



CRIS & VIVO

Promoting and facilitating interoperability with VIVO



Improving data load in VIVO

Uploading data in VIVO

Introduction

Problem:

VIVO manages manually the uploading of information. This is a big effort.

SIGMA, as a Spanish universities consortium, needs to provide an easy way to upload data to VIVO for more than one university.

Goal:

So, the goal was, can we do the same process that VIVO provides, but automatically and in one step? The answer is Yes and is more simple that it seems!



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Uploading data in VIVO

Description of the current way to upload information in VIVO

As we said, uploading data in VIVO it's a manual process.... When we want to upload data we must manage manually 2 forms:



Ingest Menu > Convert CSV to RDF

☒ comma separated ☐ tab separated

CSV file URL (e.g. "file:///")

Or upload a file from your computer:

Namespace in which to generate class and properties

Class Name for Resources

Destination Model

Destination Model for TBox

SPARQL Query

Query:

```
17 PREFIX ocref: <http://purl.org/net/OCRe/research.owl#>
18 PREFIX ocred: <http://purl.org/net/OCRe/study_design.owl#>
19 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
20 PREFIX vcard: <http://www.w3.org/2006/vcard/ns#>
21 PREFIX vitro-public: <http://vitro.mannlib.cornell.edu/ns/vitro/public#>
22 PREFIX vivo: <http://vivoweb.org/ontology/core#>
23 PREFIX scires: <http://vivoweb.org/ontology/scientific-research#>
24 PREFIX core: <http://vivoweb.org/ontology/core#>
25
26 Select ?s ?p ?o
27 where {
28   ?s a vivo:Relationship .
29 }
30 ORDER BY ?s
31
32
```

Format for SELECT and ASK query results:

☒ RS_TEXT ☐ CSV ☐ TSV ☐ RS_XML ☐ RS_JSON

Format for CONSTRUCT and DESCRIBE query results:

☐ N-Triples ☒ RDF/XML ☐ N3 ☐ Turtle ☐ JSON-LD

SIGMA's approach to upload data in VIVO

SIGMA's approach for uploading data in VIVO

Description of an automatized way to upload information in VIVO

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---------------|--|--|---------------------------------------|--|--------------------|--|----------|----------|-----|------|---|---|---|---|---|---|---|
| jenaModelName | Space | class | Local | Name | uri | Prefix | pattern1 | pattern2 | csv | File | | | | | | | |
| | http://vitro.mannlib.cornell.edu/a/graph/cfPers-ingest | http://localhost:8080/vivo/cf_pers_upf | http://localhost:8080/vivo/individual | http://localhost:8080/vivo/cf_pers_upf | cfPersId | cf_pers_upf_\$\$\$CERIF - Investigadors_UPF.csv | | | | | | | | | | | |
| | http://vitro.mannlib.cornell.edu/a/graph/cfPers-ingest | http://localhost:8080/vivo/cf_pers_upf | http://localhost:8080/vivo/individual | http://localhost:8080/vivo/cf_pers_upf | persId | cf_pers_upf_\$\$\$CERIF - Investigadors Guia Experts_UPF.csv | | | | | | | | | | | |
| | http://vitro.mannlib.cornell.edu/a/graph/cfEstamentos-ingest | http://localhost:8080/vivo/cf_est_upf | http://localhost:8080/vivo/individual | http://localhost:8080/vivo/cf_est_upf | cfOrgUnitId | cf_est_upf_\$\$\$CERIF - Estaments_UPF.csv | | | | | | | | | | | |
| | http://vitro.mannlib.cornell.edu/a/graph/cfPersEst-ingest | http://localhost:8080/vivo/cf_pers_upf_est | http://localhost:8080/vivo/individual | http://localhost:8080/vivo/cf_pers_upf | cfPersId_OrgUnitId | cf_pers_upf_est_\$\$\$CERIF - Investigadors d'estaments_ | | | | | | | | | | | |
| | http://vitro.mannlib.cornell.edu/a/graph/cfRLine-ingest | http://localhost:8080/vivo/cf_rlines_upf | http://localhost:8080/vivo/individual | http://localhost:8080/vivo/cf_rlines_upf | cfResPubId | cf_rlines_upf_\$\$\$CERIF - Linies d-investigacio.csv | | | | | | | | | | | |

