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ORCID Integration with DSpace and EPrints : A Framework for Research Communities

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Abstract

Digital repository is an important concept in research communities. It has plays an important role to promote the research activities in an open access environment. There are large number of repositories available in an online integrated system. ORCID is a repository to researcher for uploading the research papers and other resources. The main objectives of this paper is to explore the access of ORCID records through DSpace and EPrints for easy management of digital information resources. Apart from this it is also show the ORCID connectivity with Eprints where library professionals can easily be import the metadata for easy retrieval of information resources among the users and research communities. This can increases the open knowledge access system through IDR tools and techniques for the betterment of research and information services. This digital repository provides a persistent digital object identifier that distinguishes from other information researchers and its offering various types of services which independent link to organizations and research identifier by institutions, publishers, funders, digital information services and other specific services.

Keywords : ORCID, IDR, DSpace, EPrints, Metadata crosswalk

Introduction

Institutional digital repository is an important concept in modern research communities. ORCID is new research repository hubs which consists of multiple subject categories. It is an interdisciplinary effort which improve the scholarly communications for all the research scientists and communities. It is free for all researchers based on registry as open data, software, and APIs. These parameters are helps to easily integrated with any repository for submission and uploading of manuscripts available in ORCID without any hassels. This is very easy method and process to import the multiple records into any institutional digital repository. It provides a persistent digital identifier which recognizes one researcher from other researcher. Now it integrated with IDR software like DSpace and EPrints for increasing the research workflows in different areas such as manuscript and grant submission. ORCID fully supports automated and digital linkages between one researcher and specific professional activities which indicates the researcher work has been properly and appropriately attributed and discoverable among the researchers. ORCID is an independent and not-for-profit organization which designed to helps all research communities and stake-holders to reach across disciplines, research sectors, web library environment, and national boundaries. It is easily connect research and researchers which enhances the scientific library web scale discovery process and improves the use of efficiency of research funding and collaboration. Therefore, ORCID is totally engaging with all sectors in web scale interface of the research community and scientists to realize this mission and vision. Consideration of any discipline, subject, invitation or place of work which critically helps to research reputation and career for research and scholarly organizations and funders, publishers, scholarly societies and associations, academicians, and fellow of researchers. ORCID helps researchers are easily and reliably be link with any research unique identity or

contributions such as datasets, articles, books, media stories, samples, experiments, patents, notebooks and conference materials. Crossref and datacite auto-update is possible using the ORCID interface. The methods and process of ORCID records are being shown in the Figure-1. This is very easy process to create and connect all the research communities with institutional digital repository.

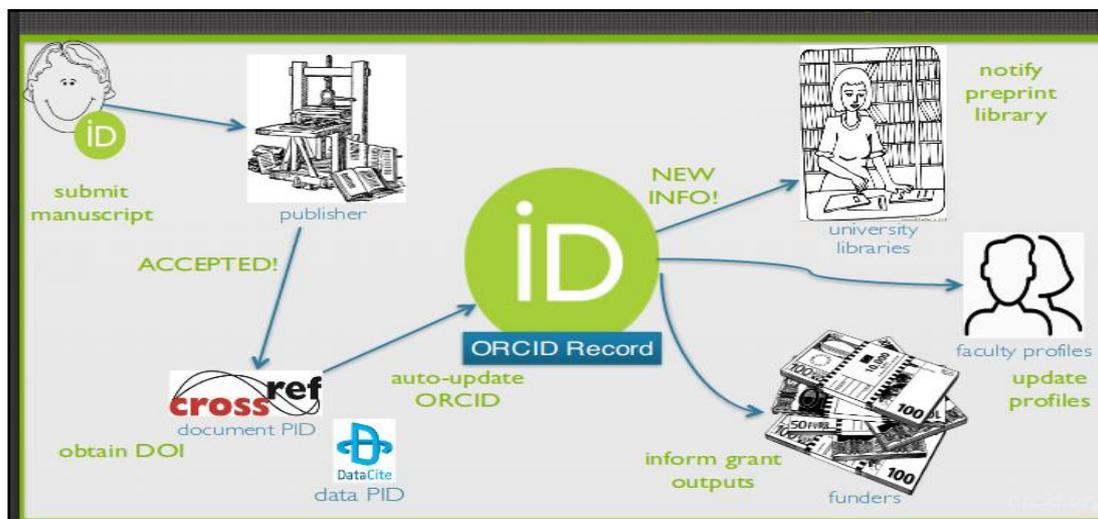


Figure -1: Methods and process of ORCID records

ords (<http://library.cfa.harvard.edu>)

