

# *Presentation metadata*

Open Data Support is funded by the European Commission under SMART 2012/0107 'Lot 2: Provision of services for the Publication, Access and Reuse of Open Public Data across the European Union, through existing open data portals' (Contract No. 30-CE-0530965/00-17).

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Training Module 1.5

## Promoting the reuse of Open Government Data through the Open Data Interoperability Platform (ODIP)

# *Learning objectives*

By the end of this training module you should have an understanding of:

- How you can overcome the barriers of reuse for your datasets.
- How Open Data Support can promote the reuse of datasets.
- What the DCAT Application Profile is and how it can be used.
- What Open Data Interoperability Platform (ODIP) is and how it can be used.

# *Content*

This module contains...

- An outline of the context of Open Government Data in Europe.
- An outline of the Open Data Support project.
- Information about the DCAT Application Profile for Data Portals in Europe as a homogenised metadata model.
- Information on how to use the Open Data Interoperability Platform.

# *There are more than 160 portals in Europe hosting Open Government Data*

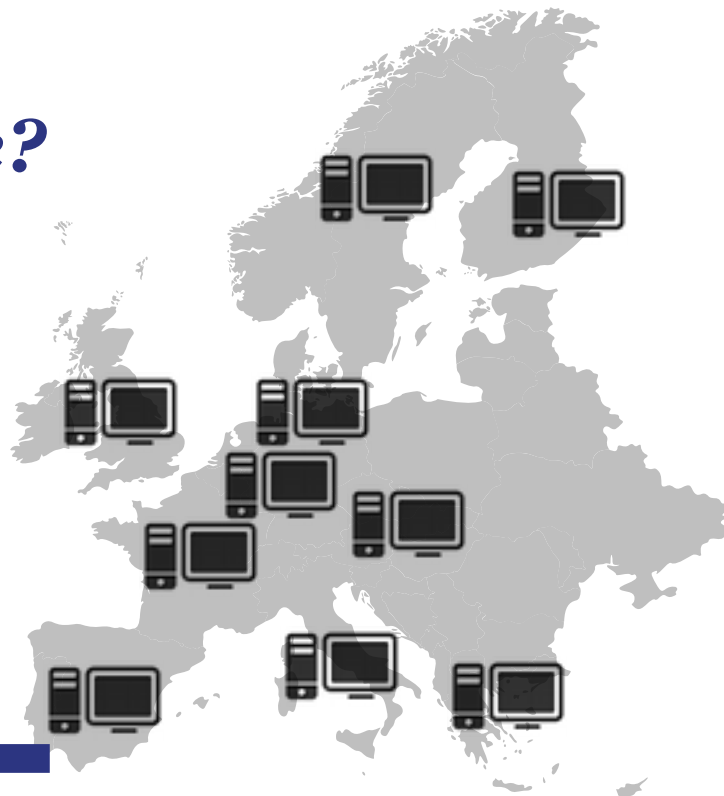
*Provenance?*

*Licence?*      *Persistence?*

*Trust?*      *Availability?*

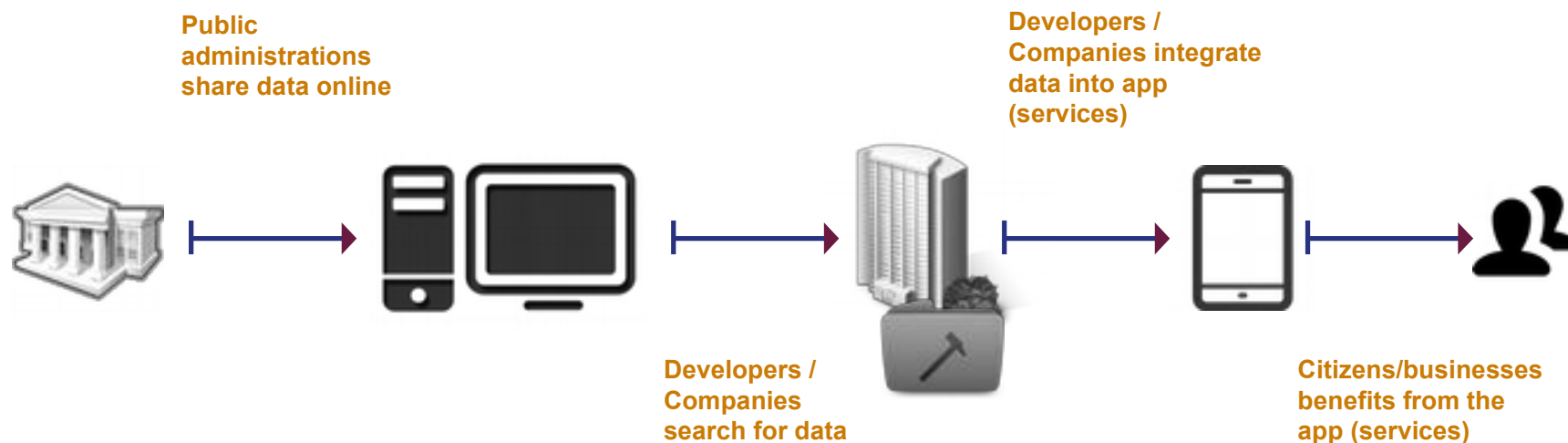
*Quality?*

# *160+*



# *Open Data has a great potential to create social and economic value*

## Publishing data



## Reusing data

# Barriers to Open Data publishing and reuse

## Data publishers

No view on which data is more likely to be reused / has a higher ROI potential.

Unclear business model for publishing Open Data.

Limited tool support.

Competing licenses for datasets.

Competing vocabularies for describing datasets.

Domain-specific metadata needs.

Effort required for keeping the metadata up-to-date.

## Data reusers

Lack of overview of existing/available datasets.

Unclear business model for reusing Open Data.

Data is often of low quality, outdated, unstructured and/or not machine-readable.

Lack of licensing information or incompatible licenses.

Different vocabularies when searching for datasets.

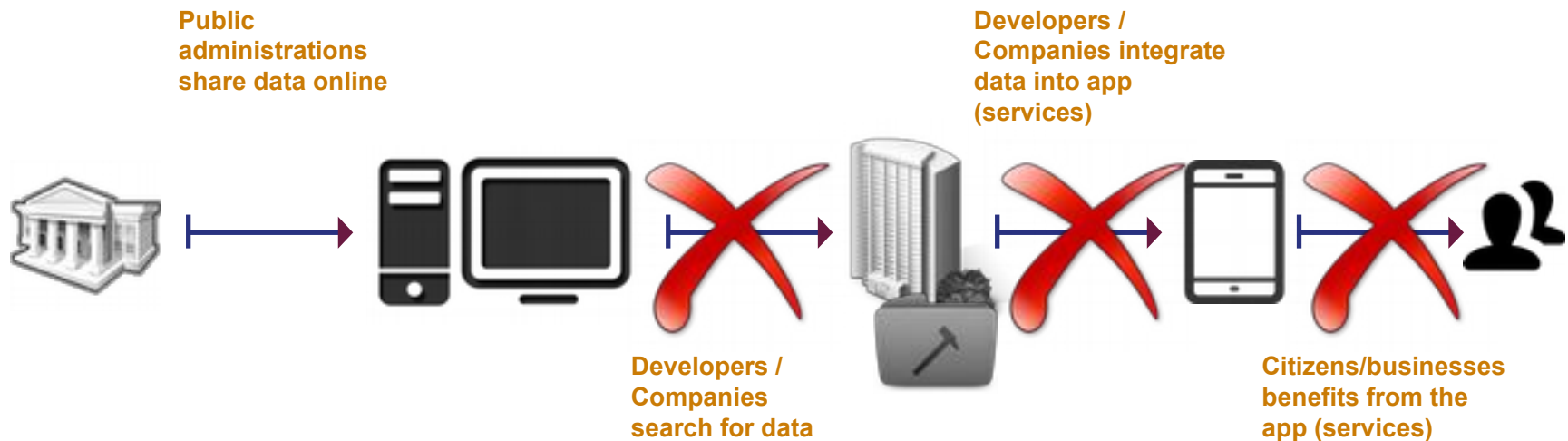
Lack of (good quality) metadata.

