This document: https://s.apache.org/ro-crate-minutes

Research Object Crate community calls

This is the rolling minutes from the Research Object Crate (*RO-Crate*) telcons. **Feel free** to join and **suggest changes** to the agenda or to help **scribe** the minutes of the call!

Regular calls are scheduled on **4th Thursdays** of the month **20:00** UTC.
EOSC-themed calls are also scheduled on **2nd Thursdays** of the month **08:00 UTC.**
Regional drop-in calls have varying schedules, see 🗒 RO-Crate Regional Drop-in Calls
(*subject to change, see Upcoming meetings below*)

> **Note**: *We follow UTC and do **not** observe daylight savings,*
> *so double-check when your country changes their clocks!*

Upcoming meetings

- 2024-10-24 20:00 UTC – (possible conflicts EOSC symposium)
- 2024-10-14 08:00 UTC
- 2024-10-28 20:00 UTC

Tip: Import as Calendar event (ICS) (via Zoom) [link removed temporarily due to being outdated]

Governance calls, EOSC-themed calls, drop-in calls

The RO-Crate calls alternate on their focus. The 20:00 UTC slots are typically *governance*-focused including specification, implementations, website and training. In comparison the 08:00 UTC *EOSC-themed* slot goes more in depth on connections with *European Open Science Cloud* (EOSC), OpenAIRE, and other EU-wide and international research projects and developments relating to Open Science.

The **regional drop-in** calls are less agenda-driven and give an opportunity to collaborate on deeper questions on implementations and individual use cases. Newcomers and developers are particularly welcomed to the drop-in calls, members of the RO-Crate community will be happy to do ad-hoc demonstrations or explore your issue!

Discussions on the RO-Crate specifications and implementations are welcome in any of the slots!

Note 2024-05: Meetings are being restructured and new times to be decided:
- Governance meeting (this slot)
    - Steering and Recommendation
    - Moving to Minimum Viable Governance
- Clinic / Code club, drop-in for Developers and newbies Q&A – regional
    - AU-NZ

- European Regional clinic - proposed: first Thursday 9am UTC, third Wednesday 2pm UTC
- US regional clinic
- Community meeting – with webinars and broadcast – regional?

Project introductions

We are welcoming **short presentations** from the different projects; in particular for the EOSC-themed calls. If you would like to add yours, suggest it below for an upcoming meeting:
- Peter Sefton to organise something with the Science on Schema.org team – TBD

Call details

Join with the Zoom client/app (recommended) or Web browser:
 https://zoom.us/j/97904359218

.. or telephone, see https://zoom.us/u/ad8HBAhAeU meeting number 979 0435 9218

Minutes/agenda

2024-10-24 Research Object Crate #98

2024-10-10 Research Object Crate #97 (EOSC)

2024-09-26 Research Object Crate #96

2024-09-12 Research Object Crate #95 (EOSC/governance)

2024-08-22 Research Object Crate #94

2024-07-11 Research Object Crate #93 (EOSC/governance)

2024-06-27 Research Object Crate #92 (Governance)

~~2024-06-13~~ Cancelled due to ELIXIR All Hands and many travelling

2024-05-23 Research Object Crate #91

2024-05-09 EOSC Research Object Crate #90

2024-04-25 Research Object Crate #89

2024-04-11 EOSC Research Object Crate #88

2024-03-28 Research Object Crate #87

2024-03-14 EOSC Research Object Crate #86

Copy next meeting from the [template](#) and add below

Topics for next meetings

(Feel free to suggest!)

- RO-Crate playground - Eli interested
- Discussions on nested crates
- how to support profile creators
- Carried forward from 2024-09-12:
  - Aleksander/Doug (HDR Fed-A) planning a *Cratey* RO-Crate service:
    📄 Cratey Documentation and Architecture
  - Found in the wild:
    RO-Crate for Testbeds.
    https://doi.org/10.23919/IFIPNetworking62109.2024.10619057 ([preprint](#))
    https://github.com/tumi8/pos-ro-crate-demonstration
    - Looks like they didn't actually share their implementation, but uses ro-crate.py
    - Some hardware details included but in unknown JSON schema
  - Doug: Crate-O and Globus file store - could we build an interface for Crate-O to work with the Globus API (see https://docs.globus.org/cli/#installation)? Josh Moore at Openmicroscopy has some experience working with Globus API, and would be willing to advise/help on this if there is interest.

2024-10-24 Research Object Crate #98

When: 2024-10-24T20:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Abigail
- Marc
- Peter
- Stian

Apologies:

- Eli (travelling)

Updates & upcoming events [max 5 mins]

- eResearch Australasia next week – two presentations from UQueensland and one from Auckland

Governance (NEW)

We are aiming to turn this meeting (or some instances) into a more governance focussed meeting – and will explore adopting Github Minimum Viable Governance, which is being used now by another project led by Peter Sefton and colleagues.

- Protocols for Implementing Long term Archival Repository Services (PILARS) <https://w3id.org/ldac/pilars> has had its first steering committee meeting. This committee will be in charge of blessing releases of the protocols document and any articles about the protocols – similar to the ad hoc role played by the RO-Crate group. See the charter. (we did not make people do pull requests to be on the committee, they were added by a resolution of the group as it bootstrapped itself into existence).
- Process notes:
    - We have a minutes document like this one to record business and particularly resolutions.

Extract included here for information:

Resolution #1: all present resolve to establish and become members of a formalised committee to oversee the governance of the PILARS protocols - raised by Robert

No objections and no abstaining: CARRIED

Proposal for Chair: Peter nominates Robert, Robert nominates Peter
Neither wishes to be Chair alone. Group conversations occurred around a Co-Chair model.
The committee is agreeable to pursuing a co-chair model within the establishment of the
inaugural committee. Proposals were opened for Co-chair structure.

Resolution #2: Co-Chair structure to lead the committee for 1 year period:
- 1: Jenny nominates Robert - Seconded by Janet.
    - Robert accepts
- 2: Jenny nominates Peter - seconded by Julia.
    - Peter accepts

Resolution #2 to be reviewed before November 2025

How to contact or raise ideas?
- Create an issue in https://github.com/pilars-protocols/pilars/issues

Actions:
- Add your names to github in the github org
  pillars-protocols/governance/org-docs/Steering-Committee.md
- PT will add all present to the steering committee page
- PT will email people who could not make it with these minutes and check that they
  want to be on the steering committee
- PT to reach out to Nichola Burton (ARDC); the committee are in support of an invite
  being extended.

→ Initial meeting in january 2025 to be the constitutional steering committee meeting for
RO-Crate

→ Draft our charter before in a separate governance repo. (with warning that it's DRAFT)

→ Steering committee is individuals. Operating as an individual.

→ Edit in https://github.com/ResearchObject/governance

Research Object Web Site [~ 10 mins]
- Check list?   📄 Checklist – is my crate any good
-
- RO-Crate registry for Website? Marc waiting on what to do.
    - https://github.com/ResearchObject/ro-crate/issues/303 and
      https://github.com/ResearchObject/ro-crate/issues/330
    - → Eli and Marc to do a 1:1 call –
    - Can try to codify list of profiles
      https://www.researchobject.org/ro-crate/profiles.html into the CSV of the demo
      repository
    -

-

Training materials [~ 10 mins]

-

Implementation, tooling, validation [~ 10 mins

]

RO-Crate to tables

Language Data Commons of Australia and collaborators (UQ and Usyd) have Started work on a profile (not an RO-Crate profile) for a two (or more) stage set of transformations for turning RO-Crate descriptions of data collections into tabular format. This will be a general purpose pipeline but the current use case is to provide single-table access to language collections, such as a series of interviews concatenated together where each line contains a transcript and contextual metadata such as speaker age, language background etc.
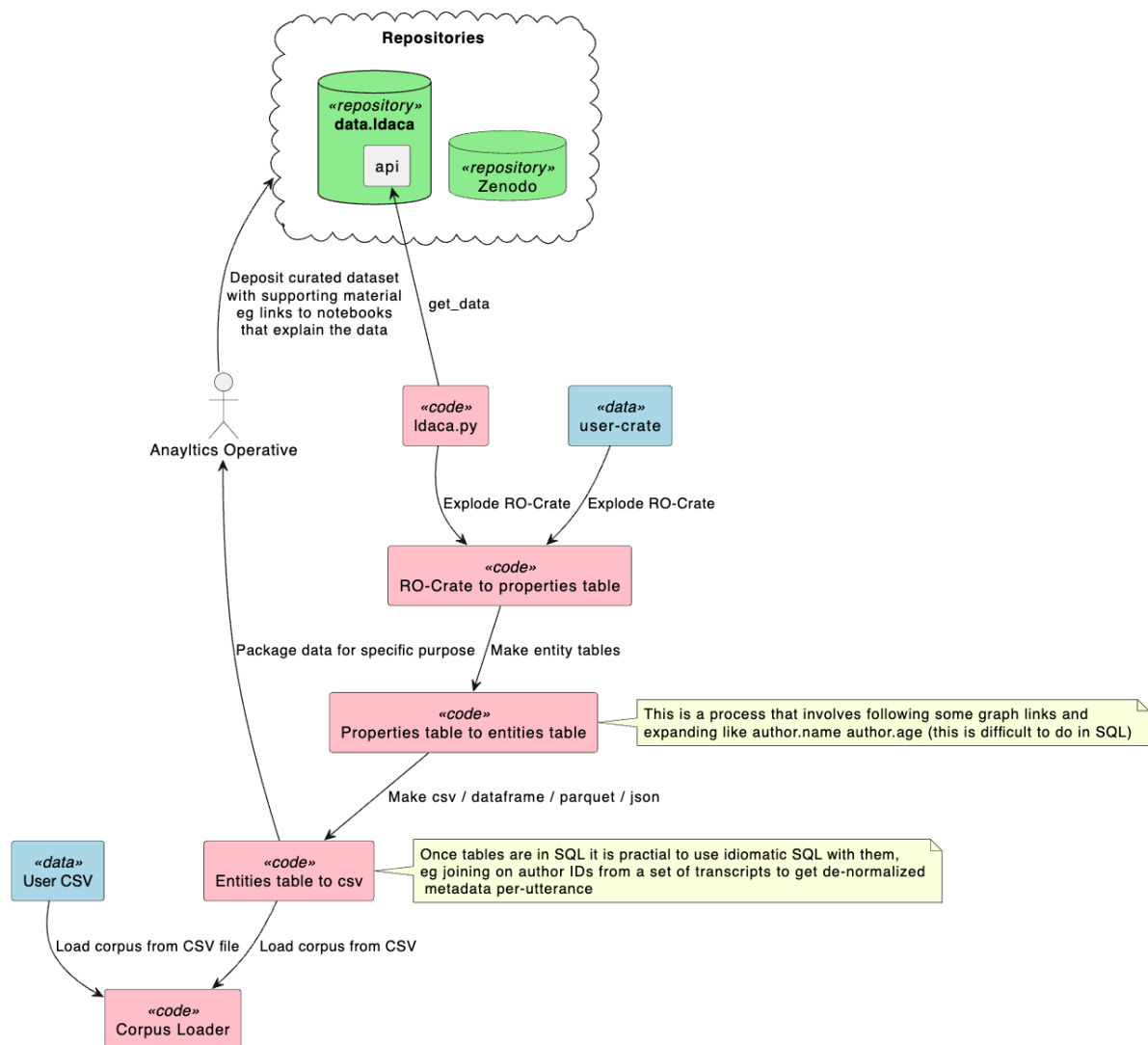
Profile document is private ATM but PT Sefton can provide access on request.

DRAFT SCHEMA for the "Elaborated Properties Table"

```
CREATE TABLE [properties] (
  [row_id],  ROWID
  [source_id] TEXT,
  [source_name] TEXT,    [property_uri] TEXT,
  [property_label] TEXT,
  [target_id] TEXT,
  [target_value] TEXT,
  [value] TEXT
```

This is a expansion of a classic "triple" designed to make it easy to produce visualizations (eg HTML) or flattened tables without too many lookups or computations. Next step is to collect entities of interest - eg Person into tables, with some configuration to follow references such as resolving birthplace to a place birthplace_name birthplace_latitude etc… (and deal with array values somehow)

Language researchers are used to put a flat list of denormalised metadata into a tabular format. Trying to make triples in a table. Ldaca library talks to the repository and expands an RO-Crate into property tables. Some of these are in RO-Crate. Text analytics people may record 100 conversations for instance. Want a single table with every term concatenated together with demographic information.

Alternative suggestions / hints:

- SPARQL works like this.. See WorkflowHub RO-Crate queries in deliverable
  https://docs.google.com/document/d/10dR8GDZuTC6Ar2k7bitSF_BbN8Y9L-U3/edit#heading=h.cg4llpl2big0

- LinkML also to be used. Uses SQLlite as that's the tool they chose..
- Marc suggests alternative
  - code repo for dockers https://github.com/vliz-be-opsci/k-gap
  - usage demo → https://github.com/cedricdcc/demo_emobon_kgap
  - idea: – separating concerns and expertise
    - LOD harvesting
    - named-query-definitions
    - dataframe output into ipynb env.
  - Multiple steps, one that can build up a triple store, and another that can work against it using templates. Uses py-Jinja2-templates. **Named Queries** by an SPARQL that can formulate structure, but parameterised. Data analyst only fill in parameters. They don't see the CSV nor RDF. In Jupyter Notebook they get a dataframe (tabular) returned. (This is similar to what LDaCA is doing - making 'data adaptors' written by RO-Crate experts that provide data to analysts)
- One-off triple store for ad-hoc queries. But SPARQL.

- Each section of RO-Crate specs is in a sense similar to a table in relational database or such a named query – or a LinkML definition. E.g. Author(id, name, affiliation), License(id, name, url)
- Cater for data science like queries that wants tables.

