

Best Practices in Developing and Enhancing Institutional Repositories

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LIBRARIANS ASSOCIATION OF MALAYSIA
WORKSHOP ON NEXT GENERATION REPOSITORIES

12TH – 13TH APRIL 2018

HOTEL SERI MALAYSIA, KANGAR, PERLIS

National Research and Education Network

- SINET is a Japanese academic backbone network for more than 800 universities and research institutions, and for about 3 million users.
 - SINET covers 100% of national, 78% of municipal, and 55% of private universities.

	National Universities	Municipal Universities	Private Universities	Junior Colleges	Colleges of Technology	Inter-Univ. Research Institutes	Labs and Others	Total
Number of Organizations	86 (100%)	71 (78%)	348 (55%)	62 (18%)	55 (97%)	16 (100%)	179	817

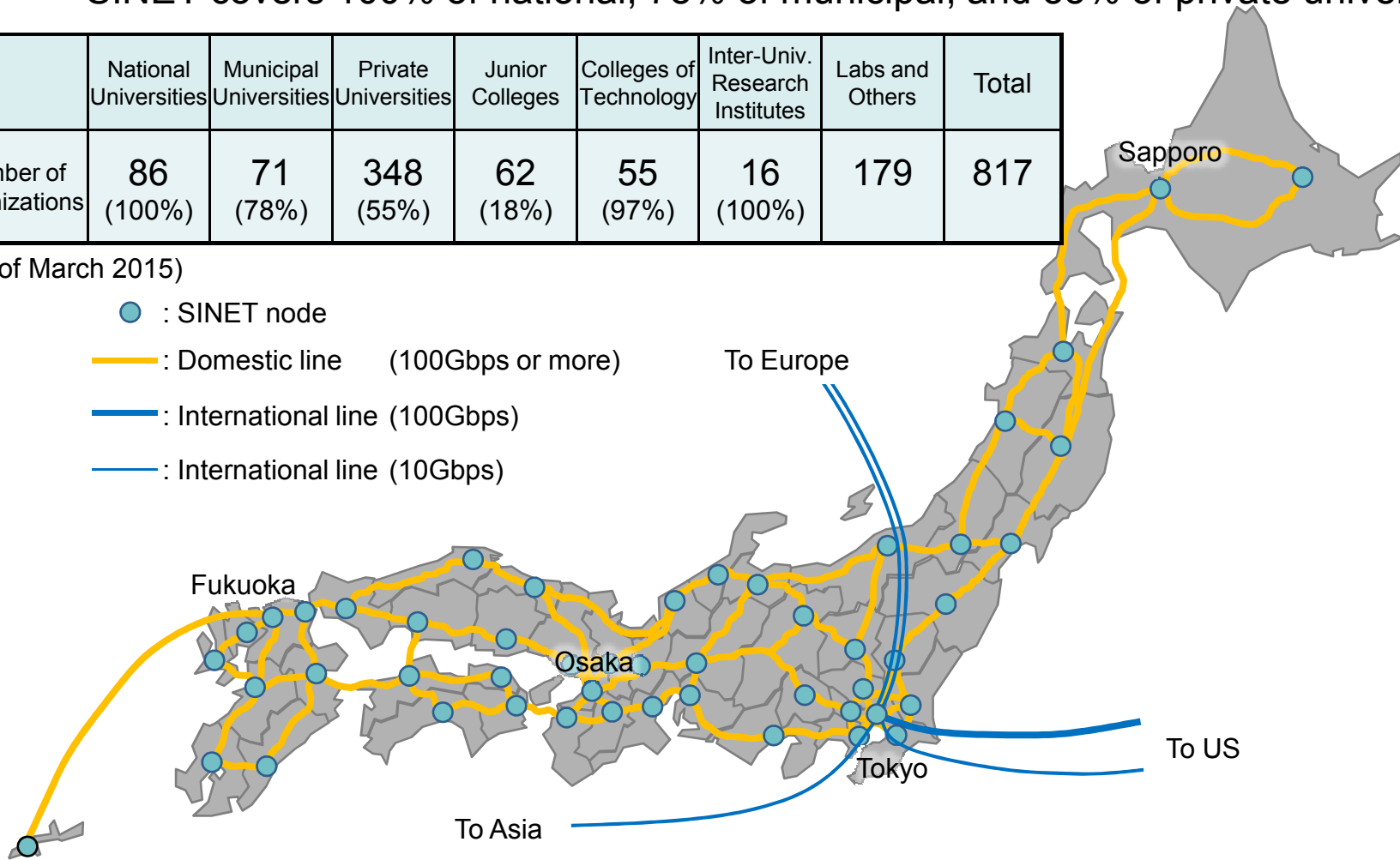
(As of March 2015)

● : SINET node

— : Domestic line (100Gbps or more)

— : International line (100Gbps)

— : International line (10Gbps)



SINET5

21st Century Academic Information Infrastructure for Advancing Open Science

Collaboration and Promotion in Research and Education



Resource

- ◆ Promotion of academic information circulation and open access
- ◆ Collaborative promotion of institutional repository expansion



Federation

- ◆ Collaborative enhancement of authentication between universities



Cloud

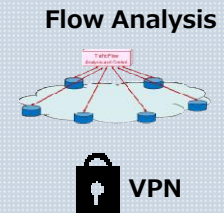
- ◆ Dramatic cost reduction and enhancement of research and education environment by tailored cloud services



GakuNin-Cloud
Direct Connection

Security

- ◆ Network flow analysis and dynamic control
- ◆ Raise of security level for SINET users

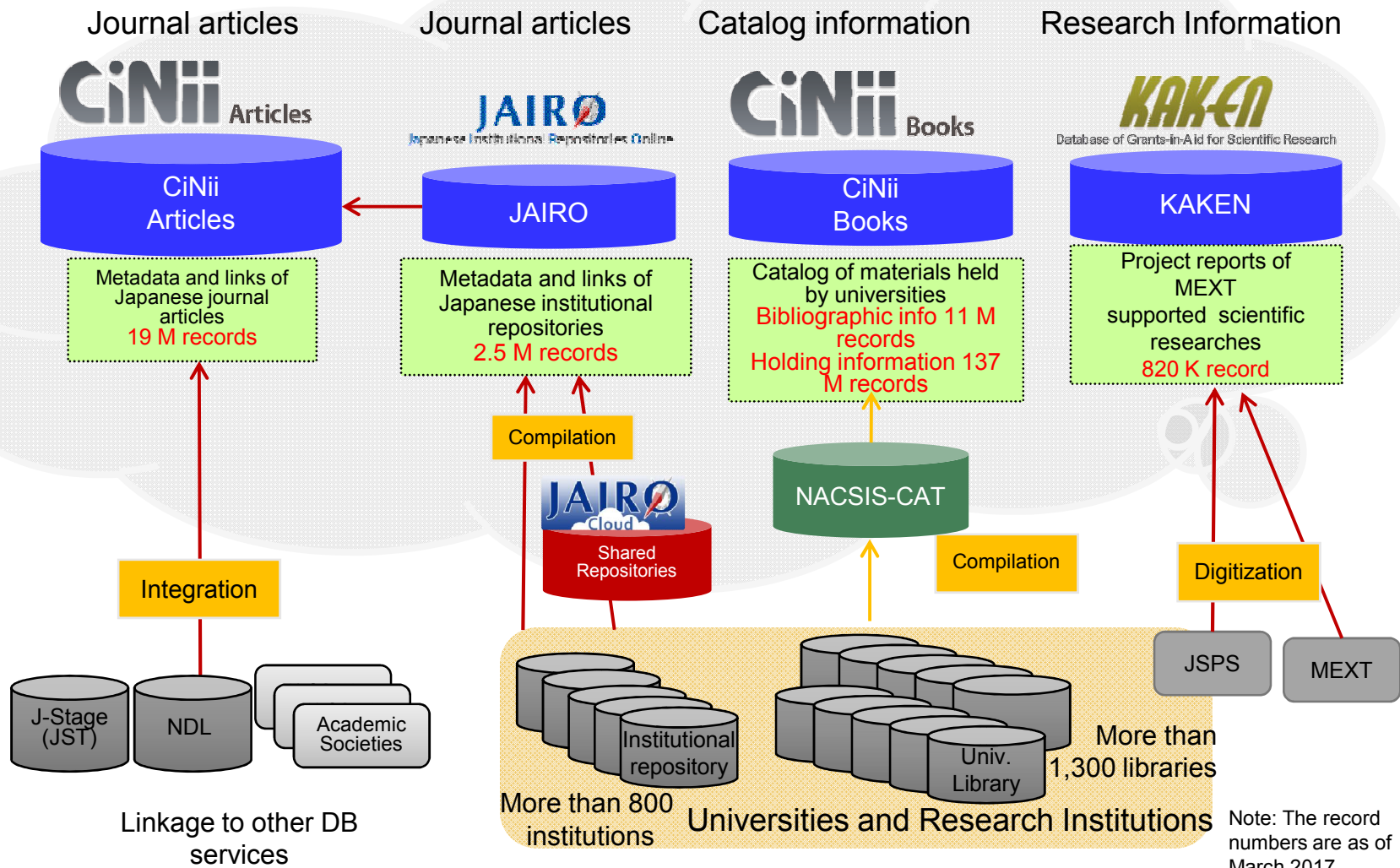


Network

- ◆ Nationwide 100-Gbps backbone network and scalable network expansion
- ◆ High-speed direct international lines to USA, Europe, and Asia
- ◆ Introduction of new technologies such as SDN in response to user needs

