

# GATEWAY TO RESEARCH

## API 2

**Version:** 1.7.2  
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### Executive Summary

This document contains a technical summary of the GTR-2 API released GtR.

GTR-2 API accesses the data in a form that is independent from the current User Interface. It can provide a response in JSON and XML data formats.

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## Before Using the API

The GtR APIs provide access to all the data available in the GtR Portal, which is available under the Open Government License. We expect users of the APIs to follow web etiquette and not to flood the service with requests and make it inoperable for other users. We would like users of the API to respect this freedom in a similar way that Search engines respect the sites they index and moderate the requests they make in any particular time window.

## Versioning

When making a request to the GTR-2 API you can specify the version that you want to use in the request

'Accept' header. If you do not specify a specific version and use the standard '*application/json*' or '*application/xml*' header, the API will default to the oldest supported version. NOTE: AN ACCEPT HEADER MUST BE DEFINED.

The request header to accept version 6 of the GtR-2 API in JSON format is as follows:

Accept: application/vnd.rcuk.gtr.json-v6

The request header to accept version 6 of the GtR-2 API in XML format is as follows:

Accept: application/vnd.rcuk.gtr.xml-v6

As of writing, the current version is V6. Versions 1 and 5 are still available for backward compatibility.

## XML Namespaces

There are a number of XML Schemas defined for the API:

FILE	DESCRIPTION	NAMESPACE	PREFIX
<b>gtr2.v1.xsd</b>	Common API definitions	<a href="http://gtr.ukri.org/gtr/api">http://gtr.ukri.org/gtr/api</a>	gtr
<b>gtr2.organisation.v1.xsd</b>	Organisation definitions	<a href="http://gtr.ukri.org/gtr/api/organisation">http://gtr.ukri.org/gtr/api/organisation</a>	gtr-org
<b>gtr2.person.v1.xsd</b>	Person definitions	<a href="http://gtr.ukri.org/gtr/api/person">http://gtr.ukri.org/gtr/api/person</a>	gtr-per
<b>gtr2.project.v1.xsd</b>	Project definitions	<a href="http://gtr.ukri.org/gtr/api/project">http://gtr.ukri.org/gtr/api/project</a>	gtr-proj
<b>gtr2.project.outcome.v1.xsd</b>	Project Outcome definitions	<a href="http://gtr.ukri.org/gtr/api/outcome">http://gtr.ukri.org/gtr/api/outcome</a>	gtr-pout
<b>gtr2.fund.v1.xsd</b>	Fund definitions	<a href="http://gtr.ukri.org/gtr/api/fund">http://gtr.ukri.org/gtr/api/fund</a>	gtr-fund

Additions to the schema will result in a new version being issued, increasing the V(n) value in the file name. The version of schema in use correlates directly with the version specified in the HTTP Accept header of the client request.

Each schema document is available to download by following the namespace URL. Again, use of the correct Accept header (XML one only) will allow you to download the appropriate version.

## How to use the API

For those of you who know how to use APIs you can delve right in and go to <http://gtr.ukri.org/gtr/api/examples> where you will find a listing of each of the available endpoints, with example usage.

All requests are HTTP GET.

The available endpoints are (check the examples endpoint for an up-to-date listing):

