FORUM OF YOUNG GEOINFORMATICIANS 2014

8th YEAR OF PhD STUDENT SCIENTIFIC CONFERENCE

Brainstorming 05-06.06.2014

Spatial data infrastructures and linked open geo data

Martin Tuchyňa & Tomáš Kliment

Content

- Overview
- Spatial data infrastructures
- Linked open geo data
- Towards the future...

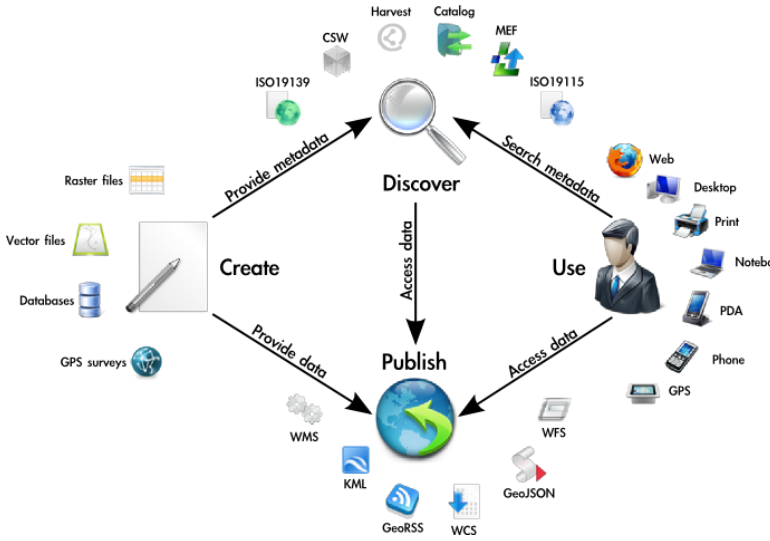
Overview

- Why?
  - To share the views about current trends influencing creation, sharing and utilisation of geospatial resources
  - To trigger ideas and discussion how to benefit from these paradigma and what challenges can occure
  - Invite you for the brainstorming:

“Current trends, activities and issues in the field of Geoinformatics – from global, through the European to the national level”

Spatial Data Infrastructures

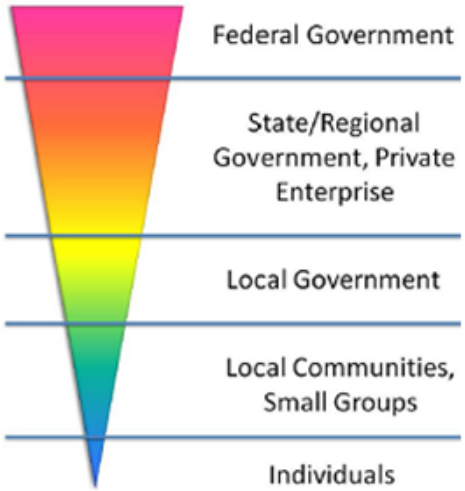
- Paradigm recently driven by
  - Legal driven initiative
  - standardisation initiatves
- Main building blocks (INSPIRE)
  - Metadata
  - Spatial data
  - Network services
  - Data sharing
  - Monitoring reporting
- Roadmap
  - Still on the beginning



Spatial Data Infrastructures

- Stakeholders involvement

  - Stakeholders:
    - High involvement
      - Governmental sector
    - Semi involvement
      - Academic, Private sector
    - Limited involvement
      - Regional and local authorities, NGOs



