ESIP Schema.org Cluster Notes

Mailing List: https://lists.esipfed.org/mailman/listinfo/esip-schema-dot-org
Slack: https://esip-all.slack.com/messages/C8EACC8KT (#sci-schemaorg)
Github: https://github.com/ESIPFed/science-on-schema.org/

Telecons via **Zoom**
Register/Join: https://www.esipfed.org/series/schema-org/
https://esipfed-org.zoom.us/j/85152121782?pwd=v5zVVHVA6ft44m7HNWFMvQ8KeJUWZx.1 (try not to share too broadly)

- **4th Thursday, 2:30pmET**

FUTURE
- **Website** like bioschemas.org
- **Profiles** (following W3C Profiles) core SOSO profile, DataONE profile
- **Deeper connection** to Schema.org

Outputs & Activities
- https://science-on-schema.org
- https://soso.readthedocs.io/en/latest/ (Python package for converting metadata dialects to SOSO)
- https://github.com/datadavev/soso-chrome (Chrome Extension SOSO validation)

Related Resources
- CodeMeta (schema.org for Software)
- Gleaner.io (harvesting Schema.org JSON-LD)

November 20th?, 2025

- Draft letter to DataCite to ask them to fix their API to produce (and accept) Schema.org for datasets that maps correct, validates in the schema.org validator, and aligns with the ESIP soso standard. To be signed by international parties. Motivation is so that data repositories (including NASA, Zenodo, and many others) could simply use the DataCite API to produce correct schema.org to auto-embed in dataset landing pages. (For those who prefer richer metadata than DataCite could support, it would also be extremely useful to be able to submit correct schema.org and have it map in an improved way to DataCite.) Related DataCite discussions:

(space to draft the letter)
- Interested in what schema.org metadata fields for data are prioritized in internet searches and in AI tools. Also, how do the schema.org metadata fields play into search engine optimization? Looking for evidence here.

October 23rd, 2025 *(Please Record)*

Attendees

Announcements

Agenda

1. Moving forward the SOSO Validation Package
2. SOSO Validation Demo (please screencast and record)
   a. Colin Smith
   b. Ian Nesbitt
3. Refactor modeling of `Services` (GitHub Issue [#262](#))?

September 25th, 2025

Attendees

Announcements

Agenda

MEETING CANCELLED.

August 28th, 2025

Attendees

Adam Shepherd, Ian Nesbitt, Jeanette Clark, Aaron Friesz, Colin Smith, Nicholas Jarboe, Chantelle Verhey, Andrea Budac, Pier Luigi Buttigieg, Rebecca Ringuette

Announcements

1. ESIP July Meeting Recording - https://youtube.com/playlist?list=PL8X9E6I5_i8gkfxDKDXMIJNw7L1GbjmiT&feature=shared
2. SOSO ESIP session video: https://www.youtube.com/watch?v=7tWBjH-IKWo&list=PL8X9E6I5_i8gkfxDKDXMIJNw7L1GbjmiT&index=30
3. ESIP is seeking an Executive Director! https://www.esipfed.org/executive-director/
4. Application for '25-'26 ESIP Community Fellows https://www.esipfed.org/student-opportunities/community-fellows/
5.

Agenda

1) nominations for a new chair, and
- Colin Smith & Ian Nesbitt nominated for co-chairs and accepted

2) followup on the schema.org validation rules discussion
- RECAP:
  - talked through use cases for validation,
  - Breakouts were more discussion,
    - Nitty gritty was too low-level for the attendees,
    - High-level discussion was really fruitful
- ESIP Summer Meeting SOSO session
  - https://docs.google.com/document/d/1Y2QrDMyanbl0zX_ATQFid1z5uIrF9SmjuDNn45Q08eM/edit?tab=t.0
  - Validation spreadsheet

- ○ Validation in soso Python library: https://github.com/clnsmth/soso (see `soso.utilities.validate`)
- Rebecca on mapping metadata to DataCite (notes below)
  - ○ Found 2 issues with DataCite schema.org metadata (DataCite Discussion 188: https://github.com/datacite/datacite-suggestions/discussions/188)
  - ○ Efforts to try to get DataCite to support their own DC-SO converter (NASA+ODIS+potentially others)
    - ■ Pier Luigi and Rebecca Ringuette
    - ■ Potentially October meeting
    - ■ Draft a letter to be signed by various organizations to request an updated mapping from DataCite to Schema.org - **Nov activity**.

(future topic from Rebecca, currently on travel): Interested in adding a mapping from DataCite to the soso software package. It should be within reach of an intern. I can draft a sssom, but I need others to review this. This will be a great way to produce accurate schema.org json-ld from DataCite metadata in a way that not only validates in schema.org (the current output from DataCite's API does not when there are contributors), but also aligns with this standard. Once we have this, we can go to DataCite and collaborate on getting it into their systems.

Validation spreadsheet:
https://www.youtube.com/watch?v=7tWBjH-lKWo&list=PL8X9E6I5_i8gkfxDKDXMIJNw7L1GbjmiT&index=30

June 26th, 2025

Attendees

Adam, Sean, Matt, Jeanette, Colin, Alycia, Emilie, Andrea, Nick, Ian, Rebecca Ringuette
ZOOM:
https://esipfed-org.zoom.us/j/85152121782?pwd=v5zVVHVA6ft44m7HNWFMvQ8KeJUWZx.1

Announcements

6.

Agenda

1. Review plans for summer meeting session
   a. 5 talks @ 8min each
   b. Adam would like to step back; plan ask for new cluster leadership discussion at ESIP
2. Pier Luigi group at UN doing work to convert spreadsheets to SO
   a. https://colab.research.google.com/drive/1BqZrzK5OTl_iNpfChImHdIkCTnIizTYR#scrollTo=rjlZN28AsCpa (Colab to convert CSV to Schema.org)
3. Sean: wants to provide SO metadata
   a. Ocean Networks Canada (via Chantel Risdale)
   b. Already provide DataCite and ISO
   c. Q: What is different from JSON-LD from the official guidance on the github?
   d. Rebecca: would be helpful to have a DataCite to SOSO mapping, similarly to what is happening in the CodeMeta community. I can draft a starting point if this moves forward.
   e. TODO: Matt to connect with DataCite and Rebecca

May 22nd, 2025

Attendees

1. Adam Shepherd
2. Rebecca Ringuette (1st half hour)
3. Andrea Budac
4. Emilie Altman
5. Cory Levinson

Announcements

None presented

Agenda

1. ESIP Summer Meeting SOSO session
   ○ https://docs.google.com/document/d/1Y2QrDMyanbl0zX_ATQFid1z5uIrF9SmjuDNn45Q08eM/edit?tab=t.0
   ○ [Validation spreadsheet](#)

2. Rebecca: In final stages of getting the mapping from SPASE (Heliophysics metadata) to Schema.org into the soso package. Hopefully merging in the next 1-2 weeks.
   - **Ways we could help:**
     - Review draft json-ld: https://github.com/Kurokio/soso-spase/blob/draft/SOSO_Draft.json
     - Codemeta collaboration: structure of json-ld: https://github.com/TheOSSci/InnovationSprint2025_Extending_Software_Metadata/blob/main/schema.org_codemeta-compliant.json
   - Moving forward:
     - Review
   - (copy from last month:) Future discussion item for the cluster:
     - Discussion of `@id` versus `identifier` clarifications in the guidance documents
     - Discussion of consistency with codemeta guidelines (see Rebecca's bullet above)
3. Packaging Data Question from Cory
   - ODIS - using schema.org - https://oceaninfohub.org/ (https://book.odis.org/, https://classroom.oceanteacher.org/enrol/index.php?id=928)

April 24th @ 2:30 ET

Attendees

- Matt Jones
- Jeanette Clark
- Dave Vieglais
- Dou Mok
- Rebecca Ringuette
- Colin Smith
- Nick Jarboe
- Chantelle Verhey
- Rebecca Ringuette
- Ian Nesbitt

Zoom link:
https://esipfed-org.zoom.us/j/85152121782?pwd=v5zVVHVA6ft44m7HNWFMvQ8KeJUWZx.1

Announcements

None presented

Agenda

4. ESIP SOSO session
   - https://docs.google.com/document/d/1Y2QrDMyanbl0zX_ATQFid1z5uIrF9SmjuDNn45Q08eM/edit?tab=t.0
   - [Validation spreadsheet](#)
5. Heliophysics SOSO mapping/ SPASE announcements
   - Been contributing a mapping to SOSO package from Colin
   - Will be working on compliance check with MetaDIG with Jeanette Clark
6. Collaboration with CodeMeta and OSSci effort. Interested in feedback on the terms also relevant for data, e.g. proper shapes, representation, etc.
   https://github.com/TheOSSci/InnovationSprint2025_Extending_Software_Metadata
   - Sprint funded by NumFocus
   - Take all the codemeta terms, combine with guidance from soso
   - Could take some of these as examples for shacl shapes for validation
   - Would like elements to align (e.g., via `funding`)
   - Challenges with use of Role fields in google rich results tool
   - Would specifically like feedback on
     https://github.com/TheOSSci/InnovationSprint2025_Extending_Software_Metadata/issues/2 - issue
     https://github.com/TheOSSci/InnovationSprint2025_Extending_Software_Metadata/blob/main/example_fullcodemeta_schemajsonld.json - file
7. Future discussion item for the cluster:
   - Discussion of `@id` versus `identifier` clarifications in the guidance documents
   - Discussion of consistency with codemeta guidelines (see Rebecca's bullet above)

Mar 27th @ 2:30 ET

Join/Register: https://www.esipfed.org/event/schema-org-12/

Attendees

- Adam Shepherd

- Andrea Budac
- Colin Smith
- Rebecca Ringuette
- Zach Boquet
- Emilie Altman
- Matt Jones
- Ian Nesbitt

Announcements

None presented

Agenda

1. Rebecca - **update on mapping from SPASE**, a Heliophysics metadata schema, to schema.org using soso (with Zach Boquet and Colin Smith)
   a. Narrative of our experience mapping to SOSO
   b. Similar narrative of our experience implementing the mapping in the soso package.
   c. Draft JSON-LD: https://github.com/Kurokio/soso-spase/blob/draft/SOSO_Draft.json
   d. Interested in discussions on these issues, also on adding guidance on including the metadata license to SOSO documentation.
      i. Indicating multiple roles for people that have no ORCiD or record
      ii. How to indicate citation relationship?
      iii. How to reference an observatory or mission in a Dataset record?
      iv. Linking schema.org and instruments
2. **[Visualizing a KG]** Idea: Once we get these data expressed in json-ld, how hard is it to visualize relationships in an interactive knowledge graph to explore connections and similarities between datasets? I'm also wondering if an easier way is to map into the system the Science Explorer uses, fork their code (assuming it is open source), and build on the metadata visualizations they already have.
   a. DataONE
      i. https://github.com/DataONEorg/sonormal/
      ii. https://github.com/DataONEorg/mnlite/
   b. Ocean InfoHub
      i. https://github.com/iodepo
   c. Edges

3. **SHACL Test Suite**

https://github.com/ESIPFed/science-on-schema.org/issues/257

    a. @see: https://github.com/ESIPFed/science-on-schema.org/tree/main/validation

    b. @see:
https://github.com/ESIPFed/science-on-schema.org/blob/main/validation/shapegraphs/soso_common_v1.2.3.ttl

        i.   DataONE based it's validation off of this shape graph

    c. Summer Workshop topic (session proposal open til May 15)

        i.   Feel free to edit here:
https://docs.google.com/document/d/1Y2QrDMyanbl0zX_ATQFid1z5uIrF9SmjuDNn45Q08eM/edit?tab=t.0

Feb 27th @ 2:30 ET

Attendees

Adam Shepherd, Emilie Altman, Colin Smith, Chantelle Verhey, Andrea Budac, Aaron Friesz, Zach Boquet, Rebecca Ringuette

Announcements

1. Polar Data Forum Events coming up - hosted after IDW (Aus) Oct 20-24 in Hobart
2. Allison Mills - website refresh -
3. From Emilie, Schema.org course: ODIS course:
https://classroom.oceanteacher.org/enrol/index.php?id=92
You have to sign up for an account first and then it will be verified a day or so later

Agenda

1. Rebecca - **update on mapping from SPASE**, a Heliophysics metadata schema, to schema.org using soso (with Zach Boquet and Colin Smith)
   a. Narrative of our experience mapping to SOSO
   b. Similar narrative of our experience implementing the mapping in the soso package.
   c. Draft JSON-LD: 📄 SOSO-SPASE Mapping Example
   https://github.com/Kurokio/soso-spase/blob/draft/SOSO_Draft.json
   Original sample SPASE record:
   https://github.com/Kurokio/soso-spase/blob/development/src/soso/data/spase.xml

d. QUESTIONS:

    i. How do we indicate the metadata license separate from the dataset license in schema.org? *subjectOf / add license property in this field Example:*

```
{
    "@context": "https://schema.org/",
    "@type": "Dataset",
    "name": "Removal of organic carbon by natural
bacterioplankton communities as a function of pCO2 from
laboratory experiments between 2012 and 2016",
    "License": { … the dataset license … },
    "subjectOf": {
      "@type": "DataDownload",
      "name": "EML metadata for dataset",
      "description": "EML metadata describing the dataset",
      "license": { … the metadata-specific license … },
      "encodingFormat": ["application/xml",
"https://eml.ecoinformatics.org/eml-2.2.0"],

"contentURL":"https://example.com/metadata/eml-metadata.xml",
      "dateModified":"2019-06-12T14:44:15Z"
    }
  }
```

    ii. We removed the APA style citation from the JSON-LD draft. Zach is wondering if the citation should be included elsewhere or removed completely? Adam, is there a correct place for this in the SOSO guidelines that we are missing? *No, this gets constructed from the other pieces (e.g. name, pub year, etc). Add a new issue about how to include the relationship like datacite does. Issue 259 now created.*

    iii. We would like to include both the concept DOI and the version specific DOI for a software (e.g. from Zenodo) in a related effort. How should we do that? (also applies to datasets). Add @id or identifier to the version object?
Or is this where the "prov:hadRevision": {"@id": "https://doi.org/10.5281/zenodo.14292170"} should be used in the concept DOI JSON example as the inverse of "prov:wasRevisionOf"?
Example: https://tinyurl.com/27uytdxc

```
{
  "@context": {
   "@vocab": "https://schema.org/",
   "prov": "http://www.w3.org/ns/prov#"
  },
  "@id": "https://doi.org/10.concept/doi",
  "@type": "Dataset",
```

```
"name": "Dataset",
"identifier": {
  "@type": "PropertyValue",
  "@id": "https://doi.org/10.version-specific/doi",
  "propertyID": "https://registry.identifiers.org/registry/doi",
  "value": "doi:10.version-specific/doi",
  "url": "https://doi.org/10.version-specific/v134",
  "prov:wasRevisionOf": { "@id":
"https://doi.org/10.version-specific/v133" }
 }
}
```

    iv.   How do we indicate the generating instrument and observatory for a dataset in schema.org? Prov-O somehow? Issue #250
https://www.w3.org/TR/prov-o/#prov-o-at-a-glance
"Observatory":
https://github.com/ESIPFed/science-on-schema.org/issues/250
"Instrument": most others use measurementTechnique, check with the group. If not enough, create a new issue.

    v.   Is there an example of how to use potentialAction for a link to a single file? Or is that in dataDistribution some other way. - *Issue #240*
https://github.com/ESIPFed/science-on-schema.org/issues/240
Maybe use "FindAction" for links that link to a directory structure?

    vi.   We have found several fields from Thing that our team has found important. We are interested in discussing getting at least some of those fields added to the SoSO guidelines.
Choose a better path, work to suggest additions.

2. **Review notes from the ESIP Winter Meeting** session on schema.org pain points
https://docs.google.com/document/d/1_rLqkC7uvTSiQfjWv1FTNVsDvQOkolHfgtNYyJnJXrM/edit?tab=t.0

3. **Revisit schedule/timing of Cluster meeting time** (4th Thursday at 2:30pmET)
    a. Put your name down here if this time is INCONVENIENT:
        i.   Rebecca Ringuette (0.5 hrs earlier would help)
        ii.   …
        iii.   …
        iv.   …
    b. Setup a vote

Dec 19th @ 4pm ET

Attendees

Adam Shepherd, Matt Jones, Chantelle Verhey, Aaron Friesz, Megan Orlando, Andrea Budac, Emilie Altman, Daniel Segessenman

Announcements

1. [Schema.org Pain Points](#) @ ESIP Winter Meeting
2. Early Registration for ESIP Winter Mtg is closing 12/20 (tomorrow)
3. schema.org @ AGU
   a. WDS training via ESIP Summer Meeting (Data Readiness Cluster on Croissant)
   b. Schema.org Town Hall
4. No Jan '25 telecon. See you in February

Agenda

- Introductions:
  - Aaron Friesz, new ESIP community manager
  - Andrea Budac: WDS ITO, Data Science Developer
  - Emilie Altman: WDS ITO, Data Science Developer
- **People to invite to Winter Meeting Session**
  - 1st time attendees ([form](#))
  - Meeting assistance ([form](#))

- Data Readiness (3rd Tuesday @4pm??)

- DataONE continues to ingest schema.org member nodes
  - Matt: Platforms on the same page would help federation
  - **CKAN** schema.org support (little different than SOSO)
    - Joel Natividad?? (Adam)
  - **DataVerse** is SOSO-compliant
  - **Geonetwork** is another
  - Maybe invite platform reps to a call
  - Chantelle has a contact that should participate: **Lunaris**
- **Issue #252**
  - add column for Schema.org v. SOSO-compliant and who is publishing (DataONE)

- One group missing from List is OceanInfoHub adopters!!! ([github issues](#))
  - ODIS documentation: https://book.odis.org/
- **ObservingNetwork**
  - POawg - focused on polar
  - To engage:
    - IRIS - ?? Rob Casey ??
- **ESIP Winter Meeting Prep**
  https://drive.google.com/drive/u/0/folders/10kGxI0IkM-GH71GnBIvGbW8OsOJ9eQV2
    - Backpocket pain points:
      - PRODUCTION:
        -
      - HARVESTING:
        - Matt: **Identifiers** are a sticking point
          - Misunderstanding **@id** (reuse causing issues)
          - DataONE needs an identifier!
          - Uniqueness
          - Non-identifiers
        - Matt: **Citations** [in the creator fields]
          - Preferred citation v. structured metadata
        - Matt: Technical - **Geospatial**
          - being encoded backwards,
          - WKT wrong
        - Matt: **@list** operator (showing up the correct order)

21 Nov @ 4pm ET

Attendees

Adam Shepherd, Colin Smith, Nick Jarboe, Rebecca Ringuette, Chuck Vardeman, Khaled Alharbi, David Butcher, Catherine Byrd, Emilie Altman, Matt Jones, Megan Orlando

Announcements

- Registration Form for new attendees (complimentary)
  - ealtman@oceannetworks.ca
  - dbutcher@magnet.fsu.edu

Agenda

Dec & Jan '24 Telecon Plan

1. Week earlier at 4pmET?
   a. Dec 19th
   b. Jan 16th

Review of mapping between SPASE and Schema.org

Suggested by Rebecca Ringuette
https://docs.google.com/spreadsheets/d/18dKisJFUPNwRWOC7MGmJg6_4_fT7i1hM/edit?usp=sharing&ouid=118198339287841207428&rtpof=true&sd=true
Crosswalks tab, column U (SPASE)

Timeline:
- Column U in crosswalks tab
- Planning to meet at AGU (Dec 10-14)
- Incorporating ODIS guidance
- Imitating the ODIS model of harvesting
- AGU meetup

Feel free to reach out to Colin (colin.smith@wisc.edu) when you get around to implementing the SPASE-to-SOSO translation code. It may be worthwhile sharing your work through the soso python package (https://soso.readthedocs.io/en/latest/) for other SPASE adopters to use.

Pathway forward
- Unpleasantness surrounding data distributions - MediaObject v. DataDownload
- Useful to get Pier's input (ODIS connection)

ESIP Winter Meeting Plan (call open to Dec 13th - 5 slots open)

BoF: Schema.org Pain Points - or - combo of Croissant (below)

Exploring the Croissant Metadata Format for improving Interoperability & Reusability of schema.org Datasets

GOAL: Why did you invent CroissantML?

1. Session Lead Organizer Name:

2. Session Lead Organizer Email:
3. Other Session Organizers (comma-separated names):
4. Session Title:
5. Session Description:
6. Connection to ESIP's Theme (How does your session fit within the Innovation to Impact annual theme?)

7. Session Participants (List the groups you want to invite to your session):

8. Value of Session to Organizer(s) (What do the session organizers want to get from this session? If this session involves an existing collaboration, such as an ESIP Cluster or Committee, please describe the value to the broader ESIP community.

9. Value of Session to Participants (What do you imagine your target participants will want to take away from this session?)

10. How many presentations do you plan to include in this session?
    a. 1-3 speakers
        i. **??Carl Boettiger** - scaling up geospatial data resources via structured metadata (brought Croissant to Matt Jones) Source Cooperative https://source.coop/
        ii. **Chuck Vardeman**
        iii. **Douglas Rao - works with Croissant**
    b. 4-6 speakers
    c. More than 6 speakers
    d. Other

11. Presenter Information Length of Time/Duration (Most sessions are 90-minute sessions. However, a few 60- and 150-minute sessions will be offered based on balancing needs with available slots.)
12. Session Level Recommended Ways for Participants to Prepare
    a. No prior knowledge or experience - the session skims the surface or is an introduction
    b. Some prior knowledge – the session will jump right into an intermediate level
    c. Some prior knowledge AND a quick review of supporting materials before the session will be a sufficient orientation for novices to feel more comfortable in the session
    d. In-depth knowledge but all skill levels are welcome to join in
    e. Cluster work session – familiarity with a cluster's work and tasks required
13. Recommended Ways for Participants to Prepare
    a. https://github.com/gdcc/exporter-croissant?tab=readme-ov-file#difference-from-schemaorg-json-ld
    b. https://docs.mlcommons.org/croissant/docs/croissant-spec.html

      c. https://dataverse.harvard.edu/api/datasets/export?exporter=croissant&persistentId=doi%3A10.7910/DVN/3FNEI0

      d. https://cyber2a.github.io/cyber2a-course/sections/ai-ready-data-in-arctic-research.html#croissant-metadata-for-machine-learning (Matt Jones: I wrote a little about Croissant in context of SOSO and other metadata work [at this link])

      e. **~ Summer Meeting Croissant ML talk ~**

14. Session Track Tags
    a. Cloud Computing
    b. Data Stewardship
    c. Education
    d. Machine Learning
    e. Metadata
    f. Science Communication
    g. Semantics
    h. Other:

15. Additional Session Tags

16. Will this session feature or discuss any ESIP-supported outputs? If yes, please list.
    a. Science-on-Schema.org Guidelines

17. Do you have any suggestions of potential plenary speakers in line with the meeting theme of Innovation to Impact?

18. All session organizers are strongly encouraged to attend the session design training workshop that will be held. If your session is accepted, would you also be interested in a one-on-one design consultation with our expert Charley Haley?
    a. Yes, I am.
    b. I'm not sure at this time.
    c. No, I'll learn what I can at the Session Design Workshop.

19. Have you organized an ESIP Meeting Session before?

24 Oct @ 2:30pm ET

Attendees

Regrets: Adam S.
Daniel Segessenman / ESIP Staff / danielsegessenman@esipfed.org

Colin Smith

David Butcher, National High Magnetic Field Laboratory [ICR Facility](). [dbutcher@magnet.fsu.edu](). Currently using Science-on-schema.org to develop an AI agent-ready database for high resolution mass spectrometry data. Interested in staying up-to-date on development.

Khaled Alharbi, PhD student and Research Assistant, Department of Computer Science, Florida State University. [Kalharbi@fsu.edu](). Currently working with David Butcher at the National High Magnetic Field Laboratory ICR on designing a database for high-resolution mass spectrometry data.

Allison Gaylord [nunatech@usa.net]() attending on behalf of the Sustaining Arctic Observing Networks (SAON) Polar Observing Assets work group which has an interest in furthering efforts to create a project in SOSO for Observing Networks and assets.

Andrea Budac with World Data System International Technology Office

Agenda

1. ESIP Winter Meeting Plan

2. Update SOSO homepage

Nick Jarboe - [https://github.com/ESIPFed/science-on-schema.org]()) I see this text.

"The cluster will be seeking endorsement across all members of ESIP, and in the meantime is releasing a series of progressively more mature guidance documents for the community."