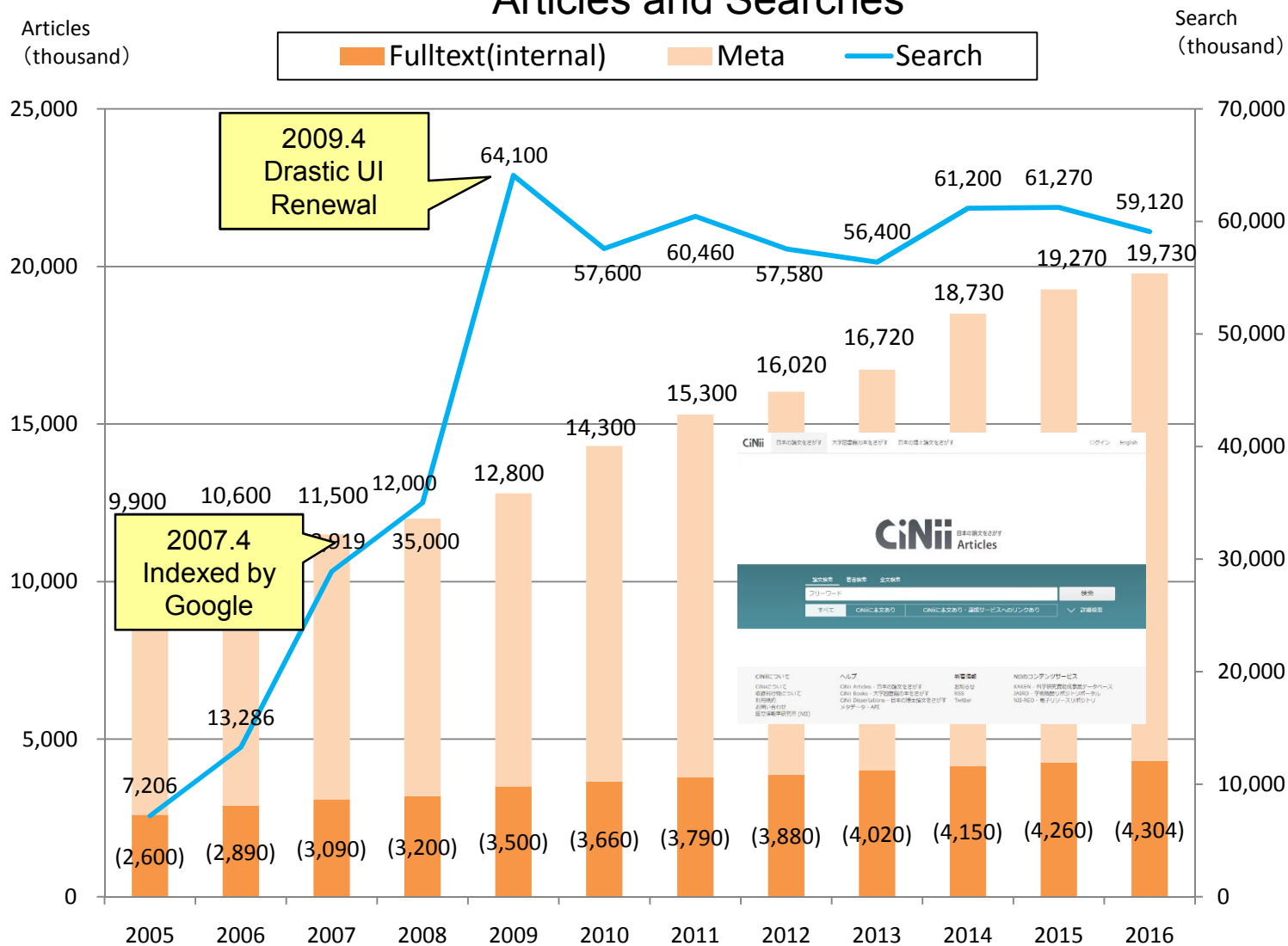


Scholarly Information Infrastructure

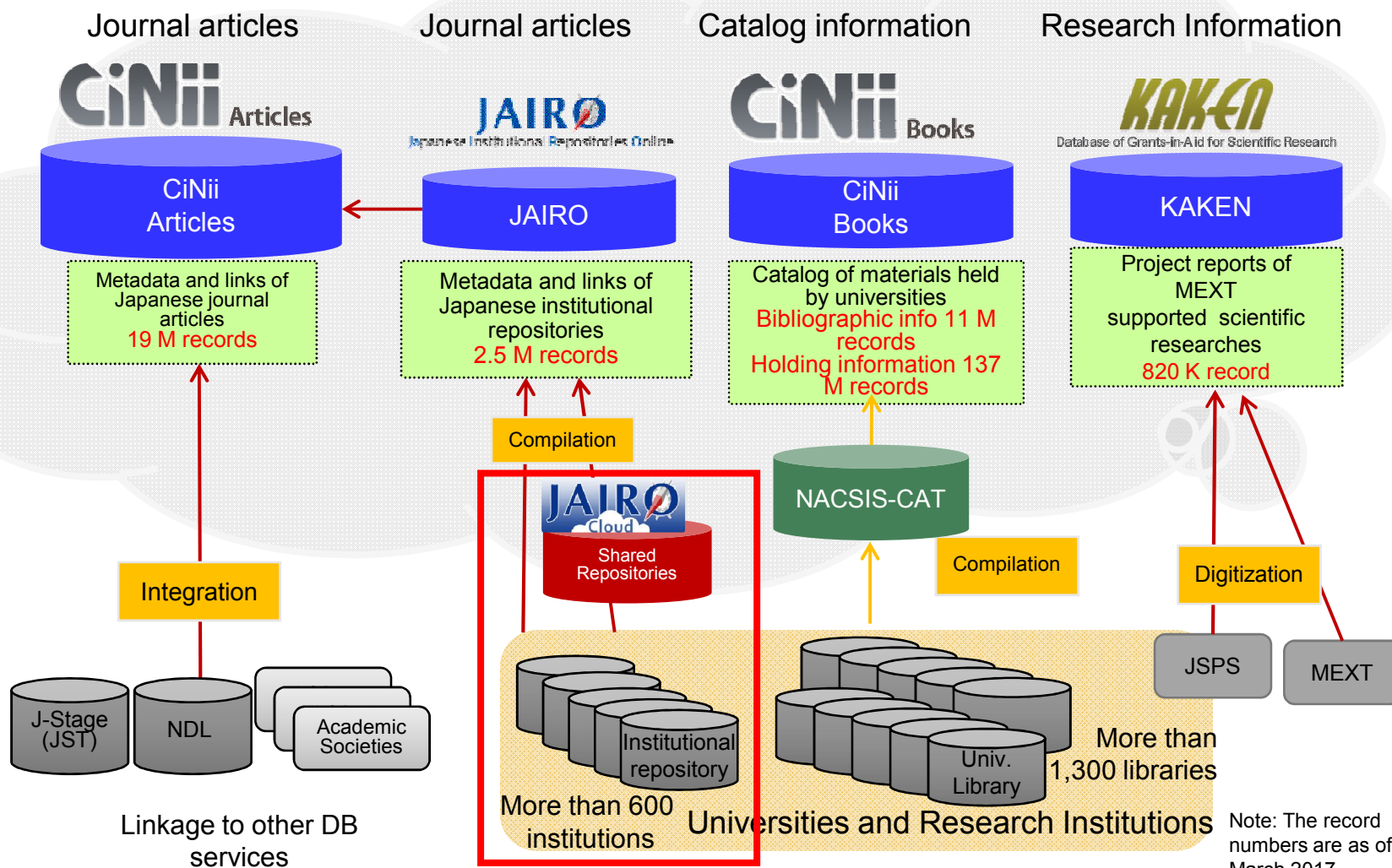


Discovery Service CiNii

Articles and Searches



Scholarly Information Infrastructure



NII-funded Programs

- NII-IRP (Institutional Repositories Program)

<http://www.nii.ac.jp/irp/en/>

- Phase 1 : FY2005-2007

- Phase 2 : FY2008-2009

- Phase 3 : FY2010-2012

- Three categories of funding

- Area 1: Support for developing IRs and content creation

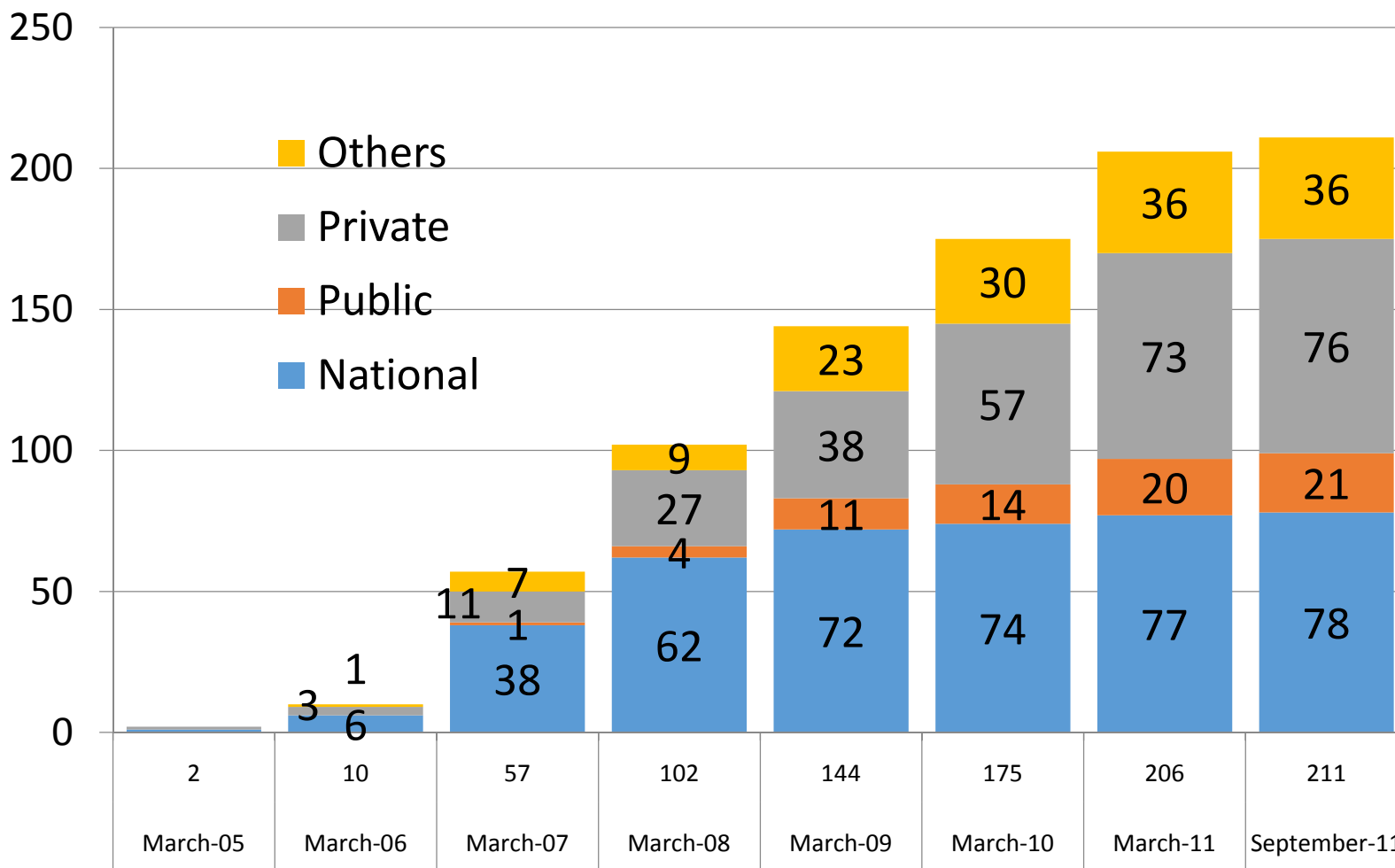
- Area 2: Research and development

- Area 3: Support for community activities



	Phase 1			Phase 2		Phase 3		
	2005	2006	2007	2008	2009	2010	2011	2012
Area 1 (Institutions)	19	57	70	68	74	24	31	34
Area 2 (Projects)	-	22	14	21	21	8	8	7
Area 3 (Projects)	-	-	-	-	-	5	4	4

Expansion of IRs until 2011




Implementation Rate of IRs in JAPAN

Almost all national universities have their own IRs, while the implementation rate of other public/private universities hovers at

20-30%

in 2012

Matters Surrounding IRs in Japan

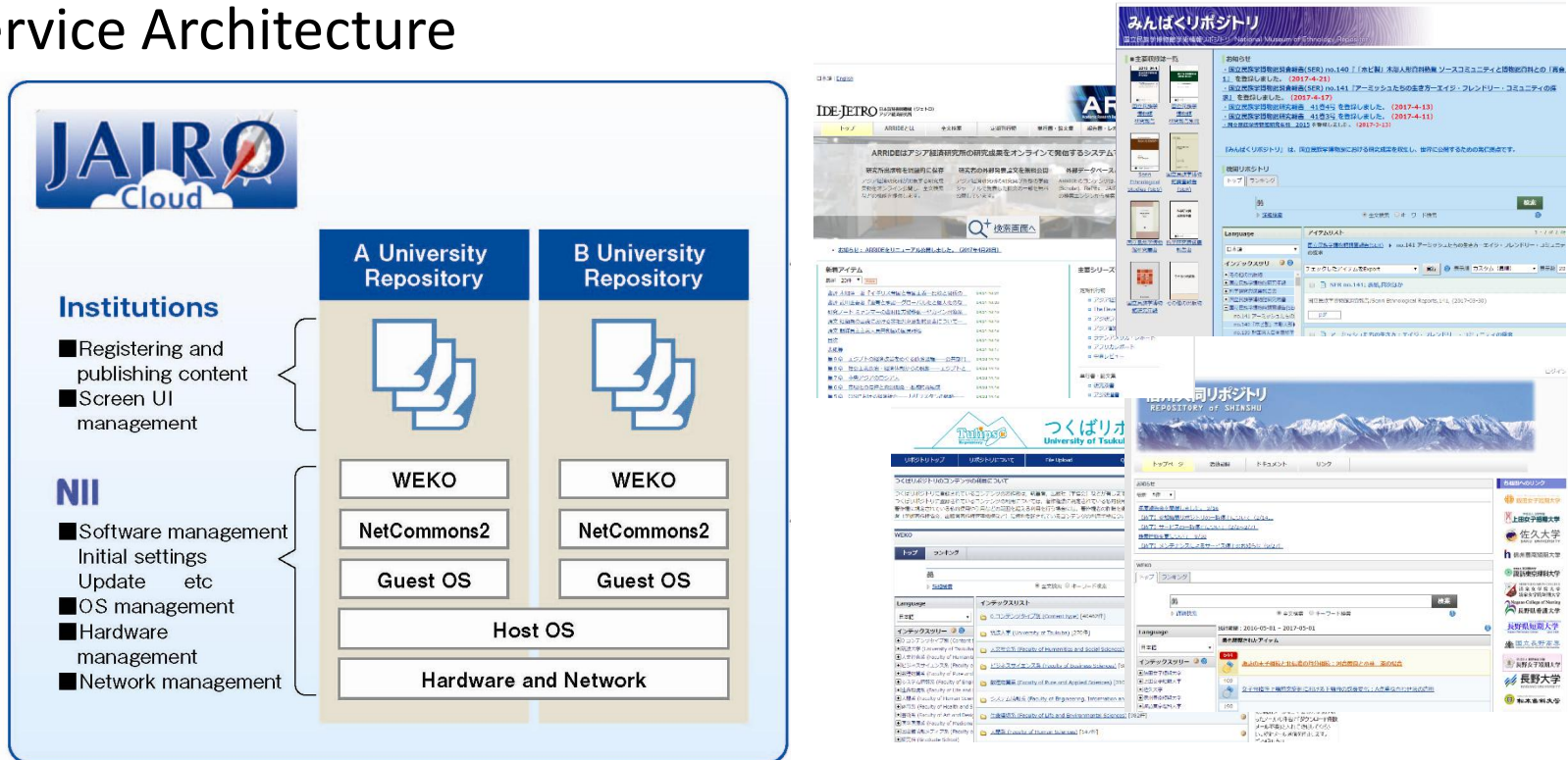
- Ministry of education and research in Japan mandated the digitalization of doctoral dissertations and their dissemination over the network.
 - In 2013 when the above was stated, there still were about 200 universities which does not have IRs.
 - There are more than 700 HEs in Japan
- 
- The universities which have already owned their IRs were also struggling with how to update and maintain the system in the sustainable manner.

