



Trendy Practices and Tools in Ontological Engineering

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🐦 @MariaPovedaV

📅 7th September 2018
📍 Zaragoza

Directors: Asunción Gómez-Pérez, Oscar Corcho

Position: 8º ranking UPM (200 groups)

Research group (30 people)

- 3 Full Professors
- 5 Associate Professors
- 3 Assistant Professors
- 7 Senior Postdocs
- 6 PhD Students
- 2 MSc and BSc Students
- 2 software engineers
- 1 system administrator
- 2 project managers

170+ Collaborations

50+ Visitors

<http://www.oeg-upm.net/>



<https://github.com/oeg-upm>



[@oeg-upm](https://twitter.com/oeg-upm)



- **Created in 1995**
- **World-wide known in the research areas**
 - Ontologies
 - Semantic Web and Linked Data
 - Multilingual linked Data
 - Open Data
 - eScience
- **Projects (> 12M€)**
 - 27 EU projects (7 as coordinator)
 - 54 National Projects
 - 27 contracts with companies
- **Publications**
 - > 100 journal papers
 - > 400 International conferences and book chapters
 - 7 Books
- **Impact of publications**
 - Asunción Gómez-Pérez (h:58, 20,000 citations)
 - Oscar Corcho García (h: 44, 11,000 citations)
- **Services to the community**
 - Host esDbpedia
 - Host linkeddata.es
 - Ontology development services
- **Awards and Prizes**
 - Ada Byron
 - Aritmel
 - Juan López de Peñalver
 - Fujitsu, Open data, ISWC, ESWC
 - SUR Awards Watson for Tech. Watch
- **Supervision of students**
 - 28 Ph.D thesis (9 awarded best thesis prize)
 - >150 MS.C thesis and BS.C
- **Events organization**
 - 11 editions of the International Summer School on Ontological Engineering and the Semantic Web
 - > 50 WS and tutorials
- **Standardization activities**
 - >25 @ W3C, ISO, OASIS, etc.
- **Mobility**
 - PhD students: 3-6 months abroad
 - Postdocs: 1 month every 2 years
- **Visibility**
 - Program chairs of ESWC, ISWC, KCAP, EKAW, TKE, TIA
 - Editorial board of Journals
 - Invited talks at conferences and events
 - Programme Committee presence



W3C- World Wide Web Consortium

- Web of Things Working Group
- Web of Things Interest Group
- LBD Community Group
- BPMLOD: Best Practices for Multilingual Linked Open Data Community Group
- CSV on the Web Working Group
- eGovernment Interest Group
- Library Linked Data Incubator Group
- LD4LT: Linked Data for Language Technologies Community Group
- LDP: Linked Data Platform Working Group
- Media Annotations Working Group
- ODRL Community Group
- Ontolex: Ontology Lexica Community Group
- prov: Provenance Working Group
- prov-xg: Provenance Incubator Group
- Research Object for Scholarly Communication Community Group
- RDB2RDF Working Group
- Semantic Sensor Networks Community Group
- SPARQL Working Group
- SDW: Spatial Data on the Web Working Group
- RDF Stream Processing Community Group
- Open Linked Education Community Group
- Bioschemas for Lifesciences Community Group

OASIS

- OSLC: Open Services for Lifecycle Collaboration

ETSI

- SmartM2M
- ISG CIM

AENOR

- Comité Técnico de Normalización CTN178 Ciudades Inteligentes. Norma UNE 178301

Open Knowledge Foundation

- Working Group on Open Data in Linguistics

ISO -International Organization for Standardization

- ISO/TC 19150 - Geographic Information – Ontology
- Ad-hoc Group Linked Data – ISO/TC211 ISO/TC 37/SC 1 Principles and methods
- ISO/TC 37/SC 3 Systems to manage terminology, knowledge and content
- ISO/TC 37/SC 4 Language resource management

Dublin Core Metadata Initiative (CMI)

- DCMI Metadata Provenance Task Group
- DCMI Vocabulary Management Community
- DCMI Bibliographic Metadata Task Group

Europeana Network

- Technology Developer and Knowledge Partner / Expert

International Federation of Library Associations (IFLA)

- Semantic Web Special Interest Group

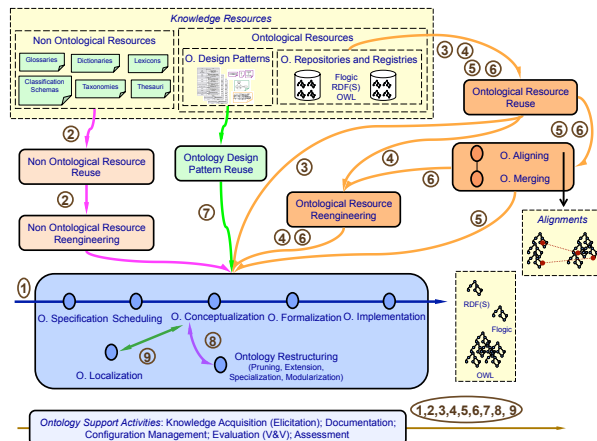
■ METHONTOLOGY and NeOn methodologies for building Networks of Ontologies

- World-wide used

METHONTOLOGY (1997)



NeOn (2010)



Ontologies

- Metadata Vocabularies (@W3C)
- Provenance (@W3C)
- Internet of Things (@W3C @ETSI)
- Geography (@IGN, CENIG)
- (Multi)-Media (@W3C)
- Knowledge Management
- Software Engineering (OSLC@OASIS)
- Tourism
- User experience
- AENOR vocab. for smart cities
- Libraries (@BNE)
- Health (@WHO)
- e-Science
- ...

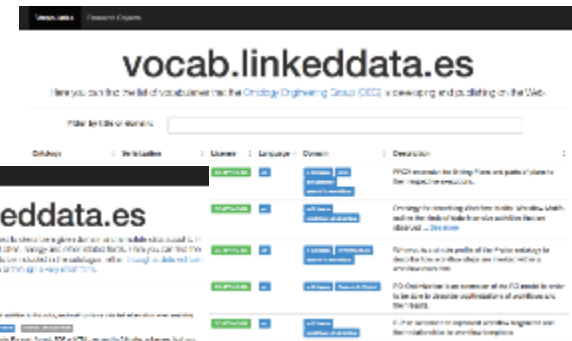
■ Ontology **evaluation**

- OOPS! Ontology Pitfall Scanner
<http://oops.linkeddata.es/>



■ Vocabulary **documentation**

- HTML: Widoco
<https://github.com/dgarijo/Widoco/>
- Diagrams: AR2DTool
<http://ar2dtool.linkeddata.es/>



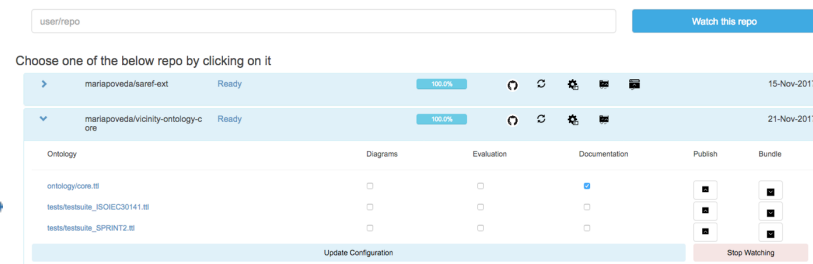
○ Vocabulary **registry**

- OEG vocabularies
<http://vocab.linkeddata.es/>
- Smart Cities <http://smartcity.linkeddata.es/>



○ Vocabulary **distributed development**

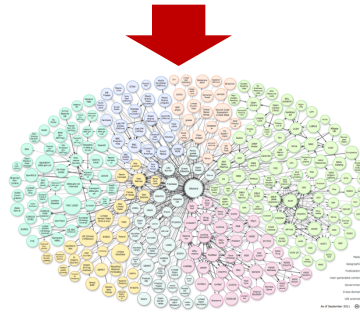
- OnToology <http://ontology.linkeddata.es/>



Linked data Technologies and Projects



RDF Generation and Linking



Visualization

Map4RDF

Linked Library Data Visualisation

Sensor Data Visualisation

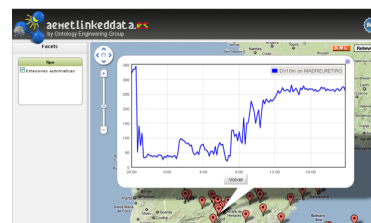
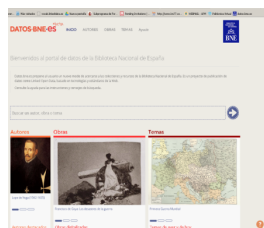
Access

Agora

LDP4j

Conditional Access

Diagnose and repair







María Poveda-Villaón, PhD

Ontological Engineering

Development

Evaluation

Conceptualization

Semantic Web

Linked Open Data

Publication

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👤 [MariaPovedaVillalon](https://www.linkedin.com/in/MariaPovedaVillalon)

Education

🕒 2009

Computer Science (Eng)

🕒 2010

MsC Artificial Intelligence

🕒 2016

PhD Artificial Intelligence

Publications

5 Journal papers (4 indexed)

7 Conference papers

3 Book chapters

25 Workshop & demo papers

1 Journal editor

2 WS proc. editor

816 citations H-index 15

Ontologies

- IoT: SAREF, VICINITY
- Web Of Things
- Video games
- Scientific reviews
- Dataset profiling: agri
- Meteorology
- Patient safety