3. ObservingNetwork discussion cont.d

See message in Slack and "[temp SOSO-RoPON Mapping table with four example networks]()" google spreadsheet – Bill

26 Sept @ 2:30pm ET

Attendees

Adam Shepherd, Nicholas Jarboe, Bill Manley, Charles Vardeman, Daniel Segessenman, Andrea Budac, Megan Orlando, Matt Jones, Colin Smith, Allison Gaylord, Emilie Altman

Agenda

1. SOSO Adopters List

https://github.com/ESIPFed/science-on-schema.org/issues/252

- Do we want such a list added to SOSO docs?
- Get list from Matt on DataOne list. CDF members are on the DataOne list.
  a. DONE: Here is the SOSO Adopters List for DataONE (current and future)
- How to get people using SOSO from Google Data - No API currently
- Get list from the CDF members
- Ocean Infohub - oceaninfohub.org
- Polar Data Search (POLDER) list of sites - list on their website - polder.info

2. ObservingNetwork discussion cont'd

Which SDO Type to use as a container?
- some concerns about ResearchOrganization as well as ResearchProject
- SOSO guidance for data repository based on ResearchProject and Service
- POAwg definition for "**Observing Networks**": systems or organizations that coordinate or conduct observation and monitoring of climate or environmental phenomena, typically with data management and infrastructure such as research stations, platforms, or instrumentation (e.g., SIOS, GTN-P, and NASA ABoVE)
- note also that RoPON also contains what POAwg calls "**Discovery Portals**": catalogs or organizations that are not observing networks per se, but which compile and share information about observing activities and infrastructure (e.g., ARMAP, ISAAFFIK, and Polardex); i.e., asset-level aggregating metadata catalogs
- Options:
  - A: Use schema:ResearchOrganization, with other types/properties to qualify an instance as an ObservingNetwork (e.g., that involve schema:Observation or schema:DataCatalog

- - - B. Define a new schema:ObservingNetwork as subclass of schema:ResearchOrganization (or a subclass of Organization?) and propose it to Google (might be too narrow for their interests)
    - C: Define esip:ObservingNetwork in our own class in an ontology that we recommend using (similar to how we recommend using PROV and other vocabs), possibly related to sosa/ssn:ObservationCollection
    - D: Define our own json-ld context that maps `esip:ObservingNetwork` onto `schema:ResearchOrganization`
    - …?
  - definition of a hypothetical SDO ObservingNetwork class?: organizations that coordinate or conduct observation and monitoring of natural phenomena
  - if helpful:
    - does ROR use SDO? apparently not.
    - does the Open Funder Registry use SDO?
    - But we can use ROR identifiers in our RO `identifier` fields
  - Next steps
    - identify approx. three examples of networks to help guide development of the guidance
      - NEON, US-LTER, …?
    - Create example SO docs for each of those networks

3. Google released DataGemma:

https://blog.google/technology/ai/google-datagemma-ai-llm/

Uses Schema.org in MCF:
https://github.com/datacommonsorg/data/blob/master/docs/mcf_format.md
Schema.org vocabulary:
https://github.com/datacommonsorg/schema/blob/main/core/schema.mcf

22 Aug @ 2:30pm ET

Attendees

Adam Shepherd, Bill Manley, Colin Smith, Andrea Budac, Daniel Segessenman, Chantelle Verhey, Megan Orlando, Rebecca Ringuette, Emilie Altman, Stephen Richard, Matt Jones, Charles Vardeman, Allison Gaylord

Agenda

1. Update to issue #238 (Tool for converting metadata standards to SOSO): https://github.com/ESIPFed/science-on-schema.org/issues/238#issuecomment-2259364219
   a. **Rebecca**: How would we work together on this?
      i. Github Issue queue
      ii. Or contact Colin (package maintainer) at colin.smith@wisc.edu
   b. **Matt**: Should we add a link to the tool in the README (https://github.com/ESIPFed/science-on-schema.org/tree/feature-249-obs-network-outline?tab=readme-ov-file#resources)?
2. Nick Jarboe asked in Slack about the current scope of who is using SOSO? https://esip-all.slack.com/archives/C8EACC8KT/p1724256341859219
   a. Matt: DataONE has an evolving list from onboarding new members
   b. Google Dataset Search
   c. What do we need?
      i. HEADER: "Known Repositories Implementing the Guidelines"
      ii. Sitemap & robots.txt
      iii. Repository/Website name
   d. Adam will create a Github Issue & Pull Request
3. Discussion of ObservingNetwork guidelines work-in-progress
   a. Main ticket: https://github.com/ESIPFed/science-on-schema.org/issues/249
   b. Draft ObservingNetwork Guidelines (very early)
   c. Question: what is the best SO class to represent an `ObservingNetwork`?
      i. From the document: "To describe an ObservingNetwork in schema.org, we will model it with an existing schema.org type schema:ResearchOrganization, with properties as shown below in Identifying Properties. We also considered modeling an ObservingNetwork as type schema:ResearchProject, which would be more transient than an organization."
   d. NOTES
      i. Collabing w. SOSO for Profile ObservingNetworks
      ii. Matt: proposes to dive into technical issues
      iii. Here is the definition that POAwg has come up with for Observing Networks: systems or organizations that coordinate or conduct observation and monitoring of climate or environmental phenomena, typically with data management and infrastructure such as research stations, platforms, or instrumentation (e.g., SIOS, GTN-P, and NASA ABoVE).
      iv. crosswalk to ROR
      v. research organization vs observation; some consensus on research organization;

      vii.   Here's the list of current examples: https://polarobservingregistry.org/
     viii.   decision for adoption of research organization as the most appropriate SDO class for observing network; Bill and Chantelle will start as a github issue;
      ix.   property mapping; specify vocabularies??;

27 Jun @ 2:30pm ET

Attendees

Bill Manley, Sean Tippett (ONC), Drew Snauffer (ONC), Rebecca Ringuette (HDRL), Andrea Budac (WDS-ITO), Colin Smith (EDI), Matt Jones (DataONE/ADC), Emilie Altman (WDS-ITO), Allison Gaylord (Nuna Technologies), Dave Vieglais (DataONE/KU)

Agenda

1. Introductions, overview of SOSO cluster activities
   a. Guidelines site: https://science-on-schema.org/
2. Observing Assets Schema.org Guidance (Bill Manley / Chantelle)
   a. Need for an integrated arctic observing system
      i. Challenge is to get a fulsome understanding across all networks, programs, projects…
   b. Registry of Polar Observing Networks to help remedy this (RoPON)
      i. Focused on registration and discovery of observing networks and their assets
      ii. Funding available to start t implement this system
   c. Data.metadata classes
      i. Infrastructure
         1. Sites
         2. Mobile Platforms
      ii. Activities
         1. Projects
         2. Campaigns
         3. Initiatives
   d. POAwg – three goals
      i. Registry of observing assets
      ii. Build crosswalks across metadata dialects
         1. JSON-LD profile
      iii. …

e. Questions and discussion
    i. Potential interest in Heliophysics to get observing networks near the pole incorporated into this effort. Email (Rebecca.Ringuette@nasa.gov) and I can attempt to connect you.
    ii. Would be good to use PIDs for assets (e.g., RORs, DIMES Id, etc.)
    iii. Is the metadata really Arctic-specific? Can we generalize the metadata for any location?
        1. Bill: Seems like no bounds on location needed
    iv. Sean: ONC perspective, working towards SO into Datasets and repository; crossover with their datasets
f. Discussion of next steps and plans
    i. Seemed to have general agreement that the cluster focus on this observing assets metadata representation in SO
    ii. Dave: should map to existing SO classes
    iii. Existing ROPON properties vocabulary as starting point
        1. POAwg network-level metadata model
    iv. ACTION ITEMS
        1. Bill: Get POAwg folks on ESIP slack
        2. Matt: summarize the proposal for other folks on the ESIP channel
            a. DONE: here's what I wrote to the channel: "Hey Adam and all SOSO folks -- Quick synopsis of todays science-on-schema.org cluster call, where Bill Manley proposed that the cluster help define a schema.org Guidelines document for Observing Networks and Assets. Bill gave a great overview (see the notes doc for details) of the need, and there was general support that we should pursue this as a cluster. If anyone has thoughts or comments on that, please let us know. The Polar Observing Assets working group (POAwg) would be contributing expertise from their work in this area, and we're hoping science-on-schema.org contributors will contribute their expertise on turning this into an effective new JSON-LD guidelines for `ObservingNetwork` document to complement our existing `Dataset` and `Repository` guidelines. The plan is to get organized between now and the August SOSO cluster meeting, and dive into the detailed work then. Please let us know what you all think."
        3. Bill and Matt: prepare materials for next meeting in August to dive into the details of classes and property mapping

PS from Bill Manley, 7/16/24: Hi All. As background for the new guidance document for ObservingNetwork, please see the presentation I gave at the June meeting, "Enabling Discovery: A New Registry of Polar Observing Networks (RoPON)". See also the websites for RoPON and POAwg, as well as an extended abstract. Regards.

22 May @ 2:30pmET

Attendees

Adam Shepherd, Chantelle Verhey, Rebecca Ringuette, Mike Mahoney, Andrea Budac

Agenda

3. Observing Assets Schema.org Guidance (Bill Manley / Chantelle)
    a. Bill wants to leverage the cluster to help develop
        i.   POA WG - https://www.polarobservingassets.org/
        ii. RoPON - https://polarobservingregistry.org/
        iii. [Bill added later: specifically it would be most awesome if SOSO could help POAwg and POLDER develop a SDO profile for "observing network". A network-level metadata model is available. This Fall would be good timing. My apologies for not making the meeting; I promise to be more involved in July and beyond. Best.]
    b. Build a Roadmap (possibly end of June - Chantelle/Bill)
        i.   Discovery - what current metadata (if any)
             1. What is observing?
             2. Who else is doing work here?
        ii. Modeling sessions to fit into (schema.org)
             1. …
        iii. Diagramming, etc..

    c. Chantelle mentioned Polar to Globals
        i.   Next polar to global interoperability hackathon - June 20th 4-6pm EST → https://p2g-data.org/workshops

4. New effort underway to rewrite the metadata model in Heliophysics. Would **really** like to discuss how to make the new metadata model interoperable with this effort. [Rebecca Ringuette]
    a. Aligning with DataCite & Schema.org
    b. Need good examples of Use Cases https://docs.google.com/document/d/12IlOvuAABAM0GNKILwnxT9J06r0PmEWpBF0Lmb9umyo/edit?usp=sharing

        i.   TWC Use Case Template [doc] [explanation]
- 1. Software example: [doc]

        ii.   Polder links
- 1. Polder github - https://github.com/POLDER-Crew/Best-Practices-schema.org /
- 2. set-up spreadsheets that helped us get there —> https://docs.google.com/spreadsheets/d/1wW5Xx6CRC0RVkfS1u-qSLJTIWGMprqH0dA5qITShFAI/edit#gid=0 / https://docs.google.com/spreadsheets/d/1KbBz_WG_yYLVhEkfvsU5IXL02xcSqs2lbi2izkebTIM/edit#gid=1748878374
- 3.

   c. Gap Analysis - DataCite & Schema.org
        i.   Example: Coordinate Reference System
- 1. https://github.com/ESIPFed/science-on-schema.org/blob/d0204a4deab285ffbfad03f7c673ed78760f6530/guides/Dataset.md#spatial-reference-systems

5. Should we pause group telecons? [**Adam**]
   a. No?

2 Mar @ 2:30pmET

Attendees

Adam Shepherd, Pier Luigi Buttigieg, Charles Vardeman, Mike Mahoney, Colin Smith, Rebecca Ringuette

Announcements

Agenda

6. TK Labels
7. Time Series Data
8. Croissant debrief (if anyone attended?)

NOTES

1. TK Labels

From Ruth: SOSO guidance for TK labels, etc.? I ask as that is something that the WDC-ITO office is interested in…

[Pier] On TK and BCL : https://github.com/iodepo/odis-arch/issues/398
(ODIS is working with Local Contexts to create a reference implementation of TK Labels and BCLs in the JSON-LD/schema.org world. Should be done in the next couple of months. Watch that issue.

TK Labels = traditional knowledge labels (relevant to indigenous communities)

2. Time Series Data

ADAM:
Any interest here in pursuing the definition of a new schema.org type for Time Series Data that would be subclass of https://schema.org/CreativeWorkSeries

I'm interested in having ways to describe:
1. changes in collection/observation methods over time
2. various people and operating organizations and roles as they change over time
3. individual datasets within a time series and their relationships to each other

There are some useful conceptual ideas we can borrow from some of the existing subclasses like
- https://schema.org/RadioSeries
- https://schema.org/VideoGameSeries

[add thoughts here]

PIER: https://github.com/iodepo/odis-arch/issues/125
1. We could use https://schema.org/EventSeries to represent the activities surrounding the various TimeSeries datasets. Investigating properties `recordedIn`, `workFeatured`
2. Possibly consider using DataCatalog to bundle the Datasets [of a TimeSeries]. Also consider a new subclass for DataCatalog for this

Terse example:

https://github.com/iodepo/odis-in/blob/c947ed61e58aff018601f7a1a00439c13b474475/dataGraphs/thematics/events/graphs/timeSeries.json

DAN BRICKLEY:
Could I encourage you to take a look at the approach that DataCommons.org have been using for a while? The basic vocabulary for it is in Schema.org but you'll probably find https://github.com/datacommonsorg/data/blob/master/docs/representing_statistics.md a good entry point. That repo uses MCF which is in fact RDF's ancestor; if you can read Turtle it should be obvious enough. There is a lot of data in https://github.com/datacommonsorg/data/tree/master/scripts - most typically a combination of tabular input data plus a template file that maps into the schema markup to describe an observation of a statistical variable in a place and at a time.

USE CASE: methodological change in dataset collection over time

ODIS Example:
https://github.com/iodepo/odis-in/blob/c947ed61e58aff018601f7a1a00439c13b474475/dataGraphs/thematics/events/graphs/timeSeries.json

METS RCN Examples of EventSeries: https://github.com/NicoGEOMAR/METS-RCN/tree/main/Examples/Events

Precis: The key here is to decouple the Event Series metadata from the Dataset metadata, so one doesn't overload the Dataset metadata. In each Event in an EventSeries, a set of potentialActions can be defined where methods and other metadata can be bundled. Each Event will also be linked to the Datasets that come out of it. One could then query: "Get me all datasets associated with events between time T1 and time T2 which use/don't use method M".

Approach:
1. Define methodological changes in the EventSeries via te subevents
2. Generate new dataset - no need to describe methods on that dataset, but rather links back through to the EventSeries for this information

Chuck mentions: OWL-Time Aggregate ontology https://www.w3.org/TR/vocab-owl-time-agg/

Pier mentions HowTo schema.org class for documenting methodologies
https://github.com/iodepo/odis-in/blob/master/dataGraphs/thematics/HowTo/graphs/HowTo.json
re: https://github.com/iodepo/odis-arch/issues/162
  (comment: https://github.com/iodepo/odis-arch/issues/162#issuecomment-1971595250)

---

3. ODIS Notes

- Will continue from funding from UNESCO
- Requests SOSO present challenges & modeling issues
- Future:
    - Progressively going deeper into the types (from metadata to data)
    - High-level coordinating with other communities to use schema.org
- Presenting implementation plan at Ocean Decade Conference (Apr 9th)

Chuck mentions CI Compass reaching out to ODIS via Pier

[Pier] R2R asked to federate: https://github.com/iodepo/odis-arch/issues/411

4. Croissant debrief

ESIP Cluster Data Readiness presented/hosted

What is it? "JSON-LD representation of a dataset for machine learning" - Chuck

https://github.com/mlcommons/croissant/blob/main/docs/croissant.ttl

https://github.com/mlcommons/croissant/blob/main/docs/croissant_rai.ttl (rai: responsible AI)

ESIP VIdeo. ▶️ Data Readiness: Introducing Croissant

Chuck attended/listened https://github.com/mlcommons/croissant/

- Google leading the charge
    - Dan & Natasha were involved
- Extending schema.org in some places
- ML Commons (https://mlcommons.org/)
    - Formed working group
- KAGGLE data file
    - Croissant JSON file (JSON-LD schema.org)
- Hugging Face also adopting
- TensorFlow supports it
-

https://github.com/mlcommons/croissant/blob/main/datasets/1.0/flores-200/metadata.json

```
{
  "@context": {
    "@language": "en",
    "@vocab": "https://schema.org/",
    "citeAs": "cr:citeAs",
    "column": "cr:column",
    "conformsTo": "dct:conformsTo",
    "cr": "http://mlcommons.org/croissant/",
```

```
"rai": "http://mlcommons.org/croissant/RAI/",
"data": {
  "@id": "cr:data",
  "@type": "@json"
},
"dataType": {
  "@id": "cr:dataType",
  "@type": "@vocab"
},
"dct": "http://purl.org/dc/terms/",
"examples": {
  "@id": "cr:examples",
  "@type": "@json"
},
"extract": "cr:extract",
"field": "cr:field",
"fileProperty": "cr:fileProperty",
"fileObject": "cr:fileObject",
"fileSet": "cr:fileSet",
"format": "cr:format",
"includes": "cr:includes",
"isLiveDataset": "cr:isLiveDataset",
"jsonPath": "cr:jsonPath",
"key": "cr:key",
"md5": "cr:md5",
"parentField": "cr:parentField",
"path": "cr:path",
"recordSet": "cr:recordSet",
"references": "cr:references",
"regex": "cr:regex",
"repeated": "cr:repeated",
"replace": "cr:replace",
"sc": "https://schema.org/",
"separator": "cr:separator",
"source": "cr:source",
"subField": "cr:subField",
"transform": "cr:transform"
},
```

Re: DataType typed as @vocab

https://github.com/mlcommons/croissant/blob/1dbeb30f196f14cc55e08fae8826e251b3d7466d/docs/croissant.ttl#L25

Json-LD playground

- Using @vocab **https://tinyurl.com/2ctmhogg**

- Changing @vocab to @id
  https://json-ld.org/playground/#startTab=tab-expanded&json-ld=.@id..
DIFF: "dataset" becomes "http://schema.org/Dataset" when using @vocab

Topics for Future

Chuck: Need to describe Instrument (manufacturer, type, etc)
Pier: tracking RDA PID Instrument Types,
- ODIS issue: https://github.com/iodepo/odis-arch/issues/68

Pier suggests prioritizing 2-3 issues
ex: augmenting Vehicle to address Instrumentation, etc

Chuck has a use case, but no formal documentation, conceptual model yet
- Thinking of ESIP Summer Mtg hack-a-thon (if travel works for Chuck)

26 Oct @ 2:30pmET

Attendees

Adam Shepherd, Stephen Richard, Charles Vardeman, Chantelle Verhey, Colin Smith, Ruth
Duerr, Pier Luigi Buttigieg

Announcements

1. No November telecon due to Thanksgiving holiday.
   Should we cancel Dec (28th) as well? Probably
   Adam will check on running a telecon week before Winter Meeting

2. CI Compass & PIDs for Instruments (Chuck)
   a. RDA PID Instrument work Chuck found difficult to use/employ
   b. Focus on Drone data Use Cases & missing pieces for development

Agenda

1. Identifiers for the metadata record Issue #245 (Steve Richard)
   https://github.com/ESIPFed/science-on-schema.org/issues/245
   https://github.com/ESIPFed/science-on-schema.org/pull/246
   a. Chuck offers that we could specify a link to the metadata by using Response
      headers

i.   Schema.org uses the
     https://www.w3.org/TR/json-ld11/#interpreting-json-as-json-ld link-rel
     header. See: https://schema.org/docs/developers.html and
     https://github.com/schemaorg/schemaorg/issues/2578#issuecomment-63
     2227864
   b.   Ruth mentioned we could also use the https://schema.org/subjectOf

2.   Repository metadata consistency with RDA recommendations #247 (Matt Jones)
     https://github.com/ESIPFed/science-on-schema.org/issues/247
   a.   More indepth info for the RDA Group initatives:
        https://docs.google.com/document/d/16QH4O_zVKItB4WE1G8bOAWEnrfWIqwrf
        ccbjFK5Rsqk/edit#heading=h.dzslmjm6rjje

3.   Migrate SOSO Tutorial to master branch
     https://github.com/ESIPFed/science-on-schema.org/tree/226-esip-summer-mtg-2022-tut
     orial/tutorials/esip-summer-mtg-2022
   a.   Adam, Chantelle & Colin are ok with this.
   b.   Ruth agrees (Oct telecon)
   c.   Chuck will review
   d.   Any other objectors?

4.   ESIP Winter Meeting joint session proposal
     Towards a Trustworthy Data Network for Marine Data in the Ocean Decade
     https://docs.google.com/document/d/1TS2KyXvkpzbLykElm9cFGeUIY7D-uc-vpm4VCcvr
     0kM/edit
        a.

5.   Adoption of ODIS profiles?
   a.   Chantelle mentioned Bill Manley - POAwg (Coordinating Observing Metadata for
        the Polar Science Community), producing RaOPN (?); under the impression that
        there was interest flushing out SO-SO to include more observation parameters -
        could be misremembering (Chantelle to reachout to check)
   b.   RoPON was created as a collaborative effort by the Sustaining Arctic Observing Networks initiative
        (SAON, www.arcticobserving.org), the Arctic Portal, and the SAON Polar Observing Assets
        Working Group (POAwg). It has been released as a Phase 1 version for demonstration purposes.
        Plans are underway as funding allows for improvements in functionality, interoperability, and scope
        (e.g., more networks). A metadata model for describing observing networks has also been
        released (see https://www.polarobservingassets.org/resources).
        i.   Discussed collaboration with the group - they said they are still interested
             in collaborating but will be in the coming months

RECAP

1. No SOSO telecons in Nov or Dec. Adam S. will work with ESIP to reschedule one before ESIP Winter Meeting
2. Steve reintroduced Issue #245 Identifiers for the metadata record
   a. For not creating a breaking change,
      i. Chuck mentioned use of Response headers to point to a metadata document
      ii. Ruth mentioned the use of the inverse property `subjectOf`so that metadata coil be added to existing JSON-LD records about the actual "thing"
   b. Decided to allow community review with plans for discussion in Jan at proposed rescheduled telecon and/or ESIP Winter Meeting
3. Chuck will review PR to merge SOSO Tutorial into develop branch for release in 1.4 https://github.com/ESIPFed/science-on-schema.org/pull/232
4. Reviewed Repository metadata from Issue #247 https://github.com/ESIPFed/science-on-schema.org/issues/247
   a. Concerns over missing semantics in new properties
   b. Seems like a worthwhile endeavor, but curious about the use cases
      i. Note from Rebecca Ringuette:

Hi Adam,

One use case for the repository metadata is to create a search interface for researchers to find the most appropriate repository to submit their data to, particularly for data supporting a publication. The request was made at the NASA Data Repository workshop last month. For that use case, additional metadata would be needed, such as relevant science topics for a given repository (e.g. search the repository interface for coronal mass ejections (CMEs) to find a repo where a research can submit data on CMEs), relevant funding calls (e.g. NASA ROSES Living With a Star), or similar missions/instruments (for missions that are trying to choose where the data should go). One such example exists for the life sciences, but I can't find the link at the moment.
Rebecca

In addition to the search examples, I would also want to see some information presented in the search results on how well the repository satisfies the US Government requirement to line up with the 'Desirable Characteristics of Data Repositories for Federally Funded Research" policy in each of the categories in that policy. Happy to chat on this if needed.
Rebecca
https://www.whitehouse.gov/wp-content/uploads/2022/05/05-2022-Desirable-Characteristics-of-Data-Repositories.pdf

The purpose of including that information would be for the user to determine what repository is trustworthy enough to entrust with their dataset.

     c.   Decided that contact with RDA Chair Michael Witt would be good to raise concerns about interoperability and semantics of proposed new fields.

     d.   Ruth will email Michael to start a conversation

28 Sept @ 2:30pmET

Attendees

Adam Shepherd, Chantelle Verhey, Colin Smith

Announcements

3. Colin - working on the transform metadata dialects to SOSO in Python (EML base case)
4. Schema.org talks at AGU (will report out Jan)

Agenda

6. Migrate SOSO Tutorial to master branch?
   https://github.com/ESIPFed/science-on-schema.org/tree/226-esip-summer-mtg-2022-tutorial/tutorials/esip-summer-mtg-2022
   a. Adam, Chantelle & Colin are ok with this. Any other objectors?
7. Adoption of ODIS profiles?
   a. Chantelle mentioned Bill Manley - POAwg (Coordinating Observing Metadata for the Polar Science Community), producing RoPON; under the impression that there was interest flushing out SO-SO to include more observation parameters - could be misremembering (Chantelle to reachout to check)

24 Aug @ 2:30pmET

Attendees

Adam Shepherd, Doug Fils, Colin Smith, Stephen Richard, Andrew Child, Dave Vieglais, Chuck Vardemann

Announcements

1. Cogan Shimzu is getting an Education OKN from NSF, collab with CI Compass - Chuck

Agenda

1. Chat about SSSOM
   a. Colin Smith is using it in development of an application to convert metadata standards to SOSO (https://github.com/clnsmth/soso). A Google Sheet version of the SOSO to EML SSSOM is: https://docs.google.com/spreadsheets/d/1QXWnMbTeDdQu7nzJf6CzFS_4fxI11aRp13ivNucJXYw/edit?usp=sharing

2. identifiers for metadata record vs. identifiers for the described resource. Use of @id.
   Issue #245 - how to specify identifier for the metadata record
   Recent discussion start here:
   https://github.com/ESIPFed/science-on-schema.org/issues/245#issuecomment-1682412630
   a. Chuck mentions thess talks at the Knowledge Graph Conference:
      i. https://youtu.be/MXul3qpRYbI?si=X_l--hFy-DaWpIFg
      ii. https://youtu.be/KHNc0WwJ5JA?si=TivbdIItyICU6sdq (by Fluree)