JAIRO Cloud

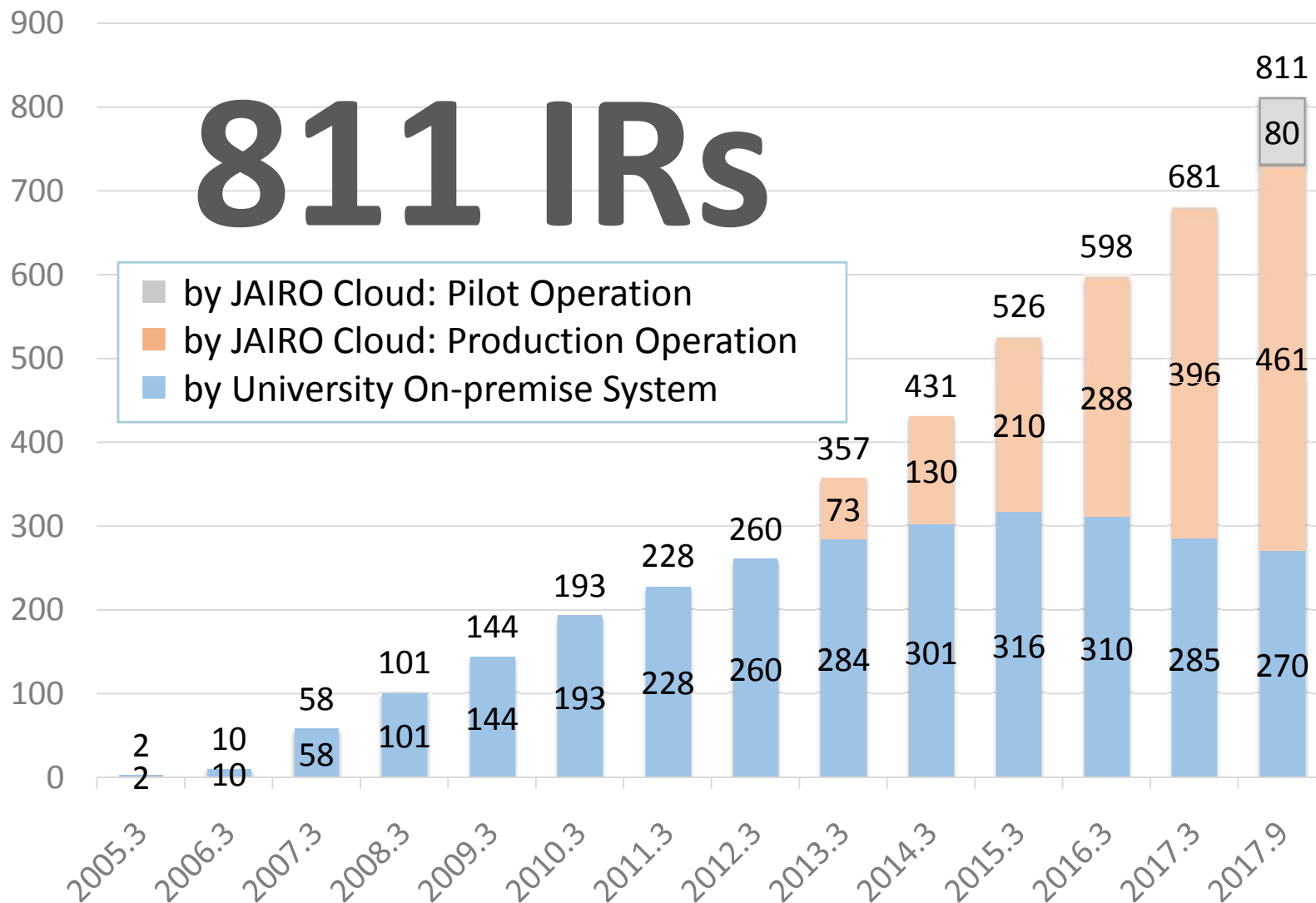
- Background

- Limited resources and less technical knowledge hamper implementation of IR especially in small universities.
- JAIRO Cloud provides a shared instance of IR system on the virtual server hosted by NII since April 2012.

- Service Architecture

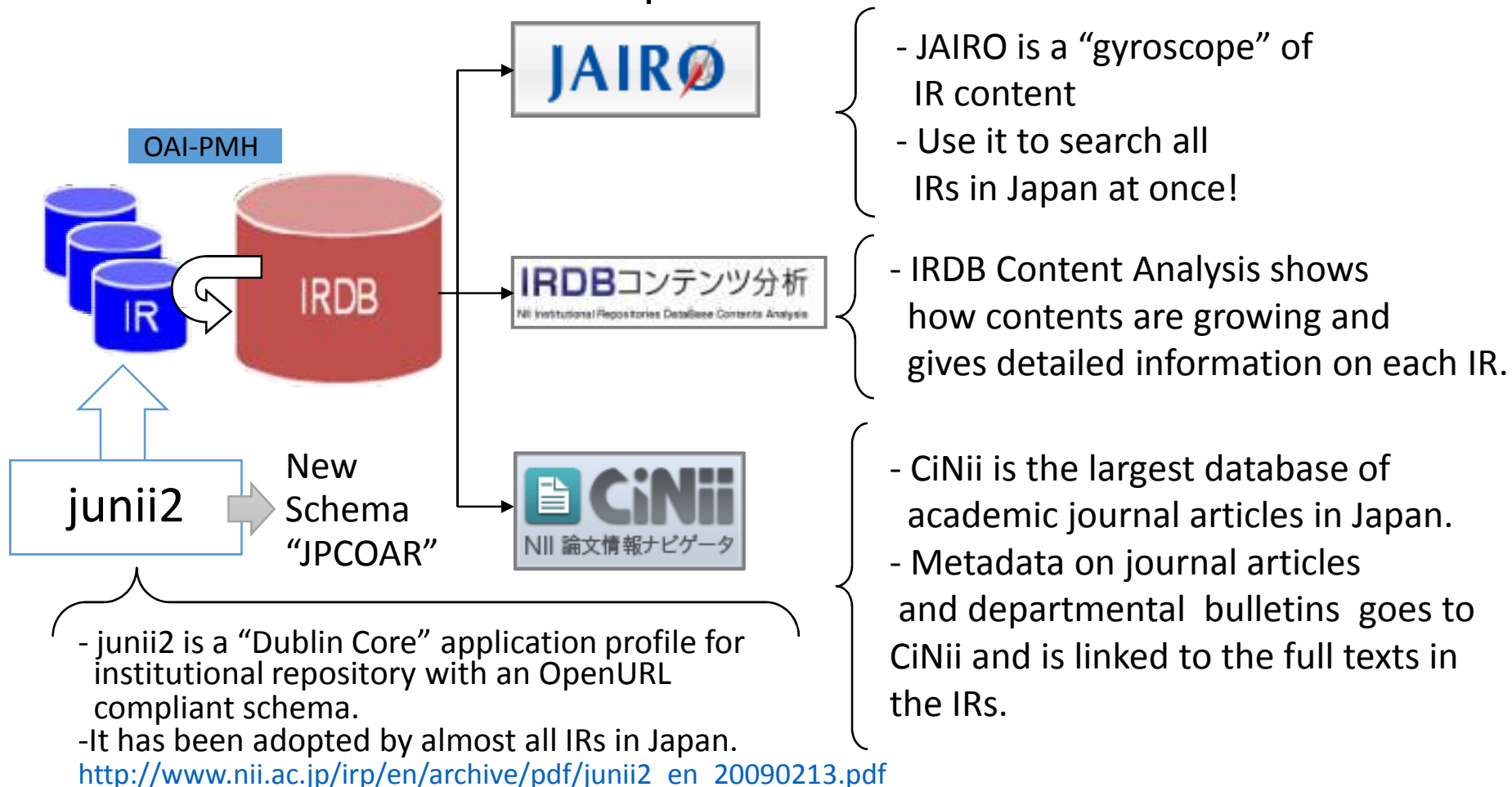


Number of Institutional Repositories in Japan

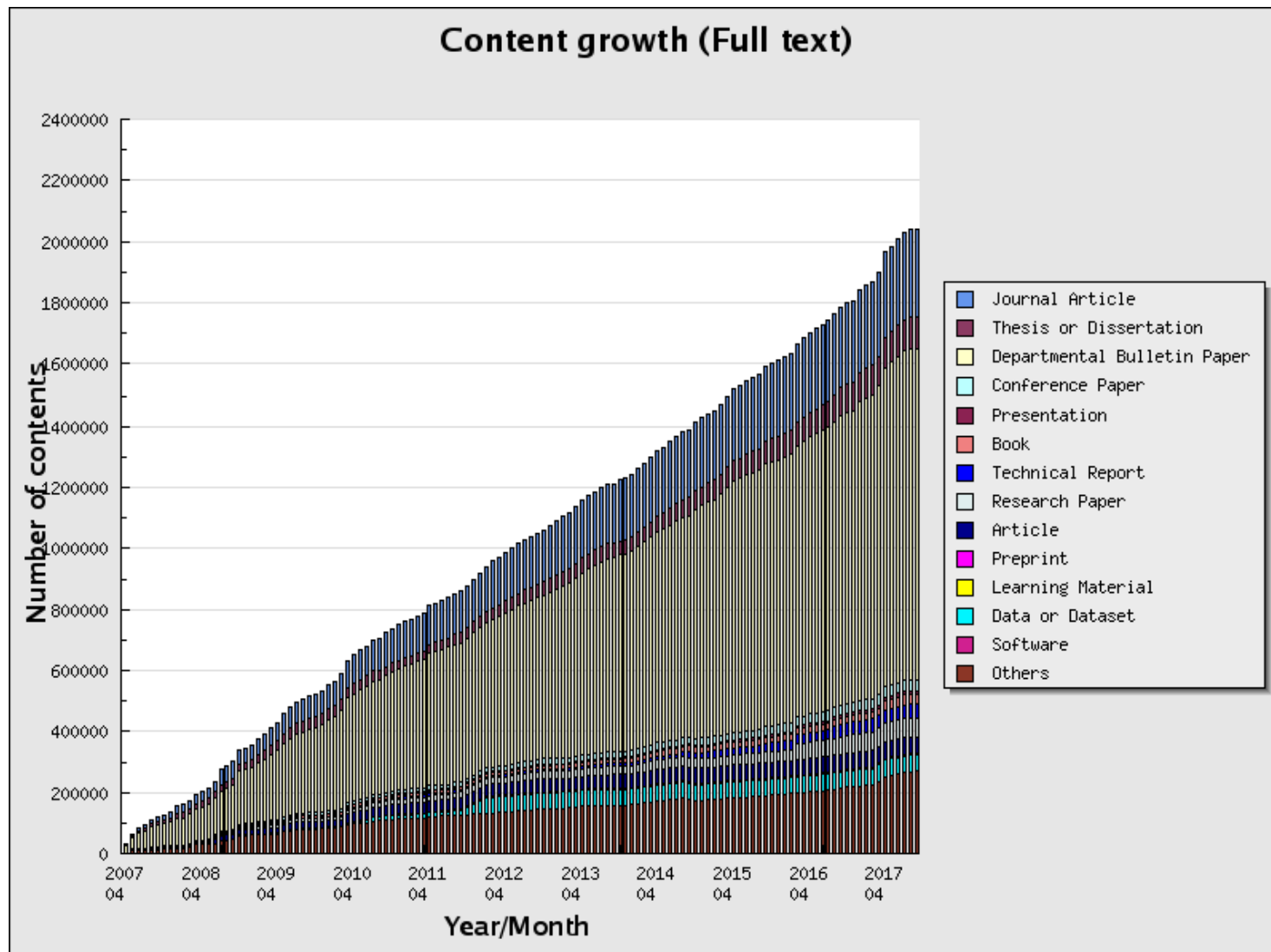


Portal services of Japanese IRs

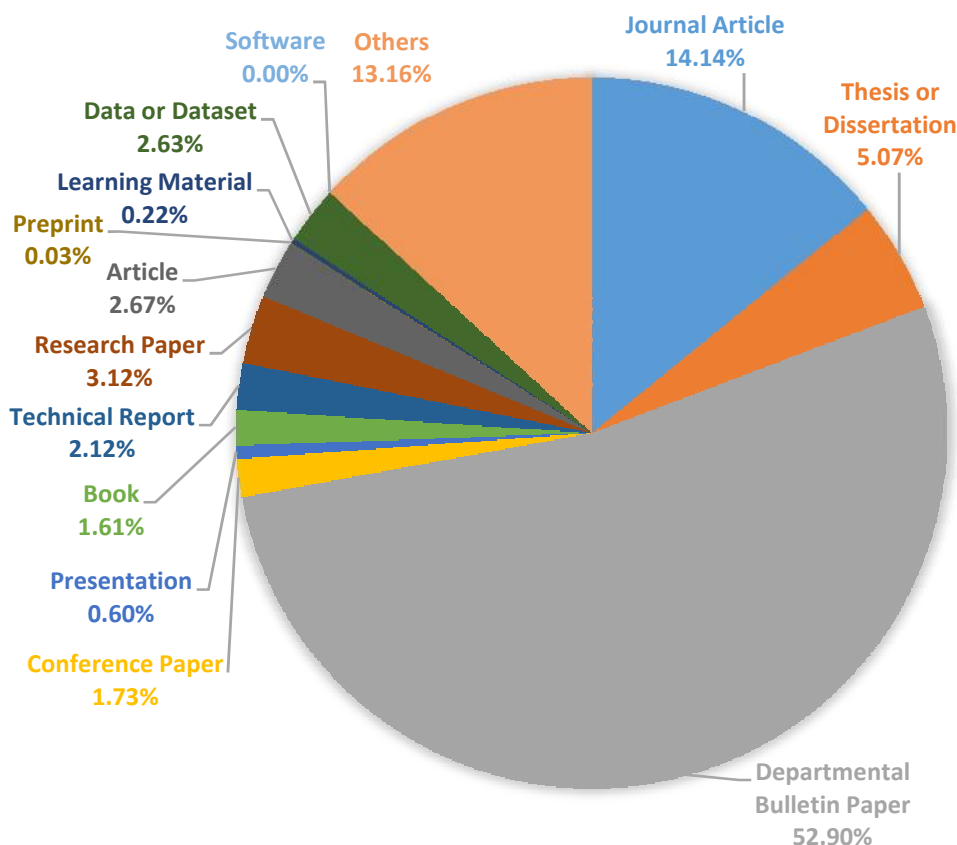
- NII harvests almost all Japanese IRs



Contents Type stored in Japanese IRs



Contents Type stored in Japanese IRs



Journal Article	288,709 (14.1%)
Thesis or Dissertation	103,478 (5.1%)
Departmental Bulletin Paper	1,080,358 (52.9%)
Conference Paper	35,303 (1.7%)
Presentation	12,251 (0.6%)
Book	32,839 (1.6%)
Technical Report	43,313 (2.1%)
Research Paper	63,771 (3.1%)
Article	54,470 (2.7%)
Preprint	624 (0.0%)
Learning Material	4,578 (0.2%)
Data or Dataset	53,736 (2.6%)
Software	46 (0.0%)
Others	268,744 (13.2%)
Total	2,042,220

