



Publishing and consuming Linked Open Data with the LOD2 Statistical Workbench

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Overview

- Linked Data Stack (LOD2, GeoKnow)
- eGovernment Case Study & the Statistical Workbench
- Exploitation of the results (SHARE-PSI)



LOD2 - Creating Knowledge out of Interlinked Data



- Instrument: Large-Scale Integrating Project
- Objective: Intelligent Information Management
- Duration: 09/2010 – 08/2014
- Total Budget: 10,2 M€

- Consortium: 14 Partners from 11 European Countries + 1 Associated Partner from Korea

UNIVERSITÄT LEIPZIG



NUI Galway
OÉ Gaillimh



Wolters Kluwer
Deutschland



Zemanta



Freie Universität Berlin



KAIST

CWI





The Stack

The Linked Data Stack comprises a number of tools for managing the life-cycle of Linked Data. The life-cycle comprises in particular the stages:

- Extraction of RDF from text, XML and SQL
- Querying and Exploration using SPARQL
- Authoring of Linked Data using a Semantic Wiki
- Semi-automatic link discovery between Linked Data sources
- Knowledge-base Enrichment and Repair

<http://stack.linkeddata.org/>

<http://stack.lod2.eu/>



Components in the Stack

Are you interested in using some of the Linked Data stack tools? Check the list of components available in the stack. Most of the tools that are part of the stack have online demos, give them a try!

[View details »](#)

How to Start

The Linked Data Stack is a collection of tools that give support to the Linked Data lifecycle. These tools are created under different research funding programs and third parties, and you can use these tools in your Linked Data creation process.

[View details »](#)

How to Contribute

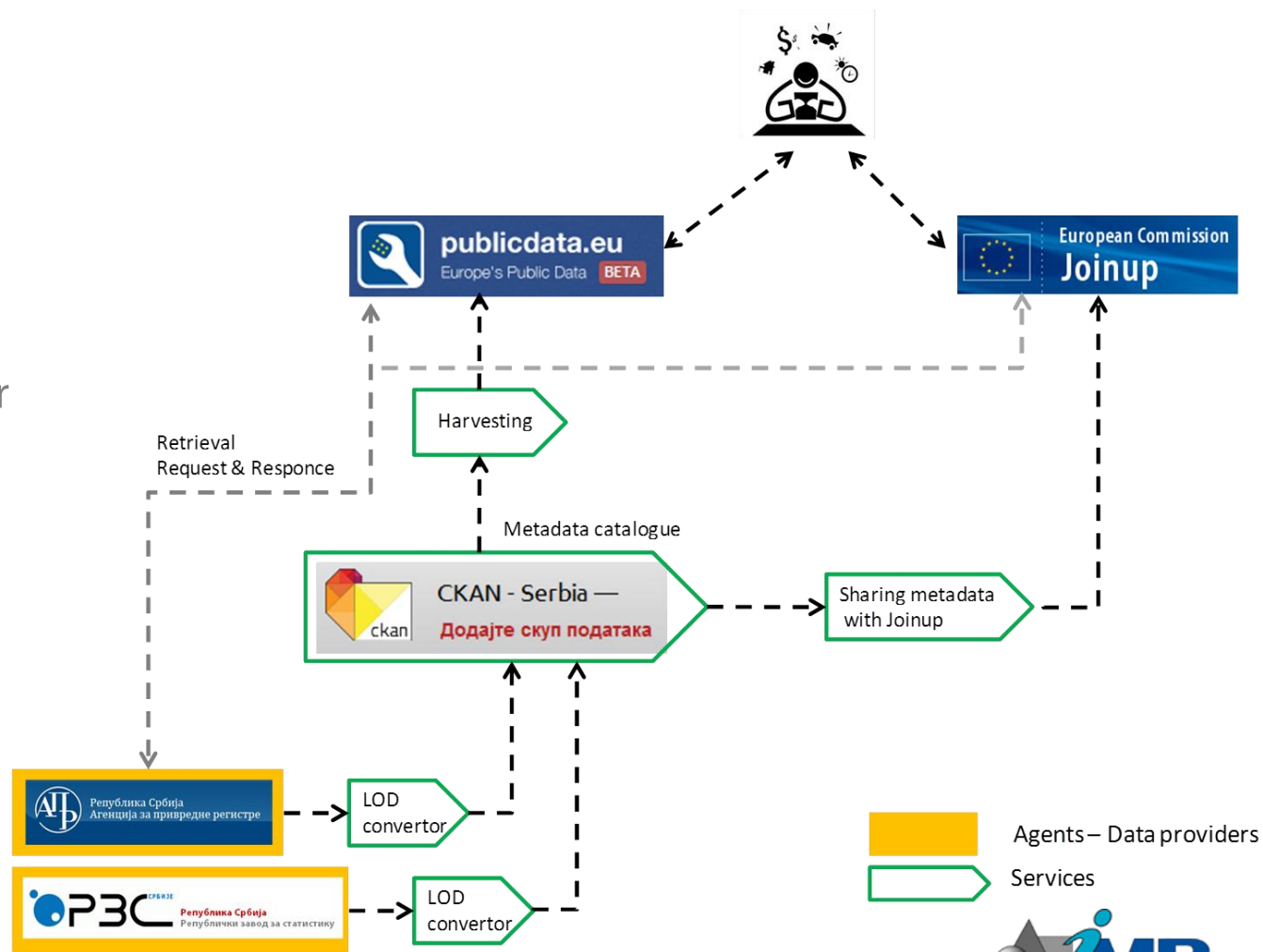
Have you created that missing tool that supports the Linked Data lifecycle? You can contribute to the Linked Data stack by adding your tool to our repository and reach targeted users from our community.

