

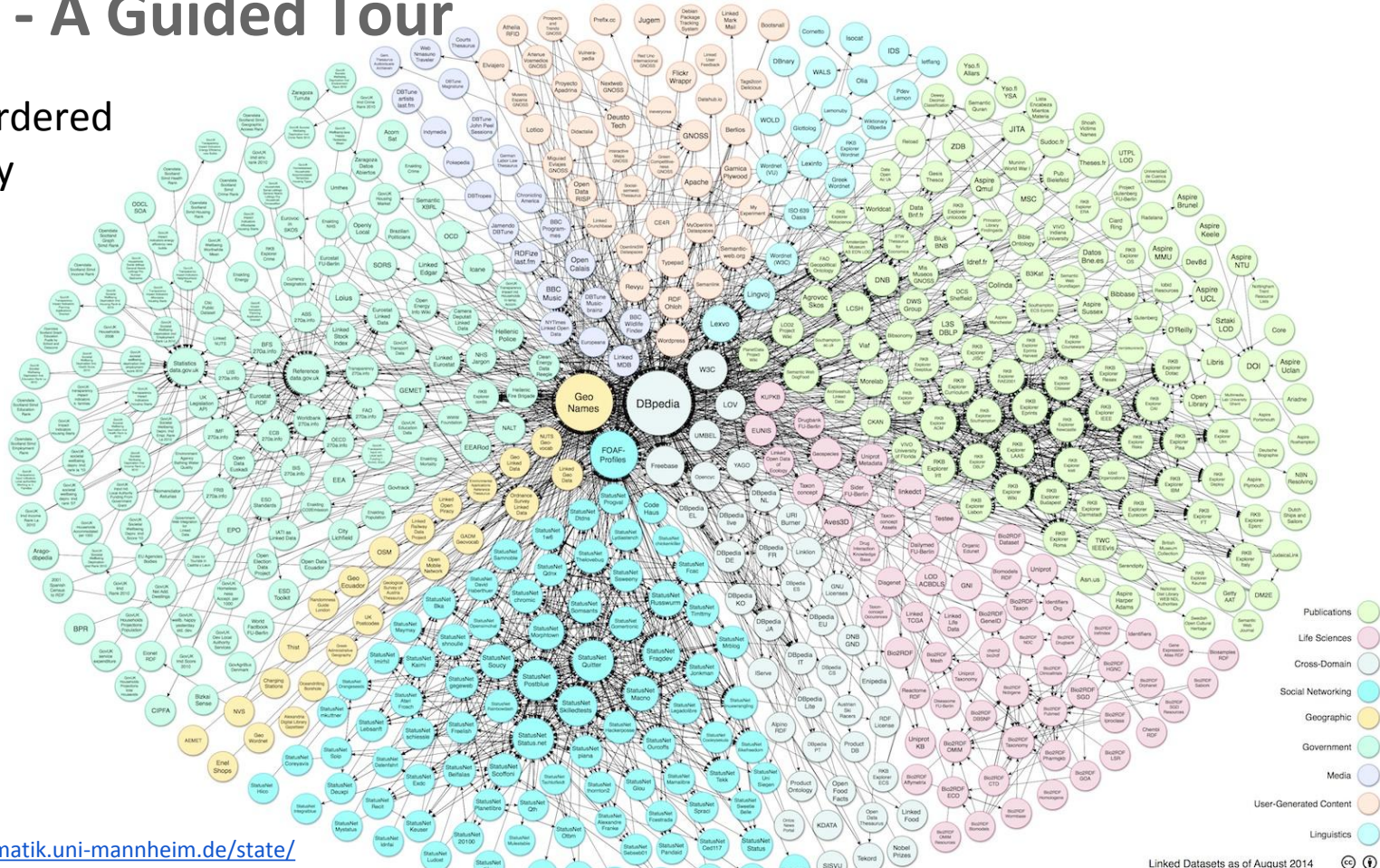
This detail from Sandro Botticelli's 'Birth of Venus' focuses on the central figure, Venus, as she reclines on a large, scallop-shaped shell. She is depicted with a fair complexion and long, flowing blonde hair, wearing a pinkish-red mantle that is partially draped over her. Her gaze is directed towards the viewer. To her left, a figure in a green garment is partially visible, and to her right, another figure in a pinkish-red mantle is seen. The background is a lush, green landscape with a small body of water in the foreground. The overall style is characteristic of the Italian Renaissance, with soft, flowing lines and a focus on idealized beauty.