Source: sdi4apps

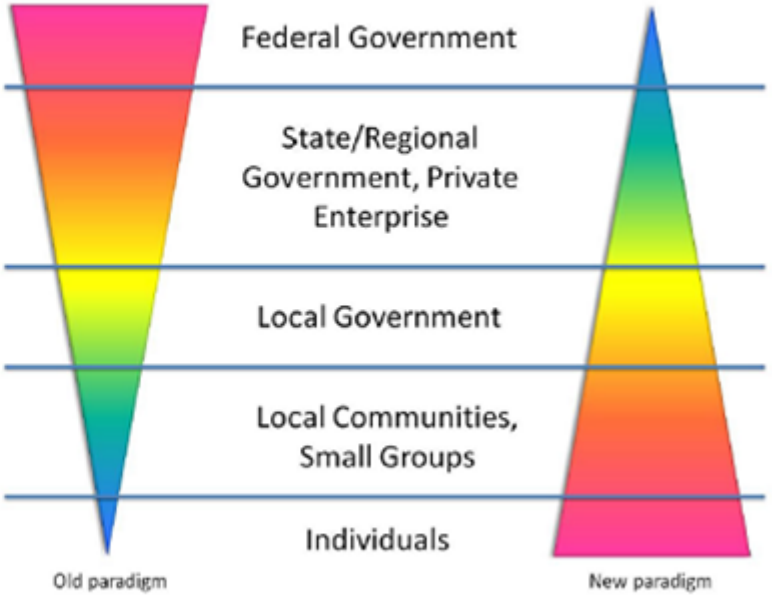
Spatial Data Infrastructures

Source: Ulla Kronborg Mazzoli, Danish Geodata Agency - EIONET_NCP 15th of October 2013

Spatial Data Infrastructures

- Stakeholders involvement

- Questions on table:
  - Users
  - Demands
  - Use cases
  - X sectoral, X border
  - Added value
  - Link 2 world outside