[View details »](#)

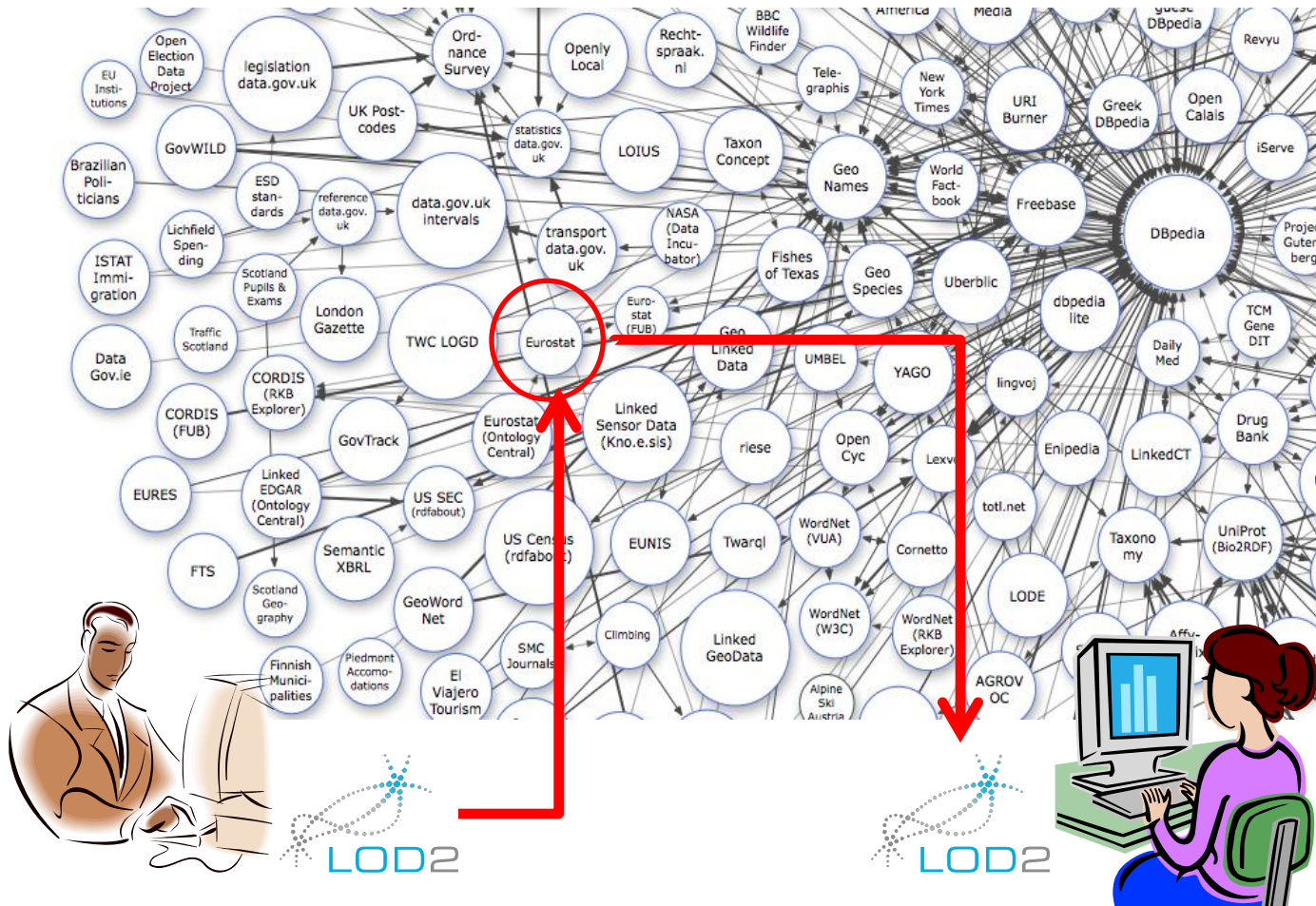
Statistical Office Case Study

Goals

- Contribute to modernization of statistical services
- Define infrastructure for publishing and integration of public sector information into the LOD cloud
- Provide an integrated collection professional tools for statistical LOD publishing (1) and consuming (2)



LOD2 Statistical Workbench



Statistical Workbench

Statistical Workbench



Make Graph Find more Data Online **Edit & Transform** Enrich Datacube **Present & Publish** Help

- Select Default Graph
- Create Graph
- Import
- Export
- Validate
- Remove Graphs

Manual revision/authoring

Inter-linking/
Fusing

Classification/

- Edit Graph (OntoWiki)
- Edit Code Lists (PoolParty)
- Merge datasets
- Slice datasets
- Transform and Update Graph (SPARQL Update Endpoint)
- SparQLed - Assisted Querying
- PoolParty Code Lists SPARQL endpoint

- Interlinking dimensions (Silk)
- Data enrichment and reconciliation (LODRefine)
- Interlinking with Limes
- Interlinking with SameAs

which comprises a
 cle of Linked Data.
 : stages

- Querying and Exploration using SPARQL
- Authoring of Linked Data using a Semantic Wiki

- Semi-automatic link discovery between Linked Data sources
- Knowledge-base Enrichment and Repair

Access tools for each of these stages using the menu

The Stack is developed by the LOD2 project consortium comprising 15 research groups and companies. The LOD2 project is co-funded by the European Commission within the 7th Framework Programme (GA no. 257934).

You can find further information about the LOD2 Stack at <http://stack.lod2.eu> and the LOD2 project at <http://lod2.eu>.

- Load RDF data from publicdata.eu
- Load RDF data from Data Hub
- DBPedia
- Mondeca SPARQL endpoint Collection



- Visualization with CubeViz
- Geo-Spatial exploration
- Publish to CKAN
- Publish to Sindice

Search

SORS Dissemination Database

National accounts

- Agriculture and fishery
- Catering
- Construction
- Culture
- Domestic trade
- Education
- Elections
- Employment and Earnings
- Energy
- Environment
- External Trade
- Forestry
- Household budget
- Industry
- Judiciary
- National accounts**
- Population
- Prices
- Register of spatial units and GIS
- Science, Technology and Innovation
- Social welfare
- Statistical registers
- Structural business statistics
- Tourism

- New**
- Data
- Publications
- Methodology
- Description

SNA2008 / ESA2010 Implementation

As macroeconomic system of data presentation, national accounts offer an insight into overall economy of a country and present the instrument of major importance for analysis, assessments and forecast of economic phenomena. Therefore, the System of National Accounts (SNA) presents a generally adopted international statistical standard. The main aggregates of national accounts and the system of accounts are used for economic policy decision-taking and for international comparisons.