Lack of provenance information.

Metadata

Metadata

# *No reuse = No social and economic value*



# Open Data Support

*...funded by the European Commission, DG CONNECT,  
lowering accessibility and awareness barriers.*



## *Open Data Support mission...*

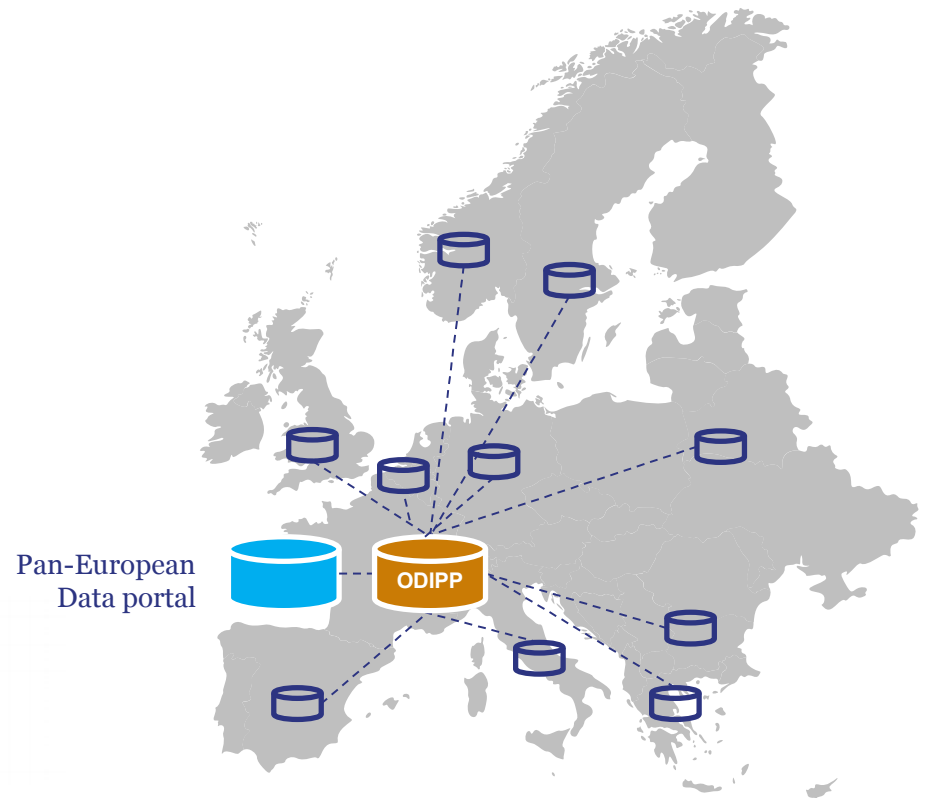
To Improve the *visibility* and facilitate the *access* to datasets published on local and national Open Data portals in order to increase their *reuse* within and across borders.

**See also:**

<http://www.slideshare.net/OpenDataSupport>

*By ...*

Providing  
*homogenised access*  
to metadata  
descriptions of open  
datasets via a  
*single point of access*



# DCAT Application Profile

*A common vocabulary for describing datasets hosted in portals in Europe, based on the Data Catalogue vocabulary (DCAT).*

## *A shared initiative of ...*



Funded by the ISA Programme under Action 1.1.  
“Improving semantic interoperability in European  
eGovernment systems” (a.k.a the SEMIC project).

## *An international Working Group of experts*

- Chair: Antonio Carneiro (Publications Office)
- 59 Working Group members representing:
  - 15 different European Member States  
(UK,IT,ES,DK,DE,SK,BE,AT,SE,FI,FR,IE,NL,GR,SI )
  - US
  - Several European Institutions and international organisations
  - 40 different Data Portals

**See also:**

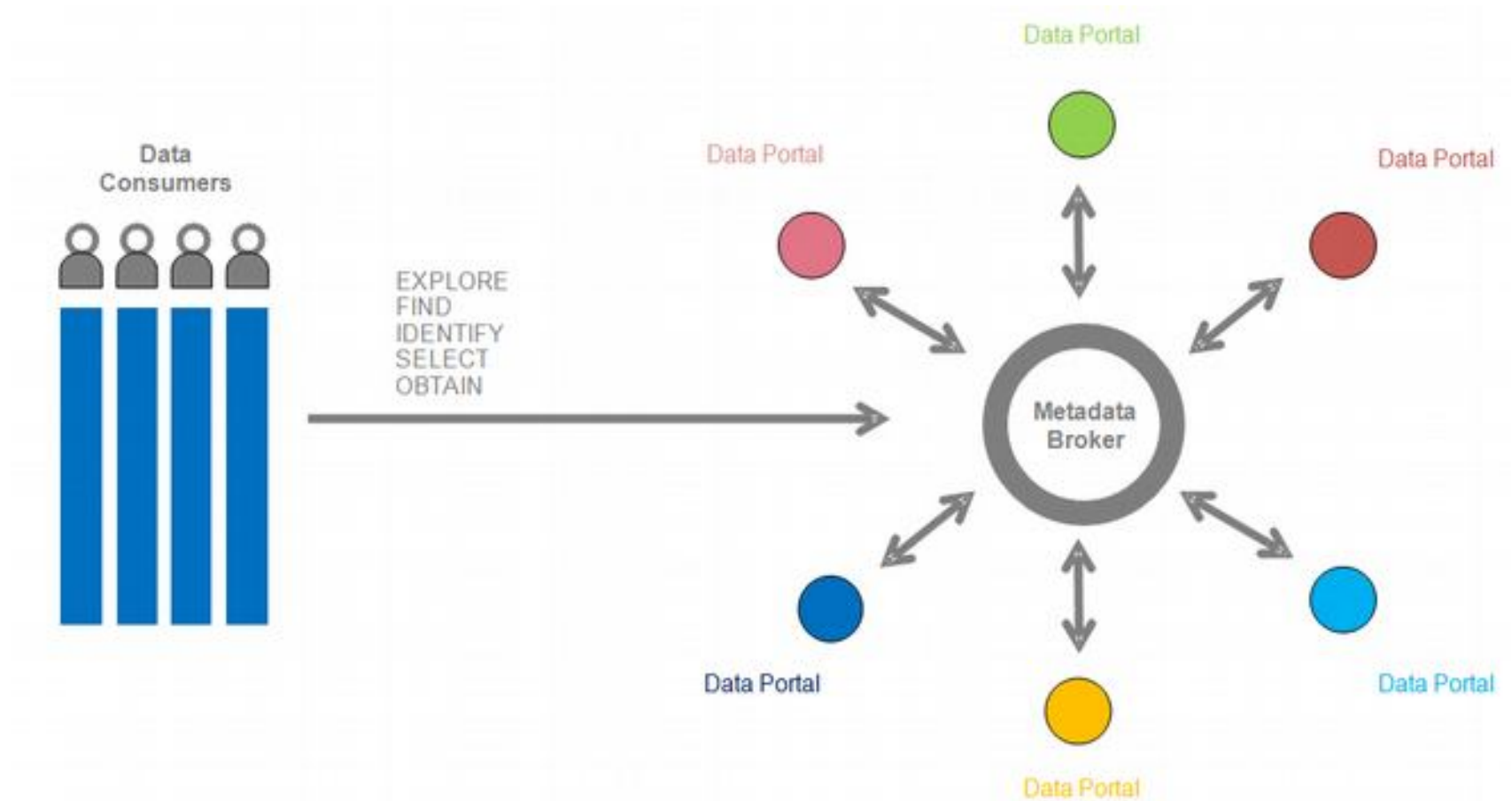
[https://joinup.ec.europa.eu/asset/dcat\\_application\\_profile/description](https://joinup.ec.europa.eu/asset/dcat_application_profile/description)

## *By using a common metadata schema to describe and sharing metadata...*

- **Data publishers** increase discoverability and thus reuse of their data.
- **Data reusers** can uniformly search across platforms without facing difficulties caused by the use of separate models or language differences.

