

# M4.13—Release an API on the catalogue of resources

## Milestone report for ViBRANT

Gregor Hagedorn ([g.m.hagedorn@gmail.com](mailto:g.m.hagedorn@gmail.com)),  
Andreas Plank ([andreas.plank@naturwiki.net](mailto:andreas.plank@naturwiki.net))

Julius Kühn Institute, Federal Research Centre for Cultivated Plants,  
Inst. f. Epidemiology and Pathogen Diagnostics,  
Königin-Luise-Straße 19, 14195 Berlin, Germany

Connecting internet resource platforms, an application programming interface (API) standardizes the way programs can exchange information and data. At the present milestone we are defining an API specific to ViBRANT platforms how resources, especially ontologies, can be accessed and exchanged.

We conclude that Drupal and Semantic MediaWiki are able to exchange data using an API.

Work in the coming months:

- incomplete imports of ontologies from <http://vocabularies.gbif.org> need to be corrected on part of the Scratchpad sites (e.g. properly addressed description files)

## API 1: Wiki to Scratchpad

On the part of the Wiki-system there exists a large [API documentation](#)<sup>1</sup> that enables programs and developers to obtain detailed data information, e.g. modified date or exchange data and even write data to the Wiki. It is documented on about 60 manual pages on <http://www.mediawiki.org>. This API provides various output formats, such as PHP (for programmers), XML (for data harvesting programs) or JSON (for interactive JavaScript programs). Additional to this core API, the extensions of [Semantic Media Wiki](#)<sup>2</sup> provide an additional export of data using the [Resource Description Framework](#)<sup>3</sup> (RDF). This approach enables a developer of ontology vocabulary to provide detailed information on terms defined in by a Wiki template system. On the Wiki [species-id.net](#)<sup>4</sup> this approach is undertaken for terms of ontologies. A customizable form for onotology terms helps the user to input correct data in a interactive way (e.g. auto completion of values in several data input fields, Figure 1)

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<sup>1</sup> [http://www.mediawiki.org/wiki/API:Main\\_page](http://www.mediawiki.org/wiki/API:Main_page)

<sup>2</sup> <http://semantic-mediawiki.org>

<sup>3</sup> <http://www.w3.org/RDF>

<sup>4</sup> <http://species-id.net>

species

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## PlantOntology:petal

Definitions and properties of term "petal":

**URI:** [PO:0009032](http://purl.org/obo/owl/PO#PO_0009032)

**Label:** petal ([PlantOntology-collection](#))

**Code:** petal

**Definition:** A member of the corolla, the inner whorl of non-fertile parts surrounding the fertile organs of a flower, usually soft and colored conspicuously.

**Part of:** [corolla](#)

**Is a:** organ (= present term is a subclass of term given here)

Representation (UML diagram) [\[Show\]](#)

RDF feed [🔗](#)

Categories (+): [Term in PlantOntology](#) | [Term](#) (+)

**Figure 1:** Wiki page defining the term “petal” for a plant ontology. RDF feed provides an API to the data.

species

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## Edit Term: PlantOntology:petal

**Label:**  (as a natural language construct)

**Code:**  (code or identifier used for instance in XML or RDF)

**Full URI:**  **Short URI:**

**Collection:** (if a number of terms form a set, you can give this a name here)  
 (in CamelCase; <CollectionName:vocabulary name> is also possible)  
 This term is reused, i.e. an import of the above specified collection.

