

An aerial night photograph of a city, likely Valencia, Spain, featuring a prominent cable-stayed bridge (Paseo del Turia) over a river. The city lights and the bridge's structure are visible against a dark sky. The entire image has a blue color overlay.

SIGMA CRIS

An implementation of VIVO in Spain



What we will see...

1. Why we need to improve the institutions visibility?
 2. How to select the best tools? Analyzing the national scenario
 3. How to select the best tools? Analyzing the international scenario
 4. SIGMA's experience with VIVO
 5. The CERIF2VIVO project
 6. Conclusions
-

Introduction

Introducing us...

SIGMA is a nonprofit organization of Spanish public universities where we develop and maintain their scholarly information systems. In this way, SIGMA is owned by the universities that compose it.

UAB Universitat Autònoma de Barcelona

UAM Universidad Autónoma de Madrid

 **UNIVERSIDAD DE BURGOS**

uc3m | Universidad Carlos III de Madrid

 **UNIVERSIDAD DE CORDOBA**

upf. Universitat Pompeu Fabra Barcelona

upna
Universitat Pública de Navarra
Nafarroako Unibertsitate Publikoa

UVa

UVIC
UNIVERSITAT DE VIC
UNIVERSITAT CENTRAL DE CATALUNYA

 1542

Universidad Zaragoza

UNED



Focusing on the Institutional Visibility

Introduction

Focus on the institutional visibility: dissemination of research information



“A Current Research Information System commonly known as “CRIS”, is any information tool dedicated to provide access to and ***disseminate research information***”

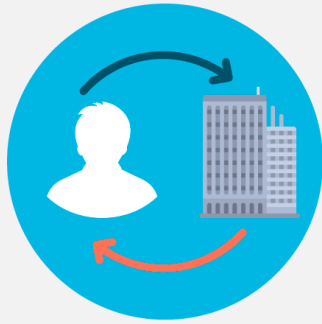


Institutional Visibility

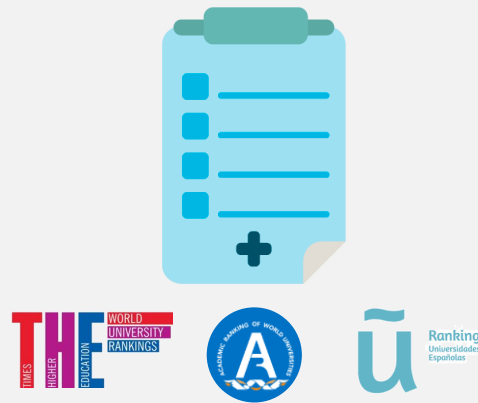


Institutional Visibility

The main goals for the institutions visibility are, among others:



Transfer the Research results to the business sector and to the society in general.



Reporting to the rankings providers, for evaluation, reuse...



Access to the media and other colleagues to public profiles: discoverability

To do this better, the institution needs to easy the public access to their results.

One of the SIGMA strategic goals: The semantic approach

The goal was defined as:

*“We must improve the visibility of the SIGMA’s institutions providing them scientific output Portals and experts’ guides with **semantic approach**, easing the search and discovering of the information.*

*This information must be **linked with the OpenAccess repository** of the institution **and the tools must be provided in the Cloud.**”*

One of the SIGMA strategic goals: The semantic approach



How to select the best tool?: Analyzing the Spanish scenario

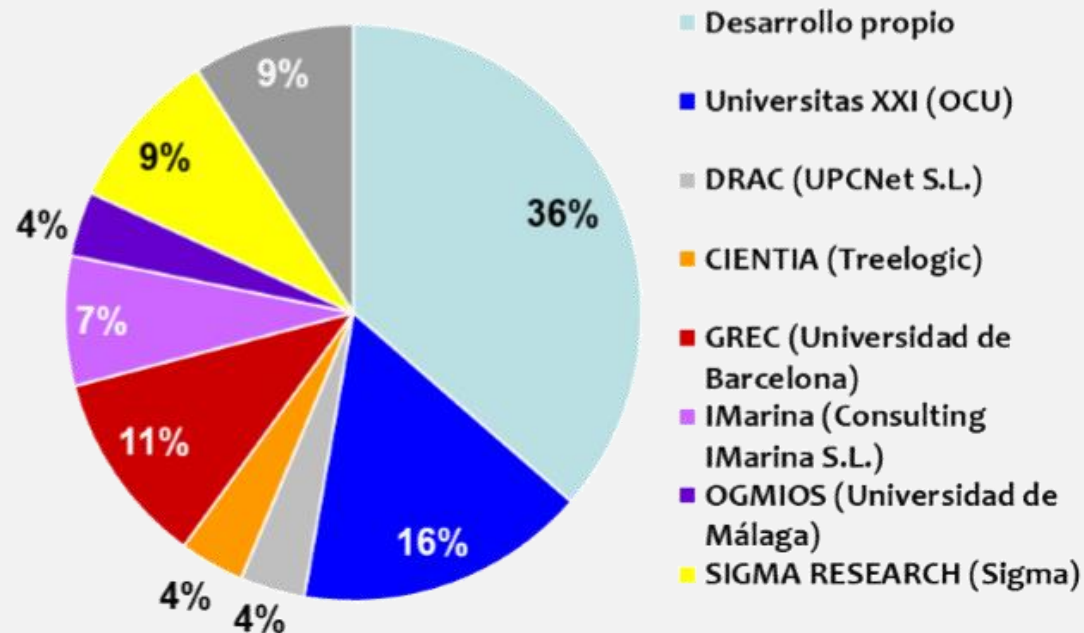
Spanish Scenario

2018 CRUE survey answered by 62 of 76 Spanish universities

81,57%
responses

1

There is no homogeneity in the use of solutions and universities already rely on own solutions.



- **The most used option is the development of own applications.**
- It is worth highlighting the presence of the Universitas XXI application in its research and / or economic modules, GREC and SIGMA Research.
- In the section of others, Fundanet (Semicroll), DspaceCRIS (Dspace), Widi and Open Vivo are cited, in general, open source solutions.

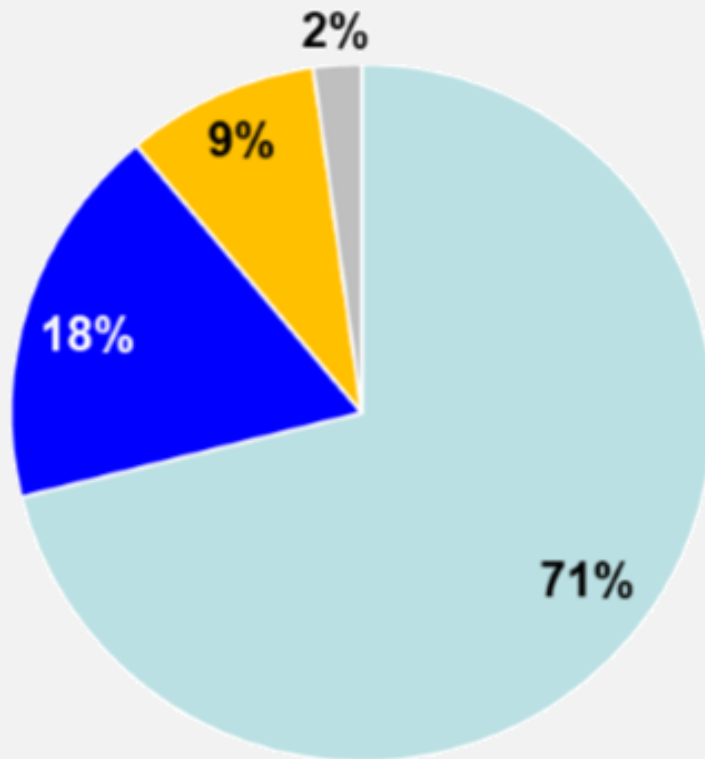
CRUE survey October 2018: [ESTADO DE LA CUESTIÓN DE LOS CRIS EN LAS UNIVERSIDADES ESPAÑOLAS \(REBUIN\)](#)

Spanish Scenario

2018 CRUE survey answered by 62 of 76 Spanish universities

2

Most of the solutions are not in the Cloud (SaaS model), that is the second part of the SIGMAs goal.



