

A Validation Service for COAR Notify Notifications

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<http://notify-inbox.info/>



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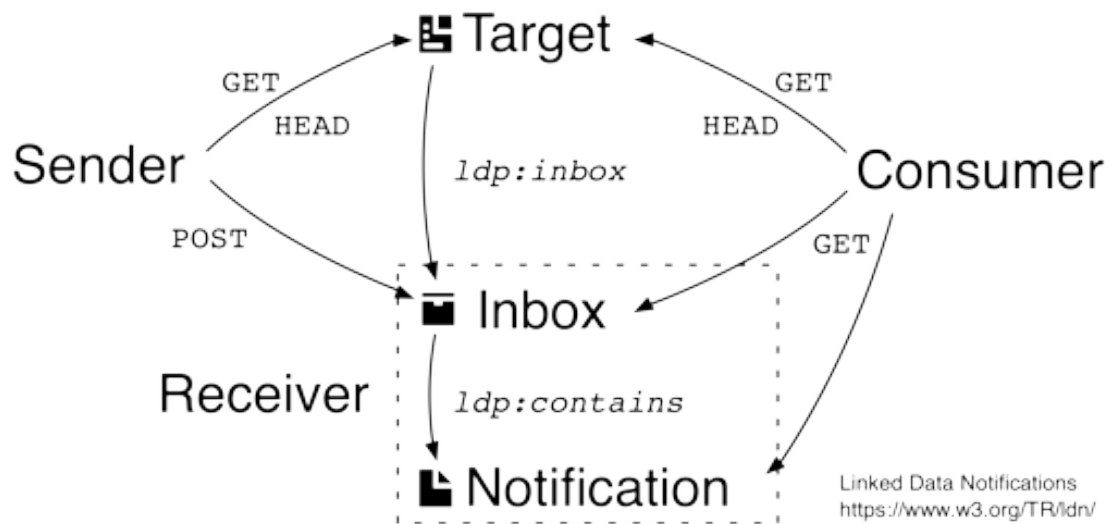


COAR Notify Technology 1/2

Linked Data Notification

- W3C standard
- simple HTTP transactions

<https://www.w3.org/TR/ldn/>



A Validation Service for COAR Notifications

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COAR Notify Technology 2/2

Activity Streams 2.0

- RDF serialized as JSON-LD
 - Machines love it!
- Minimal metadata
 - Pass by reference!
- Very few additions to the vocabulary
 - Interoperability!

<https://www.w3.org/TR/activitystreams-core/>

```
{
  "@context": [
    "https://www.w3.org/ns/activitystreams",
    "https://purl.org/coar/notify"
  ],
  "actor": {
    "id": "https://review-service.com",
    "name": "Review Service",
    "type": "Service"
  },
  "context": {
    "id": "https://research-organisation.org/repository/preprint/281283/421/",
    "ietf:cite-as": "https://doi.org/10.5555/12345688",
    "type": "sorg:AboutPage",
    "url": {
      "id": "https://research-organisation.org/repository/preprint/281283/421/content.pdf",
      "media-type": "application/pdf",
      "type": [
        "Article",
        "sorg:ScholarlyArticle"
      ]
    }
  },
  "id": "urn:uuid:94ecae35-dcfd-4182-8550-22c7164fe23f",
  "inReplyTo": "urn:uuid:8378c8fb-bb78-4a9b-87f5-bed307a589dd",
  "object": {
    "id": "https://review-service.com/review/geo/282183/0021",
    "ietf:cite-as": "https://doi.org/10.3214/987654",
    "type": [
      "Document",
      "sorg:Review"
    ]
  },
  "origin": {
    "id": "https://review-service.com/system",
    "inbox": "https://review-service.com/system/inbox/",
    "type": "Service"
  },
  "target": {
    "id": "https://research-organisation.org/repository",
    "inbox": "https://research-organisation.org/repository/inbox/",
    "type": "Service"
  },
  "type": [
    "Announce",
    "coar-notify:ReviewAction"
  ]
}
```