The quality and the availability of the description metadata directly affects how easily datasets can be found!

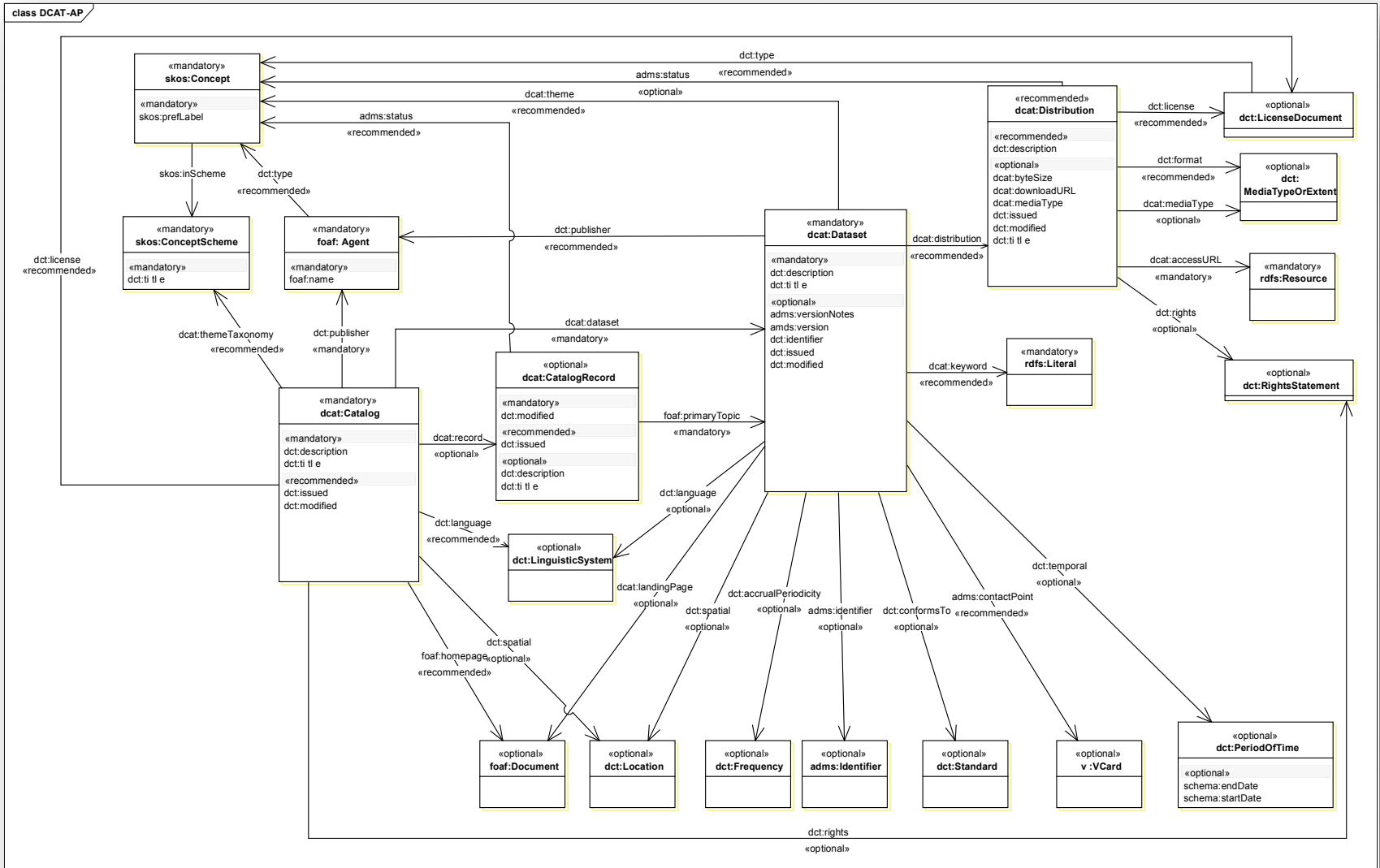
# *The DCAT-AP enables the exchange of description metadata between data portals*



# What's in the specification?



## *The DCAT Application Profile data model*



# *Usage of the DCAT Application Profile*

**Mandatory class:** a receiver of data **MUST** be able to process information about instances of the class; a sender of data **MUST** provide information about instances of the class.

**Recommended class:** a receiver of data **MUST** be able to process information about instances of the class; a sender of data **MUST** provide information about instances of the class, if it is available.

**Optional class:** a receiver **MUST** be able to process information about instances of the class; a sender **MAY** provide the information but is not obliged to do so.

**Mandatory property:** a receiver **MUST** be able to process the information for that property; a sender **MUST** provide the information for that property.

**Recommended property:** a receiver **MUST** be able to process the information for that property; a sender **SHOULD** provide the information for that property if it is available.

**Optional property:** a receiver **MUST** be able to process the information for that property; a sender **MAY** provide the information for that property but is not obliged to do so.

# Controlled vocabularies

Property URI	Used for Class	Proposed vocabulary
dcat:mediaType	Distribution	MDR File types Name Authority List
dcat:theme	Dataset	EuroVoc domains
dcat:themeTaxonomy	Catalog	EuroVoc
dct:accrualPeriodicity	Dataset	Dublin Core Collection Description Frequency Vocabulary
dct:format	Distribution	MDR File Type Named Authority List
dct:language	Catalog, Dataset	MDR Languages Named Authority List
dct:publisher	Catalog, Dataset	MDR Corporate bodies Named Authority List
dct:spatial	Catalog, Dataset	MDR Countries Named Authority List, MDR Places Named Authority List
adms:status	CatalogRecord	ADMS change type vocabulary
dct:type	License Document	ADMS license type vocabulary

# Mapping example - data.gov.uk

## Scottish Road Accident Statistics

dct:title (Dataset)

Data about injury road accidents, accident costs, vehicles involved, drivers and riders, drink-drive accidents, drivers breath tested, casualties and international comparisons.