Repository Community

- Digital Repository Federation, since 2006
- JAIRO Cloud Community, since 2012
- Institutional Repository Promotion Committee, since 2013



From 2016

- Japan Consortium for Open Access Repository (JPCOAR)
 - Working Group
 - Training WG
 - JAIRO Cloud Operation WG
 - Promotion WG
 - Task Force
 - Next Generation Metadata Schema TF
 - Research Data TF
 - Open Access Policy and Tracking TF
 - Repository Evaluation TF
 - ORCID TF

From Open Access to Open Science

Open Science Report from Japanese Cabinet Office (2015)

Promoting Open Science in Japan Opening up a new era for the advancement of science **Executive Summary**

Report by the Expert Panel on Open Science, based on Global Perspectives
Cabinet Office, Government of Japan

March 30, 2015

It is vital for Japan to participate in international discussions and to demonstrate a proactive approach to the promotion of open science. The Expert Panel on Open Science based on Global Perspectives has discussed various relevant issues of immediate importance for Japan. Based on these discussions, the Panel presented the guiding principles for promotion of open science in Japan.

I. The Importance of Open Science

“Open science” refers to a new approach to promoting innovation through knowledge creation in science and technology. This will be realized by facilitating access to and use of publicly funded research results such as scientific papers and their underlying data by the scientific community, industry and the general public. The concept of open science is spreading rapidly. At the G8 Summit held in June 2013, G8 Science Ministers issued a joint statement that endorsed the need for increasing access to publicly funded research, including peer-reviewed published research and research data. The statement triggered discussions in various forums worldwide

Research community, and to the decline of Japan’s international competitiveness.

Japan should keep pace with the global advancement of open science in a collaborative yet also strategic manner, so that the value of Japan’s latest research and development activities can lead to business activities at the next stage.

II. The Need to Promote Open Science

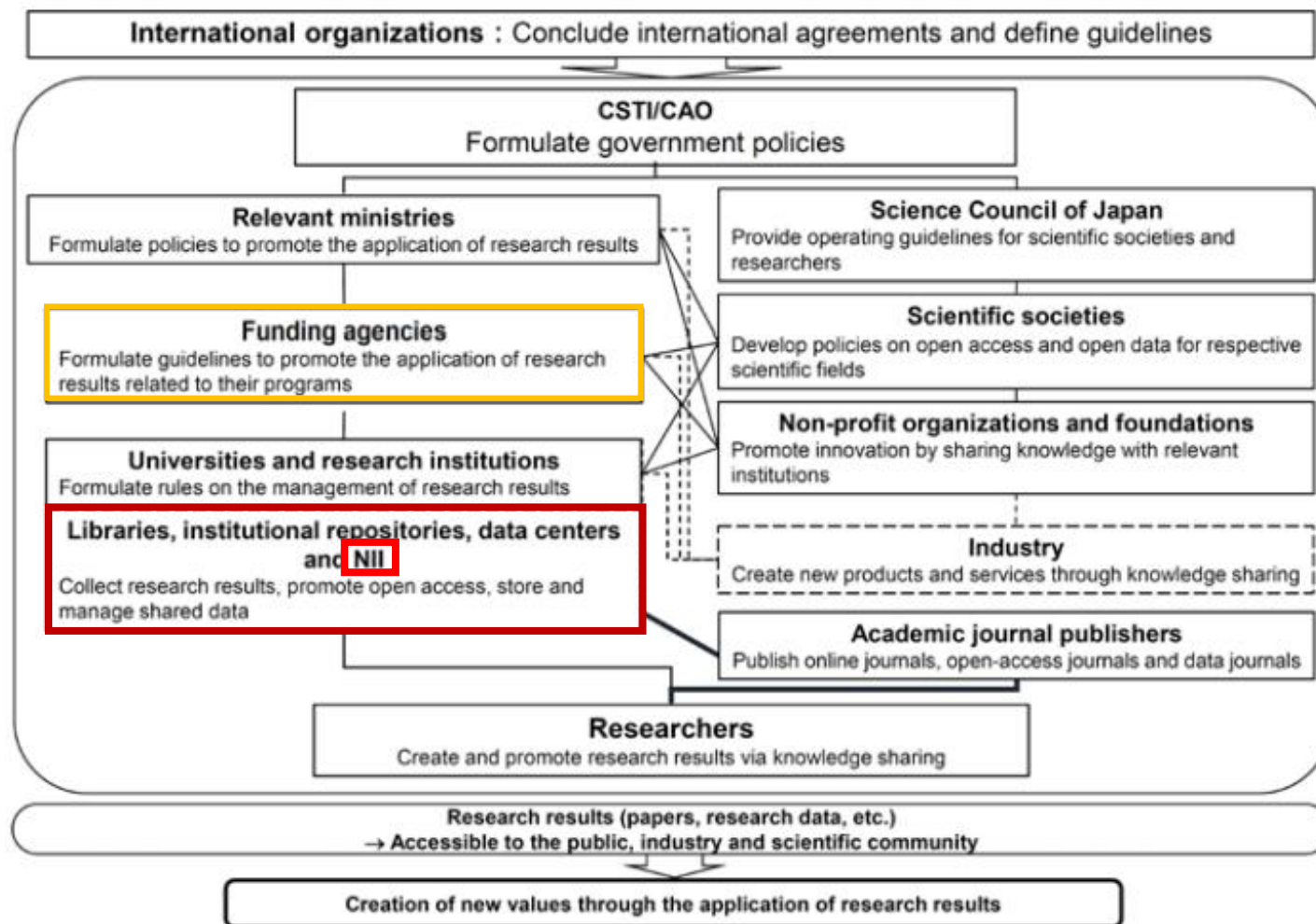
Open science may change scientific research. It will not replace traditional research methods, but will add new tools that help to advance science. It will make research results widely available in digital formats to all users including the scientific community, industry and the general public. This will enable additional value to be extracted from science and technology information, which will not only improve our knowledge, but will also reform innovation strategies.

For the scientific community, the acceleration of data-driven activities is expected to lead to new collaborations and to the prevalence of new research methods among researchers within the same research discipline and beyond. Industry and individuals are also expected to gain as they develop new products and services as a

http://www8.cao.go.jp/cstp/sonota/openscience/150330_openscience_summary_en.pdf

Framework of the Open Science in Japan

Correlation diagram of policy making and implementation



Example of Funders' Policy in UK

● Full Coverage
 ◐ Partial Coverage
 ○ No Coverage

Funders' data policies summarized by Data Curation Center
<http://www.dcc.ac.uk/resources/policy-and-legal/overview-funders-data-policies>

Research Funders	Policy Coverage		Policy Stipulations					Support Provided			
	Published outputs	Data	Time limits	Data plan	Sharing/access	Long-term curation	Monitoring	Guidance	Repository	Data centre	Costs
AHRC	●	●	●	●	●	◐	○	●	○	◐	◐
BBSRC	●	●	●	●	●	●	●	●	●	◐	●
EPSRC	●	●	●	◐	●	●	●	◐	○	○	●
ESRC	●	●	●	●	●	●	●	●	●	●	◐
MRC	●	●	●	●	●	●	○	◐	●	○	◐
NERC	●	●	●	●	●	●	●	●	●	●	◐
STFC	●	●	●	●	●	●	●	◐	●	◐	◐
Cancer Research	●	●	●	●	●	●	●	◐	●	○	●
European Commission	●	●	◐	●	◐	◐	◐	●	●	◐	●
Wellcome Trust	●	●	●	●	●	●	●	●	●	●	●

Data plan: requirement to consider data creation, management or sharing in the grant application

Some of Japanese Funders such as **AMED** and **JST** also started to request DMP

Pressure on Data

Retraction Watch

Archive for the 'japan retractions' Category

Case report of stem cell therapy in child didn't meet "ethical standards," says journal

with 0 comments

A journal has retracted a case report about a stem cell therapy in a child with cerebral palsy, after announcing the study failed to meet ethical standards.

According to the journal, Reproductive Medicine, the ethical issue is that the authors failed to report to the Ministry of Health, Labor and Welfare of Japan, which oversees the country's guidelines for conducting stem cell research. Additionally, the journal says the authors did not state what happened.

The journal's editorial board of Future Science Group, which publishes Reproductive Medicine, explained the journal's decision. [Shinya Kurita](#), reproductive medicine editor, said the journal's decision was based on the following reasons: [Read the full story here.](#)

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Tracking retractions as a window into the scientific process

Bone researcher is up to 17 retractions

with 4 comments

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[Top 10 most highly cited retracted papers](#)

<http://retractionwatch.com/category/by-country/japan-retractions/>

Intention and Approach

- **WHY (Open Science)**

- Innovation, Research Acceleration, Interdisciplinary Collaboration
- Transparency, Research Integrity and reproducibility

- **HOW**

- **WHO**

- **WHAT**

Existing Scholarly Communication Tools



BY: Jeroen Bosman, <http://dx.doi.org/10.6084/m9.figshare.1286826>

Things to Avoid by Our Effort

Invented Cool Tools by Small Company



User Explosion



Require Big Investment



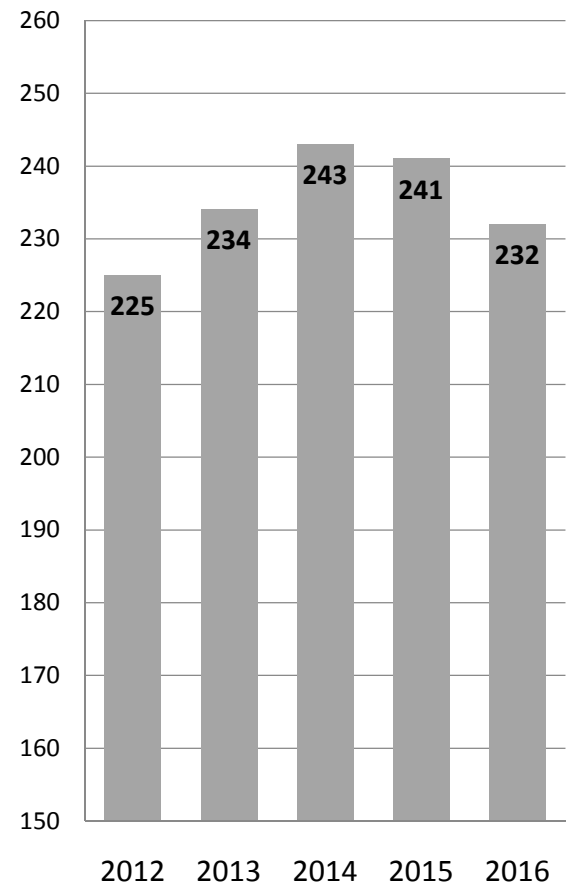
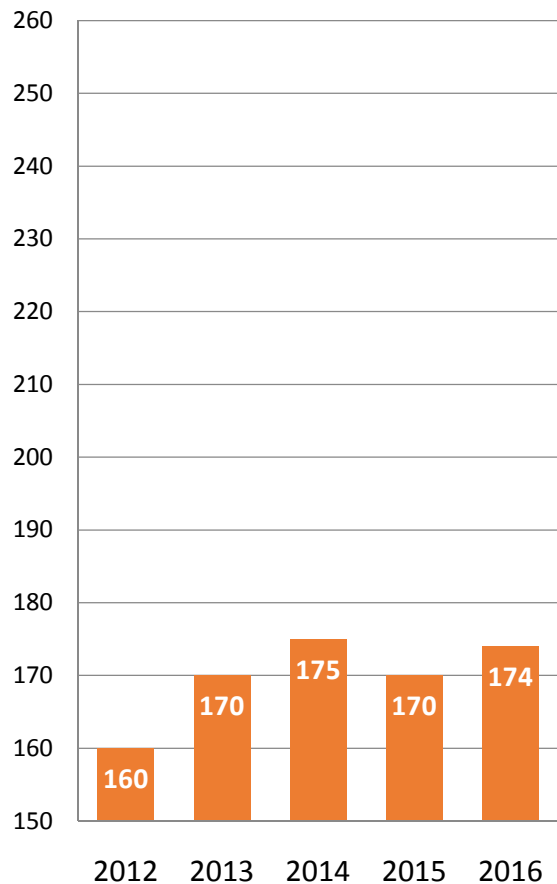
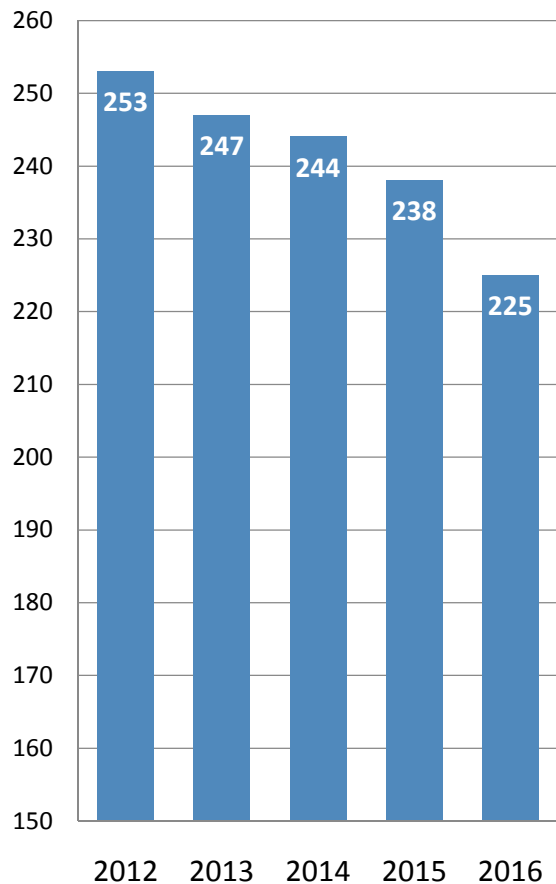
Under the Umbrella of Big Company