Source: sdi4apps

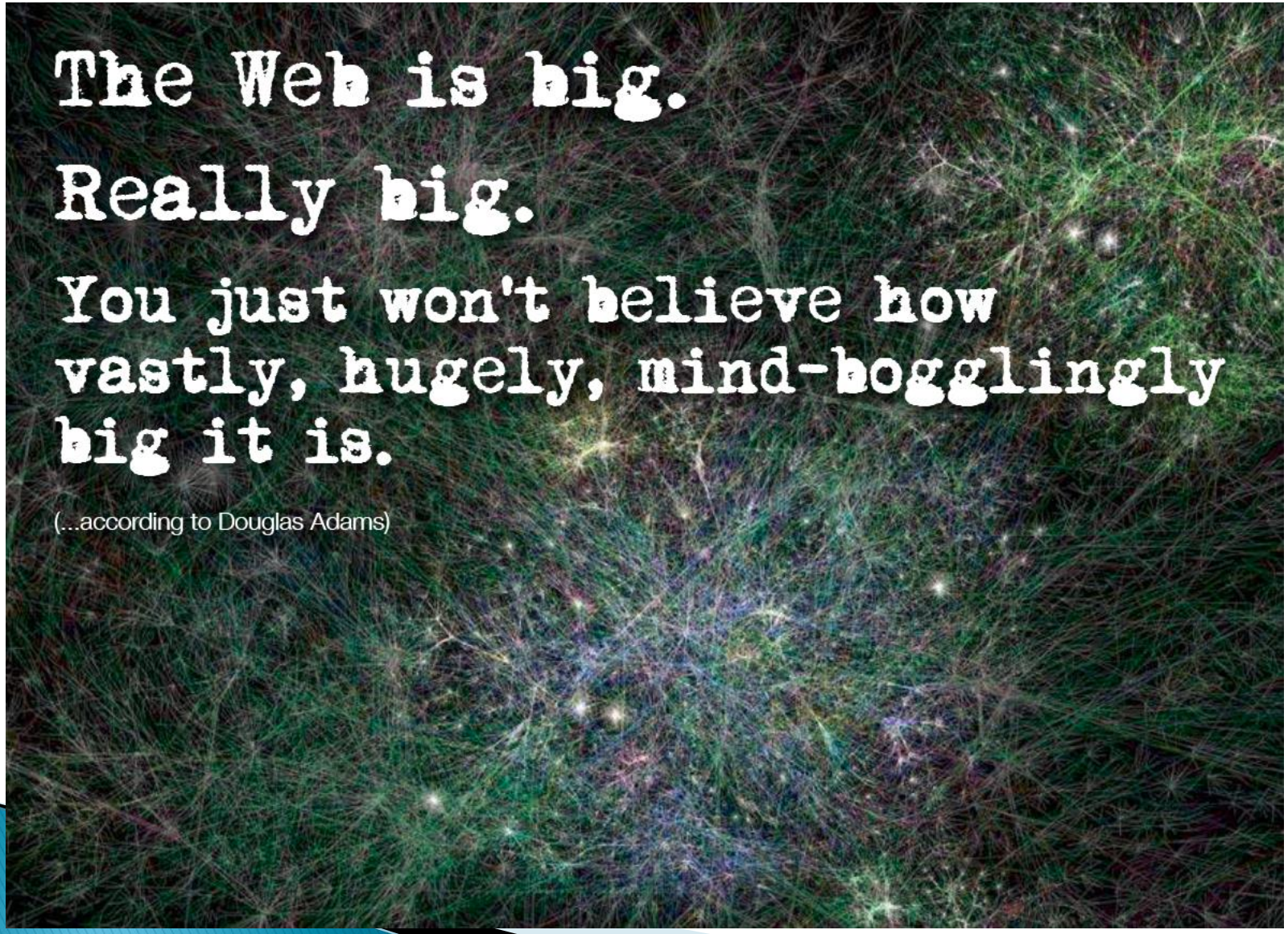
Linked Open Geo Data

How can we find information in the Web?