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

- Started a discussion document for ideas on RO-Crate v2 (discussed last meeting – plan is to have working group(s) look at this early in 2025). Goes with a validator developed at the same time.
-

Any Other Business

- marc / VLIZ reattempting oscars in phase 2
- marc looking for coalition of the willing to start on some higher level "conformsTo" suggestions for Files in ro-crates, e.g. to declare
  - triple content
  - provenance files
    - Rudolf has something in CPM profiles
  - How does this related to PRONOM file types? (PT)
  - https://www.researchobject.org/ro-crate/specification/1.2-DRAFT/data-entities.html#file-format-profiles could also include Abigail's suggestion to reference a Frictionless Schema that is included in the crate itself.
  - Public repository need to be machine-readable so it can be selected from.
  - Could even just be the profile register but without Profile Crate!
  - see also
    - Signposting https://signposting.org/conventions/#attributes and
    - iana profile registry: https://www.iana.org/assignments/profile-uris/profile-uris.xhtml
    - Crate-O could select from the machine-readable list of profiles based on file format. Sometimes the user will know e.g. which PDF version.
- Make a list of these profiles so we have common identifiers for common sub-formats
  - https://github.com/spdx/license-list-data/tree/main/jsonld

2024-10-10 Research Object Crate #97 (EOSC)

When: 2024-10-10T08:00Z

Where: https://zoom.us/j/97904359218

(or <u>call-in</u> using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Simone Leo
- Eli Chadwick
- Peter Sefton
- Jael Castro (only first half)
- Josh Moore (only first half)
- José Mª Fernández (only first half, colliding TC)
- Bruno P. Kinoshita (only last half :)

Apologies:

-

Updates & upcoming events [max 5 mins]

- **regional drop-in**
  - RO-Crate Explorer in development, making static website for navigating RO-Crate <u>https://github.com/Sydney-Informatics-Hub/observable-crate/tree/rc-0.1.0</u>
  - Developing very large corpora, similar to encyclopedia
  - Exploring how to make a relational database of RO-Crate entities
  - Transforming in a triple-like way.
  - Based on RO-Crate python library. Not a full triple store. Prototype here: <u>https://github.com/Language-Research-Technology/ro-crate-to-sqlite</u> (the work in the drop in will improve the database structure)
  - RO-Crate for interoperability of Open Research Data (ORD) platforms
    - Europe drop-in 2024-09-18 (Eli reporting offline):
      - Met with a cross-institute group who want to use RO-Crate for interoperability of Open Research Data (ORD) platforms
      - They are interested in contributing to the spec
      - Particular interest in how to capture platform-specific metadata/data structures without mapping everything into the RO-Crate metadata - e.g. by including both a JSON file and the accompanying JSON schema in the crate. Standardising how this is approached could probably benefit a few projects
      - They want to continue meeting - can we give them some time for discussion in one of these meetings? (one of the 8:00 UTC ones as they are all Europe-based)
  - Exploring <u>https://parquet.apache.org/docs/overview/</u> for breaking RO-Crate entities into tabular form (CSV)
    - Processing into a Dataframe

■

Research Object Web Site [~ 10 mins]

- Updated https://www.researchobject.org/ro-crate/dataverse
- More OR2024 in https://www.researchobject.org/ro-crate/outreach
- Alex (?)
- RO-Crate website is based on https://elixir-belgium.github.io/elixir-toolkit-theme/ , the docs on that site are good, also makes use of Jekyll collections https://jekyllrb.com/docs/collections/
- https://github.com/ResearchObject/ro-crate/tree/main/docs/_specification etc
-

Training materials [~ 10 mins]

- Updates for Galaxy Training Network tutorial as UI in Galaxy had changed. Eli edited and added more exercises.
  - https://training.galaxyproject.org/training-material/topics/fair/tutorials/ro-crate-galaxy-best-practices/tutorial.html
  - Part of https://training.galaxyproject.org/training-material/events/galaxy-academy-2024.html this week

Implementation, tooling, validation [~ 10 mins]

- Interested in any updates on LinkML – does anyone have a full worked-example for a profile or the base-crate spec? (i have reached out on their github issues https://github.com/linkml/linkml/issues/1385#issuecomment-2392970664) (ptsefton)
  a. Seems unclear how to do some of the validation?
  b. Being planned in https://github.com/crs4/rocrate-validator/issues/2
  c. Trying to use LinkML to generate SHACL, then feeding that to the CRS4 validator.
  d. Eli running into some bugs to chase down.
  e. First attempt: Make a LinkML for the RO-Crate base profile as the CRS4 already have SHACL shapes for this (and unit tests) so we can test.
  f. Need also pre-testing like "Is it JSON?" "Does it have a @graph and @context". This could be tested as JSON level.
  g. Eli could not find how to validate the linked data part of JSON-LD using LinkML - e.g. validating properties are in the context
  h. Josh Moore: LinkML view from bioimaging community. Tried out similarly. But may just use "pydantic". Talked to Chris Mongel. Some LinkML views are almost like graph, different pathways/converters. Building a big eco system but that means the tooling may not all be mature. There is talk about making a subset of the LinkML language so that it is complete and suitable in most tools.   Danger of chicken/egg situation – ideally we can use LinkML rather than all making our LinkML-like thing. Worked with Chris, perhaps even get targeted grants. Looking at the Python code base e.g. exception handling.

      i.   Crate-O Modes also look almost like LinkML, but could benefit from using LinkML instead of our own JSON format. (we have a simple validator too - which can do basic structural stuff)

      j.   Marco implemented pass-tru option for specifying severity levels in validator from the SHACL shape. Still support the severity level inherited based on folder "MUST", "SHOULD" etc. https://github.com/crs4/rocrate-validator/pull/8

      k.

- Planning to make a new HTML generator tool that is truly static and HTML only (came across this issue just now to which we never responded, sorry Stian https://github.com/Language-Research-Technology/ro-crate-html-js/issues/3- I think this is best solved using static divs and using CSS to hide/show content.

      a.   If you make a very long page with 10.000 entries browsers will be upset, but it seems to work if you just hide the divs.

      b.   Pagination fixes when there are multiple entities. Can be queried

      c.

- Language Data Commons of Australia is working with PARADISEC on an API for storage-agnostic repositories that use the PCDM schema RepositoryCollection and Repository object will include access-controlled fetching of objects and collections as well as endpoints for fulltext search.

      a.

- RO-Crate validator released on PyPI: https://pypi.org/project/roc-validator/ ("rocrate-validator" and variants were already taken)

      a.   Workflow Run Crate profile merged to develop

      b.   Now working on Provenance Run Crate

      c.   → Deprecate https://pypi.org/project/rocrateValidator/ (Stian)

      d.

RO-Crate Spec Updates/Feedback [~ 20 mins]

RO-Crate 1.2 release prep

      Potential backward incompatibility in root-finder algorithm
https://github.com/ResearchObject/ro-crate/issues/362

      → Also cjeck for .jsonld"

RO-Crate 1.3-DRAFT? We could say 1.2.1-DRAFT as we don't really want another minor release on 1.x.

      → 1.3-DRAFT labeled as new features but expecting a restructure.

      MAke sure
https://www.researchobject.org/ro-crate/specification/1.2-DRAFT/appendix/changelog.html use bold text for anything developers should be aware of. Link to changelog from the first pages.

RO-Crate 2 planning?

Would need to be more geared towards being validatable.

Peter's first shape

Now profile stuff

Not everything is on JSON-LD shape levels.

Any Other Business

Simone: if you got any knowledge (papers, preprints, tech reports, github repos) of:

- RO-Crate being used In triple stores
    - One important question is "where do I put the data" (metadata is taken care of by the store)
    - https://github.com/workflowhub-eu/workflowhub-graph/ made https://doi.org/10.5281/zenodo.13362051 – see details in https://doi.org/10.5281/zenodo.13225792
    - ROHub also keep research objects in a triple store but is not RO-Crate internally.
    -
    - Steve Cassidy (Macquarie U, NSW) will be indexing RO-Crates of language data in a triple store (the metadata data was originally triples from a previous project which had a triple store)
- RO-Crate being used For digital twins
    - BioDT! https://github.com/BioDT/biodt-fair
    - Otso Ovaskainen, Patrik Lauha, Julian Lopez Gordillo, Ossi Nokelainen, Anis U. Rahman, Allan T. Souza, Jussi Talaskivi, Gleb Tikhonov, Aurélie Vancraeyenest, Ari Lehtiö (2024):
      Prototype Biodiversity Digital Twin: Real-time bird monitoring with citizen-science data.
      Research Ideas and Outcomes **10**:e125523
      https://doi.org/10.3897/rio.10.e125523
    - Simon Rolph, Chris Andrews, Dylan Carbone, Julian Lopez Lopez Gordillo, Tomáš Martinovič, Nick Oostervink, Dirk Pleiter, Kata Sara-aho, John Watkins, Christoph Wohner, Will Bolton, Jan Dick (2024):
      Prototype Digital Twin: Recreation and biodiversity cultural ecosystem services.
      Research Ideas and Outcomes **10**:e125450
      https://doi.org/10.3897/rio.10.e125450
    - Desalegn Chala, Erik Kusch, Claus Weiland, Carrie Andrew, Jonas Grieb, Tuomas Rossi, Tomas Martinovic, Dag Endresen (2024):
      Prototype biodiversity digital twin: crop wild relatives genetic resources for food security.
      Research Ideas and Outcomes **10**:e125192
      https://doi.org/10.3897/rio.10.e125192
    - Claus Weiland, Jonas Grieb, Daniel Bauer, Desalegn Chala, Erik Kusch, Carrie Andrew, Dag Endresen (2024):
      Dataspace Integration for Agrobiodiversity Digital Twins with RO-Crate.

Biodiversity Information Science and Standards **8**:e134479
https://doi.org/10.3897/biss.8.134479

- ○ Tomáš Martinovič, Kata Sara-aho, Ondrej Salamon, Simon Rolph, Allan T Souza (2024):
  Graphical User Interface for Biodiversity Digital Twins: Data Challenges.
  Biodiversity Information Science and Standards **8**:e135092
  https://doi.org/10.3897/biss.8.135092

- ○ Sharif Islam, Julian Lopez Gordillo, Dag Endresen, Carrie Andrew (2024):
  Bridging Data Standards and FAIR Principles in Biodiversity Digital Twinning:
  Prototyping, Challenges, Lessons Learned, and Future Plans.
  Biodiversity Information Science and Standards **8**:133089
  https://doi.org/10.3897/biss.8.133089

- ○

Please let me know (simone.leo@crs4.it)

Josh Moore:

Status update from my side:

 * Funding: one recent roc-focused grant (OSCARS) wasn't funded and one (MRC) is still up in the air.

 * Nevertheless, we've just finishing up a community challenge (Jun-Oct) that's introduced RO-Crate to some new groups, leading to some 15K (500+TB) of datasets which have at least minimal metadata — https://ome.github.io/ome2024-ngff-challenge/

 * Hopefully, will be leading towards an RFC (https://ngff.openmicroscopy.org/rfc) integrating RO-Crate into OME-Zarrs (which may or may not include LinkML 😉)

 https://www.ldaca.edu.au/resources/glossary/#mode ?

Further links: https://github.com/ome/ome2024-ngff-challenge/,
https://forum.image.sc/t/ome2024-ngff-challenge/97363?u=joshmoore

2024-09-26 Research Object Crate #96

When: 2024-09-26T20:00Z (update link selecting UTC!)

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Peter Sefton University of Queensland
- Abigail
- José María
- Jael

Apologies:

- Eli (was on leave, added retroactively)

Updates & upcoming events [max 5 mins]

- **regional drop-in**
- PARADISEC won the prestigious Digital Preservation Award for Research and Innovation, "The innovative PARADISEC project – an initiative to improve access to and sustainability of the Pacific and Regional Archive for Digital Sources in Endangered Cultures - took the highly competitive Digital Repository of Ireland Award for Research and Innovation, https://www.dpconline.org/news/dpa2024-winners – see the submission.
- eResearch Australasia 2024–10-28 - 2024-11-01 - Melbourne.
  - Moises Sacal Bonequi & Peter Sefton Presenting on PILARS protocols Protocols for Implementing Long-term Archival Repositories Services (PILARS)
  - HERO-Crates (Hybrid Encrypted Research Object Crates) a secure method for storing and sharing sensitive metadata James Love

  Protocols for Implementing Long-term Archival Repositories Services (PILARS) <http://w3id.org/ldac/pilars>. Governance docs have been drafted - convening a meeting in early October with the authors to finalise and make a steering committee - once that's done will bring to this group as an example (PS)

- NFDI4DS (National Research Data Infrastructure in Germany) hackathon for webby FDOs (RO-Create and Signposting), call for applications out. To be held in Cologne 20-22.Nov.2024

Research Object Web Site [~ 10 mins]

- Something happening with Profiles? (Eli??)
- Do we have a place for news - eg the PARADISEC award

Training materials [~ 10 mins]

-

Implementation, tooling, validation [~ 10 mins]

- Looking for worked examples using LinkML: (PS)
  a. Has anyone worked out how to represent basic crate structure @context / graph? How do you deal with the complexity of @context?
  b. Assuming that actually using a linkML schema (at least with JSON Schema) requires some kind of framework to iterate over the crate graph and present parts of it to the validator, or fragmenting it into small bits as per the Python validator approach.
- RO-Crate validator https://github.com/crs4/rocrate-validator (work done by Simone Leo and other italian colleagues). Based on SHACL + custom python methods for specific constraints.

Implemented validation of Workflow RO-Crate, Process RO-Crate, Workflow Test RO-Crate. It is being difficult to properly describe Workflow Run RO-Crate standard, some constraints might not be validable.
   a. Stian is researching about the automatic translation from LinkML to SHACL.
- ro-crate-py 0.11.0 was released => https://github.com/ResearchObject/ro-crate-py/releases/tag/0.11.0
- Discussion of adding information about files such as size in ro-crate-py (Note also that RO-Crate-excel (JS) uses Seigfreid to find detailed information about file formats and get PRONOM IDs)

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

We are now working through the release process

Any Other Business

2024-09-12 Research Object Crate #95 (EOSC/governance)

When: 2024-09-12T08:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Eli Chadwick
- Andreas Czerniak
- Sveinung Gunderson
- Peter Sefton
- Simone Leo

- Jael Castro
- Douglas Lowe
- José Mª Fernández
- Daniel Garijo (a bit late)

Apologies:

- Bruno P. Kinoshita (attending another event)

Updates & upcoming events [max 5 mins]

- EOSC Symposium 2024 21-23 Oct 2024 https://eosc.eu/symposium2024/
  - Going: Carole, Eli, Raul, Jael, Sveinung
  - Virtual listen-only tickets still available
  - Followed by EOSC-Symposium & NFDI joint satellite meeting
  - EOSC Node concept to be released, including the EOSC EU Node and the core services
    - RO-Crate listed on https://eosc.eu/roadmap/bringing-ro-crate-to-trl-9/ (via EuroScienceGateway)
      "Bringing RO-Crate to Technology Readiness Level (TRL) 9 Q3 2025"
    - Workflow RO-Crate listed on https://open-science-cloud.ec.europa.eu/resources/interoperability/eosc.3cb57778bd17e87e4e0e34619829652f – not received update rights yet on this
    - Possible nodes: ELIXIR, NFDI, national nodes
- NFDI4DS hackathon on RO-Crate/Signposting and Webby FDO [Jael, Stian, Claus]
  - – some FDO folks also interested, but not committed. Prefer working on "Non-Webby FDOs" (Handle, DOIP) in parallel;
  - 0@ZBMed, Cologne, Germany, 2024-11-20/2024-11-22
  - Two days hackathon, first day is more tutorial-like on RO-Crate and Signposting. Some metadata. Afterwards
  - Then look at creation of registries to support "Webby FDOs" . Could also propose other topics.
  - TODO: Making web page, registration etc.. Would be open but want to identify key people like Claus Weiland. Munazah @ Manchester.
  - Check back next week or so.
- Survey on reporting practices:
  - I*'m Meznah Aloqalaa, a PhD candidate in the eScience Lab<https://esciencelab.org.uk/> research group at the Department of Computer Science under the supervision of Prof. Carole Goble and Senior Lecturer Stian Soiland-Reyes. Our research group focuses on the research and development of products and practices for data-driven and computational research.*
  - ***Why we're contacting you?***
  - *As part of my PhD, I'm conducting a survey that aims to gather insights into the documenting and **reporting practices** for research studies or experiments in computational science disciplines. Reporting practices refer to how researchers document and report the details of their research studies or experiments. Computational sciences involve using computational methods to solve scientific*

problems, with study methods typically being partially or entirely computational (e.g. bioinformatics, chemistry, astronomy, engineering, finance).