- Only 18% are housed outside the university in a **SaaS system or similar**.
- 71% of the solutions are hosted in the campus
- 9% of mixed solutions (SaaS/no SaaS)
- 2% don't know

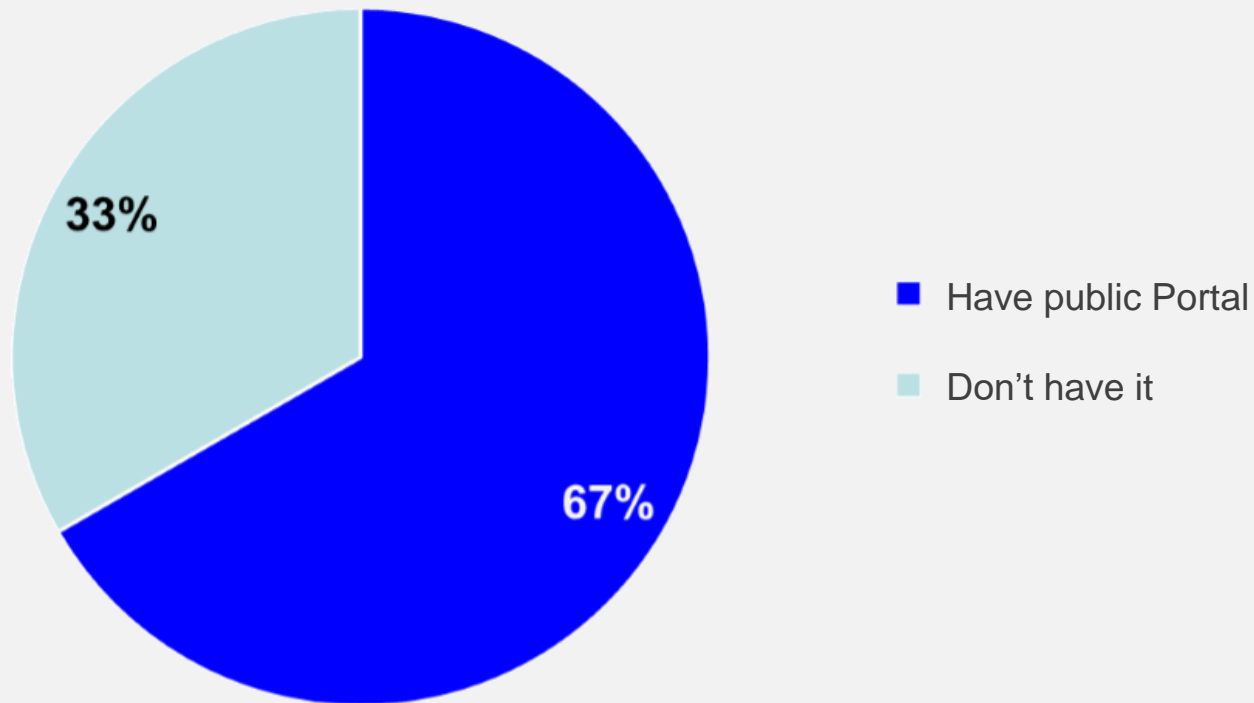
CRUE survey October 2018: [ESTADO DE LA CUESTIÓN DE LOS CRIS EN LAS UNIVERSIDADES ESPAÑOLAS \(REBUIN\)](#)

Spanish Scenario

2018 CRUE survey answered by 62 of 76 Spanish universities

3

Some solutions still don't provide Public Portals.



- **33% don't have a Public Portal** for the Research.

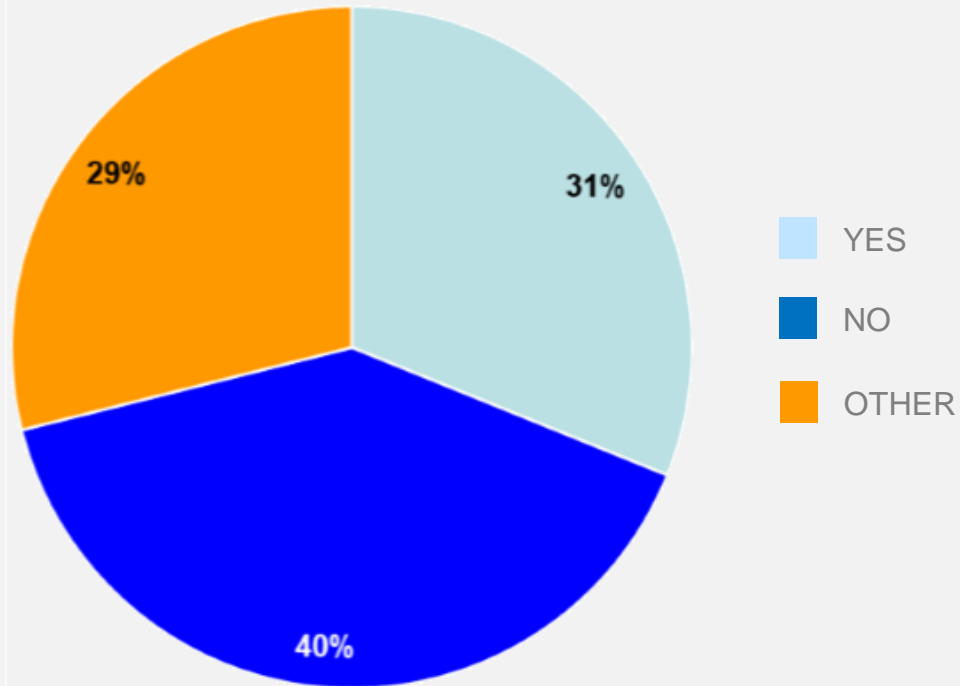
CRUE survey October 2018: [ESTADO DE LA CUESTIÓN DE LOS CRIS EN LAS UNIVERSIDADES ESPAÑOLAS \(REBUIN\)](#)

Spanish Scenario

2018 CRUE survey answered by 62 of 76 Spanish universities

4

Almost half of the CRIS systems are not linked with the openAccess Institutional repositories.



- Another surprising finding was **that 40% don't have the CRIS** linked with the IR.

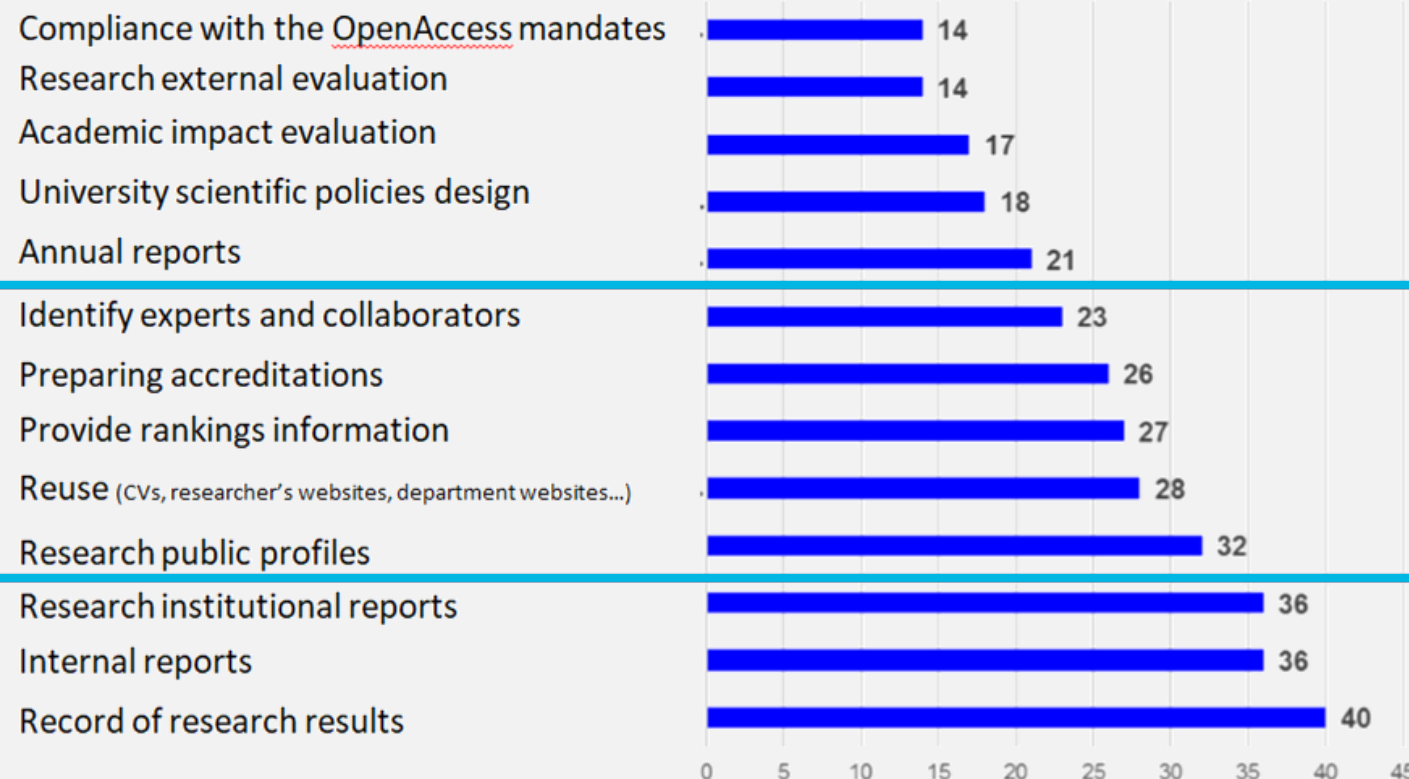
CRUE survey October 2018: [ESTADO DE LA CUESTIÓN DE LOS CRIS EN LAS UNIVERSIDADES ESPAÑOLAS \(REBUIN\)](#)