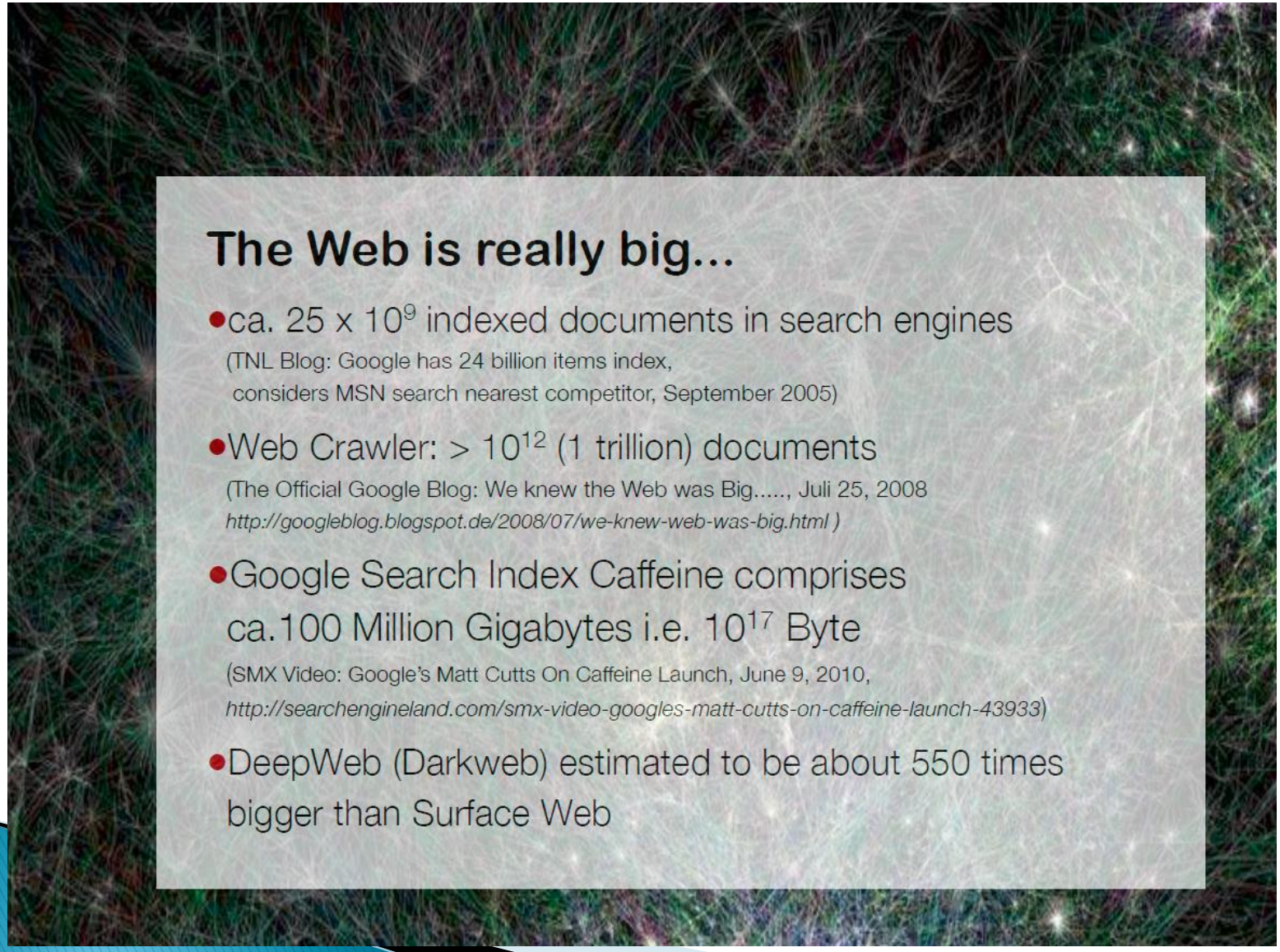
Linked Open Geo Data

current solution:

Linked Open Geo Data



Linked Open Geo Data



Linked Open Geo Data

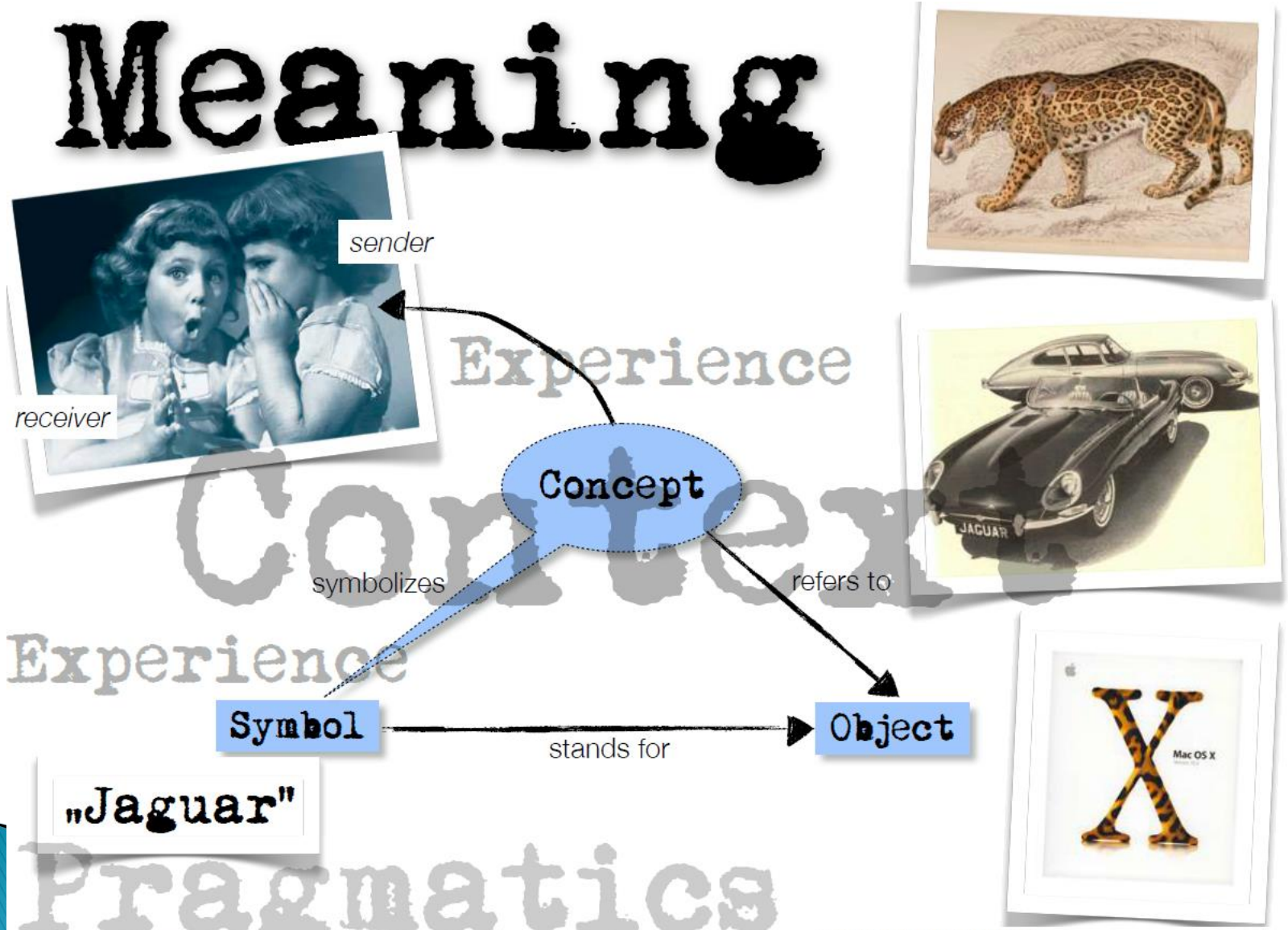
From the World Wide Web to the Web of Data

