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**4SCIENCE**  
Share your knowledge

# Webinar: Enabling Value featuring 4Science

about DSpace and DSpace-CRIS

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# Agenda

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- About 4Science
- The DSpace ORCID Integration
- ORCID Integration at TORE Repository of TUHH (Oliver Goldschmidt)
- Unique values of the DSpace-CRIS ORCID integration
- What is coming next and future plans

# About 4Science

- International company providing outstanding solutions for research and cultural heritage, we have offices in Europe (Italy) and US
- We promote the use of international standards and cutting-edge technologies
- We support Open Source projects and communities
- Our primary focus is the DSpace platform and the DSpace-CRIS opensource extension that we maintain





Confederation  
of Open Access  
Repositories



NEXT GENERATION  
REPOSITORIES



OpenAIRE



ORCID

We SHARE

Knowledge and innovation with community involvement!



euroCRIS  
Current Research Information Systems

CERIF

# DSpace-CRIS & ORCID



- DSpace-CRIS has a full ORCID bidirectional integration since v4
- 4Science has worked with multiple ORCID API versions: v1.2, v2, and the current v3
- 4Science is a Certified ORCID provider for DSpace-CRIS 7: simplified and immediate process to move your integration to production once ready
- Display authenticated ORCID on your researcher profiles and publications
- Respect the preferences of your researchers in terms of what and when things are synchronized between DSpace-CRIS and ORCID
- ORCID Integration is preconfigured and enabled out-of-box in DSpace-CRIS: you only need to provide your API KEY

# DSpace & ORCID



- Prior to DSpace 7.3, the ORCID integration in DSpace was limited to a basic registry lookup to identify authors during the submission
- 4Science has contributed the bidirectional ORCID integration to DSpace 7.3 also thanks to DSpace Community funds
- 4Science has been a Certified ORCID Provider since the beginning of the program. Renewal of the certification according to the new CSP rules is going to be conducted by late 2023 / early 2024
- The DSpace-ORCID integration is NOT enabled by default and does NOT support ALL the features available in DSpace-CRIS

# Certified providers

- We are proud to be the most active contributor to the DSpace community other than the maintainer of DSpace-CRIS and the only ORCID Certified Provider in the DSpace community
- We thank all the Institutions that choose us as their project partner, allowing us to contribute to the DSpace community and to support the ORCID initiative
- Please keep in mind that certification is not (only) about the software but mostly about the practices, experiences and skills that the provider puts in place for your project



## RSP Contributions in 2023

| #  | Service Provider     | Total Value | Non-Tech Contribution | Tech Contribution | Total # of Hours of Contribution |
|----|----------------------|-------------|-----------------------|-------------------|----------------------------------|
| 1  | 4Science             | \$96,312.50 | 291                   | 1023.5            | 1314.5                           |
| 2  | The Library Code     | \$64,342.50 | 800                   | 257.9             | 1057.9                           |
| 3  | Atmire               | \$56,412.50 | 156                   | 581.5             | 737.5                            |
| 4  | eScire               | \$25,000.00 | 288                   | 108               | 396                              |
| 5  | PCG Academia         | \$25,000.00 | 274                   | 60                | 334                              |
| 6  | Dsquare Technologies | \$25,000.00 | 202.5                 | 80                | 282.5                            |
| 7  | DSpaceDirect         | \$25,000.00 | 184                   | 24                | 208                              |
| 8  | D&L                  | \$10,000.00 | 104                   | 26                | 130                              |
| 9  | Arvo Consultores     | \$10,000.00 | 14                    | 110               | 124                              |
| 10 | Vir Softech          | \$10,000.00 | 20                    | 48                | 68                               |
| 11 | NEKI IT              | \$10,000.00 | 48                    | 0                 | 48                               |



source: DSpace Wiki: <https://wiki.lyrasis.org/display/DSPACE/Service+Providers>

- Please keep in mind that certification is not (only) about the software but mostly about the practices, experiences and skills that the provider puts in place for your project







# Quick overview of the DSpace-ORCID integration

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# DSpace ORCID Integration: functionalities

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- Public API Key
  - Authentication (optional)
  - Connect local researcher profile to ORCID (authenticated ORCID iD)
  - Import researcher profile from the ORCID registry
  - Import publications from the ORCID registry
- Member API Key
  - Push biographic information to the ORCID registry
  - Push affiliation / education / qualification information to the ORCID registry
  - Push publications to the ORCID registry
  - Push projects to the ORCID registry
  - Manage ORCID synchronization preferences