Software



Organization

4 Workshops

3 Tutorials, VoCamp

2 Open Data Day

19 PC member Conf & WS

Training

- MOOCs, SPOCs,
- Ad-hoc courses

Skills

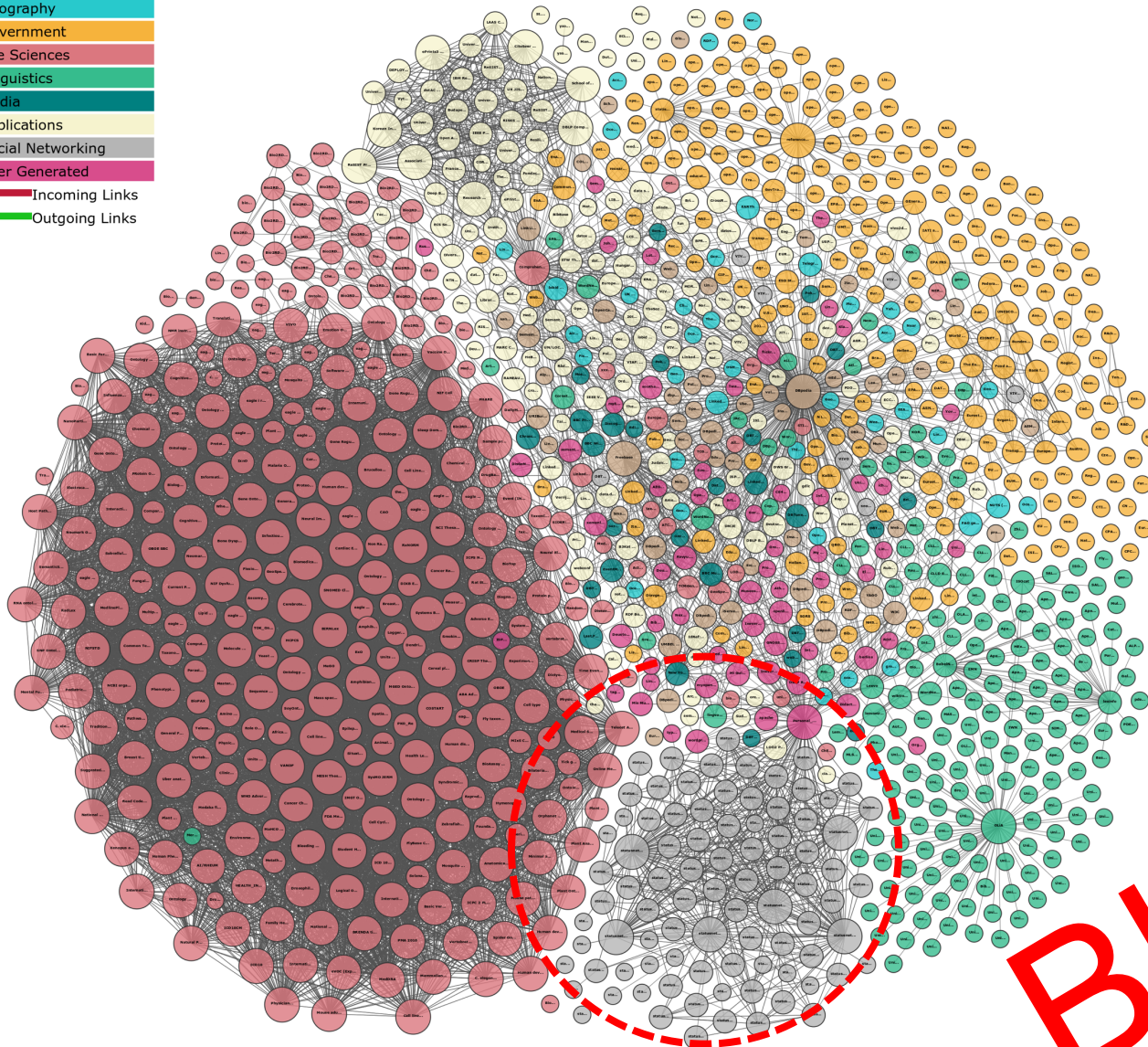
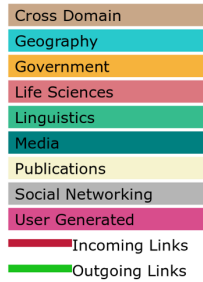
- W3C participation
- OWL, RDF, JENA, JAVA
- OpenRefine
- Public speaking

Projects

- 5 European
- 5 Spanish

New trends in ontological engineering, practices and tools

Legend



BUT!

Image taken from <https://lod-cloud.net/>

Google Dataset Search Beta

Buscar conjuntos de datos



Probar [boston education c](#)

Follow researchinprogress

Research in Progress

Things about the research in progress.



Google: We are happy to announce our new web site on [your thesis topic]



by Didac & Emin

<http://researchinprogress.tumblr.com/post/37821860151/google-we-are-happy-to-announce-our-new-web-site>

Google Dataset Search Beta

Buscar conjuntos de datos



Google Dataset Search Beta

social media



Political **Social Media** Posts
 Disasters on **Social Media**
 Data from: Spatial and te
 NYC **Social Media** Usage
 Ask Boris **social media** m
 Obama White House **Soc**
 Center for Research on S
Social Media and Law En
Social Media and Tech In
 Data from: Resource dist

Google Dataset Search Beta

semantic social media



Probar [boston education data](#) o [weather site:noaa.gov](#)

Google Search

HOME GUIDES REFERENCE CASE STUDIES APIS TOOLS SUPPORT

SEND FEEDBACK

Prepare your content

- Create quality pages
- Associate your online resources
- Rendering on Google Search
- Debug your pages
- Add voice actions

Index your content

- Introduction to indexing
- Create a list of URLs
- Submit URLs to Google

Mobile-friendly websites

- Overview
- Getting Started
- Mobile SEO configurations
- Best practices for mobile-first indexing
- Customize your website software
- Common Mistakes
- FAQ
- Glossary
- Mobile Friendly Test

AJAX Crawling

- Getting started

- A structured object with data in some other format that you might want to load into a special tool for processing
- Images capturing data
- Files relating to machine learning, such as trained parameters or neural network structure definitions
- Anything that looks like a dataset to you

Our approach to dataset discovery

We can understand structured data in Web pages about datasets, using either [schema.org Dataset markup](#), or equivalent structures represented in [W3C's Data Catalog Vocabulary \(DCAT\) format](#). We also exploring experimental support for structured data based on [W3C CSVW](#), and expect to evolve and adapt our approach as best practices for dataset description emerge. For more information about our approach to dataset discovery, see [Facilitating the discovery of public datasets](#).

Example

Here's an example for datasets using JSON-LD code and the Schema.org [vocabulary](#) in the Structured Data Testing Tool. The following example is based on a [real-world dataset description](#).

[SEE MARKUP](#)

The same [vocabulary](#) can be used in JSON-LD (preferred), RDFa 1.1, or Microdata syntax.

It is also possible to use W3C DCAT [vocabulary](#). Here is a simple example using RDFa:

Contents

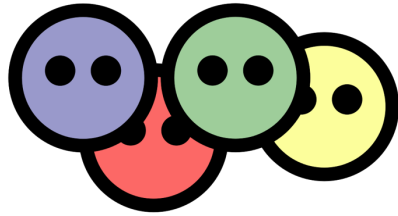
- Our approach to dataset discovery
- Example
- Guidelines
 - Sitemap best practices
 - Source and provenance best practices
- Known Errors and Warnings
- Structured data type definitions
 - Dataset
 - DataCatalog
 - DataDownload
 - Provenance and license
 - Tabular datasets
- Help and tools

Vocabularies define the **concepts** and **relationships** used to **describe** and represent an area of concern.

Definition taken from: <http://www.w3.org/standards/semanticweb/ontology>

- Ontologies offer many benefits
 - Semantics
 - Interoperability
 - Languages
 - Granularity
 - Formats
 - Schemas
 - Disambiguation
 - Reasoning
 - **REUSE**

And there are some famous ontologies in social media

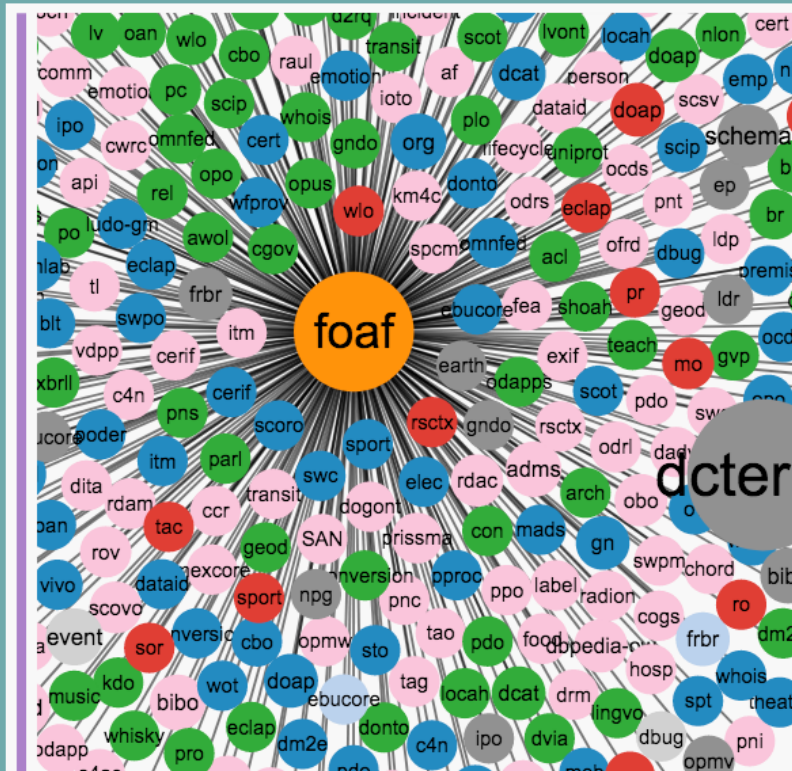


<http://xmlns.com/foaf/0.1/>



<http://rdfs.org/sioc/ns#>

373 Incoming Links



HOME	STATISTICS	DATASETS	CLASSES	PROPERTIES	VOCABULARIES	LINKS
TYPES	LANGUAGES	ABOUT	SPARQL ENDPOINT			

AKSW

3 vocabularies

URI

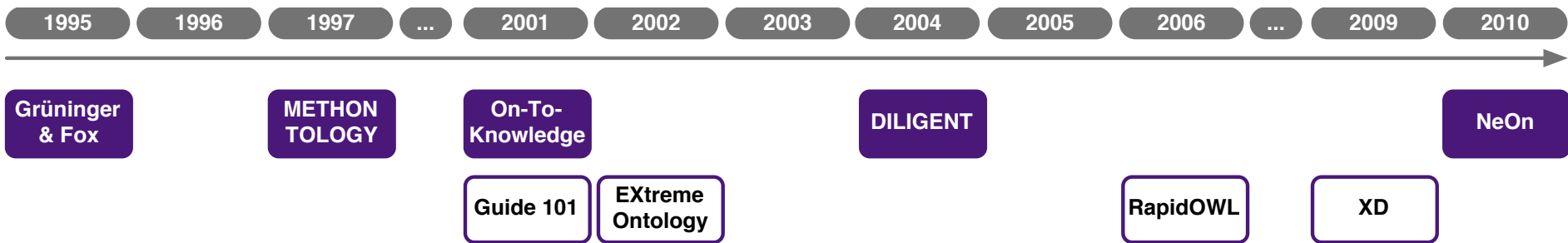
	Overall	Datasets
http://rdfs.org/sioc/ns	57,483	50
http://rdfs.org/sioc/spec/	107	12
http://rdfs.org/sioc/types	3	1