DESCRIPTION OF RESOURCE ENDPOINTS	RESPONSE TYPE (FROM XMLSCHEMA)	URL
Retrieve examples of all endpoints	gtr:endpointConfig	<a href="http://gtr.ukri.org/gtr/api/examples">http://gtr.ukri.org/gtr/api/examples</a>
Retrieve resource configuration (where <resource> is funds, projects, persons, keyfindings, spinouts etc).	gtr:resourceConfig	<a href="http://gtr.ukri.org/gtr/api/configs/&lt;resource&gt;">http://gtr.ukri.org/gtr/api/configs/&lt;resource&gt;</a>
Retrieve/Query all Funds	gtr-fun:funds	<a href="http://gtr.ukri.org/gtr/api/funds">http://gtr.ukri.org/gtr/api/funds</a>
Retrieve a specific Fund by ID	gtr-fun:fund	<a href="http://gtr.ukri.org/gtr/api/funds/&lt;id&gt;">http://gtr.ukri.org/gtr/api/funds/&lt;id&gt;</a>
Retrieve all Funds for a ProjectId	gtr-fun:funds	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/funds">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/funds</a>
Retrieve all Funds for an OrganisationId	gtr-fun:funds	<a href="http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;/funds">http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;/funds</a>
Retrieve/Query all Organisations	gtr-org:organisations	<a href="http://gtr.ukri.org/gtr/api/organisations">http://gtr.ukri.org/gtr/api/organisations</a>
Retrieve a specific Organisation by its ID	gtr-org:organisation	<a href="http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;">http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;</a>
Retrieve all Organisations for a ProjectId	gtr-org:organisations	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/organisations">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/organisations</a>
Retrieve all Organisations for an PersonId	gtr-org:organisations	<a href="http://gtr.ukri.org/gtr/api/persons/&lt;id&gt;/organisations">http://gtr.ukri.org/gtr/api/persons/&lt;id&gt;/organisations</a>
Retrieve/Query all Outcomes	gtr-pout:outcomes	<a href="http://gtr.ukri.org/gtr/api/outcomes">http://gtr.ukri.org/gtr/api/outcomes</a>
Retrieve/Query all	gtr-pout:keyFindings	<a href="http://gtr.ukri.org/gtr/api/outcomes/keyfindings">http://gtr.ukri.org/gtr/api/outcomes/keyfindings</a>
Retrieve a specific Fund by ID	gtr-pout:keyFinding	<a href="http://gtr.ukri.org/gtr/api/outcomes/keyfindings/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/keyfindings/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:impactSummaries	<a href="http://gtr.ukri.org/gtr/api/outcomes/impactsummaries">http://gtr.ukri.org/gtr/api/outcomes/impactsummaries</a>
Retrieve a specific Fund by ID	gtr-pout:impactSummary	<a href="http://gtr.ukri.org/gtr/api/outcomes/impactsummaries/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/impactsummaries/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:publications	<a href="http://gtr.ukri.org/gtr/api/outcomes/publications">http://gtr.ukri.org/gtr/api/outcomes/publications</a>
Retrieve a specific Fund by ID	gtr-pout:publication	<a href="http://gtr.ukri.org/gtr/api/outcomes/publications/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/publications/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:collaborations	<a href="http://gtr.ukri.org/gtr/api/outcomes/collaborations">http://gtr.ukri.org/gtr/api/outcomes/collaborations</a>
Retrieve a specific Fund by ID	gtr-pout:collaboration	<a href="http://gtr.ukri.org/gtr/api/outcomes/collaborations/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/collaborations/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:intellectualproperties	<a href="http://gtr.ukri.org/gtr/api/outcomes/intellectualproperties">http://gtr.ukri.org/gtr/api/outcomes/intellectualproperties</a>