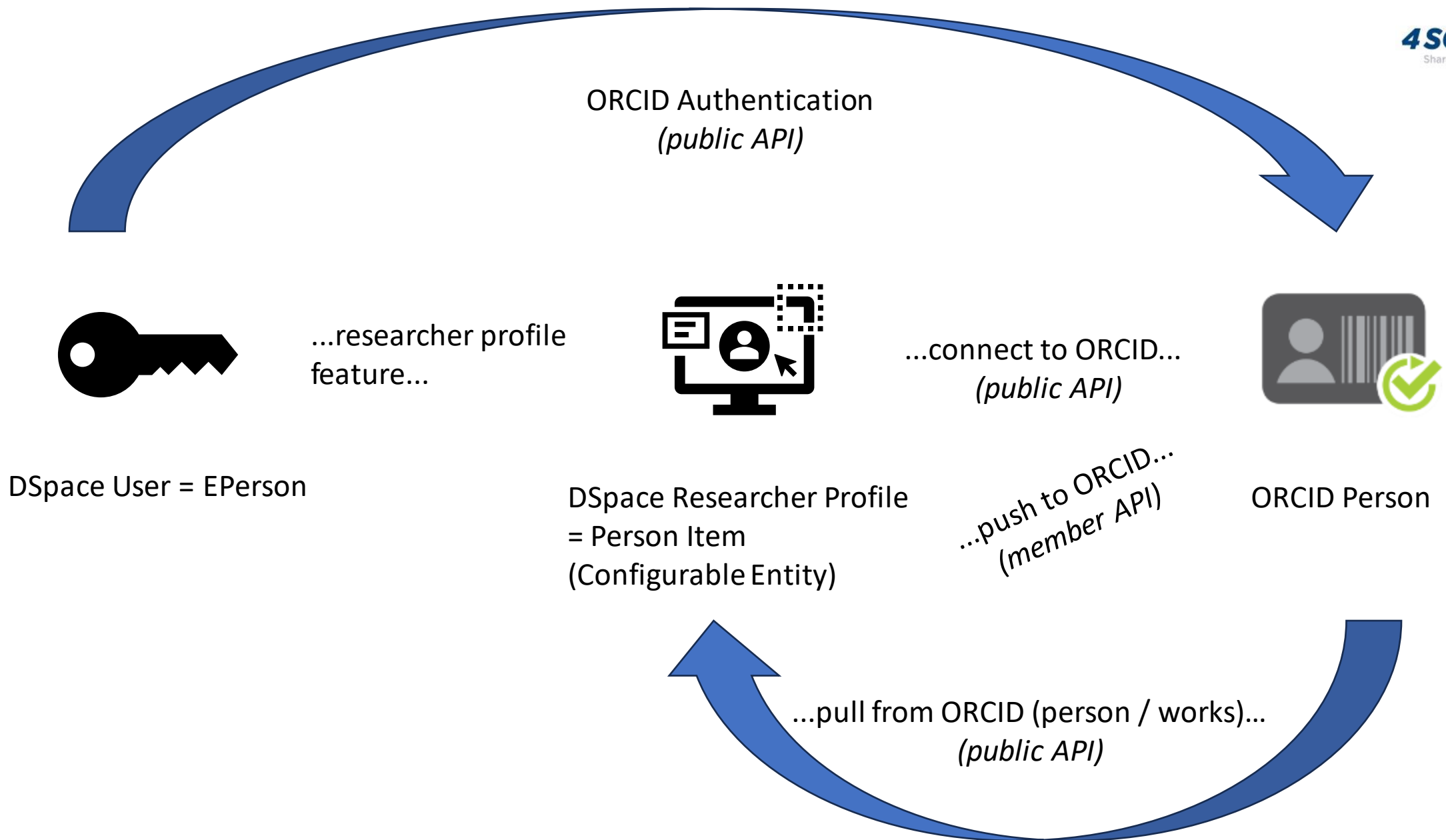
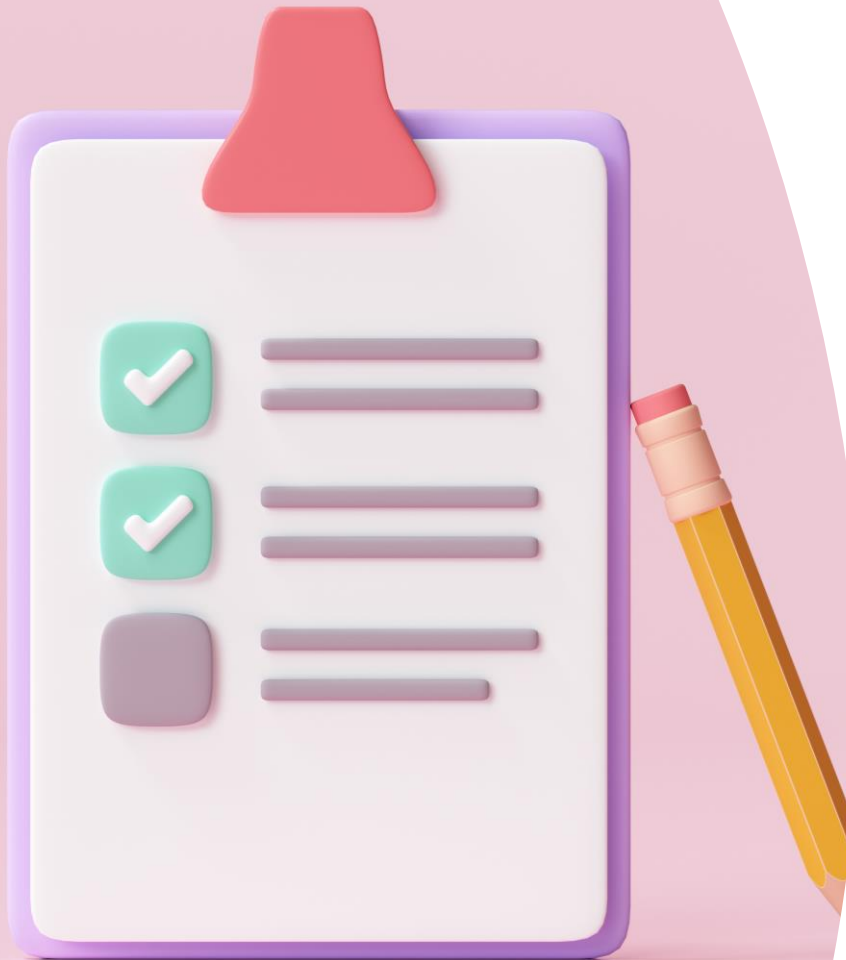