It is associated with other identifiers as ORCID which enables machine-readable connections with works, organizations, and person Ids. Now the important identifiers have been shown in the Figure-2 for researchers and scientists.



Figure – 2: ORCID identifiers (<https://jref2015.sciencesconf.org>)

Objectives

The objectives of this research paper are as follows:

- (i) To explore the ORCID based connection with institutional digital repository.
- (ii) To improve the data import facilities from ORCID records into EPrints for items submission.
- (iii) To show the authors lookup table both in DSpace and EPrints.
- (iv) To increasing visibility in the publishing process for research communities.

Review of related works

The main objective of this paper is to describe the implementation and impact of a locally customized Open Researcher and Contributor ID profile wizard as identity and single sign-on solution (Powell...et.al, 2019). To explore and evaluate the collections within digital libraries and institutional repositories in India (Mittal & Mahesh, 2008). The paper discussed the NCSI's experiences in using GNU EPrints.org software to create and maintain the open-access institutional digital repository of IISc, ePrints@IISc (Jayakanth...et.al, 2008). In 2014 Hanief Bhat explore various types of research materials in Indian institutional digital repositories. To discuss some issues and challenges relating to digital preservation has facing institutional digital repositories by the Joint Information Systems Committee's view on institutional repositories (Hockx-Yu, 2006). Institutional digital repositories are advanced technologies for sharing the information and knowledge in any types of institutions. This research paper has discussed a survey conducted and a pilot implementation of an institutional digital repository at the Icfai Business School, Ahmedabad, India (Eden & Doctor, 2008). The objective of this paper is to identify various kinds of digital repository initiatives taken by Bangladeshi institutions such as identifying prospects, exploring strategies, and framing guideline for building in digital repositories in Bangladesh (Mukhlesur Rahman & Mezbah-ul-Islam, 2014). This paper highlights the theory of metadata transformation schemas Dublin Core in institutional repositories through indexing by Google Scholar (Arlitsch & O'Brien, 2012). This paper has discussed the electronic theses and dissertation repository as a subset of local institutional digital repositories originating institutions and organizations including Virginia Tech Initiative, the Networked Digital Library of Theses and Dissertations, the United Nations Educational, Scientific, and Cultural Organization and the United States Department of Education (Yiotis, 2008). This paper is to discuss the institutional digital repository can be design and developments through Dspace which fully support range of scholarship beyond born-digital scholarly pre-prints and reports (Wise...et.al, 2007). This paper is to explain a survey conducted to ascertain different considerations for implementing an institutional digital repository at the ICFAI Business School, Ahmedabad using the Open Source DSpace Institutional Repository Software (Doctor & Ramachandran, 2008). This paper explore the procedure of Dspace implementation at the Library of Independent University, Bangladesh to promoting open educational resources movement. Therefore, it will encourage the library and information professionals to excute the functional activities of DSpace (Ahammad, 2019). YouTube is a video-sharing website and it allows users to upload, view, rate, share, add to favorites, report, comment on videos, and subscribe to other users and offers a wide range of user-oriented and education-related videos. This paper describes a system that can describe and manage digital resources in libraries (Mandal, 2019). *In this paper to show how to data import from Koha, Emerald, D-Space, and Vu-Find for the better management of digital information services among the users as well as library professionals (Mandal, 2019).* Mandal in 2019 has explore the process of designing and configuration of institutional digital repository using OPUS. In 2018 Mandal has again discussed the development of institutional digital repositories using Dspace for harvesting the fulltext and metadata of OpenDOAR for the betterment of library and information services.

