocol/WD/

Implementation report:
https://w3c.github.io/test-results/annotation-protocol/all.html

Previous version:
https://www.w3.org/TR/2017/PR-annotation-protocol-20170117/

Editor:
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Repository:
http://w3.org/TR/annotation-protocol/
5.5 Annotations ... “Annotations **MUST** have their own http(s) URIs, conveyed in the `id` property. The JSON-LD description of the Annotation **SHOULD** be returned if the URI is dereferenced, according to the [Web Annotation Protocol](https://www.w3.org/TR/annotation-protocol/).”

1.2 Summary

For those familiar with the Web Annotation model, LDP, and REST, much of the Annotation Protocol will be very obvious. The following aspects are the most important new requirements.

- The media type to use for Annotations is:
  
  application/ld+json;profile="http://www.w3.org/ns/anno.jsonld"

- Annotation Containers are constrained by the set of constraints described in this specification, and thus the `ldp:constrainedBy` URL is `http://www.w3.org/TR/annotation-protocol/`

- The link header can refer from any resource to an Annotation Container using a `rel` type of:
  
  `http://www.w3.org/ns/oa#annotationService`

- The response from a Container after creating an Annotation **should** include a representation of the Annotation, after any changes have been made to it, in the JSON-LD serialization.

- Annotation Containers **should** only contain Annotations, and not other resources.

- Activity Streams Collection [activitystreams-core](#) model is used for paging, as in-page ordering is an important requirement.
Replaced "Content in RDF" with TextualBody

Web Annotation removed defunct "Content in RDF" specification

- Working Draft from 2011 never progressed to a specification. A new Working Group Note was published in 2017 with essentially the same content (better formatting) but is not on a standardization path.
- ContentAsBase64 and ContentAsXML (along with DoctypeDecl) are pretty ugly too ;-)

Instead use TextualBody which mirrors referenced content:

```json
{
  "@context": "http://www.w3.org/ns/anno.jsonld",
  "id": "http://example.org/anno5",
  "type": "Annotation",
  "body": {
    "type": "TextualBody",
    "value": "<p>j'adore !</p>",
    "format": "text/html",
    "language": "fr"
  },
  "target": "http://example.org/photo1"
}
```
Adds `bodyValue` shortcut (hack)

The `bodyValue` shortcut provides a very compact syntax for the simplest case of a single string body, but it is explicitly **NOT RECOMMENDED** for use

- and hence… not used in IIIF!
- goes against evolving principle of regularity – feedback from client developers is that we should have regularly formatted JSON-LD, avoiding multiple forms
Specific Resources

- Model largely the same – provides the ability to contextualize, or select part of, the body or target resource in the annotation
  - Now recommended pattern for fragments, instead of direct #xywh= URIs
  - Added purpose as way of associating a Motivation with a Specific Resource
  - More selectors and selector refinement by chaining
Selectors rather than direct fragments?

It is **RECOMMENDED** to use FragmentSelector as a consistent method compatible with other means of describing SpecificResources, rather than using the IRI with a fragment directly. Consuming applications **SHOULD** be aware of both. [Web Annotation, Fragment Selector]

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```json
{
  "@context": ".../presentation/2/context.json",
  "@id": "http://ex.org/anno1",
  "@type": "oa:Annotation",
  "motivation": "sc:painting",
  "resource": {
    "@id": "http://ex.org/image.jpg",
    ...
  },
  "on": "http://ex.org/canvas/p1#xywh=0,0,600,900"
}
```

**shortened example from v2 segments**

```json
{
  "@context": ["http://www.w3.org/ns/anno.jsonld", ".../presentation/3/context.json"],
  "@id": "http://ex.org/anno1",
  "@type": "Annotation",
  "motivation": "painting",
  "body": {
    "@id": "http://ex.org/image.jpg",
    ...
  },
  "target": {
    "source": "http://ex.org/canvas/p1",
    "selector": {
      "type": "FragmentSelector",
      "conformsTo": "...w3.org/TR/media-frags/",
      "value": "xywh=0,0,600,900"
    }
  }
}
```

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**Not yet decided:**

[https://github.com/IIIF/api/issues/1338](https://github.com/IIIF/api/issues/1338)
Annotation Pages and Collections

Web Annotation specification introduces the Annotation Page as part of an Annotation Collection

- Class from Activity Streams (`as:OrderedCollectionPage`)
- Annotation Lists (a Shared Canvas construct) are replaced with Annotation Pages
- In IIIF JSON-LD the type changes from `sc:AnnotationList` to AnnotationPage

also introduces the Annotation Collection

- Class from Activity Streams (`as:OrderedCollection`) which has Annotation Pages as parts
- Layers (a Shared Canvas construct) are replaced with Annotation Collections
- In IIIF JSON-LD the type changes from `sc:Layer` to AnnotationCollection
Changes without direct impact on IIIF

- Replaced prov-o ontology features with simpler notions from dcterms
- Selection of bodies: List and Composite were removed as the use cases were deemed too esoteric with no implementations; Choice remains, but is now ordered list (sub-class of as:OrderedCollection) rather than a default plus unordered options
- Added additional properties for bodies and targets:
  - processingLanguage and textDirection for Internationalization
  - accessibility, using schema.org description of the accessibilityFeature property.
- Additional properties for the annotation:
  - audience, based schema.org's Audience class