However, new economic environment with the structural changes in the global economy required the new methodology of the system of national accounts since 1993, the

The revision of the national accounts framework adjusted to the needs of all countries will be completed by the end of 2010. Observing that the methodology contained in the current system was prepared the previous version of the national accounts. This document contains several key steps in the implementation of national accounts.

 [SNA2008 I](#)

Data

Annual National Accounts

[GDP at current prices](#)

[GDP at constant prices](#)

SDMX subject	Domain	Properties	Code Lists
1.1	Population and migration	rs:obsIndicator , rs:sex , rs:age , rs:geo , rs:time , qb:measureType , sdmx-measure:obsValue	cl:sex , cl:age , cl:geo , cl:time
1.2	Labour-statistics on labour force	rs:obsIndicator , rs:age , rs:geo , rs:time , sdmx-measure:obsValue	cl:age , cl:geo , cl:time
2.2	Economic accounts	rs:obsIndicator , rs:geo , rs:time , sdmx-attribute:unitMeasure , sdmx-measure:obsValue	cl:esa95 , cl:geo , cl:time
2.4.5	Tourism	rs:obsIndicator , rs:geo , rs:time , rs:obsTurists , qb:measureType , sdmx-measure:obsValue	cl:geo , cl:time , cl:turists



CubeViz

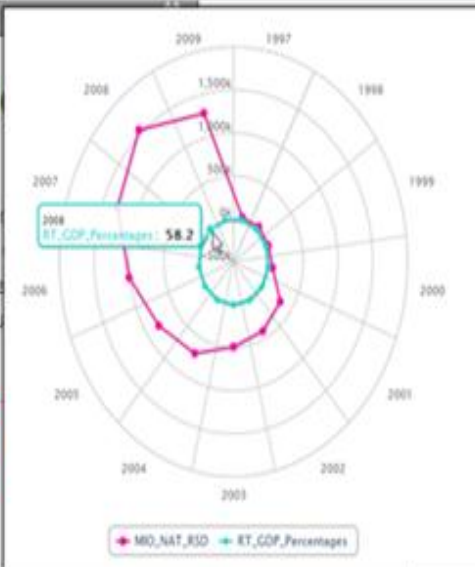
THE RDF DATACUBE BROWSER

The selected RDF dataset contains a subdivision called "DataCube datasets" which are used to group different items. The structure of a DataCube dataset corresponds to a specific data structure definition. There may be different DataCube datasets share their corresponding DataStructureDefinition. In the selection dialogue you can change the selected DataCube dataset. If you do not select one of the subdivision, CubeViz will select one automatically.

1

- GDP usage Individual consumption expenditure
- GDP usage, Import, Export
- Population aged 15 and over, by age and region

4



Data Selection

Select a dataset

GDP usage Individual..

