

Bridging CRIS and National CV through Research- Controlled Synchronization

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Double-Entry Burden

Researchers face redundant data entry across two systems

The problem: researchers must maintain identical records in two separate systems simultaneously

Institutional CRIS: Ciencia-Iscte, for profiling, reporting, and evaluation at ISCTE-IUL

National CV platform: CIÊNCIAVITAE, individual-centered public CV, required in Portugal for researchers looking for funding from FCT

Result: redundant effort, metadata inconsistencies, and risk of conflicting records

This paper: a researcher-controlled, consent-based synchronization mechanism between the two systems





CRIS + CIENCIAVITAE at ISCTE

The Portuguese Research Information Landscape

Two overlapping systems: one institutional, one national. Shared data about researchers, outputs, projects, activities and awards.

Ciência Iscte

Institutional
CRIS

4K

Researchers
at ISCTE

CIÊNCIA VITAE

National CV
Platform

200K

Records in
CRIS

CIÊNCIA ID

National
Researcher ID

5

Entity
Categories

The Previous ORCID-Mediated Approach

Lopes (2019) – prior integration work at ISCTE

→ How It Worked

- ORCID acted as data exchange hub between Ciência_Iscte and **CIÊNCIAVITAE**
- Researcher-driven and consent-based
- CRIS → ORCID → National CV (and reverse): a two-hop data exchange

→ Its Limitations

- **ORCID metadata coverage was narrow:** mainly articles and (limited) funding
- **Excluded:** proceedings, supervisions, teaching, peer review, projects, awards.
- **Needed:** a direct connection without ORCID as intermediary

Direct, Researcher-Controlled Integration

Key Design Principles

→ Researcher in Control

No automated or background sync.

All synchronization actions require explicit researcher initiation.

No silent overwrites, but bulk action available.

→ Identifier-First Matching

DOI, Handle, ORCID, and ISBN/ISSN matching prevents duplicate transfers and metadata conflicts.

Metadata matching is still used when identifiers are unavailable.

→ Direct Connection

CRIS communicates directly with **CIÊNCIA**VITAE via REST/JSON and Ciência-ID

ORCID removed as bottleneck of metadata exchange.



System Architecture

Three-Component Design



Researcher Dashboard - Reconciliation interface inside Ciência_Iscte. Shows side-by-side institutional vs. national records per domain.



Integration Service - REST/JSON API layer with schema validation, identifier normalization, deduplication, and provenance stamping.



CIÊNCIA-ID / CIÊNCIAVITAE - External services. All writes go through OAuth scopes; a local mapping DB stores cross-system record pairs.

The Reconciliation Dashboard

Researcher-Driven Synchronization in Practice

Integration between Ciência_Iscte and CIÊNCIAVITAE

[User manual](#)

Identification

Qualification

Projects

Outputs

Activities

Distinctions

Qualification

1

Ciência-IUL

Action

CIÊNCIAVITAE

PhD Ciências e Tecnologias de Informação (Inteligência Artificial) (ISCTE-Instituto Universitario de Lisboa) 2007 - 2011



M.Sc. Engenharia Informática e Telecomunicações (ISCTE-Instituto Universitario de Lisboa) 2003 - 2006



Mestrado Engenharia Informática e Telecomunicações (ISCTE-Instituto Universitario de Lisboa) 2003 - 2006



Licenciante Informática e Gestão de Empresas (ISCTE - Instituto Superior Ciências Trabalho e da Empresa) 1997 - 2002



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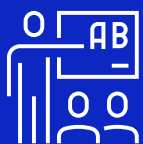


Synchronize Qualification

Three Possible Actions Available

- ① **Create counterpart:**
Generate a new record on whichever side is missing it
- ② **CRIS → CV:** Push institutional version to update national platform
- ③ **CV → CRIS:** Pull national version to update into institutional CRIS

From Articles to the Full Academic Profile



All outputs covered: journal articles, proceedings, books/chapters, datasets, software, preprints, ...



Activities + more: supervision, teaching, peer review, outreach, affiliations, qualifications, distinctions, projects & funding



ORCID is not abandoned: **CIÊNCIAVITAE** maintains its own ORCID connection. Researchers' ORCID profiles stay current via **CIÊNCIAVITAE** as downstream recipient



A 27 to 1 Return on Investment

Time Savings by Entity Category



Cost-Benefit Summary

- 4,625 researchers
- 203,756 records in CRIS
- ~127 min (~2.1 hrs) saved per average researcher
- €226,578 total monetary savings
- €8,421 development cost of the integration
- Benefit-cost ratio: 27 to 1

	Records per Researcher	Manual (min.)	Sync (min.)	Time Saved (min.)
Outputs	16.73	50.20	1.95	48.24
Activities	22.89	68.66	2.67	65.99
Identification	2.90	8.71	0.34	8.37
Qualifications	1.49	4.47	0.17	4.29
Distinctions	0.05	0.14	0.01	0.13
TOTAL	44.06	132.17	5.14	127.03



Key Takeaways

Consent-Based
CRIS-National CV
Integration at Scale



Direct connection

replaces ORCID-based approach, with broader entity coverage across all academic profile types



Researcher-controlled design

with no unattended writes, full auditability and data integrity



27:1 benefit-cost ratio

- 2 hours saved per researcher per synchronization cycle; benefits compound with each use



Generalizable approach -

applicable to any institution with CRIS/National CV interoperability needs and a PIDs infrastructure



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