Most of the papers have been discussed the designing, development and implementation of institutional digital repository but only one author has explore the ORCID for research communities. So, obviously ORCID integration is most relevant in the field of institutional digital repository for the development web scale discovery services among the users, researchers and library professionals.

Methodology

Connection of ORCID can be made using two popular software such as DSpace and EPrints. In this section configuring some important files as sincerely with both the IDR software. In case of DSpace

configuring the file named as dspace.cfg and orcid-authority-services.xml for author, editor, and advisor. Now EPrints has follow the different methods and process first go to the eprints bazar packages under the admin level and click on the available tools option and here click on install under display the import ORCID option. After that back to the home pages in admin section and here display the connect ORCID option. Apart from this it is also possible in other ways to click on the admin tool and again click on the ORCID create option for importing the metadata into EPrints from the ORCID. The total methods and process has been shown in different snapshots both using in DSpace and EPrints that can be explained as below:

Connect the research ORCID id with eprints has follow the four areas such as authenticate, display, connect, and collect. Authenticate indicates the right ORCID ID available or sign in of a particular researcher. Display means the acknowledge of user ID with icon of ORCID behind the name of database of IDR. Uupdate is very much conducive to each and every researcher for connecting the authoritative ORCID ID. Collect is also an important aspect in data import from ORCID to eprints. Updating the educational and employment activities in ORCID so the repository will also updated the researcher profile respectively. Data import is very easy task just click on the manage deposits tab or export activity details to ORCID. This will require grant the admin permission in this regard. Some information is needed while connecting the ORCID such as connect ORCID ID to eprints, add or update activities to ORCID record, and retrieved read limited information from a particular ORCID record. The users are also able to disconnect from ORCID from the Manage ORCID Permission tab option. This is the EPrints ORCID based profile in institutional digital repository. Here easily display and record the ID of record for easy retrieval of research information among the research communities. It is very user-friendly to data entry of each and every ORCID enabled authors, editors, and administrators. New profile has been created by using this option in EPrints (See Figure-3).

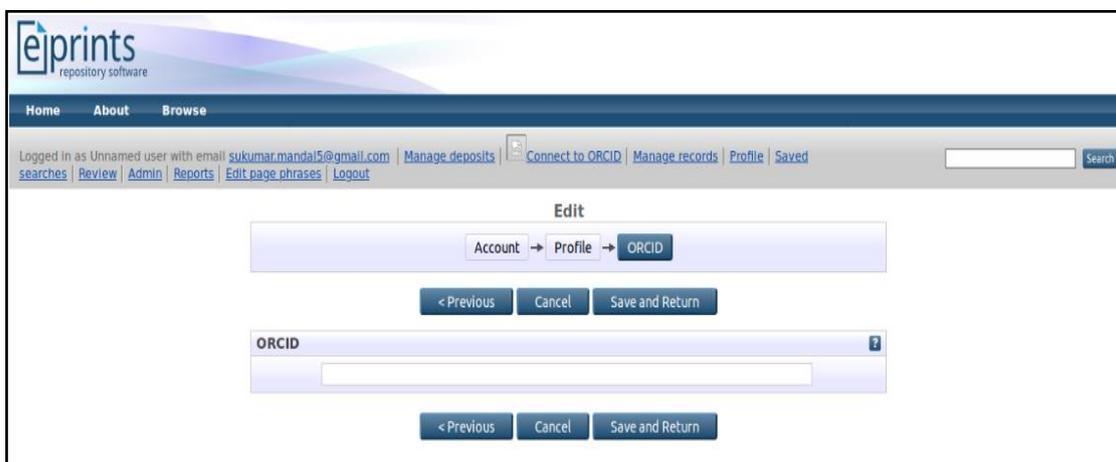


Figure 3: Profile creation

interface in EPrints

Research communities have been easily connected and access the digital information from various subjects in ORCID records. Click on the option of connect to ORCID it will easily display the name ORCID (e.g. Dr Sukumar Mandal). Here import all the ORCID records of said authors into the EPrints for creating an integrated institutional digital repository. It can save the time of the research societies or communities for easy disseminate the digital information resources among the users as well as researchers also. The Figure-4 is shown the ORCID connect option in EPrints. All the tasks have been performed after successfully installation and integration of ORCID with EPrints.