Spanish Scenario

2018 CRUE survey answered by 62 of 76 Spanish universities

5

It's correct to assess that the information of the CRIS are used in a relevant way for the institutional visibility



- Another finding was the certainty that the CRIS information is used to **improve the research visibility**.

Spanish Scenario. Findings



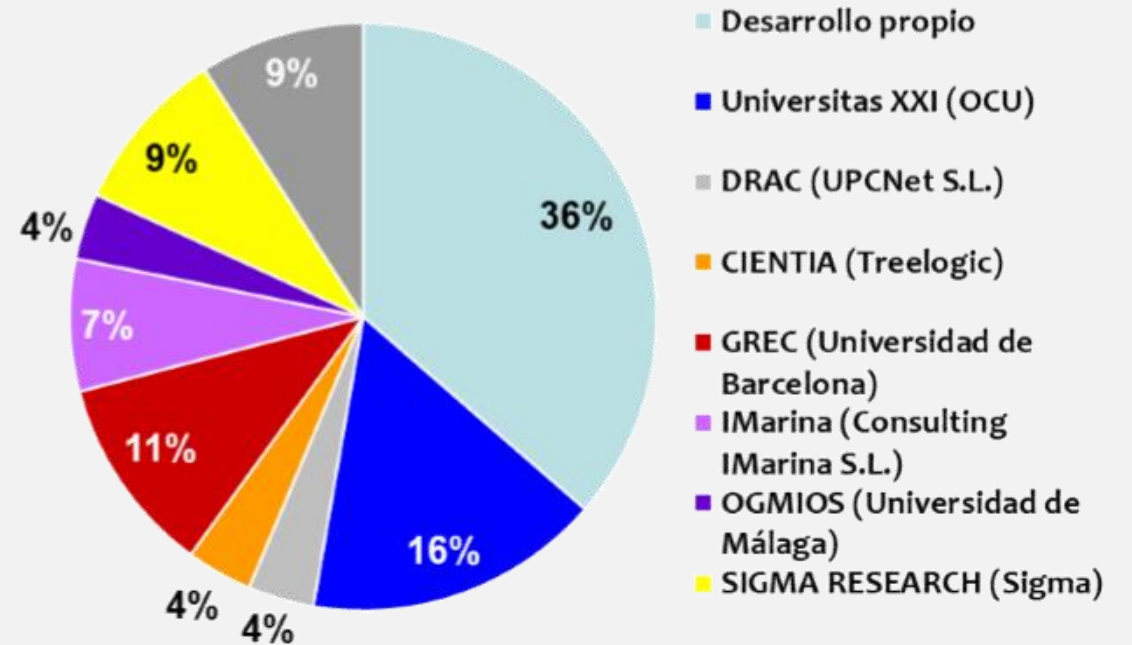
There is no homogeneity in the use of solutions, great percentage of them are own developments, mainly hosted in the university, not connected with the IR, and some not provide public portals.

Spanish Scenario

We analysed the tools showed in the first graphic:

- Drac
- Universitas XXI
- Cientia
- Grec
- We also analyse the PRC (Scientific Output Portal for Catalan universities)

In order to define possible collaborations.



Spanish Scenario, conclusions:



None of the solutions analysed fits at a high percentage with our strategy. The majority doesn't contain a semantic approach or are not provided in SaaS, among others. Seeing that no one Spanish solution fits completely with our strategy, we started to analyse solutions at international level.

How to select the best tool?: Analyzing the International scenario

International Scenario

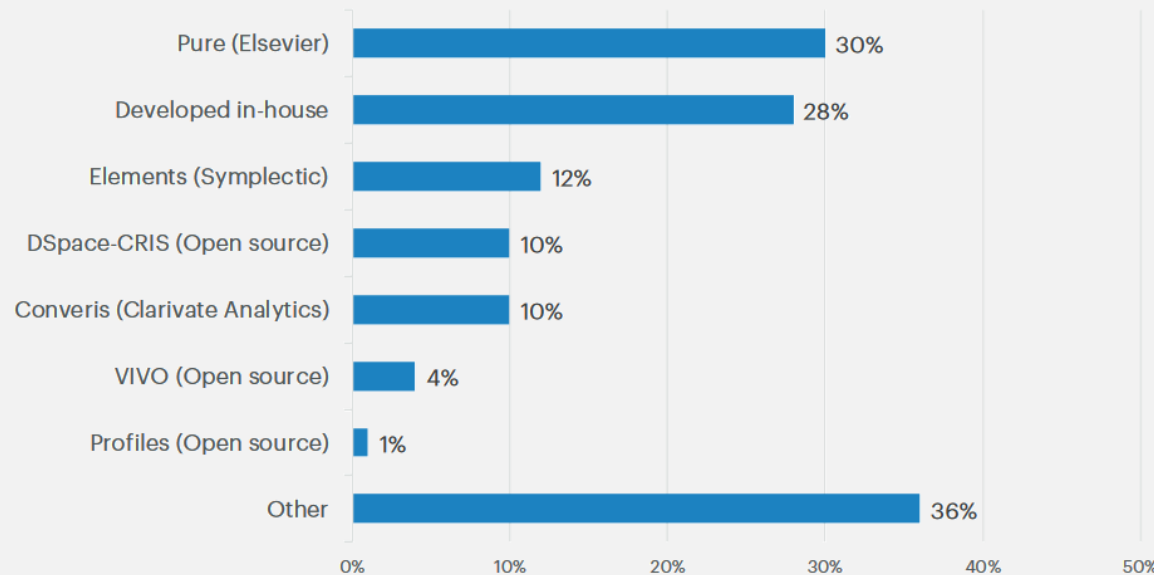
2017/18 OCLC / euroCRIS survey Practices and Patterns in Research Information Management (381 responses from 44 countries)

1

There is no homogeneity in the use of solutions

RIM Systems in Use by Survey Respondents (n=193)

Note: 29 respondents did not provide their RIM system



- Almost the most used option is the development of own applications.
- Pure(Elsevier) it's widely use specially in the UK, US and Australia.
- The rest use heterogeneous solutions

OCLC/euroCRIS survey :

[Practices and Patterns in Research Information Management: Findings from a Global Survey.](#)

International Scenario

2017/18 OCLC / euroCRIS survey Practices and Patterns in Research Information Management

2

Most of the solutions are not in the Cloud (SaaS model), that is the second part of the SIGMAs goal.

