dCollection

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Pae, Yung Heun(edmund@keris.or.kr)
Higher Education Information Unit
Academic Research Information Division
KERIS (Korea Education & Research Information Service)
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Goal of dCollection System

Goal for establishment

Enhancing the quality of research by building and operating dcollection system which collect and share research output produced by Univ.
I. Introduction to dCol.

KERIS Roles

Ministry of Education
- Policy development, funding and revising legal & regulation

KERIS Council of fulltext sharing (20 Univ.)
- Support policy development

All domestic University libraries
- Collecting and Managing research output

Roles
- Support Policy development and implementation
- Planning & design
- Secure Budget
- Building System
- Operating Service
dCollection Overview

What is dCollection?

- dCol. is abbreviation of Digital Collection
- dCol. has role of Institutional repository (IR)
- dCol. collect, preserve, manage, distribute digital research output produced by domestic university faculty and student
- Students can submit electronically thesis and dissertations through dCollection System
- Metadata of dCol. is transferred to RISS and then users can search the metadata and link to fulltext.
- 60,000 ~ 70,000 thesis (& dissertations) are updated every year
What is policy of dCollection project?

- Discuss with KERIS council of sharing fulltext regarding to deciding operating Policy
- Metadata of dCol. is offered to portal services through dCollection central system
- KERIS upgrade dCollection program 2 times per year through reflecting request of librarians
- Authors can decide whether their dissertations open or not open to the public through dCollection system.
- Authors can select options of CCL and DRM.
- KERIS provide dCollection training program for librarians 2 times per year.
Current situation of dCol.

dCollection members

- Annual stats. (as of Dec. 2013)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of inst.</td>
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<td>20</td>
<td>40</td>
<td>…</td>
<td>216</td>
<td>220</td>
<td>226</td>
</tr>
</tbody>
</table>

- 55 Universities have their own IR(Institutional Repository)
  - Distribute and install dCollection programm on University libraries’ server
  - Metadata including fulltext linking URL is transferred to dCollection central system(KERIS system)
  - Fulltexts exist in University library local dCollection server.
Current situation of dCol.

dCollection members

- Annual stats. (as of Dec. 2013)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of inst.</td>
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<td>40</td>
<td>….</td>
<td>216</td>
<td>220</td>
<td>226</td>
</tr>
</tbody>
</table>

- 171 University libraries use dCollection hosting service
  - All metadata and fulltext exist in dCollection Central System
  - Developed Oracle version of dCollection program for hosting service
Current situation of dCol.

**dCollection number of Fulltexts**

- Annual stats. (as of Dec. 2013)

- A lot of back data uploaded from 2006 through 2007
- In 2007 the number of dCollection members was sharply increased
Current situation of dCol.

dCollection Usage

- Annual stats. (as of Dec. 2013)

- Journal publishers newly added and revising RISS service page in 2009
- In 2010 KERIS started to give metadata to NAVER which is the most popular portal service in Korea
## Current situation of dCol.

### Fulltext of thesis and dissertations

- **Top 10 university libraries** (as of Nov. 2013)

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Univ.</th>
<th>fulltext</th>
<th>CCL/Ratio(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seoul National Univ.</td>
<td>49,079</td>
<td>3,699(7.54)</td>
</tr>
<tr>
<td>2</td>
<td>Pusan National Univ.</td>
<td>39,957</td>
<td>7,195(18.01)</td>
</tr>
<tr>
<td>3</td>
<td>Ewha Womans Univ.</td>
<td>38,472</td>
<td>8,523(22.15)</td>
</tr>
<tr>
<td>4</td>
<td>Hanyang Univ.</td>
<td>37,739</td>
<td>12,302(32.6)</td>
</tr>
<tr>
<td>5</td>
<td>Kyunghee Univ.</td>
<td>36,720</td>
<td>9,067(24.69)</td>
</tr>
<tr>
<td>6</td>
<td>Chungang Univ.</td>
<td>35,207</td>
<td>31,367(89.09)</td>
</tr>
<tr>
<td>7</td>
<td>Yonsei Univ.</td>
<td>34,566</td>
<td>4,436(12.83)</td>
</tr>
<tr>
<td>8</td>
<td>Korea Univ.</td>
<td>34,282</td>
<td>7,623(22.24)</td>
</tr>
<tr>
<td>9</td>
<td>Chonnam National Univ.</td>
<td>31,445</td>
<td>5,800(18.44)</td>
</tr>
<tr>
<td>10</td>
<td>Chungnam National Univ.</td>
<td>28,696</td>
<td>6,739(22.48)</td>
</tr>
</tbody>
</table>

Source: 2013 White paper on ICT in education in Korea, KERIS
## Current situation of dCol.