HPI Hasso Plattner Institut

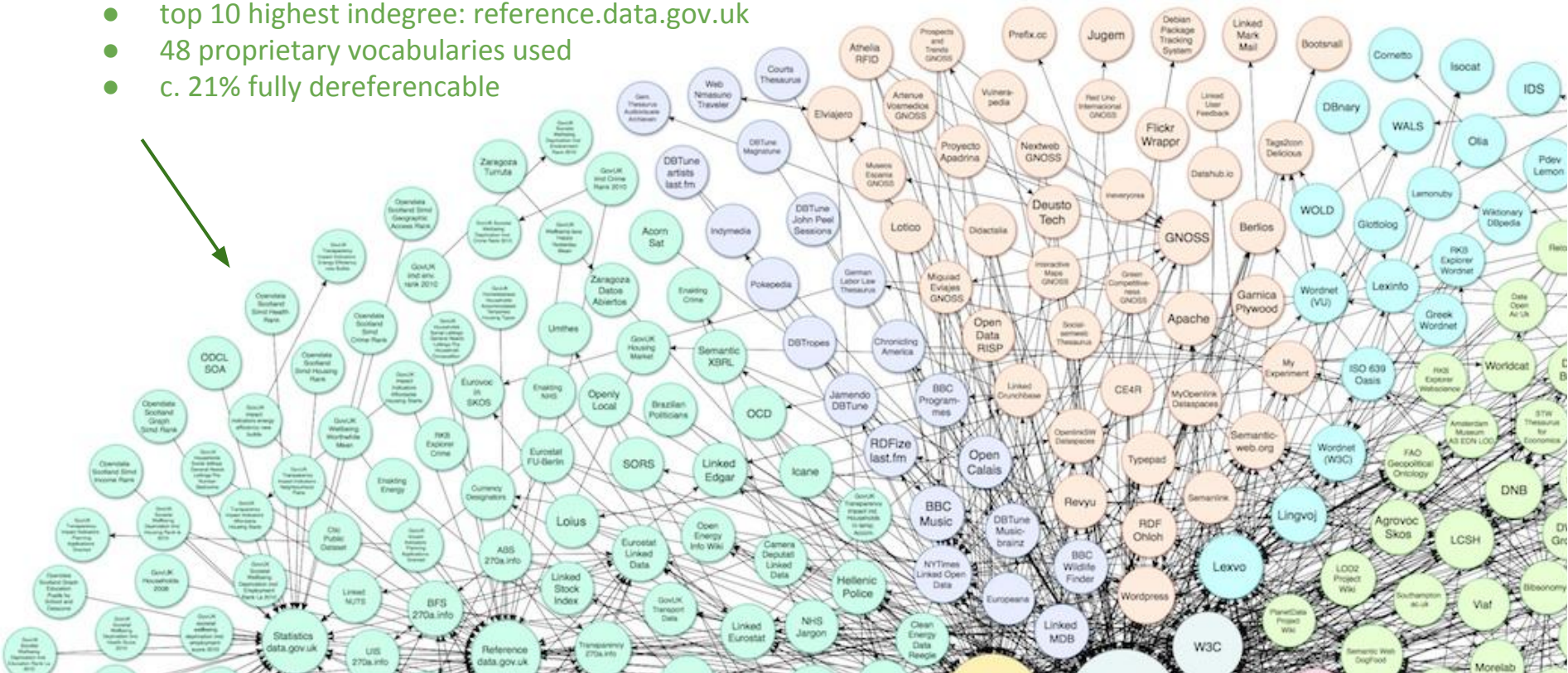
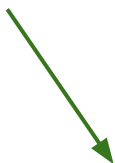
Geographic