Hosting Location of Current Live RIM System

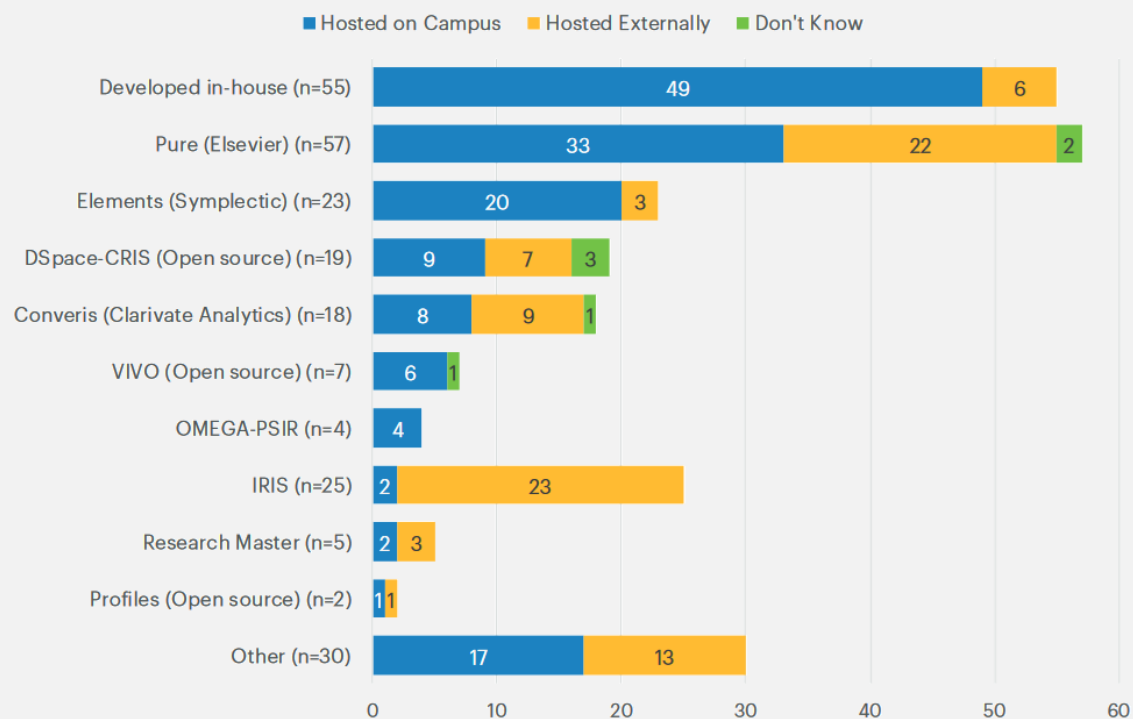


FIGURE 6. Hosting location of current live RIM system, per system used.

- A wide range of installations are hosted in campus infrastructures

International Scenario

2017/18 OCLC / euroCRIS survey Practices and Patterns in Research Information Management

3

The information of the CRIS are used in a relevant way for the institutional visibility

Activities for Institutions Implementing RIM Systems (n=51)

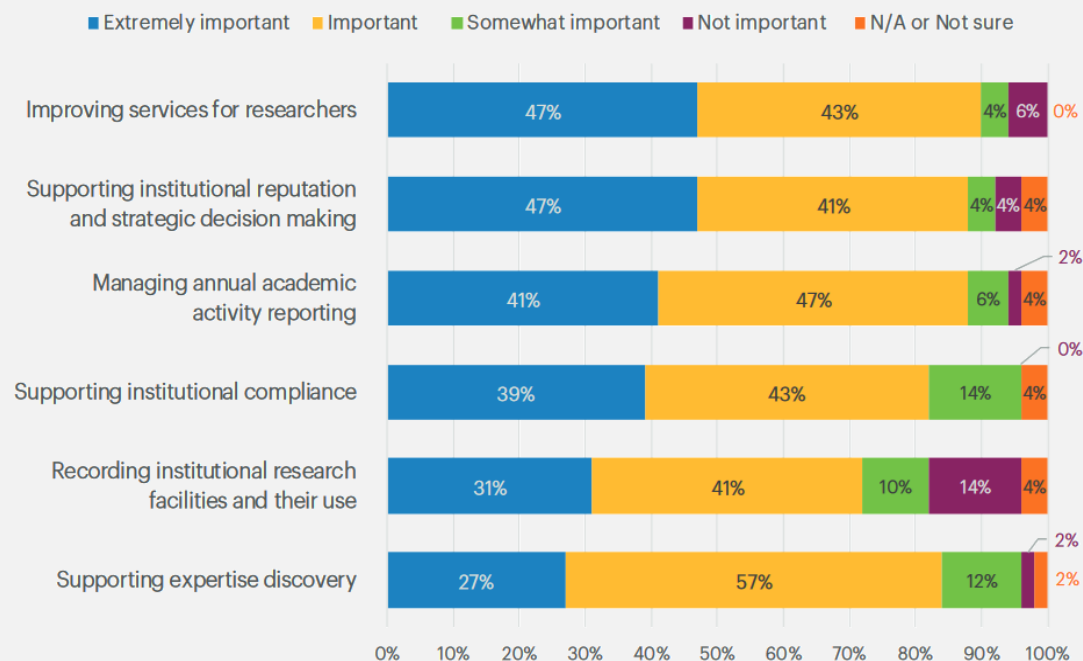


FIGURE 12. Importance of reasons for pursuing RIM activities for institutions implementing RIM systems

- Most of the activities are very similar of the Spanish scenario

International Scenario. Findings



There is no homogeneity in the use of solutions and great percentage of them there are also own developments, mainly hosted in the university.

International Scenario

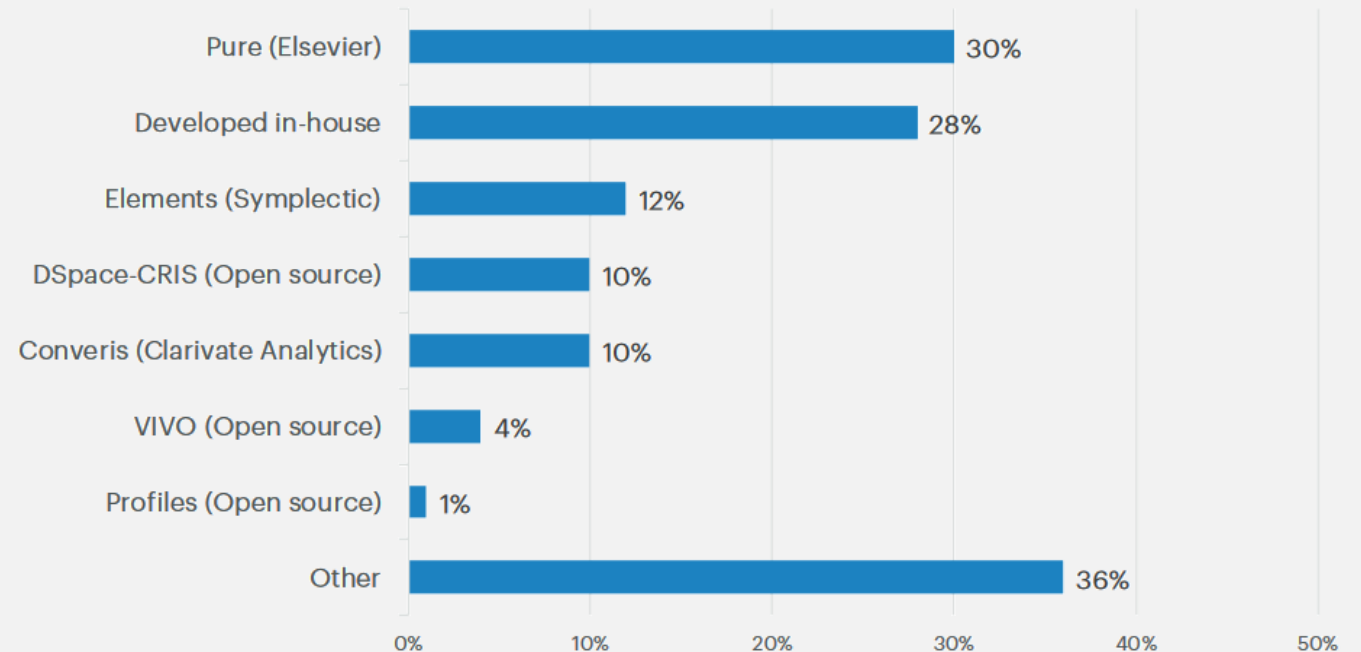
We analysed the tools showed in the first graphic:

- Pure
- Symplectic
- DSpace-CRIS
- Converis
- VIVO

We decided to focus on Dspace-CRIS and VIVO, for their OpenSource approach.