This file uploads the information to the form 1. We inform each of the parameters of the form (csv to RDF)

SIGMA's approach for uploading data in VIVO

Description of an automatized way to upload information in VIVO

This file fills the information for the form 2 (RDF to Ontology) → construct with Sparql

```
#
CONSTRUCT
{
    ?pers a vivo:FacultyMember.
#namePPC
    ?pers rdfs:label ?fullName.

#vcard
    ?pers <http://purl.obolibrary.org/obo/ARG_2000028> ?vcard .
    ?vcard rdf:type vcard:Individual.

    #vcard -> vcard_name
    ?vcard vcard:hasName ?vcard_name.
    ?vcard_name rdf:type vcard:Name.

    #vcard_name
    ?vcard_name vcard:givenName ?name. #namePPC
    ?vcard_name vcard:familyName ?surname. #surnamePPC

    #vcard_email
    ?vcard vcard:hasEmail ?vcard_email.
    ?vcard_email rdf:type vcard:Email.
    ?vcard_email vcard:email ?email.

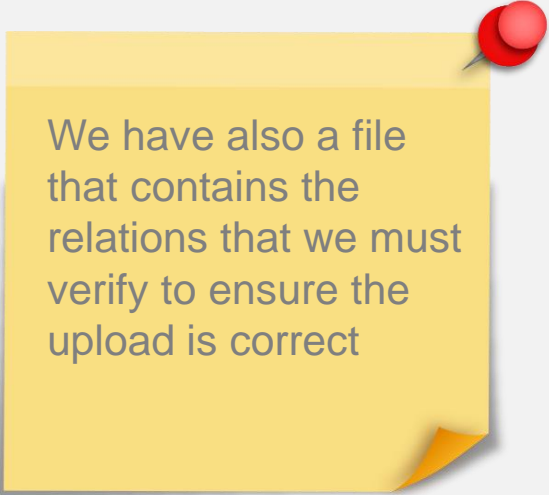
#UniversityPPC
    ?pos a vivo:Position; #tambiñ vale vivo:FacultyPosition
        rdfs:label ?posLabel;
        vivo:relates ?university,
                    ?pers.

    ?university a foaf:Organization;
                vivo:University;
                rdfs:label ?uniLabel;
                vivo:abbreviation ?sgUniversity.

#urlPPC
    ?vcard vcard:hasURL ?vcard_uriPPC.
    ?vcard_uriPPC a vcard:URL;
                  vcard:url ?urlPPC_CA.
}
```

SIGMA's approach for uploading data in VIVO

Description of an automatized way to upload information in VIVO



We have also a file that contains the relations that we must verify to ensure the upload is correct

Archivo Edición Formato Ver Ayuda

```
<rdf:RDF
  xmlns:vetro-public="http://vitro.mannlib.cornell.edu/ns/vetro/public#"
  xmlns:c4o="http://purl.org/spar/c4o/"
  xmlns:geo="http://aims.fao.org/aos/geopolitical.owl#"
  xmlns:skos="http://www.w3.org/2004/02/skos/core#"
  xmlns:event="http://purl.org/NET/c4dm/event.owl#"
  xmlns:obo="http://purl.obolibrary.org/obo/"
  xmlns:ocrer="http://purl.org/net/OCRe/research.owl#"
  xmlns:vivo="http://vivoweb.org/ontology/core#"
  xmlns:swrlb="http://www.w3.org/2003/11/swrlb#"
  xmlns:vetro="http://vitro.mannlib.cornell.edu/ns/vetro/0.7#"
  xmlns:cito="http://purl.org/spar/cito/"
  xmlns:vcard="http://www.w3.org/2006/vcard/ns#"
  xmlns:p1="http://localhost:8080/ontology/solr2PPC#"
  xmlns:ocresd="http://purl.org/net/OCRe/study_design.owl#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:bibo="http://purl.org/ontology/bibo/"
  xmlns:foaf="http://xmlns.com/foaf/0.1/"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:scires="http://vivoweb.org/ontology/scientific-research#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:swrl="http://www.w3.org/2003/11/swrl#"
  xmlns:fabio="http://purl.org/spar/fabio/"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" >
  <rdf:Description rdf:about="http://localhost:8080/vivo/individual/cf_pers_upf_2397_vcardemail">
    <rdf:type rdf:resource="http://www.w3.org/2006/vcard/ns#Email"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://localhost:8080/vivo/individual/cf_pers_upf_51647_vcard">
    <rdf:type rdf:resource="http://www.w3.org/2006/vcard/ns#Vcard"/>
  </rdf:Description>
</rdf:RDF>
```

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SUCCEED

SIGMA's approach for uploading data in VIVO

Description of an automatized way to upload information in VIVO

What we achieve?