Overall	Datasets
57,483	50
107	12
3	

<https://lov.linkeddata.es/dataset/lov/vocabs/foaf>

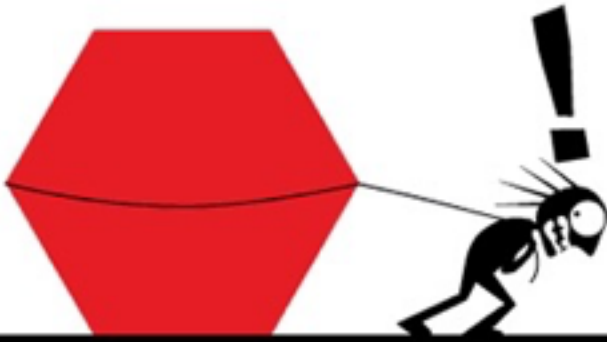
<http://lodstats.aksw.org/vocabularies?search=sioc>

Ontology Development Methodologies



- Towards lightweight and agile processes
- Inspiration from software development practices
- Coupling Software and ontology development

THE WATERFALL PROCESS



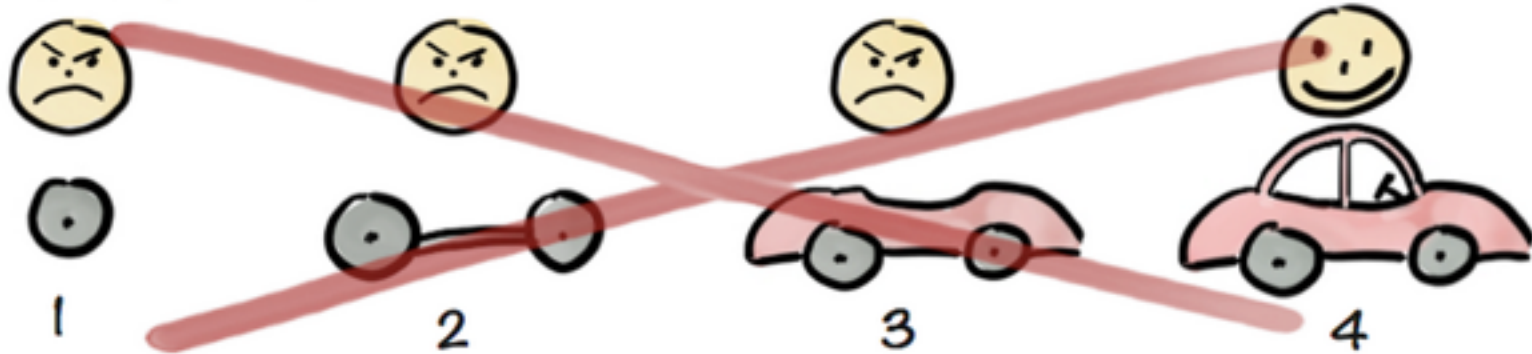
*'This project has got so big,
I'm not sure I'll be able to deliver it!'*

THE AGILE PROCESS

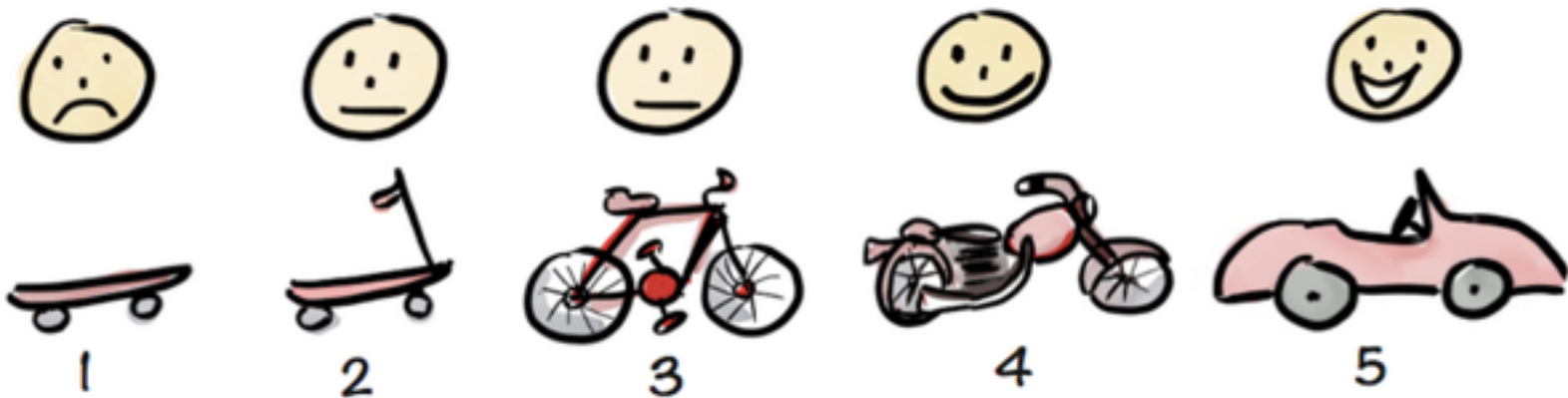


*'It's so much better delivering this
project in bite-sized sections'*

Not like this....

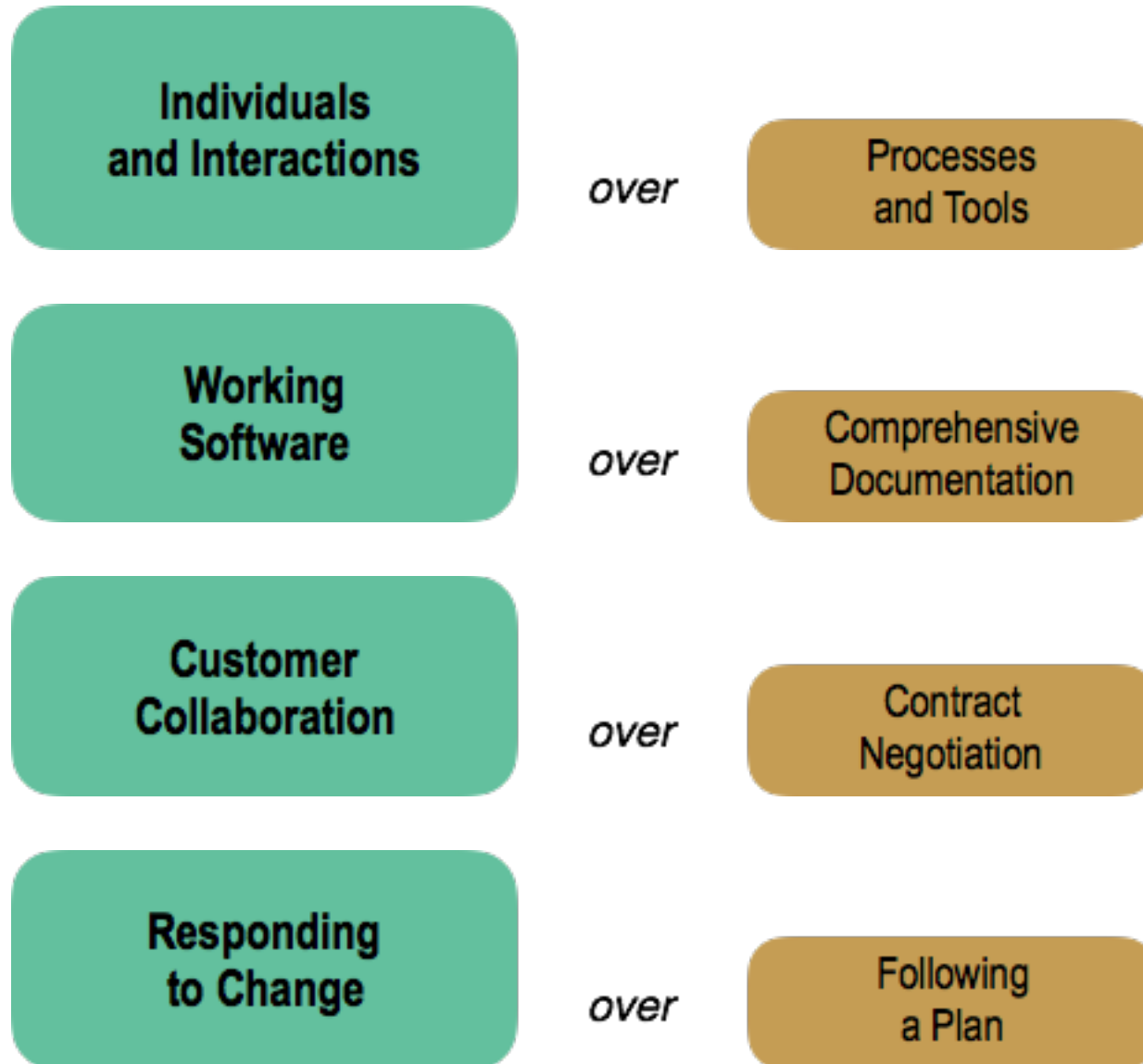


Like this!



by Henrik Kniberg

Slide from Carlos Badenes



Slide from Carlos Badenes

And how does it look like for ontological engineering?