- ○ ***How to Participate?***
- ○ *https://www.qualtrics.manchester.ac.uk/jfe/form/SV_6JqMOFjTrJQ65j8*
- Workflows Community Summit 2024 https://workflows.community/summits/2024/
  - ○ quite a bit of RO-Crate mentions, not just for FAIR Computational Workshop
- Workflow Run Crate paper published in PLOS One:
  Simone Leo , Michael R. Crusoe, Laura Rodríguez-Navas, Raül Sirvent, Alexander Kanitz, Paul De Geest, Rudolf Wittner, Luca Pireddu, Daniel Garijo, José M. Fernández, Iacopo Colonnelli, Matej Gallo, Tazro Ohta, Hirotaka Suetake, Salvador Capella-Gutierrez, Renske de Wit, Bruno P. Kinoshita, Stian Soiland-Reyes (2024):
  Recording provenance of workflow runs with RO-Crate. *PLOS One* **19**(9):e0309210
  https://doi.org/10.1371/journal.pone.0309210
- Regional calls updates
  - ○ Rutger Vos: How to make RO-Crate from templates? Ideally from Python. May be related to profiles.
    - ■ Relates to Biodiversity Genomics Europe (BGE) Barcoding
    - ■ Initially did in just as pure Python/JSON without ro-crate-py, now trying to make something using other packages. Capturing also domain-specific metadata.
    - ■
  - ○ Michael Milton: integrating other specs into RO-Crate – e.g. for wet lab provenance – also (2024-09-12 AU Call) wondering about how to implement a profile (interested in ISA)
    - ■ Got a bit confused about profiles. May need to check profile page better. User feedback. Got confused and wanted it to be MORE opinionated on what to put in the crate! But wants to use existing vocabulary.. But how to start building that system. From medical research institute in Victoria. Looked a bit about profiles in Crate-O. And we've got many things in development but what is up and running for machine-validating?
    - ■ PS: To get to what we have on Language Data Commons, we have a schema-defined schema that you can then generate a mode file for Crate-O. Validation check. Shape in home-made JSON structure for now. Can also generate profile documentation. Text in English. But also all the rules.
      - Our workflow:
        - ○ Make a SChema.org Style Schema (classes props) (these scripts help: https://github.com/Language-Research-Technology/ro-crate-schema-tools) which may involve assembling some examples . We then create a mode file for Crate-O and then this is used to help generate the profile eg https://w3id.ord/ldac/profile
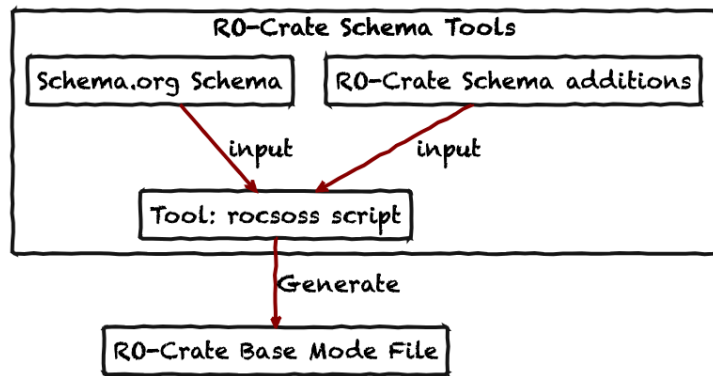
- ○
  - ■ SG: OmniPy (https://github.com/fairtracks/omnipy) general Python library for mapping and parsing. Interested in integrating some functionality there. OmniPy intended for parsing and transformation, but could also be validation (it's just to turn off the parsing!).
    - ● See 'Parse, Don't validate' Tech note (#2) on https://fairtracks.net/fair/#fair-07-transformation
  - ■ → Start a RO-Crate Profile/Validator Task Force?
  - ■ Could use ZBMed hackathon to get requirements
  - ■ Doug: From HDR work we also have many requirements to add. In other projects trying to organise metadata (LEAP project?) where we tell biomedical sciences on metadata from clinicians - via Excel spreadsheet. Generate RO-Crate from that.
    - ● Another request on data pipeline creation for atmospheric sciences. What goes into the metadata.
    - ● Crate-O has a defined and documented spreadsheet upload https://www.ldaca.edu.au/resources/user-guides/crate-o/spreadsheet-upload/ (by Documented by Rosanna Smith)
    - ● What is future-proofing on the tooling for profiles.
    - ● See also https://esciencelab.org.uk/products/rightfield/ for spreadsheet-semantics. (Stuart Owen in Manchester)
  - ○ Donald Hobern on domain classes for plant phenotyping and MIAPPE
    - ■ → Connect with Stuart Owen, BioIndustry4.0 and ARC people? RO-Crate profile for ISA also being made with nfDI4Plant: https://github.com/nfdi4plants/isa-ro-crate-profile/releases/tag/0.1
    - ■
  - ○ Abigail looking at scheduling for US-friendly regional call
  - ○

Research Object Web Site [~ 10 mins]

- ●
- ● Can some of the braindumps in 📄 Vision of RO-Crate in HDR be reused?
  - ○ Meznah's 5 reasons to use RO-Crate for Reproducibility
- ● Added quite a few publications found in Google Scholar:
  - ○ https://www.researchobject.org/ro-crate/outreach#2024 – what did we miss?
    - ■ DOI/Citation info for OR2024?

- ■

Training materials [~ 10 mins]

- Crate-O? Can we help?
  - https://www.ldaca.edu.au/resources/user-guides/crate-o/ and https://www.ldaca.edu.au/resources/user-guides/crate-o/spreadsheet-upload/ now exist!

Implementation, tooling, validation [~ 10 mins]

- How to document file format of CSV or JSON?
  a. https://github.com/ResearchObject/ro-crate/issues/27 is long thread. Some people use just PropertyValue. CSV on the Web may be worth a second look. But quite fiddly. Could be looking at this in language
  b. Overarching idea: define the format somewhere public, then use `conformsTo` on the file in the metadata (also useful for things like Dockerfiles)
  c. Frictionless Data. in a separate file much simpler. Frictionless itself we even considered as alternative to RO-Crate, also could
  d. LinkML.
  e. CroissantML also use PropertyValue
  f. if you have tabular data that describes time series there is also https://www.w3.org/TR/vocab-data-cube/
  g. OmniPy can also do this, in a way. Executable data models in Python (based on pydantic)
     - See https://fairtracks.net/fair/#fair-07-transformation
     - Example to define a parser for tabular files (BED file format in this case)
       - https://github.com/fairtracks/omnipy_examples/blob/gff_update_tmp/src/omnipy_examples/bed.py
     - Can export to JSON Schema, LinkML integration is a natural extension
  h. Describing files themselve is different from mapping the actual data and mapping transform for all the data. Perhaps don't want to pull all the data into the ro-crate-metadata.json - only column/type level.
  i. http://schema.org/variableMeasured is just a flat unordered list of PropertyValue with listing of variables – not mapped to columns easily. CSV on the Web is more suitable for programmatic but could potentially be outside the JSON-LD in separate file.
  j. Peter: Use case coming up in next few weeks on conservation transcript merging. Source on speaker ID needed.
- https://github.com/crs4/rocrate-validator/
  a. Oliver trying out LinkML: https://github.com/eScienceLab/crate-mate/blob/main/schema/root-metadata/schema.yaml
  b. How to extend it for profile creators.
  c. https://github.com/crs4/rocrate-validator/issues/2
     Luca and Marco Enrico can join the Workflow Run RO-Crate meeting later today.

- Aleksander/Doug (HDR Fed-A) planning a *Cratey* RO-Crate service:
  📄 Cratey Documentation and Architecture
- Found in the wild:
  RO-Crate for Testbeds. https://doi.org/10.23919/IFIPNetworking62109.2024.10619057
  (preprint) https://github.com/tumi8/pos-ro-crate-demonstration
    a.   Looks like they didn't actually share their implementation, but uses ro-crate.py
    b.   Some hardware details included but in unknown JSON schema
- Doug: Crate-O and Globus file store - could we build an interface for Crate-O to work with the Globus API (see https://docs.globus.org/cli/#installation)? Josh Moore at Openmicroscopy has some experience working with Globus API, and would be willing to advise/help on this if there is interest.

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

RO-Crate 1.2 release preparations: https://github.com/ResearchObject/ro-crate/issues/353

Looking for volunteers on:

-   GitHub milestone housekeeping
-   Update change log
    https://github.com/ResearchObject/ro-crate/blob/main/docs/_specification/1.2-DRAFT/appendix/changelog.md
    -   Earlier changes up until https://github.com/ResearchObject/ro-crate/pull/261
-   Verify which ro-crate-html to use, see https://github.com/ResearchObject/ro-crate/pull/356
    (Added an issue for
    https://github.com/Language-Research-Technology/ro-crate-html-js/issues/5) – will also look in to compiling the tool: https://nodejs.org/api/single-executable-applications.html
-   Review https://www.researchobject.org/ro-crate/specification/1.2-DRAFT/index.html
    -   Reviewing significant updated sections e.g. for markdown typos:
        -   https://www.researchobject.org/ro-crate/specification/1.2-DRAFT/data-entities.html#referencing-other-ro-crates has some markdown typos as {.tip} no longer work. Perhaps wrong header levels?
        -   https://www.researchobject.org/ro-crate/specification/1.2-DRAFT/data-entities.html#retrieving-an-ro-crate probably in wrong section
    -   We've reviewed e
-   Update author lists (see https://github.com/ResearchObject/ro-crate/issues/353)
    -   Also in 1.2-DRAFT/ro-crate-metadata.json
-   Help to see if Makefile https://github.com/ResearchObject/ro-crate/pull/356 works and makes a "good enough" PDF for Zenodo
-

Any Other Business

- F2F spot available for ELIXIR BioHackathon project 31: Executable metadata mappings to FAIRify Biodiversity Genome Annotations (https://github.com/elixir-europe/biohackathon-projects-2024/blob/main/31.md), as Douglas Lowe had to cancel F2F presence.
  - Contact sveinugu@uio.no within this week
  - WorkflowHub, RO-crate, provenance metadata, etc is relevant

2024-08-22 Research Object Crate #94

When: 2024-08-22T20:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Peter Sefton
- Stian Soiland-Reyes
-

Apologies:

- Eli
- Carole
-

Updates & upcoming events [max 5 mins]

- Updates from **regional drop-in**
  - PLayground has had some improvements in basic crate validation
  - How to deal with @value and @language instead of string values – interesting approach from Conal Tuohy – hoist the @language definition into the context and define a new term

```
"writtenRep (English)": {

        "@language": "en",
```

```
                "@id":
        "http:\/\/www.w3.org\/ns\/lemon\/ontolex#writtenRe
        p"
                },
```
- ○ How to start up the US side?
- ○

- ●

**Research Object Web Site [~ 10 mins]**

- ● Could re-use some text from 📄 Vision of RO-Crate in HDR
- ●

Training materials [~ 10 mins]

- ● Galaxy Academy:
  https://training.galaxyproject.org/training-material/events/galaxy-academy-2024.html
  RO-Crate in the Friday 11 October 2024 (Eli)

Implementation, tooling, validation [~ 10 mins]

- ● Improvements to new static site generator - is now approaching the same functionality (and utilitarian look and feel) as ro-crate-preview-js but without the need for a CDN to support javascript.
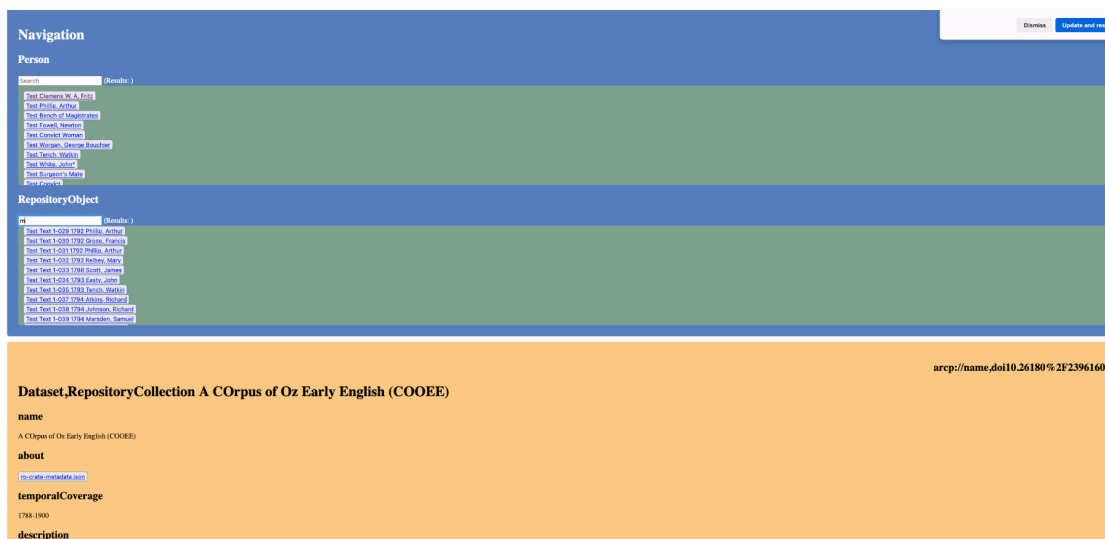
- ●
- ●
- ● https://github.com/crs4/rocrate-validator Made by Simone's team
  - a. Eg.
    https://github.com/crs4/rocrate-validator/blob/develop/rocrate_validator/profiles/ro-crate/may/4_data_entity_metadata.ttl
  - b. Also exploring LinkML https://github.com/ResearchObject/ro-crate/issues/264
  - c. Abigail looking at LinkML in the schema library. For defining your own types. LinkML can generate classes etc. in different languages.
  - d. https://linkml.io/

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

https://github.com/ResearchObject/ro-crate/pull/296 on how to reference another crate

RO-Crate 2.0 and machine readable

Markdown vs actual tests or formalism.

