



DSpace Entities

Sep 4th, 2018

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Introduction

- **Original proposal:**

- https://docs.google.com/document/d/158OKVGy_fXNH04K_-OTft1_hi7Zljmb3bUSDKigWoRo

- **High level specifications:**

- Avoid hard-coding a particular object model
- Start from the DSpace Item object
- Items can be typed, relations can be created
- Implementation of a data model is configurable

Introduction

- **Prototype implementation**

- **Documentation**

- <https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1IuTVGmxDIIdnqvwXM>

- **Code**

- ANGULAR: <https://github.com/atmire/dspace-angular/tree/entities>
 - REST API: https://github.com/atmire/DSpace/tree/w2p-51058_dspace7-entities

- **Demo server**

- <https://dspace7-entities.atmire.com/home>

Configuration of the entity types and their relations

- Data model is configurable in XML
- Example relationship Publication and Person:

```
<relationships>
  <type>
    <leftType>Publication</leftType>
    <rightType>Person</rightType>
    <leftLabel>isAuthorOfPublication</leftLabel>
    <rightLabel>isPublicationOfAuthor</rightLabel>
    <leftCardinality>
      <min>0</min><!--<max></max> not specified, unlimited-->
    </leftCardinality>
    <rightCardinality>
      <min>0</min>
    </rightCardinality>
  </type>
</relationships>
```

Configuration of the entity types and their relations

- Documentation: <https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1IuTVGmxDIIdnqvwXM#heading=h.46e60l5ak216>
- The XML file to configure the data model can be processed into the database by a script and it will read each relationship in the configuration file.
- https://github.com/atmire/DSpace/blob/w2p-51058_dspace7-entities/dspace-api/src/main/java/org/dspace/app/util/InitializeEntities.java

Database Storage

- Type of entity is stored in the item table.
- New tables:
 - store the relationship configuration: one row per relationship type from the XML
 - store the actual relations, containing a row per relation between two entities.
- Default DSpace database tables have not been modified: entity type is item metadata
- Flyway will create tables to store the entity type and relationship configuration.

Java API

- The implementation only requires classes to:
 - retrieve the relationship schema,
 - identify the entity type of the current item,
 - identify which relations can be created for the current item's type, and
 - retrieve all current relations of the item
- Docs: <https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1luTVGmxDIIdnqvwxM/edit#heading=h.pcouajmq04iz>

DSpace 7 REST API

- The DSpace REST API has been extended to represent:
 - an Entity Type,
 - a Relationship Type,
 - and a Relationship.
- For these objects, Services have been created to easily create, retrieve, update, delete them.
- Docs: <https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1luTVGmxDIIdnqvwxM/edit#heading=h.fhfalhjjh1kc>

DSpace 7 Angular UI

- Display the relations on item pages
 - The entity type switcher component
 - The entity type decorator
- Custom item pages based on the entity type
 - Modifying the item display fields per entity type is made easy with `entity-page-fields.component.ts`: contains the common functionality for using entities on an item page.
- Only section where the source code needs has been modified based on the chosen model.