**Part of:** (separate multiple values by semicolon)

**Is a:**

**Definition:** (free-form text)

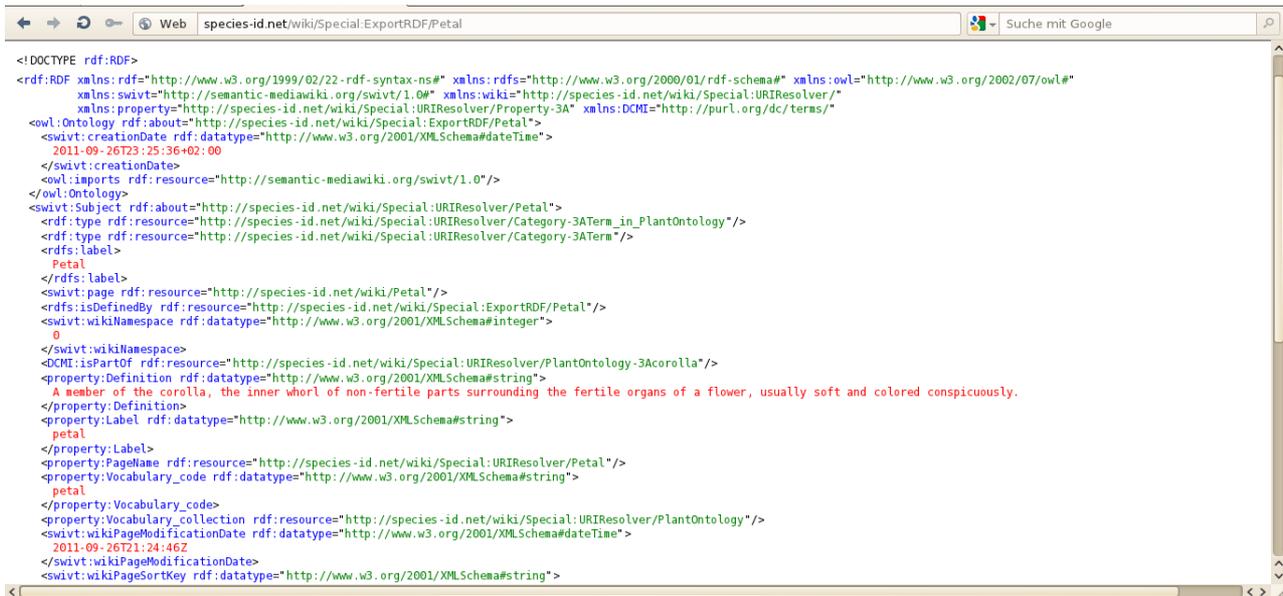
**Remarks:** (free-form text with supplementary notes or comments)

**Examples:** (free-form text with examples, use <source> around programming code: <source lang="xml">Code</source> [?](#))

**See also:** (free-form text, e.g. HTTP link or [[page name]])

**Mappings (SKOS: Simple Knowledge Organisation System)** [🔗](#)

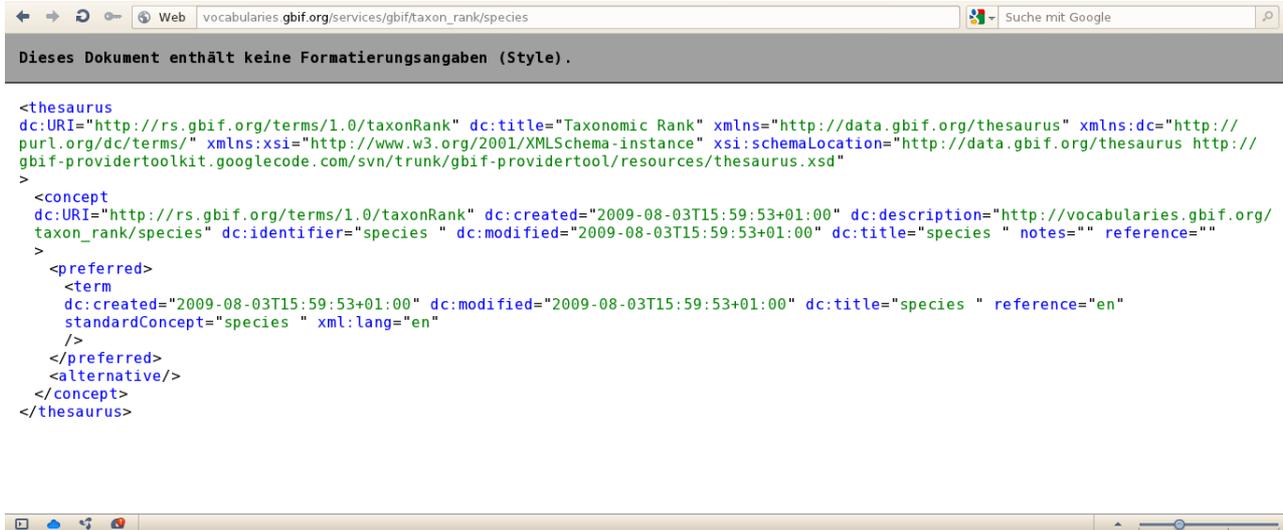
**Figure 2:** Edit term “petal” defined for an ontology collection of plants. Editing and inserting data is enhanced by auto completion of input values.