COAR Notify Validator

- Service available to all, aimed at implementers
- Jointly developed with a Notify LDN Inbox
- Provides a high-level validation of notifications' syntax and semantics
- Offers textual and visual validation feedback

Validation 1/2

```
{
  "@context": [
    "https://www.w3.org/ns/activitystreams",
    "https://purl.org/coar/notify"
  ],
  "actor": {
    "id": "https://orcid.org/0000-0002-1825-0097",
    "name": "Josiah Carberry",
    "type": "Person"
  },
  "id": "urn:uuid:0370c0fb-bb78-4a9b-87f5-bed307a509dd",
  "object": {
    "id": "https://research-organisation.org/repository/preprint/201203/421/",
    "ietf:cite-as": "https://doi.org/10.5555/12345600",
    "type": "sorg:AboutPage",
    "url": {
      "id": "https://research-organisation.org/repository/preprint/201203/421/content.pdf",
      "mediaType": "application/pdf",
      "type": [
        "Article",
        "sorg:ScholarlyArticle"
      ]
    }
  },
  "origin": {
    "id": "https://research-organisation.org/repository",
    "inbox": "https://research-organisation.org/inbox/",
    "type": "Service"
  },
  "target": {
    "id": "https://review-service.com/system",
    "inbox": "https://review-service.com/inbox/",
    "type": "Service"
  },
  "type": [
    "Offer",
    "coar-notify:ReviewAction"
  ]
}
```

- Serialization: inbox only accepts **text/ttl** or **application/ld+json** mime types
- Syntax: if the contents of the submitted turtle or json file can not be parsed into an **RDF graph** using rdflib, the content will not be accepted

Validation 2/2

- Semantics: SPARQL queries executed against the RDF graph to extract key data such as “actor” (author of a manuscript requesting peer review)

```
{
  "@context": [
    "https://www.w3.org/ns/activitystreams",
    "https://purl.org/coar/notify"
  ],
  "actor": {
    "id": "https://orcid.org/0000-0002-1825-0097",
    "name": "Josiah Carberry",
    "type": "Person"
  },
  "id": "urn:uuid:0370c0fb-bb78-4a9b-87f5-bed307a509dd",
  "object": {
    "id": "https://research-organisation.org/repository/preprint/201203/421/",
    "ietf:cite-as": "https://doi.org/10.5555/12345680",
    "type": "sorg:AboutPage",
    "url": {
      "id": "https://research-organisation.org/repository/preprint/201203/421/content.pdf",
      "mediaType": "application/pdf",
      "type": [
        "Article",
        "sorg:ScholarlyArticle"
      ]
    }
  },
  "origin": {
    "id": "https://research-org",
    "inbox": "https://research-",
    "type": "Service"
  },
  "target": {
    "id": "https://review-servi",
    "inbox": "https://review-se",
    "type": "Service"
  },
  "type": [
    "Offer",
    "coar-notify:ReviewAction"
  ]
}
```

The image shows a JSON-LD snippet with two callouts. The first callout, a black-bordered box, highlights the "actor" object in the top-level JSON. The second callout, a larger black-bordered box, highlights the "actor" object within the "origin" object. A black arrow points from the "actor" object in the top-level JSON to the "actor" object in the "origin" object.

Validation 2/2

```
{
  "@context": [
    "https://www.w3.org/ns/activitystreams",
    "https://purl.org/coar/notify"
  ],
  "actor": {
    "id": "https://orcid.org/0000-0002-1825-0097",
    "name": "Josiah Carberry",
    "type": "Person"
  },
  "id": "https://research-organisation.org/repository/123456789",
  "object": {
    "id": "https://research-organisation.org/inbox/123456789",
    "type": "Offer",
    "url": "https://research-organisation.org/inbox/123456789",
    "type": "coar-notify:ReviewAction"
  },
  "origin": {
    "id": "https://research-organisation.org/repository",
    "inbox": "https://research-organisation.org/inbox/",
    "type": "Service"
  },
  "target": {
    "id": "https://review-service.com/system",
    "inbox": "https://review-service.com/inbox/",
    "type": "Service"
  },
  "type": [
    "Offer",
    "coar-notify:ReviewAction"
  ]
}
```