### Usage of Fulltext of thesis and dissertations

- **Top 10 university libraries**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Univ.</th>
<th>Download</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ewha Womans Univ.</td>
<td>1,369,720</td>
</tr>
<tr>
<td>2</td>
<td>Koera Univ.</td>
<td>1,048,402</td>
</tr>
<tr>
<td>3</td>
<td>Chungang Univ.</td>
<td>1,006,749</td>
</tr>
<tr>
<td>4</td>
<td>Yonsei Univ.</td>
<td>792,841</td>
</tr>
<tr>
<td>5</td>
<td>Hanyang Univ.</td>
<td>687,205</td>
</tr>
<tr>
<td>6</td>
<td>Kyunghee Univ.</td>
<td>665,727</td>
</tr>
<tr>
<td>7</td>
<td>Dankook Univ.</td>
<td>625,414</td>
</tr>
<tr>
<td>8</td>
<td>Sungkyunkwan Univ.</td>
<td>596,746</td>
</tr>
<tr>
<td>9</td>
<td>Sookmyung Women’s Univ.</td>
<td>583,233</td>
</tr>
<tr>
<td>10</td>
<td>Seoul National Univ.</td>
<td>562,481</td>
</tr>
</tbody>
</table>

(as of Nov. 2013)

Source: 2013 White paper on ICT in education in Korea, KERIS
## Current situation of dCol.

### The number of Fulltext of Journal articles

- **Top 10 university libraries**

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Univ.</th>
<th>fulltext</th>
<th>Download</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seoul National Univ.</td>
<td>26,056</td>
<td>108,784②</td>
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<tr>
<td>2</td>
<td>Yonsei Univ.</td>
<td>19,422</td>
<td>73,201③</td>
</tr>
<tr>
<td>3</td>
<td>Ewha Womans Univ.</td>
<td>18,422</td>
<td>140,921①</td>
</tr>
<tr>
<td>4</td>
<td>Korea Univ.</td>
<td>15,659</td>
<td>52,147④</td>
</tr>
<tr>
<td>5</td>
<td>Kyungpook National Univ.</td>
<td>15,454</td>
<td>37,283⑦</td>
</tr>
<tr>
<td>6</td>
<td>Chungnam National Univ.</td>
<td>15,135</td>
<td>35,847⑧</td>
</tr>
<tr>
<td>7</td>
<td>Hankuk Univ. of Foreign Studies</td>
<td>13,884</td>
<td>50,248⑤</td>
</tr>
<tr>
<td>8</td>
<td>Yeungnam Univ.</td>
<td>13,731</td>
<td>22,586⑨</td>
</tr>
<tr>
<td>9</td>
<td>Kyunghee Univ.</td>
<td>13,369</td>
<td>44,635⑥</td>
</tr>
<tr>
<td>10</td>
<td>Chonbuk National Univ.</td>
<td>12,963</td>
<td>13,591⑩</td>
</tr>
</tbody>
</table>

*(as of Nov. 2013)*

Source: 2013 White paper on ICT in education in Korea, KERIS
System Configuration of dCol.

### dCollection hosting
- Hosting Management
  - Local Search
  - Build Fulltext
  - Data Provider
  - Fulltext Management
  - License Management

### RISS.KR
- RISS Integral Search Service
- Request for update
- RISS DB
- Article
- Thesis
- Foreign data
- Integral search
- Remove overlapped data

### dCollection for IR
- Data Provider
- Local Search
- Build Fulltext
- Fulltext Management
- License Management

### dCollection Central System
- RISS Central Management System
  - Data Transfer System
  - History
  - Transfer Management