   RECAP: Stephen will writeup the agreed upon solution

25 May @ 2:30pmET

Attendees

Adam Shepherd, Nick Jarboe, Matt Jones, Stephen Richard, Colin Smith, Chantelle Verhey, Dave Vieglais, Charles Vardemann, Pier Luigi Buttigieg

Announcements

1. **AGU Proposed Session:**
   - [Advancing scientific discovery through novel applications of schema.org](#)
   Abstract Submission: https://agu.confex.com/agu/fm23/prelim.cgi/Session/192283

2. CodeMeta just released [CodeMeta v 2.1](#) with a bunch of additional crosswalks
   a. Also there are plans for a CodeMeta 3.0 (see [3.0 milestone](#)) that will realign with schema.org again, and a new Project Management Committee that is overseeing the community project

Agenda

1. Colin Smith update on SOSO - writing Python code
2. Nick Jarboe - issues being seen on MagIC website with Google harvesting
3. Schema.org Daily Issues
   a. Triage our list of issues in the icebox
4. Steve Richard - issue with Dataset -> citation
   https://github.com/ESIPFed/science-on-schema.org/issues/42

   Use https://schema.org/creditText

   Add guidance on using this property for the 'here's a recommended way to cite the resource described in this record'
   Added to [v1.4](#)

5. FYI, Dan Brickley just posted a new schema.org release with a new take on the schema:Observation class. See:
   a. https://docs.google.com/document/d/1mAV3yKuk1RZvK93Rndgu99lnEh4xxYHHoI0lLstHcWU/edit#
   b. And related Google issue:
      https://github.com/schemaorg/schemaorg/issues/2564#issuecomment-1550626606
6. Get 1.3.2 published
   https://github.com/ESIPFed/science-on-schema.org/pull/244 (just needs approval by someone)
7. SHACL validation shapes for SOSO to "bless" for required fields, recommended fields
8. Chuck V. shared his PID instrument SHACL shape

     a. Created with ChatGPT 4
     https://github.com/charlesvardeman/pidinst-experiments/blob/main/data/pidinst-shapes.ttl
     b. https://github.com/charlesvardeman/pidinst-experiments/blob/main/data/pidinst.ttl
     c. https://github.com/charlesvardeman/pidinst-experiments/blob/main/data/pidinst-shapes.ttl

9. Denny V. talk on LLMs + KGs
https://www.youtube.com/watch?v=WqYBx2gB6vA&t=11s

RECAP

Summer Meeting BoF Topics

1. Steve Richard => Observation
     a. https://docs.google.com/document/d/1mAV3yKuk1RZvK93Rndgu99lnEh4xxYHHoI0lLstHcWU/edit#
     b. And related Google issue:
https://github.com/schemaorg/schemaorg/issues/2564#issuecomment-1550626606
2. Matt Jones => SHACL validation shapes for SOSO to "agree on" for required fields, recommended fields, optional fields

27 April @ 2:30 pmET

Attendees

Adam Shepherd, Nick Jarboe, Bill Manley, Colin Smith, Chantelle Verhey, Matt Jones, Dave Vieglais, Mike Bobak, Amos Hayes

Announcements

3. **AGU Proposed Session:**
     - **[Advancing scientific discovery through novel applications of schema.org](#)**

Agenda

1. **Call for Sessions live (due May 8):**
   https://docs.google.com/document/d/11LWiAD94Qft7_UA7kxtHoGAoB7XmjEijP879yn5Y
   DBQ/edit
   a. IDEAS/THOUGHTS:
      i. BoF during ESIP informal time.
      ii. Adam will reach out to Megan Carter

2. **Converting dialect EML into SOSO**
   Colin: follow-up on action item from last meeting. Item #2 - tooling to support the
   generation of Science-on-Schema.org from other metadata dialects. Working on
   converting dialect EML into SOSO. The mapping of SOSO to EML (using the SSSOM
   specification) has been drafted and is still very much a WIP:
   a. 📄 soso-eml.sssom.yml
   b. 🟩 soso-eml.sssom
   This work will be presented at the next meeting for review/discussion.

   NOTES:
   - EML to JSON-LD: Carl Boettinger wrote an R package to convert
     - Is it this one? https://cran.r-project.org/web/packages/EML/index.html
   - Feedback requested:
     -

3. Pull request review
   https://github.com/ESIPFed/science-on-schema.org/pull/241

   Matt: seems all good and acceptable, no meaning/implementation changes
   - 1.3.2 release suggested
   a. Update all contributors file - @ialarmedalien

   1.3.1 needs DOI and Zenodo push - do first before 1.3.2

4. Data Repository modification request
   https://github.com/ESIPFed/science-on-schema.org/issues/242

23 March @ 2:30 pmET

Attendees

Colin Smith, Steve Richard, Chantelle Verhey, Melinda Minch, Megan Carter

Agenda

5. Call for Sessions live (due May 8): https://docs.google.com/document/d/11LWiAD94Qft7_UA7kxtHoGAoB7XmjEijP879yn5YDBQ/edit
6. Colin: follow-up on action item from last meeting. Item #2 - tooling to support the generation of Science-on-Schema.org from other metadata dialects. Working on converting dialect EML into SOSO. The mapping of SOSO to EML (using the SSSOM specification) has been drafted and is still very much a WIP:
   a. 📄 soso-eml.sssom.yml
   b. 📊 soso-eml.sssom

   This work will be presented at the next meeting for review/discussion.
7.

23 Feb @ 2:30pmET

Attendees

Adam Shepherd, Melinda Minch, Chantelle Verhey, Bill Manley, Colin Smith, Dave Vieglais, Pier Luigi Buttigieg

Agenda

1. What's next?! - Review of Winter Meeting Takeaways (Google doc)
   a. Topics for Guidelines
      i. **Project**
         Champion: ODIS - hackathon & project preview
         Co-champion: POawg - crosswalk
            1. ODIS:

        a. Broad definition of (research projects, funding awards, but may be separate concepts re: funding & research)

        b. Existing definition/guidelines at ODIS

        c. available for search now search.oceaninfohub.org

2. POawg:

        a. Lack of metadata interoperability around the concept

3. Could be a distinction between a researcher's idea of a project (multiple funding sources or awards over a period of time for a single scientific thrust)

4. Project's have a "focus" which could be a "geographic area" which would closely be tied Monitoring Site

5. **REVIEW WHAT ODIS HAS ALREADY**

        a. [ODIS for Projects](#)

6. **Review other data standards**

        a. [ADIwg](#) [ISO 19115](#)

        b. [ARMAP](#) [ISO 19115](#)

        c. [NASA ABoVE](#) implementation ([ABoVE Profiles Dashboard](#))

        d. Crossref Profile (Awards) & DataCite

ii. Sensors

Champion: (Adam will report back from RDA)

1. ODIS: existing work already exists (have to do it)

        a. Africa stakeholders - tide gauges

        b. Germany use cases

        c. PIDInst WG from RDA

            i. Kernel metadata for a instrument

2. POAwg:

        a. ….

3. DIEMS: https://deims.org/models/?id=sensor

4. **May be slow going with RDA WG, but some legwork has been done**

iii. Research (Monitoring) Sites

Champion:

1. Should this topic be grouped with another thrust?

        a. A Project may be closely tied to a "site" (geographic)

2. Reference to TimeSeries concept at ODIS ([bookmark to links](#))

        a. See also: https://github.com/iodepo/odis-arch/pull/157

        b. TimeSeries has a spatial coverage specific to the series that includes sites and the series may be closely tied to Project

3. POAwg will go there at some point
4. LTER has this concept
   a. does EML metadata std model this concept?
      https://deims.org/models/?id=site
   b. recent article on site-level metadata comparison and recommendations:
      https://doi.org/10.1016/j.ecoinf.2020.101158

iv. **Samples**
Champion:
1. Pier: looking to guidance from iSamples, etc
   a. Medical Entity mentioned and Bioschemas
   b. Action class: with object and result for Sampling Event (connected to PIDInst for an instrument)
      Ex:
      https://github.com/BeBOP-OBON/TechOceanS_protocol_collection
2. Dave V: backing way from SDO for samples because it was not clear how to describe the very granular content of samples with concepts available in SDO.
3. Related issue: (from Steve Richard, iSamples)
   https://github.com/ESIPFed/science-on-schema.org/issues/130

v. DCAT Alignment
1. Pier: look to the Research Metadata Schemas WG at RDA and see if we can get this crosswalk set
2. Chantelle: small group doing the DCAT crosswalk, might need SOSO cluster to review?
3. Can ESIP step up and host the DCAT crosswalk
4. Talk to Doug (he's harvested groups using DCAT markup)

2. Tooling/Implementation pathways for crosswalk
   a. EDI (Colin Smith) using EML
   b. Looking for crosswalks from dialects to SDO
   c. https://github.com/ESIPFed/science-on-schema.org/issues/238
   d. OPTIONS:
      i. **EML as XML** => Python dict => SOSO
         1. Issue: business logic locked in localized code
         2. Issue: hard to extend to other dialects
      ii. **JSON-LD framing** over a crosswalk
         1. Issue: EML to RDF?? (Dave)
         2. Possible solution: Frames + SSSOM rules
         3. Maintenance is better/easier here for community (over time changing out/modifying mapping file)
         4. SSSOM examples

      a. https://github.com/EnvironmentOntology/envo/blob/master/mappings/sweet-envo_cryosphere.sssom
      b. https://mapping-commons.github.io/sssom/about/

DIDN'T TALK ABOUT:

3. Github Issue Queue
    a. Describing data accessed from static endpoints (e.g. S3 object stores)? #240

Announcements

ESIP Winter Meeting
1. Youtube playlist up on ESIP channel
2. ESIP LAB RFP closing on March 3rd - topic: wildfire and/or water resources https://www.esipfed.org/rfp

1 Dec @ 3pmET

Attendees

Adam Shepherd, Megan, Doug Fils, Colin Smith, Andrew Child, Melinda Minch, Nick, Matt
Chantel Ridsdale has a conflict and cannot make this meeting

Agenda

1. Winter Meeting Session work
January (online) 23-26, https://2023januaryesipmeeting.sched.com/
    a. DRAFT Meeting-at-a-Glance (Schedule in Google Sheets)
    b. Session Proposal (Google doc)
    c. Dec 19th 3pmET - Session design mtg w. Charlie Haley
2. What to do next
    a. Matt - **focus on adoption by others**; start helping other repos produce
    b. Nick - agrees
    c. Megan - reminds us we talked about cyclical 6 months of guidelines, 6 months of adoption
    d. Ruth - proposes we could point externally towards OIH for "Vessel" or "TimeSeries" vs. us taking on and incorporating into SOSO Guidelines
      i. Matt - still requires some review and agreement (time commitment there)

ii. Doug - we could define the criteria for what is needed for assessment
1. Matt - reminds us that we don't have strict criteria outside of a chance to comment

27 Oct @ m2:30pmET

Attendees

Matt, Megan, Colin, Nick, Dave, Ruth, Nathan McEachen

Agenda

3. Announcements
   a. ESIP Blog
      https://www.esipfed.org/news/esip-endorses-guidance-for-science-on-schema-org-metadata
   b. Enthusiasm all around
   c. Megan: open science cluster call, expressed an interest Data Help Desk – open science and DHD; larger booth; should SOSO give a demo/workshop/etc – 20-30 mins for learning about the guidance;
      i. Possibly adapt existing tutorial materials from the ESIP sessions
      ii. Target 30-45 mins, focus on shorter content, leave time for Q&A
         1. 5-10 minute intro, followed by a 20-30 minute "consulting" session on how-to?
         2. Megan will coordinate with Matt, Nick, Adam
   d. Ruth: semantic harmonization cluster call; profiles from oceans group; pushed further than SOSO, but based on SOSO; question: does this group want to look at their extensions and possibly adopt them or update them?
      i. General support in the room for this
      ii. Action: put on future agenda to discuss how to bring this in
      iii. Action: potential add list of extensions like this to the SOSO web site
      iv. Here is the link to the Ocean InfoHub documentation - https://book.oceaninfohub.org/
4. Potential Cluster Output: Vignettes of communicating adoption
   a. Examples of people/repos implementing SOSO
   b. Implementation phases and extension phases (maybe 6 months each)
   c. Possibly invite short vignettes, even in fairly raw form?

5. Tooling for mapping metadata standards to SOSO
   a. Colin is looking at building a tool for EML->SOSO mapping, asked of that would be of general interest to the cluster
   b. General agreement that tools like this for various metadata standards were of interest; discussed geometa package as an example
   c. Action: Colin to open a ticket and start a discussion on how tools like this should be reflected in the cluster documentation (**DONE**: ticket 238)
6. TimeSeries profile over Schema.org proposed at OceanInfoHub (via Pier Luigi Buttigieg) https://github.com/iodepo/odis-arch/pull/128
   - proposed schema.org:
   https://github.com/iodepo/odis-arch/blob/6c98ba757a37eda04010862898b2c6fef446498e/book/thematics/events/graphs/timeSeries.json
7. GeoShape:box issue form David Valentine https://github.com/ESIPFed/science-on-schema.org/issues/236
   a. Dave: great to pick one rec and stick to it
   b. Nick: Challenge is that Google's way goes against the other standards
   c. General agreement that we should improve the documentation in this space, hopefully via someone knowledgeable like Steve
   d. Action: Matt to create milestone for a new release, and move candidate issues into it (**DONE** – 1.3.1 and 1.4.0 milestones already exist, and I moved issues into 1.3.1)
8. Nick Jarboe mentioned issue with Geologic Time + OWL Time https://github.com/ESIPFed/science-on-schema.org/issues/77#issuecomment-1285820439
   a. Discussed class hierarchy for TemporalPosition, and decided we were probably ok;
   b. Action: Nick to summarize in the issue, and show the UML diagram

22 Sept @ 2:30pmET

Attendees

Adam Shepherd , Doug Fils, Allison Mills, Kelsey Friesen, Joan Damerow (JoanDamerow@lbl.gov)

Agenda

1. **Announcing Endorsement**
   a. Cluster highlight page:
   https://www.esipfed.org/get-involved/collaborate/schema-org

b. News Release
https://docs.google.com/document/d/1nWcIMypdWX9zJMm-YBplmwZbIa8wIFF
WaYmrS-hMI-0/edit
2. **Blog Post**
a. Working doc:
https://docs.google.com/document/d/1uqmEqjn2Qp9Nik_PJbP_dAjEs_PO1gQy4
-jytHnEn8c/edit?usp=sharing

25 Aug @ 2:30pmET

Attendees

Adam Shepherd , Chantelle Verhey, Melinda Minch, Nick Jarboe

Agenda

3. **POLDER**
a. Discussed using v1.3 tree links into the Github repo from their own
documentation (Melinda, Chantelle)
b. DOI pending for the schema.org primer doc (Chantelle)
4. Next Meeting: Thursday, September, 22nd
5. Adjourned at 2:45pmET
6. **Blog Post (on hold)**
a. Working doc:
https://docs.google.com/document/d/1uqmEqjn2Qp9Nik_PJbP_dAjEs_PO1gQy4
-jytHnEn8c/edit?usp=sharing
b.

1 Aug @ 5pmET

Attendees: Adam Shepherd , Allison Mills Nick Jarboe, Ruth Duerr, Dave Vieglais, Matt Jones

Agenda

1. **Switch cluster meetings to once a month**
   a. Thursday 2:30pmET is preference
   b. Update Github before v1.3.1
2. **V1.3.1 finalize**
   a. Temporal text fix
   b. Checksum algorithm property rename
      https://github.com/ESIPFed/science-on-schema.org/tree/develop
   c. Link to TOC needs to be fixed in Melinda's PR (DONE: Matt)
3. **Blog Post**
   a. Working doc:
      https://docs.google.com/document/d/1uqmEqjn2Qp9Nik_PJbP_dAjEs_PO1gQy4-jytHnEn8c/edit?usp=sharing
   b. Start with inspiration blog post above as boilerplate:
      https://medium.com/esip/introducing-lakepy-accessing-lake-water-level-data-through-a-python-api-9a62944a43d
   c. Content
      i. Open with enticing results if you keep reading
      ii. Describe why its important to use schema.org
      iii. What is science-on-schema.org guidelines
      iv. Introduce tutorial
         Note: each section below shortened version of tutorial, link to tutorial,
         1. JSON-LD @context & @type
         2. Basic fields
         3. Keywords as text
         4. License as URL
         5. Author
         6. Temporal
         7. Spatial
            Omitted tutorial sections Identifier, Publisher, and Data Files
      v. For more, see our full tutorial,
         1. QUESTION: List tutorial table of contents?

28 July @ 2:30pmET

Attendees: Adam Shepherd , Allison Mills, Doug Fils, Nick Jarboe, Kelsey Friesen, Yanique Campbell, Dave Veilgas, Rebecca R., Chris Hay

Agenda

1. Summer Meeting Session
   a. Session Google doc - https://docs.google.com/document/d/1SAuEXBMMQIzdntvlmJ_p4E609sGys21jpCUUfeoxs_M/edit
   b. Branch in Github - https://github.com/ESIPFed/science-on-schema.org/tree/226-esip-summer-mtg-2022-tutorial
   c. Tutorial - https://github.com/ESIPFed/science-on-schema.org/tree/226-esip-summer-mtg-2022-tutorial/tutorials/esip-summer-mtg-2022
   d. Comments
      i. Looking for something even simpler
2. Blog post
   a. Inspiration - https://medium.com/esip/introducing-lakepy-accessing-lake-water-level-data-through-a-python-api-9a62944a43d
   b. Content
      i. Start with inspiration blog post above as boilerplate
      ii. Outline [Adam]
3. Goals for Future
   a. Focus on Adoption/Implementation [Matt]
      i. Gather stories of implementation (can promote to blog)
         1. [Matt] Year of the Salmon (CKAN)
         2. [Pier] stories at Ocean InfoHub
   b. Once a month cluster
      i. Monday -
      ii. Thursday - Dave & Rebecca slight pref
4. 1.3.1 Release
   a. Checksum [Adam]
   b. Temporal stuff [Nick]
5. August 17th 2pmET - lightning talk for ESIP summer meeting review

24 June @ 2:30pmET

Attendees: [Adam Shepherd] , Allison Mills, Doug Fils, Melinda Minch, Chantelle Verhey, Nick Jarboe, Colin Smith, Dave Veiglais, Matt Jones, Megan Carter

Agenda

1. Allison Mills - Communicating the v1.3 guidelines
   a. Shared guidelines update in ESIP Update
   b. Follow up on July meeting session with a blog on esipfed.org/merge
      i. Long-form 750+ word tutorial style blog
      ii. Co-written by cluster participants (following up at August telecon)
      iii. Break up content in smaller social media content for LinkedIn and Twitter
   c. Brainstorm doc that Allison and Adam discussed
   d. ESIP blog template (filled with prompts but no specifics for the blog)
2. Program Committee - approved endorsement doc w. minor corrections
   a. Add an executive summary to the document
   b.
3. July ESIP Meeting Session [sched description]
   a. Soil Cluster slides
   https://docs.google.com/presentation/d/1u-QDjmIyNNs0kcqcKKmBqjuC-OMjaNB
   kspH2IkjsTww/edit#slide=id.g12007b0a34c_0_157
   b.
   c. **Session Outline**
   ****** **moved to: Github branch** *******
      i. **IDENTIFY 2 or so people wanting to implement**
      ii. Intro to Schema.org
      iii. **Walkthrough** - Build a basic schema.org entry (goal: it's not complicated)
         1. Basic Fields (title, description, isAccess….)
            a. Context (basic) - explain downloading the schema file to define all the terms
         2. Dates
         3. Authors - just one author
         4. Identifier - single DOI
         5. Space/Time - simple
         6. Keywords - free text
         7. License - CC BY 0
         8. Linking to data distributions
            a. Whole Dataset Landing page URL
         9. SameAs (same dataset in different locations)

10. Validate
      a. SHACL Playground: https://shacl-playground.zazuko.com/
   iv. **Walkthrough** - 2nd pass - improving the record
      1. Authors - JSON-LD arrays & lists
      2. Identifiers - JSON-LD `@id` as
         a. `@id` vs. url
      3. Space/Time - WKT correctly
      4. Keywords - DefinedTerm
      5. Data Distributions
         a. Individual files and their checksum
         b. Linking to metadata records
   v. **Wrap-up** (not hands-on) Extend it with more complicated stuff
      1. Funding [**Adam**]
      2. Variables [**Adam or Matt**]
         a. Extending the context
      3. Provenance [**Matt**]
      4. Geologic Time [**Nick**]

Session Design Workshop Notes

- Get to session room 30min early
- Rely heavily on collaborative notes, agenda, link to related resources (presentation slides)
   - Vote in google doc
   - Attendees list virtual or in-person
- Engage the virtual participants with prompts

6 June @ 5pmET

Attendees: Nick Jarboe, Matt Jones, Chantel Ridsdale, Melinda Minch, Colin Smith

Agenda

1. Review 1.3 develop branch
   a. https://github.com/ESIPFed/science-on-schema.org/tree/develop
      i. Discussed OWL-time example changes
         1. Nick to do final check on syntax [DONE]
      ii. Discussed namespace changes in CONVENTIONS
   b. Pull Request - https://github.com/ESIPFed/science-on-schema.org/pull/207

        i.   Consensus was to go ahead with the release, see summary of call review https://github.com/ESIPFed/science-on-schema.org/pull/207#pullrequestreview-997306776
- c. TO DO:
    - i. Merge develop into master
    - ii. Adam push to Zenodo
2. Assembly Endorsement document [[Google doc](#)]
    - a. [DONE] Get list of adopters/implementers for endorsement [[issue](#)]
        - i. Done in endorsement document for providers
        - ii. TODO: Matt to add list of harvesters that use SOSO (DataONE, Polder, Geocodes, GDS) [DONE]
    - b. TODO: Endorsement should reference the guidelines by linking to the appropriate version tag in Github (decided wby Megan Carter, Adam and Chantelle on 12/23/21)
    - c. TODO: Send draft to Megan Carter before submitting
    - d. TODO: Submit to Ex-Com

26 May @ 2:30pm ET

Attendees:

Adam S., Colin Smith, Nick Jarboe, Megan Carter, Melinda Minch, Ruth Duerr

Agenda

1. OWL Time Finalized
    - a. Review of Geoschemas for Temporal https://geoschemas.org/extensions/temporal.html
    - b. Drawings:
        - i. Schema.org temporalCoverage [[image](#)]
        - ii. time:Instant [[image](#)]
        - iii. time:ProperInterval [[image](#)]
2. Completing Assembly Endorsement doc

2 May @ 5pm ET

Attendees:

Adam S., Ruth Duerr, Nick Jarboe, Matt Jones, Chantelle Verhey, Dave Vieglais, Chantel Ridsdale, Megan Carter

Agenda:

1. Check in on OWL-Time guidance status ([issue #77](#))
   a. Should *time:hasBeginning* and *time:hasEnd* be nested inside of *schema:temporalCoverage*? This would be analogous to the way we handle spatial coverage
   b.
2. Review [Project board](#)
3. Review Release notes: ([comment](#), derived from comparing [master to develop](#))
4. Doug
5. Push v1.3 to Zenodo
6. Deadline: May 10th for Endorsement document ([project board](#), [endorsement Google doc](#))

28 April @ 2:30pm ET

Attendees:

Adam S., Nick J., Matt J., Melinda M., Steve R., Chantelle V., Dave V., Debbie R., Doug F., Megan C.

Agenda:

- V1.3 Completed [[github project](#)]
  - LICENSE discussion (Matt) [[issue](#)] **DONE**
  - Dates section (Stephen) [[issue](#), [PR](#)], [Text](#) **DONE**
  - Nick - temporal coverage updated by Monday
  - Doug - SHACL tests for examples
  - Review/approval for PR for 1.3 release merge ()
  - All Contributors (Matt): **DONE**
    - ChantelRidsdale (Risdale) - content, doc
    - chantelleverhey - content, doc

- - ■ Megan: mcorlando - content, eventOrganizing
    - ■ Add other contribs listed in isse #201 with "ideas"
  - ○ Zenodo metadata (Adam)
- Guidelines Endorsement ready for final review
  - ○ MEGAN - "May 10th is the next meeting of ESIP's Program Comm., which would be the next step for determining if this should be forwarded to the ESIP Assembly for 30 day comment period and then a vote on endorsement. The Committee meets monthly, so next opportunity would be June 21st. It would probably be good to have a representative of this group on the call when the discussion takes place."
- Questions about temporalCoverage and DataCite (Melinda M.)

4 April @ 5pm ET

Attendees:

Adam S., Matt J., Melinda M., Chantel R., Ruth D., Rob R.,

Agenda

- ESIP Summer Meeting Session Proposal

Session Title: How to Use Schema.org on your Dataset Web Pages
Session Description: With the latest release of the Science-on-Schem.org guidelines, this session will help you use the Schema.org vocabulary on your dataset landing pages. Bring a dataset to this session as we walk through a hands-on tutorial applying the latest recommendations from the Schema.org Cluster.
Session Purpose: This coincides with the latest release of the Science-on-Schema.org Guidelines that will be submitted for ESIP Assembly Endorsement.
Outcomes/Goals: Announce the latest guidelines, and help the community understand and adopt these recommendations.
Length of Time/Duration: 90-minutes
Speakers: [insert names here]
Target Audience: Data Managers, Web Developers
Session Level: Some prior knowledge would benefit participants – the session will jump right into an intermediate level
Are you looking for additional speakers? No
Which speakers are currently planning to travel to the meeting: Adam, ???