- Ontologies are not often the final product. Do not get the customer attention. Like databases?
- Software development are including ontologies as part of the project

Linguist/Ontologist, Google Knowledge Graph

Google
Software Engineering
San Francisco, CA, USA

APPLY

Linguists work across Google to drive improvements in quality, and as a Linguist/Ontologist you will work both on complex projects spanning specific product components or answer specific research questions. Your specialization might involve natural language processing and unsupervised subject research, experimental design, statistics, corpus linguistics, or other groundbreaking and exciting work at Google. It's our goal to use

Growing the Knowledge Graph requires the development of knowledge structures. As a Schema team, you will analyze graph structures and content, develop the development and usage of knowledge structures to improve modeling techniques, judging tradeoffs between formality and usefulness of structures. You will work with researchers and ontologists locally using both human and automatic methods.

There is always more information out there, and the Research and Analytics team is constantly refining our signature search engine to provide better search results. Search to make it faster and more engaging. We're providing useful insights enough. We're just getting started.

Responsibilities

- Analyze graph structures and content and develop new semantic models
- Make decisions and provide guidance about ontologies and their evolution
- Write code to gather, process, and analyze data of various kinds
- Work with researchers, engineers, and linguists to develop new

The screenshot shows the Amazon Jobs website interface. At the top, there's a search bar with the Amazon Jobs logo and a search icon. Below the search bar, the job title "Knowledge Engineer" is prominently displayed, followed by the job ID "630535" and the employer "Amazon Spain Services, S.L.". A large purple "Apply now" button is on the right. The "DESCRIPTION" section details the role's focus on cloud-based content and services, emphasizing passion, customer obsession, and creativity. It also mentions that the Spanish team is looking for a Spanish-speaking Knowledge Engineer to improve the knowledge base and reach with direct and visible customer impact. A section titled "Do you have fluent Spanish language skills?" lists requirements for a strong academic background in mathematics, philosophy, linguistics, history, or library science, and a keenness to apply those skills at a technology company. Below this, a bulleted list outlines the responsibilities: representing real-world objects and concepts, maintaining knowledge quality, expanding platform capabilities to infer new knowledge, and working with developers and machine learning scientists to enhance technology and invent new techniques. On the right side, "Job details" include the location "Madrid, Spain" and the department "Editorial, Writing, & Content Management". There are also social media sharing options (Facebook, LinkedIn, Twitter, Email, Print) and a "Related jobs" section listing "Digital Music Content Manager" in ES, Madrid.

amazon jobs Search for jobs by title or keyword Location

Knowledge Engineer

Job ID: 630535 | Amazon Spain Services, S.L.

Apply now

DESCRIPTION

Help mold the future of cloud-based content and services. If you have the right blend of passion, enthusiasm, customer obsession, curiosity and creativity, you may just be right for the Knowledge Engineer role.

The Spanish team is looking for Spanish speaking Knowledge Engineer to help improve the our knowledge base & reach with direct and visible customer impact.

Do you have fluent Spanish language skills? Do you have a strong academic background in a subject such as mathematics, philosophy, linguistics, history or library science? And are you keen to apply those skills at a technology company? This role is for you. As a knowledge engineer, you will work on:

- Representing real-world objects and concepts in ways that both computers and people can understand.
- Working to maintain the quality of the knowledge already in the system.
- Expanding the capabilities of the platform to infer new knowledge.
- Working with the teams of developers and machine learning scientists to enhance the existing technology and invent new techniques

Job details

Madrid, Spain

Editorial, Writing, & Content Management

Share this job

Facebook LinkedIn Twitter Email Print

Related jobs

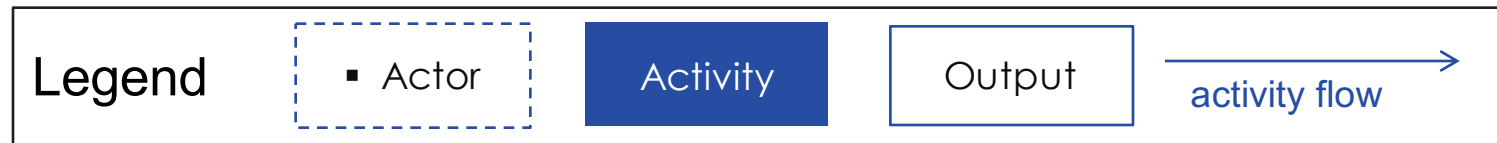
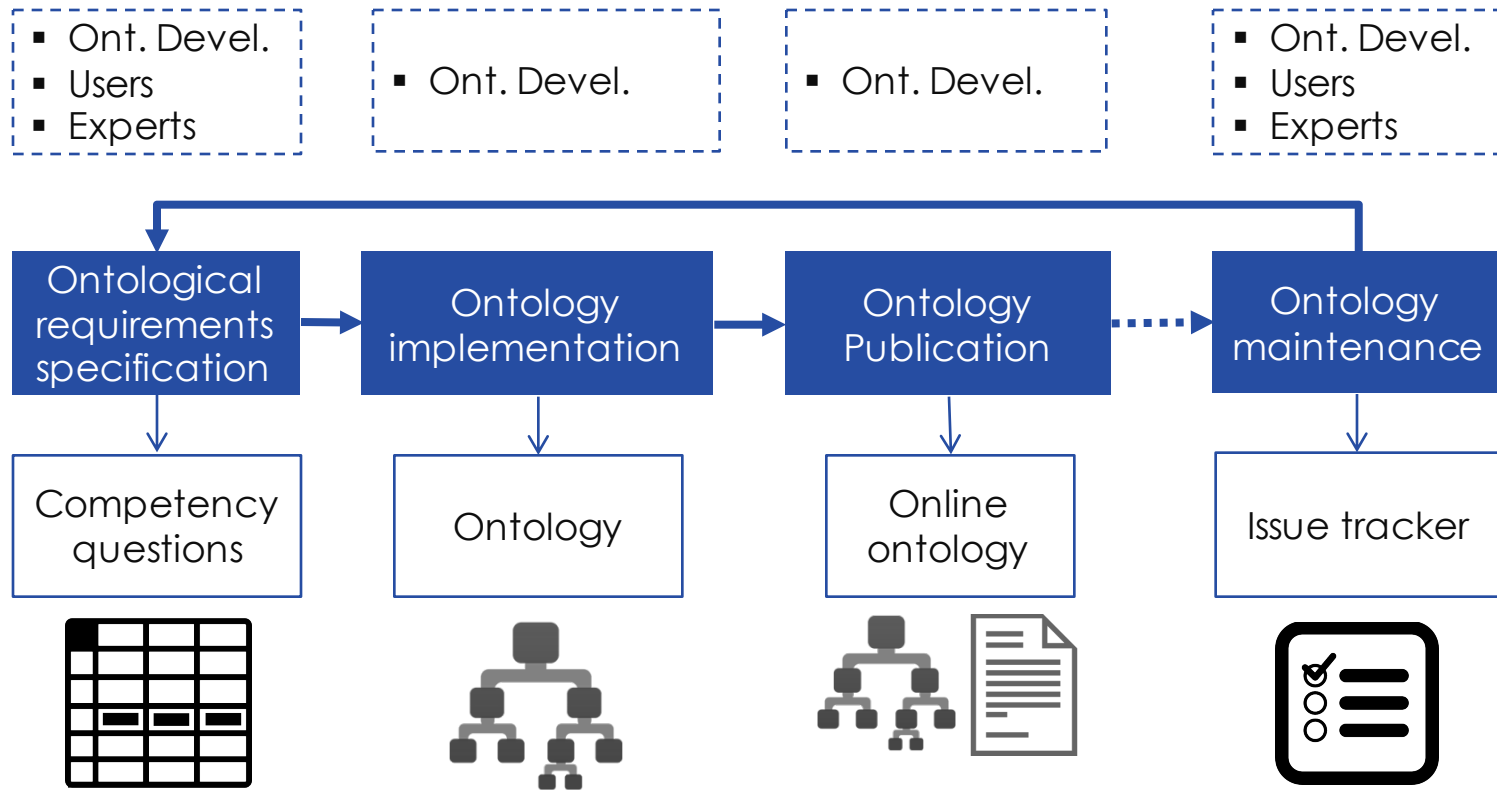
Digital Music Content Manager
ES, Madrid

Screenshot thanks to Juan Sequeda

And how does it look like for ontological engineering?

- Ontologies are not often the final product. Do not get the customer attention. Like databases?
- Software development are including ontologies as part of the project
- **Let's try to sneak our processes in SW practices!**

Ontology development process overview



Requirement specification

- Ont. Devel.
- Users
- Experts

Use case specification

Use cases



- Users
- Experts

Data exchange identification

Domain documentation



- Ont. Devel.
- Users
- Experts

Purpose specification

Ont. purpose

W3C home > Mailing lists > Public > public-wot-ig@w3.org > December 2016

Towards a formal model of thing descriptions

This message: [Message body] [Respond] [More options]
Related messages: [Next message] [Previous message]

From: Dave Raggett <dave@w3.org>
Date: Wed, 7 Dec 2016 18:20:25 +0000
Message-id: <D7140C17-4A50-48C3-92D3-A6ED1399D60F@w3.org>
To: Public Web of Things IG <public-wot-ig@w3.org>

In today's Web of things Interest Group call, I was asked to provide a formal model of the RDF graphs for thing description. The question is what formalism to use. One possibility could be the Shapes Constraint Language (SHACL), see <http://www.w3.org/TR/shacl/> against a set of conditions. This could be used for validating a thing description against the following "grammar", for validating data, and for validating service compositions to check that the components are compatible. What other formalism

The following are based upon requirements derived from a broad range of use cases.