How to define languages - JSON-LD do have a @lang mechanism and schema.org has https://schema.org/Language and https://schema.org/inLanguage –

Any Other Business

- Governance – focus for next meeting?
- Stian's PhD thesis now public: https://doi.org/10.5281/zenodo.8113625
-

Cancelled: 2024-08-08

Cancelled: 2024-07-25

2024-07-11 Research Object Crate #93 (EOSC/governance)

When: 2024-07-11T08:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Simone Leo
- Leyla Jael Castro
- Eli Chadwick
- Peter Sefton
- José Mª Fernández
- Carole Goble
- Nick Juty
- Raul Palma

Apologies:

- Doug (training course all day)
- Bruno (meetings…)

Updates & upcoming events [max 5 mins]

- New EOSC projects awarded
    - CLIMATE-ADAPT4EOSC ([HORIZON-INFRA-2024-EOSC-01](#) call) incl. Stian in University in Manchester
        - FAIRify Climate data & Services. Common (meta)data model with many FAIRifying adapters
        - RO-Crate as part of provenance and policy decisions
        - Open vs closed data
    - Raul: FAIR2ADAPT (same call)
        - Led by Anne Fouillaux, extended RELIANCE team incl. Daniel Garijo
        - Infrastructure based on ROHub and RO-Crate for representation
        - Many RO-Crate profiles to be created
    -
- Other Projects
    - https://www.ukri.org/news/ukri-given-green-light-for-game-changing-biofair-investment/
        - RO-Crate as part of the middleware
        - £34m UK investment. Will be further commissioned services
        - Architecture team includes ELIXIR-UK people (Carole, Stian, Stuart)
    - Good RO-Crate tooling will be essential for third-parties putting in bid for services
- EOSC Symposium 2024 https://eosc.eu/symposium2024/
    - **Who is going**? Eli, Carole, Nick?, Jael, Raul
    - Followed by EOSC-Symposium & NFDI joint satellite meeting
    - EOSC Node concept to be released, including the EOSC EU Node and the core services
- EOSC Opportunity Areas are open
    - https://eosc.eu/eosc-opportunity-area-expert-groups/#interest
    - Chairs and charters being settled
- EOSC Task Forces have started up
    - Selecting chairs etc.

- - https://eosc.eu/eosc-task-forces/
    - FAIR Metrics & Digital Objects with significant RO-Crate presence: Stian Soiland-Reyes, Leyla Jael Castro, Daniel Garijo, Raul Palma, also Romain David, Lars Holm Nielsen, Philippe Rocca-Serra. New chairs: Mark Wilkinson, Elli Papadopoulou
    - Technical and Semantic Interoperability Task Force incl. Marc Portier, Milan Ojsteršek, Esteban González Guardia, Nick Juty, Tomasz Miksa, Sveinung Gundersen, Mark van de Sanden, Silvio Peroni, Nils Hoffman
    - Health Data Task Force incl. Petr Holub, Salvador Capella-Gutierrez, Barbara Martelli, Wolmar Nyberg Åkerström
    - Long-Term Data Retention Task Force incl. Abdulrahman Azab, Ingrid Dillo, Robert Andrews
- Regional calls updates
  - New playground with JSON-LD pasting. Check basic structure. Then profiles matched to what is understood. Then can go into Crate-O editor for entity-by-entity editing.
  - RO-Crate HTML previewers etc can also be plugged in to run in the playground.
  - combine Zarr and RO-Crate – proposal in https://github.com/ome/ome2024-ngff-challenge/pull/2 moving to make own profile. To align with Stuart Owen drafting profile together with ARC people? Also BioDT profiles https://github.com/BioDT/biodt-fair/tree/main/fdo_profiles have RO-Crates for biodiversity workflows.

Governance

Moving to Minimal Viable Governance https://github.com/github/MVG

PTSefton is working on MVG for the PILARS principles <https://w3id.org/ldac/pilars> – working through the process here with the LDaCA project https://github.com/pilars-protocols/governance (planning to do this one first then start on RO-Crate).

→ Peter to try out MVG in Pilar and then draft it similarly for RO-Crate.

- Forming a steering committee (bootstrap from a core group and then let people apply to be added via PRs.
  - Initial members:
    - Peter Sefton, Stian Soiland-Reyes, Carole Goble
  - Mechanism for composition of steering committee and how they can be added/removed
- Formulating a charter – what's the scope? RO-Crate or ResearchObject more broadly
  - RO-Crate as scope. Specify the roles of the committee, voting rules.
  - Unclear if each code repo under GitHub organisation should have their own MVG. Mainly specification for now.
  - Who can classify a tool as being "production" or not?
  - Conformance testing – but be careful about too much centralised decision on what is or is not valid.
  - Approve release of new specification
- Re-visit meeting schedule/agenda
  - Bioschemas has split community / technical / steering meetings.

- - Steering committee meeting can be in public. May not need meeting until there was an issue, otherwise by GitHub issue or email.
    - Mostly continue these meetings as-is. 6-monthly governance review.
  - —> Make a "governance" git repository under https://github.com/researchobject/ ? Would appear as http://researchobject.org/governance/ if published as pages. Good to have separate issue tracker for governance issues as it may need to be private.

Research Object Web Site [~ 10 mins]

- https://github.com/ResearchObject/ro-crate/pull/327
  - Remove zoom links, refer to https://docs.google.com/document/d/1l0EmDVE4k6oEZSoMGjes8mMNrJboRlmZW-kvjaeVqvE/edit#heading=h.twg8huxfni6c
  - PILARS <http://w3id.org/ldac/pilars> with mainly language people. CARE principles
  - Moving ROHub out of Featured list? Some concerns in the RO-Crate implementations, e.g. l inks to contextual entities that don't work. Detached vs attached crates. So may not be a good example in comparison to the specifications.
    - Raul: Now trying to look at the contextual entity references. ROHub has several download options, both as a ZIP file (attached) and also as only manifest which has references (detached)
      - These should then not have the same references, e.g. "file.txt" in the ZIP file to reference local file, and "http://example.com/…./file.txt" in the detached crate. The point of the RO-Crate metadata file was to describe the files it is next to.
      - RO-Hub HTML preview is a bit too debugging mode. Some contextual entities missing when referencing semantic artefacts.
      - Updates to code could mean ROHub could fix output.
      - → ROHub to be removed from "featured" list for now.
    - Language Data Commons also has detached crates
    - WorkflowHub has added RO-Crate metadata file export but
- The spec is now a bit hard to find – https://github.com/ResearchObject/ro-crate/issues/328 (came up in the drop in call today)

Training materials [~ 10 mins]

- Galaxy Training Academy https://galaxyproject.org/news/2024-05-29-galaxy-training-academy-call-contribution/
  - Could have an RO-Crate topic with the existing tutorials
  - Difficult for UNIMAN to support due to other meeting commitments - any others interested in supporting?
  - Involves keeping an eye on a Slack channel to answer any questions that come up while people self-study
  - Possibly update https://gallantries.github.io/video-library/modules/ro-crate in advance

Implementation, tooling, validation [~ 10 mins]

- Doug: RO-Crate Excel editing from Crate-O - is there some demo video or documentation on how it should be used? If not, who should I talk to for a demonstration, so I can help with documenting this?
- Doug: Is there a possibility of a Globus backend for Crate-O tool? What dev work would be needed for this? It came up in discussion with Josh Moore on Monday - his team may be able to help/advise on Globus API.

Douglas Lowe works in Manchester on the HDR project. 5s-crate use case. → Doug to contact Peter.

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

https://github.com/ResearchObject/ro-crate/pull/296 referencing RO-Crate, ready to be reviewed by Daniel or JM.

https://github.com/ResearchObject/ro-crate/pull/276 codemeta terms ready, but needs Daniel to check. Missing Permalinks e.g. https://codemeta.github.io/terms/embargoEndDate does not work. Can't add sameAs without anything to link to. → Could be the new namespace, see issue.

Any Other Business

- Next community meeting is 2024-07-25
- Cancelled: EOSC-themed meeting 2024-08-08 (most of Europe on holiday)
- Following community meeting is 2024-08-22 (for those that can make it)

2024-06-27 Research Object Crate #92 (Governance)

When: 2024-06-27T20:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Peter Sefton
- José Mª Fernández
- Eli Chadwick

- James Love

Apologies:

-

- Crates with encrypted metadata - Auckland University (James Love <james.love@auckland.ac.nz>)
    - Encrypted data into an RO-Crate. Signal machines and instruments. Some of them could include personally identifiable e.g. patient identifiers. RO-Crate should be good as backup and transfer format for storing metadata.
    - But how could we have some parts encrypted and some parts open? If you split it, then how are they connected and maintained? (metadata may change frequently on server, have to re-encrypt whenever you rotate keys…)
    - Need to be able to run it on our instrument data service (UOA's Fork of MyTardis, used to store data collected from various instruments, in this case a set of sequencing machines) behind security. It can have its own key. Ingestion of data can also be done. Using GnuPG (gpg) using Python wrapper.
    -
    - Selected Entities can be encrypted through gpg.
    - Unique set of keys per encrypted graph message.
    - Comes back out as JSON which can then be reinserted into the RO-Crate
    - URI schemes for public keys? Fingerprint? Linked Data question
        - Stian: there is a hkp:// scheme for looking up keys I think, but with a given server..
    - Can be manually decrypted, no infrastructure needed (besides a working gpg binary)
    - Modified RO-Crate library to add encrypted context entity.
        - Will only be kept in memory, and saved as encrypted.
    - Q: Could there be other encryption keys? Multiple levels. Sensitive metadata but without personally identifiable.
        - In this use case this is managed by ACLs on the IDS server

- However this would be an advantage for transferring encrypted data across multiple parties. This is possible with current implementation (just supply different keys for each level)
- "Recipient" @id keys seem like not valid URIs (spaces, <> etc) - better have a ContactPoint entity for each with regular "email" field.
  - Key Server URLs could be a good option for URI for recipients
- "Audiance" -> "Audience"
- Couple of small issues – there's a schema:recipient (has recipients) – also think I saw "sex" on person, there's schema:gender (from ptsefton)
  - This is a field similar to https://biobank.ctsu.ox.ac.uk/crystal/field.cgi?id=22001 although schema:gender is probably fine (it's still ultimately a free text field).
- Which keys are you encrypting to?
  - A server key for sensitive data. Anyone can encrypt to the "audience" level
- The Python script is configured with which keys you can encrypt to and records these as recipients.
  - It will try any of the secret keys gpg has access to when decrypting (modifications to the graph won't modify which keys will be attempted)
- Keys are not retrieved or transferred, exchanged through regular PGP keyservers
- Keyserver do give a kind of URI.
  - This does require a public key be listed on a keyserver which is not alway the case (e.g. an individual instrument that is not internet connected may generate a key specifically for an ingestion script)
- (Question: is the data itself encrypted?) payload data are encrypted separately (or in bulk with the metadata if for transfer, double encrypting…).
- Could you also sign an RO-Crate?
  - You could sign the entire crate with a separate signature file
  - Using the method as above individual fields could be signed which could be useful for 5S crate (where actions may change more frequently or require individual signatures)
- Working group for Signatures and Encryption?

Updates & upcoming events [max 5 mins]

- Open repositories 2024 – report here from PT Sefton: http://ptsefton.com/2024/06/26/open-repositories-2024-trip/

  """"We not only had projects emerge from the workshop, we had a way to tie them together; "Easy Open" proposed by Patrick Stickler. Patrick wanted to make repository downloads immediately usable and well described with a nice HTML readme in every zip. I (predictably) said "Use RO-Crate" and he said (something like) "No, those weird file names, not *easy*"[1]. Patrick came up with an idea to wrap any kind of data package with a simple HTML entry point called OPEN.html (in your language of choice) which would contain a useful guide to the data package[2].

Patrick's team, which I joined, helped flesh out this idea into a [draft spec](#) and the other teams all aimed to support it in their own designs."""

Warning sign as to why RO-Crate could not be used with a particular content/ folder. Reconsider alternative landing page in RO-Crate 2.x work.

Governance and Meetings

Updates from 📄 RO-Crate Regional Drop-in Calls

- ○ Australasia: have had the first two calls, so far appears to be working well

Pete: Worked well doing live debugging and development.

James: Enjoyed being participant!

Depends on number of people, perhaps not live debugging with 15 people!

Pete: Can bring the whole team in and then make break-out rooms to work on a particular. Newbie should go with someone friendly to not get overwhelmed. Not everyone have to sit through the whole thing.

Eli: May be good to consider break out rooms to gauge interest/focus. Will there perhaps be drop-off at later call? Idea exchange. Experiences could be split out.

Reshape agenda of this governance meeting?

What do we do with the EOSC meeting?

Adopt Minimal Viable Governance? https://github.com/github/MVG

Just a few files to add to GitHub. But who is added to steering committee? If it's not open, how do you get in? Ensure easy access. Appointment of people who are allowed to say if a version can be released. Would need some light-level process on movement in/out of committee.

→ Pete will start a branch adding MVG files and raise as pull request in draft mode for discussion.