Recommended Ways for Session Attendees to Prepare:
        1) Review the latest Science-on-Schema.org guidelines
        2) Pick a dataset web page to markup during the session
Session Tags : Data Stewardship, Semantics
Will this session feature or discuss any ESIP-supported outputs?: Outputs of the Schema.org cluster.

- Start with bibliographic information (before the session).
- Sections for:
  - variables,
  - geologic time (JSON-LD heavy),
  - difference between URL and @id
  - SHACL validation throughout (use Matt's 1.2.3 SHACL at Tangram)
    - Sososhape.com is available

- Finish v1.3 [github project]
  - [Matt & co.] Need review on variableMeasured [PR]
  - [Adam] Finalize author list [issue]
  - [Nick] Working on units in temporal
    - ADR text more comprehensive than guidelines; some content should make it into guidelines before release
- GOALS
  - **V1.3 & Endorsement document's ready for final review on 4/28 meeting**
  - **Submit ESIP Endorsement (2nd May monday mtg)**
  - **Implementation and testing of v1.3**
    - **DataONE/ADC (variable measured)**
    - **BCO-DMO (variable measured)**
    - **MagIC (Geologic Age)**
    - **Neotoma? (Geologic Age)**

24 Mar 2022 @ 2:30pm ET

Attendees:

Adam S.,

Agenda

- Finish v1.3 [github project]
  - Need review on variableMeasured [PR]
  - ~~[ADAM] 'Funding' needs update to PR [branch]~~
  - ~~[ADAM] Restructure README [issue][PR]~~
  - ~~google testing tool update [PR]~~
  - [ADAM] List of authors - need to contact and ask for opt in to auth/contrib https://github.com/ESIPFed/science-on-schema.org/issues/201
  - [NICK] Working on units in temporal
- Summer Meeting Session Planning
  - Session Proposal Portal [link]
    - Simon suggests:
      - Took long time to figure out how to serialize
      - Great session for working data mgrs for how to work up a dataset in schema.org (Megan says a "Do-a-thon!!")
      - Can bring a user story from Neotoma
    - Melinda & Chantelle
      - Can bring a user story from the POLDER implementation
    - Steve and Nick - agree to working session - walking through a dataset
  - [Adam] Submission Form

7 Mar 2022 @ 5pmET

Attendees:

Adam S., Matt J., Chantelle V. Melinda M., Doug F., Steve R., Nick J. Rebecca R., Dave V.

Agenda

- Finish v1.3 [github project]
  - Need review on variableMeasured [PR]
  - [ADAM] 'Funding' needs update to PR [branch]
  - [ADAM] Restructure README [issue]
  - [ADAM] List of authors - need to contact and ask for opt in to auth/contrib https://github.com/ESIPFed/science-on-schema.org/issues/201

- Review Endorsement doc
https://github.com/ESIPFed/science-on-schema.org/projects/2

24 Feb 2022 @ 2:30 ET

Attendees:

Adam S., Ruth D., Matt, Dave V., Chantelle, Chantelle, Dave S., Doug, Ruth, Simon, Megan

Agenda

- Finish v1.3 [github project]
  - Time updates from Nick
    https://github.com/ESIPFed/science-on-schema.org/commit/61b13c5056e02d3f6325a387d899d2f7a2b97e13
- ESIP Proposal Document
  https://docs.google.com/document/d/1O539ROr9W7FUEDzR2ni2H2Doxx_2zK8AF-sma8pBDe0/edit?pli=1#heading=h.dt4tjoji9crc
  - https://github.com/ESIPFed/science-on-schema.org/projects/2

7 Feb 2022 @ 5pm EST

Attendees:

Matt, Megan, Stephen, Gary Berg-Cross, Dave, Rebecca R, Nick

Agenda

- ESIP Highlights Session Friday 1pm EST
  - https://docs.google.com/document/d/1GZ-zAgDE0cdfpccuhOqMVAMNBGM-JANB5EgxUSVYaSY/edit
  - 2 minute highlight
  - Stephen is available, will get template from Megan

- ○ Need to provide 1 slide following template by end of day tomorrow
- Finish v1.3 [github project]
  - ○ Schema.org context namespace (Issue #151)
    - ■ Reversed the recs in all examples to recommend pulling the context file
    - ■ Harvesters will need to normalize for sanity
    - ■ Matt closed this, need to be sure new examples follow the new context approach
  - ○ Representing geo time (Issue #77)
    - ■ Still need to incorporate text form the decision doc into the Dataset guide
  - ○ variableMeasured (Issue #24)
    - ■ PR still exists
  - ○ Experimental.md (Issue #190)
    - ■ Steve made updates following the recs last meetings
    - ■ TODO: Examples need to follow the new context loading guidelines
    - ■ TODO: the IGSN **@id** example should use the "igsn:" prefix
    - ■ Needs review and merge

27 Jan 2022 @ 2:30ET

Attendees

Adam, Nick, Doug, Chantelle, Megan, Dave, Melinda, Bar, Rebecca, Matt

Agenda

1. Winter Meeting Recap
   a. Notes: https://docs.google.com/document/d/1KfQR1tK5z6-ITXaJV_dSAdC8QT81r2ADdlgzO_CWUyI/edit#
   b. Potential Collaborations/Folks to reach out to?
      i. **Soil Cluster** (Lindsay): Schema.org talk in June at the cluster; Summer Meeting collab possibly
      ii. **Knowledge Graph** (Slack channel)
2. Finish v1.3 [github project]
   a. Matt: Re-open namespace context issue (#151, Decision 52)
      i. Recommend: {"context": { @vocab": "http://schema.org/" }}
      ii. Don't recommend: {"context": { "@vocab": "https://schema.org/" }}
      iii. Acceptable: "{ context": "https://schema.org/" }
3. State of Endorsement Document [github project] https://docs.google.com/document/d/1O539ROr9W7FUEDzR2ni2H2Doxx_2zK8AF-sma8pBDe0/edit

3 Jan 2022

Attendees

Adam S., D. Fils, N. Jarboe, R. Duerr, C. Verhey, D. Vieglais,

Agenda

1. Winter Meeting Session speakers confirmed (see [Sched description](#))
2. Endorsement document update (from chat with Megan Carter on 12/23) [github project](#)
3. V1.3 completion discussion
   a. https://github.com/ESIPFed/science-on-schema.org/issues/166 [needs work]
   b. [Issue #127](#): **README restructuring** [Adam]
      i. [Adam] Update the Zoom link on the Github page (push to master & merge into develop)
      https://github.com/ESIPFed/science-on-schema.org/pull/182
      ii. See the issue for ideas on changes from this call
   c. https://github.com/ESIPFed/science-on-schema.org/pull/168 [Variable Measured - PR]
   d. Experimental MARKDOWN
      https://github.com/ESIPFed/science-on-schema.org/pull/190
      i. Link to experimental doc from the README, and add section headers to this document for: Repository, Dataset, etc.
   e. Dave V. will check out the Chrome extension to see if its worth highlighting as part of the ESIP endorsement

6 Dec 2021

Attendees

Adam S, Nick J, Chantel R, Steve R, Matt J, Pier Luigi Buttigieg, Chantelle V

Agenda

1. Announcements

a. No Meeting on the Thursday, Dec. 23rd unless someone objects?
    i. This leaves Jan 3rd as the last meeting before Winter ESIP
b. ACTION: move Jan 3. To Jan 10th 5pmET/2pmPT
c. Soil Cluster reached out to hear more about schema.org at one of their mtgs
    i. Working on ontology to describe soils
    ii. Looking to represent core of their ontology
        1. Connection on keywords/parameters probably?
        2. Interested in serialization (JSON-LD?)
2. ESIP Winter Meeting - Find & confirm speakers
    a. Session Link at Sched
    b. Success Stories
        i. **Harvester interoperability - DataONE, EarthCube** [Matt & Steve, confirmed]
            1. EC - Links to Resource Registry (data file representation, application profiles, etc)
            2. DataONE - harvesting
        ii. **POLDER** [Melinda Minch, confirmed]
            1. Presenting poldat data use cases
        iii. **MagIC** [Nick, confirmed]
            1. Implementation perspective; working within the cluster
    c. Use Cases
        i. ICPSR and the need for cross-discipline data discovery [A. Thomer, confirmed]
        ii. IOC-UNESCO IODE [Pier, confirmed]
            1. Use Cases - SOSO feature requests
        iii. **Soil Cluster** [Kathe Todd-Brown, confirmed]
    d. What to highlight in the guidelines?
        i. Maybe look at a Google, DataONE or EarthCube harvested record?
    e. Conclude with the Endorsement
        i. Need to write the endorsement
            1. History
            2. Guidelines historically went inline to the document
3. V1.3 Guidelines
    a. [Adam] **Preserve item order**
        i. created pull request to finish up Issue #135
    b. [Nick] **Temporal Coverage**
        i. pulled issue #77 to develop. Still needs review
    c. New ticket to recommend how to use @list across creator/contributor so that same person on both doesn't cause confusion [Matt]
    d. Issue #127: **README restructuring** [Adam]
        i. [Adam] Update the Zoom link on the Github page (push to master & merge into develop)
            https://github.com/ESIPFed/science-on-schema.org/pull/182

ii. See the issue for ideas on changes from this call

e. [PR #168](#) **Variable Measured** wordsmithing [Matt, Steve]

  i. Wordsmith Tier 4 @
    https://github.com/ESIPFed/science-on-schema.org/blob/issue27-forPullRequest/guides/Dataset.md#variables

    1. Matt - Tier 4 is more geared towards use of the data, not necessarily discovery. Steve agrees.

  ii. Review examples JSON-LD
    https://github.com/ESIPFed/science-on-schema.org/tree/issue27-measuredVariable/examples/dataset

f. Create an EXPERIMENTAL.md [NEW ISSUE]

  i. Move VariableMeasured Tier 4 to that

    1. Leads to resolving variableMeasured PR approval

  ii. Move the entire Dataset Advanced section to that
    https://github.com/ESIPFed/science-on-schema.org/blob/issue27-forPullRequest/guides/Dataset.md#advanced-publishing-techniques

1 Nov 2021

Attendees

Adam, Steve, Doug, Nick, Megan, Dave V., Bar (Lindsay B.), Scott Akenhead, Chantelle, Andrea

Agenda

- [ESIP 2022 Winter Call for Sessions](#) (Deadline: 11/8)
  - What do we want to do?
    - Running through the Guidelines
      - Who is the audience: Intro to Schema.org
      - What
        - Talk about why having this guidelines endorsed in the abstract
        - Showing some examples
        - Showing how it appears in Google Dataset Search, GeoCODES, DataONE?
        - Mentioning OceanInfoHub
        - How can schema.org help you address FAIR
          - Publications, Samples

- - Addressing the BI
    - A. Thomer - Community Resilience & Data Usage-based Discovery Cluster - want to better understand schema.org
    - Maybe some stories from current implementers about their journey might help new audience members
        - "Might be crazy but I'm imagining little vignettes like "My Schema.org journey." Sort of like how I got here and what I need help with next. Could be a good component of a session after a general intro." - Megan
    - Community Resilience & Data Usage-based Discovery Cluster
    - Doug - lighting talk on DDI and CODATA
    - What can schema.org do for you?
    -
  - ADAM START DRAFT AND DISTRIBUTE
- Progress on v1.3 guideline issues
  - Issue #77: Tentative update from Nick on OWL Time
    - Nick has made some updates to examples
    - remove @value and @type and just have value for timePosition
    - list all examples and link to the json
    - geoschemas.org has been updated.
    - Needs to update more of the docs
  - Issue #127: README restructuring [Adam]
    - [Adam] Update the Zoom link on the Github page (push to master & merge into develop) https://github.com/ESIPFed/science-on-schema.org/pull/182
    - See the issue for ideas on changes from this call
  - Issue #135: Preserve item order [Matt, Adam]
    - Need to address these two points here

4 Oct 2021

Attendees

Adam, Nick, Chantelle Verehey, Melinda, Ryan McGranaghan, Stephen

Agenda

- Progress on v1.3 guideline issues

- - ○ [Issue #77](): Tentative update from Nick on OWL Time
      - ■ Nick has made some updates to [examples]()
      - ■ remove @value and @type and just have value for timePosition
      - ■ list all examples and link to the json
      - ■ geoschemas.org has been updated.
      - ■ Needs to update more of the docs
    - ○ [Issue #127](): README restructuring [Adam]
      - ■ [Adam] Update the Zoom link on the Github page (push to master & merge into develop) https://github.com/ESIPFed/science-on-schema.org/pull/182
      - ■ See the issue for ideas on changes from this call
    - ○ [Issue #135](): Preserve item order [Matt, Adam]
      - ■ Need to address these two points [here]()

23 Sep 2021

Attendees

Adam, Matt, Melinda, Ruth, Stephen, Chantelle

Agenda

- ● Progress [v1.3]() issues identified at Summer Meeting
  - ○ Pull Requests
    - ■ [Issue: #125](): Dataset Keyword [Adam will finish TODOs]
      - ● General agreement that it is good
      - ● TODO: Add note about GCMD and use of URLs
      - ● TODO: add example to full example doc
      - ● TODO: fix Keywords typo
      - ● TODO: approve and merge pull request
    - ■ [Issue #27](): Variable Measured [Matt will look]
      - ● Still have core agreement on 3 pronged guidelines
      - ● Might move forward with "text" and PropertyValue, defer "Observation" to a later day
      - ● See mapping among observation alignment here: https://raw.githubusercontent.com/DataONEorg/slinky/feature_14_graph_pattern/docs/oboe-alignment.png

- Conclusion: punt on Observation until later, probably preferring to use a vocab like SOSA/SSN rather than deal with the weird domain and range issues in schema:Observation
  - Need Work
    - [Issue #127](): README restructuring [Adam]
      - [Adam] Update the Zoom link on the Github page (push to master & merge into develop)
    - [Issue #77](): OWL-Time / Deep Time [Nick,Doug]
    - [Issue #135](): Preserve item order [Matt, Adam]
      - Need to address these two points [here]()

13 Sep 2021 @ 5pmET

Attendees

Adam, Nicholas, Chantelle, Melinda

Agenda

26 Aug 2021 @ 2:30pmET

Attendees

Adam, Doug, Nick, Chantelle

Agenda

1. Progress [v1.3]() issues identified at Summer Meeting
   a. Pull Requests
      i. [Issue: #125](): Dataset Keyword
      ii. [Issue #27](): Variable Measured
   b. Need Work
      i. [Issue #127](): README restructuring [Adam]
      ii. [Issue #77](): OWL-Time / Deep Time [Nick,Doug]
      iii. [Issue #42](): Use of `sdo:citation` [Matt]

1. Need to fix our previous misuse
    iv. [Issue #135](): Preserve item order [ ]
        1. Use Cases:
            a. Authors - this is important if citation to the Dataset is being built from properties of the schema.org/Dataset.
            b. Citation?
            c. DataDownload

c. Candidates for Backlog/Icebox/Future release
    i. [Issue #37](): Authoritative Copy of Dataset [ ]
        1. Helpful in supporting the original (what?) of the data
        2. [Doug, Nick] Is this just the cited identifier minted by the original publisher?
            a. Doug talk to N. Noy about how she approaches this
        3. [Adam, Nick, Doug Chantelle] Think that publisher and provider are adequate from the perspective of the schema.org document maker for what they might possibly know about a dataset. Publisher and provider provide adequate credit/attribution to curators and service provider(s) known to this schema.org document maker. It's not clear how this will be used?
        4. [Doug, Adam] Google is making this assertion based on how they interpret their harvested graph. Maybe this is the responsibility of the harvester based on the information they have
        5. OceanInfoHub harvesting strategy is to use social constructs within the community to govern issues of attribution/credit.
    ii. [Issue #128](): Preferred Identifier [ ]
        1. Depends on Issue #135
        2. Preferred might mean different things to different organizations. Is it the canonical identifier? If your not the authority, does the harvester trust that the preference of schema.org document maker knows the full chain of custody
    iii. [Issue #167](): Simple v. Advanced view of Guidelines [ ]
        1. Is this better served as a minor release after 1.3.1?

2. ~~[Matt] Report out from DataCite on use of `sdo:citation`~~
3. Issue #37(authoritative dataset) & #128 (preferred identifier)
    a. [Ruth] Define authoritative source and preferred identifier
    b. [Adam] Can clearly defining Provider and Publisher help us solve?
        i. Publisher:
            1. [Nick, Doug, Chantelle] responsible for the truth value of the dataset
        ii. Provider:
            1. [Nick, Doug, Chantelle] orgs that provides service to access

2 Aug 2021 @ 5pmET

Attendees

Agenda

4. Progress v1.3 issues identified at Summer Meeting

Summer Meeting Notes Doc:

https://docs.google.com/document/d/1NDzby_1kEcrVBVEODcxgHyRvmu0e5p3muKonl2M0IW0/edit

Possible controlled Vocabs for Keywords as DefinedTerm examples (Adam)

Nick Jarboe

https://www2.earthref.org/vocabularies/controlled

Chantelle Verhey

https://docs.google.com/spreadsheets/d/1mTvCH2995l73uqJa2Lt3KaIqsGxdy8CdraF7wPQc1D4/edit#gid=0

Publisher/Provider Discussion

What is a provider?

What is a publisher?

Do either of these fields make sense to record authoritative source for a dataset?

1. Nothing obvious in schema.org…
2. Next step: Need to look at other metadata standards for something we can reuse
   a. ISO 19115 RoleCodes
      https://www.ngdc.noaa.gov/wiki/index.php/ISO_19115_and_19115-2_CodeList_Dictionaries#CI_RoleCode
      i. Originator
      ii. Custodian

3. Ruth & Co. will define these terms for authoritative source and preferred identifier so that we can hunt for similar terms in other ontologies
   a. Then, if nothing found, we can mint these

6 July 2021 @ 6pmET

Attendees

Adam, Ruth, Steve, Doug, Chantelle, Chantel, Nick, Dave, Matt, Mark

Agenda

1. ESIP Summer Meeting plan
   a. Jul 20, Tues@ 1:30 ET - [Feedback on Endorsement](#)
      i. Overview of the document for context for the broader community
      ii. Changes coming down the line (for the Endorsement version & and pushed beyond)
      iii. Exemplars from the community (5min each)
         1. GeoCODES - confirmed
         2. DataONE - confirmed
   b. Jul 23, Fri @ 3:30ET - [Submitting the Guidelines](#)
2. Work through v1.3 milestone
   a. https://github.com/ESIPFed/science-on-schema.org/milestone/6
      i. OWL-Time (Nick)
3. ESIP Endorsement Document
   a. https://github.com/ESIPFed/science-on-schema.org/issues/18
      i. Link to the actual guidance document is at bottom of this issue

@Confirm whether science-on-schema.org documentation can be referenced by link or needs to be included.

Sept 20-24, 2021 - POLAR DATA HACK-A-THON

24 June 2021 @ 2:30 ET

Attendees

Matt, Bryce, Mark, Stephen, Dave, Chantelle, Megan, Mick, Doug, Chantel

Agenda

4. Looking ahead to July 5th telecon
   a. People working this day?
   b. Decision: move meeting to July 6th at 6pmET sharp (zoom2 in nuse up until 6pmET)
   c. Use correct zoom link: https://us02web.zoom.us/j/84043422486?pwd=bGM4YkFyMkFGSW1FZG5yaFRNaGNvdz09
5. VariableMeasured pull request update
   a. https://github.com/ESIPFed/science-on-schema.org/pull/168
   b. Matt working on revision here: https://github.com/mbjones/science-on-schema.org/blob/issue27-forPullRequest/guides/Dataset.md#variables
6. Preserving item order close to pull request?
   a. https://github.com/ESIPFed/science-on-schema.org/issues/135
   b. Discussion of the need to add to examples to finish up 135
   c. Discussion of eliminating Role guidance
      i. Notes that Google Rich Results doesn't like it, not GSDTT
      ii. Decision: mention that we looked into it but remove it from the guidance and mention that its not supported by Google; write an ADR to explain the decision
7. Clear out v1.3 milestone
   a. https://github.com/ESIPFed/science-on-schema.org/milestone/6
   b. Update OWL-Time ticket with Darwin Core for geologic time https://github.com/ESIPFed/science-on-schema.org/issues/77
8. ESIP Endorsement Document
   a. https://github.com/ESIPFed/science-on-schema.org/issues/18
9. ESIP Summer Meeting plan
   a. Jul 20, Tues@ 1:30 ET - Feedback on Endorsement
      i. Overview of the document for context for the broader community
      ii. Changes coming down the line (for the Endorsement version & and pushed beyond)
      iii. Exemplars from the community
          1. GeoCODES
          2. DataONE?
   b. Jul 23, Fri @ 3:30ET - Submitting the Guidelines
10. Agenda for the 6th
    a. Prep for the meeting
    b. Work on Endorsement doc

7 June 2021 @ 5pmET

Attendees:

Adam, Bryce, Ruth, Stephen, ...

Agenda

1. Wrap up variableMeasured proposal and start pull request
   https://github.com/ESIPFed/science-on-schema.org/issues/27
   a. Pull request: https://github.com/ESIPFed/science-on-schema.org/pull/168
   b. develop a rich example:
      https://github.com/ESIPFed/science-on-schema.org/issues/24
2. Addressing mentions of the defunct Google Structured Data Testing Tool
   https://github.com/ESIPFed/science-on-schema.org/issues/166
3. Attempt to wrap-up the following if possible:
   a. Preserve list item order - Dave will look to see if anything nneeds fixing (generally accepted)
      https://github.com/ESIPFed/science-on-schema.org/pull/165
   b. Authoritative copy of a dataset
      https://github.com/ESIPFed/science-on-schema.org/issues/37
   c. Specifying the Preferred Identifier
      https://github.com/ESIPFed/science-on-schema.org/issues/128

27 May 2021 @ 2:30pmET

Attendees:

Matt Jones, Chantel Ridsdale, Dave Vieglais, Pier Luigi Buttigieg, Chantelle Verhey, Nick Jarboe, Gary Berg-Cross, Megan Carter, Stephen Richard, Adam Shepherd

Agenda

1. Review of Funding - https://github.com/ESIPFed/science-on-schema.org/issues/109
   a. Current guidelines as written:
      https://github.com/ESIPFed/science-on-schema.org/blob/develop/guides/Dataset.md#funding
2. Review of Checksum - https://github.com/ESIPFed/science-on-schema.org/issues/66

3. Kanban review for Release 1.3
   https://github.com/ESIPFed/science-on-schema.org/projects/3

Today
1. Agreed to accept the funding proposal
   https://github.com/ESIPFed/science-on-schema.org/pull/163
2. Agreed to accept the checksum solution
   https://github.com/ESIPFed/science-on-schema.org/issues/66
3. Made a plan for remaining June telecons (see below)
4. Discussed leaving time at ESIP Summer Meeting session to address the philosophical
   debate over schema.org for simple discovery.
   https://github.com/ESIPFed/science-on-schema.org/issues/167

To-Do:

1. Matt will writeup and submit checksum addition
   https://github.com/ESIPFed/science-on-schema.org/issues/66
2. Adam will work on first draft of Endorsement document
   https://github.com/ESIPFed/science-on-schema.org/issues/18

June Meetings will focus on :
1. June 7th (Monday)
   a. wrapping up variableMeasured,
      https://github.com/ESIPFed/science-on-schema.org/issues/27
      i. Rich example:
         https://github.com/ESIPFed/science-on-schema.org/issues/24
   b. Addressing mentions of the defunct Google Structured Data Testing Tool,
      https://github.com/ESIPFed/science-on-schema.org/issues/166
   c. Attempt to wrap-up the following if possible:
      i. Preserve list item order
         https://github.com/ESIPFed/science-on-schema.org/pull/165
      ii. Authoritative copy of a dataset
          https://github.com/ESIPFed/science-on-schema.org/issues/37
      iii. Specifying the Preferred Identifier
           https://github.com/ESIPFed/science-on-schema.org/issues/128
2. June 24th (Thursday)
   a. completing a draft of the ESIP Assembly endorsement,
      https://github.com/ESIPFed/science-on-schema.org/issues/18
   b. Addressing the guidelines to accommodate bot a simple and advanced
      publishing perspective,
      https://github.com/ESIPFed/science-on-schema.org/issues/167
   c. Summer Meeting prep

3 May 2021 @ 5pmET

Attendees

Adam, Matt, Chantelle, Nick, Steve, Dave, Mark (late), Ruth (late)