**Figure 3:** Screenshot of a RDF export (<http://vocabularies.gbif.org>) of the term “petal” showing defined properties by the Wiki template “Term”.

## API 2: Scratchpads to Wiki

Scratchpads are based on [Drupal](#) software and hence they can use its API<sup>5</sup>. The data export format that is presently installed on Scratchpads is XML which can export semantically tagged publications of Scratchpad sites or export vocabulary definitions. One Scratchpad site that provides such vocabularies is [GBIF vocabulary](#)<sup>6</sup>. These vocabularies were imported into the species wiki for some of the GBIF-vocabulary-terms, e.g. taxon rank using XML export on part of the Scratchpads. At the moment the GBIF vocabulary on <http://vocabularies.gbif.org> is considered as a platform for testing purposes which means that some defined values are missing, e.g. descriptions.



**Figure 4:** Screenshot of a RDF export (<http://vocabularies.gbif.org>) of the term “species” showing defined properties by the Wiki template “Term”.

<sup>5</sup>[http://drupal.org/project/views\\_data\\_export](http://drupal.org/project/views_data_export)  
<sup>6</sup><http://vocabularies.gbif.org/vocabularies>

```
<!DOCTYPE rdf:RDF>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:switv="http://semantic-mediawiki.org/switv/1.0#" xmlns:wiki="http://species-id.net/wiki/Special:URIResolver/"
  xmlns:property="http://species-id.net/wiki/Special:URIResolver/Property-3A"
  <owl:Ontology rdf:about="http://species-id.net/wiki/Special:ExportRDF/GBIF%3Ataxon_rank%2Fspecies">
    <switv:creationDate rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">
      2011-09-27T06:20:08+02:00
    </switv:creationDate>
    <owl:imports rdf:resource="http://semantic-mediawiki.org/switv/1.0"/>
    <owl:Ontology>
    <switv:Subject rdf:about="http://rs.gbif.org/vocabulary/gbif/rank/">
      <rdf:type rdf:resource="http://species-id.net/wiki/Special:URIResolver/Category-3ATerm_in_GBIF"/>
      <rdf:type rdf:resource="http://species-id.net/wiki/Special:URIResolver/Category-3ATerm"/>
      <rdfs:Label>
        GBIF:taxon_rank/species
      </rdfs:Label>
      <switv:page rdf:resource="http://species-id.net/wiki/GBIF:taxon_rank/species"/>
      <rdfs:isDefinedBy rdf:resource="http://species-id.net/wiki/Special:ExportRDF/GBIF:taxon_rank/species"/>
      <switv:wikiNamespace rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">
        0
      </switv:wikiNamespace>
      <property:Label rdf:datatype="http://www.w3.org/2001/XMLSchema#string">
        species
      </property:Label>
      <property:PageName rdf:resource="http://rs.gbif.org/vocabulary/gbif/rank"/>
      <property:Vocabulary_code rdf:datatype="http://www.w3.org/2001/XMLSchema#string">
        species
      </property:Vocabulary_code>
      <property:Vocabulary_collection rdf:resource="http://species-id.net/wiki/Special:URIResolver/GBIF-3Ataxon_rank"/>
      <switv:specialProperty_IMP0 rdf:datatype="http://www.w3.org/2001/XMLSchema#string">
        GBIF:taxon_rank http://rs.gbif.org/vocabulary/gbif/rank/
      </switv:specialProperty_IMP0>
    </owl:Ontology>
  </rdf:RDF>
```

**Figure 5:** Screenshot of a RDF export (<http://species-id.net/wiki>) after importing the term from <http://vocabularies.gbif.org>. The marked line indicates that it is being imported.