Research Object Web Site [~ 10 mins]

- Question: now that the new site is live is the RO-Crate-2024 site still the place to edit use cases?
- Edit in https://github.com/researchobject/ro-crate/
  - ○ https://github.com/ResearchObject/ro-crate/tree/main/docs/pages/use_cases
  - ○ When we merged
  - ○

- ○

Training materials [~ 10 mins]

- ●

Implementation, tooling, validation [~ 10 mins]

- ● Question for Stian about ARCPs. As previously notes we are using ARCP ids in our repository

  FIrst attempt used URL encoding – but this is hard to read so we are looking at a different convention for the encoding. arcp://name,doi~10.25949~2F24769173.v1/ arcp://name,doi10.25949%252F24769173.v1/

  In order to encode DOIs into an name-based ARCP we are using the format of doi[prefix]~[suffix] where [prefix] and [suffix] are the DOI prefix and suffix, with slashes within the suffix also replace with a tilde. This approach means that the DOI can be easily identified from the ARCP, in particular subunits that do not otherwise have their own persistent identifier can be positively associated with the DOI of the parent collection. The benefit of this over the use of URL encoding is that it is human readable, and the tilde is not an accepted character within the DOI, so it is clear where the slashes need to go to reconstruct the DOI (from Mark Raadgever)

  ref: https://simonwillison.net/2022/Mar/19/weeknotes/#tilde-encoding

  Question for ARCP authors – can we have an arcp://doi, type so repository owners can house data with a DOI and ref? (still need to

  Yes. Add to https://github.com/stain/I-D/tree/master/arcp "hdl"

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Any Other Business

2024-05-23 Research Object Crate #91

When: 2024–05-23T20:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Nick Juty
- Carole Goble
- Eli Chadwick
- Jael Castro
- Mike Lynch
- PT Sefton
- José Mª Fernández
- Abigail Miller

Apologies:

-

Updates & upcoming events [max 5 mins]

- Language Data Commons of Australia – draft Protocols for the Implementation of Long-term Archival Repositories – PILARS DRAFT for comment: <http://w3id.org/ldac/pilars>

  - Open for comments in GitHub - split between principles and implementation notes. Suggested as replacement of Arkisto. Recommendations on FAIR implementations. Will be presented at OR2024

- WorldFAIR meeting showed interest in RO-Crate. https://worldfair-project.eu/event/the-worldfair-project-the-journey-so-far-and-next-steps/
  - Recordings: https://worldfair-project.eu/the-worldfair-project-webinar-series-presenting-project-outputs/
- RDA virtual plenary
  - Complex Citation task force. Doing hundreds of citations. Link to FDO and RO-Crate was requested. More DOI focus.
  - WorkflowHub Workflow Publisher Forum (incl. Gigascience, PLOS, Elsevier) also were interested in impact on DOI and citations. Also avoid multiple DOIs for the same thing.
    - Ownership of the identifier?
    - Handle, DOI and FDO forum
      - → Schedule focused discussion on identifier handling for RO-Crate

- [Open Repositorie](#)s - 3-6 June Göteborg Sweden - Stian and PT Sefton are working on : "Five ways RO-Crate data packages are important for repositories" (PT will be in London from June 8 -15 if anyone wants to say hi in person)
- [EarthByte](#) (School of Geosciences, University of Sydney)'s [Model Atlas of the Earth](#) launching in next couple of months - using RO-Crates, ML can do a presentation on this in a future meeting
  - Mike to present at later meeting and add to https://docs.google.com/forms/d/e/1FAIpQLScvphoh0Q0s4vY0gZCj26eBh1C30nn5y6RLvmpeow8qqC46Jw/viewform

Research Object Web Site [~ 10 mins]

- https://www.researchobject.org/ro-crate-2024/use_cases now populated
  - updates welcome (more pictures/screenshots/links!), instructions in https://github.com/ResearchObject/ro-crate-2024/tree/main/pages/use_cases or https://forms.gle/zD7ojwP9TCuYswEV7
- now populated https://www.researchobject.org/ro-crate-2024/domains https://www.researchobject.org/ro-crate-2024/tasks https://www.researchobject.org/ro-crate-2024/roles
  - ..please revise! Add to category in markdown header of page
- Aiming to transition to https://www.researchobject.org/ro-crate/ by end of May before OR2024 (3rd June)
  - .. and for ELIXIR AHM!
  - Be careful on how to actually do the changes in git! Old issues t
  - Check comments from Bert on if we did something wrong from the theme
  - Table of Content could be added later
  - Attribution in the footer
  - Adding contact/contributor details for use case?
  - Timing issue in holiday. Tuesday next week.
  - Merge pull requests before moving to new structure of specification like https://github.com/ResearchObject/ro-crate-2024/blob/main/_specification/1.2-DRAFT/contextual-entities.md
  - If I want to build the RO-Crate 2024 site locally what do I do?
    - Clone the repo
    - Install Jekyll & its dependencies https://jekyllrb.com/docs/installation/
    - Run `bundle install`
    - Run `bundle exec jekyll serve`
    - + pray it works (Jekyll can unfortunately be temperamental)

Training materials [~ 10 mins]

- I (Peter Sefton) noted some issues with RO-Crates from RO-Hub and there was a slack discussion about this. I subsequently added some stronger wording to the spec (see the [PR that Stian merged](#)) about making sure that if files are present locally then they should be linked using @ids that are local paths. There are two issues with the downloads ATM:
  a. They don't describe the data that's present in a Zip download and

b. A couple of issues with the HTML-preview file mean that it does not describe the context very fully.

I'm raising this in the meeting because I think we need to work on foregrounding the purpose of RO-Crates – we arrived at this specification so that data could be packaged and understood by people (and machines yes), with metadata about packages and files and useful context. Having a usable HTML preview is key to this, yet the ones I am seeing at RO-Hub and Workflow hub are not user-friendly and in the crates I have sampled are not useful. What can we do to emphasise the importance of this in the spec. In training materials and in our community of practice? We are obviously not providing enough feedback and support early enough.

Maybe a Crate Clinic where implementers could come to have their RO-Crate exports reviewed and get some help?

Peter discussed with ROHub people on improvements to its RO-Crate generation. Some implementations not following expectations so our spec needs to be stronger. ROHub RO-Crate had lots of files included in ZIP but in JSON-LD were described by full URL, so you would not know how to match up. Make sure entities are effectively in the Crate. HTML preview generation was not that human readable.

Let's not forget the main reason why we made RO-Crate! Keep it simple and readable. Should be able to download a ZIP file with good metadata both for machines and humans, that is then useful as-is. RO-Crate should not just list files, need to add the useful metadata! This philosopy needs to be communicated better.

TLCMap also used RO-Crate but with few details.

We need a checklist on what is a good crate. This is not just syntax! Do a clinic where we do "Bring your Own Crate" drop-in session for critique/help. Developer starter clinic.

We have agreed before! But who will do it? What do we do differently? Organize the clinic. . Bring in existing connections and pro-actively engage early when it's not ideal.

-
-
- Golden examples – should be good implementations to show case so we may need to help.
- Use Case - make recommendations per use case. Also pick up changes on both sides.
- Keep recommendations digestible/realistic - not just moan! Capture "plain wrong", "could be better" and "nice to haves" (MoSCoW!). Argue on interoperability and usability.
- → Make the easy checklist first!   📄 Checklist – is my crate any good
    - All: Add just **one** recommendation you find important
    - Eli to check this ~ 10 June.
    - Go through from spec – how does it contribute to checklist? Add links back to relevant section.
- → LJ: Could do a mini-hackathon with NFDI on RO-Crate/FDO Best Practices. Perhaps 10 people and 2-3 facilitators.
    - Gather feedback on what people are doing and turn into guidelines.
    - Building a documented procedure for how you would work with building RO-Crate

- o   Then the guideline can be reused outside hackathon – in a sense replicating it.
- o   Could be a couple of tracks, align with practices for research data management and software management plans.

Meeting organisation:

- Steering and Recommendation Committee (what this meeting has turned into!) – governance
  - https://github.com/github/MVG
  - Starting from meeting 2024-06-27
- Clinic / Code club for Developers – regional
  - → Mike/Pete will start an AU/NZ regional clinic
    - If no-one shows up, it's a coding club!
  - → European Regional clinic - Eli
  - → US regional clinic – Abigail
- Community meeting – with webinars and broadcast.
  -

June is the watershed! RO-Crate is reborn! Governance

Implementation, tooling, validation [~ 10 mins]

ISO 23494-5 Provenance of Data Processing

Considering Wf Run RO Crate profiles as a basis. ISO TC 276 WG 5 meeting in 1 month, participants welcome. Contact Rudolf Wittner <rudolf.wittner@bbmri-eric.eu>. Will be discussed in next Workflow Run Crate call 2024-06-06. 📄 Workflow Run RO-Crate meetings

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Codemeta:

#276 Add Codemeta terms updated PR ready for review - Dani to check

299 Made the language about hybrid attached/detatched crates stronger merger

#296 How to reference and retrieve another RO-Crate

#262 Soften Profile inheritence rules – merged

Any Other Business

Matt Burridge (PGR) <M.Burridge1@newcastle.ac.uk>: I've done some work as part of my PhD in Neil's team in the ICOS group, investigating using RO-Crate as a data packaging and transfer layer within an automated synthetic biology lab. In doing so, I've been working on a package that's specific to our requirements so, A.) I can understand RO-Crate deeper and B.) I can tailor it to our particular use case. **I've ended up making a new RO-Crate parser/creator package, and we were wondering if you'd be interested in taking a look to see if it might be relevant or if developed further might be useful for anyone else.**

It's built on a **Rust** library core that acts as the RO-crate parser, allowing compilation to various systems and the generation of binaries that can be created for our particular systems. Then there's a CLI tool for any headless/terminal work, and also a python wrapper that allows you to use the Rust library within python through a very basic collection of functions (it's not aimed to be a fully-fledged python implementation).

I tried to make it:

- As flexible as possible in terms of running in any compute environment or even within potential embedded systems (i.e our liquid handling robots/ general old lab equipment),
- Performant so it can scale with the various constraints of an automated lab
- Robust/reliable so it can be set up on an automated system and there won't be concerns with compatibility or maintenance.

If you're interested, let us know and we can add you to the github repo so you can have a look (it's not currently public). If you have any questions or want to collaborate in any further development, please let us know!

2024-05-09 EOSC Research Object Crate #90

When: 2024-05-09T08:00Z

Where: https://zoom.us/j/97904359218 **Sorry! Stian Sausage fingers at work..**

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Daniel Garijo
- Simone Leo
- Peter Sefton
- Doug Lowe

- Eli Chadwick
- José Mª Fernández
- Nick Juty

Apologies:

- Stian's Zoom just died!

Updates & upcoming events [max 5 mins]

- EOSC "OSCARS" open call
  - https://oscars-project.eu/open-calls
  - Call closes soon! May 15th
  - In flight:
    - Marc on RO-Crate including some new local actors doing digital assets management and user interfaces driven by SHACL
    - Timo/Björn on ARC & Galaxy
    - LJ: schema.science & Bioschemas improvements. Taste of RO-Crate. =
    - EMBL: LabID-PROV: Tracking and Sharing Data Provenance with RO-Crate in Lab Integrated Data
    - Daniel is leading one with EVERSE partners on software (non-RO-Crate related, but we can include also compatibility).
  - Who needs letter of support from RO-Crate community?
-

Research Object Web Site [~ 10 mins]

- https://www.researchobject.org/ro-crate-2024/
  https://github.com/researchobject/ro-crate-2024
- How to migrate use cases?
  - Move the relevant .md file from
    https://github.com/ResearchObject/ro-crate/tree/master/docs/in-use to
    https://github.com/ResearchObject/ro-crate-2024/tree/main/pages/use_cases and
    update the `title`, `description` etc fields at the top (See the WorkflowHub file as an example)
  - Included images and a logo should go in
    https://github.com/ResearchObject/ro-crate-2024/tree/main/assets/img
  - Make it a PR and website maintainers will review
- How to add new use cases?
  - Add a new .md file to
    https://github.com/ResearchObject/ro-crate-2024/tree/main/pages/use_cases
    named according to the use case, and set the `title`, `description` etc fields (See the WorkflowHub file as an example)
  - Included images and a logo should go in
    https://github.com/ResearchObject/ro-crate-2024/tree/main/assets/img
  - Make it a PR and website maintainers will review
  - OR use a Google form (under construction)

- Eli will write this up somewhere on GH ^
  https://github.com/ResearchObject/ro-crate-2024/issues/33

Training materials [~ 10 mins]

-

Implementation, tooling, validation [~ 10 mins]

- RO-Crate-py – would appreciate an update on
  https://github.com/ResearchObject/ro-crate-py/issues/178 loading JSON, would be useful
  for the Language Data Commons

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Feedback welcome on:

How to reference and retrieve another RO-Crate

https://github.com/ResearchObject/ro-crate/pull/262 (Thanks Simone)

https://github.com/ResearchObject/ro-crate/pull/276 Code Meta

Any Other Business

2024-04-25 Research Object Crate #89

When: 2024-04-25T20:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Abigail Miller
- Jael Castro
- Marc Portier

- Carole Goble
-

Apologies:

- José Mª Fernández (just flying)

- EOSC "OSCARS" open call
  - https://oscars-project.eu/open-calls
  - Call closes soon! May 15th
  - In flight:
    - Marc on RO-Crate including some new local actors doing digital assets management and user interfaces driven by SHACL
    - Timo/Björn on ARC & Galaxy
    - LJ: schema.science & Bioschemas improvements. Taste of RO-Crate. Appreciate help on the more political section. Helena for training.
  - Make sure you get a recommendation letter of support from your cluster. ELIXIR projects there's a spreadsheet to get the ELIXIR Hub to recommend.
-

Research Object Web Site [~ 10 mins]

- Eli helped usability and link checks to make sure they don't break.
- Nick made a submit-usecase-form so you don't have to use GitHub.
- Tools & tutorials and profiles now under Resources.
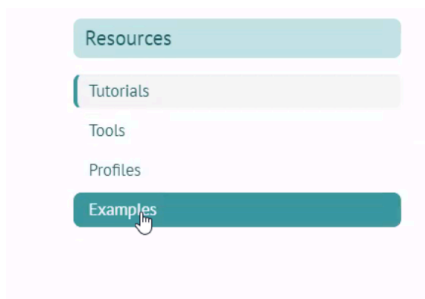
- More use cases to migrate. Home page can't list all of them! Need some way to select only some of them to show.
  - C: Can we do it by type? All should be "living". One on data, one on workflow – not too many! Show Dataverse! Carole can do traffic-light system. Green: Always, Orange: Sometimes, Red: Don't highlight
  - Goble, C. (2024, February 16). FAIR Digital Research Objects: Metadata Journeys. University of Auckland Seminar, Auckland. Zenodo. https://doi.org/10.5281/zenodo.10710142 uses examples
- Abigail Porting over rest of use cases from https://www.researchobject.org/ro-crate/in-use/
- Abigail to add their own use case!
  - OMERO bioimaging considering more RO-Crate – see also https://www.denbi.de/de-nbi-events/1614-towards-omero-and-arc-interoperability-for-rdm-compliant-bio-image-data

- Profile Registry? Abigail made an issue to link with Marc? #13
  https://github.com/ResearchObject/ro-crate-2024/issues/13
  - Add entry to CSV that points to the Profile Crate info.
  - Need contribution guide - do they need to make Profile Crate for each?
  - Minimum profile for profile needed!
  - Could also be to a RO-Crate that uses a profile, or a space that has its own listing like Workflow Run Crate profiles.
  - Essentially just DCAT? Or just CSV?
    - DCAT-AP 3.0 profile now released
  - Always have an example!
- Helmholtz use case?
- Show detached vs attached? Could be a "Task"
- https://rdmkit.elixir-europe.org/media_kit for the life cycle graphic
- The logo and images listed here are licensed under a Creative Commons Attribution 4.0 International License, just like the rest of the content on RDMkit.
- LJ: Can we have a list of papers that are citing RO-Crate?
  - Mostly on https://www.researchobject.org/ro-crate/outreach.html
  - Several FDO 2024 ones listed in
    https://research.manchester.ac.uk/en/publications/practical-webby-fdos-with-ro-crate-and-fair-signposting-experienc
  -

Training materials [~ 10 mins]

-

Implementation, tooling, validation [~ 10 mins]

- ro-crate-uploader taking shape
-

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Stian simplified https://github.com/ResearchObject/ro-crate/pull/262 to drop inheritance across profiles, but want to include "recommended" profiles.