Image credit: ORCID profile with validation check taken from <https://info.orcid.org/researchers/>

# What is needed to enable integration

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- [ORCID integration](#) is NOT enabled by default
- Other *optional features* must be enabled to use the ORCID integration
  - [Configurable Entities](#): Person, Publication, Project & OrgUnit
  - [Researcher Profile](#)
- ORCID Member API is required to get the most from this integration (push)
- It is not required to enable the ORCID login to use the ORCID integration
- Your researchers must connect their local profile with ORCID granting permission



Demo Site Administrator  
dspacedemo+admin@gmail.com

- Profile
- MyDSpace
- Subscriptions

Log out

## Update Profile

Researcher Profile

Researcher profile associated

Status: PUBLIC

View Delete

Identify

Email Address  
dspacedemo+admin@gmail.com

First Name \*  
Demo

Last Name \*  
Site Administrator

Contact Telephone

Language  
English

Security

Optionally, you can enter a new password in the box below, and confirm it by typing it again into the second box.

Current password \*

Password

Retype to confirm

User account management

Link the account to a Person Item

Create a  
public /  
private  
Person Item

## Update Profile

Researcher Profile

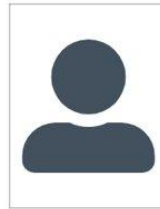
Researcher profile associated

Status:  PUBLIC

[View](#) [Delete](#)

1 - Step to enable the ORCID synchronization / to collect authenticated ORCID

## Person: Researcher, Famous



### Research Projects



Research Project

A sample funding for the ORCID Webinar

### Job Title

prof

### Last Name

Researcher

### First Name

Famous

### Name


Famous Researcher

Full item page

Connect to  
ORCID

Access your Person item and connect it to ORCID via the 3 legged OAuth process

ORCID Authorizations



No ORCID iD associated yet. By clicking on the button below it is possible to link this profile with an ORCID account.

[Connect to ORCID ID](#)

Sign in

Email or 16-digit ORCID iD  
example@email.com or 0000-0001-2345-6789

Password

[SIGN IN](#)

[Forgot your password or ORCID ID?](#)  
Don't have an ORCID iD yet? [Register now](#)

or

[Access through your institution](#)

[Sign in with Google](#)

[Sign in with Facebook](#)

ORCID Authorizations

Job Title

Granted authorizations

- Get your ORCID iD
- Read your information with visibility set to Trusted Parties
- Add/update your research activities
- Add/update other information about you

Missing authorizations

Great! This box is empty, so you have granted all access rights to use all functions offers by your institution.

[Disconnect from ORCID](#)

Access your Person item and connect it to ORCID via the 3 legged OAuth process



## ORCID Synchronization settings

Synchronization mode

Please select how you would like synchronization to ORCID to occur. The options include "Manual" (you must send your data to ORCID manually), or "Batch" (the system will send your data to ORCID via a scheduled script).

Synchronization mode

Manual

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Publication preferences

Select whether to send your linked Publication entities to your ORCID record's list of works.

Disabled

All publications

Funding preferences

Select whether to send your linked Project entities to your ORCID record's list of funding information.