Agenda

1. funding for Datasets - https://github.com/ESIPFed/science-on-schema.org/issues/109
   a. All comment on schemorg issue https://github.com/schemaorg/schemaorg/pull/2618
   b. DONE: Matt will write up the documentation and ADR and a PR
2. variableMeasured - https://github.com/ESIPFed/science-on-schema.org/issues/27
   a. Long discussion of Text, PropertyValue, and Observation classes
   b. Discussed a complexity ramp:
      i. Simplest is provide Text values for names of variableMeasured
      ii. Next level is to provide PropertyValue without a propertyId but that still qualifies the measured property (e.g., with a description or qudt:DataType)
      iii. Next, qualify semantics of the property by adding propertyId
      iv. Full semantics using Pattern 3 with PropertyValue that contains both a measuredProperty and an observedNode
   c. Decided to keep these 4 recommendations and follow the narrative similar to our Dataset Identifier narrative of preferring the PropertyValue over simple text.
3. ~~Topics for remaining telecons before Summer Mtg~~
   a. ~~Thursday, May 27th @ 2:30pmET~~
   b. ~~Monday, June 7th @ 5pmET~~
   c. ~~Thursday, June 24th @ 2:30pmET~~
   d. ~~Monday, July 5th @ 5pmET~~

22 April 2021 @ 2:30pm ET

Attendees

Adam, Chantelle, Steve, Mark, Pier, Dave, Matt, Megan

Agenda

1. Discussion: How to link in Annotations to Datasets

a. Megan pointed out the large number of semantically-oriented or relevant session proposals she had received; and how we might better identify commonalities and synergies among these efforts: Ag&Climate, Biology, Discovery, Marine, Soil, Semantic Harmonization, SeReen, etc
b. Discussion about how outputs of AI/ML are largely unconstrained by any mapping to established vocabularies, e.g. annotated to an HTTP IRI of a term in an ontology. Pier says some work going on regarding this at his Helmholtz Inst.
c. Discussion about how to use SOSO to better describe Specimens/Samples-- Steve's example of a rock that contains a fossil of some specific type of Ammonite. Bioschemas.org and Darwin Core may have some structures to address this Use Case.
d. Use of 'subjectOf'/'about' discussed
e. Discussion of overall Dataset structure (Dataset/Entity/Attribute hierarchy)
   i. `DataDownload` as a surrogate for `Entity`, which we are treating as somewhat synonymous with `geolink:DigitalObject` and `prov:entity` and `provone:Data`
   ii. Here's the DataONE WIP document on these class mappings: https://github.com/DataONEorg/slinky/blob/feature_14_graph_pattern/docs/mappings.md
f. Discussion of EML annotation mechanism for those structures
g. Group decision: general annotation is a good thing to pursue, but probably want to spend more time on it, and therefore
2. Review/Finalize a variableMeasured strategy (see Issue #143)
3. Review List for v1.3 https://github.com/ESIPFed/science-on-schema.org/projects/3
4. What to do when "metadata records" disagree with schema.org description?
5. Discussion about whether to include OWL:time recommendations on V.1.3, especially for "Deep Time"?
   a. there was a new #time_semantics channel to discuss these issues in ESIP: https://esip-all.slack.com/archives/C013E5V113R
   b. Simon's URL to Pier regarding update on chronostratigraphy: https://vocabs.ardc.edu.au/repository/api/lda/csiro/international-chronostratigraphic-chart/geologic-time-scale-2020/collection
   c. Marshall Ma's work on Deep/Geological time: http://deeptimekb.org/
      i. Assoc GH repo: https://github.com/xgmachina/geotimeversion
6. Need better inverse properties in Schema-- e.g. "funder" needs RDF inverse. But may be okay with JSON-LD as here: https://w3c.github.io/json-ld-syntax/#reverse-properties

5 April 2021 @ 5pmET

Attendees

Adam, DaveV, Nick, Harrison Dekker, Megan, Mark, Stephen, Matt

Agenda

7. Propose a session: Summer Meeting session proposal portal is open now through April 16th.
   a. Matt: Feedback session
      i. Present the package
         1. Implementation experiences
      ii. Breakup in smaller groups for feedback
      iii. Gather all feedback and edit
      iv. Submit for endorsement
   b. Mark:
      i. Presentations from implementers of the guidelines
         1. See a.i.1
   c. Megan:

8. Review/Finalize a variableMeasured strategy (see Issue #143)
   a. Also need to address composite hierarchies (https://github.com/ESIPFed/science-on-schema.org/issues/131)
   b. Also address how to attach variableMeasured to DigitalObjects
   c. Need for a DigitalObject class
   d. Dave: Could have variableMeasured be "attached" to a `DataDownload` through a property
      i. subjectOf is property of PropertyValue
   e. Todo: everyone with interest fill out examples in branch https://github.com/ESIPFed/science-on-schema.org/tree/issue27-measuredVariable/examples/dataset that illustrate the approach to doing these annotations
9. Populate a Project board for completing v1.3 https://github.com/ESIPFed/science-on-schema.org/projects/3

a. **Reminder: thumb-up the first comment on a issue proposed for v1.3** **https://github.com/ESIPFed/science-on-schema.org/issues?q=is%3Aissue+is%3Aopen+sort%3Areactions-%2B1-desc**

b. TODO: everyone nominate issues for the 1.3 release by adding them to the board and/or tagging them as milestone 1.3

25 March 2021 @ 2:30ET

Attendees

Dave, Chantelle, Matt, Adam, Ruth, Megan, Mark

Announcements

1. IGSN was registered at identifiers.org (Issue #98) https://registry.identifiers.org/registry/igsn

Agenda

1. Update on variableMeasured
    a. Press for a new property name at schema.org "variableMeasured"
    b. Discussion of direct use of SO types for variableMeasured
        i. Mark's issue comment on Issue 143
        ii. Developed some examples to work through here
        iii. Consensus was Pattern 2 was preferred

DID NOT GET TO THE ITEMS BELOW - PUSH to April 5th

2. Propose a session: Summer Meeting session proposal portal is open now through April 16th.
    a. Do we want a discussion on variableMeasured?

3. Populate a Project board for completing v1.3 https://github.com/ESIPFed/science-on-schema.org/projects/3
    a. **Reminder: thumb-up the first comment on a issue proposed for v1.3** **https://github.com/ESIPFed/science-on-schema.org/issues?q=is%3Aissue+is%3Aopen+sort%3Areactions-%2B1-desc**

1 March 2021 @ 5pmET

Attendees

Matt Jones (lead), Ruth Duerr, Nick Jarboe, Dave Vieglais, Chantelle Verhey, Mark Schildhauer, Megan Carter, Steven Richard

Agenda

Working session on variableMeasured - bring your examples!

- Overview of last week's discussion
- Started with examples to be worked through for variableMeasured
- Ruth presented Nunalit example: http://eloka-arctic.org/communities/yupik/atlas/index.html?
  - Interface in english and Yupik
  - Map interface with georeferenced points, and points link to media files, that are audio, images, pdfs, etc.
  - One Dataset for whole atlas
    - Whole Atlas can be downloaded as a directory structure
    - In two languages
  - Mark: Should 'schema:Collection' be preferred over 'schema:Dataset'?
    -
  - Dataset:
    - Title: "Yupik Environmental Knowledge Project Atlas"
    - url: "http://eloka-arctic.org/communities/yupik/atlas/index.html?"
    - DataDownload
      - For each PDF, image, sound file
    - Organized as places with a 'placename' attribute and an attached set of files
    - Options: request that schema.org provide "attributeName" as an alternative/alias to "variableMeasured"
    - TODO: develop the JSON-LD example for this atlas
      - Potentially review with Noor Johnson from ELOKA
  - schema.org:Collection
    - Alternative way to describe these types of sets of information objects
  - Another related example: http://eloka-arctic.org/communities/nunaput/atlas/index.html
- Mark: also wants to be able to use schema.org types in variableMeasured as the object of propertyId

- Nick said he has a dataset example as well
  - MagiC database, DOI to landing page for each "Dataset", each associated with a publication
  - Method codes used to link to sample processing methodology
    - Mostly used for interpretation, but also can be used for search and discovery
    - Add to `measurementTechnique`
  - How to handle datasets that contain multiple entities?
    - Move variableMeasured to the entity level
    - Make a 'hasPart' relationship that can be used to create dataset hierarchies, with each entity being a child Dataset of a parent Dataset. See related Github issue with examples.
  - Nick -- also want to encode 'Sites'
    - A dataset contains a set of 'Sites', on which the properties are measured
  - TODO: create example of Sites/variableMeasured for illustration of the challenges inherent in MagiC
- Ruth: Things are organized as a graph
  - Let's tackle this on the next call
- Next discussions
  - Use of schema.org types in propertyId
  - Use of Observation and measuredProperty
    - Mark: Still need to develop examples for these, especially differentiating the entity measured from property measured

25 February 2021 @ 2:30 ET

Attendees

Adam Shepherd, Matt Jones, Ruth Duerr, Chantelle Verhey, Dave Vieglais, Steve Richard, Nick Jarboe, Megan Carter, Mark Schildhauer

Agenda

1. Announcements
2. Minor Revisions to 1.2.0
3. Review of outstanding issues for v1.3 release
4. variableMeasured continuation

Announcements

1. ## ESIP Switching to Zoom starting March 1.

Zoom for Schema.org
https://us02web.zoom.us/j/85680809640?pwd=a09zQTl2eFd6NnpoRkRxNHlDdFN0dz09
Link can always be found at the ESIP Calendar:
https://www.esipfed.org/get-involved/telecon-calendar

    a. Zoom link TODO: need to update our README and wiki

2. ## V1.2.0 Released

https://github.com/ESIPFed/science-on-schema.org/releases/tag/1.2.0

Matthew B. Jones, Stephen Richard, Dave Vieglais, Adam Shepherd, Ruth Duerr, Doug Fils, Lewis McGibbney. (2021). Science-on-Schema.org v1.2.0 (Version 1.2.0). Zenodo. https://doi.org/10.5281/zenodo.4477164
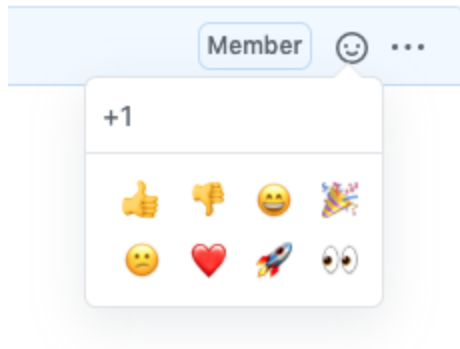
Minor Revisions to 1.2.0

- Fixed formatting in full Dataset JSON-LD example - Bryce Mecum (issue #147)
- Update README for Zoom link

Review of outstanding issues for v1.3 release

HOMEWORK - tag an issue you want in v1.3.0 with the **v1.3 milestone**

Add a thumbs-up reaction to the first comment in the issue if you think it should be included in the release

variableMeasured continuation

- Discussed using propertyID for pointers to property type URLs
- propertyId should point at a property type that represents what was measured, and can be either a schema.org property or a property from another vocabulary like ENVO
- Ruth: raising the issue of inappropriateness of variableMeasured as the property name in some contexts
- Also should consider https://schema.org/Observation , which is much more aligned with observational data models, and includes the nicely targeted https://schema.org/measuredProperty
- AMRuth Duerr (to All):
  - here is an example dataset http://www.evenki-atlas.org/index.html
  - and another dataset http://eloka-arctic.org/communities/nunaput/atlas/index.html
  - http://eloka-arctic.org/communities/yupik/atlas/index.html

1 February 2021 @ 5pmET

Attendees

Adam Shepherd, Ruth Duerr, Chantel Ridsdale, Chantelle Verhey, Dave Vieglas, Mark Schildhauer, Nick Jarboe, Pier Luigi Buttigieg, Matthew Jones

Agenda

1. ESIP Winter Meeting Review
   a. Google Doc Notes

     i. NOTE: ESIP will endorse guidelines (not schema.org itself)
  2. V1.2 release
    a. Develop pull request: https://github.com/ESIPFed/science-on-schema.org/pull/138
    b. Update this issue with any more mailing lists to announce: https://github.com/ESIPFed/science-on-schema.org/issues/136
  3. variableMeasured strategy
    a. POSTER: https://esip.figshare.com/articles/poster/Rich_Variable_Description_with_Schema_org/13640636
    b. Propose a property name difference for 'variableMeasured' to contribute up to schema.org (to be as broadly inclusive as possible without leading to confusion)
  4. ESIP Endorsement strategy
    a. V1.3 release candidate issues: https://github.com/ESIPFed/science-on-schema.org/milestone/6
     i. Review unclassified issues

4 January 2021 @ 5pmET

Attendees

Adam, Chantel, Chantelle, Matt, Megan, Pier Luigi, Ruth, Stephen

Agenda

1. **Winter Meeting progress**
   a. Preparing Science-on-Schema.org for ESIP Assembly endorsement
      Friday, January 29 11:00am ET
      i. Agenda for the session:
         1. Brief introduction to the Science-on-Schema.org guidelines & the Schema.org ESIP Cluster
         2. Review/announce the latest version of the guidelines (v1.2)
         3. Why obtaining an ESIP Assembly endorsement is a worthwhile/meaningful activity;
         4. Review the ESIP Assembly submission guidelines
         5. Develop a roadmap for the Science-on-Schema.org guidelines for ESIP Assembly review
            a. Thinking about Governance & Maintenance strategy
            b.

b. Variables poster update-- Steve Richard lead, Kai/Mark assist
Deadline: about a week in advance of the meeting
Format: embeddable
Date: Wed, Jan 27th 6 - 7:30pmET
c. Marine Data Cluster hosting collaboration social event
Date: Tues, Jan 26th 6 - 7:30ET
2. **Intro to SDO Primer -** Google Doc
3. **Guidelines v1.2 Progress**
https://github.com/ESIPFed/science-on-schema.org/milestone/5
a. #120 - shortDOI (**Adam**) Pull Request needs review
b. Added Issue #125 - use DefinedTerm for Dataset keywords (**Adam**)
i. LucidChart access needs fixing
ii. Need to discuss DefinedTerm data structure and if PropertyValue is a better data structure so that the predicate could be specified as to how the Thing relates to the Dataset.
iii. Adam L. provide a more concrete example (or can he attend a SDO call?)
c. #101 - GeoShape format (**Steve**)
i. Just needs a pull request
d. #19 - Writeup guidance on URLs in Data (**Chuck V.**) - dropped from v1.2
i. Agreed to drop
e. #67 - dateModified (**Adam**) - need to work on
f. #59 - SHACL shape for SDO namespace (**Dave, Doug**)
i. Might not be complete w.r.t to the full guidelines
ii. Should we release in its current form?
iii. What does not conforming to the shape mean?
iv. Ping Dave on this issue
g. #72 - provenance of DOIs (**Matt**)

Context of the main Github Page
- README file needs work
- V1.3
- Maybe wait for the publishing of the primer
- Created new Issue: Matt Completed:
  https://github.com/ESIPFed/science-on-schema.org/issues/127
  - General overview with links to content, etc.

7 December 2020 @ 5pmET

Attendees

Adam, Doug, Ruth, Mark, Amos, Chantelle, Chantel, Dave V., Megan, Heather B

Agenda

1. **Chantelle Verhey on schema.org Crosswalks**

Slides: https://docs.google.com/presentation/d/1RQGGAKiwm_FphkjnU2qaYmTzzASSbC0N/edit#slide=id.p1
Visualizations: https://rd-alliance.github.io/Research-Metadata-Schemas-WG/

Crosswalks Excel Sheet:
https://docs.google.com/spreadsheets/d/1P6WH8h4OnIVR9UJj3FcOebNUpLnKNBCuvEp3NsLRho4/edit#gid=1789151191

Question1 : Should Schema.org Cluster takeover managing the crosswalks?
- Ruth: RDA output. Why isn't RDA making it permanently available?
- Chantelle: FAIRSharing & RDA would host, but not maintain or develop any further. These are a last resort.
- Ruth: There has been talk at RDA of having maintenance groups that continue work post WGs.
- Chantelle: Mingfang said there are no plans to spin up a maintenance group at RDA.
- Ruth: Google Sheet should be published and get a DOI as version 1.
- Chantel: Could we ask schema.org if they'd be willing to host/manage?
- Ruth: Thinks the ESIPFed Schema.org could host the crosswalks and code hosted
- Doug: Is CodeMeta a template for how these corsswalks could live on?
- Amos: Github code for these crosswalks (and the RDA WG) is: https://github.com/rd-alliance/Research-Metadata-Schemas-WG
- Mark: This could be an interoperability Rosetta Stone for higher-level concepts
  - Lots of ESIP Data Repos could benefit from using these mappings!
  - Were appropriate experts from each of the vocabs involved in the mapping?
  - Were any potential "deeper semantics"-- such as domain/range axioms or "recommended properties of Type usages in SDO" -- considered ?
    - How were Natural language expressions reconciled when these were not the same? E.g. in SKOS we'd assert various levels of "sort of synonymy"
  - Formalizing these mappings in an Ontology would be highly useful!!!!
    - Ontology should be accessible through some repo like COR
- Ruth: raising awareness of this effort is important! Publication plans?

Question2: Schema.org Cluster interested in reviewing the Intro to SDO for Repositories?
   ● Chantelle will send a draft of the Intro to SDO document to the group?

2. **Guidelines v1.2 Progress**
   https://github.com/ESIPFed/science-on-schema.org/milestone/5
       a. #120 - **shortDOI (Adam)** Pull Request needs review
       b. #101 - **GeoShape format (Steve)**
       c. #19 - **Writeup guidance on URLs in Data (Chuck V.)** - dropped from v1.2
       d. #67 - **dateModified (Adam)** - need to work on
       e. #59 - **SHACL shape for SDO namespace (Dave, Doug)**
       f. #72 - **provenance of DOIs (Matt)**
       g. Added Issue #125 - use DefinedTerm for Dataset keywords (Adam)

3. **Winter Meeting progress**
       a. Variables poster update-- Steve Richard lead (not present today), Kai/Mark assist
       b. Anything else?

2 November 2020 @ 5pmET

Attendees

Adam, Matt, Megan, Chantel, Dave, Nick, Ruth, Stephen, Mark

Agenda

4. **Winter Meeting Session Proposal Review**
5. **ShortDOI in Dataset Identifier Issue (#120)**
6. **Guidelines v1.2 Progress**

Notes

Winter Meeting Session Proposal Review

   ● Matt suggests getting someone from Google to speak about Schema.org directions (N. Noy) - mention in session proposal submission

- On Natasha v. Dan - Dan engaged on vocabulary development where Natasha has focused on Dataset Search. Their is a role for Dan to comment on
- Ruth suggests mentioning 'Simple Discovery'
- Ruth likes 'Skim the Surface' so we can talk higher-level about:
  - Naming conventions
  - Why ESIP Endorsement is worthwhile
- Steve suggests mentioning the Research Showcase poster as an opportunity to interact with the Cluster.
- Ruth suggests these working times are helpful at progressing

Read/Edit the session description here:
https://docs.google.com/document/d/168aAeWo7I-VX_Hwvcp8KeGhltQZhFls9ib6ZiO_K2JM/edit#bookmark=id.x6hu3mu9cac9

Session type: I put 'Working Session'

How does this session relate to the meeting theme: Leading Innovation in Earth Science Data Frontiers?

Describe target audience:
Data Repositories, ESIP Assembly members (past or present)

Session Audience: I put 'Skim the Surface'

Session Tags: I tagged with 'Data Stewardship', 'Metadata', 'Semantics'. Others?

Guidelines v1.2 Progress

https://github.com/ESIPFed/science-on-schema.org/milestone/5

ShortDOI in Identifiers

See: https://github.com/ESIPFed/science-on-schema.org/issues/120

Ruth and Matt suggest "sameAs"
Steve concurs
Ruth the documentation could say, "If you are using Short DOI service (and/or other multiple identifiers from the same provider), you could do this with `sameAs`"
Actions:
1. Fix up the guidelines
2. Make example JSON-LD

3. Make sure the documentation doesn't read that `sameAs` is required property to be compliant to the guidelines

Tag chuck with confirmation about what to do with
https://github.com/ESIPFed/science-on-schema.org/issues/19

22nd October 2020 @ 2:30pmET

Attendees

Adam, Kai, Chantelle V., Steve R, Mark S., Kevin L., Ruth D., Amos H., Megan C.

Agenda

1. **ESIP Winter Meeting Call for Sessions (registration: https://www.cvent.com/d/c7qcdh (early registration available until 12/21; meeting is Jan 26-28, 2021)**
    https://docs.google.com/document/d/1TXVHqig7AgfGSbITR-6Qxprc-6ctbAUU4VvYpoJVszM/edit
    a. **Deadline: Nov. 5**
    b. **Session Proposal:**
        https://docs.google.com/document/d/168aAeWo7l-VX_Hwvcp8KeGhltQZhFls9ib6ZiO_K2JM/edit#heading=h.xkpfsohnkemp

    c. **Research Showcase Poster (deadline early Dec. up to 50 participants):**
        Update, Plan for describing SO:variableMeasured (Steve, Mark, … Kai some help)
        https://docs.google.com/presentation/d/1rDVOqHCI3oCZ6g13viRdqr6le10Fivd4Okt6qJQQXKc/edit#slide=id.p
        i. SOSA/SSN as "underlying data model"
        ii. Domain recommendations for implementing the model
            1. Astromaterials (geochemical data via EarthChem - Steve R.)
            2. Mark will contribute an example from DataONE or NSF Arctic Data Center
            3. Adam/Kai may contribute oceanography example (ENVO)

4. Ruth may contribute NASA Biology division example (ISA-TAB metadata)
        iii. Steve R. will manage
                1. Steve will register to the "virtual poster"
        iv. Everyone, please contribute notes on the slide and Steve will arrange.

2. **v1.2 Guidelines - Next Steps**
https://github.com/ESIPFed/science-on-schema.org/milestone/5

Discussion on 1.c above: Pick domain ontologies to use as examples, using SOSA/SSN as the data model for variable measured. Steve working on an Astro database for Kirsten Leonard. Measurements in some ontologies are often expressed as a composite of "SOSA:features of interest" with "SOSA:observable properties". Force people to dichotomize measurements into the SOSA model could be an issue, seawater temp vs sea surface temperature. Which is property and which is a feature, where "seawater" is a feature of interest, but also "surface" is a feature of "seawater"-- or is it a property? ... it can get complicated. Forcing ppl to dicatomize like sosa might be an issue (already going outside schema.org). Pointing to outside ontology better-- but ideally that external ontology DOES conform to some good observations/measurements design pattern like SOSA. Diff levels of granularity. Search any seawater temp, or something more specific. Accounting for the continuum of granularity. Level of schema.org force people to conform to sosa, or let people point to an ontology. Id variable measured with URI which should dereference to a more detailed description (profile issue). Want to avoid too much ontological commitment.

ESIP research showcase poster december.
ESIP Session deadline in 2 weeks

Kevin L(kevin.lindstrom@ubc.ca): I'm totally new to the group and am looking for guidance as to how I can best contribute. I'm a science librarian here at UBC in Vancouver, Canada. I'm involved with research data support for earth science researchers here at UBC.
        Dataverse canadian-wise data repo, but people there are using pangaea and zenodo for earth science, some dryad. I'm tracking data repository doi's on a number of publisher platforms including Copernicus, Wiley, and Elsevier/ScienceDirect.

ESIP Winter Meeting - Strategizing for an ESIP Recommendation for the Science-on-Schema.org Guidelines

ESIP Policy on Endorsement:
https://github.com/ESIPFed/Governance/blob/master/ESIP%20Policies%20and%20Procedures/1.0%20Corporate/ESIP%20P%26P%201.7%20Endorsements.md
- **Aim for clarity**
- **Ensure Assembly members can understand and contribute**

- **Make sure the version you propose will be relevant for at least a 1-2 yrs**

1. V2.0 or V1.3 as the "version" label for the Recommendation
   a. Amos: a "dot" release lets people know that they don't have to revisit their existing work.
   b. Ruth: proposes a "named" release. Likens to Apple's use of cat or geographical names for MAC OS releases
   c. Amos: We could have both and numbered version so you know where you are in the timeline, but could also have a "codename"
   d. Ruth: v1.3 "schema.org for simple discovery" - almost like a subtitle.
   e. Anything submitted for ESIP endorsement needs to be a complete packet which might not change for a long time. How to best use schema.org to be interoperable with the earth sciences, shouldn't change every 6 months.

Chantelle Verhey, **ITO Research Associate**
- Promoting schema.org for World Data System (WDS) members
- Working with the RDA Research Metadata Schemas WG
- Working on documentation that would be a precursor to the science-on-schema.org
  - Background materials before getting into the technical detail
-

5th October 2020 @ 5pmET

Attendees

Ruth Duerr, Adam Shepherd, Megan Carter, Chantelle Verhey, Dave Vieglais, Doug Fils, Mark Schildhauer, Matt Jones, Mike Bobak

Agenda

3. **ESIP Winter Meeting Call for Sessions**
   https://docs.google.com/document/d/1TXVHqig7AgfGSbITR-6Qxprc-6ctbAUU4VvYpoJVszM/edit
   a. **Deadline: Nov. 5**
   - 3-day event in January
   - Looking for high-quality 90-minute sessions
   - Unstructured time possible
   - Compliment the session with Research Showcase
   - Matt suggests broader engagement opportunity like a plenary session (or webinar feature)

- - Related: IT&I, Data Stewardship, SemTech
  - Matt: look towards summer meeting w. another release
  - Ruth: poster/mini-video could be done for winter meeting
    - Virtual Gallery for Research Showcase can support mini-video.
    - Interactive Poster/Small Presentation, etc.
  - Megan: deadline for Research Showcase is in December

  b. Submission form: https://docs.google.com/forms/d/e/1FAIpQLSf-VAtzrJn1fPmFcmUUui13_9801EYpInPY4mAVcsw6saVO4Q/viewform?usp=send_form
  c. New co-chairs?