- We start the process and the system runs automatically until the information is loaded to VIVO, and it can be displayed.
- We minimally modified the VIVO process and it's valid for any university and different sources, because we only need that they provide the correct csv.
- it's easy and not depends on the number of data files do you want to upload.

Problems:

- Not runs for very big files (more than 1.000 lines) → We need to run a previous process to separate the data in many files.
- Accents and special characters in csv that not translates well in VIVO → we include also a converter in the previous process.

03

Timmings

SIGMA's approach for uploading data in VIVO

Timmings

The following examples were for uploading data from some of SIGMA's universities, but with a condition:

We first implemented the Experts guide with VIVO. We only upload the information required for the Experts Guide, i.e. we upload the researcher name, department, expertise and photograph and then, in a single field we group all the scientific activities of the researcher.

Example:

SIGMA's approach for uploading data in VIVO

Timmings

Example:



Experts Guide (UP

tribute

SEARCH

Found 6 results

ALBO PEREZ, LAIA



Department: Department of Information and Communication Technologies

Expertise: MOOC. Blended Learning. ICT. TEL



CASAL RIBAS, ELBA PAULA



Department: Department of Law

Expertise: Political Philosophy. Moral philosophy



HERNANDEZ LEO, DAVINIA



Department: Department of Information and Communication Technologies

Expertise: Learning Technologies. ICT for Education, eLearning. Tecnologies per a l'aprenentatge. TICs i Educació.

AMARASINGHE ., PATHINARAGE ISHARI UTHPALA



Department: Department of Information and Communication Technologies



FREIRE VEIGA, ANA MARIA



Department: Department of Information and Communication Technologies

Expertise: Information Retrieval. Web Search. Distributed Systems. Power Consumption. Bioinformatics. Recuperació de Informació. Búsqueda Web. Sistemas Distribuidos. Consumo Energético. Bioinformática.



PINEDA I CIRERA, ANNA



Department: Department of Translation and Language Sciences

Expertise: Syntactic Variation, Syntax of Romance Languages, Argument Structure, Syntax-Semantics Interface. Romance languages, Germanic languages



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Expertise

Learning Technologies. ICT for Education, eLearning. Tecnologies per a l'aprenentatge. TICs i Educació. eLearning. Tecnologies para el aprendizaje. TICs y Educación. eLearning

PUBLICATIONS



Journal articles (96)
Books (6)
Book chapters (20)
Conference proceedings (110)
Manuals and other publications (5)

CONTRACTS & GRANTS



Projects (33)
Other grants (8)

OTHERS



Doctoral thesis (7)
Conferences (69)
Event organisation (8)
Awards (29)
Patents (1)
Research stays (2)
Courses and seminars given (10)
Editorial collaborations (7)
Participation on committees (18)
Research lines (1)
Other activities (14)

PUBLICATIONS

> Journal articles (96)

Hernández D, Martínez R, Pardo A, Muñoz JA, Rodríguez MJ. *Analytics for learning design: a layered framework and tools*. British journal of educational technology 2019; 51(1): 139-152.

Publication link

Full text

SIGMA's approach for uploading data in VIVO

Timmings

This tool, can also upload aggregated information from more than one university, we called “The HUB”. The hub works the same as the single experts guide, but also stores the university to which the researcher belongs.