Disabled

All fundings

Profile preferences

Select whether to send your biographical data or personal identifiers to your ORCID record.













Biographical data

Identifiers

[Update settings](#)

## ORCID Registry Queue

Now showing 1 - 4 of 4

| Type  | Description  | Action  |
|---|--|---|
|  | A sample funding for the ORCID Webinar   |   |
|  | A preliminary test for the ORCID webinar   |   |
|  | A publication for the ORCID webinar  |   |
|  | Usage of internet among students of periyar maniyammai university tanjavur :astudy |   |

ORCID  
synchronization  
settings

# Things to know

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You must provide your ORCID API Key, only **member API Key** allows the repository to WRITE in the ORCID registry



You must actively use the **Researcher profile**, establishing relations among it and the publication / project items



Only Publication and Project items are synchronized: remember you must **enable the Configurable Entities** and load a suitable data model (configuration is based on the sample CRIS data model shipped with DSpace)

# Things to know

- ORCID requires data to conform to its schema and vocabularies: if you customize the DSpace metadata and/or don't provide the minimal amount of needed information, the synchronization will fail.
- The ORCID lookup is based on the import of ORCID Person in DSpace: your researchers cannot use it, only administrators are currently able to do that
- The DSpace ORCID Authority should NOT be used. It is provided for institutions that want to use the basic ORCID lookup feature available in previous versions of DSpace, without enabling the Configurable Entities and the advanced synchronization



# The ORCID integration heavily relies on the Configurable Entities

- The Configurable Entities in DSpace are still a recent feature: misconfiguration, bugs and unideal behavior unfortunately are still frequent in our experience
- If you encounter them, please report on GitHub to help the community assess the current situation and improve the feature over time
- We have done that; these are the two issues that we have just identified preparing this webinar and could affect/prevent a successful use of the ORCID integration:
  - <https://github.com/DSpace/DSpace/issues/9114>
  - <https://github.com/DSpace/DSpace/issues/9115>
- Other configurable entities issues:  
<https://github.com/DSpace/DSpace/labels/component%3A%20configurable%20entities>

# Relevant configurations

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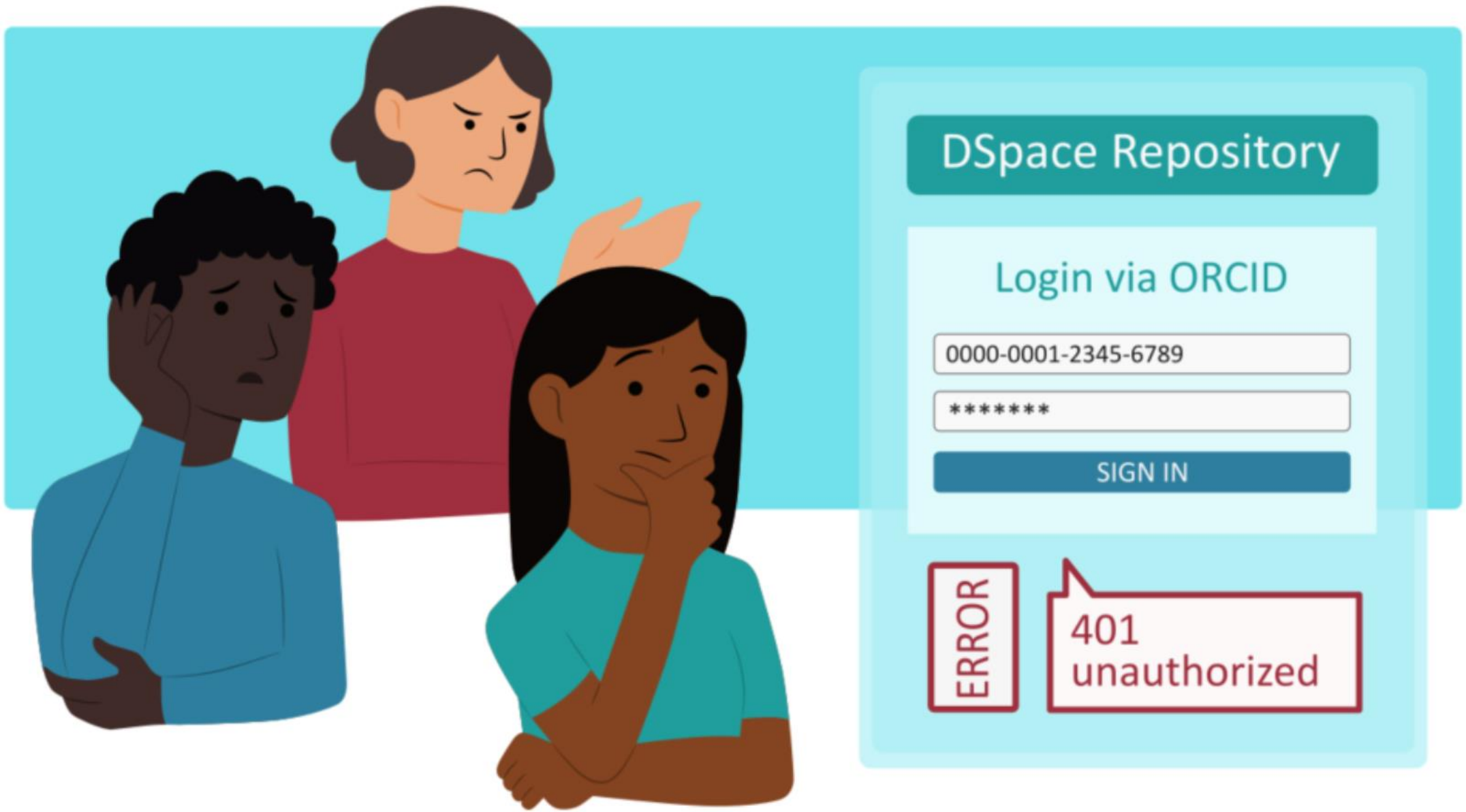
- Configurable Entities data model (to load in the system) - [dspace/config/entities](#)
- To enable the Researcher profile feature – [dspace/config/modules/researcher-profile.cfg](#)
- To enable the ORCID feature - [dspace/config/modules/orcid.cfg](#)
- Configuration of the mapping between the DSpace metadata and the ORCID data model and viceversa (PUSH / PULL) - [dspace/config/modules/orcid.cfg](#)
- Crosswalk to translate the vocabularies (language code, publication & project types, etc.) - [dspace/config/crosswalks/orcid](#)
- To enable the ORCID Authentication - [dspace/config/modules/authentication.cfg](#)