Each thing must have a thing description.
A thing description is a graph of RDF triples rooted in a given thing.
A thing description must have URI with which to access the description.
A thing may have meta-data, i.e. a set of predicate/value pairs.
A thing may have zero or more properties, actions and events.
Each property, action and event must have a string literal as its name.
Each property, action and event may have metadata.
A property must have a data type.
A property may have a default value.
A property may be writable.
A property may be required.
Each property may itself have properties.
Each property, action and event may have metadata.
A data type is a core data type, or is defined in place, or by reference to a definition.
Core data types are null, boolean, integer, number, string, vector, thing, enum and union.
A property may be a stream.
A property may be a collection.
A collection is either ordered or unordered, but not both.
A vector is a set of items, where each item has a string literal for its name, and a non-negative integer for its index.
A property may have constraints, which depend on its data type.
An integer or number may have a min and a max value.
A collection may have a min and a max length.
Each action must define a request.
Each action may define a response.
A request may expect a sequence of zero, one or more responses.
Each request and response must have a data type.
Each event must have a data type.
There are predefined events for signalling updates and life cycle changes.
Metadata includes comments and communication metadata.
A comment is a string literal and may be annotated with its human language.
A thing may be associated with a service.
A service provides a means to notify updates to properties and metadata.
A service provides a means to signal events, action requests and responses.
A service URI may contain named variables.
A property may be a sink or source but not a combination of these.
A sink is a stream of samples that applications can generate.
A source is a stream of samples that applications can observe.
A stream may have a sampling rate.
A stream may have a latency.
A stream may carry date stamps.

Q: main Highlight All Match Case Whole Words 1 of 4 matches

- Ont. Devel.

TABLE OF CONTENTS

1. Introduction
 - 1.1 Vision
 - 1.2 How to get started
2. Terminology
3. Concepts & Building Blocks
 - 3.1 WoT Interface
 - 3.1.1 Resource Model and URIs
 - 3.1.2 Protocol Bindings
 - 3.1.3 Security Mechanisms
 - 3.1.3.1 Simple Request Authorization and Caller Authentication

- Ont. Devel.

<http://w3c.github.io/wot/current-practices/wot-practices>
3.2 Thing Description

The WoT Thing Description (TD) provides the semantic metadata of a Thing as well as a functional description of its WoT interface. For this, it relies on the Re-lying data model. For now, [JSON-LD] is used as a formal vocabulary to express the capabilities of and Events. In addition, the TD provides met etc.), mediaTypes (e.g., "application/json", "a tion, etc.). Fig. 3 Concepts of the Thing Desc TD.

Save

Thing's Interaction Resources

- Property
- Action
- Event

Fig. 3 Co

ection will give a brief i
ations of the TD eleme
duction.

- Ont. Devel.

- Ont.

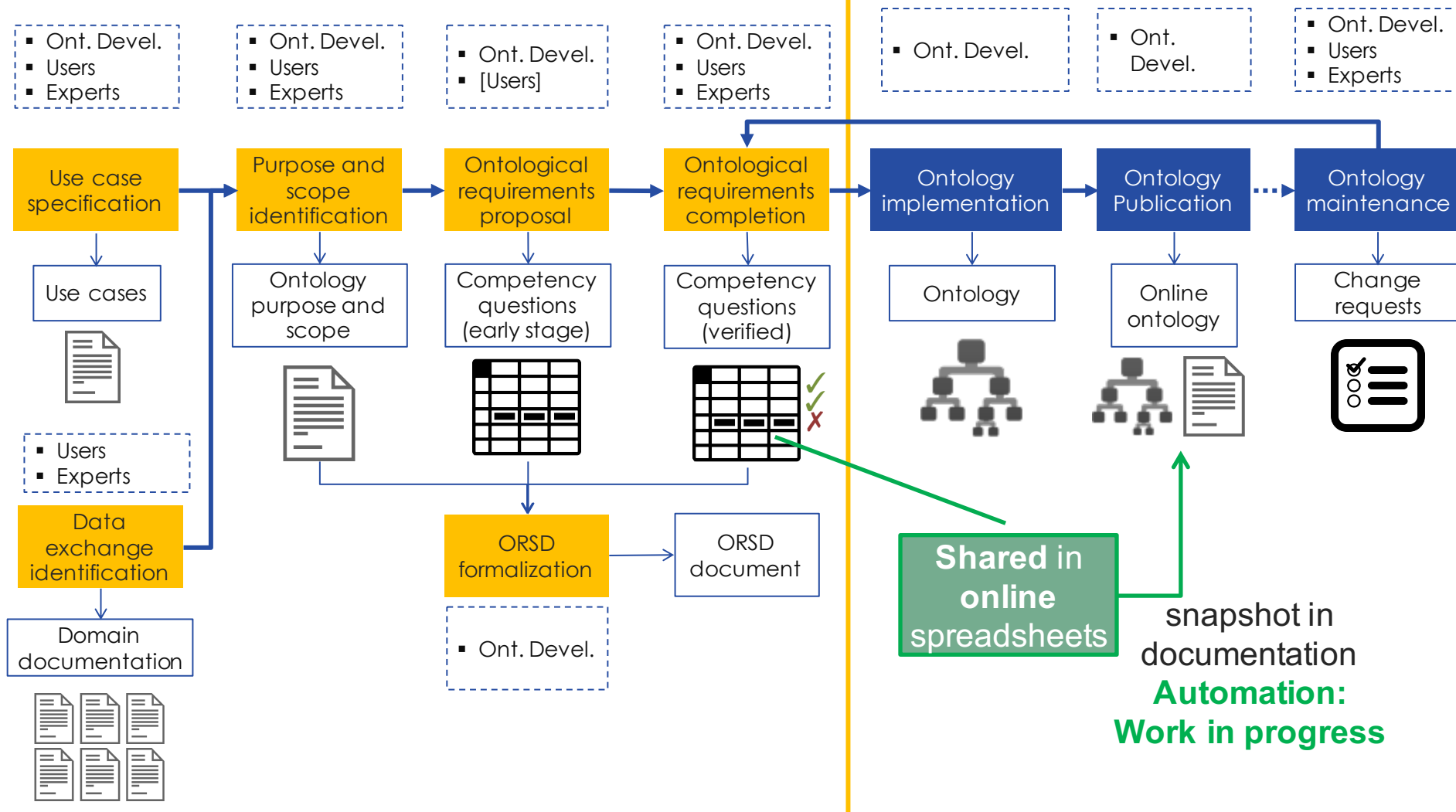
- Ont. Devel.
- Users
- Experts

EXAMPLE 3: More Capabilities

```
{
  "@context": [
    "http://w3c.github.io/wot/w3c-wot-td-context.jsonld",
    { "actuator": "http://example.org/actuator#" }
  ],
  "@type": "Thing",
  "name": "MyLEDThing",
  "base": "coap://myled.example.com:5683/",
  "security": {
    "cat": "token:jwt",
    "alg": "HS256",
    "as": "https://authority-issuing.example.org"
  },
  "interactions": [
    {
      "@type": ["Property", "actuator:onOffStatus"],
      "name": "status",
      "outputData": { "valueType": { "type": "boolean" } },
      "writable": true,
      "links": [
        {
          "href": "pwr",
          "mediaType": "application/exi"
        },
        {
          "href": "http://mytemp.example.com:8080/status",
          "mediaType": "application/json"
        }
      ]
    },
    {
      "@type": ["Action", "actuator:fadeIn"],
      "name": "fadeIn",
      "inputData": {
        "valueType": { "type": "integer" },
        "actuator:unit": "actuator:ms"
      },
      "links": [
        {
          "href": "in",
          "mediaType": "application/exi"
        },
        {
          "href": "http://mytemp.example.com:8080/in",
          "mediaType": "application/json"
        }
      ]
    }
  ]
}
```

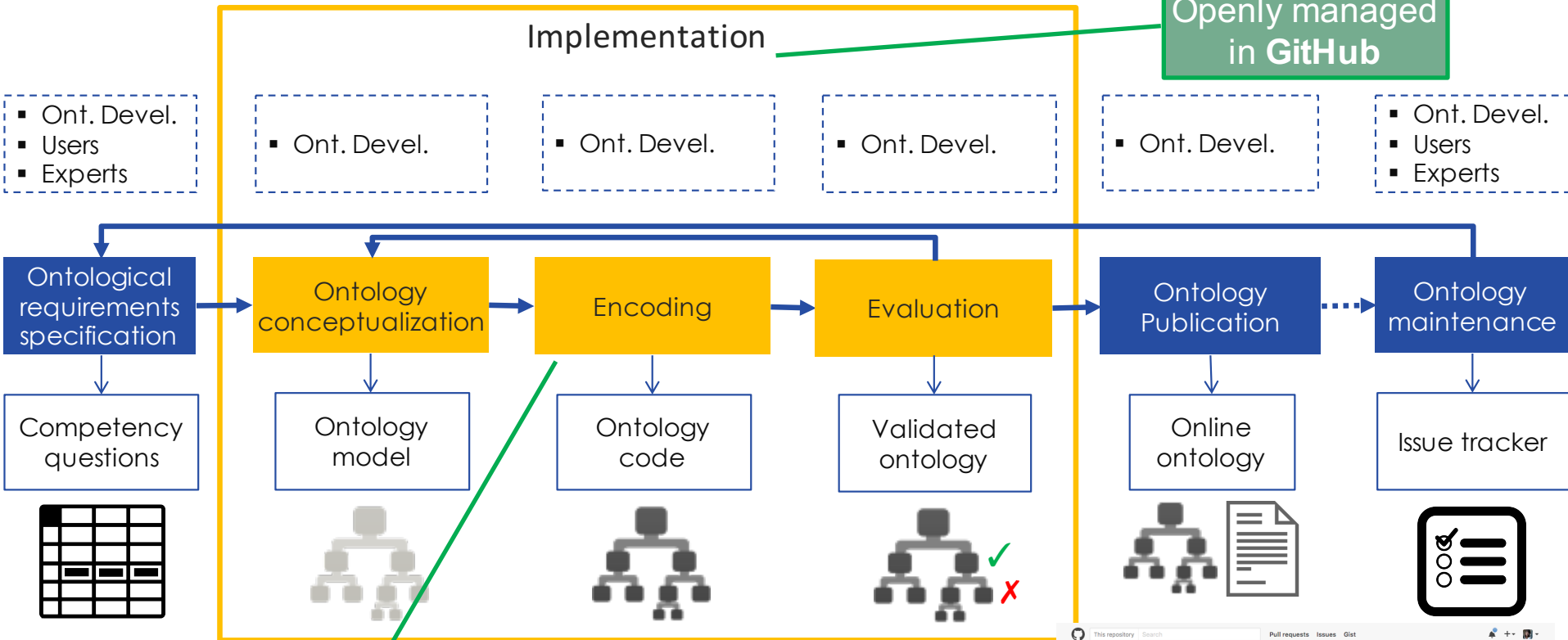
<https://lists.w3.org/Archives/Public/public-wot-ig/2016Dec/0016.html>