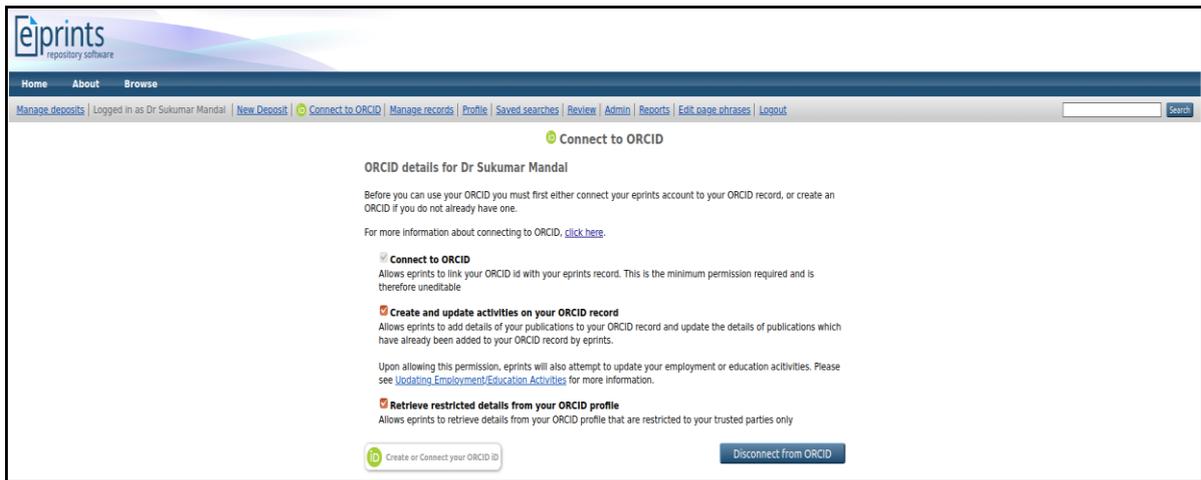


Figure – 4: ORCID connect option in EPrints

This is lookup table of authors both for ORCID and those data have been entered here manually. Multiple authors can be displayed here and choosing one or more author for a particular article. This can save the time of the library professionals during data entry of different metadata fields and subfields. The Figure-5 is represents the lookup table of EPrints.

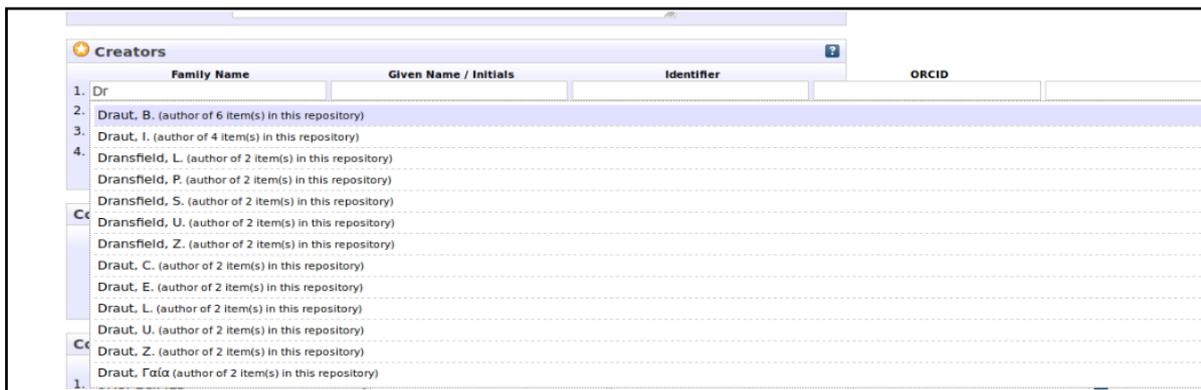


Figure – 5: ORCID lookup table in EPrints

The advantages of lookup table is that the ORCID name will automatically be appeared in the field of family name or given name and manually add the ORCID ID for a specific author (here e.g. ORCID ID of Sukumar Mandal). The Figure-6 is shown the data entry framework of ORCID of individual author. This is also known as discovery level services in institutional digital repository.