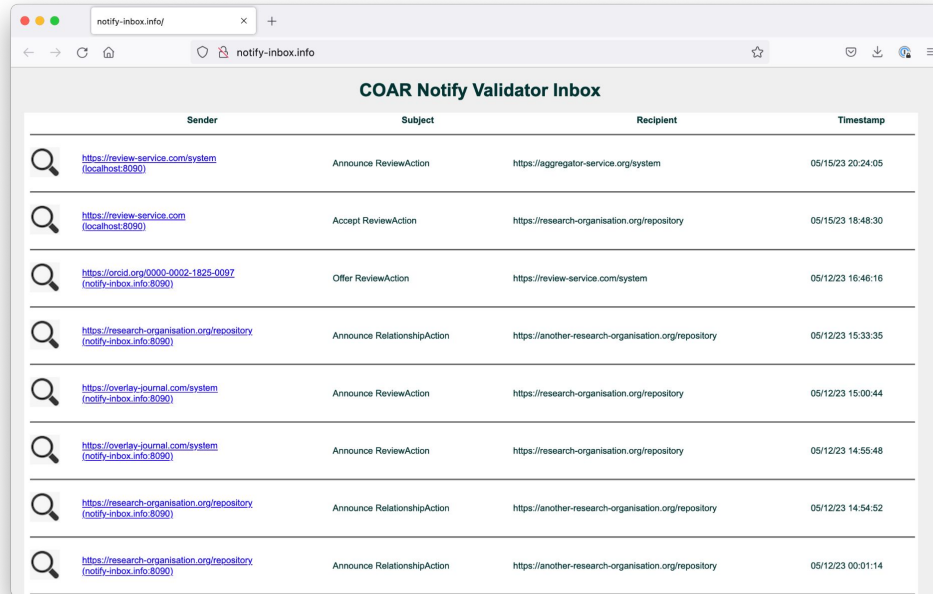
- Semantics: SPARQL queries executed against the RDF graph to extract key data e.g., notification type
- Shape validation via shacl validation files

Currently Implemented Validation Patterns

- Acknowledge and Accept
- Acknowledge and Reject
- Acknowledge and Tentative Accept
- Acknowledge and Tentative Reject
- Announce-Endorsement
- Announce-Ingest
- Announce-Relationship
- Announce-Review
- Announce
- Offer-Review
- Offer-Ingest
- Offer-Review
- Undo