Monopoly



Digital Divide resulted from Monopoly Phenomena

Number of Institutional Contract with Major Publishers



Data provided by Japan Alliance of University Library Consortia for E-Resources (JUSTICE)

24 March 2017

**German research organisations:
Elsevier blocks negotiations on nationwide licences**

Publisher Elsevier has once again failed in yesterday's negotiating session with Project DEAL, acting for German research organisations, to present an offer that goes any way at all to address the demands of the research sector.

"After five sessions I am forced to question whether Elsevier is actually serious about entering into a viable contract based on Gold Open Access," said President of the German Rectors' Conference (HRK), Prof Dr Horst Hippler, who is heading the negotiations for the research organisations. According to Prof Dr Hippler, the negotiators for Project DEAL would nevertheless be willing to continue discussions – if Elsevier were to present a serious and negotiable offer.

The goal being pursued by the research organisations through Project DEAL is to achieve nationwide licensing agreements for the entire portfolio of electronic journals (E-journals) from major academic publishers from the 2017 licence year. The effects of a consortium agreement at the national level should relieve the financial burden on individual institutions and bring wide-scale, lasting improvements in access to scholarly literature for researchers. An open access component is also planned.

The Open Access "Gold Road" means that a research text is published for the first time on an Open Access basis. Quality assurance is mostly carried out in the peer review process.

National Research Infrastructure for OS



National Research Infrastructure Roadmap terms of reference released

For: All

Wednesday 9 March 2016

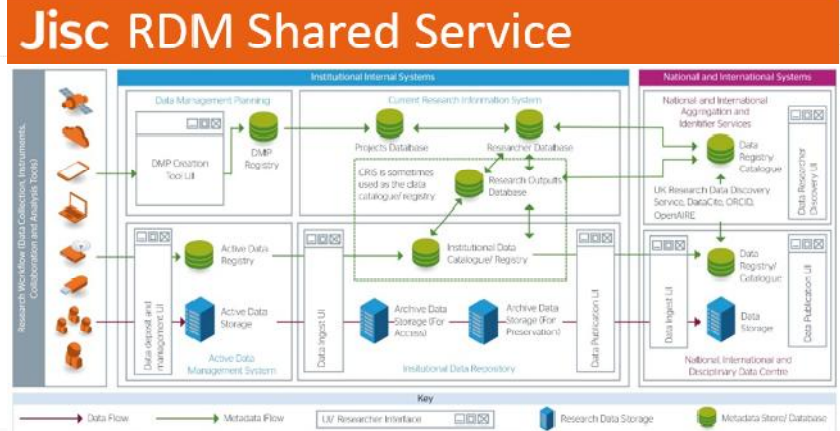
Open Science and Research in Finland

- Science and innovation in Finland
- National infrastructure strategy and roadmap 2014-2020
- Open science and research approach in Finland

Ministry of Education and Culture
Ministère de l'Éducation et de la culture

The European Open Science Cloud for Research

EGI, together with other leading European initiatives EUDAT, LIBER, OpenAIRE and GÉANT, have shared their joint vision for the European Open Science Cloud for Research with eight elements of success for a concrete contribution to the Digital Single Market.



GERMAN COUNCIL FOR SCIENTIFIC INFORMATION INFRASTRUCTURES
OPENING DECLARATION

JUNE 2015



Intention and Approach

- **WHY (Open Science)**

- Innovation, Research Acceleration, Interdisciplinary Collaboration
- Transparency, Research Integrity and reproducibility

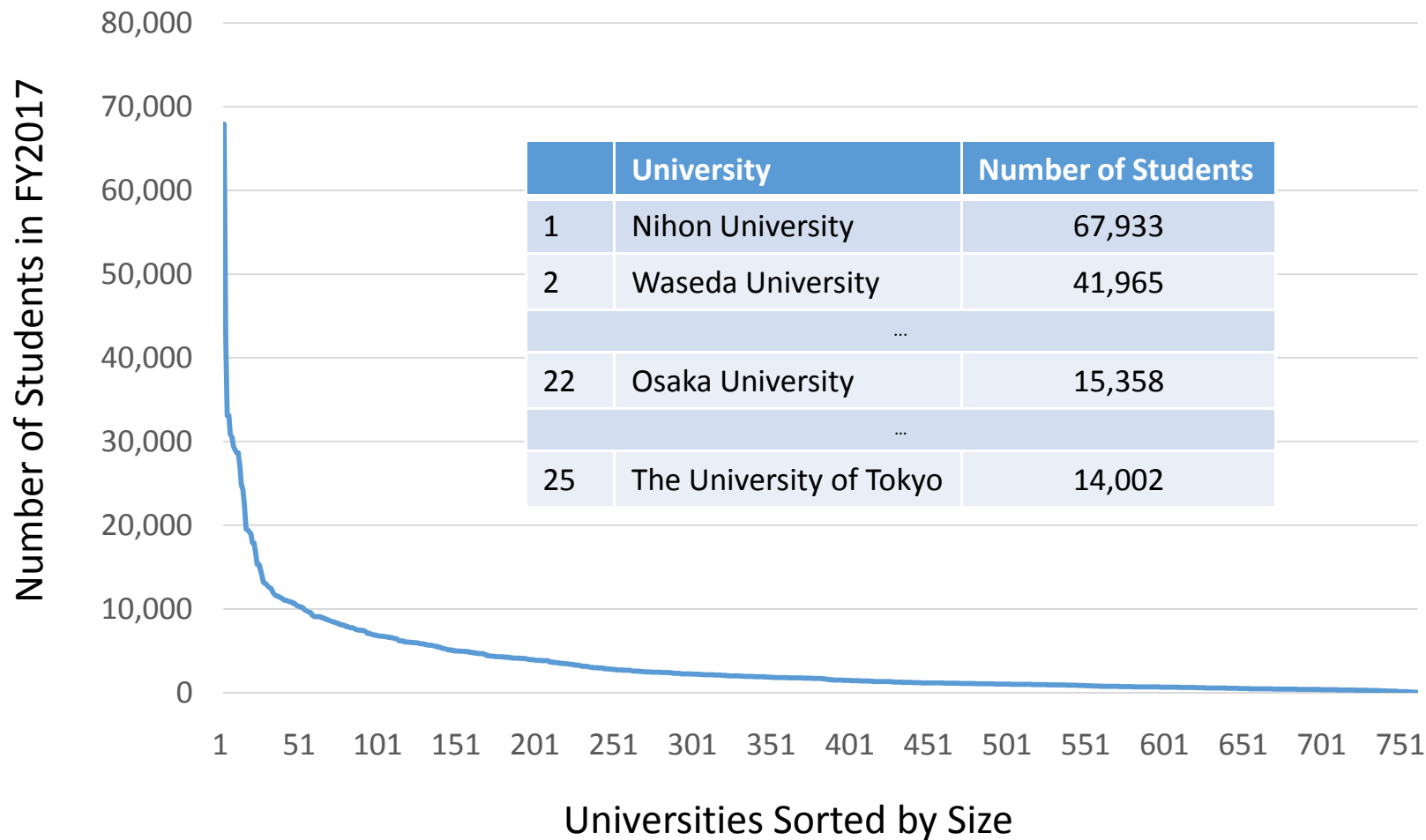
- **HOW (Environment)**

- Preserve Control within Academic Community
 - Maximize Open Source Software
 - Maximize User Community for System Development

- **WHO**

- **WHAT**

Long Tail Feature in Japanese Universities



JAIRO Cloud is a good example for supporting long-tail

Intention and Approach

- **WHY (Open Science)**

- Innovation, Research Acceleration, Interdisciplinary Collaboration
- Transparency, Research Integrity and reproducibility

- **HOW (Environment)**

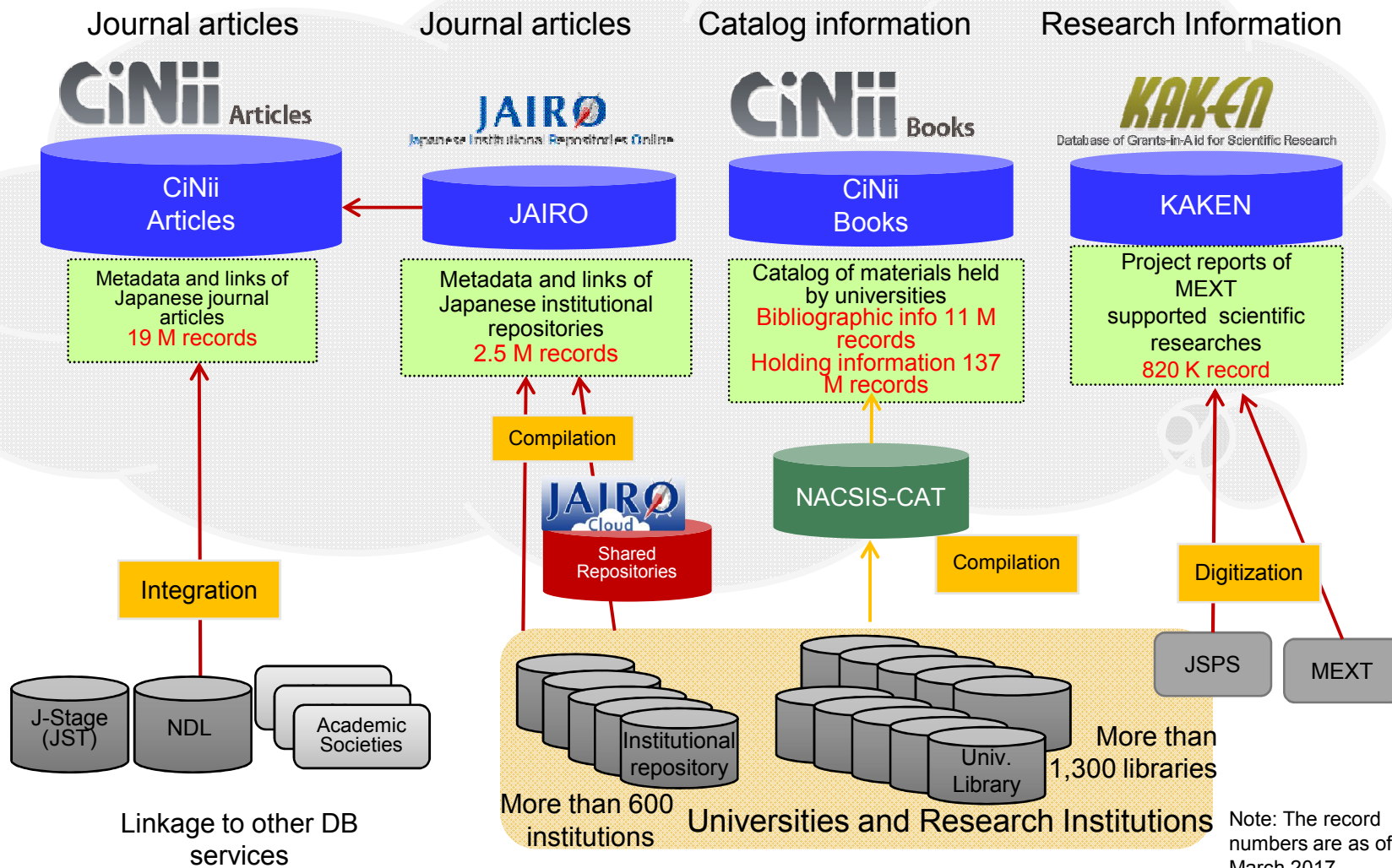
- Preserve Control within Academic Community
 - Maximize Open Source Software
 - Maximize User Community for System Development