Source agency: Scottish Government

Designation: National Statistics

Language: English

Alternative title: Scottish Road Accident Statistics

dct:description

### Licence

dct:licence

UK Open Government Licence (OGL)



### Data Resources 2



Key statistics for 2007



2007 Volume

dct:title (Distribution)

Details

Download

Details

Download

Dcat:accessURL

dcat:downloadURL, dct:issued,  
dct:format, dct: description

### Additional Information

Openness score	★★★★★
Geographic coverage	Scotland
National statistic	yes
ONS Category	Travel and Transport
Temporal coverage	No value
Date added computed	No value
Date updated computed	No value

dct:spatial

dct:theme

dct:temporal

dct:publisher

### Publisher

Scottish Government

### Enquiries:

No details supplied

### FOI Contact:

#### • Web:

<http://www.whatdotheyknow.com...>

adms:contactPoint

### Tags

accident health-well-being-and-care  
road road-accidents road-safety  
roads safety transport  
transport-accidents-and-casualties  
travel-and-transport

dcat:keyword

### About this dataset

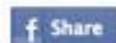
- Added to data.gov.uk: 10/12/2011
- Modified on data.gov.uk: 10/06/2013
- History of changes
- JSON, API and URI for developers

dct:issued

dct:modified

### Do more with this data

- Share your app
- Share an idea
- Request new data



# Example description of dataset with the DCAT-AP

```
<rdf:Description rdf:about="http://data.gov.uk/data ">
    <rdf:type rdf:resource="http://www.w3.org/ns/dcat#Catalog"/>
    <dc:title xml:lang="en">data.gov.uk</dc:title>
    <dc:description xml:lang="en">Description of the data portal</dc:description>
    <dc:license rdf:resource="http://www.nationalarchives.gov.uk/doc/open-government-licence"/>
</rdf:Description>

<rdf:Description rdf:about="http://data.gov.uk/dataset/east-sussex-county-council-election-results">
    <rdf:type rdf:resource="http://www.w3.org/ns/dcat#Dataset"/>
    <dc:title xml:lang="en">East Sussex County Council election results</dc:title>
    <dc:description xml:lang="en">A list of elections to East Sussex County Council, which leads to data about candidates,
    parties, electoral divisions and votes cast. Uses the Open Election Data RDF vocabulary from http://openelectiondata.org/
    </dc:description>
</rdf:Description>

<rdf:Description rdf:about="http://www.eastsussex.gov.uk/yourcouncil/localelections/election2009/default.aspx">
    <rdf:type rdf:resource="http://www.w3.org/ns/dcat#Distribution"/>
    <dc:title xml:lang="en">East Sussex County Council election 4 June 2009, and subsequent bi-elections</dc:title>
    <dcat:accessURL rdf:resource="http://www.eastsussex.gov.uk/yourcouncil/localelections/election2009/default.aspx ">
    <dc:license rdf:resource="http://www.nationalarchives.gov.uk/doc/open-government-licence"/>
</rdf:Description>
```

# Creating mappings to the DCAT-AP

Dataset Properties Raw Predicate	Example Value	Harmonized Predicate	Generated SPARQL
<a href="http://data.gov.uk/predicate/title">http://data.gov.uk/predicate/title</a> <a href="http://data.gov.uk/predicate/unpublished">http://data.gov.uk/predicate/unpublished</a>	Government Major Projects data for the Foreign and Commonwealth Office 2012 FALSE	dct:title	<pre> prefix dct &lt;http://purl.org/dc/terms/&gt; INSERT { ?harms dct:title ?d. } where {   ?ds a &lt;http://www.w3.org/ns/dcat#Dataset&gt; .   ?ds &lt;http://data.gov.uk/predicate/title&gt; ?d.   ?harms &lt;http://xmlns.com/foaf/0.1/primaryTopic&gt; ?harms.   ?harms record   &lt;http://data.opendatasupport.eu/ontology/harmonisation.owl#raw_?ds. } </pre>
<a href="http://data.gov.uk/predicate/update_frequency">http://data.gov.uk/predicate/update_frequency</a>	other	dct:accrualPeriodicity	<pre> prefix dct &lt;http://purl.org/dc/terms/&gt; INSERT { ?harms dct:accrualPeriodicity ?d. } where {   ?ds a &lt;http://www.w3.org/ns/dcat#Dataset&gt; .   ?ds &lt;http://data.gov.uk/predicate/update_frequency&gt; ?d.   ?harms &lt;http://xmlns.com/foaf/0.1/primaryTopic&gt; ?harms.   ?harms record   &lt;http://data.opendatasupport.eu/ontology/harmonisation.owl#raw_?ds. } </pre>
<a href="http://data.gov.uk/predicate/update_frequency-other">http://data.gov.uk/predicate/update_frequency-other</a>	quarterly	dct:accrualPeriodicity	<pre> prefix dct &lt;http://purl.org/dc/terms/&gt; INSERT { ?harms dct:accrualPeriodicity ?d. } where {   ?ds a &lt;http://www.w3.org/ns/dcat#Dataset&gt; .   ?ds &lt;http://data.gov.uk/predicate/update_frequency-other&gt; ?d.   ?harms &lt;http://xmlns.com/foaf/0.1/primaryTopic&gt; ?harms.   ?harms record   &lt;http://data.opendatasupport.eu/ontology/harmonisation.owl#raw_?ds. } </pre>



# Where can you find it?

The screenshot shows the Joinup website interface. At the top, there's a navigation bar with links like Contact, Search, Glossary, Help, Partners, Analytics, and Disclaimer. The main header features the European Commission logo and the Joinup logo, with the tagline "Share and reuse Interoperability solutions for public administrations". Below this is a breadcrumb trail: "European Commission > ISA > Joinup > Semantic assets > Projects > Dcat application profile > Description". A secondary navigation bar includes links for My Page, Communities, Semantic Assets (active), Software, News, Events, e-Library, and People. The main content area displays the "DCAT application profile for data portals in Europe" project page. It includes a "Description" tab, a "Download" button, a star rating, and a note that it's an "Editor's choice". The description text states: "Submitted by [Stijn Goedertier](#) on March 08, 2013. Rating: 5/5 (based on 3 votes) | 4024 reads. 11 people uses this project." The "Description" section explains that the DCAT-AP is a specification based on the Data Catalogue vocabulary (DCAT) for describing public sector datasets in Europe. It mentions that the DCAT-AP will be used in the Open Data Support service. A "Participate in the public review" section notes that the final draft was released for public review on 13 May 2013. On the right side, there are links to "Request to be a member of this semantic asset project", "Export description metadata", and "Use this project". A "Related Content" section lists recent events like the 2nd CESAR Workshop and the EFIR Workshop 2013.

[https://joinup.ec.europa.eu/asset/dcat\\_application\\_profile/description](https://joinup.ec.europa.eu/asset/dcat_application_profile/description)

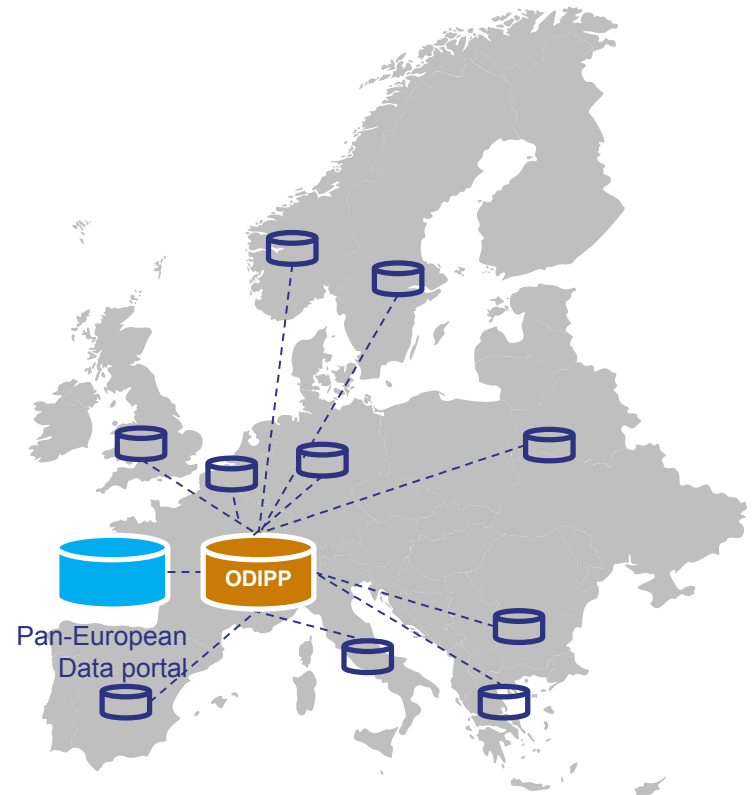
# Share the metadata you datasets on ODI

*The Open Data Interoperability Platform (ODIP) enables share metadata of datasets described using the DCAT-A improving the discoverability and visibility of your data eventually leading to wider reuse.*



## *What can ODIP do?*

- **Harvest** metadata from an Open Data portal.
- **Transform** the metadata to RDF.
- **Harmonise** the RDF metadata produced in the previous steps with DCAT-AP.
- **Validate** the harmonised metadata against the DCAT-AP.
- **Publish** the description metadata as Linked Open Metadata.
- **Translate** metadata automatically in English



# *How can ODIP help you improve your metadata?*

- ODIP maps your metadata to a standard model, i.e. the DCAT-AP.
- ODIP helps you reuse standardised multilingual controlled vocabularies in your metadata, replacing error-prone text values or tailor-made lists.
- By means of its validation services, ODIP allows you to detect inconsistencies and errors in your metadata.
- ODIP assigns persistent URIs to your metadata.
- ODIP links your metadata with other metadata, thus adding context to it and enriching its meaning.
- ODIP automatically translates the title and description of the metadata to English.

