

Annotation Model

The annotations are serialized in json-ld. The json-ld file should have a `@context` field providing the context and a `@graph` field providing the annotations.

The value of the `@graph` property is an array, so a single json-ld file may contain several annotations.

```
{
  "@context" : { ... },
  "@graph" : [ { ... }, { ... }, ... ]
}
```

The structure of each object (annotation) inside the `@graph` array is as follows:

```
{
  "id" : "https://sage-ails.ails.ece.ntua.gr/resource/annotation/941011",

  "type" : "Annotation",

  "created" : "2022-07-20T08:08:10",
```

"creator" is the annotation creator. It should be an object of "type" either "Person" for manually created annotations or "Software" for automatically created annotations. It could also provide the iri of the creator. The type is obligatory, other properties, such as id and name (of the application) are optional (for details see Web Annotation Model).

```
"creator" : {
  "id": "http://apps.islab.ntua.gr/inknowledge/",
  "type" : "Software",
  "name": "inThesaurus Annotator"
},
```

"body" is the actual annotation value. It can be either a iri or a literal, encoded as an object with properties "type" of value "TextualBody" and "value" for the literal lexical form and "language" for the literal language. Typically there should be one body, but it may be the case that the body is an array of uris or literals. In the latter case, all other properties of the annotation object refer to all bodies.

```
"body" : "http://www.wikidata.org/entity/Q8434",
```

or

```
"body" : {
  "type" : "TextualBody",
  "value" : "Wir können nur verstehen",
  "language" : "de"
}
```

or (multiple bodies)

```
"body" : [ "http://www.wikidata.org/entity/Q8434",
  "http://www.wikidata.org/entity/Q84" ] ,
```

"confidence" is the confidence of the annotation creator for the particular annotation(s).

```
"confidence" : "1.0",
```

"target" is the object that gave rise to the annotation and the annotation value refers to. It should have a "source" which should be the URI of the object the annotation refers to, and possibly a selector to select a part of the source.

```
"target" : {  
  "source" : "http://mint-project/eriac/255",
```

For annotation on rdf data, a selector of type "RDFPathSelector" specifies a path starting from the node corresponding to the value of "source" and ending to the desired destination node, which typically will be a literal. A part of the literal can also be specified using the "start" and "end" properties. The rdf path selector is inspired from <https://www.w3.org/2005/04/fresnel-info/fsl/>, and the following example is interpreted as *[uri(.) = 'http://mint-project/eriac/255']/dc:descriptor/*[literal-value(.)="We can only comprehend"@en]. Other selectors may be supported.

```
  "selector" : {  
    "type" : "RDFPathSelector",  
    "rdfPath" : "/<http://purl.org/dc/elements/1.1/description>/",  
    "destination" : {  
      "type" : "Literal",  
      "value" : "We can only comprehend",  
      "language" : "en"  
    },  
    "refinedBy": {  
      "type": "TextPositionSelector",  
      "start": 6,  
      "end": 27  
    },  
  },  
},
```

The "RDFPropertySelector" provides a more straightforward way to select a node connected to the source by a single property.

```
  "selector" : {  
    "type" : "RDFPropertySelector",  
    "property" : "http://purl.org/dc/elements/1.1/description",  
    "destination" : {  
      "type" : "Literal",  
      "value" : "French stuff here",  
      "language" : "fr"  
    },  
    "refinedBy": {  
      "type": "TextPositionSelector",  
      "start": 6,  
      "end": 27  
    },  
  },  
}
```

or (for a non-literal destination, if there is such a use case)

```
  "selector" : {  
    "type" : "RDFPropertySelector",  
    "property" : "http://purl.org/dcterms/spatial",  
    "destination" : "http://wikidata.org/25"  
  },  
}
```

"review" provides information about the annotation validation status. Currently "Validation" and "Rating" review types are supported. Reviews of type "Validation" have a field "recommendation" with value either "accept" or "reject". Reviews of type "Rating" have a decimal score.

```
"review" : {
  "type" : "Validation",
  "recommendation" : "accept"
},
```

or

```
"review" : {
  "type" : "Rating",
  "score" : 0.789
},
```

"scope" is the property the annotation should be encoded as. It should be an iri.

```
"scope" : "dc:spatial"
}
```

The @context object is the following:

```
{
  "as" : "https://www.w3.org/ns/activitystreams#",
  "dc" : "http://purl.org/dc/terms/",
  "dce" : "http://purl.org/dc/elements/1.1/",
  "foaf" : "http://xmlns.com/foaf/0.1/",
  "oa" : "http://www.w3.org/ns/oa#",
  "rdf" : "http://www.w3.org/1999/02/22-rdf-syntax-ns#",
  "xsd" : "http://www.w3.org/2001/XMLSchema#",

  "soa" : "http://sw.islab.ntua.gr/annotation/",

  "id" : {
    "@id" : "@id",
    "@type" : "@id"
  },
  "type" : {
    "@id" : "@type",
    "@type" : "@id"
  },

  "value" : "rdf:value",

  "created" : {
    "@id" : "dc:created",
    "@type" : "xsd:dateTime"
  },
  "creator" : {
    "@id" : "dc:creator",
    "@type" : "@id"
  },
  "language" : "dc:language",
```

```

"Software" : "as:Application",

"Person" : "foaf:Person",
"name": "foaf:name",

"Annotation" : "oa:Annotation",
"TextPositionSelector": "oa:TextPositionSelector",
"TextualBody" : "oa:TextualBody",
"body" : {
  "@id" : "oa:hasBody",
  "@type" : "@id"
},
"end" : {
  "@id" : "oa:end",
  "@type" : "xsd:nonNegativeInteger"
},
"refinedBy": {
  "@type": "@id",
  "@id": "oa:refinedBy"
},
"scope" : {
  "@id" : "oa:hasScope",
  "@type" : "@id"
},
"selector" : {
  "@id" : "oa:hasSelector",
  "@type" : "@id"
},
"start" : {
  "@id" : "oa:start",
  "@type" : "xsd:nonNegativeInteger"
},
"source" : {
  "@id" : "oa:hasSource",
  "@type" : "@id"
},
"target" : {
  "@id" : "oa:hasTarget",
  "@type" : "@id"
},

"Literal" : "soa:Literal",
"Rating" : "soa:Rating",
"RDFPathSelector" : "soa:RDFPathSelector",
"RDFPropertySelector" : "soa:RDFPropertySelector",
"Validation" : "soa:Validation",
"confidence" : {
  "@id" : "soa:confidence",
  "@type" : "xsd:decimal"
},

```

```
"destination" : {
  "@id" : "soa:destination",
  "@type" : "@id"
},
"property" : "soa:onProperty",
"rdfPath" : "soa:rdfPath",
"recommendation" : {
  "@id" : "soa:recommendation",
  "@type" : "@vocab"
},
"score" : {
  "@id" : "soa:score",
  "@type" : "xsd:decimal"
},
"review" : {
  "@id" : "soa:hasReview",
  "@type" : "@id"
},
"accept" : "soa:Accept",
"reject" : "soa:Reject"
}
```