Select Unit and Measurement

Units

Observed Value

2

Configure the Dimensions

Observed Sector

4 of 4 Selected

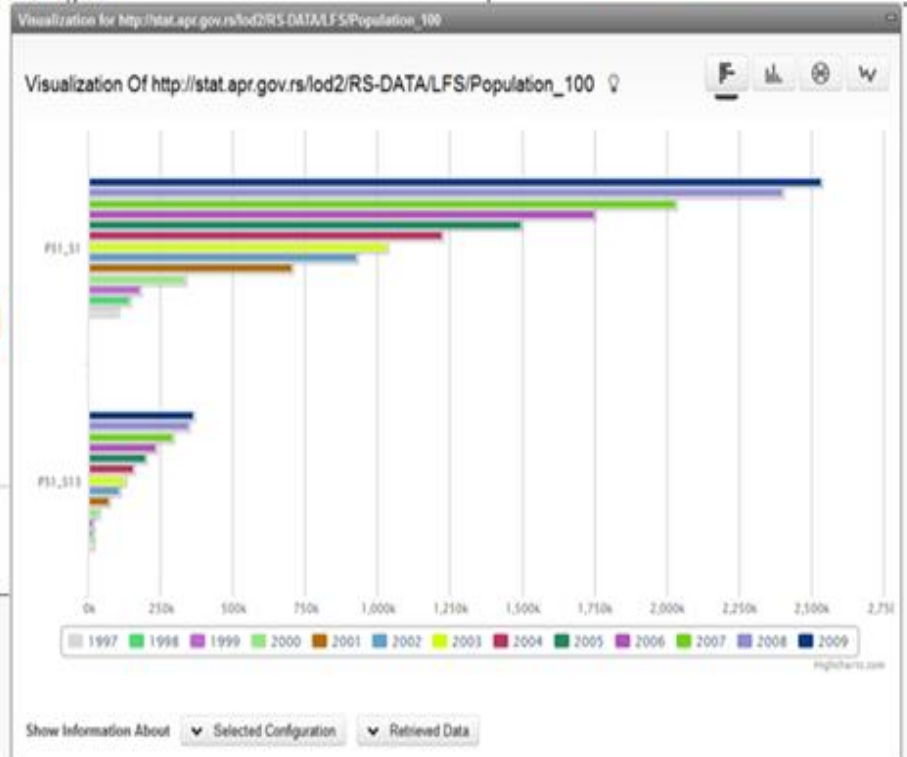
Times

13 of 13 Selected

Link

Show Visualization

3