What's better than hearing about a real experience on the ORCID integration, to learn how it works in DSpace-CRIS?

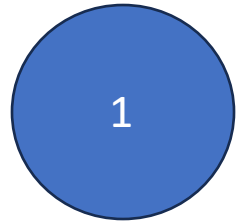
---



**OLIVER GOLDSCHMIDT**  
**TUHH**



# The ORCID login flow improvements - GPF



Private  
Email  
address



Log In

## 401

unauthorized

An error occurred during login via ORCID. Make sure you have shared your ORCID account email address with DSpace. If the error persists, contact the administrator

[Take me to the home page](#)

footer test

Built with DSpace-CRIS software - Extension maintained and optimized by **4SCIENCE**  
Share your knowledge

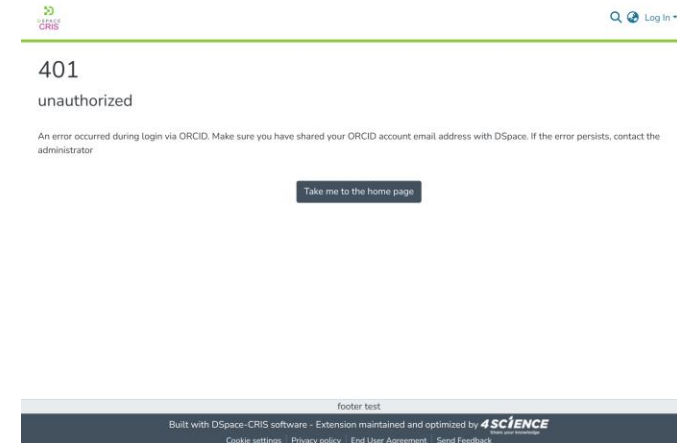
[Cookie settings](#) | [Privacy policy](#) | [End User Agreement](#) | [Send Feedback](#)



# The ORCID login flow improvements - GPF

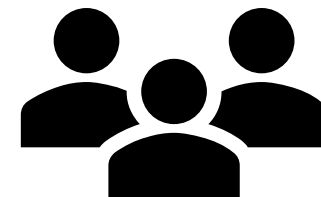
1

Private Email  
address



2

Different email  
address between  
ORCID & DSpace



Duplication of accounts in DSpace

# The solution

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- If the email is not provided by ORCID or if the email coming from ORCID is not recognized in the system, ask the user
- User can manually provide a different email address or login with a different authentication method in DSpace to finalize the linking among the accounts
- Email addresses manually provided by the user are validated via a secure link shipped to the mailbox
- It has been merged on the 10th October, available at <https://github.com/4Science/DSpace> (the new DSpace-CRIS version will be tagged by the end of this month)

### Information needed to complete the login process

ORCID

0009-0002-4667-0352

Last name

Email

First name

Test Private

The information received from ORCID are not sufficient to complete the login process. Please use a different method to associate your ORCID to an existing account.