Example:

SIGMA's approach for uploading data in VIVO


Timmings

ordenador

Se han encontrado 8 resultados :

BLAT GIMENO,JOSE ANGEL


Cooperative environments. Intelligent web portals. Educational telematics. Multimedia and GIS. Computational educational toys. Modelling and mathematical analysis of images. Advanced 3D graphics. Human modelling and animation



[Ver Mas >](#)

MARTINEZ MONES,ALEJANDRA


Aprendizaje apoyado por ordenador



[Ver Mas >](#)

RODRIGUEZ CASO,CARLOS FRANCISCO

Cancer. Complex networks. Complex systems. Synthetic biology. Systems biology. Tissue organisation




[Ver Mas >](#)

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Inicio > BLAT GIMENO, JOSEP

BLAT GIMENO, JOSEP



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Experto

Cooperative environments. Intelligent web portals. Educational telematics. Multimedia and GIS. Computational educational toys. Modeling and mathematical analysis of images. Advanced 3D graphics. Human modeling and animation

PUBLICACIONES

Artículos de revista (89)
Libros (16)
Capítulos de libros (30)
Actas de congresos (121)
Manuales y otras publicaciones (25)

AYUDA A LA INVESTIGACIÓN

Proyectos (107) 
Convenios (71)
Otras ayudas y becas (10)



OTROS

Tesis doctorales (20)
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Organización de actos (26)
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Cursos y seminarios impartidos (14)
Experiencia en gestión de I+D (10)
Participación en comités (15)
Líneas de investigación (1)
Otras actividades (37)


PUBLICACIONES

Artículos de revista (89)

Evans, Alun Thomas; Agenjo, Javier; Blat, Josep. *A Pipeline for the creation of progressively rendered web 3D scenes*. Multimedia Tools and Applications 2018; 77(16): 20355-20383.

 [Enlace publicación](#)  [Texto completo](#)

Righi V, Sayago S, Rosales A, Ferreira SM, Blat J. Co-designing with a community of older learners for over 10 years by moving user-driven participation from the margin to the centre. CoDesign: International Journal of CoCreation in Design and the Arts 2018; 14(1): 32-44.

 [Enlace publicación](#)

Kim H, Evans A, Blat J, Hilton A. *Multimodal Visual Data Registration for Web-Based Visualization in Media*

SIGMA's approach for uploading data in VIVO

Timmings



**Universitat
Pompeu Fabra**
Barcelona

In these conditions the timings are:

| University | # active researchers | time |
|--------------------------------------|----------------------|------------|
| Pompeu Fabra university of Barcelona | 1.519 | 30 minutes |
| Public university of Navarra | 1.692 | 35 minutes |
| University of Valladolid | 2.400 | 35 minutes |

We observe that, as in UPF or UPNA we have at about 1.500 active researchers, in UVA we have more or less 2.400, the timings are similar, so we can conclude that the number of researchers when we upload one university is not significant and for an Expert finding system could be at about half an hour.

To upload the hub, actually for 4 universities, in total more or less 6.300 researchers, the timings are about 80 minutes.

SIGMA's approach for uploading data in VIVO

Conclusions



**Universitat
Pompeu Fabra**
Barcelona

- We believe that it's important to work in the improving of the interoperability of VIVO with CRIS's or other systems.
- We need to provide our universities an easier way to upload information.
- This has been a good test for the automation of the upload of the information in VIVO.
- We are working in the next step that is to have all the Scientific Portal, not only the Experts finder, using VIVO, where we will want to apply this upload too.

Next step: using CERIF

Uploading data in VIVO

Using CERIF

Problem:

We want to have standard files, using CERIF, that can upload automatically to VIVO and that don't depend on the data source (or sources).

But we find that:

1. The mapping from CERIF model to VIVO model doesn't exist.
2. CERIF model has a high complexity

Goal:

So, the goal was, can we map the CERIF ontology to VIVO ontology in an easy way that can provide an standard to upload data in VIVO? The answer is yes, though the CERIF2VIVO project.



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The CERIF2VIVO project

The CERIF2VIVO Project

SIGMA is involved in the [definition of the CERIF2VIVO](#) project.

[This project will be a collaboration](#) between: euroCRIS, VIVO and SIGMA and open to other collaborations.

The goal of this project is to [define an interface to upload information to VIVO](#) always the same way independent of the source, so, the standard CERIF, seems the best option.