- The Web of Data is an upgrade of the Web of Documents
- The Web as a huge decentralised database (knowledge base) of
- machine-accessible data

„The web of human-readable document is being merged with a web of machine understandable data. The potential of the mixture of humans and machines working together and communication through the web could be immense.“

***Tim Berners-Lee**, The World Wide Web: A very short personal history, May 1998*

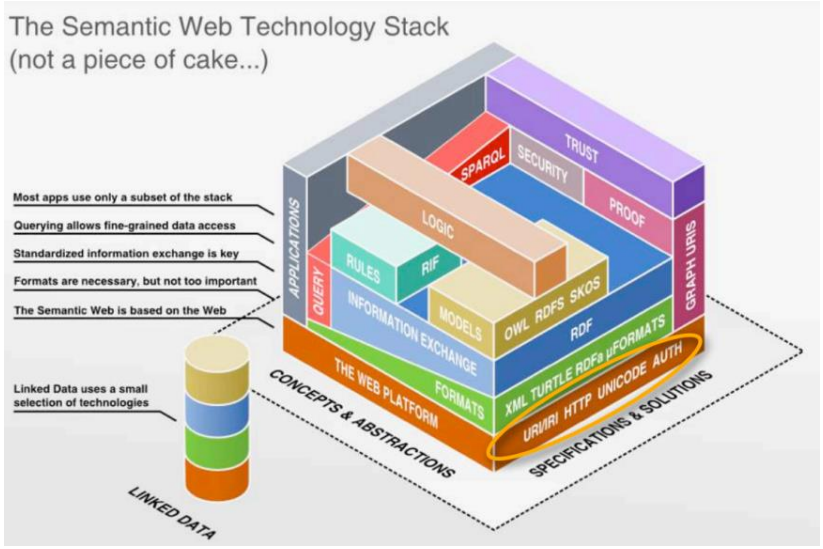
Linked Open Geo Data



Ogden, Richards: The Meaning of Meaning:
A Study of the Influence of Language upon Thought and of the Science of Symbolism (1923)