# How does ODIP look like?

The screenshot displays the Open Data Interoperability Platform (ODIP) interface. The top navigation bar includes links for 'New Job', 'Manage Jobs', 'Error Reports', 'Get Support', and 'About'. The main content area is divided into two panels. The left panel shows a table of jobs with columns for NAME, INTERVAL, STATUS, SCHEDULE, RUN, and DELETE. The right panel provides a detailed view of the selected job, 'odp raw harvesting'.

NAME	INTERVAL	STATUS	SCHEDULE	RUN	DELETE
Ireland harmonization				Run	X
Ireland raw	0 0 3 ***	Running	Cancel	Run	X
odp harmonization				Run	X
data.gov.uk raw harvest	0 0 0 ***	Running	Cancel	Run	X
odp raw harvesting	0 0 4 ***	Running	Cancel	Run	X
data.gov.uk harmonization				Run	X

**Job Details: odp raw harvesting**

- ☐ Chained
- Created: Fri Jun 14 16:05:43 CEST 2013
- sdts:sdts
- Description:
- Interval: 0 0 4 \*\*\*
- Name: odp raw harvesting
- Previous Job Id:
- Schedule Type: Interval
- ☒ Scheduled
- Next run in 0 days, 16 hours, 35 minutes and 0 seconds
- Full Job

**SELECTED EXTRACTORS**

CKAN Extractor

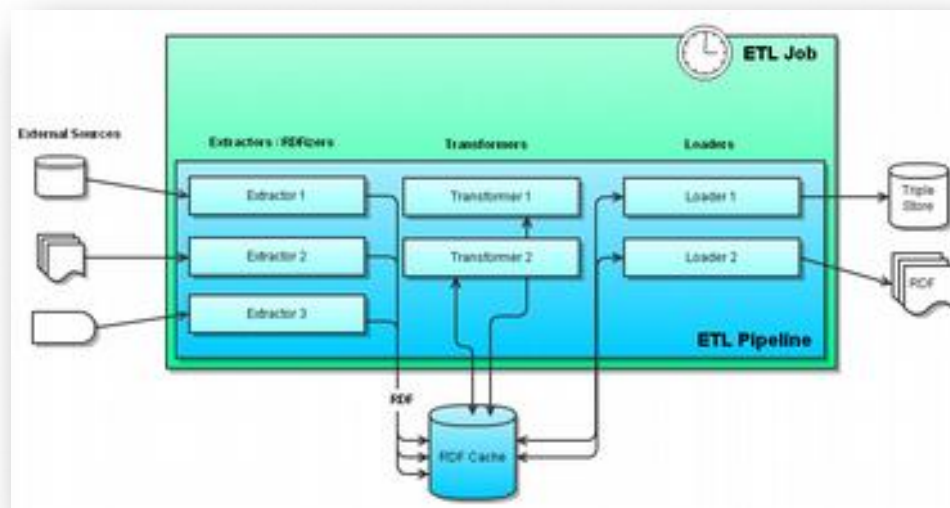
<http://odip.opendatasupport.eu>

# An ODIP Job

The ODIP job consists of three possible phases which need to be ran in order and that are composed of several plug-ins :

1. Extraction
2. Transformation
3. Loading

Furthermore these jobs can be scheduled to be launched periodically, in succession or manually.



# Overview of ODIP's Extract-Transform Load process

# 1. Extraction

- The extraction phase entails retrieving (extracting) raw data from a given source Open Data portal using the appropriate plug-in, depending on the technology of the source.

- Available extractors:

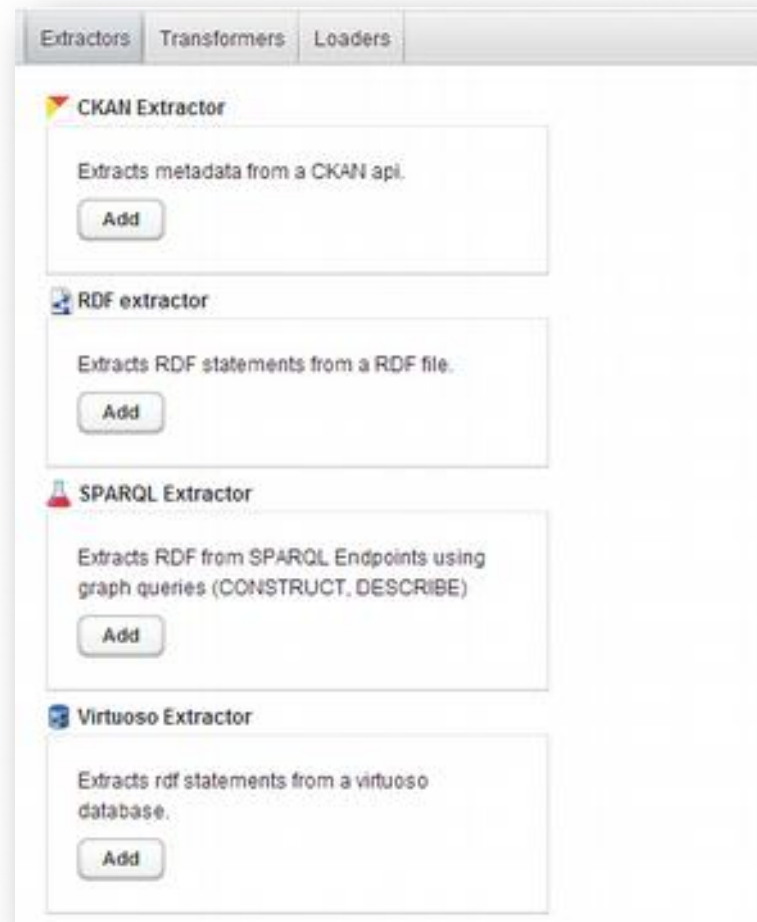
 CKAN Extractor

 RDF extractor

 SPARQL Extractor

 Virtuoso Extractor

 CSV Extractor



## 2. Transformation (1/3)

- The goal of the transformation phase is to harmonise, cleanse and prepare for storing on ODIP metadata harvested from Open Data portals.

- Available transformers:

📖 ODS Value Mapper.

📖 SPARQL Update Query Transformer.

📖 ODS Cleaner.

📖 ODS DCAT Application Profile Harmoniser.

📖 ODS Modification Detector.