### Service Provider
- SP Collector
- DB establishment
- SP Management

### Collected DB Management System
- Collected DB
- Integral search

### Protocol
- HTTP
- SOAP
- OAI-PMH

### Users
- Link to Fulltext
- Local Search

### FT storage
- Univ.1
- Univ.2
- Management DB
  - Univ.1
  - Univ.2
Functions of dCollection

Provide Fulltext URL of thesis & dissertations and Link to Fulltext

- Provide linking URL to fulltext of thesis & dissertations which Univ. libraries have
- Display, print and download fulltext

Build integral metadata DB of thesis & Dissertations

- Prepare for updated metadata
- Collect updated metadata periodically
IV. Function of dCollection

Functions of dCollection

Managing Integral metadata DB of thesis & dissertations

- Review collected metadata of thesis & dissertations
- Revise metadata of thesis & dissertations

Uploading and managing journal articles

- Librarians upload metadata of journal articles
- They search, revise and remove metadata (including vol. issues of journal)
- Input, revise and remove metadata, abstract and table of contents
- Manage matching information between metadata and fulltext
Functions of dCollection

Convert metadata of backfiles

- Convert metadata of backfiles of scholarly resources
- Transfer the converted metadata to dCollection Central System

Build journal article fulltext

- Upload journal article fulltext
- Convert collected fulltext to PDF image for service
- Manage matching information between metadata and fulltext
Functions of dCollection

Manage statistics

- Statistics of the number of collected fulltexts
- Statistics of usage (fulltext download)
- Information of dCollection members
- Information of setup and authorization

Submission of thesis and dissertations

- Fill in metadata, abstract and table of contents
- Upload fulltext
- Converting fulltext to PDF image file
Functions of dCollection

Process of submission of thesis and dissertation

Students log in dCol. Homepage for users

- CCL (Creative Commons Lisence)
  Students comprise a selection out of 4 conditions

<table>
<thead>
<tr>
<th>Icon</th>
<th>Right</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attribution (BY)</td>
<td>Licensees may copy, distribute, display and perform the work and make derivative works based on it only if they give the author or licensor the credits in the manner specified by these.</td>
<td></td>
</tr>
<tr>
<td>Share-alike (SA)</td>
<td>Licensees may distribute derivative works only under a license identical to the license that governs the original work. (See also copyleft.)</td>
<td></td>
</tr>
<tr>
<td>Non-commercial (NC)</td>
<td>Licensees may copy, distribute, display, and perform the work and make derivative works based on it only for noncommercial purposes.</td>
<td></td>
</tr>
<tr>
<td>No Derivative Works (ND)</td>
<td>Licensees may copy, distribute, display and perform only verbatim copies of the work, not derivative works based on it.</td>
<td></td>
</tr>
</tbody>
</table>

Source: http://en.wikipedia.org/wiki/Creative_Commons_license
Functions of dCollection

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta

- 20 items (Mandatory 9 items, recommendation 11 items)
- Students must fill in 9 items of metadata items

- SOMS (Scholarly Object Metadata Set)
  - Metadata standard
  - Designed by expanding DC (Dublin Core)
## SOMS (Meta standard of dCol.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Element (In Korean)</th>
<th>Elements (Eng)</th>
<th>Options</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>제목</td>
<td>title</td>
<td>Mandatory</td>
<td>Title</td>
</tr>
<tr>
<td>2</td>
<td>제목 (부제목)</td>
<td>subTitle</td>
<td>Recommend</td>
<td>Sub title</td>
</tr>
<tr>
<td>3</td>
<td>제목 (대등)</td>
<td>alternative</td>
<td>Recommend</td>
<td>Alternative title</td>
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<tr>
<td>4</td>
<td>제목 (제2언어)</td>
<td>translated</td>
<td>Recommend</td>
<td>Title in second language</td>
</tr>
<tr>
<td>5</td>
<td>저자명</td>
<td>creator</td>
<td>Mandatory</td>
<td>Author name</td>
</tr>
<tr>
<td>6</td>
<td>저자 (제2언어)</td>
<td>otherName</td>
<td>Recommend</td>
<td>Author name in second language</td>
</tr>
<tr>
<td>7</td>
<td>저자의 소속</td>
<td>affiliation</td>
<td>Recommend</td>
<td>Organization that belongs to author</td>
</tr>
<tr>
<td>8</td>
<td>저자 이메일</td>
<td>whols</td>
<td>Recommend</td>
<td>Author’s email address and homepage</td>
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<tr>
<td>9</td>
<td>주제어 (키워드)</td>
<td>subject</td>
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<td>초록/요약</td>
<td>Abstract</td>
<td>Mandatory</td>
<td>abstract (summary)</td>
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<td>11</td>
<td>목차</td>
<td>tableOfContents</td>
<td>Recommend</td>
<td>Table of contents</td>
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<td>Mandatory</td>
<td>Publisher’s name</td>
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<td>지도교수</td>
<td>Advisor</td>
<td>Recommend</td>
<td>Professor who advise</td>
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<td>14</td>
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<td>Mandatory</td>
<td>Month when degree was awarded</td>
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<td>Mandatory</td>
<td>Awarded degree (Master or Doctoral)</td>
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<td>specialty</td>
<td>Recommend</td>
<td>Specialty</td>
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<tr>
<td>19</td>
<td>페이지</td>
<td>page</td>
<td>Recommend</td>
<td>Total number of pages</td>
</tr>
<tr>
<td>20</td>
<td>본문언어</td>
<td>language</td>
<td>Mandatory</td>
<td>First language in which thesis &amp; Dissertation was written</td>
</tr>
</tbody>
</table>
Functions of dCollection