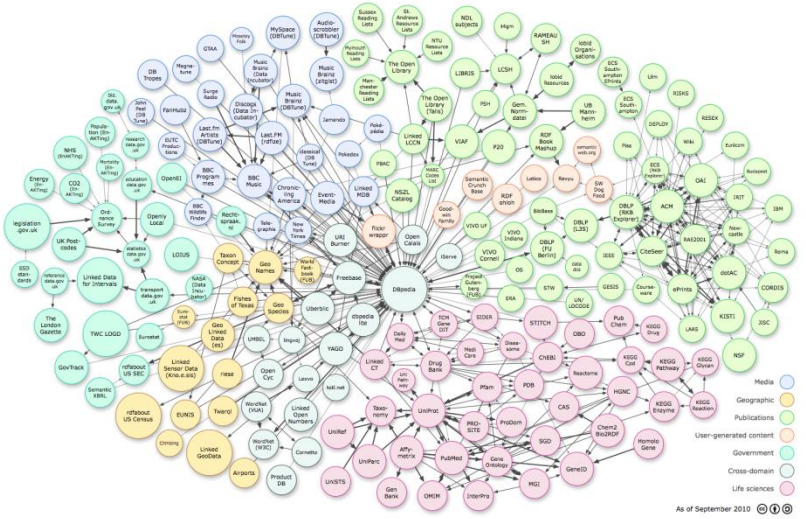
Linked Open Geo Data

- Paradigm recently driven by
  - Development of the Internet
  - Need to process huge amount of data
- Main building blocks