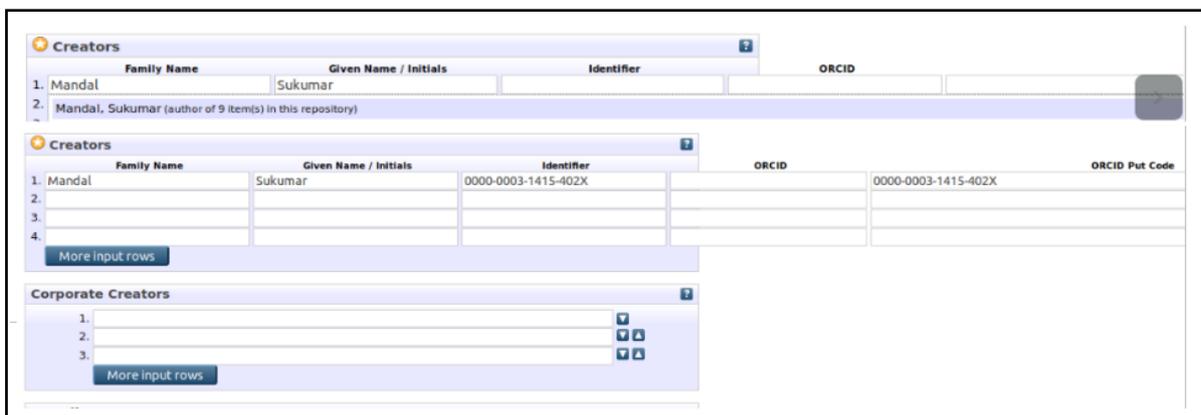


Figure – 6: Data entry framework of ORCID in EPrints

Metadata is also an important aspects in institutional digital repository. Here all the data are available in ORCID records of Sukumar Mandal and these can be successfully imported into the EPrints interfaces both author and metadata. The Figure-7 is represents the items of records and title. This is the beauty of discovery services in EPrints based institutional digital repository.

User Workarea.
 Under Review.
 Live Archive.
 Retired.

Last Modified	Title	Item Type	Item Status	
14 Dec 2019 12:10	Development of an Integrated VRA Core Framework for Libraries	Article	Live Archive	
14 Dec 2019 12:10	Development of Multilingual Resource Management Mechanisms for Libraries	Article	Live Archive	
14 Dec 2019 12:10	Designing and Configuration of Institutional Digital Repository through OPUS: An Integrated Open Access Framework	Article	Live Archive	
14 Dec 2019 12:09	Development of cloud computing in integrated library management and retrieval system	Article	Live Archive	
14 Dec 2019 12:09	MultiTes: A Knowledge Organization Thesaurus Construction Tool for College Libraries under the University of Burdwan	Article	Live Archive	
14 Dec 2019 12:07	Barcode Generation Tools in Integrated Library Management and Retrieval System	Article	Live Archive	
14 Dec 2019 12:06	Harvesting Full text and Metadata of OpenDOAR through DSpace OAI - PMH : A Framework for Institutional Digital Repositories	Article	User Workarea	
14 Dec 2019 12:06	Information Literacy Skills of the Research Scholars in Arts Faculty under the University of Burdwan: A Comparative Analysis	Article	User Workarea	

Figure 7: List of records and title in EPrints

ORCID search is also possible by using this integrated framework. It is very easy method just write the ID of ORCID of any researchers in any subject fields. Given here ORCID this is the ORCID of Sukumar Mandal (e.g. 0000-0003-1415-402X). This is the unique ID of each researcher and this can be provided after successfully registration of ORCID.org website. This is very useful for research communities and higher education learner. The Figure-8 is shown the ORCID search interface. The metadata import is also possible by using this framework for IDR.