> https://github.com/ResearchObject/ro-crate/blob/764c75ddc8b1a884102474552b7a50a5bc67d74f/docs/1.2-DRAFT/profiles.md#multiple-profiles

> Suggest still to keep this to avoid contextual entities re-declared
> https://github.com/ResearchObject/ro-crate/blob/764c75ddc8b1a884102474552b7a50a5bc67d74f/docs/1.2-DRAFT/profiles.md#shared-contextual-entities-from-a-profile-crate

Instead of profile Inheritence - research what is Delegate etc. from old CS theories.

- https://en.wikipedia.org/wiki/Delegation_pattern
  https://refactoring.guru/replace-delegation-with-inheritance
  https://stackoverflow.com/questions/832536/when-to-use-delegation-instead-of-inheritance
  https://www.jetbrains.com/help/idea/replace-inheritance-with-delegation.html

Lets chat to Colin Venters from CERN

Any Other Business

- FDO Implementation Summit papers can be extended
-

2024-04-11 EOSC Research Object Crate #88

When: 2024-04-11T08:00Z (notice **daylight saving changes** in EU!)

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Peter Sefton
- Johan Gustafsson
- Simone Leo
- Eli Chadwick
- Doug Lowe
- Leyla Jael Castro
- Bruno P. Kinoshita

Apologies:

- José Mª Fernández (two colliding TCs)
- Nick (EOSC PID call)
-

Updates & upcoming events [max 5 mins]

- Open call for EOSC Task Force membership -- applications by 21 April.
  - https://eosc.eu/open-call-for-eosc-association-task-force-members/
  - Task forces now include:
  - *EOSC Technical and Semantic Interoperability* (think: FAIR-IMPACT, FAIRplus, ontologies)
    - Raul?
  - *Long-term Data Retention* (think Zenodo, repository, EVERSE, Software Heritage, WorkflowHub?)
  - *FAIR Metrics and Digital Objects* (think: Signposting, FDO, BioDT)
    - Stian
  - *Health Data* (think HDR UK, EOSC-ENTRUST EOSC4Cancer, rare diseases, 5s-Crate)
    - Tim Beck (HDR UK)?
- EOSC "OSCARS" open call
  - https://oscars-project.eu/open-calls
  - ~ 100.000 EUR each for 12-24 months
  - Call closes soon! May 15th
  - RO-Crate-related applications:
    - ARC
    - Bioschemas
    - RO-Crate Community
      - Contact Marc Portier to join

Research Object Web Site [~ 10 mins]

- https://www.researchobject.org/ro-crate-2024/ updated further. Adding use case form.
- Use cases can be ported over to https://github.com/ResearchObject/ro-crate-2024/tree/main/pages/use_cases with minimal changes - Pull Requests welcome!
  - Similar for Tools https://github.com/ResearchObject/ro-crate-2024/blob/main/_data/tool_and_resource_list.yml
  - → Peter to revamp + add on LDaCA+ Tools side
  - Also need some help with tagging of use cases with relevant domains. Will be a spreadsheet that can help tagging
    - → Abigail to clarify tagging help
  -
-

Training materials [~ 10 mins]

- Putting together a Getting Starting page together with migrating Tutorials (and Examples) to ro-crate
-

Implementation, tooling, validation [~ 10 mins]

- ro-crate-py PRs merged
    a. [Better handling of HTTP header](#) via Raul Sirvent
        - Zenodo had semi-broken HTTP headers for content-type
    b. [Add help text for some CLI args](#) improving --help
- Raul: OSTrails project working more on connecting RO-Crate with DMPs and Scientific Knowledge Graph.
  Mapping with DMP (Data Management Plan) already drafted. OpenAIRE ARGOS, based on DMPOnline
    a. LJ: Making a type for output management plans. Subclass for software management plans.
        - Types OutputManagementPlan and SoftwareManagementPlan available at https://discovery.biothings.io/ns/maSMP (link to [json-ld](#))
        - With corresponding profiles (recommendations on what properties to use) at https://discovery.biothings.io/ns/maSMPProfiles (link to [json-ld](#))
    b. Tomasz Miksa presented 📄 summit-s7-miksa.pdf at FDO 2024
- Setting up an RO-Crate onboarding/implementation regular. Could be quarterly and application-specific. Early May?
-

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

asWKT - https://github.com/ResearchObject/ro-crate/pull/288 - still preferably to not have a separate geoJSON file separately for every location/area.

https://github.com/ResearchObject/ro-crate/issues/283 - how to list multiple crates

Peter has Portal that does this dynamically for >50k crates.

https://github.com/ResearchObject/ro-crate/pull/262 remove inheritance and just suggest other profiles.

Also not got a persistent way to validate Profile Crate implementations. Need to be avoid making too formal declarations before we know exactly how to validate them. Crate-O mode files now drops inheritance but shifted to similar mode files at different levels. One mode for different granularity (different types of objects) but under the hood will use a mechanism to build it from a bigger mode file. Family of profiles? Could also be filters. Could be derived mode files that are then hand-tweaked. Doing this as a build-side for making the mode files programmatically.

If Crate-O is built into a repository then it is tied to a more particular mode file (e.g. profile). ConformsTo goes to the same document but different #identifiers. Profile Crate can't do this as it has 1:1 link to profile.

Use of SHACL RDF shapes with RO-Crate specifications looking at Workflow * Crate profiles. Would need to be able to fall back to lower hierarchy shapes for validation.

Any Other Business

FDO Summit 2024: We have now uploaded all slides and recordings and linked them with the program sessions: https://fairdo.org/fdof-summit-2024/

The training session materials have not yet been uploaded, but will come as soon as possible. The Summit showed that the concept of "FDOs" is living, that there

· is much implementation work ongoing that require proper agreements on specifications,

· are some different "implementation ways" that require further brainstorming about unification, and

· are urgent topics that need to be addressed (how to move forward, how to improve dissemination, etc.)

Therefore, we would like to invite everyone engaged to participate in the FDO Forum work which is based on voluntary engagement. Due to the organisation of the Summit much capacity was bound during the last weeks. We will need to return to intensify the work in working groups, organise open meetings about various issues of relevance, organise training courses, continue the work on establishing an international testbed etc.

If you are interested in participation or have suggestions to the Forum, please send an email to secretariat@fairdo.org and/or to peter.wittenburg@mpi.nl.

Johan did win best poster at！RO-Crate now being written into humanities & societes data lab etc. Connect Australian community of implementers.

Pete presenting Open Repositories OR2024 presentation and workshop on file-based repositories.

2024-03-28 Research Object Crate #87

When: 2024-03-28T20:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Carole Goble, UNIMAN
- Marc Portier, VLIZ
- Stian Soiland-Reyes, UNIMAN
- Simone Leo, CRS4
- Abi
- Eli Chadwick, UNIMAN
- Mike Lynch, University of Sydney
- José Mª Fernández (BSC /ELIXIR ES)
- Sveinung Gundersen, ELIXIR Norway

Apologies:

-

Updates & upcoming events [max 5 mins]

- Summer of Reproducibility / Google summer of Code opportunity:
  - Achieve automatic reproducibility of COMPSs workflows at Chameleon:

  https://ucsc-ospo.github.io/project/osre24/bsc/ro-crate-compss/
- Biohackathon Europe proposals w/ WRROC? Due **8th April**
  - Sveinung Gundersen: Support provenance metadata for genome annotation pipelines, as overlap between "FAIRification of Genomic Annotations WG" in RDA (FAIRtracks continuation), ERGA/BGE, Galaxy/EuroScienceGalaxy and ROCrate/WorkflowHub communities
    - Link to proposal (relatively empty for now, open to suggestions)
  - Timo: ARC RO-Crate
  - Claus/Leyla Signposting
  -
- ELIXIR All Hands poster abstracts was **due today**
  https://app.oxfordabstracts.com/stages/6923/submissions/new
  - Five Safe Crate / EOSC-ENTRUST
    - 📄 Five Safes Workflow RO-Crate and WfExS: Closing the gap of fed…
  -
- FDO Summit 2024 - a triumph!! 50% of the papers were RO-Crate - now "**Webby FDOs**"
- We won a prize for pitching 5Safes RO-Crate! And Anne won the top prize and she pitched RO-Crate!

-

  - Slides and recordings and linked with the program sessions.https://fairdo.org/fdof-summit-2024/ The training session materials are not yet uploaded but will come asap.
  - From Peter It showed that the concept of "FDOs" is living, that there
- is much implementation work ongoing that require proper agreements on specifications,
- are some different "implementation ways" that require further brainstorming about unification, and
- are urgent topics that need to be addressed (how to move ahead, how to improve dissemination, etc.)
  - If you are interested in participation or have suggestions to the Forum, please send an email to secretariat@fairdo.org and/or to peter.wittenburg@mpi.nl .
  -
- EOSC "OSCARS" open call
  - https://oscars-project.eu/open-calls
  - see https://youtu.be/aBg14R2S83s
    - part of EOSC - so consortium of EU partners to submit proposals
    - open March 15th 2024 (2nd call expected open end year)
    - due 60 days --> ~ May 15th
    - Goal - build on science cluster approach to ensure the uptake of EOCC
    - 12-24 months timeframe
    - lump sum (which includes overheads and potentially travel, external contracting)
    - Consolidate FAIR services, societal benefits, excellent science by leveraging open Research approach
    - target science clusters + RIs, Unis, Institutes, consortia, individuals---
    - Needs clear objectives, realistic, Objectives contribute to a dataspace for science innovation, to pursue creation of pan European research-enabling value-added services, coordination of national activities in Europe, RIs etc interdisciplinary
    - aim to support researchers engaged in enabling open data research by doing science projects that facilitate foster sharing data and results in FAIR, also developing services tools to do that
    - outputs should themselves be FAIR

- - - min €100k, max €250k
      - 10 pages proposal, lite-weight not much reporting during it but final 5000 character PDF summary check at the evaluation criteria.
    - Marc willing to coordinate an RO-Crate Community proposal!
      - Further Development of RO-Crate
      - Contact Marc to join - we want
      - Could allow external entities sub-contracting
        - **[FAQ](#): Q: What are the eligibility criteria? Do the usual HE criteria apply, only participants from member states and associated countries can receive funding?**
        - **A**: No, third parties receiving financial support are not subject to the rules on eligibility for funding provided in Article 23 of the HE Regulation.
      - Only six weeks to go!
      - EVERSE project also linked to OSCARS
      - Mike Lynch: We've got some geophysicists using RO-Crates (who may have European contributors
      -
- ELIXIR ones:
  - RO-Crate + ARC
  - Research software starter kit
  - Multi-tenanted TeSS
- ELIXIR science call?
  - https://elixir-europe.org/internal-projects/commissioned-services/general-requirements-science
- open question/suggestion from mpo/VLIZ on these:
  - also enter a proposal from the RO-CRATE community (EU partners, feels like min 3 max 6)
  - broad general goal / them "to enhance practical usage of RO-Crates" - "to lower treshold for usage of RO-CRATE"
    - dev (possibly paid externals) of tooling / packages - libraries <-- at least community guided design/analysis
      - e.g. viewer component,
      - e.g. vscode plugin UI to create crates
    - training materials
    - larger embedding strategies (e.g. like previous suggestion on ro-way-of-working)
  - VLIZ willing to pull coordinate writing process
    - invites others / willing partners to speak up --> email marc.portier@vliz.be
      - short intro of org, ro-crate expertise + interest / scope for oscars
      - Marc to reach out to Raul? → https://www.researchobject.org/ro-crate/in-use/rohub.html
    - expect between now and May 10th
      - to be available for writing, review, weekly(3-4) short progress meetings

- - - 1st meeting to put down before Apr 15th
  - Carol suggests to focus on the "grid" and try to check as much as possible boxes
    - e.g. find industry partner

Research Object Web Site [~ 10 mins]

- https://www.researchobject.org/ro-crate-2024/ current draft
  - Abigail/Nick Porting over existing content
  - Specifications moved over, e.g. https://www.researchobject.org/ro-crate-2024/specification/1.2-DRAFT/introduction.html
  - Append contribution guide for GitHub? https://github.com/ResearchObject/ro-crate-2024/blob/main/README.md
- We have a lot of examples of people using RO-Crate in the FDOSummit we can use. They all have abstracts.
- https://academic.oup.com/gigascience/article/doi/10.1093/gigascience/giad078/7321054 is RO-Crate
- https://github.com/ResearchObject/ro-crate-2024/issues
  - Volunteers welcome!
- Move tutorial page over https://www.researchobject.org/ro-crate/tutorials.html
- Move additional tools
- ~~ ready to move over real-soon-now after Easter
- Marc willing to add the Profile Registry
  - Could be linked to from under Community
  - issue to track → https://github.com/ResearchObject/ro-crate-2024/issues/13

**Training materials [~ 10 mins]**

- Updates to ro-crate-py training material in GTN
- Highlight more presentations
-

Implementation, tooling, validation [~ 10 mins]

- Quick demo from Mike Lynch (University of Sydney) of his Observable-based Crate-viewer

a.
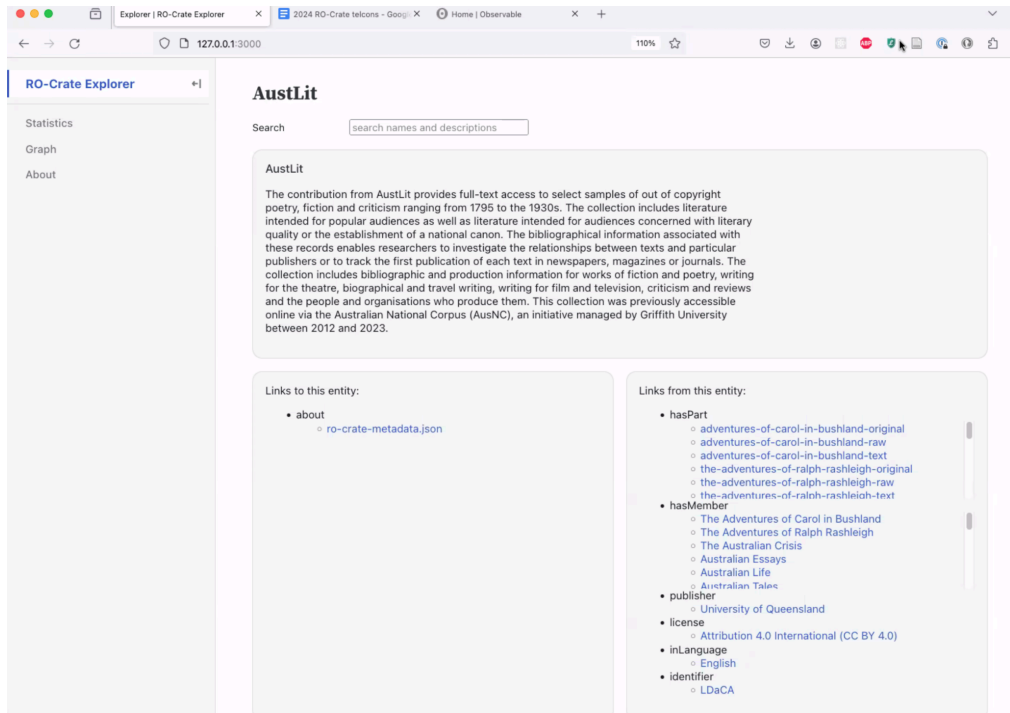
b. Based on Observable framework. Generated as static HTML but can be quite interactive. E.g. can be on GH Pages.