RIM Systems in Use by Survey Respondents (n=193)

Note: 29 respondents did not provide their RIM system



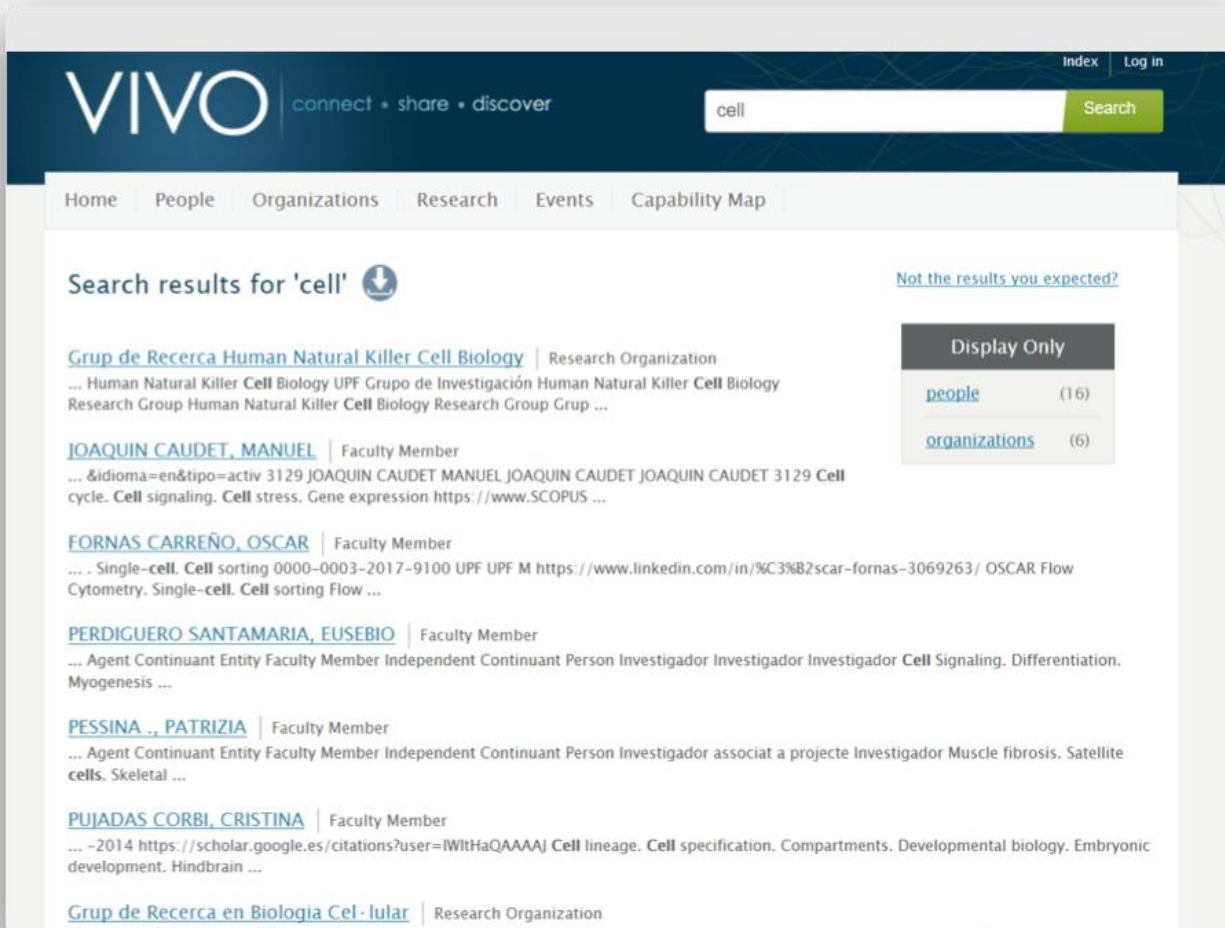
Spanish Scenario, conclusions:



One of the solutions analysed fits at about 80% with our strategy. The semantic approach, the ontology, the functionalities and the possibility to install in the cloud made that we choose VIVO. VIVO is member-supported, open source software and an ontology for representing scholarly

SIGMA's experience with VIVO

VIVO test



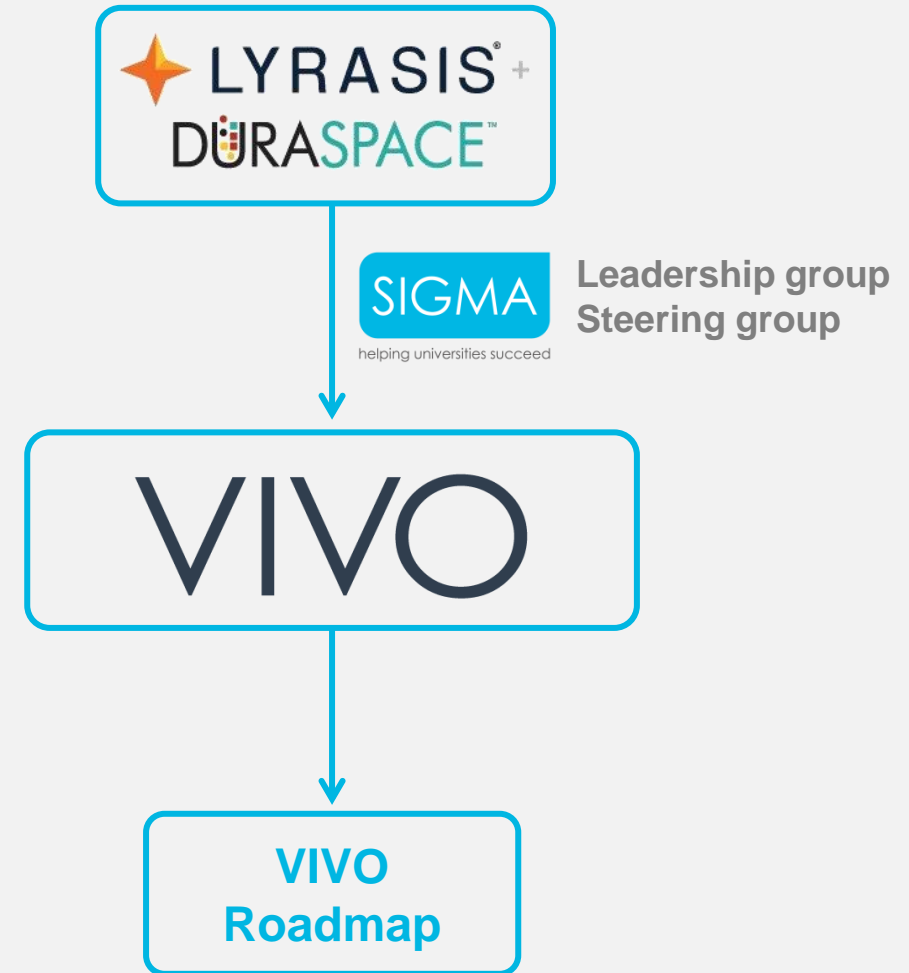
- We found that VIVO semantic model and functionalities fits almost 80% with the Spanish model for research, and is evolving and adapting to the new trends and have a great community behind.
- We start doing a test uploading information to an installation of VIVO (download from GitHub), and see how the information looks like.
- We could upload a lot of information in the ontology. This test satisfied us and finally we decided to use VIVO.

VIVO Community Collaboration

The next step was to collaborate with the VIVO community, so since March of 2018 SIGMA participates in the Leadership group. This group establishes priorities and is responsible for making strategic decisions.

During 2018 in VIVO we collaborate in the roadmap of the product definition. It was a great opportunity for SIGMA to align their strategy and goals with the advance of the VIVO product.