We have had a first experience with CERIF in the collaboration with CSUC to upload information in the PRC (Research Portal of Catalan Universities). Even though PRC only uploads a subset of the information that is stored in a CRIS (articles, books, book chapters, projects and thesis), it was a good experience.

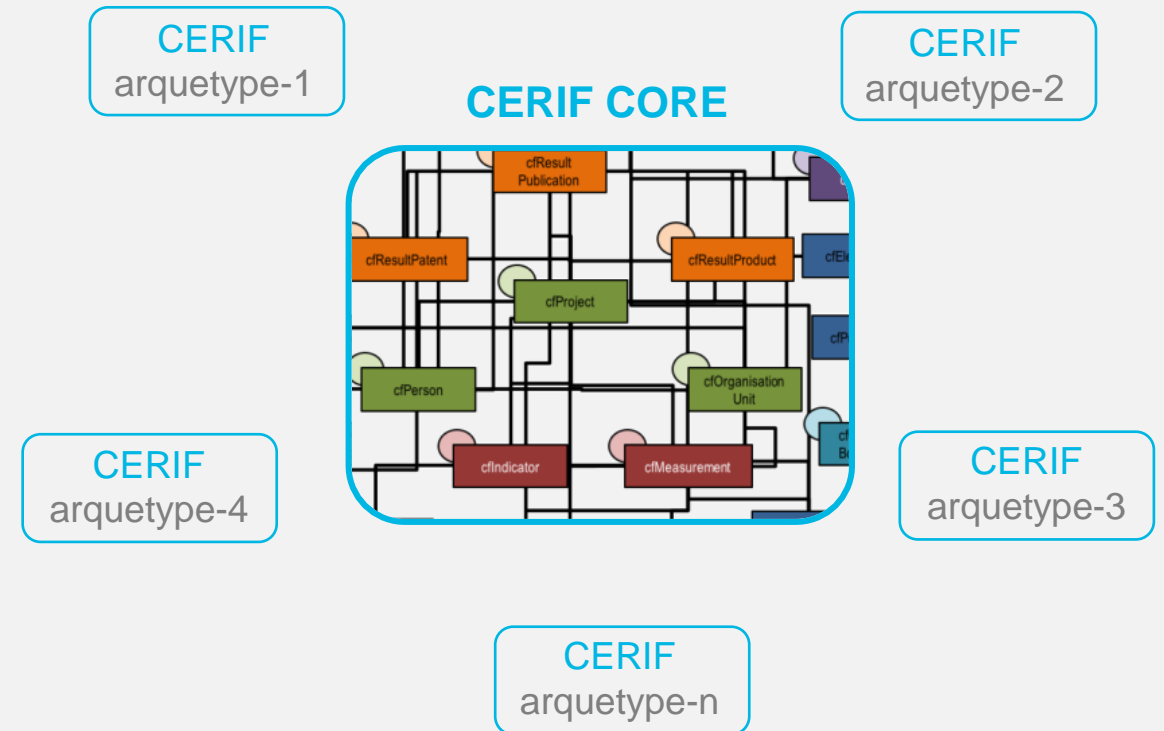


The CERIF2VIVO Project

To do this project, we must avoid one of the current drawbacks of CERIF, that is its complexity. The CERIF model is big and complex, so, in parallel, it's planned also the refactoring of the CERIF model.

This refactoring proposes to divide the CERIF model in a CORE model that will contain the essential entities, and then the definition of specific areas of entities that completes the model and that should be defined by experts in the area.

At the same time to do the refactoring, the mapping to VIVO will be defined.



Conclusions

VIVO

Conclusions...

- We can use **VIVO as a CRIS**, uploading all the information from some sources automatically or manually data entry.
- We can use VIVO as a **scholarly showcasing tool** (read-only), uploading the information from the CRIS of the organization (or more than one organization). Ideally we should use the CERIF model as the exchange format.
- euroCRIS will work in the **refactoring of the CERIF** model to simplify its use.
- In parallel, euroCRIS, VIVO and SIGMA will work in the **mapping of CERIF to VIVO ontologies**
- Five universities in the U.S. are working on **VIVO Scholar**, a modernized, read-only front-end for VIVO (for using as a showcasing tool)
- With these projects **we will be able to upload information from any CRIS to VIVO** in a consistent way (using the standard CERIF).



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