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta
- Agree w copyright

- Students can choose agreement of opening their dissertations to the public
- or they can choose disagreement of opening their dissertations to the public
Functions of dCollection

Process of submission of thesis and dissertation

1. Log in
2. C/C
3. Fill in Meta
4. Agree w copyright
5. Input table of contents

- Students input table of contents of their dissertations.
- The table of contents help users to jump to pages which they are interested in.
Functions of dCollection

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta
- Agree w copyright
- Input table of contents
- Upload Fulltext

- Students upload their dissertations onto dCol. system
- Users can search dissertations at RISS and link to fulltexts which are in dCol. system
Functions of dCollection

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta
- Agree with copyright
- Input table of contents
- Submission state
- Upload Fulltext

- Students print confirmation form of submitting their dissertations and agreement of opening them to the public
- After librarians confirm submission of dissertations, the dissertations can go to next step
Functions of dCollection

IV. Function of dCol

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta
- Agree with copyright
- Input table of contents
- Convert word to PDF
- Submission state
- Upload Fulltext

- Librarians convert word to PDF
- Librarians can convert many dissertations to PDF all at once by using PDF converting software
Functions of dCollection

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta
- Agree w copyright
- Input table of contents

- Check for converting error
- Convert word to PDF
- Submission state
- Upload fulltext

- Librarians check error of converted PDF file
- If converting failed, Librarians can convert again
Functions of dCollection

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta
- Agree w copyright
- Input table of contents
- Check for converting error
- Convert word to PDF
- Submission state
- Upload fulltext
- Transfer Meta to

- Metadata is transferred to dCol. Central system.
- Users can search the metadata at RISS
Functions of dCollection

IV. Function of dCol

Process of submission of thesis and dissertation

- Log in
- C/C
- Fill in Meta
- Agree with copyright
- Input table of contents
- Check for converting error
- Convert word to PDF
- Submission state
- Upload fulltext
- Transfer Meta to
- Open API

- Open API is offered at RISS homepage
- Other institutions can search thesis & dissertations of RISS and view search result at their own service homepage by using RISS open API
Digital Right Management

1. (administrator)
   - Setup
     - License Setup interface
     - License engine
   - Store license info
   - Generate license PDF page

2. (Students)
   - Register license
     - PDF with DRM (include license page)

3. View license
   - License viewer
   - Packaged DRM on real time

4. View fulltext
   - License Management
   - License DB
   - dCol. DB server
   - Select setting at setup

PDF w license: License page is merged to fulltext
PDF w DRM: PDF with license is applied DRM to. Users view
PDF with license and DRM
Digital Right Management

PDF before applying license and DRM
Digital Right Management

PDF after applying license and DRM
Digital Right Management

DRM and policy of Univ. library

- librarians can select DRM options according to policy

- DRM options are Display, Print and Save.

- librarians can setup saving conditions of fulltext

- The fulltext that users can not view is delivered via Inter library loan
THANK YOU