DESCRIPTION OF RESOURCE ENDPOINTS	RESPONSE TYPE (FROM XMLSCHEMA)	URL
Retrieve a specific Fund by ID	gtr-pout:intellectualpropy	<a href="http://gtr.ukri.org/gtr/api/outcomes/intellectualproperties/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/intellectualproperties/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:policyInfluences	<a href="http://gtr.ukri.org/gtr/api/outcomes/policyinfluences">http://gtr.ukri.org/gtr/api/outcomes/policyinfluences</a>
Retrieve a specific Fund by ID	gtr-pout:policyInfluence	<a href="http://gtr.ukri.org/gtr/api/outcomes/policyinfluences/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/policyinfluences/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:products	<a href="http://gtr.ukri.org/gtr/api/outcomes/products">http://gtr.ukri.org/gtr/api/outcomes/products</a>
Retrieve a specific Fund by ID	gtr-pout:product	<a href="http://gtr.ukri.org/gtr/api/outcomes/products/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/products/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:researchmaterials	<a href="http://gtr.ukri.org/gtr/api/outcomes/researchmaterials">http://gtr.ukri.org/gtr/api/outcomes/researchmaterials</a>
Retrieve a specific Fund by ID	gtr-pout:researchmaterial	<a href="http://gtr.ukri.org/gtr/api/outcomes/researchmaterials/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/researchmaterials/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:spinouts	<a href="http://gtr.ukri.org/gtr/api/outcomes/spinouts">http://gtr.ukri.org/gtr/api/outcomes/spinouts</a>
Retrieve a specific Fund by ID	gtr-pout:spinout	<a href="http://gtr.ukri.org/gtr/api/outcomes/spinouts/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/spinouts/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:furtherfundings	<a href="http://gtr.ukri.org/gtr/api/outcomes/furtherfundings">http://gtr.ukri.org/gtr/api/outcomes/furtherfundings</a>
Retrieve a specific Fund by ID	gtr-pout:furtherfunding	<a href="http://gtr.ukri.org/gtr/api/outcomes/furtherfundings/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/furtherfundings/&lt;id&gt;</a>
Retrieve/Query all	gtr-pout:disseminations	<a href="http://gtr.ukri.org/gtr/api/outcomes/disseminations">http://gtr.ukri.org/gtr/api/outcomes/disseminations</a>
Retrieve a specific Fund by ID	gtr-pout:dissemination	<a href="http://gtr.ukri.org/gtr/api/outcomes/disseminations/&lt;id&gt;">http://gtr.ukri.org/gtr/api/outcomes/disseminations/&lt;id&gt;</a>
Retrieve/Query all Funds	gtr-pout:persons	<a href="http://gtr.ukri.org/gtr/api/persons">http://gtr.ukri.org/gtr/api/persons</a>
Retrieve a specific Fund by ID	gtr-pout:person	<a href="http://gtr.ukri.org/gtr/api/persons/&lt;id&gt;">http://gtr.ukri.org/gtr/api/persons/&lt;id&gt;</a>
Retrieve all Funds for a ProjectId	gtr-pout:persons	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/persons">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/persons</a>
Retrieve all Funds for an OrganisationId	gtr-pout:persons	<a href="http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;/persons">http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;/persons</a>
Retrieve/Query all Funds	gtr-pout:projects	<a href="http://gtr.ukri.org/gtr/api/projects">http://gtr.ukri.org/gtr/api/projects</a>
Retrieve a specific Fund by ID	gtr-pout:project	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;</a>
Retrieve all Funds for a ProjectId	gtr-pout:projects	<a href="http://gtr.ukri.org/gtr/api/persons/&lt;id&gt;/projects">http://gtr.ukri.org/gtr/api/persons/&lt;id&gt;/projects</a>
Retrieve all Funds for an OrganisationId	gtr-pout:projects	<a href="http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;/projects">http://gtr.ukri.org/gtr/api/organisations/&lt;id&gt;/projects</a>
Retrieve/Query all	gtr-pout:outcomes	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:keyFindings	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/keyfindings">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/keyfindings</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:impactSummaries	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/impactsummies">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/impactsummies</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:publications	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/publications">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/publications</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:collaborations	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/collaborations">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/collaborations</a>

DESCRIPTION OF RESOURCE ENDPOINTS	RESPONSE TYPE (FROM XMLSCHEMA)	URL
Retrieve all Disseminations for a ProjectId	gtr-pout: intellectualProperties	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/intellectualproperties">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/intellectualproperties</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:furtherFundings	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/furtherFundings">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/furtherFundings</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:policyInfluences	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/policyinfluences">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/policyinfluences</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:products	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/products">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/products</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:researchMaterials	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/researchmaterials">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/researchmaterials</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:spinOuts	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/spinouts">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/spinouts</a>
Retrieve all Disseminations for a ProjectId	gtr-pout:disseminations	<a href="http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/disseminations">http://gtr.ukri.org/gtr/api/projects/&lt;id&gt;/outcomes/disseminations</a>

## Configs

The 'configs' endpoint provides information on the URL parameters and the searchable/sortable fields available for a specific endpoint.