c. Looking at LDACA crates.

d. Can navigate into different elements of the crate.

e. Lots of different views possible, e.g. table view

f.
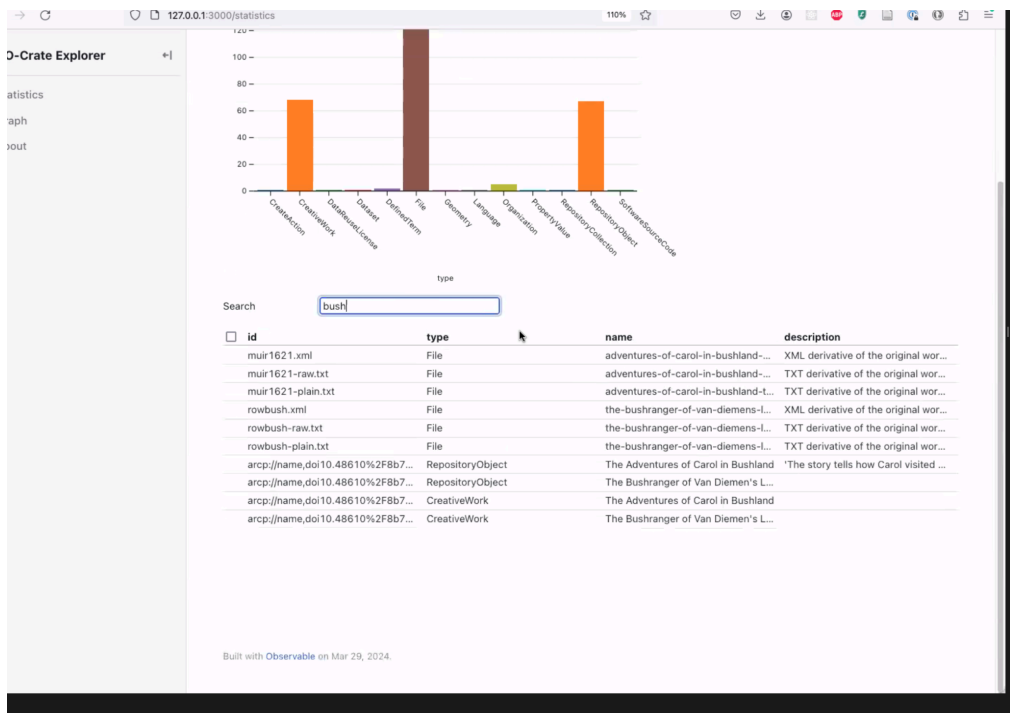
g. Search sub-optimal but improvements coming.

h. Can be both general-purpose RO-Crate rendering, but also customized for particular kind of crates.

i. RO-Crate as a way to rescue data trapped in 15 year old platform but still keep some interactive exploring method. No server needed!

j. → Demo is now up on [GitHub pages](#) with source code at [GitHub](#)
k. Currently working only from the RO-Crate Metadata File
l. Another project doing RO-Crate on GitHub
    https://glam-workbench.net/trove-government/
    - ■ Opposite end - here the RO-Crate is used in the backend to build readme etc.
    - ■ → Invite to next meeting?

m. (mpo/VLIZ) demo from Mike makes me naturally think about our own (less sexy)
    https://open-science.vliz.be/demo-rocrate/#
    - ■ like the competition - tools can be swapped!
        - ● so we should agree on the arbitrary decisions around tools like this that make them easily swappable (with minimal fuzz)
        - ● things to agree / learn from
            - ○ on the result
                - ■ add fair-signposting support
                - ■ comply with the ro-crate-preview.html
                - ■ on including rich content viewers
                - ■ on published public download URLS (deep into content)
            - ○ on the integration
                - ■ align config setting in the gh-workflow?
                - ■ align on gh-repo organisation (many-to-many)
                - ■ align on gh-repo release tag support (multiple published)
                - ■
        - ● open to have a dedicated call on these topics → marc.portier@vliz.be
    - ■ like the opportunity
        - ● Build agreement e.g. on how to recommend GitHub setup
    - ■ → Marc and Mike to meet up separately
        - ● Include Tim Sherratt?? who is generating README files from RO-Crate in Github
          https://github.com/GLAM-Workbench/data-repo-template)
        - ● Abigail also welcome
        - ● Meet in April?
- ● ro-crate-py 0.10.0 released
    a. Peter to add feature requests in GitHub to improve RO-Crate consumptions:
        - ■ Loading of crate from an API/
        - ■ Normalizing to arrays

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Merge https://github.com/ResearchObject/ro-crate/pull/288

Any Other Business

- FYI: https://www.niso.org/standards-committees/cpld
  - Publishers are paying attention
  - More manuscript-element focused than dataset-centric
  - → We need to form opinion on this!
  - Carole sent it to Mark to consider for LivePublication
  - Carole's contact: Frank (?)
  -

2024-03-14 EOSC Research Object Crate #86

When: 2024-03-14T08:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- …
- Stian Soiland-Reyes
- Eli Chadwick
- Peter Sefton
- Leyla Jael García
- José Mª Fernández
- Simone Leo (since 9:12)

Apologies:

-

Updates & upcoming events [max 5 mins]

- https://eosc.eu/symposium2024/
  - Berlin, 21-23 Oct 2024
  - Call for Unconference Sessions – closes 18 March
  - https://eosc.eu/symposium2024/call-for-unconference-sessions/
    - Leyla + NFDI folks on software quality

- - Led by someone else - LJ involved for RO-Crate for metadata for software
    - ■
- FDO 2024 training next week
- OR2024 https://or2024.openrepositories.org/
  - Workshop on Simple-static repository collections. Peter working with Tim Shephard / DSpace. Claire Knowles. RO-Crate one of possible metadata formats.

Research Object Web Site [~ 10 mins]

- https://www.researchobject.org/ro-crate-2024/ current draft
  - Abigail/Nick Porting over existing content
  - Awaiting contribution guide for GitHub https://github.com/ResearchObject/ro-crate-2024/tree/main/pages

Training materials [~ 10 mins]

- Eli adding improvements to RO-Crate tutorial
  - Also check https://www.researchobject.org/packaging_data_with_ro-crate/

Implementation, tooling, validation [~ 10 mins]

- Mike Lynch at Usyd has done some interesting work on crate viz using Observable Framework, potential other option for RO-Crate previewer – will try to get a demo at the meeting end of March (which is Good Friday in Australia)
  a. Can handle larger crates (>10k items)
  b. Also useful as another option for ro-crate-html
  c. OF is a static html rendering thing for JavaScript
  d.
- Started ro-crate-uploader for Zenodo
  a. Gathering requirements in https://github.com/ResearchObject/ro-crate-uploader/issues
  b. Could Zenodo also render similar to
  c. JavaScript port would be handy so this could also be used by Crate-O etc.

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Peter to review https://github.com/ResearchObject/ro-crate/pull/291

Try to avoid @value string literal magic - but could have a section about this for RO-Crate 2

RO-Crate 2 motivation: Avoid adding things in multiple places. Good opportunity to rewrite/reorganize. Dataset as root object with "./" – now could we allow other types as root?

Components of RO-Crate can be useful independent of being in a data packaging. Could you still do "RO-Crate way"?

Any Other Business

Making profiles

What are the skills needed for making RO-Crate profiles?

A bit of a worry if you let untrained people make their own vocabularies. So would be good to document what you need to know to make a profile.

https://www.researchobject.org/ro-crate/profiles.html#making-an-ro-crate-profile

Bioschemas approach for profiles didn't work too well.

SHACL/ShEx quickly gets too complicated.

Crate-O Mode Files only dealing with classes at root and its properties. What if some properties only allowed in certain contexts?

Crate-O tooling has a way to do an example crate and generate a schema from that. No LLM needed! Just find which terms are used.

Validation

Check the minimal criteria. https://github.com/ResearchObject/ro-crate-validator-py has some support, used in https://github.com/ResearchObject/runcrate/pull/17

Simone: A colleague Marco Enrico Piras will do an internal demo of a validation using SHACL and pySHACL for Workflow RO-Crate and Workflow Testing RO-Crate. There was an issue on ro-crate-validator-py as it was more targeting CLI outputs and not API. Making more of a library.

Next call:

2024-03-28 20:00Z will go ahead, although it is Easter Bank Holiday in some countries (Good Friday in AU)

2024-02-22 Research Object Crate #85

When: 2024-02-22T20:00Z

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

1. Stian Soiland-Reyes
2. Peter Sefton
3. Nick Juty
4. Jose Mª Fernández
5. Andreas Czerniak

Apologies:

- Carole Goble (Sister turned up)

Updates & upcoming events [max 5 mins]

- Carole: eResearch New Zealand Keynote 7-9 February 2024,
  https://zenodo.org/records/10648472
  - eResearch New Zealand 2024. Wellington , New Zealand,
  - Carole: University of Auckland 16 February 2024,
    P Auckland-Talk-GOBLE-16Feb-v3.pptx
-
- Open Repositories (Gothenburg Sweden June 3-6),
  - RO-Crate presentation (talking about the benefits of RO-Crate to repositories) accepted
  - tech update on Crate-O
  - Language Data Commons of Australia technical stack based around RO-Crate
  - also PT Sefton is co-convening a workshop on static/simple repositories (like static websites)
  - Now why is it important for repositories? Link to Dataverse.
  - Herbert van de Sompel also lots of things accepted incl. Signposting
  - ELIXIR all Hands follows week after
  - Peter also going to UK
- SWAT4HCLS (on Monday!) - training on Bioschemas, RO-Crate, Signposting
- ELIXIR Biohackathon dates coming up
  - 4-8 Nov 2024 - Biohackathon 2024 (Barcelona, ES), Campus Belloch
  - Project Call opens - 26/2/2024
  - Project Call closes - 8/4/2024
  - Project review by Programme Committee by 22/4/2024
  - Project Leads informed about the project selection and project attendees invited - 20/5/2024
  - BioHackathon 2024 registration opens:
    - 27/5/2024 (for invitees)
    - 3/6/2024 (for everyone)
  - Start thinking about RO-Crate projects

Research Object Web Site [~ 10 mins]

- Moved to gh repo : https://github.com/ResearchObject/ro-crate-2024

- Site: https://www.researchobject.org/ro-crate-2024/ (see also: https://ro-crate-web.azurewebsites.net/)
  - What to display on components of use cases
  - Contents to migrate
  - Arkisto.md - start with a harmonised set (name, image, short description)
  - What about new contributions? Template?
  - Feedback by github?
    - Abigail assigning tickets for she and I on populating content
-

Training materials [~ 10 mins]

-

Implementation, tooling, validation [~ 10 mins]

- New world record? PARADISEC has ~40K items/collections in RO-Crate format - metadata harvested here in to a discovery portal (about 400K index entries including the files - some crates have 15k files). This is using an API we're co-developing with PARADISEC at the Language Data Commons of Australia which can list RO-Crate objects in a repository by their conformsTo URI and by memberOf/hasMember relationships with RepositoryObject and Repository collection (which are built in to RO-Crate for this purpose). (The API could work with flat list of RO-Crates that don't have any of these things)

RO-Crate as a big step-up from OAI-PMH/DC

Finding top level collections.

https://github.com/ResearchObject/ro-crate/issues/283 discusses similar listing of RO-Crates

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Settle profiles.

→ Peter to Find Crate-O's schema.org-style-schema doc that we can borrow. – There's a brief description on the RO-Crate Schema tools repo

Any Other Business

Carole presented in New Zealand - a cheer went up when Peter Sefton was shown on screen!

Aside: Why is it called RO-Crate? What wizardry?

Gandalf the Grey, Hobbiton, New Zealand

Peter Sefton, Queensland University, Australia

EVERSE project on software quality https://everse.software/
https://esciencelab.org.uk/projects/everse/

2024-02-08 EOSC Research Object Crate #84

When: 2024-02-08T08:00Z (update link selecting UTC!)

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Peter Sefton
- Stian
- Marc Portier
- Cedric Decruw
- LJ

- José Mª Fernández
- …
-

Apologies:

- Bruno P. Kinoshita (thought it was today at 5PM!)

Updates & upcoming events [max 5 mins]

- EOSC Winter School
  - Stian, Marc, Daniel
  - [EuroScienceGateway/RO-Crate/Galaxy](#) presented by Lukasz Opiola
  - Hope & despair – many opportunities but also a bit of mess
  - Difficult to settle the big juggernaut and move forward.
  - Inability to start sharing when a standard is lacking
  - Concept of "EOSC Node" emerging
  - Daniel was in FAIR Assessment - lots of talk about Signposting
    - Even without Signposting then RO-Crate are helpful as the metadata is clear on where it is coming from
- Marc's thoughts
  - 📄 RO Components, Insights and Related Stuff
  - Several RO-Crate concepts could be decoupled and be useful in EOSC etc. on its own
  - Signposting should be used ni EOSC for many other things
  - Minimal standards for sharing so we can see which standards/vocabs exist
  - We discussed data services, there are many ways to describe them, but how to find them? Is that an "RO-Link"?
  - EOSC Node could link to all the services, datasets etc. and other catalogues
  - RO Profile can also be applied beyond RO-Crate, and content negotiation by profile (which needs more thought)
  - RO Registries – could we use shema:ItemList? As a very lightweight registry?
    - Peter: We've looked at using has~~Part~~ Member and memberOf as well as using Common Repository layout. https://www.researchobject.org/ro-crate/1.1/provenance.html#digital-library-and-repository-content with memberOf / isMemberOf rather than hasPart.
    - Need to look at flexibility here to also consider physical objects etc.
    - Marc: Only thinking about discoverability for now. In EOSC it's a big challenge just to get started, so we need to start easy.
    - Peter: Collection records has members that themselves are RO-Crate. Referenced by PCDM. Could be big objects. https://data.ldaca.edu.au/search
    - Profile Registry is also a (simpler) Use case – not an RO-Crate now.
- Carole presented at [eResearch New Zealand](#)
- Carole [presented](#) at Lorentz Symposium, The Road to FAIR and Equitable Science – Barend Mons
- Several RO-Crate talks at FDO 2024 (Carole, ++)
  -

- Australian Research Data Commons events Feb 5-9, Melbourne:
  - Workshop on Workspaces and repositories for Humanities and Social Sciences & Indigenous Data Commons (invitation only) – PT is trying to establish some principles for establishing repositories for Data Commons implementations
  - Summer School – lots of RO-Crate references, and discussions with language archives about using RO-Crates stored as directories on disk, to avoid or escape vendor lockin.
    - Recording of aboriginal languages, RO-Crate as vendor-independent storage
    -

Research Object Web Site [~ 10 mins]

- Preparing for deployment to GitHub Pages
- https://www.researchobject.org/ro-crate/in-use/
- to be revisited when Abigail and Nick are around
  - VLIZ restates Cedric.Decruw@vliz.be can be contacted on the integration of the ro-registry

Training materials [~ 10 mins]

- RO-Crate/Signposting/Bioschemas training at SWAT4HCLS - end of Feb
  - https://drive.google.com/drive/u/0/folders/1SdYiTTTuX1OEnYzswXi0WB6EvuHYBU18
  - Tutorial Bioschemas in webpages in Github Pages – no actions, no Jekyll!
  - Tried to follow same Carpentries-style
  - Stian, Claus, Leyla
- RO-Crate/Signposting training at FDO2024 - March
  - Same as above but FDO flavour
-

Implementation, tooling, validation [~ 10 mins]

- Experimental RO-Crate to Datasette tool (ptsefton)
  a. Similar to RO-Crate preview
  b. Table
- Exploring how WfExS can consume its own RO-Crates as inputs
  a. Related to PIDs of pushing workflow run RO-Crate to Zenodo
- Marc: VRE that can produce RO-Crate
- Manchester recruited 3 new d

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

PTsefton is Working on the GEO stuff.

