

Grant metadata updates (draft for comment)

(Updated 3/15/22 to include language support section)

A number of updates have been suggested for the Grants metadata we collect. Please comment with any suggestions, we value your feedback!

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Expanding: additional funding types

Will add:

- APC: article processing charge for open access content
- BPC: book processing charge for open access content
- infrastructure

Current funding types:

- award: a prize, award, or other type of general funding
- contract: agreement involving payment
- crowdfunding: funding raised via multiple sources, typically small amounts raised online
- endowment: gift of money that will provide an income
- equipment: use of or gift of equipment
- facilities: use of location, equipment, or other resources
- fellowship: grant given for research or study
- grant: a monetary award
- loan: money or other resource given in anticipation of repayment
- other: award of undefined type
- prize: an award given for achievement
- salary-award: an award given as salary, includes intramural research funding
- secondment: detachment of a person or resource for temporary assignment elsewhere

- seed-funding: an investor invests capital in exchange for equity
- training-grant: grant given for training

New: Acknowledgements

Add narrative acknowledgements section - repeatable to support multiple languages

```
<acknowledgements xml:lang="en">We would like to thank Crossref for providing
us with durable and attractive sofas to assist with our
research</acknowledgements>
```

Expanding: Identifying the source of funding

1. Add ROR IDs, to be supplied instead of a funder ID
2. Remove requirement for funder name - can retrieve name from funder or ROR registry (forthcoming API enhancement)

```
<funding amount="24.50" currency="USD" funding-percentage="100"
      funding-type="equipment">
  <funder-name>Crossref</funder-name> (optional)
  <ROR>https://ror.org/02twcfp3</ROR> (funder-id or ROR
required)
  <funding-scheme>Metadata program</funding-scheme> (optional)
</funding>
```

Breaking change: updates for group authors / beneficiaries / investigators

We want to capture that grants can be given to organizations. We also need to capture that grant beneficiaries are not always the investigators, and that investigator roles can change over time.

Changes:

1. **New:** Add 'group' option: We need to capture beneficiaries that are organizations, not people. The group will be modeled like investigators but will support a ROR ID instead of an ORCID ID
2. **Breaking change:** Make role into a repeatable element with start and end dates: roles change over time, and an individual may have multiple roles.
3. **New:** Add 'beneficiary' as a role: some grants are given to beneficiaries (often institutions) and not individuals

4. **Breaking change:** Change the container ‘investigator’ element to ‘recipients’: we currently have an ‘investigators’ section in our input XML, since this is expanding to include beneficiaries and potentially other roles, we should change the container tag to reduce future confusion. (*note:* this is just a container tag and isn’t included in metadata outputs so we could keep it as-is, but the role changes will require reworking of XML outputs for those wishing to adopt the updated schema anyway, so it’s a good time to do it.)
5. **Update:** reinstate requirement that a person OR group recipient be included in the metadata. We had relaxed the ‘investigators’ requirement temporarily to accommodate members who need to register grants with institution

What this will look like:

```
<recipients>
  <person>
    <givenName>Minerva</givenName>
    <familyName>Reuland</familyName>
    <alternateName>Minnie Cat</alternateName>
    <role type="co-lead_investigator" start-date="2021-03-04"
end-date="2022-01-10"/>
    <role type="lead_investigator" start-date="2022-01-11"/>
    <affiliation>
      <institution>University of Crossref</institution>
      <ROR>https://ror.org/02twcfp3</ROR>
    </affiliation>
    <ORCID>https://orcid.org/0000-0002-4011-3590</ORCID>
  </person>
  <group>
    <group-name>Society of Metadata Idealists</group-name>
    <role type="beneficiary"/>
    <ROR>https://ror.org/04abc123</ROR>
  </group>
</recipients>
```

Expanding: language support

The current grants metadata includes an *xml:lang* attribute for *project-title* and *description*. Both elements are repeatable, allowing titles and descriptions to be supplied in multiple languages. We’d like to further expand language support by adding *xml:lang* to other sections of metadata as well.

- **funding-scheme:** add *@xml:lang* as an attribute and make repeatable

- **funder-name:** it has been proposed that we expand funder-name to be repeatable as well to accommodate multiple languages. All funder metadata must be supplied with an identifier (currently a funder ID but expanding to include ROR IDs), so we'd prefer to eliminate the name requirement entirely and rely on the identifier for funder names and other details.

We will be expanding language support beyond

Relationship types

We can establish connections between grants and outputs, as well as grant-to-grant, by including relationships in DOI metadata records. It's tempting to get very specific, but relationships are most machine-actionable when limited to a simple list of broad terms. Relationships are made between DOI records, so must be associated with the grant/award and not an individual project.

We should apply existing relationships to grants wherever possible to keep the vocabularies consistent between grants, content/ outputs, and event records, but may need to add additional relationships specific to grants.

Adding new relationships and defining best practices for Grants will be a priority but needs further discussion within the Funder Advisory Group.

Currently supported relationships:

- isDerivedFrom / hasDerivation
- isReviewOf / hasReview
- isCommentOn / hasComment
- hasRelatedMaterial / isRelatedMaterial
- isCompiledBy / compiles
- isDocumentedBy / documents
- isSupplementTo / isSupplementedBy
- isContinuedBy / continues
- isPartOf / hasPart
- references / isReferencedBy
- isBasedOn / isBasisFor
- requires / isRequiredBy
- isTranslationOf / hasTranslation
- isPreprintOf / hasPreprint
- isManuscriptOf / hasManuscript
- isExpressionOf / hasExpression
- isManifestationOf / hasManifestation
- isReplacedBy / replaces
- isIdenticalTo

- isVersionOf / hasVersion
- isFormatOf / hasFormat

New: Project Identifiers (added Jun 23, 2023)

We'd like to include project level identifiers (currently RAiD)