Linked Data - A Guided Tour

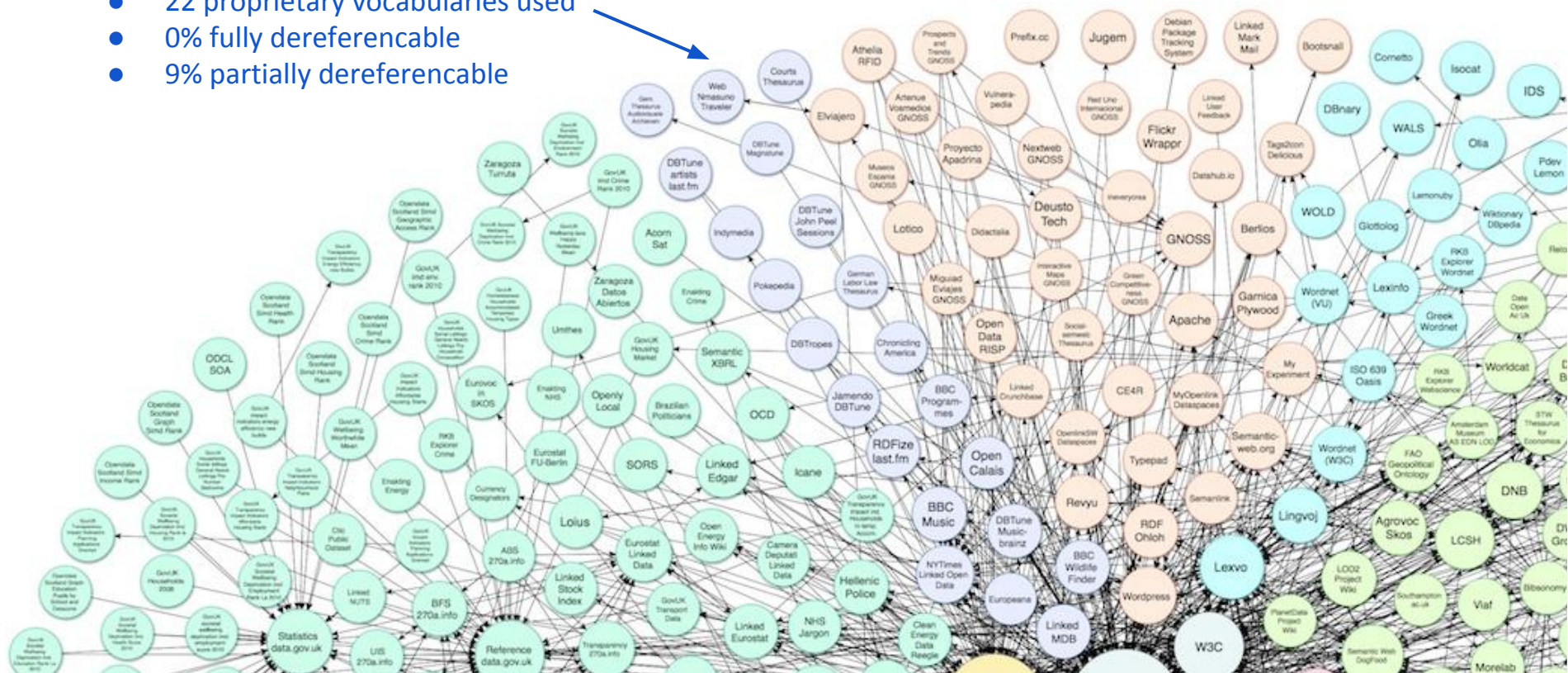
- Datasets ordered by category



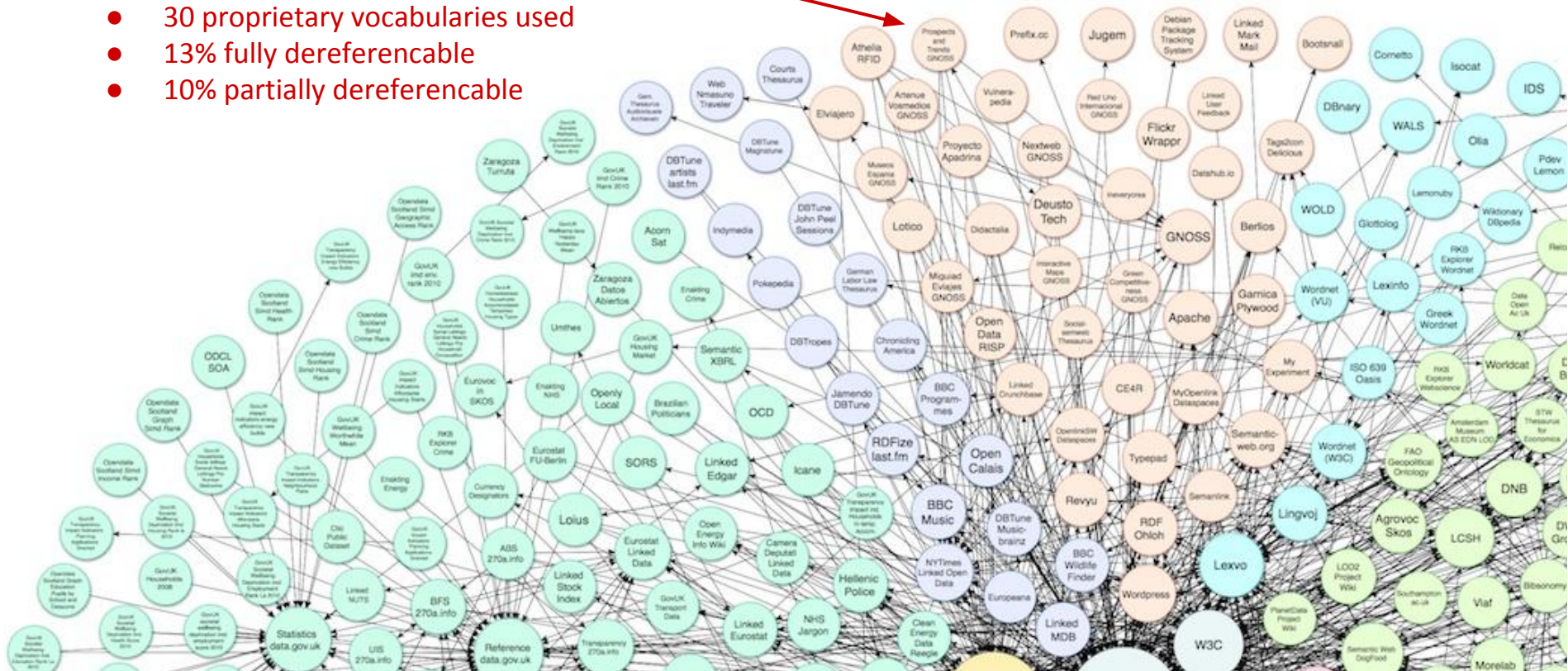
- 183 datasets
- top 10 highest indegree: reference.data.gov.uk
- 48 proprietary vocabularies used
- c. 21% fully dereferencable



- 22 datasets
- 22 proprietary vocabularies used
- 0% fully dereferencable
- 9% partially dereferencable