Exploratory Spatio-Temporal Analysis

<http://fraunhofer2.imp.bg.ac.rs/esta-ld/>

Regional development incentives - Mozilla Firefox

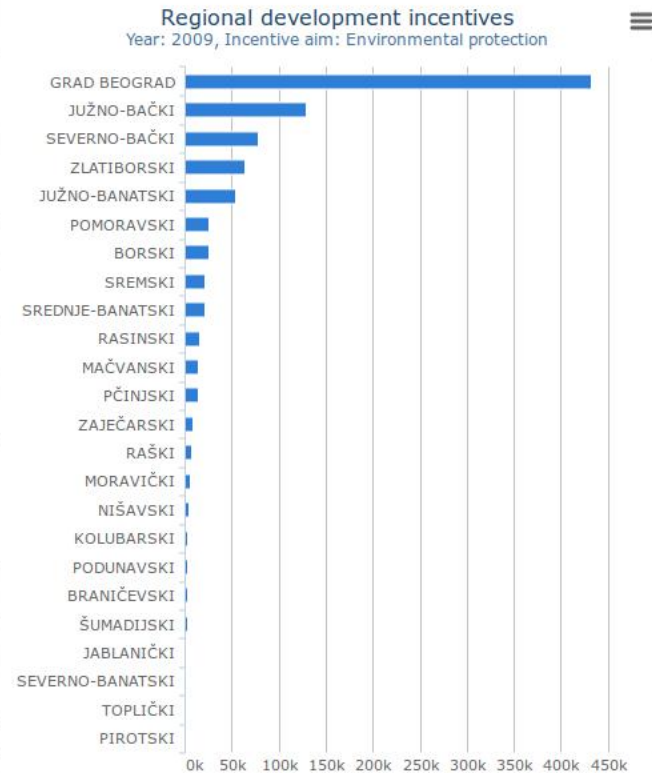
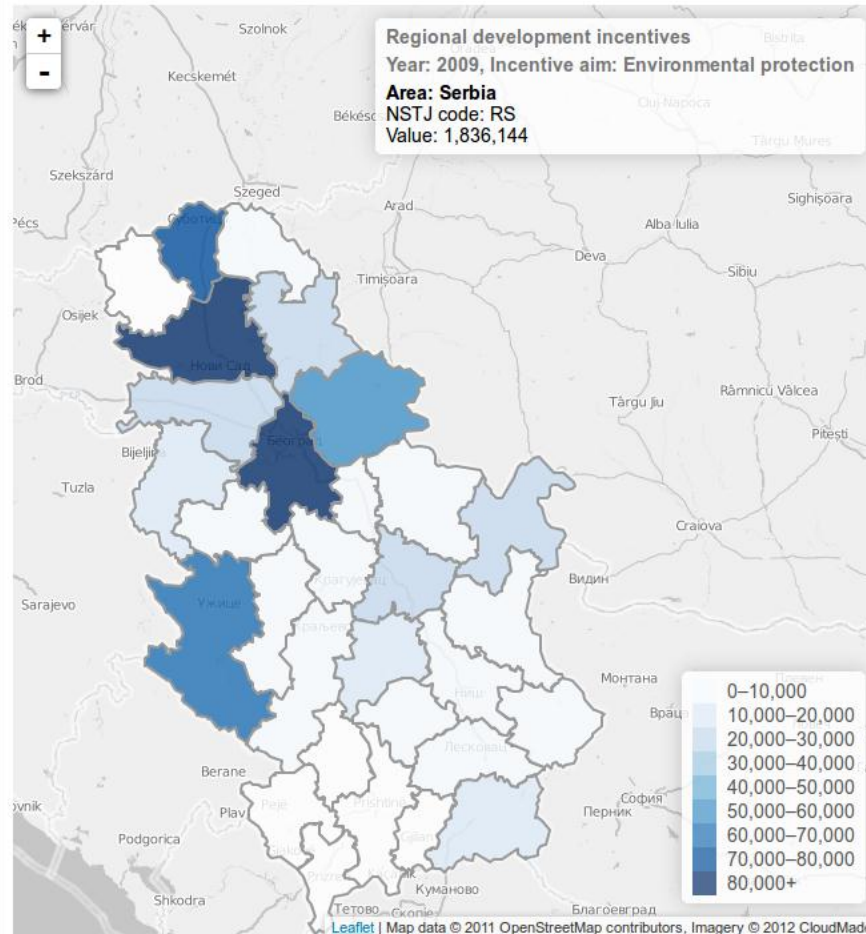
Regional development incentives