4. **Debrief from Stencila talk**
   https://stenci.la/blog/2020-09-20-register-now-for-stencila-community-call-thur-24-sept-2020/
   a. They created the Stencila schema - vocabulary for reproducible workflows; documents those workflows
   b. Started with schema.org as a base
   c. Built tooling around creating Stencila schemas then transformed into schema.org
   d. Discussion with panel of experts for feedback
   e. Overview of Goals
   f. Stencila schema coverage
   g. Raised science-on-schema.org & CodeMeta at the call and through their bug tracker
   h. Mark: seems like they were over-engineered; focused on a "smart paper"-- can access code and data that generated figure
   i. On behalf of E-Life

5. **V1.2 Status**
   https://github.com/ESIPFed/science-on-schema.org/milestone/5
   a. Variable measured
      i. *Proposing to punt this issue to a future release*
      ii. Mark, Steve, Kai document of proposed recommendations https://docs.google.com/document/d/1XwznJpHVvG-AVy9BcttA7sQri1K3mmBLrBQ9XNbCUSg/edit#heading=h.i2bj2yfpr0un
          1. Chuck mentioned this is close to RDF DataCube and we should pay attention to that effort-- RDF DataCube talks about overlap with void and DCAT vocabs; plus Steve mentions DDI
      iii. Matt: like us to promote something compatible with OGC, SOSA/SSN, etc. vs. the schema:Observation
      iv. Dave suggests some practical examples that demonstrate usage

<div style="margin-left: 2em;">
<ol type="i" start="5">
Ruth suggests poster could revolve around consensus on domain vocabularies to endorse
General agreement to suggesting ontologies, etc. to include in the recommendations.

</div>

6. **Ruth suggests ESIP Recommendation for a certain version of the Guidelines**
   a. Similar to Data Citation standards
   b. Matt proposes targeting Summer Meeting to announce/start the process of the ESIP Recommendation process

7. **Use of 'citation'**
   https://github.com/ESIPFed/science-on-schema.org/issues/42#issuecomment-696357948
   a. **PUT IN v2.0 RELEASE (a.k.a. formerly 1.3)**
      i. Ruth suggests 2.0 due to audience - if not 2.0 it needs a name like "ESIP Schema.org Guidelines for Dataset Discovery"
      ii. Matt: would 2.0 not be backwards compatible? Thinking about semantic versioning

24th September 2020 @ 2:30pmET

Attendees

Adam Shepherd, Chuck Vardeman, Elizabeth, Mark Schildhauer, Kai Blumberg, Susan Shingledecker, Amos Hayes, Dave Vieglais

Agenda

8. **Debrief from Greg Kellogg JSON-LD 1.1 Talk**
   Slides: https://json-ld.org/presentations/JSON-LD-Lotico-2020/#0

   Reflections on the schema.org talk:
   JSON LD needs to be in memory and doesn't scale well. Parsing TTL can be problematic relative to n triples and n-quads. Schema.org mostly driven by commercial interests, scientists outliers, groups will interpret properties in their own way according to their own needs, the opposite of what we need as scientists to have it constantly understood. Interrupt company form Tim Bertners Lee, cutting edge of sem web api's tooling for web developers, but they still have

the same issue of vocab harmonization. Leveraging w3c standards, the goal of their applications are to replace facebook and twitter (good on him :P).

US2TS working group trying to deal with blank nodes, which are problematic for scientists. Quote for sceptics of SemWEB, recognize that the "*future is much longer than the past!*".

Of particular interest to MS were slides 16, 17, 22,23, & 28 re implications for the "so:variableMeasured" approach

9. **Stencila talk**
   https://stenci.la/blog/2020-09-20-register-now-for-stencila-community-call-thur-24-sept-2020/

   Zoom:
   https://us02web.zoom.us/j/83174497222?pwd=R0F3ZDlTWDZZNHgvcG1lOUVhRi9pZz09
   Passcode: 257695
   Webinar ID: 831 7449 7222

   - Doing work on scientific workflows
   - Related to CodeMeta

10. **V1.2 Status**
    https://github.com/ESIPFed/science-on-schema.org/milestone/5
    a. Matt Jones proposes to push "so:variableMeasured" to next release
       i. Mark seconds-- need to consider some JSON-LD 1.1. Updates, and Stencila talk (see above)
          1. Q: How much can we defect from a rigid implementation for variableMeasured or Observation?
          2. Mark: Whether or not to use the schema.org terms-- when sound 'relevant', but are oftentoo strictly (and oddly!) constrained in the "official" schema.org documentation (e.g see "so:QualitativeValue"); or to map to external vocabularies (e.g. SOSA or DCAT) that might have more powerful and appropriate semantics.
          3. Chuck: MeasuredValue similar observation but didn't bring in dataset mapping utilities of datacube, (which is aligned with other ontologies). Could stub to domain ontologies, IOT's stubbing from certain property types to SOSA. Is precedent for such hooking, different than what Mark is Suggesting (more a comprehensive set of vocabs). Google dataset search describes a url as

variableMeasured, but that's not the same in schema.org. Linked data worldview is to link off to external vocabs. Agents consuming schema.org data need explicit advertising of profiles, they should be able to use the profile to consume but it should be linked to something more expressive (like OWL RL) graphs which we can reason over. Create multiple profiles 1 for discovery and then more complicated ones. Direct agent to grab a graph fragment that conforms. In landers they use schema:sameAs, translates into owl properties/relations which can be reasoned over.

27th August 2020 @2:30 pm ET (CANCELLED)

Attendees

Dave Smith (EPA), Chuck Vardeman, Steve Richard, Megan Carter

No meeting. Met Dave Smith and learned a bit about his work and interest in the Schema.org Cluster.

Foundations for Evidence- Based Policy Making

"Influential Dataset" How to define??

Chuck shared https://github.com/adamml/data-release-ont/blob/master/collaborative-trust.ttl with Trust Indicator/Benevolence Indicator/and more.

3rd August 2020 @ 5pmET

Attendees

Nick Jarboe, Adam Shepherd, Stephen Richard, Matthew Jones, David Vieglais, Amos Hayes, Michael Bobak, Mark Schildhauer (late with apologies: Kai Blumberg)
Apologies: Ruth

Agenda

1. **ESIP Summer Meeting Highlights Lightning Talk (slide)**

a. ESIP is hosting the **2020 Summer Meeting Highlights Webinar on Thursday August 13th from 3:00 pm - 4:30 pm ET**.
b. Invited to give a lightning talk (max 1 slide, 2 minutes) about your session.
c. If you would like to participate, please reply to this note (megancarter@esipfed.org) by next Friday (8/7**)**
d. You may **use [this template](#) to draft your single slide** - download or make a copy before you start editing. Once you are finished, please upload the slide to [this Google Folder](#) (at latest by Tuesday 8/11 at 5 pm ET).
      i. Started a draft [Highlights slide](#) …

2. **Proposing V1.1.1 Milestone**
   a. Fix HTTPS to HTTP in @vocab
   b. Historically namespace was http://schema.org/
      i. Brickley and others push to move it to https
      ii. V0.9 creates duplicated vocabulary at https://schema.org/, with mapping equivalence via OWL axioms
   c. SOSO should push for https, which is summarized in [Issue #52](#)
      i. Equivalencies: https://github.com/schemaorg/schemaorg/blob/http-httpsequivs/data/releases/9.0/schemaorg-http-https-equivalents.jsonld
   d. Proposed ADR in develop branch: https://github.com/ESIPFed/science-on-schema.org/blob/develop/decisions/52-namespace-consistency.md

3. Continue v1.2 Variable Measured Discussion
   a. ADR for variable measured: https://github.com/ESIPFed/science-on-schema.org/blob/issue27-measuredVariable/decisions/27-measuredVariable.md
   b. Issue to be decided: use existing SO terms, or recommend using another established observations vocabulary like SOSA
   c. Should SO use Min,Max, Range as pre-specified (highest ground-based measure, deepest ocean depth, bush or tree, etc.), or "computed" values describing a dataset. (complication if data are being updated-- requires recomputing any summary stats); create some Use Cases to concretize issues here

4. **Provenance representation** proposal ([Issue #72](#))
   a. [ADR](#)
   b. [Provenance Guidelines](#)
   c. Discussion of alternatives (PROV/ProvONE versus less precise SO)
      i. https://github.com/ESIPFed/science-on-schema.org/issues/72#issuecomment-665166859
      ii. Some comments in GH expressed support for the PROV-O/ProvONE representation
      iii. ACTION: Ping Martin Fenner to review

5. Example doc errors (New issue for 1.2)

a. https://github.com/ESIPFed/science-on-schema.org/issues/115
b. Adam to review for HTML type issue
c. Dave to review for possible new SHACL rules

6th July 2020

Attendees

Ruth Duerr, Adam Shepherd, Megan Carter, Doug Fils, David Vieglais, Mark Schildhauer, Gary Berg-Cross, Nick Jarboe, Kai Blumberg, Stephen Richard, Steve Richard, Chantel Risdale

Agenda

Continue work on ESIP Session Planning
https://2020esipsummermeeting.sched.com/event/cIvd/advancing-schemaorg-guidelines-for-dataset-interoperability-and-discovery

1. ESIP Summer Meeting Planning (July 14 @ 2pm, qiqochat, google doc)
   a. Meeting Design & Agenda (breakouts etc for Qiqochat planning)
   b. Planning for the Takeaways (capture 3 takeaways in the last 5-10 minutes)
   c. We can use the Qiqochat room for the whole day

2. Tuesday July14 @ 2pmET
   https://2020esipsummermeeting.sched.com/event/cIvv/structured-data-on-the-web-putting-best-practice-to-work
3. Wednesday July15
   a. @ 11:30amET
      https://2020esipsummermeeting.sched.com/event/cIvy/structured-data-on-the-web-putting-best-practice-to-work
   b. 2pmET
      https://2020esipsummermeeting.sched.com/event/cIw1/structured-data-on-the-web-putting-best-practice-to-work
   c. 4pm Advancing schema.org Guidelines for Dataset Interoperability and Discovery
      https://2020esipsummermeeting.sched.com/event/cIvd/advancing-schemaorg-guidelines-for-dataset-interoperability-and-discovery

Q from Ruth can there be multiple SHACL rules? Dave: Yes hierarchically structured but it could be too rigid at the wrong level. From the polar data forum from Ruth: "Are we all willing to care a

little about data that doesn't look like ours as we build tools". Introduce utility of shacl and rdf data.

SHACL plugin for Protege: https://github.com/fekaputra/shacl-plugin

Ideas for our 4pm session,

Social science datasets - Amos (confirmed - I was asked by Matt to present for 5min on this - Amos)

Other Topics to cover if we have time:
  ● How to describe machine actionable links through services
  ● Declaring authoritative version of dataset

Ask if CDF would plug our ESIP session

@Mark Kai and Steve to do 10 min presentation

25th June 2020

Attendees

Adam Shepherd, Kai Blumberg, Ruth Duerr, Dave V., Nick Jarboe, Megan Carter, Ethan Davis, Chuck Vardeman, Mark Schildhauer, Mike Bobak, Steve Richard

Agenda

4. Quick update on To-Dos
   a. Hosting Schema.org Extensions for Science-on-Schema.org (Adam)
   b. SHACL Pull Request (Doug)
   c. Spatial Pull Request (Steve)
   d. HTTP URIs in guidance docs (Dave)
5. ESIP Summer Meeting Planning (July 14 @ 2pm, qiqochat, google doc)
   a. Meeting Design & Agenda (breakouts etc for Qiqochat planning)
   b. Planning for the Takeaways (capture 3 takeaways in the last 5-10 minutes)
   c. We can use the Qiqochat room for the whole day
      i. https://2020esipsummermeeting.sched.com/event/clvd/advancing-schemaorg-guidelines-for-dataset-interoperability-and-discovery

- @Ruth notes a polar interoperability working group Tuesday 30th 8am MST. @RUTH please [add link](#) here. 1st June 2020

- Kai announces new editor for UO ontology (units) that is integrated with OBO Foundry
  - Mark wonders about UO merits relative to QUDT
  - RDA group and NIST keenly interested in units.
  - Kai and Mark to examine Units approaches (Kai also mentions useful complex-unit type constructor available in OBOE')
- Mark question: scientific datasets only? Organization/institution person/people, place/location are broader contexts needed to "find" datasets of interest
  - Glossary of common schema terms could be useful
  - Google dataset search big deal flushing out classes to work with it is major motivation use case for use, but we want to try to get to other domain vocabs/ontologies.
- JSON-LD vs RDFa
  - Whatever google crawls support for dataset search is prob valid
  - Goal is discovery, them seem to prefer jsonLD but RDFa (google developers give examples of both) Chuck saying jsonLD more likely to show up in dataset search. Charles: more emphasis on jsonLD, but both should work. Could maybe recommend jsonLd (not require) to help proto standardize.
- DCAT2 and schema.org harmonization?

1st June 2020

Attendees

Adam Shepherd, Doug Fils, Chantel Risdale, Megan Carter, Stephen Richard, Mark Schildhauer, Kai Blumberg, Ruth Duerr, Dave Vieglais, Mike Bobak, Nick Jarboe, Amos Hayes

To Do

1. **(Adam, Dave)** Start Branch for HTTPS vs. HTTP to change all uses of https://schema.org/ to http://schema.org/
2. **(Dave, Doug, Adam)** Review Dave's SHACL Pull Request.
3. **(Dave, Doug, Adam)** Work on moving schema.org extension hosting to COR machine. Adam will contact Lewis on #cor Slack channel with needs

Agenda
1. **[Adam] Update on geoschemas.org hosting**

- - ○ Need Content Negotiation for it to work properly
    - ○ Propose moving geoschemas.org to the cloud
    - ○ Lewis said SemTech Committee can absolutely help by hosting geoschemas.org on the COR machine.
    - ○ Asked us to gather a list of what we need to host, and post at the #cor Slack.
        - ■ Docker container
    - ○ Implementers: Doug F and Dave V, Adam
2. **[Doug] Update on spatial in JSON-LD (implications for schema.org) ([issue](#))**
    - ○ Doug touched base with Alistair & Dave Blodgett & Dave Vieglais
    - ○ Report on IGSN and Geoconnex effort
    - ○ No matter which spatial version you use it needs to indicate schema:subjectOf so the user knows what the spatial identification is about
    - ○
3. **Update on HTTPS URIs for schema.org (Dave V., [Github comment](#))**

   FROM DAVE V.
   1. The correct namespace for schema.org appears to be `http://schema.org/`. Despite the `https` variant appearing in various places (mostly instance documents in the wild), the schema.org sources are consistent. Resolving the URLs `https://schema.org/` and `http://schema.org/` and content relative to those seem to return equivalent content in all cases, and the namespace in returned documents is consistently "http://schema.org/". e.g. [1, 2]

   2. I have been unable to find a mechanism with json-ld contexts or framing to reliably enable programmatic equivalence of terms in the `https://schema.org/` and `http://schema.org/` namespaces. There was a bug in version 1.0 of the json-ld spec that may have provided a mechanism, however that issue allowed circular reference within a context definition, producing indeterminate results. [3]. It may be possible to do something like apply an imported context [4] to recast terms to a different namespace, though if it works then the context would need to be generally imported to all, and so would be challenging with respect to bullet 4 below.

   3. Equivalence could be asserted through an ontology that mapped all terms between the two namespaces. This would likely have significant performance impacts. It would also require ongoing maintenance of the map.

   4. Namespaces can be converted programmatically on loading the documents, and this works for limited cases. However, libraries and other third party software can, and often will load content from other sources. Those sources loaded by the third party may not have the namespace changed on load, leading to unexpected results. e.g. a json-ld processor may load an external context that in turn could import additional context [5]. This can easily create a mixed use of namespaces and lead to inconsistent results.

Although it is a little painful to change the namespace use by science-on-schema.org from ["https://schema.org/"](https://schema.org/) to ["http://schema.org/"](http://schema.org/), my impression is that making this change sooner will save confusion and incompatibility issues in the future.

[1] https://schema.org/version/latest/schema.ttl
[2] https://schema.org/docs/jsonldcontext.jsonld
[3] https://w3c.github.io/json-ld-syntax/#iri-expansion-within-a-context
[4] https://w3c.github.io/json-ld-syntax/#imported-contexts
[5] https://www.w3.org/TR/json-ld-api/#algorithm

4. **Geolocation Pull Request (Steve, [pull request](#))**
   ○ Steve updates
5. **Work through issues for version 1.2 of guidelines:**
   https://github.com/ESIPFed/science-on-schema.org/milestone/5

28th May 2020

Attendees

Adam Shepherd, Nick Jarboe, Kai Blumberg, Ruth Duerr, Chantel Ridsdale, Doug Fils, Mark Schildhauer, David Coyle (USGS), Stephen Richard, Megan Carter

Agenda

6. Update on variableMeasured work (Kai, Mark, [Github comment](#))

Update from Mark and Kai about their ongoing proposal to address VariableMeasured, what ontology terms to go in and how to use existing schema properties.

7. Update on Deep Time work with Nicholas Carr (Nick Jarboe, [Github comment](#))

Extend science for schema.org for owl time. Discussion about keeping issue at geoschemas.org that Adam has for 9 years. Talk to Lewis about potential budget support for maintaining JSON-LD context of "geotemporal context" property

Presentation discussed relevant to time: The recording will be available here: https://transcripts.gotomeeting.com/#/s/62e311ad282b53e96e069344b0f616730d78abe9cb3cca683202dd0500cc7eaa for the next 30 days. We will move it to the ESIP YouTube Channel shortly also.

8. Geolocation Pull Request (Steve, [pull request](#))

Get Alister or Dave Blodgett to help settle the geospatial issues.

9. Update on HTTPS URIs for schema.org (Dave V., Github comment)
   [ON HOLD for Dave]

   FROM DAVE V.
   1. The correct namespace for schema.org appears to be `http://schema.org/`. Despite the `https` variant appearing in various places (mostly instance documents in the wild), the schema.org sources are consistent. Resolving the URLs `https://schema.org/` and `http://schema.org/` and content relative to those seem to return equivalent content in all cases, and the namespace in returned documents is consistently "http://schema.org/". e.g. [1, 2]

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   Although it is a little painful to change the namespace use by science-on-schema.org from "https://schema.org/" to "http://schema.org/", my impression is that making this change sooner will save confusion and incompatibility issues in the future.

   [1] https://schema.org/version/latest/schema.ttl
   [2] https://schema.org/docs/jsonldcontext.jsonld
   [3] https://w3c.github.io/json-ld-syntax/#iri-expansion-within-a-context
   [4] https://w3c.github.io/json-ld-syntax/#imported-contexts

[5] https://www.w3.org/TR/json-ld-api/#algorithm

10. Work through issues for version 1.2 of guidelines:
    https://github.com/ESIPFed/science-on-schema.org/milestone/5

4th May 2020

Attendees

Ruth, Amos Hayes, Kai B, Andrew Schaffer (had technical issues and left), Sarah Ruest, Megan Carter, David Vieglais, Dave Smith, Chantel Ridsdale, Nicholas Jarboe, Mark Schildhauer, Micheal Bobak, Adam Shepherd (joined 30 min in), Matt Jones (joined 40 minutes in)

Agenda

11. Work through issues for version 1.2 of guidelines:
    https://github.com/ESIPFed/science-on-schema.org/milestone/5

   - Issue 27 populate schema.org terms when easy to align
     Hashing references to approp ontologies to populate fields in schema.org.
     Dave some jsonld parsers can get info and populate a graph from an ontology
     URI, depends on parser and environment @Dave to give some examples.

     Nick: just have measured variables displayed in paleomagnetic database, no
     concrete solutions yet. Have internal vocabularies.
     Amos: not at the stage of using ontologies yet

     OWL time from OGC: Stick With it or use something else?

     Schema.org extensions? Make them in science on schema.org? Be nice to have
     the geoworld have more representation in schema.org. Keep science on
     schema.org namespace. Schema won't expand unless there is a large
     use-community. Domain specific accuracy not their goal. MATT: develop on
     something useful for the discipline (get everything standardized here) and then
     later try to push to schema.org. EML's time union of geological age and iso dates.
         EML alternativeTimeScale:
     https://eml.ecoinformatics.org/schema/eml-coverage_xsd.html#SingleDateTimeType_alternativeTimeScale

(this is isomorphic with the FDDC BDP schema too)

Link to document on geologic time ontologies: <mark>(requires login for KU)</mark>:

https://link-springer-com.www2.lib.ku.edu/article/10.1007/s12145-013-0110-x

Perhaps you mean this:

https://www.researchgate.net/publication/262936829_A_geologic_timescale_ontology_and_service

- ○ New Issue related to specifying a bounding box for a dataset
  https://github.com/ESIPFed/science-on-schema.org/issues/101

12. ESIP Summer Meeting Planning - Discuss structure and topics
    - ○ A general schema.org session for data publishers is scheduled as part of a 4-part session series o nStructured Data on the Web (Dave Blodgett, Amber Budden, Ruth Duerr, Lewis McGibbney)
    - ○ ESIP schedule:
      https://docs.google.com/spreadsheets/d/1UbG9so6rsSzTz1-Mp6BFYVwkT860IH2_rdc-lCSxMWM/edit#gid=648921078
    - ○ Matt Jones was able to submit a session for the Schema.org Cluster. Last meeting we discussed structuring this session into a series with potential topics:
      - ■ SHACL Validation (Dave and/or Doug)
        - ○ Reach out to Documentation Cluster for mini-session on metadata validation & recommendations (re: SHACL work from Dave and Doug) (Matt will send email)
      - ● Describing APIs (Steve)
      - ● Measured Variable structure (Matt, Mark)
      - ● Provenance representation (Alex,Steve,Matt)
      - ● OWL-Time (Nick/Adam)
      - ■ Session Structure
        - ● Intro 5 topics above - form breakouts if possible
        - ● Breakouts
        - ● Reconvene

TO-DOs

1. Write v1.1 announcement (Adam S.)
2. Look into Zenodo DOI reserve for existing Github repos (???)
3. Mark Schilhauer and Kai to each flesh out suggestions for referencing ontology elements and terms. To get together and propose some ideas for how to move forward on issue 27 material about the measurement values types, units, protocol docs or iri's, measurement devices etc.
4. David Vieglais will note which parsers will pull ontology elements when given the term URI
5. Nick Jarboe to search out information on existing Deep Time standards out there

Goals: validation tools to verify generated markup is compliant with guidelines.