For example, the configuration for the 'projects' endpoint can be obtained by issuing a GET request to <http://gtr.ukri.org/gtr/api/configs/projects>.

```

<parameters>
  <parameter>
    <value>q</value>
    <description>Query term,
    q=search_term</description> </parameter>
  ...
</parameters>
<fields>
  <field>
    <code>pro.id</code>
    <description>Grant Reference</description>
    <searchable>true</searchable>
    <sortable>false</sortable>
    <searchedByDefault>true</searchedByDefault>
  </field>
  ...
</fields>

```

## How pagination works for bulk resources

Endpoints that return documents that are of the 'bulk' type provide information regarding the record and page count.

```

<xs:complexType name="bulk"
  abstract="true"> <xs:annotation>
  <xs:documentation xml:lang="en"> Abstract bulk collection of a
  resource </xs:documentation>
</xs:annotation>
<xs:sequence>
  <xs:element name="links" type="gtr:links"
  minOccurs="0"/> <xs:element name="ext"
  minOccurs="0" type="gtr:ext"/>
</xs:sequence>
<xs:attribute name="page" type="xs:int" use="required"/>
<xs:attribute name="size" type="xs:int" use="required"/>
<xs:attribute name="totalPages" type="xs:int"
  use="required"/> <xs:attribute name="totalSize"
  type="xs:int" use="required"/>
</xs:complexType>

```

This will enable you to page through the endpoint results by increasing the required page number. Exceeding the number of pages available will result in a HTTP response code of 404.

Page size will default to 20, but can be specified by using the size parameter with a value from 10 to 100.

## Link Relations

Most resources will contain links to related resources. A link is defined in the XML Schema as follows:

```
<xs:complexType name="link">
  <xs:annotation>
    <xs:documentation xml:lang="en"> A link to a resource. A relationship (rel)
      must be specified in order to define the relationship that the link
      represents.
    </xs:documentation>
  </xs:annotation>
  <xs:attribute name="href" type="xs:string"
    use="required"/> <xs:attribute name="rel"
    type="xs:string" use="required"/> <xs:attribute
    name="start" type="xs:dateTime" use="optional"/>
  <xs:attribute name="end" type="xs:dateTime"
    use="optional"/> <xs:anyAttribute
    processContents="lax"/>
</xs:complexType>
```

The following table defines the possible 'rel' constants.

RESOURCE	RELATIONSHIP VALUE	DESCRIPTION
persons	PI_PER	The linked person is the Principal Investigator.
persons	COI_PER	The linked person is the Co-Investigator.
persons	PM_PER	The linked person is a Project Manager
persons	FELLOW_PER	The linked person is a Fellow
persons	EMPLOYEE	The linked person is an Employee
persons	ORCID_ID	The link to the person's ORCID id details
organisations	EMPLOYED	The linked organisation is the employer
organisations	LEAD_ORG	The linked organisation is the Lead Research Organisation
organisations	COLLAB_ORG	The linked organisation is a Collaborating Organisation
organisations	FELLOW_ORG	The linked organisation is a Fellow Organisation
organisations	COFUND_ORG	The linked organisation is a Co-Funder
organisations	PP_ORG	The linked organisation is a Project Partner
organisations	FUNDER	The linked organisation is a Funder



RESOURCE	RELATIONSHIP VALUE	DESCRIPTION
outcomes	ARTISTIC_AND_CREATIVE_PRODUCT	The linked outcome is an Artistic and Creative Product
outcomes	COLLABORATION	The linked outcome is a Collaboration
outcomes	DISSEMINATION	The linked outcome is a Dissemination
outcomes	FURTHER_FUNDING	The linked outcome is a Further Funding
outcomes	IMPACT_SUMMARY	The linked outcome is an Impact Summary
outcomes	IP	The linked outcome is an Intellectual Property
outcomes	KEY_FINDING	The linked outcome is a Key Finding
outcomes	POLICY	The linked outcome is a Policy Influence
outcomes	PRODUCT	The linked outcome is a Product Intervention
outcomes	PUBLICATION	The linked outcome is a Publication
outcomes	RESEARCH_DATABASE_AND_MODEL	The linked outcome is a Research Database and Model
outcomes	RESEARCH_MATERIAL	The linked outcome is a Research Material
outcomes	SOFTWARE_AND_TECHNICAL_PRODUCT	The linked outcome is a Software and Technical Product
outcomes	SPIN_OUT	The linked outcome is a Spin Out
funds	FUND	The linked Fund
projects	PROJECT	The linked Project

## Communication of Changes

Routine changes will be communicated in the [Release History](#) section of the web portal. More significant changes will be broadcast via the GtR category on the RCUK blog (<http://blogs.rcuk.ac.uk/category/gtr/>).

The versioning of the interface should help to isolate you from changes to the interface and breaking changes will result in a new version of the API and this document.