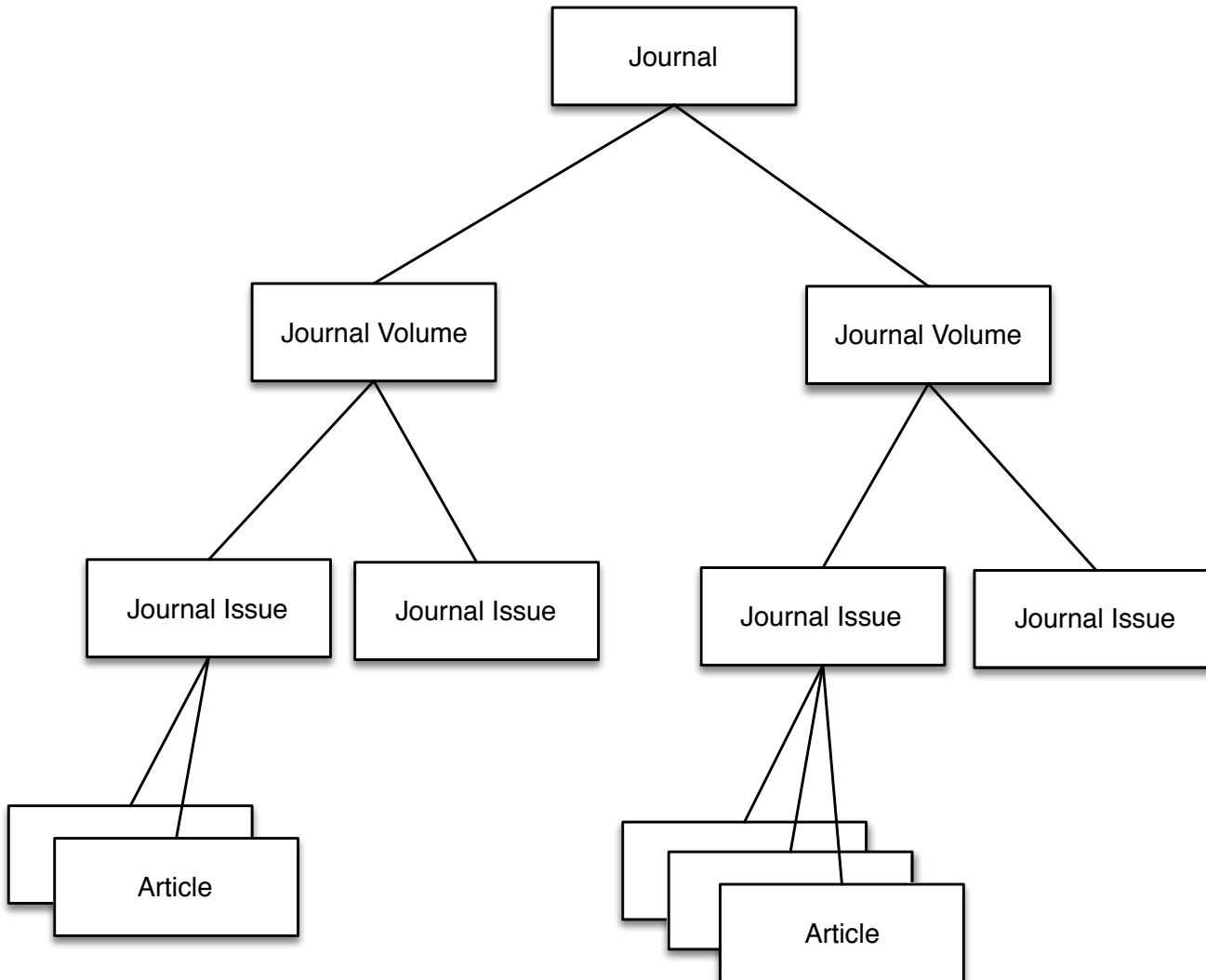
DSpace 7 Angular UI

- Virtual Metadata
 - Related entities as relations should not require duplicated storage of metadata.
 - Populate one entity with the metadata of other entities
 - ensure this is available independent of how metadata is retrieved (OAI, SWORD, REST, ...).
 - Example:
 - If authors are included using relations to a Person object, the author name can be virtually included as `dc.contributor.author`.
- Docs: <https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1luTVGmxDIdnqvwxM#heading=h.5bo9g6294oai>

Configuration of other functionality to support entities

- Search for entity types
 - facet for the different entities
 - option to create separate discovery pages with a predefined filter
- Batch import for entity types
 - entity type is part of metadata
 - has been modified to support importing relations to other entities.
- Submission forms per entity type
- Workflow for entity types
- Community/collection list for entity types

Example Use Case: Journals



Environmental & Architectural Phenomenology



**Environmental &
Architectural
Phenomenology**

ISSN

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Publisher

Kansas State University

Volumes

[Environmental & Architectural Phenomenology Volume 29 \(2018\)](#)

[Environmental & Architectural Phenomenology \(29\)](#)

[Environmental & Architectural Phenomenology Volume 28 \(2017\)](#)

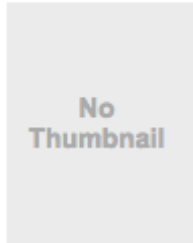
[Environmental & Architectural Phenomenology \(28\)](#)

Description

Environmental & Architectural Phenomenology, published two times a year, is a forum and clearing house for research and design that incorporate a qualitative approach to environmental and architectural experience and meaning. One key concern of EAP is design, education, and policy supporting and enhancing natural and built environments that are beautiful, alive, and humane. Realizing that a clear conceptual stance is integral to informed research and design, the editor is most interested in phenomenological approaches but also gives attention to related styles of qualitative research.