We also collaborate in the creation of the Steering group, a group that will bring issues to the Leadership Group for decisions, in which SIGMA is also involved.



Creating a New Experts Guide

To implement a new Experts guide, we followed the next steps:



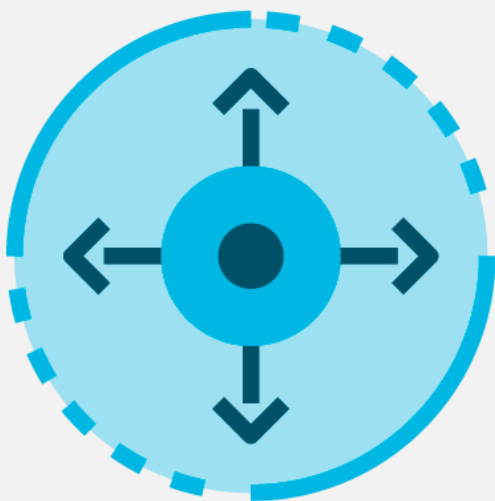
1. **Study and analyse** the VIVO ontology.



2. **Compare the SIGMA CRIS model with the VIVO ontology.** Entities and relations that exist in the SIGMA CRIS and not in the VIVO model. The VIVO ontologies gives answer to the US scholarly model that is slightly different from the European model. We found that VIVO ontology fits almost 80% with the European model for research (and therefore, the Spanish model).

Creating a New Experts Guide

To implement a new Experts guide, we followed the next steps:



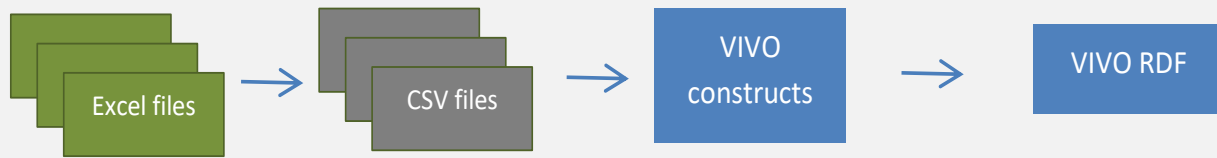
Example:

VIVO	Extended Property
Researcher - people	vivo-local#personID
	vivo-local#universityPPC
	vivo-local#urlPPC
	vivo-local#namePPC
	vivo-local#urlPhotoPPC
	vivo-local#expertGroupPPC
	vivo-local#mainResearchPPC
	vivo-local#departmentPPC
	vivo-local#surnamePPC
	vivo-local#rankingPPC
	vivo-local#expertisePPC
Estate - Organisation	vivo-local#orgID
	vivo-local#tipoEstamento
Journal articles	vivo-local#resPublID
Book chapters	vivo-local#resPublID
Books	vivo-local#resPublID
Thesis	vivo-local#resPublID

3. **Extend the VIVO ontology** with the properties and entities for the Spanish model that are not in VIVO. The result was 10 entities and more or less 50 properties that are not in the VIVO ontology. I.e:

Creating a New Experts Guide

To implement a new Experts guide, we followed the next steps:



-
- 4. Develop a process to upload** the information in VIVO in one step. We automatize the manual process, filling the information of the 2 forms (csv2rdf and rdfto ontology)



-
- 5. Develop a new frontend angular for the Experts guide** that aligns the visual requirements of the current Experts guide of the SIGMA universities, so the process to implement VIVO will be do it as an improve of the current tools. This frontend uses the search engine of VIVO and its ontology.

Creating a New Experts Guide

- The guide is **Multilanguage**
- We can use some **topics to search** (Boolean connectors, literal words or phrases, approximated words, etc...)
- The search is in all the scientific information upload in VIVO ontology (scientific production of researchers)
- The experts are sorted by their surname. It could be sorted by relevance (not implemented yet)
- **Shows the same style** as the institutional web of the university
- Shows the institutional photo only if the researcher gives his consent.
- **Very fast searches**
- Link to the researcher profile though name of button '+'.

The screenshot shows the 'Experts Guide (UPF)' interface. At the top left is the UPF logo (Universitat Pompeu Fabra Barcelona). At the top right is the title 'Experts Guide (UPF)'. Below the logo is a search bar containing the text 'tribute' and a red 'SEARCH' button. Below the search bar, it says 'Found 6 results'. The results are displayed in two columns. Each result includes a small portrait photo, the researcher's name, their department, and their expertise. A red square button with a white '+' sign is next to each result. The results are as follows:

Name	Department	Expertise
ALBO PEREZ, LAIA	Department of Information and Communication Technologies	MOOC. Blended Learning. ICT. TEL
CASAL RIBAS, ELBA PAULA	Department of Law	Political Philosophy. Moral philosophy
HERNANDEZ LEO, DAVINIA	Department of Information and Communication Technologies	Learning Technologies. ICT for Education, e-learning. Technologies per a l'aprenentatge TICs i
AMARASINGHE ., PATHINARAGE ISHARI UTHPALA	Department of Information and Communication Technologies	
FREIRE VEIGA, ANA MARIA	Department of Information and Communication Technologies	Information Retrieval. Web Search. Distributed Systems. Power Consumption. Bioinformatics. Recuperació de Informació. Búsqueda Web. Sistemas Distribuidos. Consumo Energético. Bioinformática.
PINEDA I CIRERA, ANNA	Department of Translation and Language Sciences	Syntactic Variation, Syntax of Romance Languages, Argument Structure, Syntax-Semantics Interface, Romance Languages, Germanic Languages

New Experts Guide

The screenshot displays the 'SCIENTIFIC OUTPUT' profile for DAVINIA HERNÁNDEZ-LEO on the UPF website. The header includes the PPC logo, 'SCIENTIFIC OUTPUT', and the UPF logo, along with navigation links for 'cat', 'esp', 'eng', 'Help', 'Contact', 'UPF website', and 'Intranet'. The profile header shows 'HERNÁNDEZ-LEO, DAVINIA' with a home icon and a minus sign. The main content area features a profile picture of a woman with glasses, her title 'Senior lecturer', department 'Department of Information and Communication Technologies', and affiliation 'Interactive and Distributed Technologies for Education Research Group (TIDE)'. It also lists her email 'davinia.hernandez@upf.edu' and phone number '93 542 2300'. Below the photo are icons for ORCID, LinkedIn, Twitter, Scopus, and ResearchGate. To the right, the 'Expertise' section lists 'Learning Technologies', 'ICT for Education', 'eLearning', 'Tecnologies per a l'aprenentatge', 'TICs i Educació', 'eLearning', 'Tecnologías para el aprendizaje', 'TICs y Educación', and 'eLearning'. A navigation bar at the bottom has three tabs: 'PUBLICATIONS' (selected), 'CONTRACTS & GRANTS', and 'OTHERS'. The 'PUBLICATIONS' tab shows a list of publication types and counts: Journal articles (96), Books (6), Book chapters (20), Conference proceedings (110), and Manuals and other publications (5). The 'CONTRACTS & GRANTS' tab shows Projects (33) and Other grants (8). The 'OTHERS' tab shows a list of activities and counts: 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), and Other activities (14). Below the navigation bar, the 'PUBLICATIONS' section is expanded, showing 'Journal articles (96)'. A specific publication is highlighted: '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.' with links for 'Publication link' and 'Full text'.

PPC SCIENTIFIC OUTPUT upf.

cat esp eng Help Contact UPF website Intranet

Home > HERNÁNDEZ-LEO, DAVINIA

HERNÁNDEZ-LEO, DAVINIA

Senior lecturer
Department of Information and Communication Technologies
Interactive and Distributed Technologies for Education Research Group (TIDE)

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[93 542 2300](tel:935422300)

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

PUBLICATIONS CONTRACTS & GRANTS OTHERS

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

Projects (33)
Other grants (8)

Doctoral thesis (7)
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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

- Access to the **complete researcher profile** from the CRIS system.