<https://notify.coar-repositories.org/patterns/>

http://notify-inbox.info/



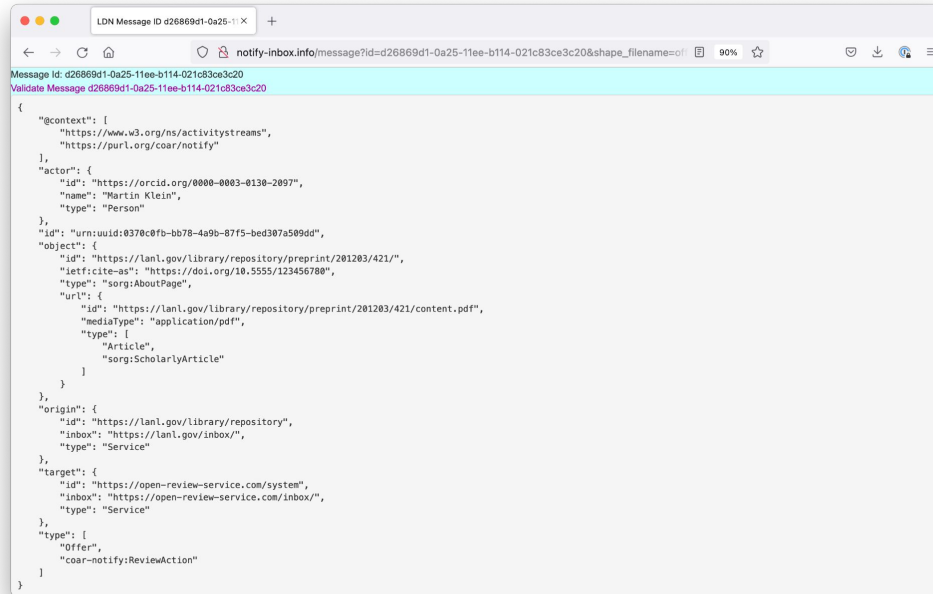
| | Sender | Subject | Recipient | Timestamp |
|---|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------------|
| 🔍 | https://review-service.com/system (localhost:8090) | Announce ReviewAction | https://aggregator-service.org/system | 05/15/23 20:24:05 |
| 🔍 | https://review-service.com (localhost:8090) | Accept ReviewAction | https://research-organisation.org/repository | 05/15/23 18:48:30 |
| 🔍 | https://orcid.org/0000-0002-1825-0097 (notify-inbox.info:8090) | Offer ReviewAction | https://review-service.com/system | 05/12/23 16:46:16 |
| 🔍 | https://research-organisation.org/repository (notify-inbox.info:8090) | Announce RelationshipAction | https://another-research-organisation.org/repository | 05/12/23 15:33:35 |
| 🔍 | https://overlay-journal.com/system (notify-inbox.info:8090) | Announce ReviewAction | https://research-organisation.org/repository | 05/12/23 15:00:44 |
| 🔍 | https://overlay-journal.com/system (notify-inbox.info:8090) | Announce ReviewAction | https://research-organisation.org/repository | 05/12/23 14:55:48 |
| 🔍 | https://research-organisation.org/repository (notify-inbox.info:8090) | Announce RelationshipAction | https://another-research-organisation.org/repository | 05/12/23 14:54:52 |
| 🔍 | https://research-organisation.org/repository (notify-inbox.info:8090) | Announce RelationshipAction | https://another-research-organisation.org/repository | 05/12/23 00:01:14 |

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http://notify-inbox.info/



```
LDN Message ID d26869d1-0a25-11e-11ee-b114-021c83ce3c20
notify-inbox.info/message?id=d26869d1-0a25-11ee-b114-021c83ce3c20&shape_filename=of
Message Id: d26869d1-0a25-11ee-b114-021c83ce3c20
Validate Message d26869d1-0a25-11ee-b114-021c83ce3c20
{
  "@context": [
    "https://www.w3.org/ns/activitystreams",
    "https://purl.org/coar/notify"
  ],
  "actor": {
    "id": "https://orcid.org/0000-0003-0130-2097",
    "name": "Martin Klein",
    "type": "Person"
  },
  "id": "urn:uuid:0370cefb-bb78-4a9b-87f5-bed307a509dd",
  "object": {
    "id": "https://lanl.gov/library/repository/preprint/201203/421/",
    "ietf:cite-as": "https://doi.org/10.5555/123456780",
    "type": "sorg:AboutPage",
    "url": {
      "id": "https://lanl.gov/library/repository/preprint/201203/421/content.pdf",
      "mediaType": "application/pdf",
      "type": {
        "Article",
        "sorg:ScholarlyArticle"
      }
    }
  },
  "origin": {
    "id": "https://lanl.gov/library/repository",
    "inbox": "https://lanl.gov/inbox/",
    "type": "Service"
  },
  "target": {
    "id": "https://open-review-service.com/system",
    "inbox": "https://open-review-service.com/inbox/",
    "type": "Service"
  },
  "type": [
    "Offer",
    "coar-notify:ReviewAction"
  ]
}
```

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ToDos

- Dereference URIs, check for status
- Improve quality of textual validation feedback
- Generalize to validate against Event Notifications Spec
<https://www.eventnotifications.net/>
- User Interface

In Summary

- Inbox and validation service available to COAR Notify implementors
- Various levels of validation (mime type, syntax, semantics)
- Pilot, development ongoing, all feedback welcome!

<http://notify-inbox.info/>

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