Integration and Knowledge organization in a CRIS based on semantic technologies

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CONTENIDO

- INTRODUCTION
- CRIS IN UNIVERSITY CONTEXT
- PROBLEMS AND GOALS
- CRIS PROPOSAL
- OpenUPSA
- CONCLUSIONS
INTRODUCTION

Semantic CRIS OpenUPSA
University Responsibilities

Teaching

Research

Transparency
What is a CRIS?

Current Research Information System

Information system through which institutions like universities can store, manage, show and share with society, its research production.
What is OpenUPSA?

CRIS for UPSA

CRIS with advanced services...

- Data Integration Facilities
- Advanced Query System
  - (Semantic Technologies)
Why OpenUPSA?

Looking for Transparency

Problem!!
No Institutional Repository
Semantic CRIS OpenUPSA

CRIS & UNIVERSITY CONTEXT
Who maintain CRIS system at University?

How CRIS interact with institutional repositories, should be CRIS the institutional repositories?

Where data come from in a CRIS system?
PROBLEMS & GOALS
Most of universities situation:

- Not institutional repository
- (single data system)

Looking for institutional Transparency

Research information disseminated among different and heterogeneous data sources
- PDF
- WebSV, library Repository (JSON)
- ...
Objectives

Research information retrieval and integration
Research information sharing and reusing
Research information management
Research information visualization
Semantic CRIS OpenUPSA

**CRIS PROPOSAL**
Requirements Specification

- Information integration from heterogeneous sources
- Data management
- Data sharing with users (reusing and downloading)

Research Information Visualization
Looking for Alternatives

- Single & Common Repository
- Heterogeneous sources (parsers)

- Web Information System

- Semantic Technologies
Research information
RETRIEVAL, INTEGRATION & MANAGEMENT

Single Institutional Repository

Relational DBMS
Research information RETRIEVAL, INTEGRATION & MANAGEMENT

Data from HETEROGENEOUS SOURCES to RELATIONAL DB => PARSERS to RDBMS

PDF Document (Researchers CV) ➔ PDF Parser ➔ Relational DBMS

HTML Web (Research Groups Information) ➔ HTML Parser ➔ Relational DBMS

CSV documents (External Database, Scopus) ➔ Excel Parser ➔ Relational DBMS

API Library Repository (Academic Works Information) ➔ JSON Parser ➔ Relational DBMS

MANAGEMENT AND INTEGRATION MODULE
Research information
QUERING & REUSING

OpenUPSA ontology (from CERIF ontology)
Research information
QUERING & REUSING

SPARQL POINT

Consulta libre
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX cerif: <http://eurocris.org/ontology/cerif#>

Consulta proyectos
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
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PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX cerif: <http://eurocris.org/ontology/cerif#>

Consulta publicaciones
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX cerif: <http://eurocris.org/ontology/cerif#>

Consulta investigadores
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX cerif: <http://eurocris.org/ontology/cerif#>

Consulta grupos de investigación
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
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PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
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PREFIX cerif: <http://eurocris.org/ontology/cerif#>

Realizar consulta

Descargar JSON

Semantic Repository
OPENUPSA SOFTWARE ARCHITECTURE

Integration and Management Module

Web Visualization Module

SPARQL Point Module

Relational DBMS

Semantic Repository
OPENUPSA Services

Integration and Management Service

Web Visualization Service

Advanced Query Service
(SPARQL Point)
OPENUPSA Integration and Management
OPENUPSA Visualization
OPENUPSA Advanced Query Service
(SPARQL Point)
CONCLUSIONS
OPENUPSA Advantages & Contributions

- **Single Institutional Repository**: Retrieval and integration information
- **Semantic Technologies and Queries**: Data sharing and reusing
- **Contributions**: Parsers, Ontology, OpenUPSA CRIS (UPSA Transparency)
Thanks & Questions?

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