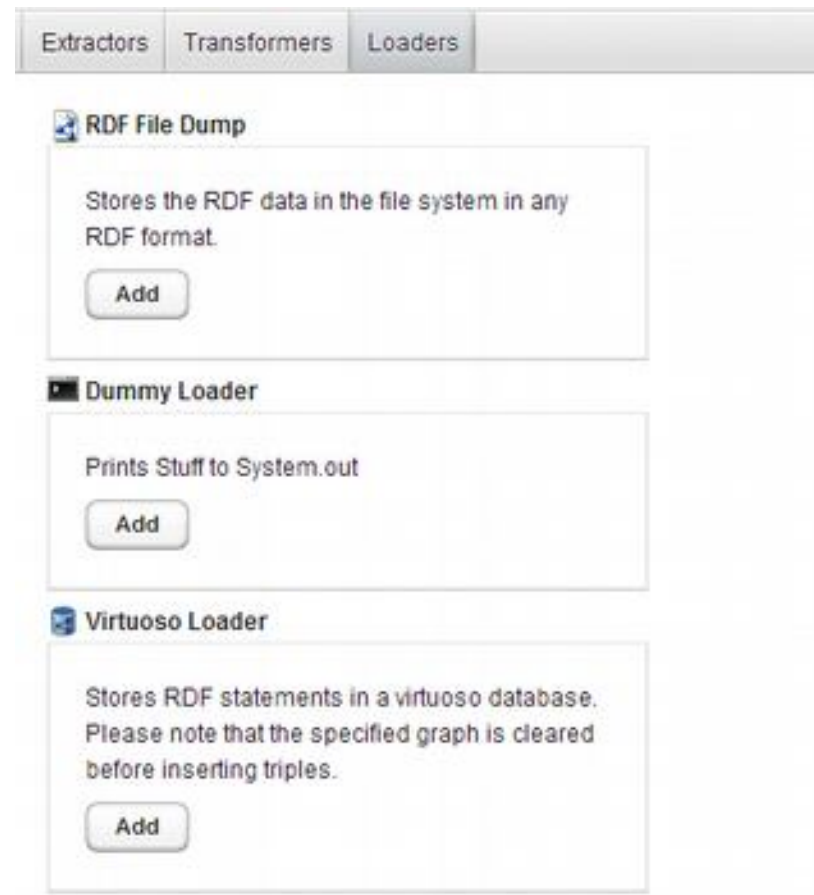
📖 ODS Validator.

📖 Web Translations.



# Loading

- In the loading phase, the harvested and harmonised metadata is stored on Virtuoso's RDF repository using the Virtuoso Loader.





## Example

### *Harvesting a CKAN-based Open Data portal*

1. Create a new job on ODIP
2. Extraction phase
  - Add and Configure a CKAN Extractor to harvest data from a CKAN API.
3. Transformation phase
  - Add ODS Value mapper
  - Add a SPARQL Update Query Transformer with the pertinent queries
  - Add ODS Cleaner
  - Add and configure DCAT Application Profile Harmoniser
  - Add Modification detector
  - Add ODS Validator
  - Add Web Translations
4. Loading phase
  - Load the extracted data in a Virtuoso RDF Store via the Virtuoso Loader
5. Scheduling the job on ODIP

## Example - 1. Create Job : Creating a job on ODIP

- To create a new job, click on “New Job”.
- At the bottom part of the screen you can configure the actual tasks within each of the three phases by selecting a tab.
- For each phase you can add and configure modules accordingly.

The screenshot shows the 'New Job' form in the Open Data Interoperability Platform. The form includes fields for 'Name', 'Description', 'Schedule type' (set to 'interval'), and 'Execution interval'. There are 'Save' and 'Cancel' buttons. Below these are three tabs: 'Extractors', 'Transformers', and 'Loaders'. The 'Extractors' tab is active, showing three modules: 'CKAN Extractor', 'RDF extractor', and 'SPARQL Extractor'. Each module has an 'Add' button. Three orange callout boxes provide instructions: 1. 'Provide a name for the Job.' points to the 'Name' field. 2. 'Present the job with a short description.' points to the 'Description' field. 3. 'Press the “Add” button to determine the plug-ins to deploy.' points to the 'Add' button of the 'CKAN Extractor' module.

## Example - 2.Extraction : Adding and Configuring a CKAN API Extractor to harvest data from a CKAN API

After adding the CKAN extractor plugin you will be prompted to fill out the following form:

Publisher, license, title and description: Used in the stored catalog for the dct:publisher, dct:license, dct:title and dct:description properties.

**Subject prefix:** The prefix used to create a URI for each the metadata of harvested dataset.  
The subject is created as  
<subjectprefix>/dataset/<datasetid>

**Ignored keys:** A comma separated list of JSON attributes that should not be converted to RDF triples.

The Web location of the CKAN portal you wish to harvest.  
The portal should support API version 3 and the API must be enabled.

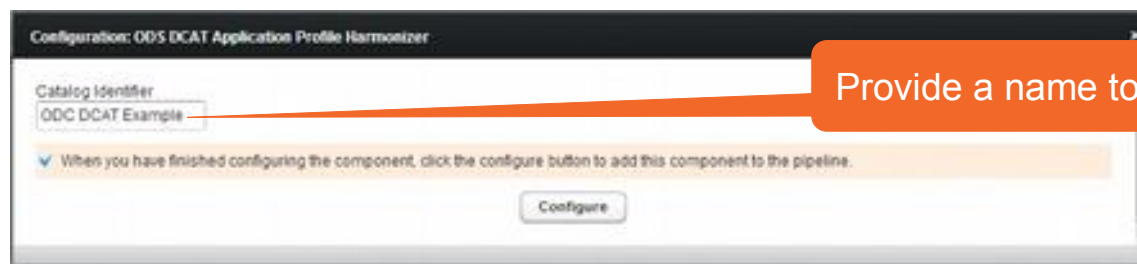
**Predicate prefix:** JSON attributes are converted to predicates by appending them to the predicate prefix.  
The CKAN API response is in JSON, we then convert this into RDF.

The screenshot shows a web form titled "Configuration: CKAN Extractor". It contains several input fields: "CKAN Url" with the value "http://odp.tenforce.com/data/", "Publisher" with "bert@tenforce.com", "Title" with "ODPEU", "Description" with "The european open data portal", "License" with "http://ec.europa.eu/geninfo/", "Predicate Prefix" with "http://odp.tenforce.com/data/predicate/", "Subject Prefix" with "http://odp.tenforce.com/data/dataset/", and "Ignored Keys" with "rdf". There is a checkbox labeled "harvest all datasets" which is checked. At the bottom right is a "Configure" button. A yellow banner at the bottom says "After finishing configuring the component, click the configure button".

## Example - 3. Transformation : Adding and configuring plug-ins to harmonise data(1/3)

- Start by adding the **ODS DCAT Application Profile Harmonizer**.

🌐 This plugin will create the harmonized catalog data and a basic skeleton for each dataset it identifies.

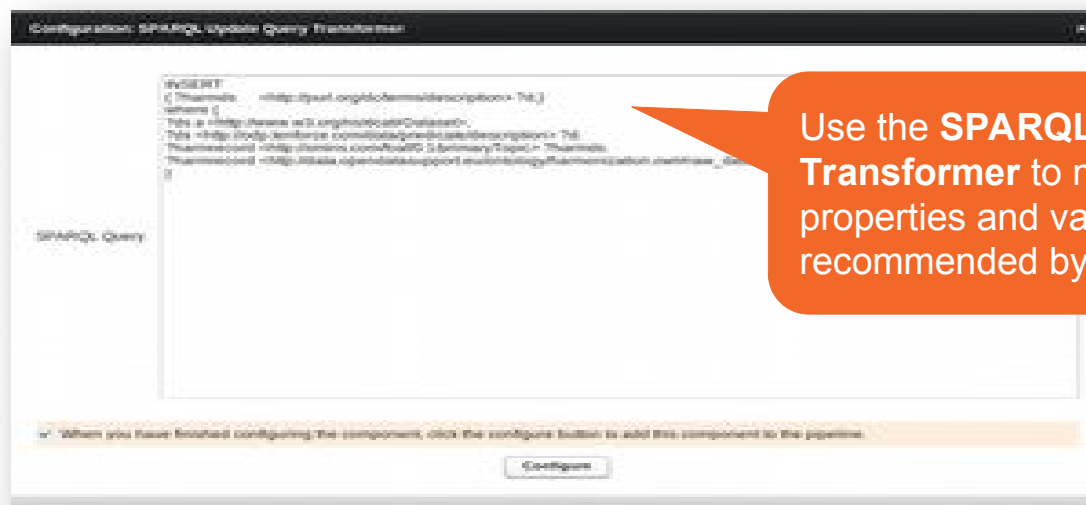


- Use the **Modification Detector** to compare provenance data generated by the CKAN extractor between the current and previous version of the raw data to set the dct:modified field of the catalog records.