Requirement specification

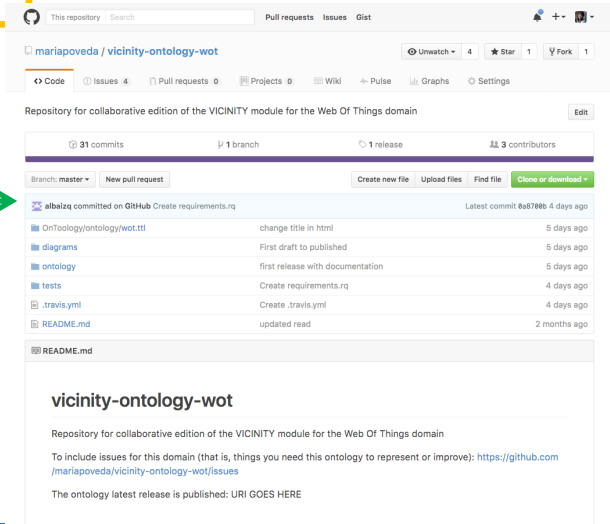


Implementation - Encoding

Openly managed
in GitHub

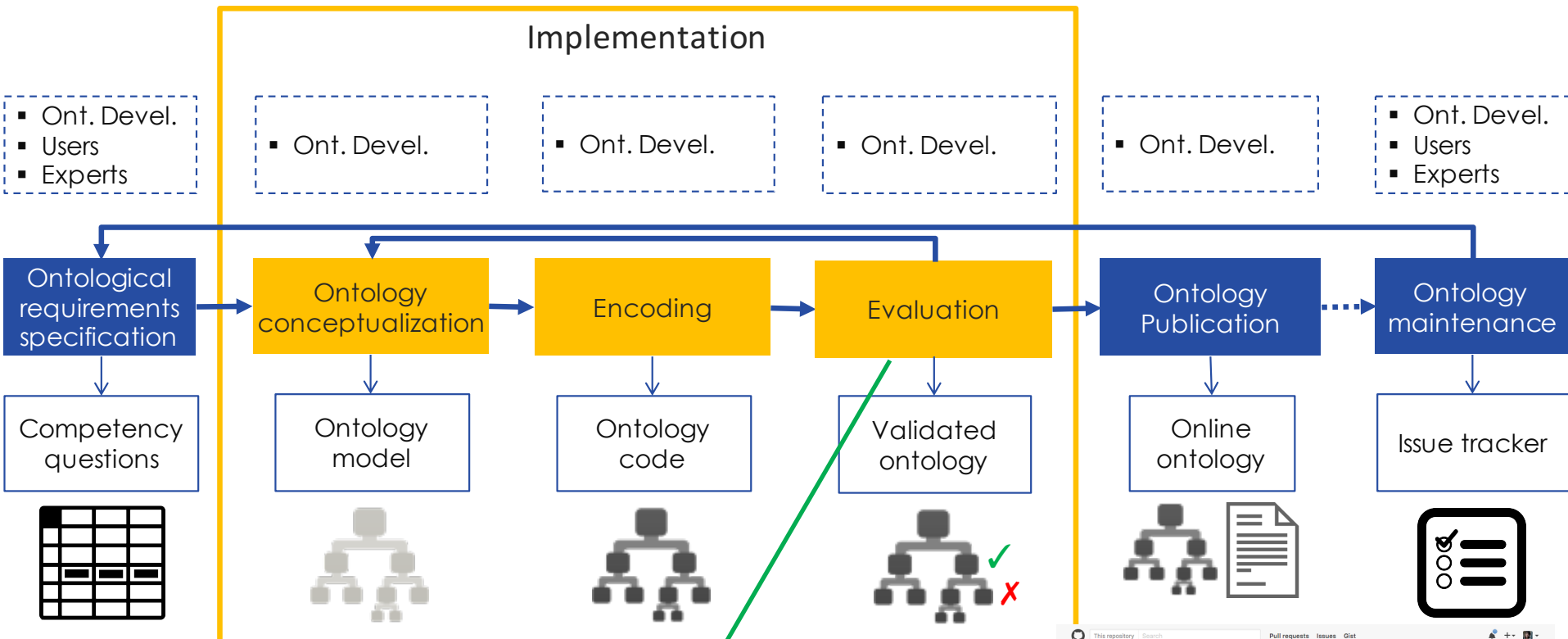


```
10 #ref: http://rat.lisboa.ua/ontology/
11 #ref: http://rat.lisboa.ua/ontology/
12 #ref: http://rat.lisboa.ua/ontology/
13 #ref: http://rat.lisboa.ua/ontology/
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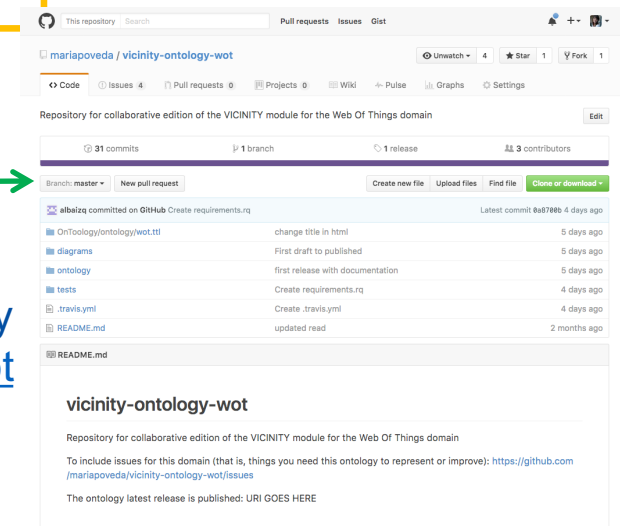


GitHub repository
<https://github.com/mariapoveda/vicinity-ontology-wot>

Implementation - Evaluation



Online and notifications in GitHub repository
<https://github.com/mariapoveda/vicinity-ontology-wot>



Ongoing work: tests from requirements

Evaluation - OOPS! – Ontology Pitfall Scanner!

- Implements the **48** detection methods for **33** pitfalls
 - Pitfalls selection
 - Selection by dimensions and aspects
- Web user interface <http://oops.linkeddata.es/>
- Web service <http://oops-ws.oeg-upm.net/>

The screenshot shows the OOPS! Ontology Pitfall Scanner web interface. At the top, the header reads "OOPS! Ontology Pitfall Scanner!". Below the header, a text box for "URI input" contains the example "http://data.semanticweb.org/". To the right, a "Pitfall name" label points to the "Results for P04: Creating unconnected ontology elements." section. Further right, a "Pitfall frequency" label points to the "11 cases | Minor" status, and an "Importance level" label points to a yellow circle icon. Below the URI input, there is an "OWL code input" section with a checkbox labeled "Uncheck this checkbox if you are sure". To the left of the main results, a "Pitfall description" label points to the text "This pitfall appears when any relationship (except for those that are defined as symmetric) does not have an inverse relationship (owl:inverseOf) defined within the ontology." Below that, an "Affected elements" label points to a list of URIs. The main results area lists several pitfalls: P04, P05, P08, P11, P12, and P13. The P13 section is expanded, showing suggestions for relationships without inverse and a list of affected elements. On the right side, an RDF code snippet is displayed, showing namespace declarations and a description of a pitfall.

URI input

Example: <http://data.semanticweb.org/>

OWL code input

If you checked this checkbox, the checker will not check the namespace.

☐ Uncheck this checkbox if you are sure

Pitfall name

Pitfall frequency

Importance level

Results for P04: Creating unconnected ontology elements.

Results for P05: Defining wrong inverse relationships.

Results for P08: Missing annotations.

Results for P11: Missing domain or range in properties.

Results for P12: Equivalent properties not explicitly declared.

Results for P13: Inverse relationships not explicitly declared.

This pitfall appears when any relationship (except for those that are defined as symmetric) does not have an inverse relationship (owl:inverseOf) defined within the ontology.

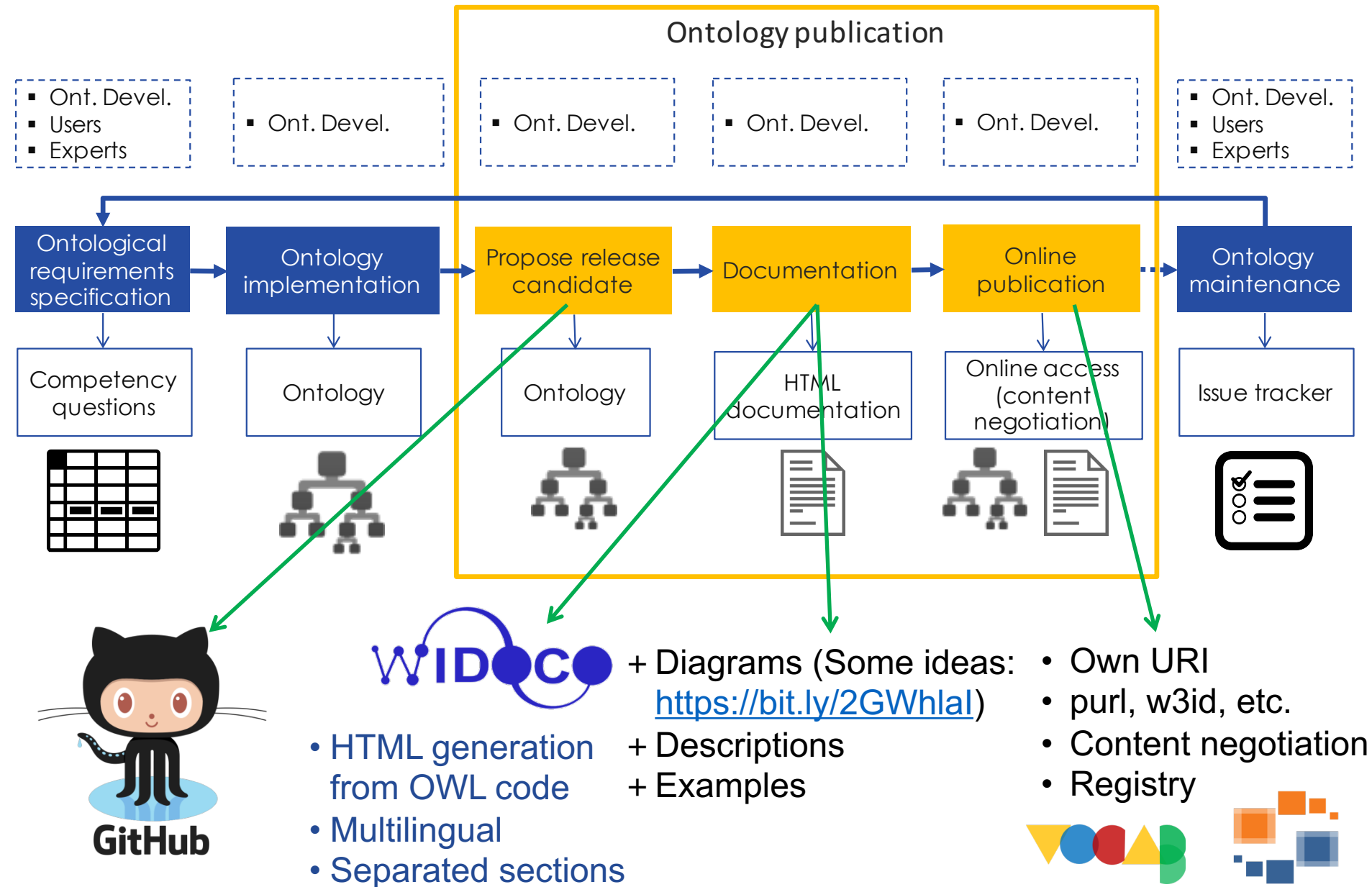
- OOPS! has the following suggestions for the relationships without inverse:
 - > <http://data.semanticweb.org/ns/swc/ontology#hasPart> could be inverse of <http://data.semanticweb.org/ns/swc/ontology#isLocationFor>
 - > <http://data.semanticweb.org/ns/swc/ontology#isLocationFor> could be inverse of <http://data.semanticweb.org/ns/swc/ontology#hasPart>
 - > <http://swrc.ontoware.org/ontology#participant> could be inverse of <http://swrc.ontoware.org/ontology#hasLocation>
- Sorry, OOPS! has no suggestions for the following relationships without inverse:
 - > <http://www.w3.org/2002/12/cal/ical#component>
 - > <http://www.w3.org/2002/12/cal/ical#dtstamp>
 - > <http://www.w3.org/2002/12/cal/ical#dtstart>

Pitfall description

Affected elements

11 cases | Minor