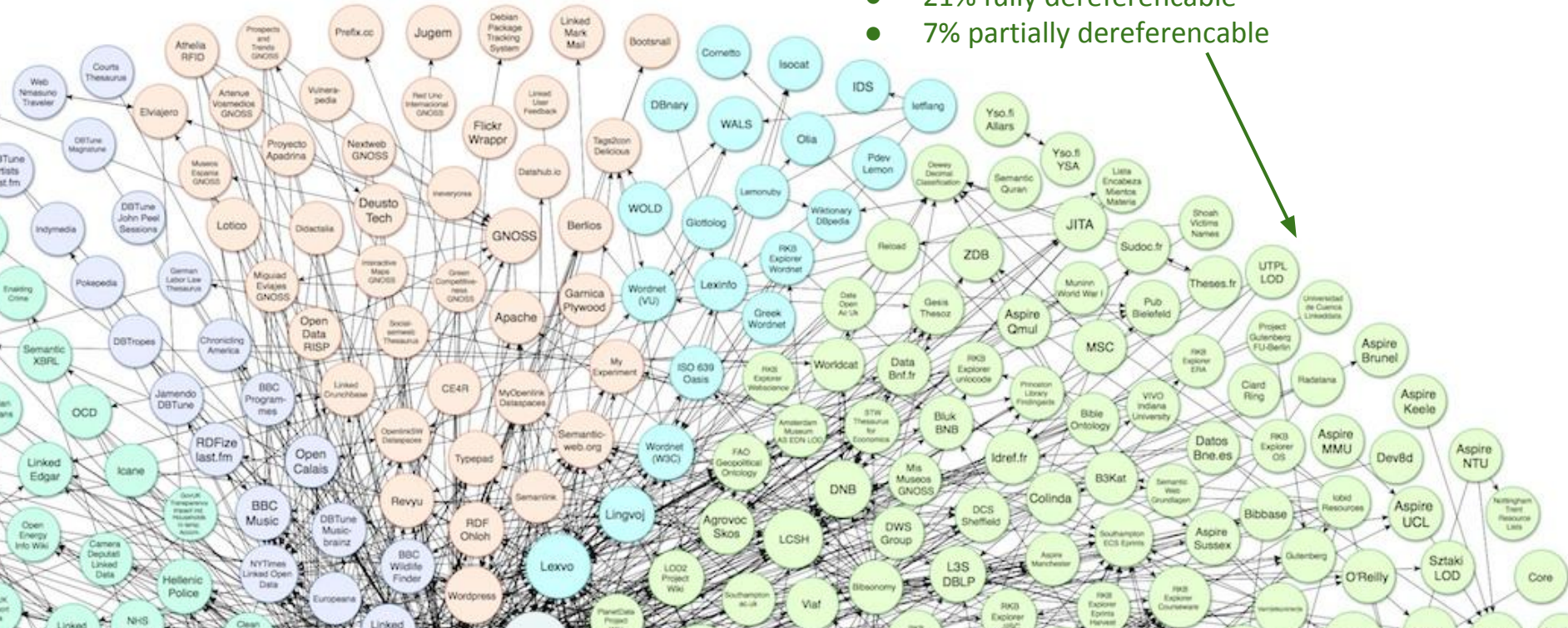
- 48 datasets
- top 10 highest outdegree: semanticweb.org
- 30 proprietary vocabularies used
- 13% fully dereferencable
- 10% partially dereferencable