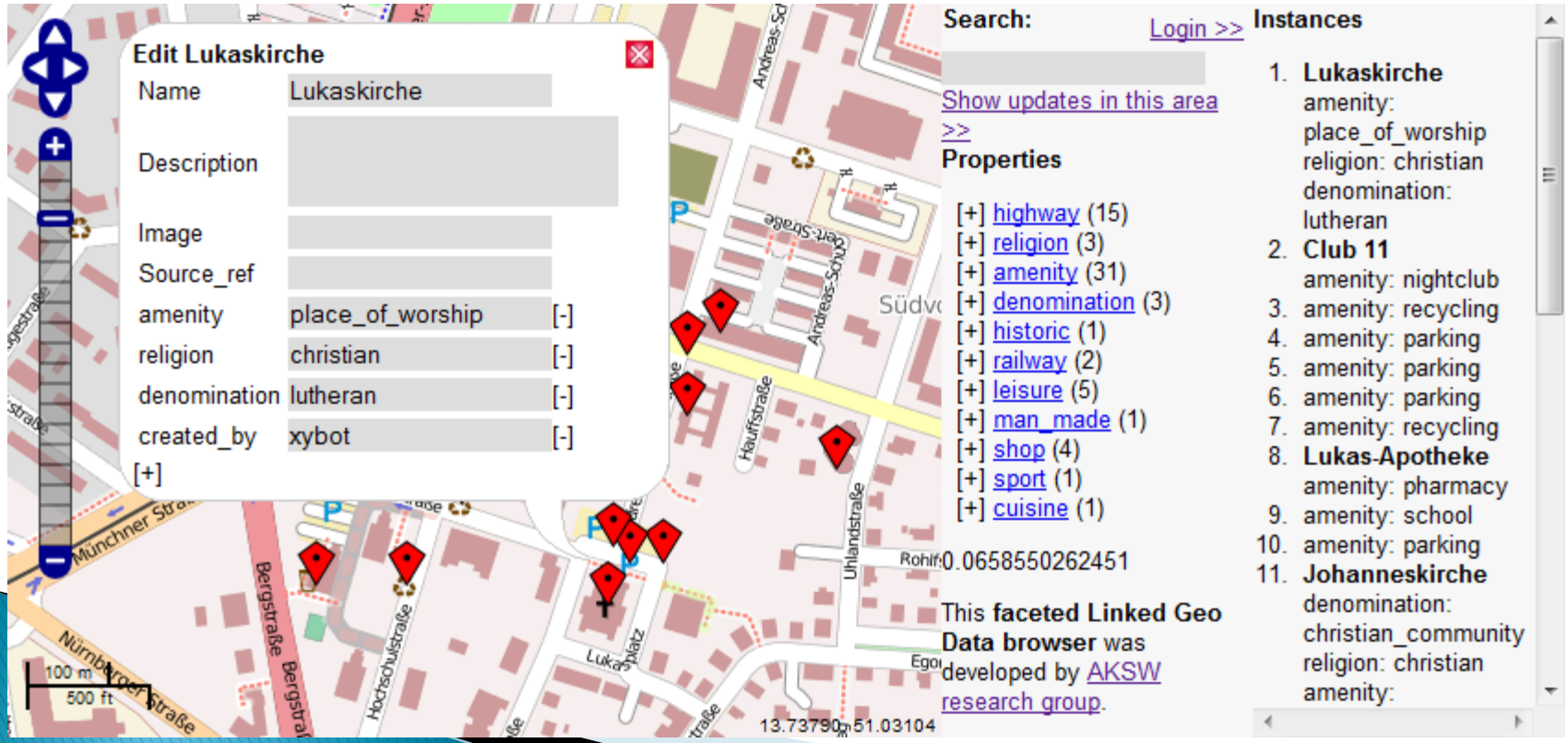
Linked Open Geo Data principles

- Linking of heterogeneous resources in the web
- RDF, URI
- re-emphasizes Semantic Web principles by RDF data model



Linked Open Geo Data principles

- Implementations
  - Storage
  - Transformation
  - Publishing
  - Visualisations (eg.http://linkedgeodata.org)



Linked Open Geo Data principles

- Standards
  - General linked open data (RDF,RDFa)
  - Modeling languages (RDFS,OWL)
  - Notation&serialisation (RDF/XML, N-Triples, RDFa, otation3, Turtle, TriG,JSON-LD, GEOJSON-LD ...)
  - Metadata linked open standards (DC,OWL,VoiD...)
- Schemas, vocabularies
  - Location (GRDF,GeoRSS,GeoSparql,NeoGeo..)
  - Domain ones (AgroVOC,GEMET,GeoSpecies)
- GeoLOD datasets
  - dbPedia,FAO,OS,Geonames,LinkedGeoData,Getty...

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Linked Open Geo Data principles

- Technology
  - Storage (RDF triple stores) with GeoSPARQL:
    - Virtuoso, OWLIM, Parliament , uSeekM, Strabon
  - Connectors &ETL tools (Sparqlify,TripleGeo)
  - Browsing, visualisation
    - Mappify, Jassa, Facete (more info)
  - Interlinking (GeoLift, LIMES)
- Examples
  - Data preparation – transformation for Linked Data (GeoKnow Unister report)

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Linked Open Geo Data principles