🌐 No configuration is required.

## Example - 3. Transformation : Adding and configuring plug-ins to harmonise data (2/3)

- Mapping the description of dataset to dct:description as required by the DCAT-AP.



- Use the **ODS Cleaner Plugin** to remove raw data loaded into the working set before storing it into a harmonized graph.
  - 🌐 No configuration is required.

## Example - 3. Transformation : Adding and configuring plug-ins to harmonise data (3/3)

### Result

The final result of your harmonisation pipeline should look similar to the following :

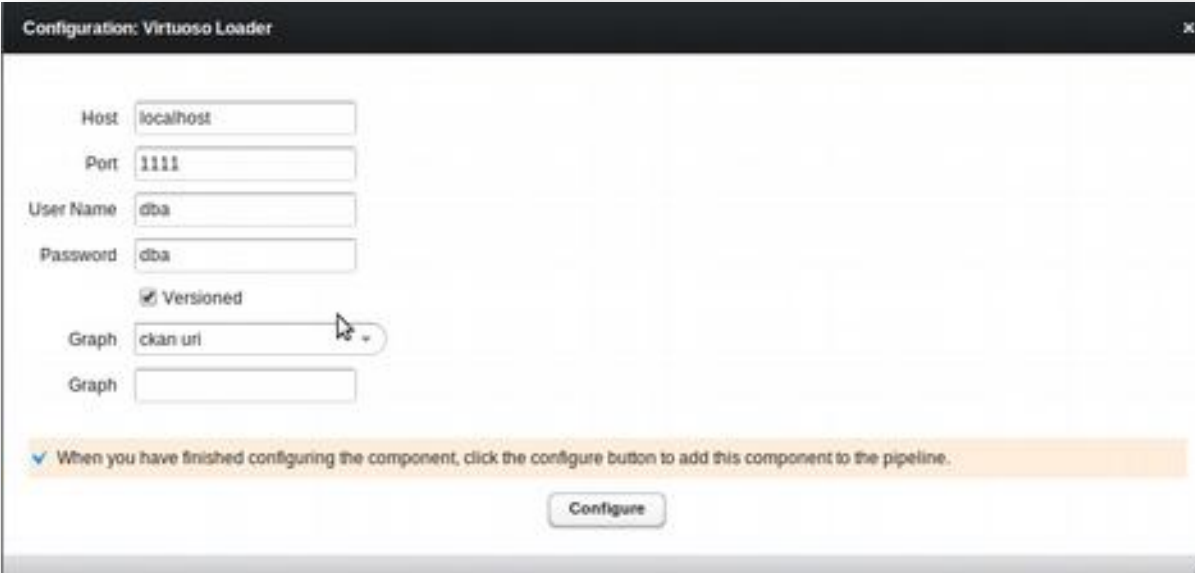
Extractors	Transformers	Loaders
SELECTED TRANSFORMERS		
ODS DCAT Application Profile Harmonizer		
ODS Modification Detector		
SPARQL Update Query Transformer [INSERT { ?harms <http://purl.org/dc/terms/p]		
SPARQL Update Query Transformer [INSERT { ?harms <http://purl.org/dc/terms/r]		
SPARQL Update Query Transformer [INSERT { ?harms <http://purl.org/dc/terms/d]		
ODS Cleaner		

Configure the Virtuoso Loader to load the harmonized data into Virtuoso.

## *Example - 4. Loading: Load the extracted data in a Virtuoso RDF Store via the Virtuoso Loader*

The Virtuoso Loader will store the generated triples in the Virtuoso RDF store. The triples will be inserted into a graph of your choice.

The Virtuoso Loader needs host, port and user credentials to connect to your Virtuoso server.



Configuration: Virtuoso Loader

Host: localhost

Port: 1111

User Name: dba

Password: dba

☒ Versioned

Graph: ckan url

Graph:

✓ When you have finished configuring the component, click the configure button to add this component to the pipeline.

Configure

## 5. Scheduling a job on ODIP

A job can be scheduled to run at a set interval or chained after another job:

- **Interval Scheduling:**

<sec> <min> <hour> <day-of-month> <month> <day-of-week>

() Example:

 0 0 4 \* \* \* - each day at 4 am

 0 0 0 \* \* 1 - each Monday at midnight

 0 30 \* \* \* - every half past the hour

- **Chained scheduling:** Select a job after which this job should be executed.



# ODIP Reporting tool

Whenever a “job” is ran, a report is created and can be reviewed as can be seen in the following screenshot:

**Open Data Interoperability Platform**

Buttons: New Job, Manage Jobs, Error Reports, Get Support, About

ID	NAME
c811978a-44a8-4385-a88a-421939509071	ireland_harmonization
68a42aaa-94e5-4a3c-95d9-644f95445001	ireland_raw
3d870748-571b-48c2-87d1-7ea91e5a35	odp_harmonization
0d90cc3-3c04-4338-acbd-2162b07d43b0	ADMS_Test_2nd_wave
48a7d981-705c-4303-895d-e1a73d4050c1	data.gov.uk: raw harvest
e6601b42-0023-4995-a2b0-e1c562205d	odp raw harvesting
209a54a1-75e8-4055-a095-4e1a019150c1	data.gov.uk: harmonization
5c514323-d887-4d7e-a224-17e4822a78	CKAN_test_2nd_wave
0503d85a-01d3-453d-a0f3-8a5e434ebd8	Admin: minimum example : Test

**Last Execution**

DATE	DURATION	COMPONENT ERRORS
19.08.13 - 16:55:16	1 second	

**Informers**

EXTRACTOR	RESULT	WARNING
RDF extractor	OK	0

**Transformers**

TRANSFORMER	RESULT	WARNING
SPARQL Update Query Transformer	OK	0
SPARQL Update Query Transformer	OK	0
SPARQL Update Query Transformer	OK	0
ODS DCAT Application Profile Har	OK	0
ODS Cleaner	OK	0

**Loaders**

LOADER	RESULT	WARNING
Virtuoso Loader	OK	0

**Select the appropriate job**

**Inform user whether or not a plug-in functioned correctly or not.**

# Discover datasets through ODIP

*The Open Data Interoperability Platform (ODIP) enables share metadata of datasets described using the DCAT-A improving the discoverability and visibility of your data eventually leading to wider reuse.*

# *The public SPARQL endpoint of ODIP Query interface*



<http://data.opendatasupport.eu>

# The public SPARQL endpoint of ODIP

## Result set

**OPEN DATASUPPORT**[Home](#)[Sample Queries >](#)

OPEN DATA SUPPORT

[Homepage](#)

[Training](#)

[Interoperability Platform](#)

[Contact](#)

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[Case study on how Linked Data is transforming eGovernment](#)

[Describe organizations in RDF with Core Business Vocabulary and ORG Ontology](#)

[10 Rules for Persistent URIs](#)

