

Related objects and relationships

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Meaning & purpose

In the RDA Registry relationships between real world entities are described by linking registry objects together using different kinds of relations. Relationships between activities, collections, parties and services are used to provide navigational links and contextual information. These relations create a rich mesh of information about Australia's research data and the parties, activities and services that support it. The four classes of registry objects can be related to each other.

RelatedObject has a number of child elements that describe the related resource:

- the **Key** of the registry object to be linked (mandatory).
- **Relation**, to describe the nature of the relationship between the registry objects, using Relation Type (mandatory), and the optional child elements:
 - **Description**—a plain text description further refining or describing a relationship. Optionally, the language of the relation description metadata can be recorded in the language attribute, @lang.
 - **URL**—a URI expressing or implementing the relationship between registry objects. For example, the URL which implements a service related to a collection.

Relation attributes

Relation Type

A Relation Type is required. Preferably specify a type from the Relation Type vocabulary. Local types may also be used, for example if a data source has described different relationships according to an established schema. Ad hoc local values should be avoided.

Available Relation Types differ according to the classes of registry object being linked; detailed descriptions of relevant relations are provided on the [collection](#), [service](#), [activity](#) and [party](#) pages. If the generic relation 'hasAssociationWith' is used, include a description of the details or nature of the association.

Expand the links below to view available Types:

Activity-Activity relation:	
isPartOf	is contained in the related activity (for example, a project that is part of a broader program)
hasPart	contains the related activity
Activity-Collection relation:	
hasOutput	delivers materials in the related collection
Activity-Party relation:	
isFundedBy	receives monetary or in-kind aid from the related party
isManagedBy	is organised and/or administered by the related party
isOwnedBy	legally belongs to the related party
hasPrincipallInvestigator	the related party is the lead investigator for the project or grant
hasParticipant	the related party is a participant in the project or grant
Activity-Any relation:	
hasAssociationWith	has an unspecified relationship with the related registry object
Collection-Collection relation:	
describes	is a catalogue for, or index of, items in a related collection
hasPart	contains the related collection
hasAssociationWith	has an undefined relationship with the related collection
isDescribedBy	is catalogued or indexed by the related collection
isLocatedIn	is held in the related repository
isLocationFor	is the repository where the related collection is held

isPartOf	is contained within the related collection
isDerivedFrom	collection is derived from the related collection e.g. through analysis
hasDerivedCollection	the related collection is derived from the collection e.g. through analysis
hasVersion	versioned by the related collection
isVersionOf	is a version of the related collection
Collection-Party relation:	
hasCollector	has been collected, generated, created or aggregated by the related party
isManagedBy	is maintained and made accessible by the related party (includes custodian role)
isOwnedBy	legally belongs to the related party
hasPrincipalInvestigator	is researched by the related party
isEnrichedBy	(parties only) additional value provided to a collection by a party
Collection-Activity relation:	
isOutputOf	is a product of the related activity
Collection-Service relation:	
supports	can be contributed to, accessed or used through the related service (in technical terms, the collection supports the service)
isAvailableThrough	(services only) Discovery Services (Harvest, Search, Syndicate)
isProducedBy	(services only) Creation Services (Create, Generate, Assemble, Transform output)
isPresentedBy	(services only) Creation Services (Report)
isOperatedOnBy	(services only) Creation Services (Transform input)
hasValueAddedBy	(services only) Metadata Services (Annotate, Classify)
Collection-Any relation:	
hasAssociationWith	has an unspecified relationship with the related registry object
Party-Party relation:	
describes	is a catalogue for, or index of, items in a related collection
hasPart	contains the related collection
hasAssociationWith	has an undefined relationship with the related collection
isDescribedBy	is catalogued or indexed by the related collection
isLocatedIn	is held in the related repository
isLocationFor	is the repository where the related collection is held
Party-Collection relation:	
enriches	provides additional value to a collection
isCollectorOf	has collected, generated, created or aggregated the related collection
isManagerOf	administers the related collection
isPrincipalInvestigatorOf	is researched by the related party
Party-Activity relation:	
isParticipantIn	is enrolled in the related activity
isFundedBy	receives monetary or in-kind aid from the related party or program
isFunderOf	provides monetary or in-kind aid to the related party or activity
isPrincipalInvestigatorOf	is researched by the related party

Party-Any relation:	
hasAssociationWith	has an unspecified relationship with the related registry object
isManagedBy	is overseen by the related party (includes custodian role)
isManagerOf	oversees the related party or service or administers the related collection (includes custodian role)
isOwnedBy	legally belongs to the related party
isOwnerOf	legally possesses the related activity, collection, service or party (group only)
Service-Service relation:	
hasPart	contains the related service
isPartOf	is contained within the related service
Service-Collection relation:	
isSupportedBy	enables contribution and access to and use of the related collection (all services) (in technical terms, the collection supports the service)
makesAvailable	Discovery Services (Harvest, Search, Syndicate)
produces	Creation Services (Create, Generate, Assemble, Transform output)
presents	Creation Services (Report)
operatesOn	Creation Services (Transform input)
addsValueTo	Metadata Services (Annotate, Classify)
Service-Party relation:	
isManagedBy	is overseen by the related party (includes custodian role)
isOwnedBy	legally belongs to the related party
Service-Any relation:	
hasAssociationWith	has an unspecified relationship with the related registry object

Use in Research Data Australia

All relations are displayed as hyperlinks and can be used to navigate to other information within Research Data Australia. In addition, a visual presentation of a record's relationships is displayed through a relationship graph with each node on the graph representing a related entity with links to related pages (internal and external to Research Data Australia).