23rd April 2020

Attendees

Adam Shepherd, Matt Jones, Dave V., Megan C., Ruth, Rob Casey, Nick Jarboe

TO-DOs

6. Write v1.1 announcement (Adam S.)
7. Look into Zenodo DOI reserve for existing Github repos (???)

Agenda

13. V1.2 https://github.com/ESIPFed/science-on-schema.org/milestone/5
    ○ Which is the best way to represent ontological terms representing observation types of a **measuredVariable**?
        ■ Flesh out a rich variable description of a dataset Update Documentation good first issue
    ○ Writeup guidance on **URLs** in Data Leading Practice
    ○ Intention of adding **provenance of DOIs** with isBasedOn?
    ○ Recommendation on specifying **dateModified** for Datasets
    ○ Add **SHACL shape** to validate SO namespace enhancement
        ■ Dave V: need more than SHACL
            ● Non-existent components in the graph might not trigger invalidation (ex: namespace difference)
        ■ Discuss Dave's plugin/Tangram tool at ESIP Summer Meeting
        ■ Use a report similar to Metadata Quality Report @ DataONE (to help abstract the SHACL stuff users might not understand)
        ■
    ○ Recommendation for indicating **authoritative copy of dataset**
    ○ Add **OWL-Time Extension** guidance
14. ESIP Summer Meeting session abstract
    ○ https://docs.google.com/spreadsheets/d/1quXmvAv-pTj2sV6lLyBbrfTmhVaKpwwSCFRcoAtOffE
    ○ TOPICS
        ■ SHACL Validation (Dave and/or Doug)

- Reach out to Documentation Cluster for mini-session on metadata validation & recommendations (re: SHACL work from Dave and Doug) (Matt will send email)
        - Describing APIs (Steve)
        - Measured Variable structure (Matt, Mark)
        - Provenance representation (Alex,Steve,Matt)
        - OWL-Time (Nick/Adam)
    - Session Structure
        - Intro 5 topics above - form breakouts if possible
        - Breakouts
        - Reconvene
    - **A general schema.org focus on data providers & implementation in Amber/Dave B./Ruth group of 4 sessions**

6th April 2020 ([21:00 UTC](#))

Attendees

Adam Shepherd, Kai, Nick Jarboe, Dave, Mingfang, Megan, Mark Servilla, Erin R, Chantel, Mark Schildhauer, Doug Fils, Matt Jones

Agenda

15. V1.1 Released https://github.com/ESIPFed/science-on-schema.org/releases/tag/1.1.0
    - Review the RELEASE NOTES - what could be better?
    - Review [repo README](#) - what could be improved?
        - Style the Guidelines section better
    - Should we add a LICENSE to the repo?
        - CC0
    - Announcing v1.1
        - [@ScienceOnSchema tweet](#)
        - ESIP Slack - [#science-on-schemaorg](#)
        - ESIP schema.org cluster [mailing list](#)
        - DataONE announcement

            -
        - To announce
            - CANLIB-DATA listserve (https://lists.ubc.ca/scripts/wa.exe?A0=CANLIB-DATA)
            - Monday Update

- ESIP-All
- RDA Research Metadata Schemas WG
  (rda-research-schemas-wg@rda-groups.org)
  - Announcement text for ESIP Monday update, RDA and DataOne
    - What we did
    - How to join in

16. V1.2 https://github.com/ESIPFed/science-on-schema.org/milestone/5

- Feedback on release notes: People seem to think they are sufficient.
- Can we reserve id's from zenodo? Associate with a given tag (like a github release). Reserve identifier make it permanent after tag. //TODO look into how to do this correctly.
- Adam likes the github milestones helped to make the release easier/faster. //TODO writing out the process for future releases.
- Matt J: likes landing page, be good to have context/guidance docs longer explanation of what the links lead to.
- Put a licence on repo CC0 or ccbio so people can know what to do with material in repo. CC0 it is.
- Where to announce? Add a few sentences for the ESIP monday update, also post to ESIP all. @ming says post to RDA group as research metadata schemas get feed back from Layla there. Dataone announcement? Matt can get it posted there once we have a link. New markdown file to link to? Link to main page. //TODO write and reuse blurb for the announcements (monday update RDA and DataOne). Continuing to improve here's how you join etc.
- V1.2:
  - issue #59 namespaces: settled on https://schema.org if we enforce https it'll be contrairy to schema.org practice. We chose https, but Dave is concerned as it's different than other common ones like google. Be good to settle on one and prefers not https for namespace going to impose technical burden. @Matt J impression was that https was better, yes but that's diff then common practice. Can we use a sameAs axiom? No applies to all classes and properties. @matt thinks we need all mappings anyway if ppl are using both namespaces schema.org ppl don't use reasoners too much. @Doug: deadlines on horrison for http and transition to https, and for mixed mode of the 2. Doug will see if he can track down where it's going. If it's linkable url then you get insecurity issues. We should think about future year/2 implications when everyone goes to https. Link to schema.orgs ttl: https://schema.org/version/7.03/schema.ttl if they don't transition. @Dave maybe shouldn't switch. @matt probably going to be two uri's http and https likely going to have to deal with both. @Dave: Can do a transform across all the graph into the namespace you want (sub namespace). Adam let it be upto harvesters to manage it change guidance docs? @Dave both forms http https are in wide use, we prefer https (logic to why) provides example code for

conversion //We'll go with this. BCO-DMO (currently) fails namespace test http vs https.
- #67 date modified: several locations for date modified, want these hints early and consistently. Ex date mod in site map, so content may have changed since last harvest. Landing page timestamp consistent, and in json-ld. //TODO @Adam to make an update.
- Difference between 24/27? Very similar-- should be addressed in conjunction
- Issue which is authoritative DOI Publisher vs provider, corollary how to construct citation for dataset. Pub vs prov end up citing dif repo as location. @Erin came from data stewardship, but now a new cluster. Invite them? Conversation beyond datasets how to cite anything in scholarly landscape. //TODO
  - RDA BoF session Re-publication and duplication of data: Authority, Identity, Ethics Notes (Led by Jens)
- Jens work on IGSN add that to id's.org. Process started. Identifiers.org has a github can ping them there.
  - IGSN added to identifers.org https://github.com/identifiers-org/identifiers-org.github.io/issues/86
- RDA InteroperAble Descriptions of Observable Property Terminology WG (I-ADOPT WG) (in exploratory state - doing survey, gathering measures and definition) Notes from the RDA plenary session.
-
-

26th March 2020 (19:30 UTC)

Attendees

Adam Shepherd, Mark Servilla, Charles Vardeman, Megan Carter, Steve Richard, Matt Jones

Agenda

Reviewed v1.1 release plans and final issues.
- V1.1 https://github.com/ESIPFed/science-on-schema.org/milestone/4
- Action: Adam to finish up release housekeeping and get it out

Reviewed candidate issues for v1.2 release
17. V1.2 https://github.com/ESIPFed/science-on-schema.org/milestone/5
18. Chuck: Issue #72 discussed inclusion of prov:wasDerivedFrom (example: https://github.com/landrs-toolkit/LANDRS-o/blob/master/ontology.ttl#L320-331)

- ○ Comments that using PROV-O over schema:isBasedOn is preferred when appropriate
19. Chuck: [Issue #27](#) - highlight the work of [I-ADOPT working group at RDA](#). may need to wait for guidance coming out of that group
    - ○ Discussed desire to have I-ADOPT align with existing ENVO/OBO efforts on observed property types; see discussion in the ENVO github repo on adding large numbers of properties to ENVO for CF and related vocabularies

TO-DO:
1) Poke Matt Jones, Dave V. and Ruth for reviews of remaining Pull requests
2)

2nd March 2020 (22:00 UTC)

Attendees

Adam Shepherd, Nick Jarboe, Matt Jones, Dave Vieglais, Doug Fils, Megan Carter, Bandon W

Agenda

Reviewed v1.1 release plans and final issues.
- ● V1.1 https://github.com/ESIPFed/science-on-schema.org/milestone/4
- ● Action: Adam to finish up release housekeeping and get it out

Reviewed candidate issues for v1.2 release
20. V1.2 https://github.com/ESIPFed/science-on-schema.org/milestone/5
21. Identified 8 issues to be tackled, some of which are longer, some of which can be handled quickly
22. We can discuss whether some of the issues that require more work should be delayed to a following release. If we have some critical issues complete, we can move ahead with incremental releases
23. Discussed release approach; some advantages to doing frequent releases in the beginning, and then fewer to maintain stability once the guidelines have emerged

27th February 2020 (19:30 UTC)

Attendees

Matt Jones, Mark Schildhauer, Doug Fils, Chuck Vardeman, Adam Shepherd, Megan Carter, Nick Jarboe, Chantel Ridsdale, Mike Bobak

Agenda

- Use of `develop` branch and GitFlow model
    - Git rebase develop on master
- Version 1.1 Release Issues
  https://github.com/ESIPFed/science-on-schema.org/milestone/4
    - https://github.com/ESIPFed/science-on-schema.org/pull/81 - push to develop
    - Delete branch feature_74… and recreate off of develop
    - Identifiers
        - schema:value is the prefixed identifier value
        - schema:propertyID is the registry.identifiers.org URI for the identifier scheme
        - schema:url is some resolvable url for that identifier
        - schema:name (optional)

3rd February 2020 (22:00 UTC)

Attendees

Megan Carter, Robert Casey, Mingfang Wu, Nick Jarboe, Ruth, Brandon, Kai Blumberg, Brandon W.

Agenda

Version 1.1 Release Issues

https://github.com/ESIPFed/science-on-schema.org/milestone/4

Suggested potential time change for first Monday meetings time conflict with technical advisory committee for NSF earthcube program. Tentative time change to **22:30:00 UTC. @ADAM @DAVE @Doug does does work for you?**

Several ways to implement a DOI need to standardize. A specification can allow multiple alternative ways to do something, but a best practice should have a standard way as to converge upon a single implementation, so all markups are interoperable.

Each domain has it's own ways of doing things maybe don't' want to constrain, but then that hinders I in FAIR (code has to see 5 versions) vs everyone doing it the same way. Does it have a DOI is it formatted correctly, like a validation check on a field. INternally have ways of writing doi but for the external world everyone does it the same way, inhibits interoperability. ISO115 metadata standard everyone did it differently. Community to choose representation, in polar data forum it was an issue they wanted solved, better not to have a choice of best practices. Everyone do it the same way, no diverging profiles leading to the need to do translations. @RUTH proposed https://github.com/ESIPFed/science-on-schema.org/issues/13 is ready to go forward based on what is specified in @Matt Jone's comment https://github.com/ESIPFed/science-on-schema.org/issues/13#issuecomment-577446582

Is this for data repos that already mint DOI? Separate mapping to them for sake of schema.org? No, https, http, not have http, doi: etc. The far left of the doi.

https://github.com/ESIPFed/science-on-schema.org/issues/4

Made a descison propsoal
https://github.com/ESIPFed/science-on-schema.org/blob/master/decisions/4-dataset-metadata-distributions.md
Schema.org done's have a way of identifying the pieces of something, so for now this maybe ready however it's not in the long term complete. @Ruth missing ways of typing the contents of something, this term is related to this item (it's it's the later's metadata) or a browse image etc. Not just show what's it's pointing to but attributes associated with it.

https://github.com/ESIPFed/science-on-schema.org/blob/feature_4_dataset_metadata_distributions/guides/Dataset.md

@RUTH ADR looks good provided this is the updated and current-most diagram. This ARD is fine as is but the bigger issue of typing multiple kinds of relationships hasn't been resolved. Is this potentially a new issue?

For schema.org how deeply do we need these metadata relation descriptions? @Ruth thinks it depends on how much FAIR we want full FAIR. @Kai suggests having a set of relations like RO to be more FAIR. @Ruth should we be tackling best practices in terms of FAIR principles. If worried about findable do the first x, if A next ones etc.

@RUTH Comment on process, considering issues stale after one month of inactivity. Timeframe is very different for communities that meet on yearly timeframes etc. @Ruth Leading practice items should be separated into its own thing as the ppl working on it are data managers who are on a slower timeframe.

https://github.com/ESIPFed/science-on-schema.org/issues/74

@Ruth likes it. @Kai querying though rdf is already challenging enough to have consistent relations so that we can actually query. Everything should be stupidly simple and standardized so that we can make the data wilderness less messy not more. @Minfang semantic web is moving slower than NLP as NLP can handle much more variance in languages, semantic we need a consistent implementation to scale up. NLP doesn't require high precision of what are presented/represented

https://github.com/ESIPFed/science-on-schema.org/pull/81 Seems ready to go forward when ready.

All 4 issues in v1.1 milestone seem good to go (for now)!

Issue of navigating through these issues, difficult for documentation, can get confusing. Potential suggestion of using the github wiki for guidance docs etc. Problem with the current scheme two+ versions (branches master issue dev) 6 branches to look through to find the correct version, which may not persist across links.

Polar data repo community have a vocab and semantics working group monthly basis, polar groups should be on this. Mechanisms for everyone to be on the same page difficult can meet every year or so. CDF council of data facilities get updates at general meetings. Individual data centers need feedback for individual details, google colab seems a good way to share code -> express continuous datasets can share with Adam and Doug. Need to share beyond with other

data center type folks. USGS should have that kind of data stream flows etc. P419 folks have tools to check markups can use to validate. Their validators only use google advice so none of our new recommendations. Require more and different validators.

Notes

1. Ruth points out that this meeting is overlapping the EarthCube TACC meeting by ½ hour (21:30 UTC start). This may be an ongoing time conflict, so proposing that we discuss schedule change.

23rd January 2020 (19:30 UTC)

Attendees

Adam Shepherd, Kai, Ruth Duerr, Annie Burgess, Chantel Ridsdale, Dave Vieglais, Mark Servilla, Matt Jones, Mark Schildhauer, Nick Jarboe

Agenda

Version 1.1 Release Issues

https://github.com/ESIPFed/science-on-schema.org/milestone/4

Quick Updates

1. ESIP Winter Meeting Session
https://docs.google.com/document/d/1ycG9Dlt6xRr9wxjqkQrPkJQJvm83E34eue_cxkrSGUI/edit#heading=h.uk9b9n7dqnvg
2. Closed issues: giflow ARD dev branch, dataset licence using spdx URLs. Ruth OKs this.

Further Issues:

1. Ruth wants standards be VERY well specified and standardized so that validators checks make sense and enable IR from FAIR. Matt Jones has some proposals. Ruth to check language from SHOULD to MUST. MUST means a validor check. Warnings for SHOULD statements. Data stewardship committee to look at this more regularly along with semantics committee (activities perhaps converging).
2. Is it reasonable form harvesters perspective to take in incorrectly formated identifiers? From consumer's perspective prefer to have properties available with Controlled vocabs. Identifier for dataset is a MUST. Providers probably use some consistent identifier.

Example genomics community more variable identifiers, compact uri is dominant format for example protein databank identifiers. Datacite list identifiers.org lists. Property type makes this clear.

3. Property name. Name of identifier should be specific to DOI? Or should name be DOI. The name property is the name of the specific identifier, better value for name is paleodb:xxx . The property id is same as name, make property ID array? But having prop ID pointing at CV could be better isn't ATM. DOI value field excludes DOI: prefix, whats the diff between name and value here? PropID namespace where value is unique. ADAM: Perhaps make value the name?

Pull Request for Identifier guidance:
- EXAMPLE:

```
"identifier": [
        {
           "@type": "PropertyValue",
           "propertyID": "https://registry.identifiers.org/registry/paleodb",
           "name": "paleodb:83088",
           "value": "83088",
           "url": "https://identifiers.org/paleodb:83088"
        },
         {
           "@type": "PropertyValue",
           "propertyID": "https://registry.identifiers.org/registry/doi",
           "name": "doi:10.3174/ajnr.A5646",
           "value": "10.3174/ajnr.A5646",
            "url": "https://doi.org/10.3174/ajnr.A5646"
        },
         {
           "@type": "PropertyValue",
           "propertyID": "https://registry.identifiers.org/registry/pubmed",
           "name": "pubmed:16333295",
           "value": "16333295",
            "url": "https://www.ncbi.nlm.nih.gov/pubmed/16333295"
        }
]
```

Issue for Identifiers: @MATT doing
- Provide text about identifiers.org, how to find an identifier scheme, and translate an identifier from that scheme into a schema.org PropertyValue
- Dataset MUST have identifier and SHOULD have the other fields.

Issue to update CONNVENTIONS.md @DAVID doing
- MUST and SHOULD have reff to IRFC process to clarify semantics of MUST/SHOULD. Put in conventions document.
  "Terminology
    The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this

document are to be interpreted as described in "Key words for use in
RFCs to Indicate Requirement Levels" [RFC2119].
"

Adam likes Identifiers.org maybe easier than getting ppl to the datacite ontology. Ruth
many datacenters have to use the datacite, but its ok to use the identifiers as it's
superset (not ontologized yet). Matt SHOULD use prop values structure rather than bare
identifier. ADAM agrees on SHOULD. Upto harverts to interpret. Dave: easier if ppl have
same properties but can workaround it, therefore SHOULD is appropriate ID value very
import others are nice to have. Matt proposes: MUST provide ID but SHOULD use
structure. Some ppl will use dataset id as id value if so having id entries is useful. ID
same as URL may not capture some subtlety. MATT: Which ID is
authoritative/canonical? Name ID for dataset should be one of the urls listed in identifier
blocks?
David: MUST provide ID but SHOULD use structure/other values.

Metadata Linkage
- See
https://github.com/ESIPFed/science-on-schema.org/blob/feature_4_dataset_metadata_distributions/guides/Dataset.md#metadata
- Encoding format can accept url, want to ensure it follows iso, make field array of values
  so it's textXML and iso.
- Update PR #81 to include an example of using `schema:about` starting at the paragraph

  *Alternatively, if the schema.org record is meant to describe the
  metadata record, one could use the inverse property
  `schema:about` to indicate the linkage back to the Dataset that it
  describes. This would be a more rare situation, as typically the
  schema.org record would be focused on the Dataset itself.*

19th December 2019 (20:00 UTC)

Attendees

Adam Shepherd, Mingfang Wu, Erin Robinson, Megan Carter, Dave Vieglais, Ruther Duerr, Kai
Blumberg, Chantel Ridsdale, Doug Fils, Nick Jarboe

Quick Updates

1. [Ming] RDA Research Schemas WG - workshop co-located at RDA Plenary 15 -
   Melbourne, AUS (draft proposal:

https://docs.google.com/document/d/1eBky75YwaMDB2UMLlQqiCPIOOcQoQRMqUTEf JPdKny8/edit)

2. [Ruth] Data Stewardship Committee - each monthly (1st Thursday of month) telecon will take 20-30min going through the documentation
   a. Looking at github issue
3. [Adam] science-on-schema.org ½ workshop at AGU
4. [Adam] https://github.com/ESIPFed/science-on-schema.org/issues
5. [Adam] ESIP Winter Meeting schema.org AGENDA doc: https://docs.google.com/document/d/1ycG9Dlt6xRr9wxjqkQrPkJQJvm83E34eue_cxkrS GUI/edit#

Recently Active Github Issues

1. Using schema:subjectOf to reference Dataset metadata https://github.com/ESIPFed/science-on-schema.org/issues/4
   a. BCO-DMO implementation
   b. Need to discuss identifiers (Winter Meeting)
   c. Controlled vocabulary for metadata formats - seed with DataONE File Formats listing https://cn.dataone.org/cn/v2/formats
   d. SHACL shapes made public in the repo (see below)
   e. How to define when resource has been modified (schema:dateModified)
      i. DataONE cascading from file resource (DataDownload) then up to Dataset then into the metadata record then to sitemap datemodified.
   f. Can we add checksums for data and metadata?
      i. Can we use the schema:identifier property?
      ii. URN schema to indicate checksum?
         1. Old IETF draft, never ratified: https://tools.ietf.org/html/draft-thiemann-hash-urn-01

2. recommendation for indicating authoritative copy of dataset https://github.com/ESIPFed/science-on-schema.org/issues/37
   a. Jens Klump and others are organising a BoF about this topic at the RDA P15. Here is the BoF proposal: Improving data discovery through aggregated data search https://docs.google.com/document/d/1eBky75YwaMDB2UMLlQqiCPIOOcQoQR MqUTEfJPdKny8/edit
   b. Mingfang and her colleagues did an analysis here: https://docs.google.com/document/d/17hrcLpxcAA3_U3MZ3sWHrbaeNVa1k8yai gBzbjmxFHk/edit BSG-135: Detecting duplicates in RDA (Research Data Australia)

c. Issues with getting multiple records for the same dataset happens with Google data, as well as Polar data centers. Larger issue to tackle provenance of datasets with multiple reference urls/numbers/etc.

3. Standard way of specifying a well-defined identifier
   https://github.com/ESIPFed/science-on-schema.org/issues/13
   a. Link to issues 41 and 48

https://schema.org/citation definition may have changed
- Leyla Garcia from bioschemas.org is conferencing with Dan Brickley about the definition change

Actions

1. [Dave] Store SHACL shapes in ESIPFed/science-on-schema.org repo at the top-level called `shapes/`
   a. Use Turtle format (update the CONVENTIONS.md file to note this choice)
   b. Host on geoschemas.org ? https://github.com/geoschemas-org
      https://github.com/geoschemas-org/geoshapes (Doug's shacl shapes)
2. [Dave] Need to create an issue about how to define the dateModified
   a. If you make changes, make sure you update the sitemap content.
3. ~~[Adam] Need to create an issue about adding checksums for data and metadata?~~
   a. ~~Can we use the~~ schema:identifier ~~property?~~
   b. ~~URN schema to indicate checksum?~~
4. ESIP Winter Meeting Agenda: feel free to edit
   https://docs.google.com/document/d/1ycG9Dlt6xRr9wxjqkQrPkJQJvm83E34eue_cxkrSGUI/edit#

2nd December 2019 (22:00 UTC)

Attendees

Adam Shephard, Ruth Duerr, Chantel Ridsdale, Chuck Vardeman, Christine Laney, Chris Jones, Dave Vieglais, Kai, Matt Jones, Megan Carter

Announcements

1. **ESIP TestLab Call For Proposals**
   https://www.esipfed.org/lab/funding-opportunities/wrfp19
   Due: 1/10/2020

"We discussed this on the COR side as well see mmisw/orr-portal#130
If it would strengthen your proposal maybe shoot for service integration/resource sharing
with COR. Evening running Widoco or pyLODE on the shared AWS instance?" - Lewis
McGibbney (on Github Issue #54)

2. **EarthCube Call For Proposals**
   https://www.nsf.gov/pubs/2020/nsf20520/nsf20520.htm
   Due: 3/12/2020
   EarthCube: Developing a Community-Driven Data and Knowledge Environment for the
   Geosciences
   6-12 awards ($5M-$10M)

   1) Science-Enabling Data Capabilities and Pilots and
   2) EarthCube Research Coordination Networks.

3. **ESIP Winter Meeting Early Registration Deadline is this FRIDAY 12/6**
   https://2020esipwintermeeting.sched.com/
   Invite others to ESIP Winter Meeting with text here
   Direct link to registration: http://www.cvent.com/d/nyqrhv

   Matt Jones: Meeting at polar data forum: many other people may be interested in joining
   us here. Proposing issues.

   Ruth to write ESIP testbed proposal? Maybe not appropriate to testbed. Community
   wants it implemented (beyond discovery) Maybe we're getting to federated queries.
   Megan: Annie appropriate person to talk about testbed proposal. Also special project
   funding for clusters is available. Perhaps proposal writing as part of working session?
   https://www.esipfed.org/lab/funding-opportunities/wrfp19. Scheduled 4pm tuesday, could
   maybe do it then Due Jan 9th. **Mention idea to Annie Prior to get feasibility. Ruth will
   do**.

   Proposal template:
   https://docs.google.com/document/d/1G-GJfO2naJKliSyOxv4XR8VZqvqhsMr_tx7YNnPn
   Xjw/edit#heading=h.n70pclp2bqpc
   Testbed Proposal is at most $10,000 which is not intended for salaries.

   David V: Documentation shouldn't necessarily be a standalone document.

   Charles V: Can work with Lewis on the Widoco. [http://editor.zazuko.com/] Can build off
   Schema.org has proposal voting term selection, not for SWEET, but maybe
   GEOschema. **Chuck to reach out to Lewis about pyload/Widoco.** Creating of
   schema.org through editor, documentation of release through pyload/widoco reference

terms like linked data. Proposing a pipeline for the workflow, will look at this during ESIP winter meeting. Tool for domain experts like YAMZ (this I think https://yamz.herokuapp.com/) but maintained, nice features. They roughly plan on doing open source release. Widoco is a bit convoluted to actually use.

Licensing of ontologies needs to be considered some like DCAT2 have copy rights, be nice to have cc0 or public domain on everything but decision needs to be made. Schema.org license is CC3, software is apache2. We should try to stay consistent with Schema.org. CC3 is hard to change later, but CC0 is public throughout and can be picked up by others later. If we could assign copyright to ESIP to use CC3. **TODO Make issue about this**. Maybe we want ESIP to be the copyright holder?

[Adam] Licensing session at ESIP Winter: https://2020esipwintermeeting.sched.com/event/Xri6/license-up-what-license-works-for-you-and-your-downstream-repositories

Pull Requests

- **Changed http to https where possible**
  https://github.com/ESIPFed/science-on-schema.org/pull/57
  David V: Issue of using https vs http. Ticket was about namespace for schema.org consistence of trailing slash or not etc to be consistent. Seems to promote https doesn't mention trailing slash. Load JSON-LD into RDF without slash will get messed up. Matt J: thought its weird to change others namespaces changing the slash could be useful. Evaluate content, adoption of consistent namespace would be ideal, Matt J: validator should be checking this as a strict requirement. Ruth should be separate issues. Agressive to change all. Ensure trailing slashes for vocab. Separate issue for trailing issues? Matt J yes. Fine to change schema uri's is fine but don't make it super aggressive like http vs https, should isolate PR changes to vocabl lines in schema.org ****action item****. David V: see the conventions.md Better formalization strategy? How the schackel shapes get used. Ruth: clearly separating best practice guidance and why was deemed important by polar data forum. **David V to follow up on issue** (issue 52?)

  Related Issues
  - Recommendation for consistency in `schema.org` namespace
    https://github.com/ESIPFed/science-on-schema.org/issues/52
    - Discussion consensus was that we recommend using https and a trailing slash, and that the trailing slash would be required. As requested, I added a new issue for a SHACL shape for validating the namespace: https://github.com/ESIPFed/science-on-schema.org/issues/59

Recently Active Github Issues

https://github.com/ESIPFed/science-on-schema.org/issues?q=is%3Aissue+is%3Aopen+sort%3Aupdated-desc

4. specific recommendations for metadata distribution info
   https://github.com/ESIPFed/science-on-schema.org/issues/4
   David V: process of dataone harvesting need consistency. 3 Patterns mentioned in issue reoccur. Encoding discussed at summer meeting. Properties about & subject of (inverses) of each other. Used in RDA packaging work CRATE research object asserts a metadata entry is about or documenting another entity. Subject of inverse also works, both queryable via sparql. Preference for both the about maybe easier in the end. Ruth any reason to prefer about vs subject of? Construct of graph created is a little different. Putting properties on dataset instead of on metadata file. Data subject subject of metadata record when in properties. Are these same as SODO document properties? RUTH usecaase: both metadata record and documentation to dataset how to distinguish human readable non parsable document. Matt should be able to tell by doc type. For the subject of can talk about (make assertion about) the format (like ISO document). ADAM @David V Is there sufficient feedback for proposal as PR? **DAVID V: Will add in text as PR**.