- **WHO (Stakeholder)**

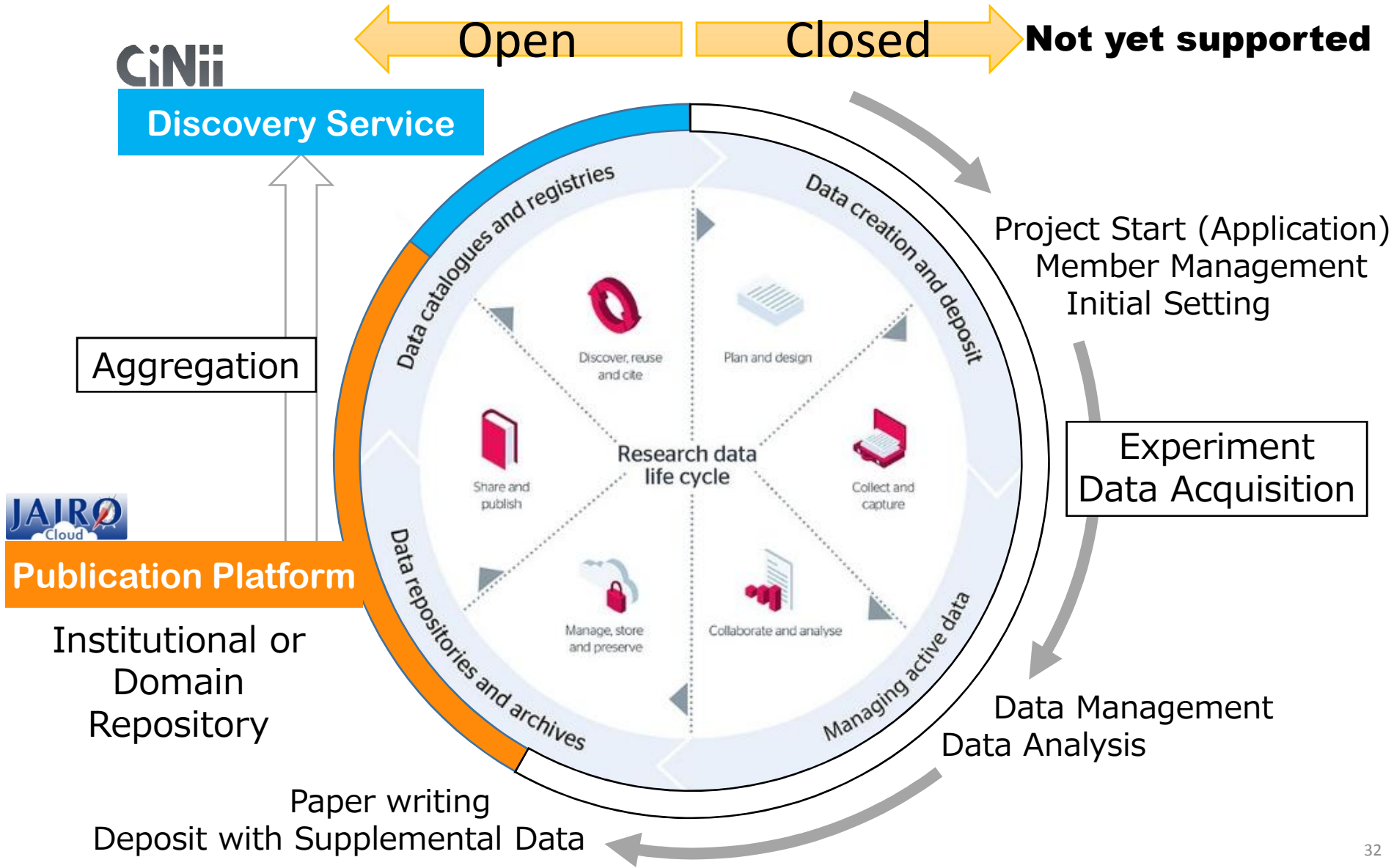
- as Longtail (need to define a certain level) as Possible

- **WHAT**

NII Scholarly Information Services



Current NII Services and Research Workflow



Intention and Approach

- **WHY (Open Science)**

- Innovation, Research Acceleration, Interdisciplinary Collaboration
- Transparency, Research Integrity and reproducibility

- **HOW (Environment)**

- Preserve Control within Academic Community
 - Maximize Open Source Software
 - Maximize User Community for System Development

- **WHO (Stakeholder)**

- as Longtail (need to define a certain level) as Possible

- **WHAT (Infrastructure)**

- Support Research Workflow throughout closed Environment

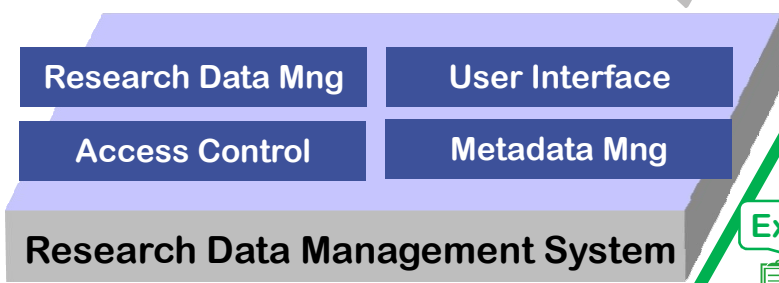
Research Data Infrastructure for Open Science

CiNii Research

Discovery Platform

- Linking Func between Article and Data
- Researcher and Research Project Identification and Management Func
- Data Exchange with International Discovery Service

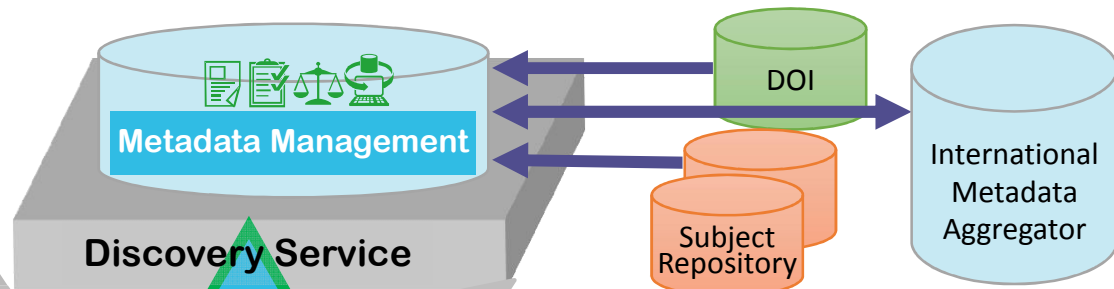
Re-use



RDM Platform

 **GakuNin RDM**

- High Speed Access using SINET5
- Data Sharing Func using Virtual NW and ID Federation
- Effective Data Storage Switcher



Search/Find

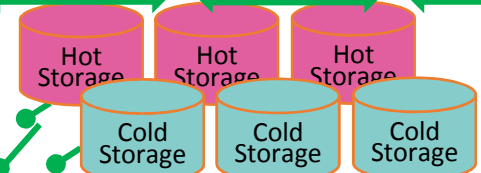


Institutional Research Data Mng

Research Data Repository



Private Shared Public



Publication Platform

 by  WEKO3

- Data oriented Self-Archiving Func
- Versioning and auto-Packaging Func
- User Dependent Personal Data Pseudonym Func

Challenge to Develop Research Data Infrastructure

• Open Access

- Journal Article, Article Search
 - Well defined Metadata Format and Use-Case
 - ➔ Add useful functionalities

• Open Science

- Research Data in addition to OA materials
 - Variety : Different types of Format and Use-Case
 - Critical : Daily Use (Especially RDM Service)

**Flexibility
Expansibility**

System Specification
get Difficult to Define

**Confidentiality
Integrity
Availability**

People get Angry
once Stopped

System Development and Operation

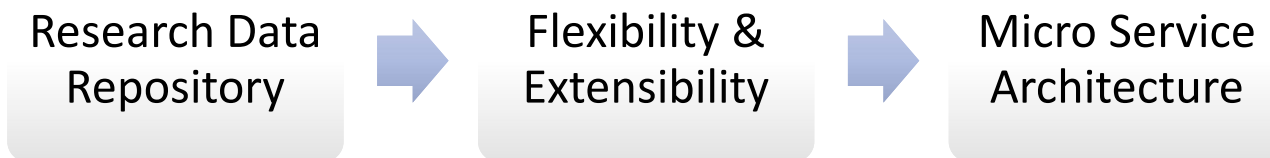


- Micro Service-zation of Application Architecture
- Dev/Ops through CI/CD

(Completely Different Approach from our Previous Services)

Comparison of Existing Repository System

Repository	License	Programming Language	Framework	CMS	DB	Metadata Store	Full-text search	O/R mapping	Message oriented middle-ware
DSpace	BSD 3-Clause	Java	Cocoon		PostgreSQL	PostgreSQL	Solr	Hibernate	
EPrints	GPL 3	Perl			MySQL	MySQL			
Fedora	Apache 2.0	Java	Spring		ModeShape	ModeShape			
HUBzero	GPL 2	PHP	Joomla!	○	MySQL	MySQL			
Invenio	GPL 2	Python	Flask		PostgreSQL	PostgreSQL	Elasticsearch	SQLAlchemy	Celery/RabbitMQ
Hyrax/Hyku	Apache 2.0	Ruby	Samvera		MySQL	Fedora	Solr	ActiveFedora	Sidekiq/Redis
Samvera	Apache 2.0	Ruby	Ruby on Rails		-	Fedora	Solr	ActiveRecord	
Islandora	GPL 3	PHP	Drupal	○	MySQL	Fedora	Solr	ActiveFedora	
dataverse	Apache 2.0	Java			PostgreSQL	PostgreSQL	Solr		
WEKO2	BSD-2-Clause	PHP	NetCommons 2	○	MariaDB	MariaDB	Mroonga		



Architecture of Publication Platform

Institutional Repository

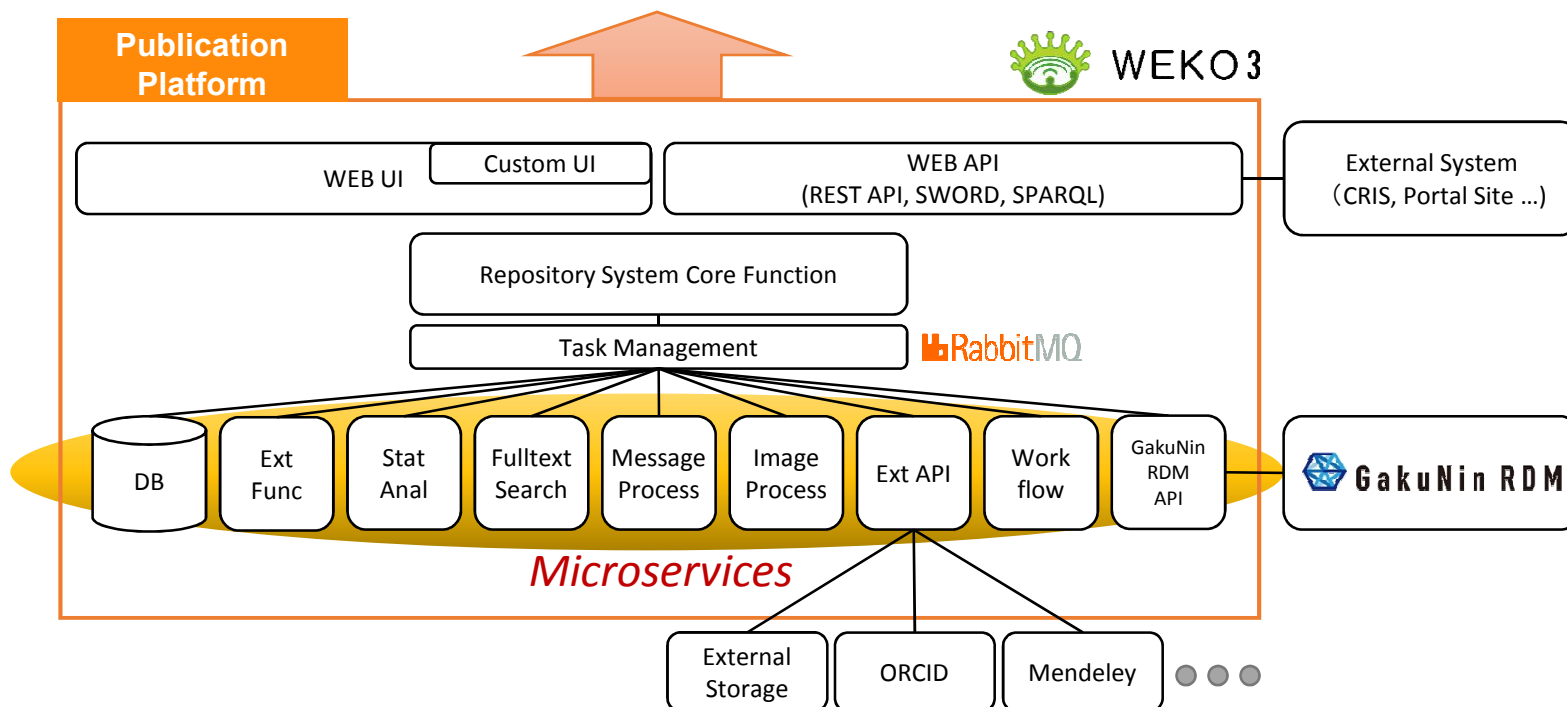
- Article, Gray Literature
- Digital Archive
- Research Data
- Educational Materials
- Etc.