Related items: 2 journal volumes

Environmental & Architectural Phenomenology Volume 29 (2018)



Volume

29

Issue Date

2018

Journal

Environmental & Architectural Phenomenology

10839194

Issues

Environmental & Architectural Phenomenology Vol. 29,

No. 1

29 - 1

Description

The 29th volume of Environmental & Architectural Phenomenology

Related item: Journal

Related item: Issue in volume

VOLUME of JOURNAL

```

x-content-type-opti
x-frame-options: DE
connection: close
content-type: application/hal+json;charset=UTF-8
cache-control: no-cache, no-store, max-age=0, must-revalidate
transfer-encoding: chunked
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Properties

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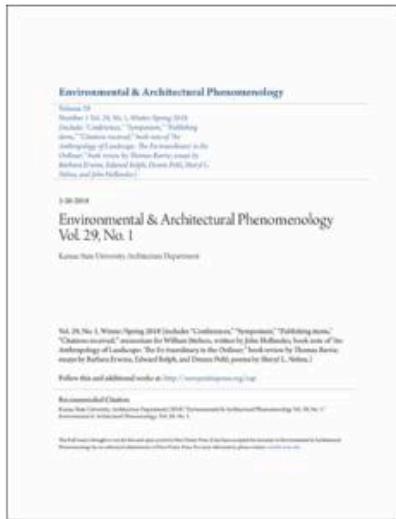
Virtual metadata

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  "language": ""
},
{
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  "value": "The 29th volume of Environmental & Architectural Phenomenology",
  "language": ""
},
{
  "key": "journal.identifier.issn",
  "value": "10839194",
  "language": "*"
}

```


Environmental & Architectural Phenomenology Vol. 29, No. 1



Number
1
Issue Date
2018

Related item: Volume

Volume
[Environmental & Architectural Phenomenology Volume 29 \(2018\)](#)
 Environmental & Architectural Phenomenology (29)

Articles
[TestArticle3](#)
 (2018-05-17) DeLanghe, Kristof

Description

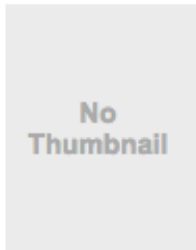
Vol. 29, No. 1, Winter/Spring 2018 (includes "Conferences," "Symposium," "Publishing items," "Citations received;" memoriam for William Itterson, written by John Hollander; book note of "An Anthropology of Landscape: The Extraordinary in the Ordinary;" book review by Thomas Barrie; essays by Barbara Erwine, Edward Relph, and Dennis Pohl; poems by Sheryl L. Nelms.)

Keywords

- Environmental psychology
- Environmental aspects
- Periodicals, Human beings
- Effect of environment on Periodicals, Architecture
- Periodicals, Architecture
- Human factors
- Periodicals, Architecture
- Psychological aspects
- Periodicals, Phenomenology
- Periodicals

Related item:
Article in issue

TestArticle3



Date
2018-05-17

Authors
 DeLanghe, Kristof
 Software Developer

Org Units
 The London Eye
 Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi archit

Journal Issue
 Environmental & Architectural Phenomenology Vol. 29,
 No. 1
 29 - 1