Provide email

andrea.bollini@4science.it

Send Verification link

### Confirmation email sent

We have sent an email to the provided address to validate your input. Please follow the instructions in the email to complete the login process.

### Information needed to complete the login process

ORCID

0009-0002-4667-0352

Last name

Email

First name

Test Private

Email

andrea.bollini@4science.con

It seems that you have not yet an account in this system. If this is the case, please confirm the data received from ORCID and a new account will be created for you. Otherwise, if you already have an account in the system, please update the email address to match the one already in use in the system or login via a different method to associate your ORCID to your existing account.

Confirm or update email

andrea.bollini@4science.con

or



Connect to an existing user

Confirm this email

## Review your account information

The information received from ORCID differs from the one recorded in your profile.

Please review them and decide if you want to update any of them. After saving you will be redirected to your profile page.

| Information | Received value            | Current value   | Override                     |
|-------------|---------------------------|---|------------------------------|
| ORCID       | 0009-0008-2643-7995       | N/A   |                              |
| Email       | dspacedemo+edit@gmail.com |  |                              |
| Firstname   | Andrea                    |  |                              |
| Lastname    | Bollini                   | I   | <input type="checkbox"/> OFF |

[Save](#)



# Unique values of DSpace-CRIS

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with respect to the ORCID integration

# Production-ready system

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- DSpace-CRIS is configured out-of-the-box to support the richer data model needed in a modern repository. Instead of enabling, one by one, all the features that you need, you can eventually deactivate what is not (yet) needed
- DSpace-CRIS uses the Configurable Entities but relies on the Authority Framework to manage relations among them, an approach used for more than 10 years: proven to work, stable and performant



# Managing the researcher profile in DSpace-CRIS

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- Granular security: authorized users can edit only specific item metadata via a friendly UI (submission like) instead of the raw (and risky) administer. It is not only about UI but about granular permissions (change/access to specific metadata is prevented)
- DSpace doesn't protect the ORCID iD or the metadata used in the Researcher Profile to flag the ORCID as authenticated. This is risky and against best practice
- Prevent misattribution: features are available to allow researchers to stay informed about publications linked to their profile and eventually reject misattribution



Display the  
**ORCID badge**  
respecting the  
**ORCID guidelines**

**Publication**

# DSpace administration issues: the commu

(2005) Donohue, Tim; Bollini, Andrea

[Details](#)

## DSpace administration issues: the co

2005

### Author(s)

Donohue, Tim  
Bollini, Andrea

### Abstract

A large or medium repository, but also a small repository, requires a specialized management of administrative activities as: coordination, management of submitter and workflow groups, editing of metadata, etc.

[Show more](#)

### Subjects

[dspace](#) [open source](#)

### Type

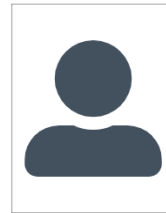
Controlled Vocabulary for Resource Type Genres::

### File(s)

| Name           | Type         | Size    | Format    | Checksum (MD5) |
|----------------|--------------|---------|-----------|----------------|
| DSpace-ManualL | main article | 7.22 MB | Adobe PDF | 293f5376b3f5d3 |

**Views**  
337  
Acquisition Date  
Apr 6, 2023

**Downloads**  
1184  
Acquisition Date  
Apr 6, 2023



## Bollini, Andrea

Preferred name  
Main Affiliation  
Web Site

I'm responsible for all the technological aspects of the company proposal, from the final solutions to tools, methodologies and technologies adopted for the production and support activities. Among my responsibilities, I define the infrastructure that best fits the project requirements. We provide support on premis on the customer data center and worldwide cloud providers. Our hosted solutions are powered by Amazon Web Services, our experience in their services allow us to offer best in class solutions, scalable and cost-optimized.

I'm in charge of the planning, estimation and execution of the projects from the technical perspective, and of the preparation of technical annexes for national and international tenders.

I lead the teams of software architects and developers, assuring the adoption of best practices and up-to-date technologies. I'm in charge of the scouting and integration of new technologies and products within our solutions with a particular focus on Open Source and Open Standards. I'm directly involved with open-source and domain communities to assure that our solutions remain aligned with the international trends both from the technical perspective and for the functional requirements.