5. Need to determine which data set fields are mandatory, recommended or optional
   https://github.com/ESIPFed/science-on-schema.org/issues/40
   a. How do we validate? SHACL tooling? EOI community using this to ensure confirmation.
      i. FUSEKI - has a validation endpoint that supports SHACL
      ii. Topbraid & pySHACL - can be used in a Jupyter notebook
      iii. Develop SHACL shapes for validation? (ESIP Testbed proposal) may not be useful for namespace check? Can validate if it's schema object or not.

6. recommendation for indicating authoritative copy of dataset
   https://github.com/ESIPFed/science-on-schema.org/issues/37

7. Standard way of specifying a well-defined identifier
   https://github.com/ESIPFed/science-on-schema.org/issues/13

Action Items

1. ~~[Adam] Did Chris Jones get invited to Github ESIPFed.~~
   a. ~~Got it Adam! I missed your invite after Annie's ESIPFed invite. All good.~~
2. [Ruth] Talk with Annie about ESIP Testbed proposal. Github Issue #43 & #45

3. [Chuck] Get in touch with Lewis McGibbney about pyLODE or WIDOCO schema.org. (*Github Issue #54*)
4. [Adam] Investigate Zazuko Editor for managing geoschemas.org and then using pyLODE or WIDOCO for generating the documentation
5. [Dave] Maybe too aggressive on the https requirement to just vocab lines and schema.org. Reply to https pull request and put together one for metadata recommendation.
6. [Dave] Pull request on Issue #4

ESIP Testbed Idea for schema.org
- SHACL shapes for validating markup
- Documenting the best practices and separating them out of the techie bits
- Providing guidance on schema.org markup for ontology documentation tools such as WIDOCO, pyLODE, and COR.

21th November 2019 (20:00 UTC)

Attendees

Adam Shepherd, Simon Cox, Nick Jarboe, Mingfang Wu, Kai Blumberg, Ethan Davis, Megan Carter, Christoper Jones, Chantel Ridsdale, David L. Blodgett, David Vieglais.

Agenda

1. News:
   a. Kai Blumberg, ESIP Fellow for our Cluster
   b. AGU Schema.org Workshop
      geoschemas.org: publishing schema.org as JSON-LD for the geosciences (SCIWS10)
      Date and Time: Monday, 9 December 2019: 8:00 - 12:20
      Signup: https://agu.confex.com/agu/fm19/meetingapp.cgi/Session/82757
      Registration closes November 27th; need at least 1 more in-person participant before AGU cancels the workshop
2. Github Issue Templates for
   a. Vocabulary Extension Request
   b. Guidance Document Change
   c. Seek guidance/consult from Matt Jones via Dave Vieglas or Steve Richard (via Ruth Duerr)?

3. **ESIP TestLab Call For Proposals**
   https://www.esipfed.org/lab/funding-opportunities/wrfp19
   Due: 1/10/2020

   IDEAS
   a. Review of Widoco doc ontology - its use of schema.org, proposal would recommend suggestions for ontology [Leads: Dave Vieglas, Ruth Duerr]
      GALLERY: http://dgarijo.github.io/Widoco/doc/gallery/
      i. **EXAMPLE**:
         http://linked.earth/ontology/core/1.2.0/index-en.html#CalibrationModel
         <!-- SCHEMA.ORG METADATA -->
         <script type="application/ld+json">{"@context":"http://schema.org","@type":"Tech Article","url":"http://linked.earth/ontology#","image":"http://vowl.visualdata web.org/webvowl/index.html#iri=http://linked.earth/ontology#","name":"The LiPD Ontology", "headline":"The Linked Earth Ontology aims to provide a common vocabulary for annotating paleoclimatology data", "datePublished":"4 April 2017", "version":"1.2.0", "license":"http://creativecommons.org/licenses/by/2.0/", "author":[{"@type":"Person","name":"Nick McKay","url":"http://www.cefns.nau.edu/~npm4/"},{"@type":"Person","name":"Julien Emile-Geay","url":"http://orcid.org/0000-0001-5920-4751"},{"@type":"Person","name":"Deborah Khider","url":"http://earth.usc.edu/~khider/"}], "contributor":[{"@type":"Person","name":"Yolanda Gil","url":"http://www.isi.edu/~gil/"},{"@type":"Person","name":"Daniel Garijo","url":"http://w3id.org/people/dgarijo"}]}]}</script>
      ii. **Another possible partner:** https://github.com/rdFLib/pyLODE is a Python implementation of LODE - developed to provide an alternative to LODE Online Service because that is not always up.
   b. Reduce overlap for schema.org tooling [Dave V.]
      i. Possibly hosting links at science-on-schema.org
      ii. Github Labels for filtering a list of projects
      iii. Describing activities/tools using schema.org markup
         1. RDA Research Metadata Schemas WG Activity (Mingfang)
            a. https://docs.google.com/document/d/11rGAojGefSDibP16Z TGLgT7yWDZNYyXhB-nhbOFDBwA/edit
            b. https://docs.google.com/spreadsheets/d/1qqxYXs_8eNRC YPlhSDLwRppSMCkQIWq2hWIb--HPPgM/edit#gid=0
4. New science-on-schema.org issues via Polar Data Forum (Github issue queue)
5. Action Items left from last telecon
   a. [Adam] Make a newsletter out of: (see notes below)
      i. Github weekly digest bot

Review IPFS newsletter as template to base off of ([issue #35](#))
     iii.	Yes vote on digest (Simon)
     iv.	Frequency: bi-weekly (Kai, Dave V. in general, Chantel agrees)
     v.	Immediate need could be just an email to the mailing list (Simon)

Kai: **[Why] Schema.org**
- Leveraging the tech stack for our own purposes
    - DataONE is harvesting data repositories
    - NSF EarthCube for Geoscience data repositories
- Synergies with Google harvesting
- Simon: when do you decide to reuse the schema.org framework or extend beyond? Can we use it as an RDF object and tags from other RDF resources such as ontologies/vocabs. Feature of schema all in same namespace but governance unclear to what degree of specialization. Hence we need to work toward guidelines.
- **Need for guidelines**
    - Example: describing Identifiers and need to step outside schema.org namespace for describing Identifier schemas (Datacite ontology)
    - Example: IGSN for Kerstin Lehnert
    - Polar Data Forum also raised the issue of Identifiers
- Kai: **Just using Schema.org for discoverability or could we address interoperability as well?**
    - Dave V: describing data packaging could help
    - Kai: example at Planet Microbe using Frictionless datapackages
    - Example research object crate describing dataset structures using schema.org https://researchobject.github.io/ro-crate/0.2/#core-metadata-for-the-root-data-entity
        - This [RDA GEDE Digital Object Topic Group](#) is implementing digital objects in Europe (not sure which ontology they are using, perhaps in their documentation)
    - Best practices for documenting systems doi: or http:/doi etc how to manage the strings or full uri's etc.
- Dave V: **Prefered namespace for schema.org?** Seems to be 3 current variants. http, https, trailing slash etc need consistency in namespace. Seem to be http no s. Either appropriate which is non-useful for future harvesters. Provide a proto community best practices document. @Dave B suggests https.
    - http://prefix.cc/sdo
    - http://prefix.cc/schema

- How to come to consensus on decisions? **General governance.**
    - Like from case of NetCDF-CF, need a strong moderator to make sure tasks follow the process. Assign moderator via assignment of issue on github. Establish repo moderators. Time limits on comments to avoid lingering issues. Come up with simple voting process (+1s) or something. Within constrained time

frame. Always triage tickets as they come in to make sure they are addressed and the community is aware of the issues
- **Repository Moderators:** Dave Vieglas (@datadavev), Christopher Jones (@csjx), Simon Cox ( )
- Periodic check-in with moderators if they want to step off?

RECAP

1. Kai Blumberg is our ESIP Fellow starting in December!
2. Idea for ESIP Testbed Proposal - develop guidance for using schema.org in ontology documentation (issue #54)
3. Nice discussion about the utility of schema.org outside of Google's use case. (here)
4. Decision to let interested people become moderators (github team) of science-in-schema.org repository - currently: Adam Shepherd, Doug Fils. Volunteered: Dave Vieglas & Christopher Jones (Adam emailed Annie Burgess to add Dave and Chris into the ESIPFed Github organization). Anyone else interested in moderating the guidance docs, please let us know (mailing list, Slack, email, carrier pigeon)!

4th November 2019 (5pm ET)

Attendees

Adam Shepherd, Chantel Ridsdale, Ruth Duerr, Nick Jarboe, Mingfang Wu, David Vieglais, Megan Carter, Joel Benn

Agenda

1. Science-on-schema.org weekly digest bot (example)
   a. [Ruth] How do we communicate as a group who may not be using Github?
   b. [Adam] Cluster Chair could curate weekly email (Github bot + Data Mgr thoughts)
   c. [Ruth] See IPFS weekly email for ideas about a weekly content
   d. [Dave] There are two tracts here: technical and curation
      i. We could push curation/DM-related schema.org issues to ESIP All
      ii. [Megan] Periodically for the Monday update;
         1. Machine Learning started a quarterly newsletter
2. Review Proposal for Governing science-on-schema.org (issue #30)
   a. [Ruth] Time limits for comment on proposed changes
   b. [Dave] Time limit helps
   c. [Ruth] Time limit with a cap of a few weeks; can be highlighted in weekly emails
   d. [Ruth] Adding guidance for catalog entries for Code, Semantic Resources, etc.
      i. Should we?

1. Yes votes [Dave, Adam, Ming, Chantel]
            ii.   If so, how?
                    1. Add to science-on-schema.org repository [Dave, Adam]
    e. What to do about other projects that have implemented schema.org for things like
       Code, Semantic Resources, etc.
            i.   Example - Widico - Wizard for Documenting Ontologies
            ii.   [Ruth] Where do put mention of Widoco?
            iii. [Adam] on README page here:
                  https://github.com/ESIPFed/science-on-schema.org#resources
            iv.   [Ruth] Should we engage Dan about a schema.org review?
            v.   [Dave] good idea, but can we spread the workload out?
            vi.   [Adam] **Ruth & Dave V. would be interested if funding through ESIP.**
            vii. [Ruth] Lab is best funding opportunity right now
3. Investigate schema.org release strategy (issue #29)
    a. [Ming] link to bioschemas.org RDA sessions (here is the link from a RDA call,
       and part of this slides from RDA P14.)
4. Reschedule 4th Thursday of month for Nov & Dec (issue #33)
    a.

Action Items

1. Ruth send an IPFS email to the mailing list
2. [Adam] Create the first post for mailing list
    a. What are the topics?
            i.   Beyond Datasets - Code, Research resources
            ii.   Issue : schema:encoding property for Dataset Metadata records
            iii. Governance strategy
3. Create Github Issue Templates (Chris Jones? via Dave V. or Steve R. via Ruth)
    a. Guidance Document template
    b. Vocabulary Extension template
4. Look at ESIP TestLab Call For Proposals - Review of Widoco doc - ontology schema.org
   Due: 1/10/2019 (https://www.esipfed.org/lab/funding-opportunities/wrfp19)
   CFP Google Doc: [links goes here]
5. [Adam] Reach out to Leyla about bioschemas.org presentation to ESIP
6. [Adam] Send Ruth punchlist of schema.org dataset issues

24th October 2019 (2:30pm ET)

Attendees

Adam Shepherd, Doug Fils, Matt Jones, Chris, Jones, Chantel Ridsdale, William Francis

Agenda

1. **Hot News**
   a. **ESIP Winter Meeting**
   b. **Schema.org @ RDA**
   c. **AGU geoschemas.org Workshop**
2. **Open Discussion**

Hot News

ESIP Winter Meeting

Submitted session: [Sustaining science-on-schema.org (Working Session / Business Meeting)](#)

AGU Schema.org Workshop

Workshop Title: geoschemas.org: publishing schema.org as JSON-LD for the geosciences (SCIWS10)
Date and Time: Monday, 9 December 2019: 8:00 - 12:20
Location: Grand Hyatt, Room: GB West
Information: https://agu.confex.com/agu/fm19/meetingapp.cgi/Session/82757

Research Metadata Schemas WG

SESSION NOTES:
https://docs.google.com/document/d/1UshlHlUPmV2FsLIOez8wLYnqYHCyqfyS-gnGIXLvclw/edit

1. Common Conceptual Model
2. Guideline alignment
   a. Bioschemas
   b. Science-on-schema.org / Geoschemas

        c.   EOSC-EDMI (https://eosc-edmi.github.io/crosswalk)
3. Acknowledging tooling

Notes

Science-on-schema.org - for new terms into core schema.org
- Work on proposals in our Github issue queue
- When ready, link it to schema-org github issue queue

Q: Can we integrate Github issue queue email with Mailing List?

Need for validation tool against guidance document.
https://fence.gleaner.io/

Schema.org / Codemeta editor from Force11 hackathon
● https://forge.softwareheritage.org/source/codemeta-generator/

Proposal for linking external metadata records:
- https://github.com/ESIPFed/science-on-schema.org/issues/4#issuecomment-520805754

Ideas for 2020 Winter Meeting Sessions

Meeting Types (from Call for Sessions)
● **Breakout Session**: presentation-style session with multiple speakers sharing lessons learned, a new tool, or new initiative.
● **Panel Session**: panel-style discussion with a group of experts who represent different perspectives on a common topic.
● **Workshop Session**: classroom-style session to teach attendees; hands-on, limited use of slides.
● **Working Sessions**: roundtable-style session where attendees work together on specific problem.
● **Business Meetings**: dedicated planning time for Collaboration Areas.

Idea (meeting type)	Description	Proposer	Votes (mark 'x')
Sustaining science-on-schema.org (Working Session / Business Meeting)	Walkthrough of the guidance documentation **Discussion:** * How do we govern as a cluster?	Adam Shepherd	xxxxx

	* Monitoring updates to schema.org? * Strategies for proposing changes to core schema.org? * Extensions at geoschemas.org		
Advancing Data Integration approaches with structured data web (style?)	I'm posting for Irina, so she might update it. A session on some of the work that is pushing schema.org (structured data on the web) into the realm of integration. Likely this scopes the work going on at NASA, at Geoscience Australia, etc...	Irina Bastrakova and Dave Blodgett	
Schema.org for Software and Research Objects (Working Session/Discussion)	Discuss the Force11 CodeMeta Task Force work on standardizing CodeMeta software metadata fields into schema.org, and on how to best annotate research objects that are a mix of data, software, and scientific products. The RDA data packaging recommendations describe how to best provide an RO manifest using JSON-LD, but it does not discuss the relationship with SO and HTML landing pages. Let's discuss the relationship of these with the ESIP guidance docs. Links: ● CodeMeta ● Force11 CodeMeta Task Force ● RDA RO Recommendations	Matt Jones (possibly remote)	xx
Publishing schema.org for Datasets (Hackathon Style)	Work through of the guidance documentation for the datasets folks want to work on **Agenda:** * Required fields * Recommended fields * Using vocabularies outside of schema.org * Validation	Ruth Duerr / Adam Shepherd	xxxx

...your idea goes here...			

7th October 2019 (5pm ET)

Attendees

Adam Shepherd, Charles Vardeman, Doug Fils, Mark Servilla, Ben Evans, Ruth Duerr, Joel Benn, Mingfang Wu, Gary Berg-Cross, Megan Carter, Brandon Whitehead, William Francis, Chantel Ridsdale, Christine Laney, Christopher Jones, Dave Vieglais, Reyna Jenkins

RDA: Mingfang, Chuck, Adam, ~~Matt Jones?~~

Agenda

3. **Cluster Plan: Goals & Strategic Actions of Cluster**
   ESIP Template: http://wiki.esipfed.org/index.php/Cluster_Plan_Template
4. **Review Winter Meeting Session Ideas**
   Call for Winter Meeting Sessions

Cluster Plan

Goals and strategic Actions proposed on the initial Cluster call:

GOALS

1. Providing guidance & resources to the geoscience community (Adam S., Steve R.)
   a. What guidance - publishing best practices. Modeling examples.
   b. [Ruth & Doug] Primer - How to get started.
   c. Help with elevating domain extensions?
   d. Other resources besides datasets (use cases, code/software, specifications, etc.)
   e. Getting volunteers to work on the guidelines.
   f. [Adam & Chuck - RDA] Governance - how do we agree – are decisions tethered to anything, like a use case?
      i. See Denise Hills (chair of the Governance Committee)
      ii. Define a workflow for bringing changes to the guidance documents.
         1. Github - technical component of the workflow
            a. Might not work for everyone that needs to review
            b. What else could we use besides Github (Loomio?)

iii.   Consistency with best practices (Gatekeeper?)
                        iv.   Potential roles:
                                1. Gatekeeper
                                2. Curator
                                3. Maintainer (technical)
            g. GOAL: to have ESIP Assembly endorse guidance documents (see 1a.)
                        i.   Assessment of how implementable it is (Council of Data Facilities)
    2. Liaising
            a. Seek input from external authorities (Chuck V.)
                        i.   Avoid reinventing the wheels
                        ii.   Are there broader communities that we can leverage?
                                1. RDA
                                2. ESIP-All
                                3. E2SIP!!!
                        iii.   A reference doc I assembled:
                                https://docs.google.com/document/d/1OajAN9y9Ebr1etUPy6PON6xdovm
                                u-ubFopYzYcUETL8/edit#
            b. with schema.org group (Dave V.)
            c. with other geoscience-related groups (for elevating issues to schema.org) (Doug
                F. & Brandon)
            d. Loomio for decision making (Brandon mentions ESIP might already have an
                account?)
    3. Extending core schema.org where appropriate
            a. See Action 6.
            b. Related to Liaising to schema.org group for guidance
            c. Bridging to other vocabularies and ontologies (or guidance on how to re-use
                them)
    4. Coordination and Architectures for Scientific Data Discovery
            a. Guidelines and profiles for scientific metadata aggregation using
                sitemap/schema.org
            b. Test-bed aggregation collaborations
                        i.   Optimisations for performance
                        ii.   Feedback to repositories on quality
                        iii.   Science specific discovery considerations
            c. Technical information sharing for scientific discovery portal operators and
                developers

STRATEGIC ACTIONS

    1. Governing https://github.com/ESIPFed/science-on-schema.org (Adam)
    2. Looking at bioschemas.org and others for lessons learned governing (Chuck)
    3. Keeping tabs on Research Data Alliance, ESIP, W3C, OGC, SELFIE, https://stacpec.org
        (Chuck, Doug, Brandon)

4. Providing feedback to Github schema.org group on geoscience topics & extensions
5. Using Github Issues for liaising (Chuck V.)
6. Formalize a process for gathering new additions to schema.org, and how do we support new contributors of data, different domains (Rob C.)

Review [Winter Meeting Session Ideas](#)

28th August 2019 (2:00 ET)

Attendees

Charles Vardeman, Doug, Dave Vieglais, Nick Jarboe, Mark Servilla, Ethan Davis, Julia Collins, Bob Dattore, Bryce Mecum, Rob Casey, Lisa Raymond, Stephen Richard, Christine Laney

Apologies

Matt Jones, Ruth Duerr, Lewis Mc, Chris Jones

Agenda

1. Meeting time discussion
   a. Review results of poll
   b. Note.. we have a lot of interest in this work from the Australian community. Do we want to consider one of these meetings at a time at least somewhat reasonable for them? Take a look at http://www.timebie.com/std/canberra.php?q=6 I think 4 PM ET is 6 AM Canberra. It seems like about as good as it gets if we want to try to.
   Better link from Simon:
   https://www.timeanddate.com/worldclock/meetingtime.html?iso=20190901&p1=152&p2=22&p3=137&p4=75&p5=76&p6=43
2. Discuss cluster format
   a. Proposal idea 1: Two meetings a month with one focused more on introduction, onboarding and publishing. With the other focused on deeper technical issues like vocabulary topics and architecture patterns.
   b. Develop initial set of topics like; approaches to shape files, identifying vocabulary patterns, vocabulary gaps (and how to address), etc.

Minutes

Who and Why Interested?

- **Bob Dattore** (NCAR Research Data Archive)- embedding schema.org already; keep updated; really interested in how the information is getting used - what's the impact?
- **Brandon** (CABi in the UK) - using schema.org, hoping to catch up a bit
- **Bryce Mecum (**NCEAS) - keeping track of schema.org
- **Chuck Vardeman** (Notre Dame) - help organizing this cluster
- **Christine Laney** (NEON) - working with schema.org to help make data more discoverable
- **Dave Vieglas** (DataONE) - schema.org for harvesting by DataONE; (Kansas Univ.) - schema.org for describing biodiversity resources
- **Doug Fils** (EarthCube, CSDCO) - worked in EarthCube for tools harvesting, validation of schema.org
- **Ethan Davis** (UCAR, UNIDATA) - data server software added schema.org to; interested in how to represent schema.org there
- **Julia Collins** (NSIDC) - reinvigorating schema.org; here to learn more
- **Mark Servilla** (EDI) - using schema.org over a year now; following on
- **Megan Carter** (ESIP) - facilitate and support cluster
- **Nick Jarboe** (MagIC) - staying in conversation to extend schema.org for geologic science
- **Rob Casey** (IRIS) - push to seismic archives described using schema.org
- **Steve Richard** (IEDA, EarthCube) - using schema.org through transforms of ISO metadata; working on EarthCube Resource Registry & representation so those resource descriptions using schema.org are consistent with community conventions
- **Debbie Roth** (WHOI)
- **Chris Jones** (NCEAS) - Interoperability among data repositories

Meeting Time - Survey

- Meeting Time: https://www.surveymonkey.com/r/C22SRCT
- Results: https://www.surveymonkey.com/results/SM-GJJPCNZY7/

Chuck V. - maybe pick two different date/times for meeting more than once a month
Steve R. - 2nd time looking at Thursday (2nd week and 4th week of month)

Steve R. - likes having more narrowly scoped meetings
Doug F. - 1) general meeting (Assessment, usage) and 2) technical meeting (extensions, harvesting, descriptions)
Brandon - seconds Doug's suggestion
Dave V. - second's suggestion for two

Megan - splitting teleconds topically, living agenda; oscillate and/or report out across both meetings; record the telecons
Brandon - seconds recording; mentions Github issues to help with Topics

Two Meeting Concept Notes

Technical Meeting
- Spatial patterns
- Temporal patterns
- Vocabulary extensions (geologic time, service description, etc)
- Cross connecting the networks (resource registry etc)
- Publishing patterns (server side, client side, re-hydration, etc)
- Mechanistic/Webmaster techniques - Rendering schema.org (Vue.js, etc.)
- Validation (SHACL, JSON-LD Framing, etc)
- Patterns for identifiers and links to related resources

General Meeting
- How to do "assessment"
- Use cases
- Available tools (Google SDTT, JSON-LD playground etc)
- Making "How To's"
- Best practices and guidelines
- "Awesome list" perhaps? Ie, like https://github.com/sindresorhus/awesome
- Mechanistic/Webmaster techniques - SEO, etc.
- Guest speakers from other communities like bioschemas
- Monthly schema.org change log update: ie like at https://schema.org/docs/releases.html
- On boarding approaches for new groups and data types…

ESIP Cluster Plan Template: http://wiki.esipfed.org/index.php/Cluster_Plan_Template. We will ask for this to be updated twice a year.

GOALS

5. Providing guidance to the community (Adam S., Steve R.)
6. Seek input from external authorities (Chuck V.)
7. Liaising with schema.org group (Dave V.)
8. Liaising with other geoscience-related groups (for elevating issues to schema.org) (Doug F. & Brandon)

STRATEGIC ACTIONS

7. Governing https://github.com/ESIPFed/science-on-schema.org (Adam)
8. Looking at bioschemas.org and others for lessons learned governing (Chuck)
9. Keeping tabs on Research Data Alliance, ESIP, W3C, OGC, SELFIE, https://stacpec.org (Chuck, Doug, Brandon)
10. Providing feedback to Github schema.org group on geoscience topics & extensions
11. Using Github Issues for liaising (Chuck V.)
12. Formalize a process for gathering new additions to schema.org, and how do we support new contributors of data, different domains (Rob C.)

To-Do

1. Populate http://wiki.esipfed.org/index.php/Cluster_Plan_Template
2. Pick Meeting Dates/Times
       Results: https://www.surveymonkey.com/results/SM-GJJPCNZY7/
3. Work through Goals & Objectives
4. Discuss ESIP Wiki vs. other ?

Future Happenings

- AGU
  - schema.org workshop
  - schema.org eLightning Session
    https://agu.confex.com/agu/fm19/webprogrampreliminary/Session81359.html
  - Data Help Desk as part of Data FAIR (hosted by ESIP & AGU and their partners)

Proposed Agenda Topics

QUEUE
1. Extension: OWL-Time [Adam Shepherd]
   https://github.com/earthcubearchitecture-project418/p419voctemporal
2. Guidance:
   a. Data Services [Adam Shepherd]
      https://github.com/earthcubearchitecture-project418/p419dcatservices
   b. Other resources [Steve Richards, Ruth Duerr]
3. Validation: Shape Graphs [Doug Fils]
4. Proposal for linking external metadata records for datasets:
   https://github.com/ESIPFed/science-on-schema.org/issues/4

5. Review past issues