Domain Repository

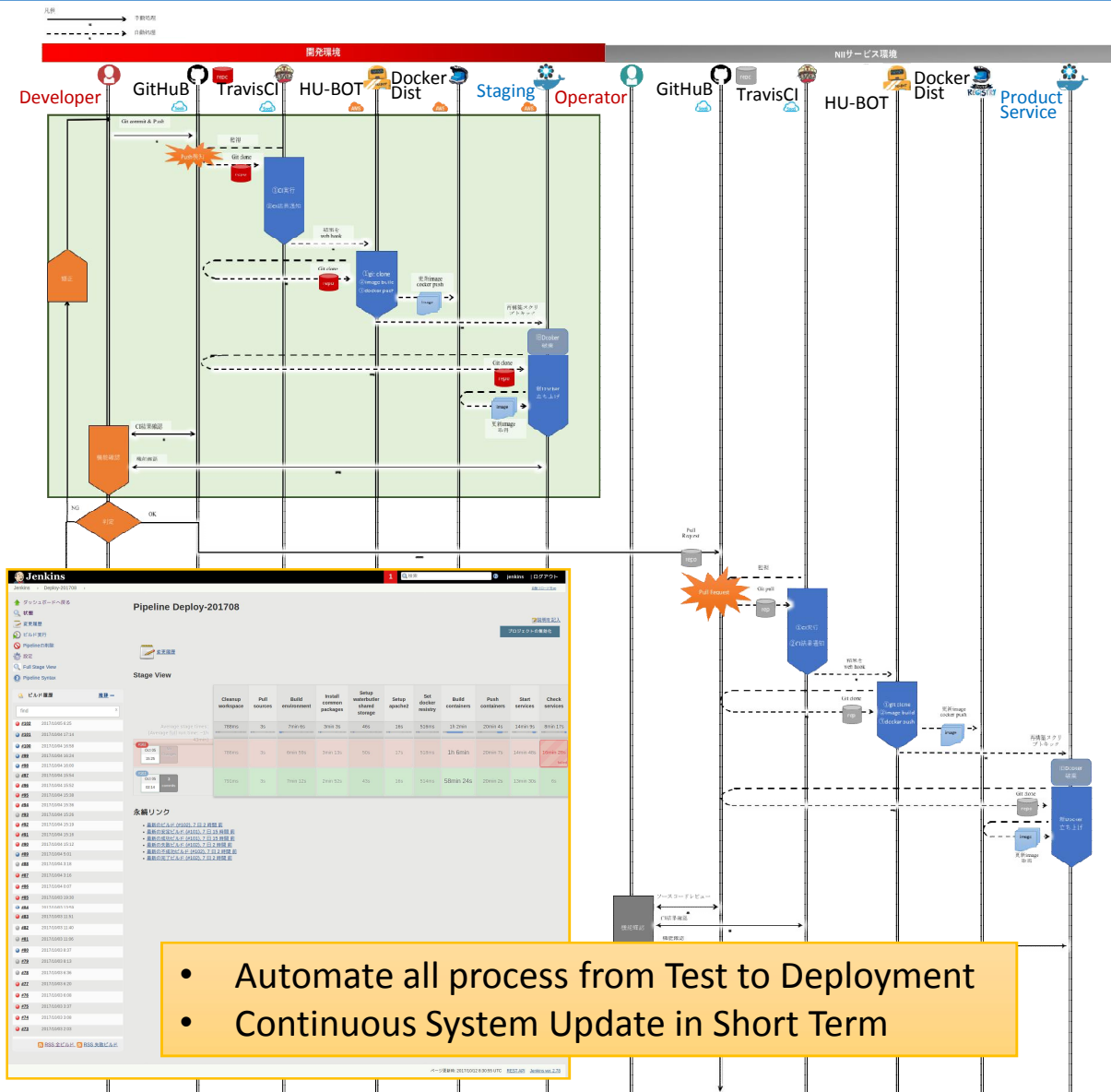
- Article, Technical Report
- Research Data, Supplemental Data

Add-Value Service

(Statistics Information, CRIS Linkage ...)

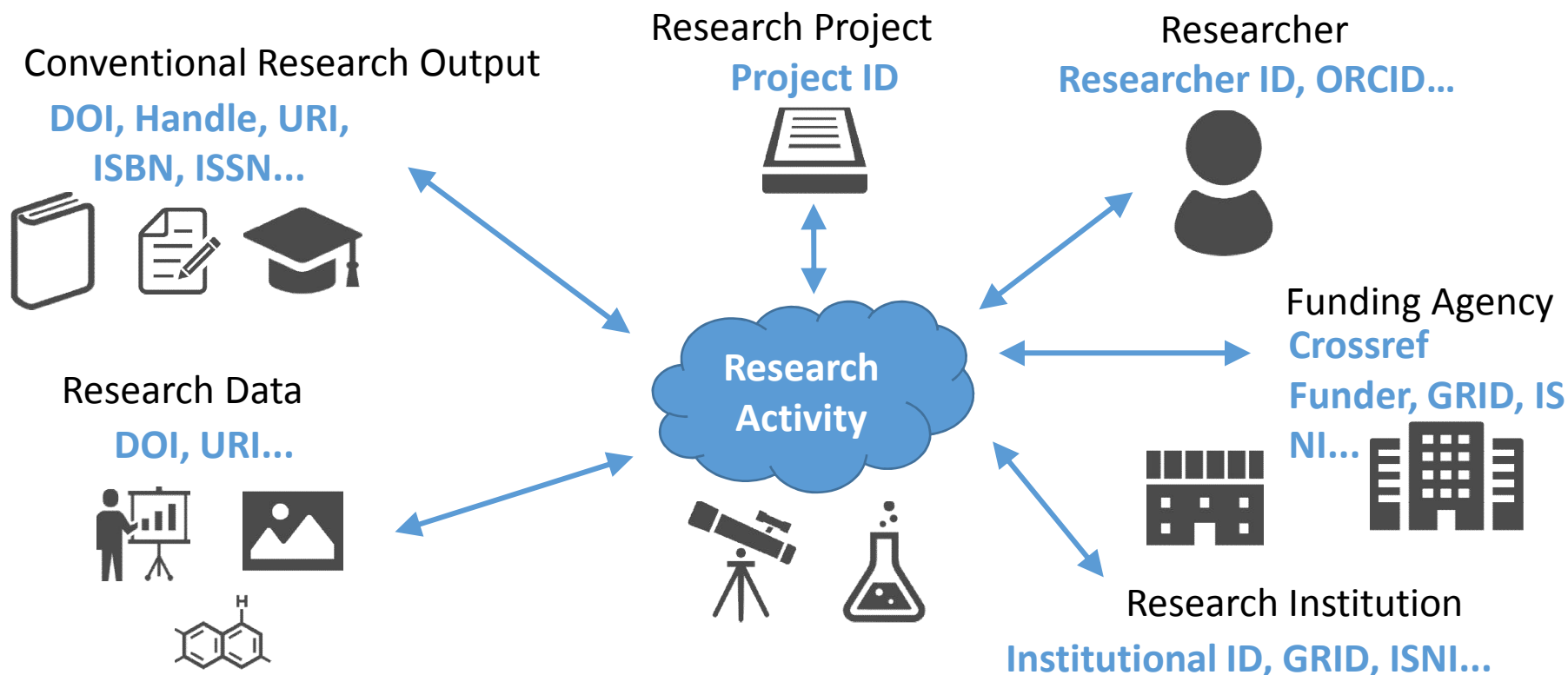


Dev/Ops Flow of RDM Platform

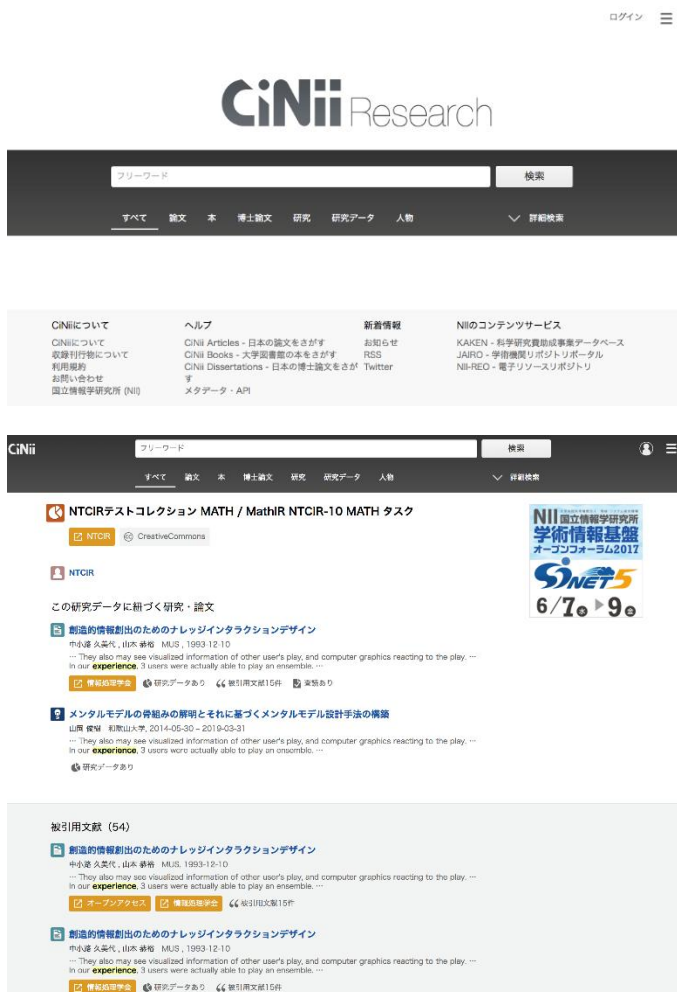


Mission of Discovery Platform

- Metadata Search for Research Data stored in Publication Platforms and Other External DBs
 - Title, Creator, Date, Format...
- Discovery based on Linked Data around Research Activity
 - Article, Research Data, Researcher, Project, Fund...



CiNii Research

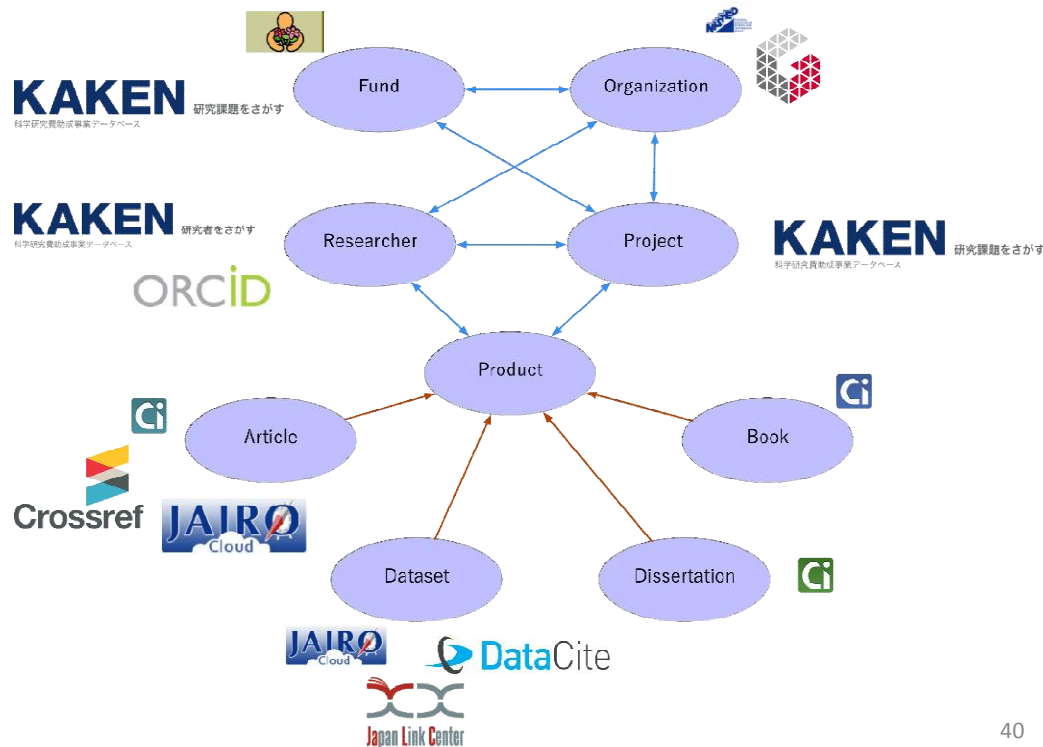


• NII Knowledge Graph

- Aggregate from various DBs
- Define Entity Links

• User Interface

- Support Discovery Experience for Research Data via Article and Project



Future Plan on Discovery Platform

FY2017 : Data Aggregation, API Specification, Initial UI Development
FY2018 : Knowledge Graph Development, UI Improvement ...