### SPARQL Query

```
prefix dcat <http://www.w3.org/ns/dcat#>
select *
where [[?record a dcat:CatalogRecord ](?record ?x ?y)]
LIMIT 100
```

[run query](#)

record	x	y
<a href="http://data.opendatasupport.eu/d/catalog/test/">http://data.opendatasupport.eu/d/catalog/test/</a>	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#type">http://www.w3.org/1999/02/22-rdf-syntax-ns#type</a>	<a href="http://www.w3.org/ns/dcat#CatalogRecord">http://www.w3.org/ns/dcat#CatalogRecord</a>
<a href="http://data.opendatasupport.eu/d/catalog/test/">http://data.opendatasupport.eu/d/catalog/test/</a>	<a href="http://xmlns.com/foaf/0.1/primaryTopic">http://xmlns.com/foaf/0.1/primaryTopic</a>	<a href="http://data.opendatasupport.eu/d/catalog/test/">http://data.opendatasupport.eu/d/catalog/test/</a>
<a href="http://data.opendatasupport.eu/d/catalog/test/">http://data.opendatasupport.eu/d/catalog/test/</a>	<a href="http://opendatasupport.eu/ontology/harmonisa">http://opendatasupport.eu/ontology/harmonisa</a>	<a href="http://joinup.ec.europa.eu/asset/adms/release">http://joinup.ec.europa.eu/asset/adms/release</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-quarterly-">http://data.opendatasupport.eu/d/catalog/irela-quarterly-</a>	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#type">http://www.w3.org/1999/02/22-rdf-syntax-ns#type</a>	<a href="http://www.w3.org/ns/dcat#CatalogRecord">http://www.w3.org/ns/dcat#CatalogRecord</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-quarterly-">http://data.opendatasupport.eu/d/catalog/irela-quarterly-</a>	<a href="http://purl.org/dc/terms/modified">http://purl.org/dc/terms/modified</a>	2013-06-18T03:00:00+02:00
<a href="http://data.opendatasupport.eu/d/catalog/irela-quarterly-">http://data.opendatasupport.eu/d/catalog/irela-quarterly-</a>	<a href="http://xmlns.com/foaf/0.1/primaryTopic">http://xmlns.com/foaf/0.1/primaryTopic</a>	<a href="http://data.opendatasupport.eu/d/catalog/irela-quarterly-">http://data.opendatasupport.eu/d/catalog/irela-quarterly-</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-quarterly-">http://data.opendatasupport.eu/d/catalog/irela-quarterly-</a>	<a href="http://data.opendatasupport.eu/ontology/harm">http://data.opendatasupport.eu/ontology/harm</a>	<a href="http://ie.cikan.net/dataset/deaths-quarterly-">http://ie.cikan.net/dataset/deaths-quarterly-</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-quarterly-">http://data.opendatasupport.eu/d/catalog/irela-quarterly-</a>	<a href="http://www.w3.org/ns/adms#status">http://www.w3.org/ns/adms#status</a>	updated
<a href="http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty">http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty</a>	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#type">http://www.w3.org/1999/02/22-rdf-syntax-ns#type</a>	<a href="http://www.w3.org/ns/dcat#CatalogRecord">http://www.w3.org/ns/dcat#CatalogRecord</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty">http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty</a>	<a href="http://xmlns.com/foaf/0.1/primaryTopic">http://xmlns.com/foaf/0.1/primaryTopic</a>	<a href="http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty">http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty">http://data.opendatasupport.eu/d/catalog/irela-living-conditions-and-poverty</a>	<a href="http://data.opendatasupport.eu/ontology/harm">http://data.opendatasupport.eu/ontology/harm</a>	<a href="http://ie.cikan.net/dataset/income-living-conditions-and-poverty">http://ie.cikan.net/dataset/income-living-conditions-and-poverty</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-for-people-with-disabilities">http://data.opendatasupport.eu/d/catalog/irela-for-people-with-disabilities</a>	<a href="http://www.w3.org/1999/02/22-rdf-syntax-ns#type">http://www.w3.org/1999/02/22-rdf-syntax-ns#type</a>	<a href="http://www.w3.org/ns/dcat#CatalogRecord">http://www.w3.org/ns/dcat#CatalogRecord</a>
<a href="http://data.opendatasupport.eu/d/catalog/irela-for-people-with-disabilities">http://data.opendatasupport.eu/d/catalog/irela-for-people-with-disabilities</a>	<a href="http://xmlns.com/foaf/0.1/primaryTopic">http://xmlns.com/foaf/0.1/primaryTopic</a>	<a href="http://data.opendatasupport.eu/d/catalog/irela-for-people-with-disabilities">http://data.opendatasupport.eu/d/catalog/irela-for-people-with-disabilities</a>

## More about ODIP



- ODIP is based on the LOD Management Suite, originally created by the Semantic Web Company in the context of LOD2 FP7 project.
- The LOD Manager Suite was further extended by TenForce in the context of Open Data Support for the deployment of ODIP.
- It will be made available on GitHub under GPLv2.

# Conclusions

- Good quality description metadata can improve the discoverability of open datasets.
- DCAT-AP can be used for homogenising metadata of datasets hosted on different Open Data portals and allows for querying them using a uniform vocabulary.
- ODIP can support harvesting, harmonising according to the DCAT-AP and publishing as linked data metadata of datasets published on different Open Data portals.
- ODIP, through its public SPARQL endpoint, provides a single point of access to datasets from all over Europe.
- Easier access to datasets means higher reuse of datasets.

## Group questions



<http://www.visualpharm.com>

How many Open Government Data portals do you know in your country?



<http://www.visualpharm.com>

In your country, are you aware of any applications or services that were built upon Open Government Data?



<http://www.visualpharm.com>

How would you compare the visibility of Open Government Data portals with that of traditional data providers such as national statistics offices?



<http://www.visualpharm.com>

Have you heard about the Open Government Data initiatives of the European Commission?

**Take also the online test here!**

**Thank you!**  
**...and now YOUR question**



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# References

Slide 4, 6, 9, 10, 11 & 12:

- Open Data Support: How can we help you?. Open Data Support.  
<http://www.slideshare.net/OpenDataSupport/open-data-support-service-description>

Slide 12:

- Data Catalogue Vocabulary. <http://www.w3.org/TR/vocab-dcat/>

Slide 13-21:

- DCAT Application Profile for data portals in Europe Community. ISA Programme.  
[https://joinup.ec.europa.eu/asset/dcat\\_application\\_profile/description](https://joinup.ec.europa.eu/asset/dcat_application_profile/description)  
[https://joinup.ec.europa.eu/asset/dcat\\_application\\_profile/asset\\_release/all](https://joinup.ec.europa.eu/asset/dcat_application_profile/asset_release/all)

Slide 23-35:

- LODMS User Manual for Open Data Support. Open Data Support

Slide 29:

- Figure from <http://www.semantic-web.at/linked-open-data-management-suite-lodms>

## *Related projects and initiatives*



DCAT Application Profile for Data Portals in Europe, [https://joinup.ec.europa.eu/asset/dcat\\_application\\_profile/description](https://joinup.ec.europa.eu/asset/dcat_application_profile/description)



Publicdata.eu, [http://www.w3.org/2011/gld/wiki/Main\\_Page](http://www.w3.org/2011/gld/wiki/Main_Page)



LOD2 FP7 Project, <http://lod2.eu/>



The Semantic Web Company, <http://www.semantic-web.at/>



Linked Open Data Management Suite, <http://www.semantic-web.at/linked-open-data-management-suite-lodms>



OpenLink Virtuoso, <http://virtuoso.openlinksw.com/>

Data Catalog Interoperability Protocol, <http://spec.datacatalogs.org/>



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