localhost:8080/GeoKnow/Leaflet-incentives.html

Google

Regional development incentives

Year: 2009 Incentive aim: Environmental protection Areas Regions Municipalities



Добродошли на CKAN - Serbia!

Проналажење податка

[Нађи скупове података](#)

CKAN - Serbia садржи **168 скуп(ов)а података** које можете прегледати, учити о њима и преузети.

Дељење података

Add your own datasets to share them with others and to find other people interested in your data.

[Региструјте се »](#)

Сарадња

Find out more about working with open data by exploring these resources:

- [GetTheData.org](#)
- [DataPatterns.org](#)
- [Open Data Handbook](#)

Ко је још овде?

Statistical Office

The Statistical Office of the Republic of Serbia (SORS) is a special professional organization in the system of state administration of the Republic of Serbia that performs the expert...

Statistical Office има 91 скуп(ов)а података.

Ministry of Education and Science

Republic of Serbia

Ministry of Education and Science има 4 скуп(ов)а података.

National Bank of Serbia

The National Bank of Serbia is independent and autonomous in fulfilling its functions stipulated by the NBS Law and other laws, and is accountable for its work to the National Assembly of...

National Bank of Serbia има 41 скуп(ов)а података.

Serbia Investment and Export Promotion Agency

Serbia Investment and Export Promotion Agency (SIEPA) is a government organization dedicated to effectively helping foreign investors and buyers, while raising Serbia's profile in the...

Serbia Investment and Export Promotion Agency има 4 скуп(ов)а података.

Serbian Business Registers Agency

The Serbian Business Registers Agency (SBRA) was established by the Business Registers Agency Law in 2004, while the first electronic register (Register of Companies) started with its...

Serbian Business Registers Agency има 17 скуп(ов)а података.

Serbian Chamber of Commerce

Republic of Serbia

Serbian Chamber of Commerce има 2 скуп(ов)а података.

Benefits for early adopters

- improve the accessibility and transparency of data by extending the existing public services with new features
- standardize the data publishing / consumption process
- ensure interoperability (e.g. integration of data from the Register with data from the Dissemination database of the Statistical Office of the Republic of Serbia, SORS)
- allow advanced analysis and visualization of available indicators (i.e. spatio-temporal data on a geographical map)

More info ...

- <http://stack.linkeddata.org/>, <http://stack.lod2.eu/>
- <http://rs.ckan.net/>
- <http://fraunhofer2.imp.bg.ac.rs/lod2statworkbench>
- **Supporting the Linked Data publication process with the LOD2 Statistical Workbench**, <http://www.semantic-web-journal.net/content/supporting-linked-data-publication-process-lod2-statistical-workbench>

Thank you for your attention!