

The Epidemic Marketplace Platform: towards semantic characterization of epidemiological resources using biomedical ontologies

Francisco M Couto, **João D Ferreira**, João Zamite, Carlos Santos, Tiago Posse, Paulo Graça, Dulce Domingos and Mário J Silva

F	7th International Conference on Formal Ontology in Information Systems				July 24 – 27		
O							
I	C	B	O	2	0	1	2
S	3rd International Conference on Biomedical Ontology				July 21 – 25		

Gratz, July 24th

The Epidemic Marketplace

- Semantic web vision:
 - Easier access to epidemiological resources
 - Easier sharing mechanisms
 - Increased interoperability
- <http://www.epimarketplace.net/>

A guided tour

Metadata

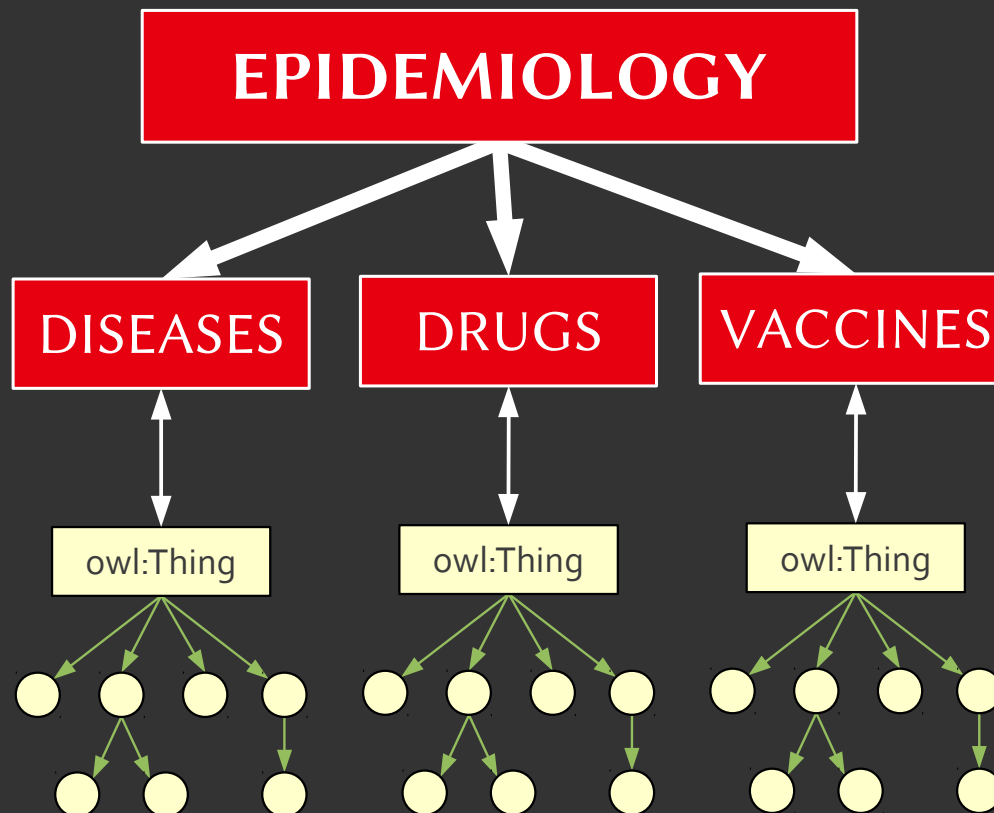
The epidemiology-related elements

```
<em:biology>  
  <em:diagnosticMethod />  
  <em:disease />  
  <em:drug />  
  <em:host />  
  <em:pathogen />  
  <em:symptom />  
  <em:transmission />  
  <em:vaccine />  
  <em:vector />  
</em:biology>  
<em:demography />  
<em:environment />  
<em:location />  
<em:socioEconomicCondition />
```

Metadata

Network of Epidemiology-Related Ontologies

- Paper presented yesterday
- Ontologies used to characterize the resources



Metadata

Network of Epidemiology-Related Ontologies

```
<em:biology>  
  <em:disease>&obo;DOID_8659</em:disease>  
  <em:symptom>&obo;SYMP_0000009</em:symptom>  
  <em:symptom>&obo;SYMP_0000090</em:symptom>  
  <em:host>&ncitaxonomy;9606</em:host>  
  <em:pathogen>&ncitaxonomy;10338</em:pathogen>  
</em:biology>  
<em:Location>&geoplanet;742676</em:Location>  
<em:demography>&mesh;D044465</em:demography>
```

Technical Details

- Resources are stored in Fedora Commons
- Interface is Drupal-based
- Other technologies:
 - SOLR for indexing
 - XACML for access policies
 - Triple stores (*in the future*)
- Public RESTful web services

Conclusions

- Semantic web in the epidemiological field
- Exploiting biomedical ontologies to improve:
 - Management & characterization of epidemiological resources
 - Homogeneous sharing of information
 - Communication between epidemiologists

Acknowledgments

XLDB / LaSIGE