Figure – 8: ORCID search interface in EPrints

This is the lookup table of DSpace after successfully configuration of ORCID under the file of (dspace.cfg). This interface is very attractive and useful to the library professionals and research communities. Here easily view all the authors and repository items and choose the authors for a particular item and collection. The list of authors or lookup tables have been shown in the Figure-9.

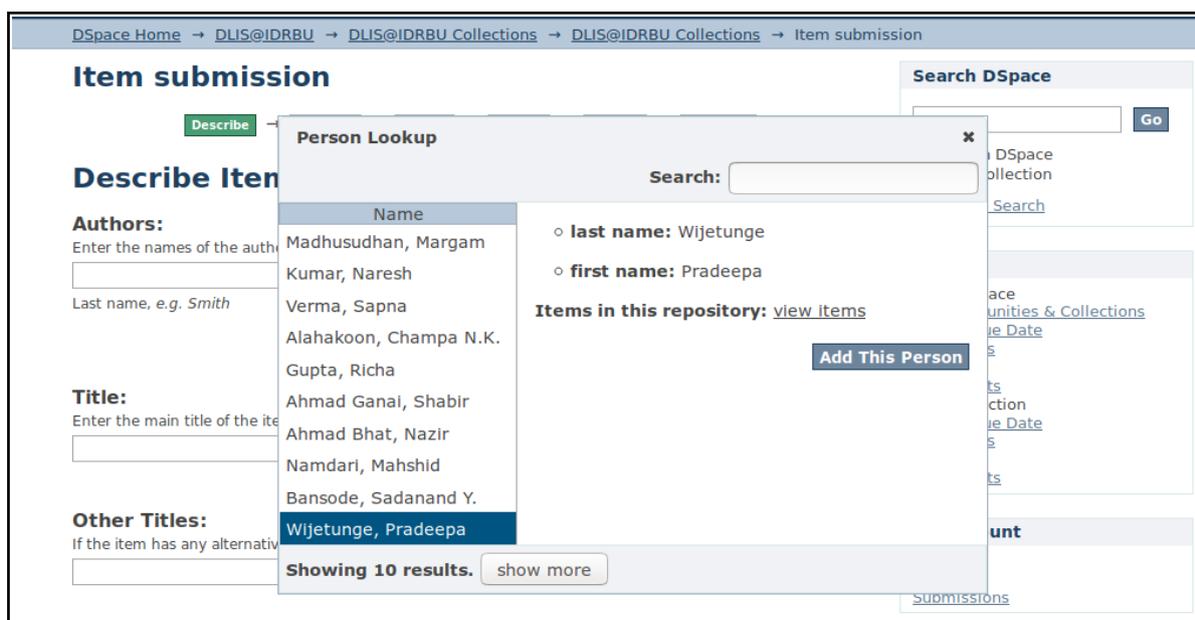


Figure – 9: Person lookup table in DSpace

Important Findings

Important findings of this research work have been represents as below:

- (i) Choose the author from the lookup table of a particular record.
- (ii) To easily connect the ORCID of any researcher by using this framework.
- (iii) It is possible to data interoperability and crosswalk.
- (iv) Import metadata from the ORCID records into the EPrints.
- (v) It is possible to create the research hub for research communities.
- (vi) ORCID search is possible by using this integrated framework.
- (vii) Person lookup table is shown in DSpace interfaces for managing the records.
- (viii) Show the records of ORCID authors available in IDR.
- (ix) Report generation is also possible in EPrints ORCID dashboard.
- (x) Custom report creation is possible for ORCID in EPrints.

Conclusion

Integration of ORCID with DSpace and EPrints has successfully been possible to developing and designing an integrated common access framework for researchers. This interface is very much conducive to the users and library communities of each and every sphere of activities. This research paper has successfully shows how to import the ORCID records of any reserchers into the Eprints for enhancing the discovery level services in web scale environment. Researchers can easily have access the ORCID records from this integrated framework. It can be implemented in various libraries and institutions for promoting the reading habits in the open access environment. However, this work is practical method but its very user-friendly to the users. So, overall it can conclude that this designing framework and concept is very helpful to each and every institution. It can increases the web scale discovery level services in digital library environment.

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