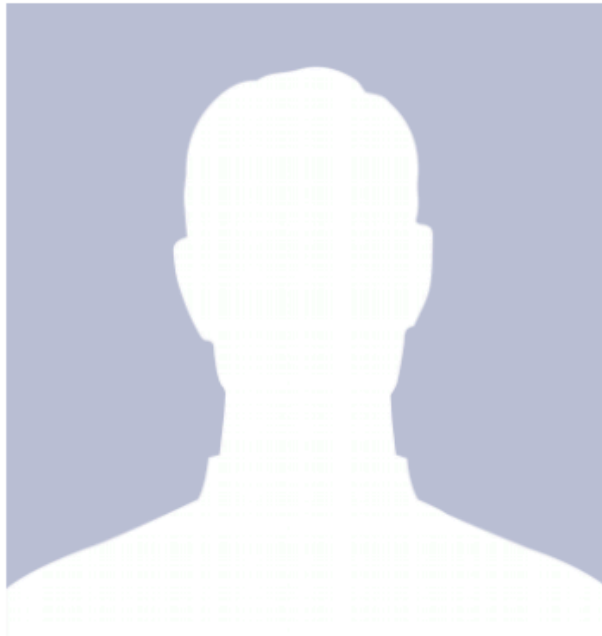
Abstract
 URI
 Collections
 Articles

Author entity type



Related item:
Article in issue

DeLanghe, Kristof



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kristof.delanghe@atmire.com

ORCID

0000-2222-1111-3333

Birth Date

1994-01-01

Staff ID

2123456789

Publications

Related publications

TestTheses1

(2018-05-17) Van de Velde, Kevin Ponsaerts, Raf DeLanghe, Kristof

TestTheses3

(2018-05-17) Ponsaerts, Raf DeLanghe, Kristof

TestArticle3

(2018-05-17) DeLanghe, Kristof

TestBook1

(2018-05-17) Van de Velde, Kevin Ponsaerts, Raf DeLanghe, Kristof

TestBook3

(2018-05-17) DeLanghe, Kristof Van de Velde, Kevin

TestArticle2

(2018-05-17) DeLanghe, Kristof Ponsaerts, Raf

TestArticle1

DeLanghe, Kristof Van de Velde, Kevin Ponsaerts, Raf

Projects

Related projects

Upgrade Parking Lots

DELAYED

First project of the functionality

COMPLETED

TestProject1

ONGOING

Org Units

The London Eye



Search DSpace

Search

Filters

Author +

Subject +

Date +

Has files +

Entity Type -

 Publication 9 JournalIssue 7 JournalVolume 4 OrgUnit 3 Person 3[Show more](#)

Entity Type

Search Results

Now showing items 1 - 10 of 43

[TestArticle2](#)

(2018-05-17) DeLanghe, Kristof Ponsaerts, Raf

[TestArticle1](#)

DeLanghe, Kristof Van de Velde, Kevin Ponsaerts, Raf

[La Louvre](#)

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[TestBook1](#)



Search DSpace

Search

Filters

Author +

Subject +

Date +

Has files +

Entity Type -

JournalIssue

Entity Type

Search Results

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[Environmental & Architectural Phenomenology Vol. 28, No. 2](#)

28 - 2

[Environmental & Architectural Phenomenology Vol. 29, No. 1](#)

29 - 1

[Environmental & Architectural Phenomenology Vol. 28, No. 1](#)

28 - 1

[Editorial, Volume 7, Issue 1](#)

7 - 1

[Editorial, Volume 7, Issue 2](#)

7 - 2

Work estimates

- **For the generic data model:**

- ~~Designing the model & integration in DSpace 7: already completed~~
- ~~Changes to the database (new tables and corresponding Java classes): 1 day~~
- ~~Changes to the REST API: 4 days~~
- ~~Changes to the Angular UI: 6 days~~
- ~~Changes to the submission: 3 days~~
- ~~Changes to the batch import: 2 days~~

Work estimates

- **For the CRIS use case:**

- ~~Configuration of entities and relations: 1 day~~
- Submission form: 2 days
- ~~Search config: 2 days~~
- ~~Community list config: 1 day~~
- ~~Item display config: 3 days~~
- (optional) Automatic setup of configs: 8 days

- **For the Journal use case:**

- ~~Configuration of entities and relations: 1 day~~
- Submission form: 2 days
- ~~Search config: 2 days~~
- ~~Community list config: 1 day~~
- ~~Item display config: 3 days~~
- (optional) Automatic setup of configs: 8 days