Smart Cities
(READY4SmartCities)

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READY4SmartCities project contributes in creating a **common approach on Smart Cities.**
 In co-operation with different stakeholders (engineering specialists, ICT and RES providers, energy companies) the **main goals** are:

- To deliver a new **data ecosystem** that will accommodate cross-domain data and will allow the exploitation of such data at global scale

- To **identify** an holistic and **shared vision**, allowing feasible step-by-step action plans for relevant stakeholder groups to develop and use ICT-based solutions for energy system in urban and rural communities towards future Smart Cities

- To **identify** a set of **ontologies relevant to Smart Cities** and the different **requirements and guidelines** on how to use data described according to those ontologies

- **Facilitate ontology reuse**
  - There are many ontologies (and other resources) useful to describe energy and cross-domain data
- **One place to discover ontologies**
  - It is not trivial to find them
- **Specific for energy efficiency and smart cities**
  - Search engines and ontology registries are too general or off-topic (biology, environment, etc.)
- **Ontology assessment**
  - The quality of ontologies in the Web is unknown

Ontologies   Datasets   About

smartcity.linkeddata.es

On the Semantic Web, ontologies define the concepts and relationships used to describe a given domain and annotate data about it. In the READY4SmartCities FP7 CSA we are collecting ontologies about smart cities, energy and other related fields. Here you can find the list of ontologies we have identified so far. You can also propose ontologies to be included in the catalogue, either through a detailed form if you have more time to fill the required data or through a very short form.

Link to RDF dump

Quality indicators

Metadata

Ontologies

Along the catalogue the following color code is used to represent different information. Furthermore, in addition to the color, each cell contains detailed information when available.

Green for positive indicators   Orange for intermediate indicators   Red for negative indicators   Blue for plain information   Grey for unknown fields

The first column of indicators shows whether the ontology is available online in RDF and HTML formats. For each format, RDF or HTML, we use the following colors and text tags: CN OK (for "Content Negotiation OK") if the corresponding content can be retrieved in the given format according to content negotiation best practices for publishing RDF vocabularies, NO CN (for "NO Content Negotiation") if the content can be retrieved even though no content negotiation mechanisms are properly set up, and Not Av (for "Not Available") if the content can not be retrieved.

Ontology	Online Availability (RDF | HTML)		Open License	Ontology Language	Syntax	Domain		Natural Language
The W3C PROV Ontology	CN OK	CN OK	W3C	OWL	RDF/XML	provenance		en
eDIANA context awareness ontology	NO CN	CN OK	Unknown	OWL	RDF/XML	devices		en
DOLCE (Descriptive Ontology for Linguistic and Cognitive Engineering)	NO CN	Not Av	Unknown	OWL	RDF/XML	generic ontology		en
CASCADE airport ontology	NO CN	CN OK	Unknown	OWL	RDF/XML	airport facility		en

Detailed description page

Go to ontology

Information gathered during the catalogue generation

Information gathered from the on-line form

Ontologies   Datasets   About

trade

Title	trade
URI	http://personal.us.es/aparedes/Trade.owl
Description	This ontology defines the classes, properties and individuals that make up the commercial management specially focused to purchase orders, in a company dedicated primarily to trade in electrical, energy and environmental products.
Languages	English
Ontology languages	OWL
Ontology format	RDF/XML
Issued	2012-2-28
Version	2.0

Detailed information

Evaluation results

The following evaluation results have been generated by the RESTFul web service provided by OOPS! (OntOlogy Pitfall Scanner!).

oops! It is obvious that not all the pitfalls are equally important; their impact in the ontology will depend on multiple factors. For this reason, each pitfall has an importance level attached indicating how important it is. We have identified three levels:

Critical It is crucial to correct the pitfall. Otherwise, it could affect the ontology consistency, reasoning, applicability, etc.
Important Though not critical for ontology function, it is important to correct this type of pitfall.
Minor It is not really a problem, but by correcting it we will make the ontology nicer.

P04. Creating unconnected ontology elements   2 cases detected. **Minor**

Ontology elements (classes, relationships or attributes) are created with no relation to the rest of the ontology. An example of this type of pitfall is to create the relationship "memberOfTeam" and to miss the class representing teams; thus, the relationship created is isolated in the ontology.
This pitfall affects to the following ontology elements:

- http://localhost:8080/trade.owl#Trade_Handling
- http://swrl.stanford.edu/ontologies/built-ins/3.3/temporal.owl#Entity

P08. Missing annotations	259 cases detected	**Minor**
P11. Missing domain or range in properties	27 cases detected.	**Important**
P13. Missing inverse relationships	108 cases detected.	**Minor**
P22. Using different naming criteria in the ontology	ontology *	**Minor**
P27. Defining wrong equivalent relationships	1 case detected.	**Critical**
P36. URI contains file extension	ontology *	**Minor**

References.

- [1] Gómez-Pérez, A. Ontology Evaluation. Handbook on Ontologies. S. Staab and R. Studer Editors. Springer. International Handbooks on Information Systems. Pp: 251 – 274. 2004.
- [2] Noy, N.F., McGuinness. D. L. Ontology development 101: A guide to creating your first ontology. Technical Report SMI-2001-0880, Standford Medical Informatics. 2001.
- [3] Rector, A., Drummond, N., Horridge, M., Rogers, J., Knublauch, H., Stevens, R.,; Wang, H., Wroe, C. ''Owl pizzas: Practical experience of teaching owl–dl: Common errors and common patterns''. In Proc. of EKAW 2004, pp: 63 – 81. Springer. 2004.
- [4] Hogan, A., Harth, A., Passant, A., Decker, S., Polleres, A. Weaving the Pedantic Web. Linked Data on the Web Workshop LDOW2010 at WWW2010 (2010).
- [5] Archer, P., Goedertier, S., and Loutas, N. D7.1.3 – Study on persistent URIs, with identification of best practices and recommendations on the topic for the MSs and the EC. Deliverable. December 17, 2012.
- [6] Heath, T., Bizer, C.: Linked data: Evolving the Web into a global data space (1st edition). Morgan & Claypool (2011).

Title of the detected pitfall

Pitfall frequency

Pitfall description

Ontology elements affected

Importance level

Evaluation results generated by

oops!

http://oops.linkeddata.es