

# Semantic Media Management with Apache Marmotta

<http://marmotta.apache.org/events/iswc2014>



**ISWC 2014**  
Riva del Garda - Trentino, Italy

The 13th International Semantic Web Conference

19-23 October 2014

# Who Am I



## Thomas Kurz



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## Committer at the **Apache Software Foundation**

also...

Lecturer at **Fachhochschule Salzburg**

Senior Researcher at **Salzburg Research**

Partner and Solution Architect at **Redlink GmbH**

# Linked Media

is a “Web scale layer of structured, interlinked media annotations (...) inspired by the Linked Data movement for making structured, interlinked descriptions of resources better available online.”

Lyndon J. B. Nixon. The importance of linked media to the future web: lime 2013 keynote talk - a proposal for the linked media research agenda. WWW Companion Volume, page 455-456. International World Wide Web Conferences Steering Committee / ACM, (2013).

# Plan for the next hour

Create a new module for Apache Marmotta which supports a simple Semantic Media Management workflow, including:

- Storing images
- Annotating image fragments
- Retrieving images and image fragments based on annotations

# Technologies

- Linked Data Platform
- Media Fragment URIs
- Open Annotation Model
- SPARQL-MM

# Media Fragment URIs

"... a media-format independent, standard means of addressing media fragments on the Web using Uniform Resource Identifiers."

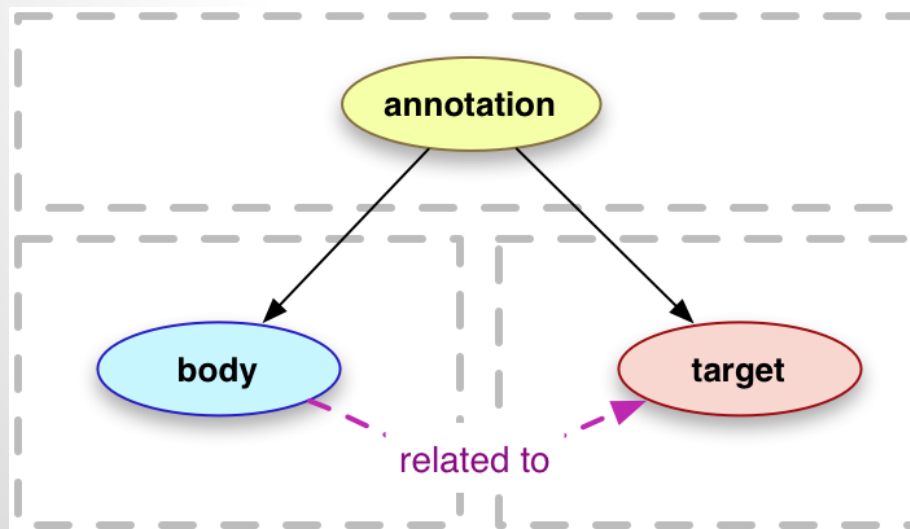
[\[W3C Recommendation: Media Fragments URI 1.0 \(basic\)\]](#)

```
http://test.org/video.mpg?t=10,20&xywh=10,20,30,40
```

# Open Annotation Model

The Open Annotation Core Data Model specifies an interoperable framework for creating associations between related resources (...).

<http://www.openannotation.org/spec/core/>



# SPARQL-MM

## Multimedia Extension for SPARQL

<https://github.com/tkurz/sparql-mm>

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX mm: <http://linkedmultimedia.org/sparql-mm/functions#>

SELECT ?f1 ?f2 (mm:boundingBox(?f1,?f2) AS ?box) WHERE {
  ?f1 rdfs:label "a".
  ?f2 rdfs:label "b".
  FILTER mm:rightBeside(?f1,?f2)
}
```



# Eat your own dog foot

- Post images to LDP
- Create annotations for Image Fragments with LDP and OA
- Retrieve and display (aggregated) Image Fragments with SPARQL-MM

# What we gonna do

- Create a Marmotta Module which extends LDP to Image Fragments
- Create a Marmotta Webapp which a nice UI for Image Annotation and Retrieval

# *grazie!*

acknowledgments to the [MICO](#)  
FP7 project (grant no. 610480)



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