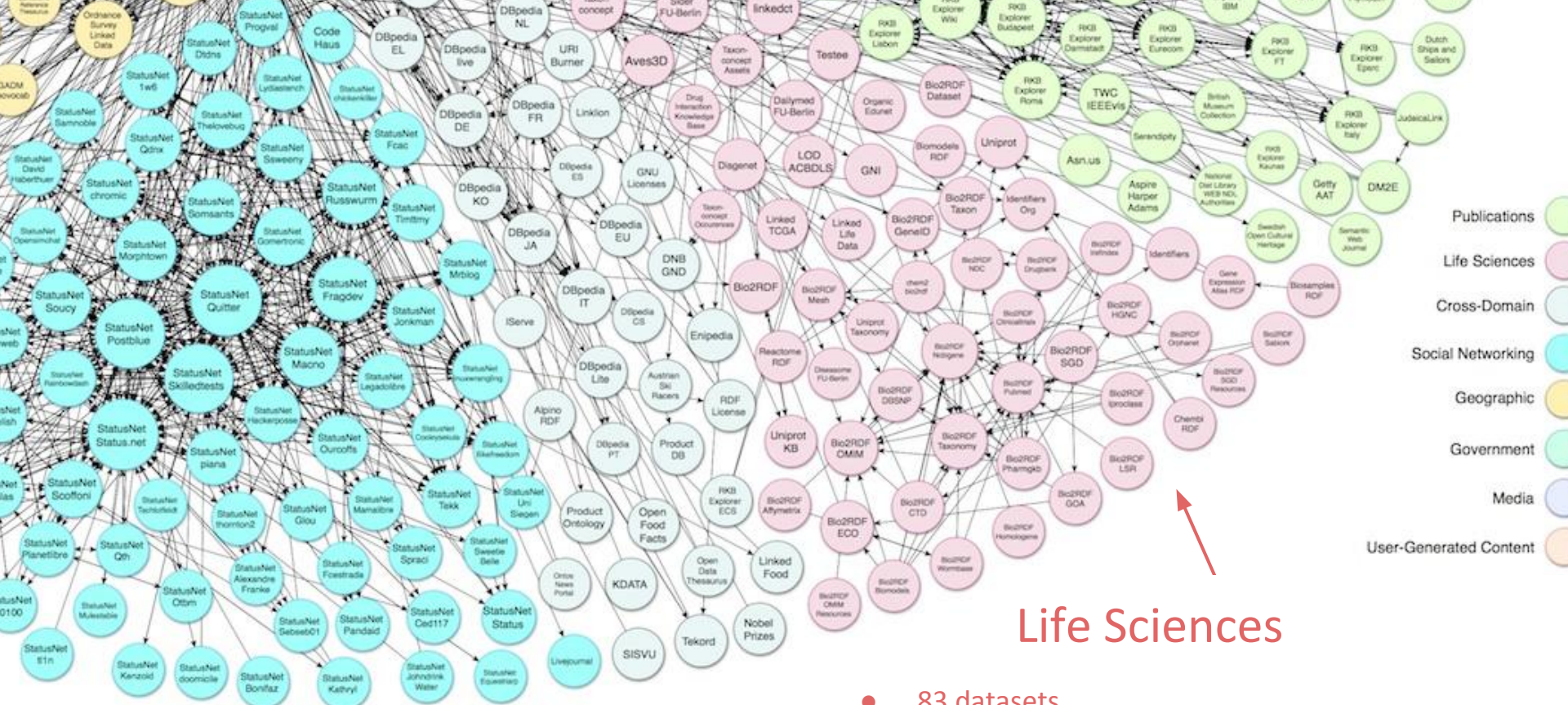


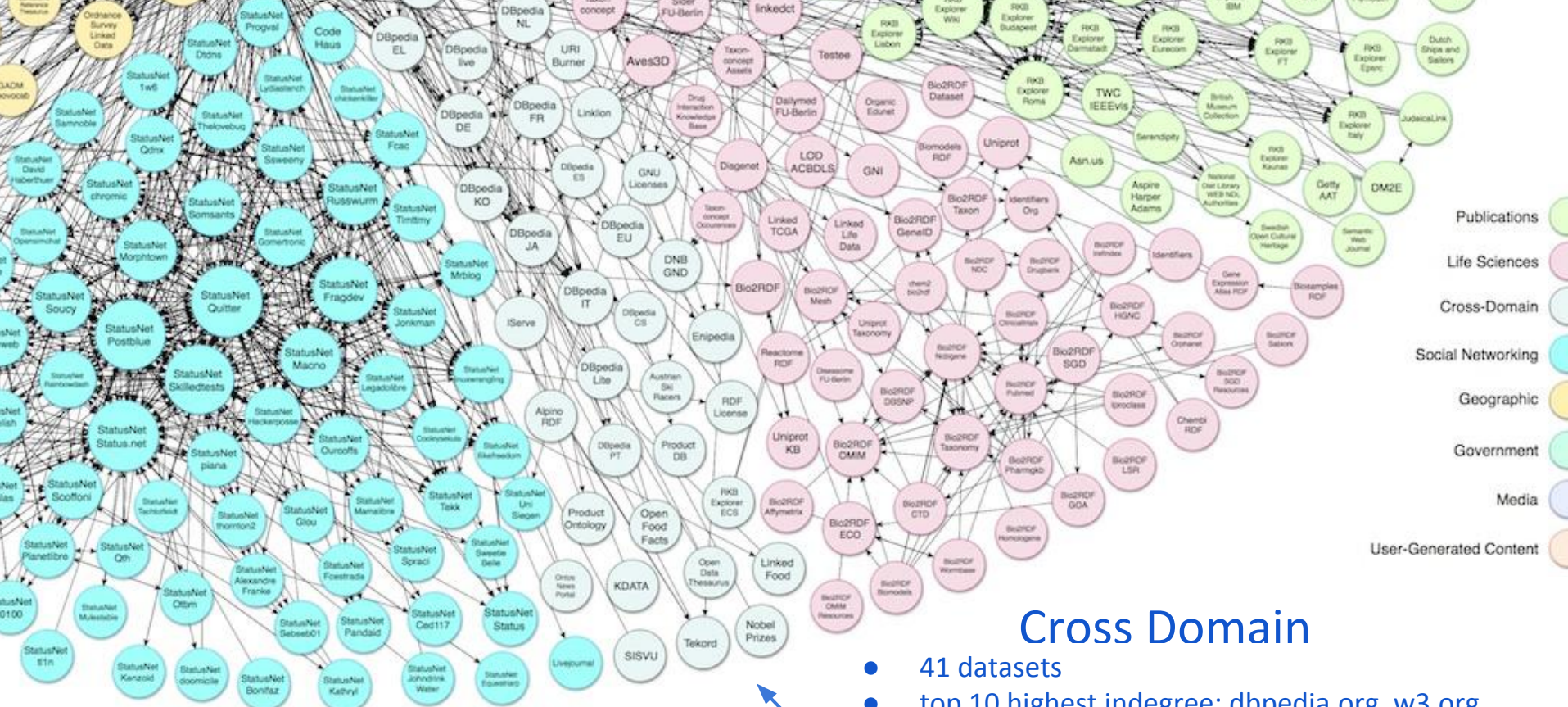
-
- no statistics available so far

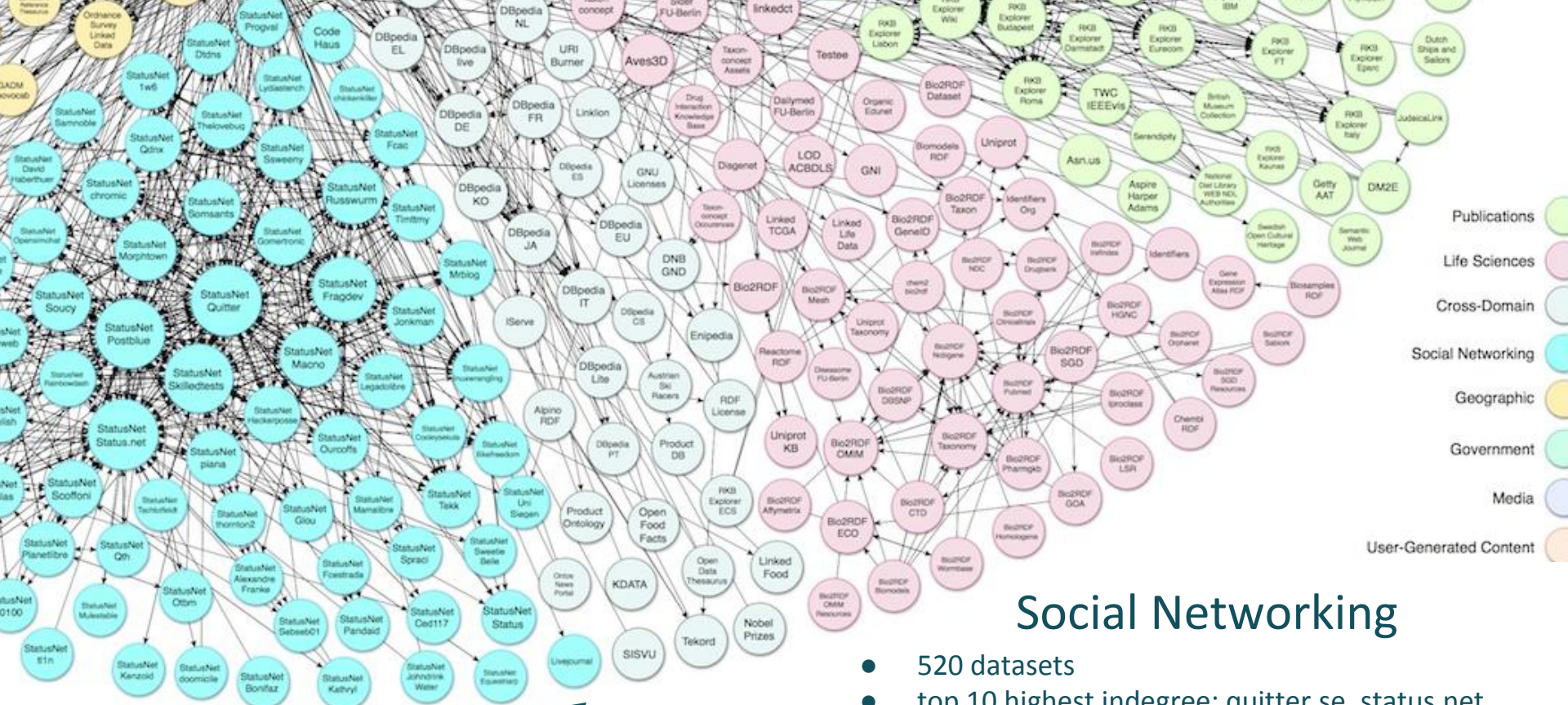
Bibliographic Data

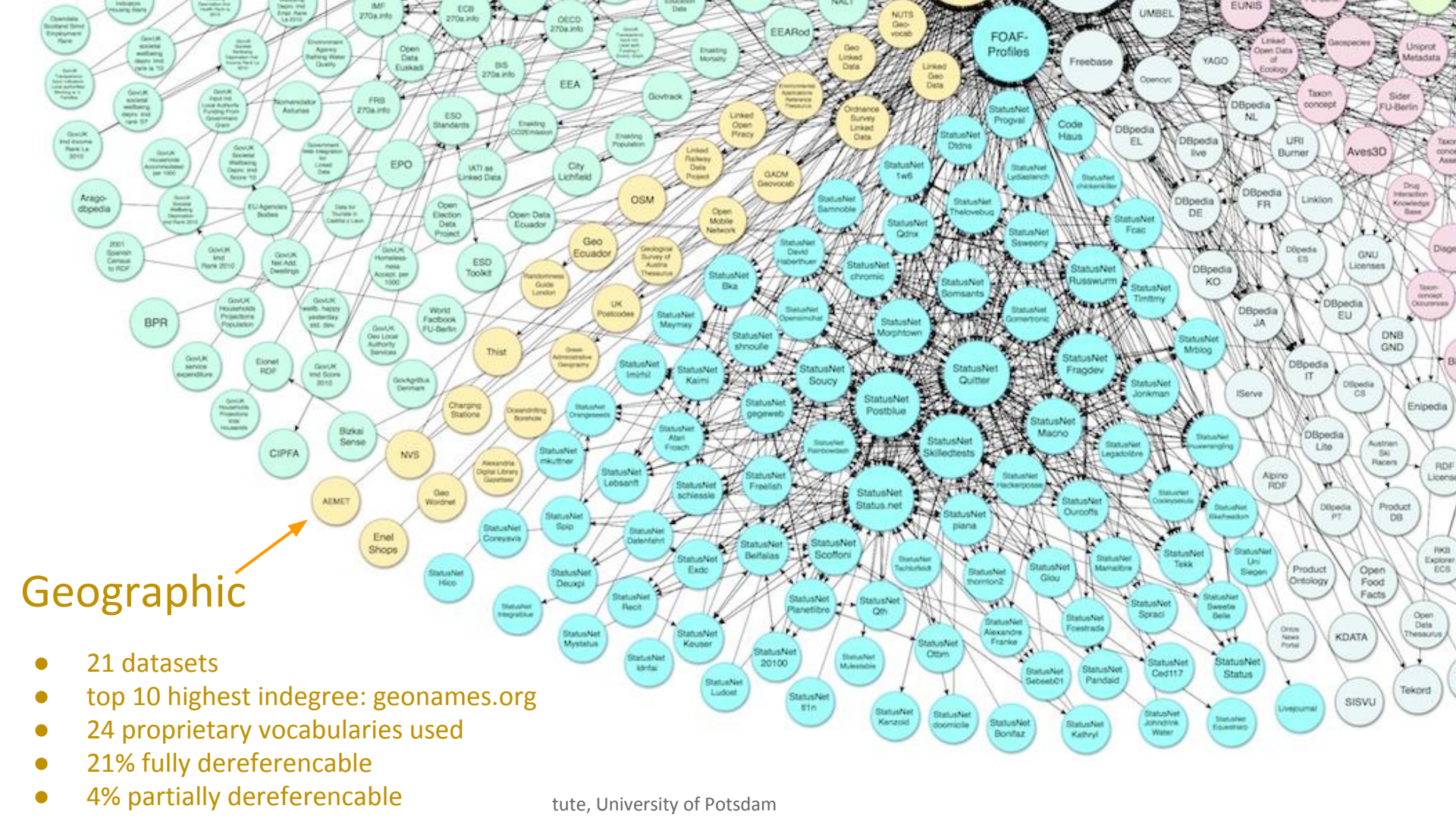
- 96 datasets
- top 10 highest indegree: data.semanticweb.org
- top 10 highest outdegree: bibsonomy.org
- 58 proprietary vocabularies used
- 21% fully dereferencable
- 7% partially dereferencable