Labels for relationships are simplified for display in Research Data Australia:

Relation	Displays as:
describes	Describes

enriches	Enriches
isEnrichedBy	Enriched by
hasAssociationWith	Associated with
hasCollector	Aggregated by
hasMember	Has member
hasOutput	Produces
hasPart	Includes
hasParticipant	Undertaken by
has PrincipallInvestigator	Principal investigator
isCollectorOf	Collector of
isDescribedBy	Described by
isFundedBy	Funded by
isFunderOf	Funds
isLocatedIn	Located in
isLocationFor	Location for
isManagedBy	Managed by
isManagerOf	Manages
isMemberOf	Member of
isOutputOf	Output of
isOwnedBy	Owned by
isOwnerOf	Owner of
isParticipantIn	Participant in
isPartOf	Part of
is PrincipallInvestigatorOf	Principal investigator of
isSupportedBy	Supported by
supports	Supports

If two or more collections are related to each other with a relationship type of 'hasPart' or 'isPartOf' (nested collections: see XML encoding example below), they will graphically display as a hierarchy in Research Data Australia similar to the following:



Best practice

Contributors should consider how important a relation is to discovery, and not create relations that will not improve access. In particular, although the RDA Registry allows parties to be related, this should be used only to improve discovery. A relation between a person (researcher) and a group (funding organisation) may add value, while hierarchical relations between organisational parts may not.

RelatedInfo or RelatedObject?

Registry objects can be linked to a related collection, party, activity or service in one of two ways:

1. using an Identifier in the [RelatedInfo](#) element, OR
2. using the Key of an (existing or new) related RegistryObject in the RelatedObject element.

As Research Data Australia is primarily a collections registry, it is preferred that a RegistryObject be created to describe collections. However, consider whether you need to create a RegistryObject for parties. Research Data Australia treats parties linked via RelatedObject or RelatedInfo in almost exactly the same way: the indexing and display of names are equivalent; however, an advantage of using RelatedObject is that [reverse links are generated from the Party Object](#), allowing all collections related to that Party to be displayed when a Party name is clicked on (this functionality will hopefully be available with RelatedInfo links in a future release). The advantage of using RelatedInfo is that it is the simplest (and most sustainable) way to link parties to collections, activities and services with a globally unique persistent identifier (preferably an ORCID).

Whichever option is chosen, contributors are strongly encouraged to provide a globally unique identifier such as a DOI, ORCID or PURL in their records. Identifiers support a linked data approach that enables relationships between resources to be identified and displayed in Research Data Australia regardless of the source of the record.

Multiple relations

It is possible to create multiple relations for a single object. For example, a party may be related to a collection as both manager and owner. Multiple relations for a single object should be provided in a single instance of the RelatedObject element. See the XML encoding examples below for details.

See [Relationships between registry objects](#) for information on how the RDA Registry can automatically create relationships between objects, and bi-directional links between related objects.

XML encoding examples

Part of a party record, showing the key of the related collection and the party's relation to that collection (isOwnerOf)

```
<relatedObject>
  <key>hdl:102.100.100/999999</key>
  <relation type="isOwnerOf" />
</relatedObject>
```

Part of a collection record showing the key of a related party and the collection's relation to that party (isOwnedBy)

```
<relatedObject>
  <key>http://nla.gov.au/nla.party-549576</key>
  <relation type="isOwnedBy" />
</relatedObject>
```

Part of a collection record showing the key of a related party and the collection's multiple relations to the party (isManagedBy ; isOwnedBy)

```
<relatedObject>
  <key>http://nla.gov.au/nla.party-549576</key>
  <relation type="isManagedBy" />
  <relation type="isOwnedBy" />
</relatedObject>
```

Part of a collection record showing a collection's multiple relations to its parent collections (isPartOf) and its child collection (hasPart) - "nested collection"

```

<relatedObject>
  <key>Collection26</key>
  <relation type="isPartOf" />
</relatedObject>
<relatedObject>
  <key>Collection28</key>
  <relation type="isPartOf" />
</relatedObject>
<relatedObject>
  <key>Collection29</key>
  <relation type="hasPart" />
</relatedObject>

```

Change history

Date	Change history
April 2010	Consultation draft
26 Oct 2010	First web publication
25 Jan 2011	Relation information for services added
18 July 2011	Information about inferred bi-directional links added
21 Nov 2011	Information about creating primary relationships
5 Dec 2011	Minor clarifications to descriptions of relation types
4 May 2012	Correction, added collection-to-any relation isAssociatedWith, previously omitted in error
20 Nov 2012	PrincipallInvesigator relation type added
8 April 2013	Information about multiple relations added
15 May 2013	Information about nested collections added
26 Nov 2013	Information about expanded use of relatedInfo added to best practice section (RIF-CS v1.0.5)
26 Nov 2015	Updated definitions of hasCollector and isCollectorOf introduced with Release 18
5 July 2017	Content completely revised and updated. Updated relatedInfo vs relatedObject best practice guidance. Primary and bi-directional links info, and detailed relation explanations moved to new Research Data Functionality and Display page.
20 June 2018	Updated relatedInfo vs relatedObject best practice guidance.

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Added information about graph display of relations in RDA (Release 28)