Settle profiles.

→ Peter to Find Crate-O's schema.org-style-schema doc that we can borrow.

Any Other Business

2024-01-18 EOSC Research Object Crate #83

When: 2024-01-18T08:30Z (**rescheduled**!)

Where: https://zoom.us/j/97904359218

(or call-in using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Stian Soiland-Reyes
- Marc Portier (VLIZ)
- Bram Ulrichts (VLIZ)
- Nick Juty (UNIMAN)
- Peter Sefton (UQ / ARDC)
- Daniel Garijo (UPM)
- Andreas Czerniak (UNIBI)
- Raul Palma (PSNC)
- Douglas Lowe (UNIMAN)
- Carole Goble (UNIMAN)
- Bruno P. Kinoshita (BSC)

Apologies:

-

Updates & upcoming events [max 5 mins]

- EOSC Winter School 2024-01-29/--01
  - RO-Crate folks joining: Stian, Nick, Bjorn, Raul, Marc, …
  - Different levels of prep for different opportunity areas
  -
- FDO 2024 Summit of FAIR Digital Objects Forum
  - Abstracts submitted:

- - - **[RO-Crate community update](#)** (Thanks Peter, LJ, Simone, Claus!)
      - **[FAIR Signposting: Exposing the Topology of Digital Objects on the Web](#)**
      - **[RO-Crates as a practical implementation of FAIR Digital Object to align Biodiversity workstreams](#)**
      - BioDT on RO-Crate profiles
      - **[Five Safes RO-Crate: FAIR Digital Objects for Trusted Research Environments for Health Data Research](#)**

- **[ELIXIR All Hands 2024](#)** 10 June 2024 to Wed 12 June 2024, Uppsala, Sweden
  - Workshop proposals due 26 Jan 2024!
  - Bioschemas not. Hands-on didn't work that well. More of a symposium format.
  - Could be FAIR Digital Object themed. More of what's going on outside ELIXIR? Bringing together and forming communities beyond ELIXIR.
  - 90 minutes could be 4 talks of 15 mins + panel.
  -
- Lorentz Workshop "[The Road to FAIR and Equitable Science](#)", Yann Le Franc and Scott Edmunds will be there.

  The focus of the 5 workshop days
  Day 1: Workshop introduction - reflection and looking ahead - requests for FAIR Signposting and RO-Crate videos
  Day 2: Focus - machine actionability - lots on FDO's
  Day 3: Focus - equitability
  Day 4: Focus - fully AI Ready
  Day 5: Workshop conclusion - looking forward to the next 10 years

  Daily summary online, Day 1 to 4
   In order to serve those who are not able to attend the workshop because of the strict capacity limits, we will broadcast a summary of Days 1 through 4 including a short Q&A. These 'Reporting and Q&A' times are most convenient for the West regions.

   Those from the East regions can watch recordings of these reportings which will be placed on this [YouTube channel [youtube.com]](#) at any convenient time, and have the opportunity to ask questions in the dedicated Q&A sessions in the mornings of the next workshop day. All times (CET) can be found below.

  West regions
  Reporting and Q&A on Day 1 - 16.10-16.30 CET on Monday January 22
  Reporting and Q&A on Day 2 - 16.10-16.30 CET on Tuesday January 23
  Reporting and Q&A on Day 3 - 16.10-16.30 CET on Wednesday January 24
  Reporting and Q&A on Day 4 - 16.10-16.30 CET on Thursday January 25

  East regions
  Watch the recordings here at a time convenient for you.
  Q&A on Day 1 - 09.30-09.45 CET on Tuesday January 23
  Q&A on Day 2 - 09.30-09.45 CET on Wednesday January 24
  Q&A on Day 3 - 09.30-09.45 CET on Thursday January 25

  Day 5 'Strategy Day'
   The final workshop day can be followed online in full, 09.30-15.00 CET on Friday January 26

  ONLINE PARTICIPANTS: REGISTER TO RECEIVE ZOOM LINK

In case you have colleagues who are interested in following these online / broadcasting sessions, please feel free to share this information with them, and ask them to register via this link [forms.gle] Friday January 19th at the latest. We will then make sure calendar invites including Zoom details are sent out.

Background on the Lorentz Workshop
Some general background can be found below:
Lorentz Workshop 'The Road to FAIR and Equitable Science'
The overall aim of the workshop is to consolidate a 'roadmap' for rigorous FAIR implementations in the coming decade.
More background information can be found online [lorentzcenter.nl] and in this overview video [youtube.com],
The last day of this 'unconference' (Friday, the 26th of January) is reserved to collectively present this consensual 'roadmap'-type document to a larger group, including funders, publishers and policy makers.
Recordings of the reporting sessions will be made available daily via this YouTube channel [youtube.com] so they can be watched at any time.

- Open Repositories (OR2024) , 12 Jun 2024, Gothenburg, Sweden
  - Peter prepared an abstract on RO-Crate
    https://research.manchester.ac.uk/en/publications/five-ways-ro-crate-data-packages-are-important-for-repositories
- RO-Crate tutorial at SWAT4HCLS, February 26-29, 2024, Leiden
  - See https://www.swat4ls.org/workshops/leiden2024/tutorials/
  - Planning meeting: 2 Feb 2024
-

Research Object Web Site [~ 10 mins]

- Updated https://www.researchobject.org/ro-crate/outreach.html#2024 – any publications/presentations etc. missing?
  - ..
- Stian split out https://www.researchobject.org/ro-crate/in-use/ but many pages are half-empty. Will need more content for new layout.
  - → Add ELN format as "in use", see https://github.com/TheELNConsortium/TheELNFileFormat/issues/61
- New website: Beta/demo- we could use feedback
  - Colour code 'tags'
  - Carousel -> flat list
    - Using tags. May have different colours depending on domain/task/role tags.
    - Had considered filtering by tag
  - Adding Contact page
  - FAQs to add
  - 'Onboarding' to add ('learning path' / 'proficiency path' targeting common tasks for example)
  - Use cases added as a flat list.
    - Making web form for submitting a use case
    - Specification lists.
    - About 20 use cases now, more to come (use a widget to paginate them and search/buttons to filter/drill down?) (Peter: If use cases are a list you can paginate it and allow live searching to filter it)
    -
  - Questions

- How many versions of specs to display - archive link after 'previous'
    - Add "Archived" with deep-links (or even to Zenodo deposits)
- How to navigate to profiles
    - Combine with VLIZ's profile registry? (see further)
- Order of use cases (currently from spreadsheet but can be modified)
    - Organize in different ways! Task, discipline, country!
    - Building credibility
- Should we change the colour scheme?
    - No!
- Focus on content and how we can contribute.
- Deployment deadline needed.
    - Suggestions
        - Carole: focus on how people can contribute and deployment
            - mpo: preferably contribution is following the current model → contribution to github & static site generation
        - community page → should include the github#1 membership signup + regular calls invite ?
        - from VLIZ – can we collaborate on including the ro-crate-profile-registry in a smart way?
            - see demo → https://open-science.vliz.be/demo-profile-repository/
            - pls contact cedric.decruw@vliz.be for tuning embedding / integration / style fitting
              (optionally /cc Marc + use the github repos-issues behind it)
            - Can be integrated into the new website together with gitHub Action
            - Machine readable output needs feedback
              https://open-science.vliz.be/demo-profile-repository/registry.ttl (this is what feeds rendering)
            - Should the registry itself be a RO-Crate or a DCAT DataCatalogue?
            - List of Research Objects could also be a goal and should also be machine-readable
                - Listing of crates not uniform today across ROHub, WorkflowHub, LDAcA
                    - Peter: LDaCA uses pcdm:Collection / pcdm:Object to organize objects with pcdm:hasMember /pcdm:memberOf properties (Collections are typically stand-alone crates and Objects have hasMember relations to the those crates)
                    - mpo:
                        - currently we opted for the simplest thing that could work → schema:ItemList
                        - remembers jon postel robustness advise: – be conservative in what you write, be liberal in what you read (so I like producing something really simple, and consider advanced entries to be readable by our component)

- ○ https://schema.org/DataCatalog
- ○ → Document this pattern of listing RO-Crates
- ○ → How to do listing as an API?
  - ■ Many existing generic repository APIs like OAI-PMH (for harvesting items) and SWORD (for deposit)
  - ■ mpo – or not do an API and rather go for smart LD fragmenting (eg tree-cg and ldes) – these typically do not need a live server, but can materialise fragments
- ○ → Daniel to make issue on this and tag everyone involved.
  - ■ https://github.com/ResearchObject/ro-crate/issues/283
- ○ ROHub listing? Using its own API?
  - ■ OAI-PMH catalogue integrates into EOSC knowledge graph. Based on OpenAire's guidelines, and again DC , Datacite, so with DCAT similarities
  - ■
- ○ WorkflowHub listing via TRS API: https://about.workflowhub.eu/developer/trs/
- ○ RDF Turtle of profile registry now is on the simplest possible listing.
  - ■ Only make it more complex if it we know what we need from it.
  - ■ Be conservative in what you write and liberal in what we read.
  - ■ Marc: Avoid adding additional APIs unless needed for synchronization of changes and sizes get so big that fragmenting becomes useful.
- ○

Training materials [~ 10 mins]

- ● https://www.researchobject.org/ro-crate/tutorials.html to be revised for SWAT4HCLS - build Crate-O training material
  - ○ Could also show how editing a schema/vocabulary as the audience will know about ontologies
  - ○ Show building and use of modes.
    - ■ Tooling on command line that can make a Mode file (previously known as Crate-O profile) and example documents
    - ■ Use "All inclusive schema.org" mode to build example crate. Then generate Mode from that, which also makes RO-Crate profile docs.
  - ○ ROHub also have a Python library for building RO-Crates together with ROHub.
    - ■ Link to training material?
    - ■ https://reliance-eosc.github.io/ROHUB-API_documentation/html/tutorials/tutorial%231.html
    - ■ Need to find a smooth path to show the different tools working together
    - ■ Also some jupyter notebook examples that can be shown

-
  -
    -
      -

Implementation, tooling, validation [~ 10 mins]

- Crate-O – team is still on summer holidays – we have a summer student using Crate-O's Excel Spreadsheet support to annotate an archive of indigenous language materials
  a. Crate-O HDR UK meet-up ([poll](#)): likely 25 January 2024 10:00 - 11:00 GMT (Alvin Sebastian, Doug Lowe, Jon Couldridge, Moises Sacal, Stian Soiland-Reyes, Tim Beck)
- UQ LDaCA team is talking to PARADISEC about a standard RO-Crate based API for data repositories - ATM LDaCA's API returns RO-Crate and uses RepositoryCollection and Repository object for structural relationships. (For example: https://data.ldaca.edu.au/docs) – anyone interested in joining in the discussion?

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Any Other Business

2023-12-14 EOSC Research Object Crate #82

When: 2023-12-14

Where: https://zoom.us/j/97904359218

(or [call-in](#) using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- Simone Leo
- Alex Ip (AARNet)
- Stian Soiland-Reyes
- Carole Goble

- Peter Sefton
- Leyla Jael Castro

Apologies:

-

Updates & upcoming events [max 5 mins]

Preparing proposals for Open Respositories 2024 - including a workshop on "Simple Static Sustainable" repository tech   (ptsefton)

Australia: HASS and Indigenous Research Data Commons Receives $25 Million – this includes the Lanaguage Data Commons of Australia (Peter Sefton . Apex Ip)

Workflow Run RO-Crate being submitted to PLOS ONE
arXiv preprint: https://doi.org/10.48550/arXiv.2312.07852

https://eosc.eu/eosc-focus-project/winter-school-2024/ registration still open!

Research Object Web Site [~ 10 mins]

Training materials [~ 10 mins]

Implementation, tooling, validation [~ 10 mins]

Have made progress on a software-source code Profile:
https://github.com/ResearchObject/software-profiles/blob/main/docs/profiles/0.1/software_source
_code_crate.md – this can be used in Crate-O

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

https://github.com/ResearchObject/ro-crate/pull/278

Any Other Business

2023 #64-#82

Older minutes are archived in the [2023 RO-Crate telcons archive](#)

2022 #42–#63

Older minutes are archived in the [2022 RO-Crate telcons archive](#)

2021 #19–#41

Older minutes are archived in the [2021 RO-Crate telcons archive](#)

2020 #9–#18

Older minutes are archived in [2020 RO-Crate telcons](#)

2019 #1–#8

Older minutes are archived in [2019 RO-Crate telcons](#)

2018 pre-RO-Crate

[2018 Joining up Research Object Activity](#) notes

Template: 2024-mm-dd Research Object Crate #nn

When: [2024-mm-ddT20:00Z](#) (update link selecting UTC!)

Where: https://zoom.us/j/97904359218

(or [call-in](#) using Meeting ID: 979 0435 9218)

*Note: call will be **recorded** for the sole purpose of minute taking. Recording will not be distributed outside University of Manchester. Contact Stian Soiland-Reyes if you would prefer the call not to be recorded.*

Participants: *(add yourself below):*

- …
-

Apologies:

-

Updates & upcoming events [max 5 mins]

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Research Object Web Site [~ 10 mins]

-

Training materials [~ 10 mins]

-

Implementation, tooling, validation [~ 10 mins]

-

RO-Crate Spec Updates/Feedback [~ 20 mins]

Planning/status: https://github.com/ResearchObject/ro-crate/projects/1

Milestone: https://github.com/ResearchObject/ro-crate/milestone/2

Any Other Business