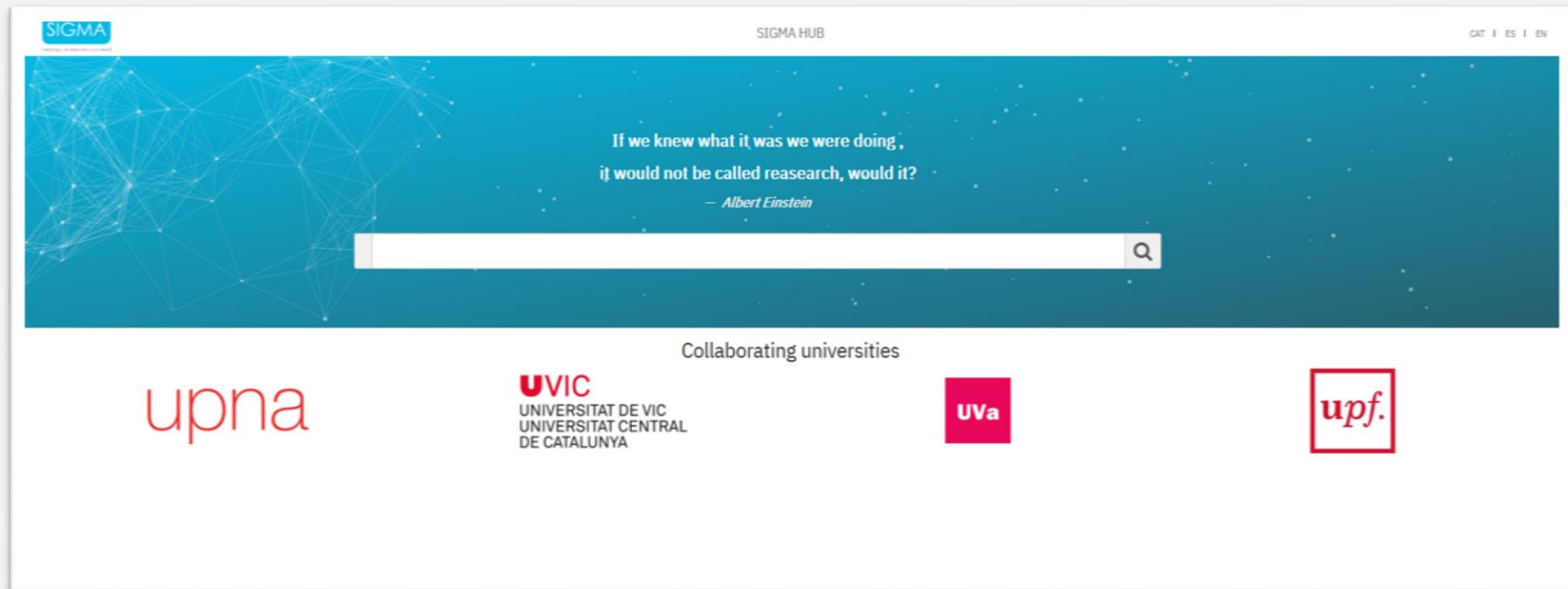
New Experts Guide

The new Expert guide improvements over the current SIGMA Expert guide are:

- More powerful model (ontology) that provides scalability and more easy improvements of the tool. Some that VIVO already provide and some that could be new (due the openSource model)
- More powerful search engine
 - Search in all the researchers information, easing the discoverability
 - More possibilities for the search (booleans, literal and approximated words...)
 - Very fast and efficient searches
- More sorting possibilities for the results: for relevance, citation, impact... of the researchers

New SIGMA Hub

On the other hand, we have implemented an Experts Guide that can upload information aggregated from many universities, we called 'The SIGMA hub'. This tool enables the showcasing of a group of universities or from the university and their related research centres.



New SIGMA Hub


It stores and show the results displaying the researchers of all the universities that matches the search.

If we knew what it was we were doing ,
it would not be called reasearch, would it?
— Albert Einstein

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 >

MAGDALENO MARTÍN,JESÚS


Análisis por elementos finitos; Didáctica de las ciencias experimentales; Diseño asistido por ordenador (CAE); Diseño, desarrollo y evaluación curricular; Estructuras metálicas; Ingeniería mecánica; Ingeniería civil y arquitectura; Recursos y tecnologías en educación



Ver Mas >

PARES BURGUES,NARCIS

Full-Body Interaction. Embodied Cognition. Learning. Play. Special Needs. Autism. Interaction Design. Children. HCI. Exergames. Virtual Reality. VR.Interacció de Cos Sensor. Cognició Corpòria. Aprenentatge. Joc. Necessitats Especials. Autisme. Disseny d'Interacció. Infants. IPO. Realitat Virtual.Interacció de Cuerpo Entero. Cognición Corpórea. Aprendizaje. Juego. Necesidades Especiales. Autismo. Diseño de Interacción. Niños. Realidad Virtual.



Ver Mas >


SANZ CARRERAS,FERRAN

Informàtica biomèdica. Disseny de fàrmacs assistit per ordinador. Modelització molecular. Bioestadística. Informàtica biomèdica. Diseño de fármacos asistido por ordenador. Modelización molecular.

Ver Mas >


MARCOS MORA,MARIA CARMEN

Interacción Persona-Ordenador (IPO). Experiencia Buscadores. Eye tracking. Interacció Persona-On d'usuariis. Cerdadors. Eye tracking. Human-Comp. User studies. Search Engines. Eye tracking



Ver Mas >

RIBAS TORRABADELLA,JOAN IGNASI


UNIVERSITAT DE VIC
UNIVERSITAT CENTRAL
DE CATALUNYA

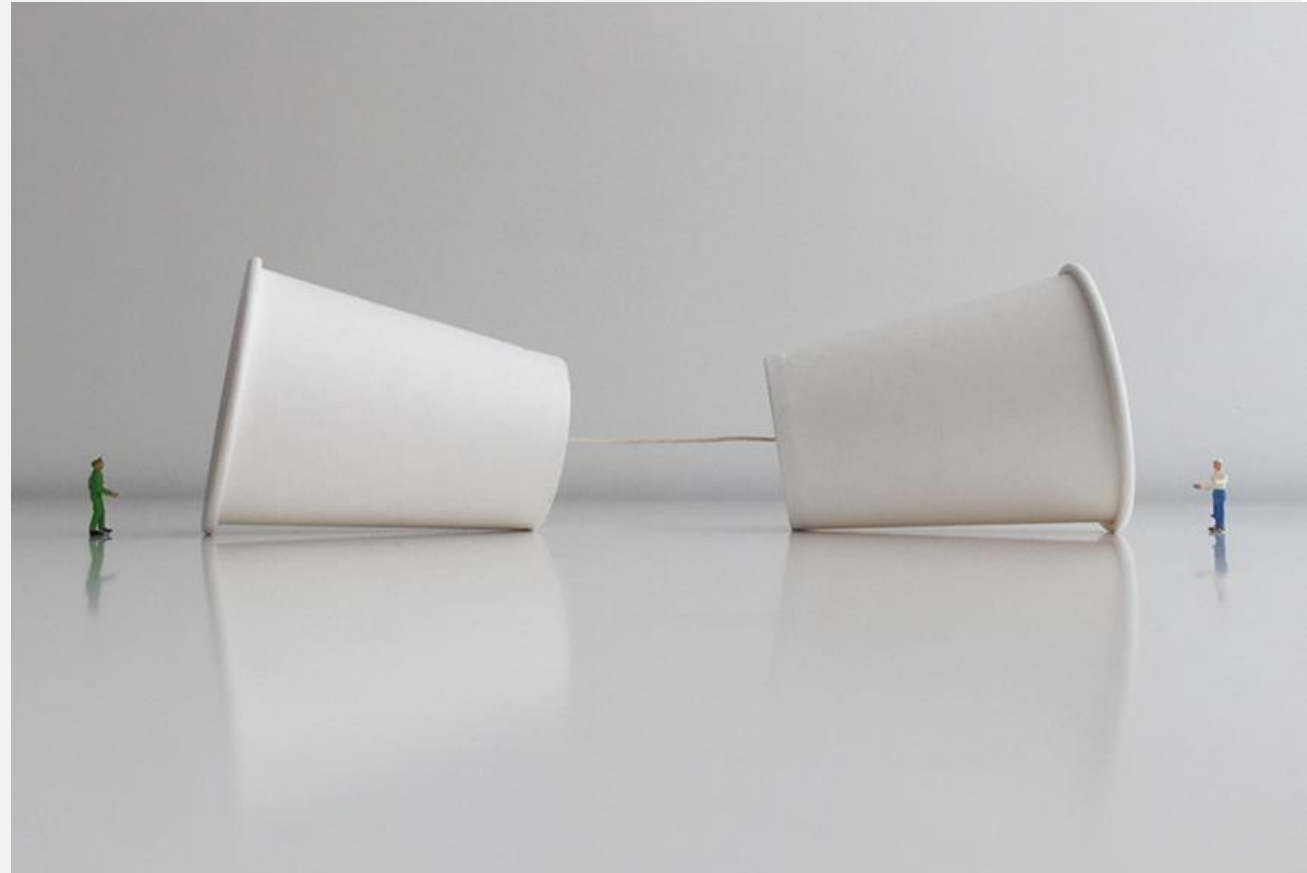
Ver Mas >

Conclusions and next steps

This is our first pilot and we start the implementation in one of our universities and parallel to this, evolving the tools until have the complete research output Portal with VIVO.