```
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:oops="http://www.oeg-upm.net/oops#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" >
  <rdf:Description rdf:about="http://www.oeg-upm.net/oops#suggestion">
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.oeg-upm.net/oops/fdeaaa6-71d6-4557-
    a17a-dc3244ff536b">
    <oops:hasCode rdf:datatype="http://www.w3.org/2001/XMLSchema#string">P10</
    oops:hasCode>
    <oops:hasName rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Missing
    disjointness [1, 2, 3]</oops:hasName>
    <oops:hasDescription rdf:datatype="http://www.w3.org/2001/XMLSchema#string">
    The ontology lacks disjoint axioms between classes or between properties
    that should be defined as disjoint.</oops:hasDescription>
    <rdf:type
    rdf:resource="http://www.oeg-upm.net/oops#pitfall"/>
    <oops:hasImportanceLevel rdf:datatype="http://www.w3.org/2001/XMLSchema#
    string">Important</oops:hasImportanceLevel>
    <oops:hasNumberAffectedElements rdf:datatype="http://www.w3.org/2001/
    XMLSchema#integer">1</oops:hasNumberAffectedElements>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.oeg-upm.net/oops/496ae03d-48c6-406d-8
    d07-530bf05c9a1">
    <oops:hasPitfall rdf:resource="http://www.oeg-upm.net/oops/fdeaaa6-71d6
    -4557-a17a-dc3244ff536b"/>
    <rdf:type rdf:resource="http://www.oeg-upm.net/oops#response"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.oeg-upm.net/oops#pitfall">
    <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#Class"/>
  </rdf:Description>
</rdf:RDF>
```



The DataLift logo is located in the bottom right corner. It features the word "DataLift" in a bold, sans-serif font, with "Data" in blue and "Lift" in orange. To the right of the text is a stylized graphic consisting of three overlapping squares in blue, orange, and green, with a black arrow pointing upwards from the center.

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+ Suggest



Ontology development process overview

Openly reported in
GitHub issue tracker:
new needs, bugs, etc.

Erroneous domain definitions #38

Closed vcharpenay opened this issue on Jun 12, 2017 · 2 Comments



vcharpenay commented on Jun 12, 2017

Some domain axioms seem erroneous:

- `:providesInteractionPattern rdfs:domain :InteractionPattern .` I suppose you mean `rdfs:range ?`
- `:name rdfs:domain :Thing` leads to the fact that all interaction patterns are also things, which is unwanted, I guess.

In general, are domain/range axioms supposed to remain in the ontology or should they be removed?



mariapoveda commented on Jun 12, 2017

Thanks for the comments I'll update the ontology.
I'd rather to keep them in the ontology.

mariapoveda added a commit that referenced this issue

0.0.7 replace erroneous domains issue #38



mariapoveda commented on Jun 12, 2017

Closed in [ea30b5a](#)

Closed mariapoveda closed this on Jun 12, 2017

Clear current search query, filters, and sorts

3 Open ✓ 8 Closed

Author

add a queueable attribute to action element

#43 by sulfo4229 was closed 21 days ago

Erroneous domain definitions

#38 by vcharpenay was closed on Jun 12, 2017

Interaction patterns cardinality

#30 by mariapoveda was closed on Apr 25, 2017

Delete DigitalRepresentation

#20 by mariapoveda was closed on Apr 5, 2017

WoT5 and relation with Thing

#5 by mariapoveda was closed on Feb 16, 2017

WoT1 terminology doubt

#4 by mariapoveda was closed on Mar 7, 2017

WoT15

#2 by mariapoveda was closed on Feb 16, 2017

WoT11

#1 by mariapoveda was closed on Feb 16, 2017

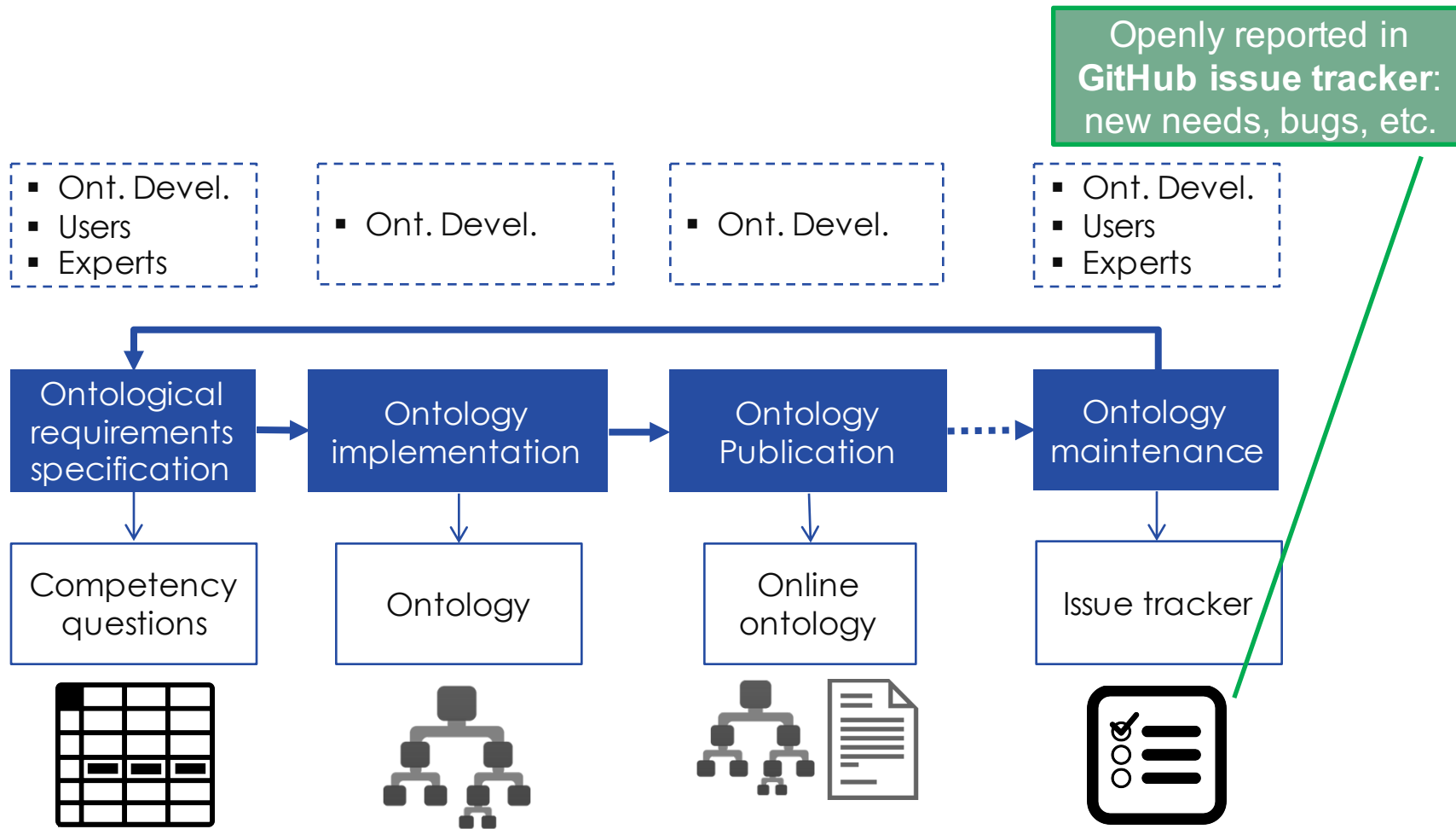
- Ont. Devel.
- Users
- Experts

Ontology
maintenance

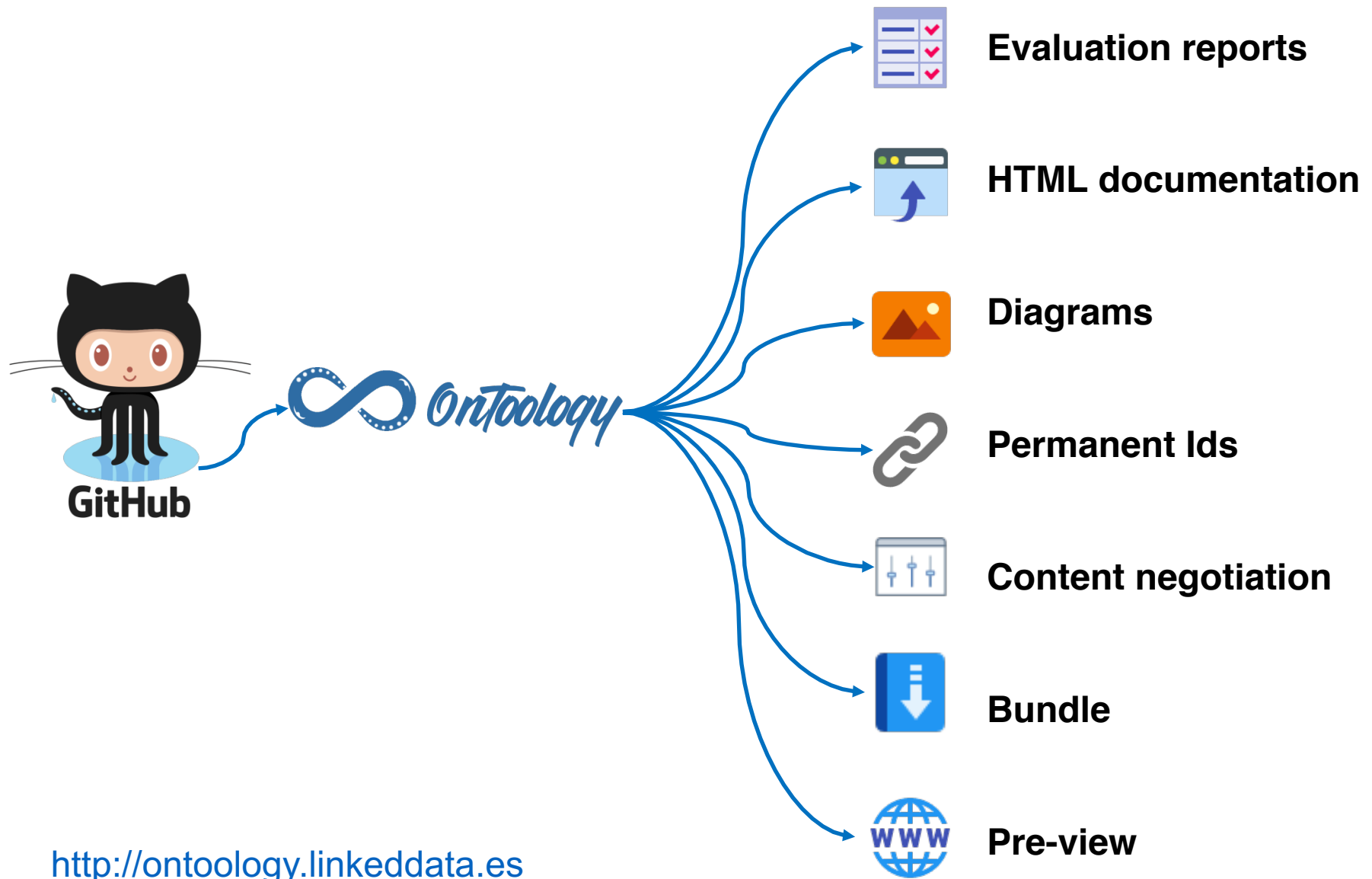
Issue tracker



Ontology development process overview



Aiming at bringing all this together...



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















































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mariapoveda/saref-ext	Ready	100.0%	Refresh, Sync, Settings, Watch, Fork	15-Nov-2017																								
mariapoveda/vicinity-ontology-core	Ready	100.0%	Refresh, Sync, Settings, Watch, Fork	21-Nov-2017																								
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mariapoveda/inia-ontology	Ready	100.0%	Refresh, Sync, Settings, Watch, Fork	27-Nov-2017																								
mariapoveda/vocab	Ready		Refresh, Sync, Settings, Watch, Fork	0-Nov-2017																								

Or when forcing the generation of resources

Latest revision November, 2017
 Ontology Engineering Group