Bollini, Andrea  
[4Science](#)   
<https://www.linkedin.com/in/andreabollini/>  
<https://github.com/abollini>

Email  
ORCID

[andrea.bollini@4science.it](mailto:andrea.bollini@4science.it)  
0000-0003-0864-8867

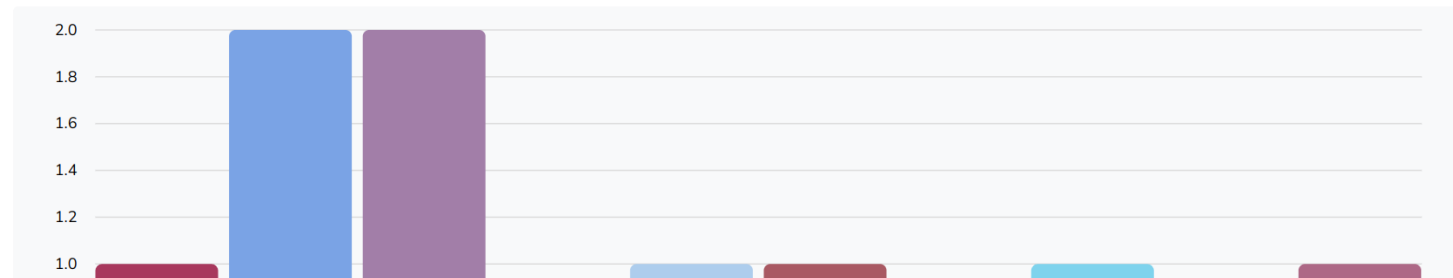
## Research Output

[Visualization by Type](#)

[Visualization by Date](#)






























[Visualization Demo LTR](#)

[Visualization Demo RTL](#)





Welcome to the DSpace Demo Site!

|                            |                            |   |
|----------------------------|----------------------------|---|
| dc.title                   | Famous Researcher          |             |
| dspace.entity.type         | Person                     |             |
| dspace.object.owner        | Famous Researcher          |             |
| dspace.orcid.authenticated | 2023-10-10T05:52:04.565863 |             |
| dspace.orcid.scope         | /authenticate              |             |
|                            | /read-limited              |             |
|                            | /activities/update         |             |
|                            | /person/update             |         |
| person.identifier.orcid    | 0000-0002-1622-9796        |     |

Save

Discard

Back



Collection Person

Drop files to attach them to the item, or browse

Add more +

Person basic information

Collection Person

andrea.bollini@4science.it

Preferred Name \*

Bollini

Interest(s)

Interest(s)

Fullname

Last name

Fields of Science and Technology (OECD)

oecd:Engineering and technology::Electrical engineering, Electronic engineering, Information engineering::Electrical and electronic engineering

Vernacular Name

Last name

oecd:Humanities::Philosophy, Ethics and Religion::Ethics (except ethics related to specific subfields)

+ Add more

Variants

Last name

ORCID

0000-0003-0864-8867

Settable by connecting the entity with ORCID

Scopus Author ID

55484808800

First name

Andrea

+ Add more

Birth Date

1980

Researcher ID

Researcher ID

Job Title

CTO

+ Add more

Affiliation(s)

Role

CTO

Organisation name \*

4Science

Start Date

2016

month

day

End Date

year

month

day

Duplicate

# Lookup in DSpace-CRIS

- Possible to track ORCID iDs of external authors without importing them
- Reuse information from the ORCID profile to prepopulate additional metadata at the publication level
- Based on the authority framework to manage relationship in a more flexible way

Co-Investigator(s)

Nicole

**Nicole Prudent**

ORCID iD : 0000-0001-6985-3739

Affiliation(s) : Boston Medical Center, Boston University School of Medicine, Boston University School of Public Health

**Nicole Kissane**

ORCID iD : 0000-0003-3893-4119

Affiliation(s) : Boston University School of Medicine

# Import

- DSpace-CRIS automatically suggests to the individual researcher publications found in their ORCID profile, not available in the repository.
- This functionality cannot be ported to DSpace until the PR [#8280](#) is reviewed and merged (waiting since May 2022)
- The PR [#8280](#) is currently targeted for DSpace 8.0. This means that porting of this feature can be planned for DSpace 9

The screenshot shows the DSpace-CRIS 7 interface. At the top, there is a navigation bar with links for 'Communities & Collections', 'Research Outputs', 'Fundings & Projects', and 'People Statistics'. A notification banner at the top right states: 'We found 6 publications in the ORCID registry that seems to be related to your profile. Please review the suggestions.' Below this, the main content area shows a 'Suggestions' window titled 'Publications Suggestion for Jordan from the ORCID registry'. The window includes a 'Select / Deselect All (0)' button and indicates 'Now showing 1 - 6 of 6' items. The list of suggestions includes:

- Total Score 100.00. No Thumbnail Available. Regional Portal FVG: Effective Interoperability Through DSpace-CRIS and Open Standards (2017-01-01) Jordan PIŠČANC; Trampus, Romano; Balbi, Luisa; Mennielli, Michele. [Approve & import] [Not mine] [See evidence]
- Total Score 100.00. No Thumbnail Available. CRO OpenDocuments: institutional DSpace-CRIS for healthcare institution (2016-01-01) Jordan PIŠČANC; Mazzocut, Mauro; Guarin, Nicolas; Ricci, Roberto. [Approve & import] [Not mine] [See evidence]
- Total Score 100.00. No Thumbnail Available. Regional Portal UnityFVG: Interoperability through DSpace-CRIS and open standards (2016-01-01) Jordan PIŠČANC; Bollini, Andrea; Trampus, Romano; Balbi, Luisa. [Approve & import] [Not mine] [See evidence]

The bottom right corner of the image features the '4SCIENCE' logo with the tagline 'Share your knowledge'.