From Document Retrieval to Fact Retrieval

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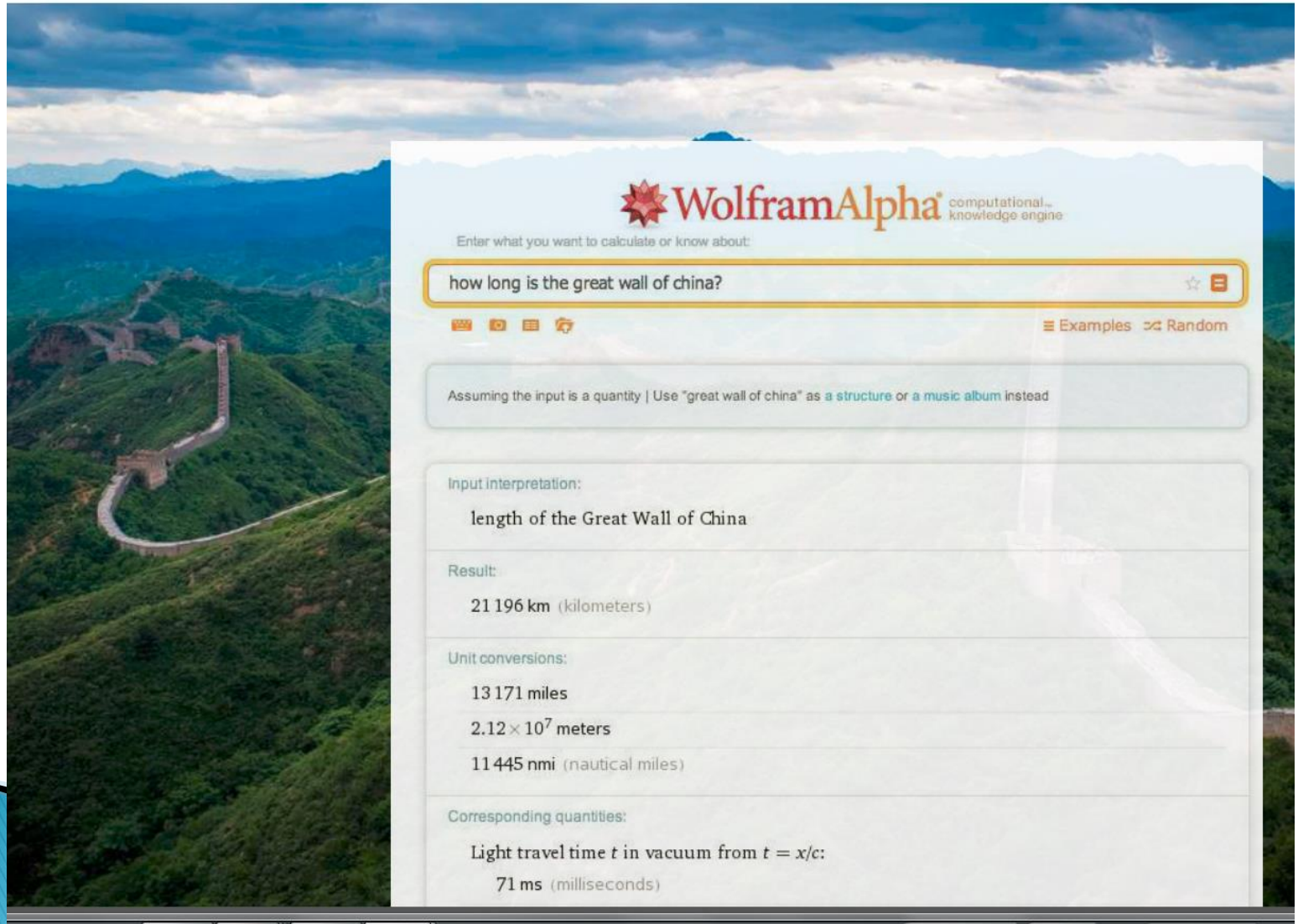

Towards the future

- Join the Brainstorming to shape the future ;o)

Thursday 5.6.2014 (16:40 – 18:00)

1. Brainstorming FYG 2013 main outcomes (What we managed and what no?...)
2. Thematic identified topics:
   a. Support of INSPIRE implementation (INSPIRE MIG) – Martin Tuchyňa
   b. INSPIRE conformity testing and validation (Organisation of the process (EU (MIG WG MIWP-5)), tools, certification authorities) – Tomáš Kliment

Friday 6.6.2014 (09:00 – 12:00)

   c. OpenLinked (Geo) Data and related projects (SmartOpenData, SDI4Apps) – Martin Tuchyňa,Tomáš Kliment
   d. Data and services sharing (TPVSS) – Martin Tuchyňa
   e. Needs and potential of shared knowledge and experience within the wider geo-community space (Experience from Balkan countries, Challenges for Cental Europe Countries) – Vlado Cetl, Martin Tuchyňa
3. Conclusions
4. AOB