 Contact: ontology@delicias.dia.fi.upm.es
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Publish the ontology under a w3id URI

Choose one of the below repo by clicking on it

>	mariapoveda/saref-ext	Ready	100.0%						15-Nov-2017
▼	mariapoveda/vicinity-ontology-core	Ready	100.0%						21-Nov-2017
Ontology				Diagrams	Evaluation	Documentation	Publish	Bundle	
ontology/core.ttl				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
tests/testsuite_ISOIEC30141.ttl				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
tests/testsuite_SPRINT2.ttl				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Update Configuration				Stop Watching					
>	mariapoveda/vicinity-ontology-wot-mappings	Ready	syntax error in tests/testsuite_requirements.ttl	100.0%					21-Nov-2017
>	mariapoveda/wot-ontology	Ready		100.0%					20-Nov-2017
>	mariapoveda/wot-thing-description	Ready		100.0%					27-Sep-2017
>	mariapoveda/inia-ontology	Ready		100.0%					27-Nov-2017
>	mariapoveda/vocab	Ready		100.0%					20-Nov-2017

Or download the resources needed to publish it in your server

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Powered by [Widoco](#), [AR2DTool](#) and [OOPS!](#)



- Since 2015
- **531** ontologies from **113** repositories
- Some examples:
 - opencitydata/medio-ambiente-contaminacion-acustica
 - opencitydata/medio-ambiente-calidad-aire
 - mariapoveda/wot-ontology
 - vcharpenay/wot-ontology
 - jpcik/medred
 - marianofl1971/dul-es
 - GeorgFerdinandSchneider/bot
 - ...



<http://vicinity.iot.linkeddata.es/>



Here you can find the list of ontologies developed in VICINITY. You can also find the repository for VICINITY project.

If you want to contribute development, please follow the guidelines.

Filter by title:

Ontology	Description	Repository	Issue tracker	Requirements	Releases
Ontology model for Web of Things	This ontology aims to model the Web of Things domain according to the w3c Interest Group (http://w3c.github.io/wot/)	wot-ontology	ontology issues	ontology requirements	ontology releases
Vicinity core model	This ontology represent the core terms to allow interoperability in an IoT context based on VICINITY technological solutions.	vicinity-ontology-core	core issues	core requirements	core releases
Vicinity WoT mappings model	This ontology represent the mapping definitions between WoT to allow interoperability in an IoT context based on VICINITY ... See more	vicinity-ontology-wot-mappings	mappings issues	mappings requirements	mappings releases

This slide has been taken from Raúl García Castro presentation at EMSE

We still need to think about certain things

- What is delivered in OE at the end of each iteration?
 - Different products in different phases
- How do we validate if an iteration is complete in OE?
 - Different type of tests in different phases
 - Difficult to automate validation, mostly for human interaction need

Title	P15. Using “some not” in place of “not some”	Importance level	Critical
Aspects	Wrong inference	Affects to	Classes
Description			
<p>The pitfall consists in using a “some not” structure when a “not some” is required. This is due to the misplacement of the existential quantifier (<code>owl:someValuesFrom</code>) and the negative operator (<code>owl:complementOf</code>).</p> <p>(a) When to use a “some not” structure ($\exists \text{relationshipS}.\neg \text{ClassA}$): to state that there is at least one individual acting as object of the relationship “relationshipS” and such individual do not belong to class “ClassA”. This implies that there must be at least one instantiation of the relationshipS whose target does not belong to “ClassA”. This does not prevent instances from ClassA acting as objects of the relationship.</p> <p>(b) When to use a “not some” structure ($\neg \exists \text{relationshipS}.\text{ClassA}$): to state that no individuals in class “ClassA” act as objects of the relationship “relationshipS”. This does not imply the existence of individuals that do not belong to ClassA acting as objects of the relationship.</p> <p>This pitfall is explained in more detail in [1]. See figure below for more details about situations using “some not” or “not some”.</p>			

- Where is the common point between OE and?
 - Surely there are successful and not so successful adaptations
 - Dependant on the abstraction or formalism level?



Thanks for your attention!

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Trendy Practices and Tools in Ontological Engineering

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📅 5th April 2018
📍 MINES Saint-Étienne