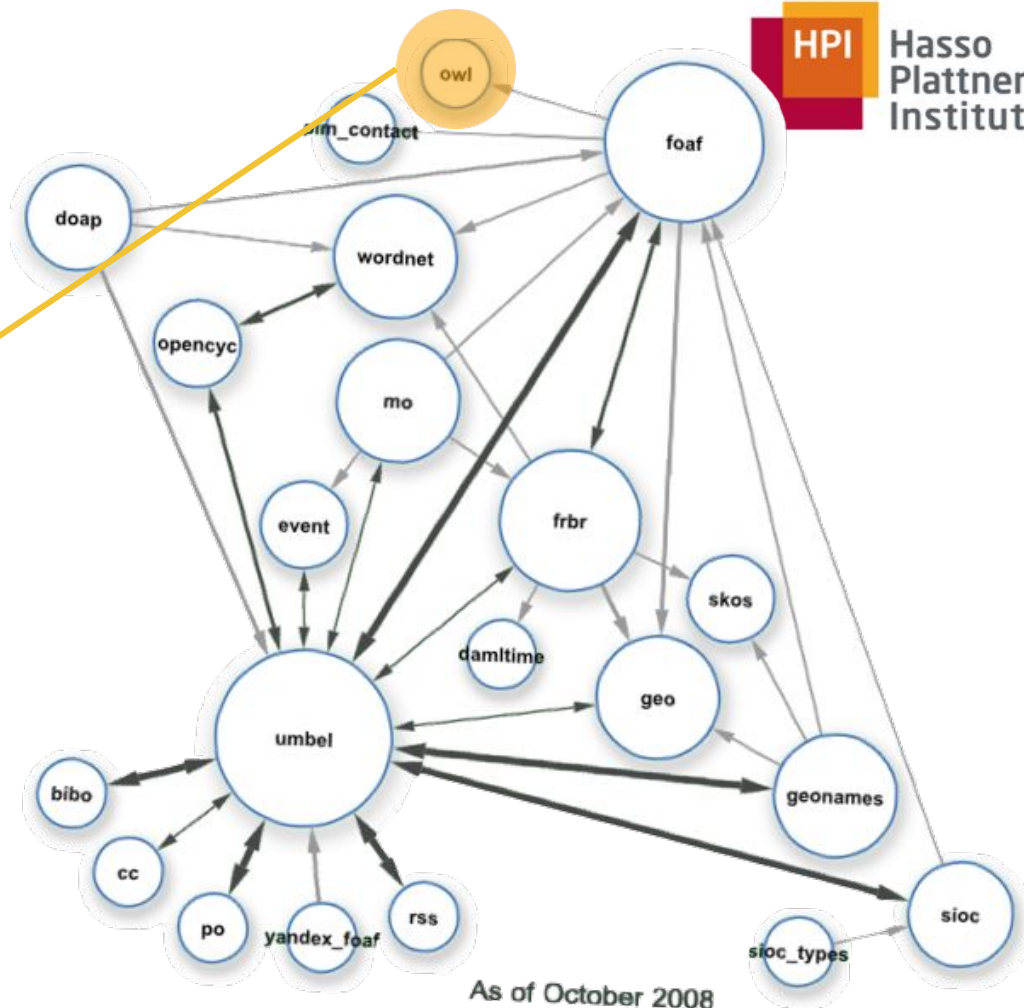






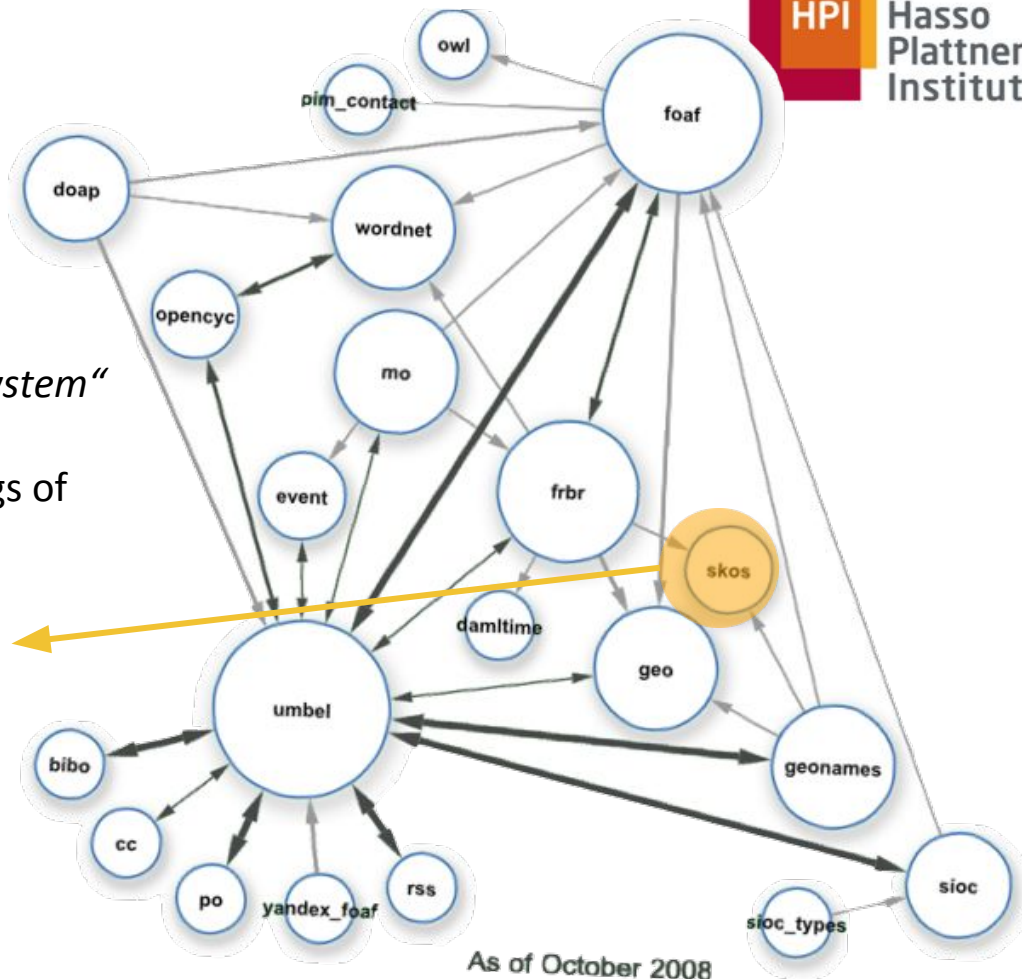
Linked Data Ontologies

- Ontologies hold the Linked Data Cloud together
- **OWL**
`owl:sameAs` connects identical individuals
`owl:equivalentClass` connects equivalent classes



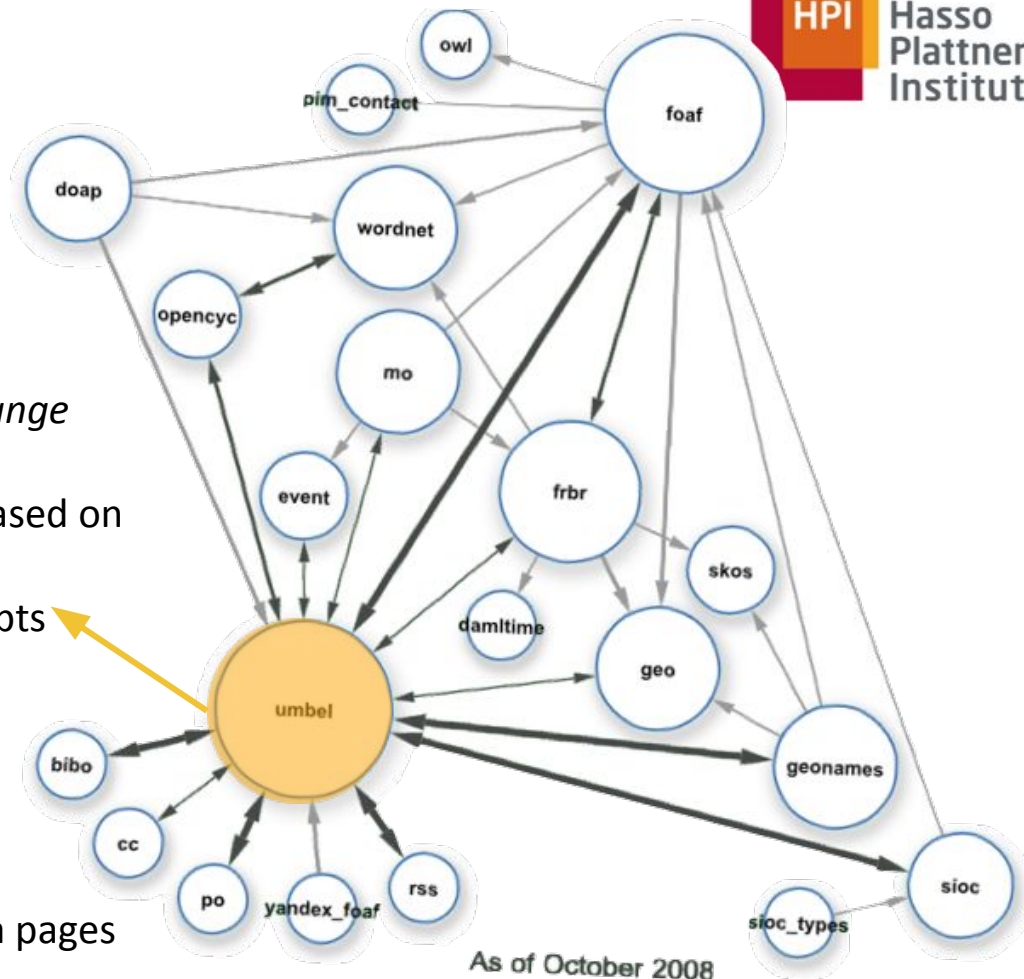
Linked Data Ontologies

- Ontologies hold the Linked Data Cloud together
- **SKOS**
 - „Simple Knowledge Organization System“
 - based on RDF and RDFS
 - applied for definitions and mappings of vocabularies and ontologies
 - `skos:Concept` (classes)
 - `skos:narrower`
 - `skos:broader`
 - `skos:related`
 - `skos:exactMatch`, `skos:narrowMatch`, `skos:broadMatch`, `skos:relatedMatch`



Linked Data Ontologies

- Ontologies hold the Linked Data Cloud together
- **umbel**
 - „Upper Mapping and Binding Exchange Layer“
 - Subset of OpenCycas RDF Triples based on SKOS and OWL2
 - Upper Ontology with 28.000 concepts (skos:Concept)
 - 46.000 Mappings into DBpedia, geonames, e.a.
(`owl:equivalentClass`, `rdfs:subClassOf`)
 - Links to more than 2 Mio Wikipedia pages



OpenHPI - Course Knowledge Engineering with Semantic Web Technologies

Lecture 6: Knowledge Engineering