# Push

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- DSpace-CRIS provides richer data to ORCID when publication and projects are pushed, thanks to the production-ready data model shipped out of the box, based on the full OpenAIRE information space and CERIF
- Publications include citations in BibTeX format as by ORCID recommendation, generated via a CSL engine

**The Impact of COVID-19 on the Optimal Management of Osteoporosis.**

Everyone ▾

Journal of bone me  
2021-05-01 | Other  
DOI: [10.11005/jbm.](https://doi.org/10.11005/jbm.2021.28.2.115)  
HANDLE: [12345678](https://demo7.dspace.org/handle/123456789/211)  
PMID: [34130363](https://pubmed.ncbi.nlm.nih.gov/34130363/)

**Citation** (bibtex)

[Hide citation](#)

```
@misc{Kong_Hwang_Yoon_Famous_2021,
  title = {The Impact of COVID-19 on the Optimal Management of Osteoporosis.},
  volume = {28},
  url = {https://dspacecris7.4science.cloud/handle/123456789/211},
  DOI = {10.11005/jbm.2021.28.2.115},
  abstractNote = {Osteoporosis does not take a break while Coronavirus disease 2019 (COVID-19) stunned and overtook everyone's lives. Medical resources were immediately shifted, self-isolation and telemedicine were expanded, ambulatory care services such as bone densitometry and osteoporosis-centered clinics came to a near halt. Progress with fracture prevention has been challenged because osteoporotic fracture with low energy injury is more prevalent even though restriction of people's movement. Thus we must re-engage with chronic bone health concerns and fracture prevention. This review discusses challenges in management of osteoporosis during the COVID-19 pandemic and reinforces the need to implementing recommendations concerning the importance of bone fragility care with at least those patients who are already treated with antiosteoporotic drugs maintaining their adherence to treatments.},
  number = {2},
  author = {Kong, Sung Hye and Hwang, Bo Kwon and Yoon, Byung-Ho and Famous, Researcher},
  year = {2021},
  month = {May}
}
```

**Language**

English

**URL**

[https://dspacecris7.](https://dspacecris7.4science.cloud/handle/123456789/211)

**Citation** (bibtex)

[Show citation](#)

**Description**

Osteoporosis does  
resources were im  
densitometry and  
osteoporotic fractu  
engage with chron  
during the COVID-  
fragility care with a  
treatments.

[Switch to compact formatting](#)

**Added**

2021-06-20

**Last modified**

2021-06-20

**Source:** DSpaceCris7

**A preliminary test for**

2022-01-01 | Journal article

HANDLE: [10673/23900](https://demo7.dspace.org/handle/10673/23900)

**URL**

[https://demo7.dspace.org/h](https://demo7.dspace.org/handle/10673/23900)

**Added**

2022-11-15

**Last modified**

2022-11-15

**Source:** DSpace7 - Dem



# Research Organization Registry (ROR) Integration

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- The next version of DSpace-CRIS will also add support for the ROR iD at the Organization level
- This will make it easier to identify organizations to be used in the Person affiliation, education and qualification, assuring a smooth transmission of this information to ORCID



I need a  
feature  
available  
in DSpace-  
CRIS...

If your Institution needs a specific feature available in DSpace-CRIS, you can either:

- Upgrade to DSpace-CRIS, which extends some features that are more appropriate for institutional repositories
- Port the feature from DSpace-CRIS to DSpace: the DSpace-CRIS source code adopts the same license as DSpace and copyright is assigned to Lyrisis, so everyone can just pick the code from DSpace-CRIS and propose it for DSpace. We would love to get mention of DSpace-CRIS



# How to port the additional features available in DSpace-CRIS to DSpace

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- 4Science is constantly donating new features, improvements and bug fixing to DSpace, also porting implementations available in DSpace-CRIS
- We have planned to contribute to DSpace 8 the major features expected in the new version: COAR Notify, correction and suggestion services resulting from our OpenAIRE/EOSC innovation project (including the PR #8280 mentioned before)
- Don't you have the skills or the time to contribute back? At 4Science we will be happy to do that for you, saving your time and reducing the overall implementation costs of your project

# Questions?

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