To do this step, we will wait until we have results in the VIVO Scholar project.

This tools are only for the reuse, visibility and dissemination of scientific information, so the maintenance of the CRIS is made by other products. **VIVO will be, for us, read-only.**



By the way....

We have other examples in Spain using VIVO, in this case, the UC3M, Carlos tercero university of Madrid. That since 2016 is using an implementation of VIVO with successful results.

They have also a CRIS from which they upload information to VIVO once a month.

The screenshot shows the UC3M Research Portal profile for Pablo Angel Garcia Salaberry. The header includes the UC3M logo and the text 'Universidad Carlos III de Madrid RESEARCH PORTAL'. A search bar is located in the top right. Below the header is a navigation menu with 'Home', 'Researchers', 'Organizations', and 'Outputs'. The profile section displays the name 'GARCIA SALABERRI, PABLO ANGEL' with a QR code and a category 'Teaching Assistant with PhD'. An ORCID iD is provided with the URL 'https://orcid.org/0000-0002-3918-5415'. To the right of the profile are social media icons and two network links: 'Co-author Network' and 'Co-researcher Network'. The 'Positions' section lists three roles: 'Academic Department : Thermal and Fluids Engineering', 'Research Group : Fluid Mechanics Group', and 'Institute : Gregorio Millán Barbany University Institute for Modelling and Simulation in Fluidodynamics, nanoscience and industrial mathematics'. The 'Contact Info' section shows an email 'pagsalab@ing.uc3m.es' and a link to 'Other Contact Information'. Below this are tabs for 'Publications', 'Projects', and 'Other'. The 'Publications' tab is active, showing a 'sample of publications' section. This section is divided into 'articles' and 'conference contributions'. The 'articles' section lists five publications with their titles, journal names, volume/issue/page numbers, and years. The 'conference contributions' section shows the beginning of a publication titled 'Exploring the limits of macro-homogeneous models of carbon fiber papers'.

uc3m | Universidad Carlos III de Madrid
RESEARCH PORTAL

Home Researchers Organizations Outputs

GARCIA SALABERRI, PABLO ANGEL 
category: Teaching Assistant with PhD
 <https://orcid.org/0000-0002-3918-5415>

 [Co-author Network](#)

 [Co-researcher Network](#)

Positions

- Academic Department : [Thermal and Fluids Engineering](#)
- Research Group : [Fluid Mechanics Group](#)
- Institute : [Gregorio Millán Barbany University Institute for Modelling and Simulation in Fluidodynamics, nanoscience and industrial mathematics](#)

Contact Info
✉ pagsalab@ing.uc3m.es >> [Other Contact Information](#)

Publications Projects Other

sample of publications

articles

- [The Impact of Reaction on the Effective Properties of Multiscale Catalytic Porous Media: A Case of Polymer Electrolyte Fuel Cells](#). *TRANSPORT IN POROUS MEDIA*. 128:363–384. 2019
- [Through-the-Membrane Transient Phenomena in PEM Fuel Cells: A Modeling Study](#). *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*. 166:F3154–F3179. 2019
- [Implications of inherent inhomogeneities in thin carbon fiber-based gas diffusion layers: A comparative modeling study](#). *ELECTROCHIMICA ACTA*. 295:861–874. 2019
- [A 1D+1D Model of Direct Ethanol Fuel Cells Based on an Optimized Kinetic Mechanism for Ethanol Electro-Oxidation Involving Free and Adsorbed Intermediate Species](#). *Electrochemical Society Transactions*. 80:95–104. 2017
- [On the Limitations of Volume-Averaged Descriptions of Gas Diffusion Layers in the Modeling of Polymer Electrolyte Fuel Cells](#). *Electrochemical Society Transactions*. 80:133–143. 2017

[... more](#)

conference contributions

- [Exploring the limits of macro-homogeneous models of carbon fiber papers](#). 195–197. 2018

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.

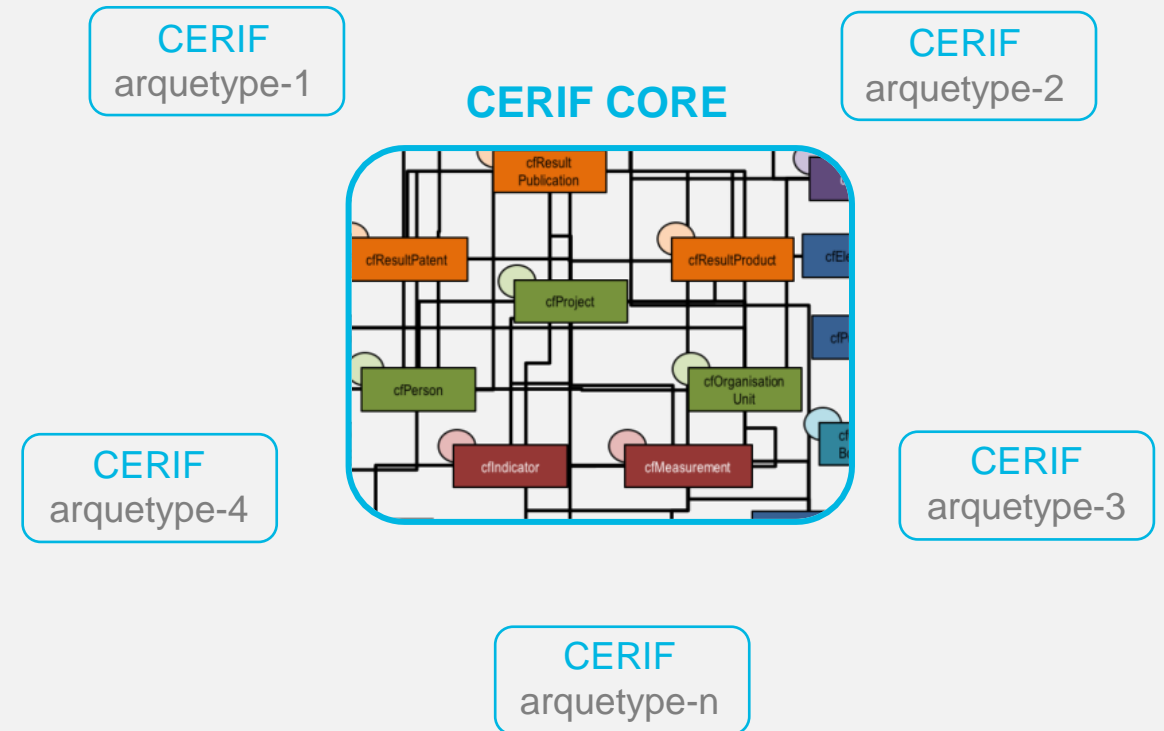


The CERIF2VIVO Project

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.



06

Conclusions

VIVO

Some conclusions ...

- Our participation in the VIVO community it has been a great experience and an opportunity to **evolve and be able to provide to our universities solutions align with the ones used by world-class universities** (that leads the international rankings), that are also in the VIVO community, using and adopting their **best practices** at some levels.
- We can use VIVO as a **scholarly showcasing tool** (read-only), uploading the information from the CRIS to one university or more than one. Ideally we could 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). To provide public portals and experts guides to our universities.

Thank you!!



helping universities succeed

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