• Deployment

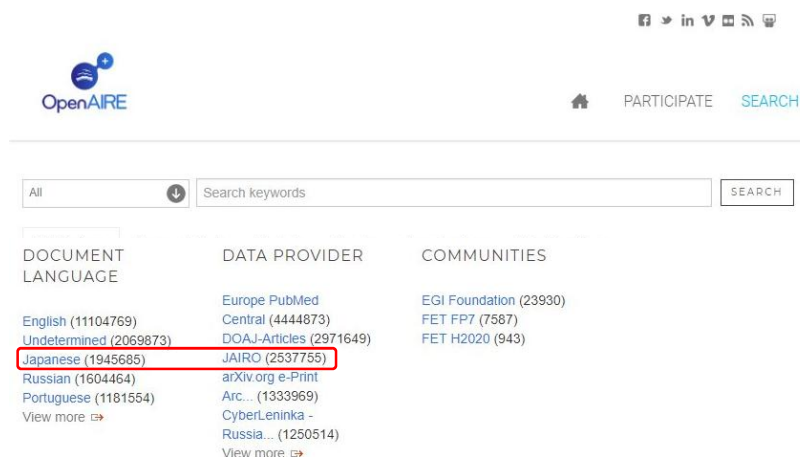
- 2019 Pilot Operation
- 2020 Production Operation

• Integration

- Domestic Domain DBs
- Service Level Integration
 - API, Backend Data

• Collaboration

- OpenAIRE
- Data Level Collaboration
 - Knowledge Graph Exchange



The screenshot shows the OpenAIRE website interface. At the top right, there are social media icons for Facebook, Twitter, LinkedIn, YouTube, and RSS. Below them is the OpenAIRE logo and navigation links for 'PARTICIPATE' and 'SEARCH'. A search bar is visible with the text 'Search keywords' and a 'SEARCH' button. Below the search bar, there are three columns of data: 'DOCUMENT LANGUAGE', 'DATA PROVIDER', and 'COMMUNITIES'. The 'DOCUMENT LANGUAGE' column lists various languages with their respective counts, and 'Japanese (1945685)' is highlighted with a red box. The 'DATA PROVIDER' column lists various providers, and 'JAIR0 (2537755)' is highlighted with a red box. The 'COMMUNITIES' column lists various communities with their respective counts.

DOCUMENT LANGUAGE	DATA PROVIDER	COMMUNITIES
English (11104769)	Europe PubMed Central (4444873)	EGI Foundation (23930)
Undetermined (2069873)	DOAJ-Articles (2971649)	FET FP7 (7587)
Japanese (1945685)	JAIR0 (2537755)	FET H2020 (943)
Russian (1604464)	arXiv.org e-Print	
Portuguese (1181554)	Arc... (1333969)	
View more ⇨	CyberLeninka - Russia... (1250514)	
	View more ⇨	

Mission of Publication Platform

- **Aa a Article Repository**

- Institutional and Funding Agency's Mandate
 - Support Different Type of Workflow in each Institution
 - Reduce Workload for Registration and Publication
- JAIRO Cloud Service
 - Be Ready to Accept All of Japanese Universities and Research Institutions

- **As a Data Repository**

- Support Stressless Deposit Evidence Data with Article
- Support Respective Demand in Different Use case
- Support Scalable Operation

How to Realize IT?



WEKO3

• Current WEKO2

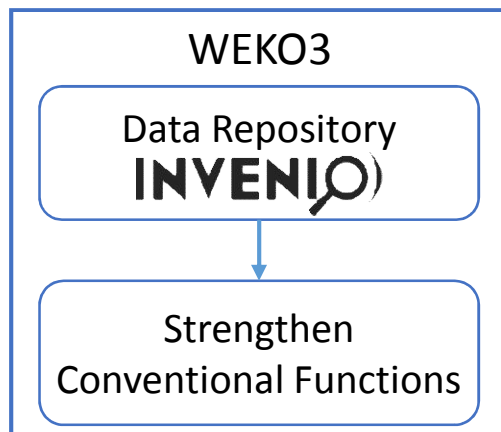
- Gradually Specialized for Journal Article Repository
- Add Functions based on Practical Requests from JAIRO Cloud Users



Research Data Handling

• Future WEKO3

- Based on Invenio3 which is originally focused as Data Repository
- Integrate WEKO2 Functions into Invenio3



Realize New Publication Platform based on sophisticated Invenio3 Architecture

(Invenio3 = our RDM Platform in Architecture)

Effective Development and Operation

Domain Use-case by Extensibility

Future Plan on Publication Platform

FY2017 : WEKO2 Functions, Basic User Interface

FY2018 : Workflow Function, User Interface, Data Related Functions

• Deployment to JC

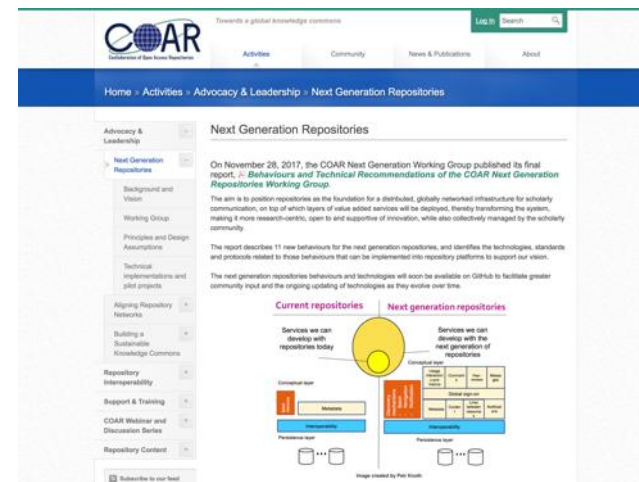
- FY2019 Pilot Operation
- FY2020 Production Operation

• Case Study

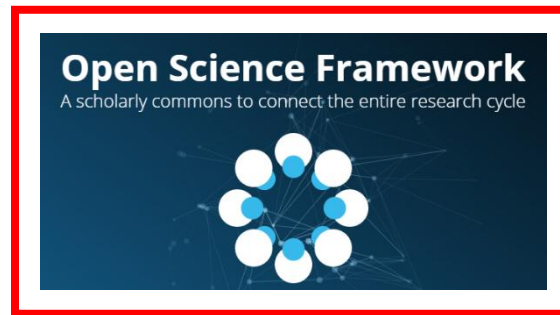
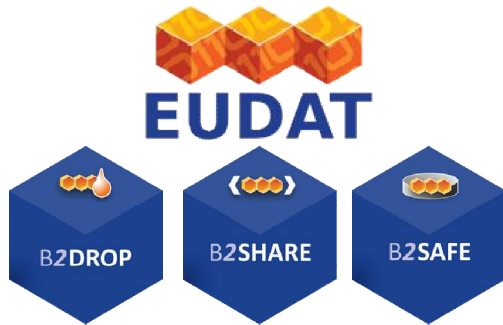
- JC Users
 - Institutional Use Case
- Research Domain
 - Requirements from each Domain

• Collaboration

- COAR (Especially NGR Fun)
- CERN & Invenio Community



How to realize our RDM Platform

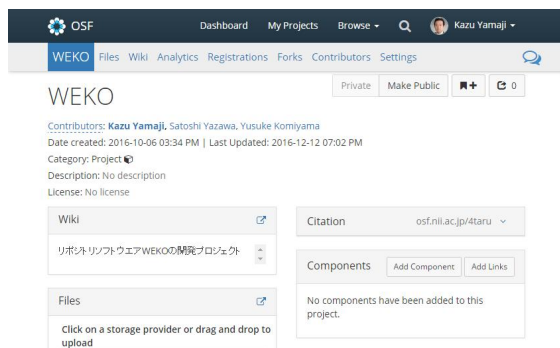


- Establish corroborative development with the Western projects
- Our Functional Requirements
 - Connection to Institutional Storage Service
 - Institutional Level Control Panel (Storage Configuration, Plugin Configuration)
 - SAML Authentication and connect with VO Platform
 - Metadata Management Functionality
 - Easy deposit function to JAIRO Cloud
 - Mash-up with other scholarly information services in Japan

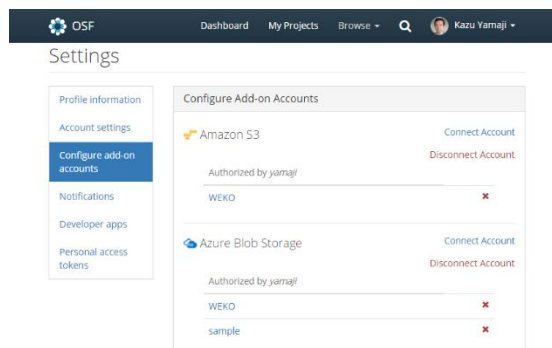
Advantage of OSF is its “Flexible” and “Extensible” architecture

New Service GakuNin RDM

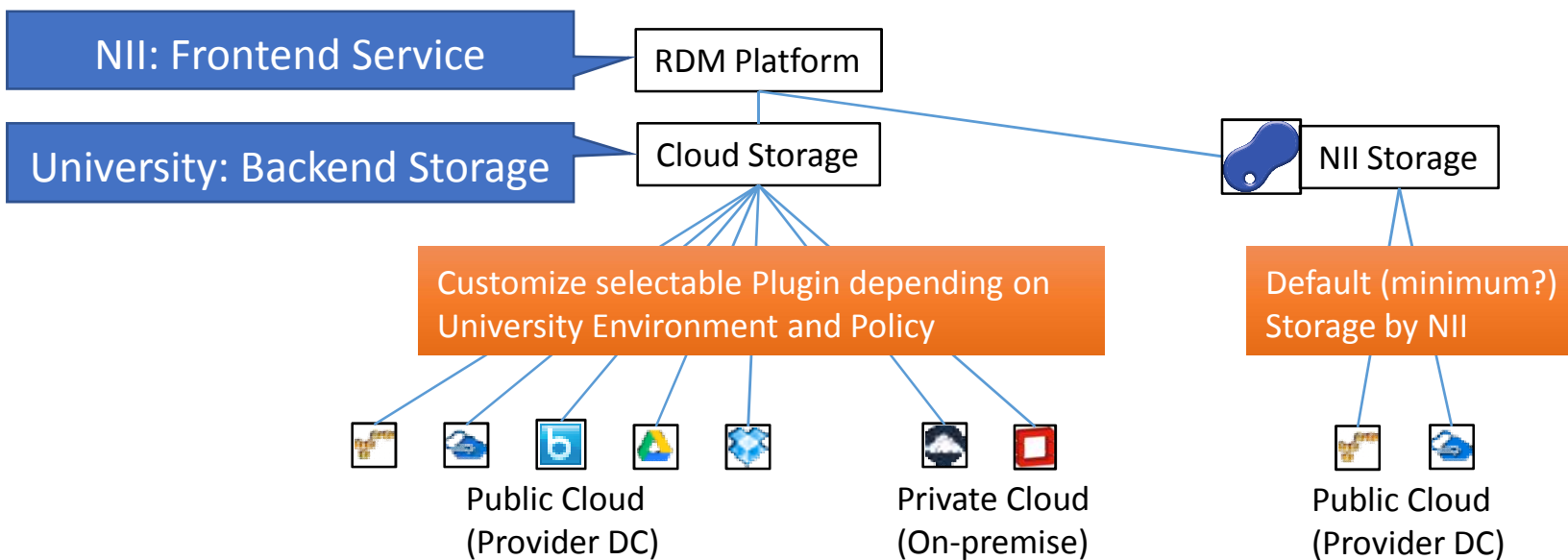
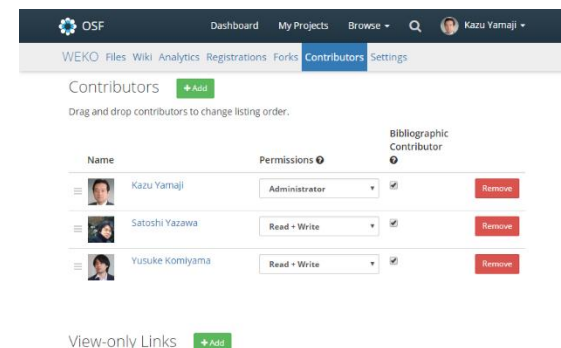
Manage Research Data by Research Project



Connect Cloud Storage from Various Plugin



Share Research Data within Collaborators authn by ID Fed



New Functions Developed in FY2017

- New Plugin
 - New External Storage
 - ownCloud, S3 Compatible Storage, OpenStack Swift
 - Integration with Publication Platform
 - Integration with Data Analysis Tool
 - JupyterHub
 - Plugin SDK
- Research Data Management
 - Research Footprint Management
 - Metadata Management
 - Workflow Management
- Institutional Management
 - Plugin Selection
 - Statistics
 - Institutional Template

Integration with Publication Platform



RDM Platform

Repository Plugin

WEKO: インデックス1

デモ用レポジトリの...
第14回大学CIOフォー...

Publication Platform

アイテムリスト

デモ用レポジトリの使い方
Yazawa Satoshi
pdf
第14回大学CIOフォーラム 講演者の方へご案内
Yamaji Kazu
pdf
第14回大学CIOフォーラム 講演者の方へご案内

→



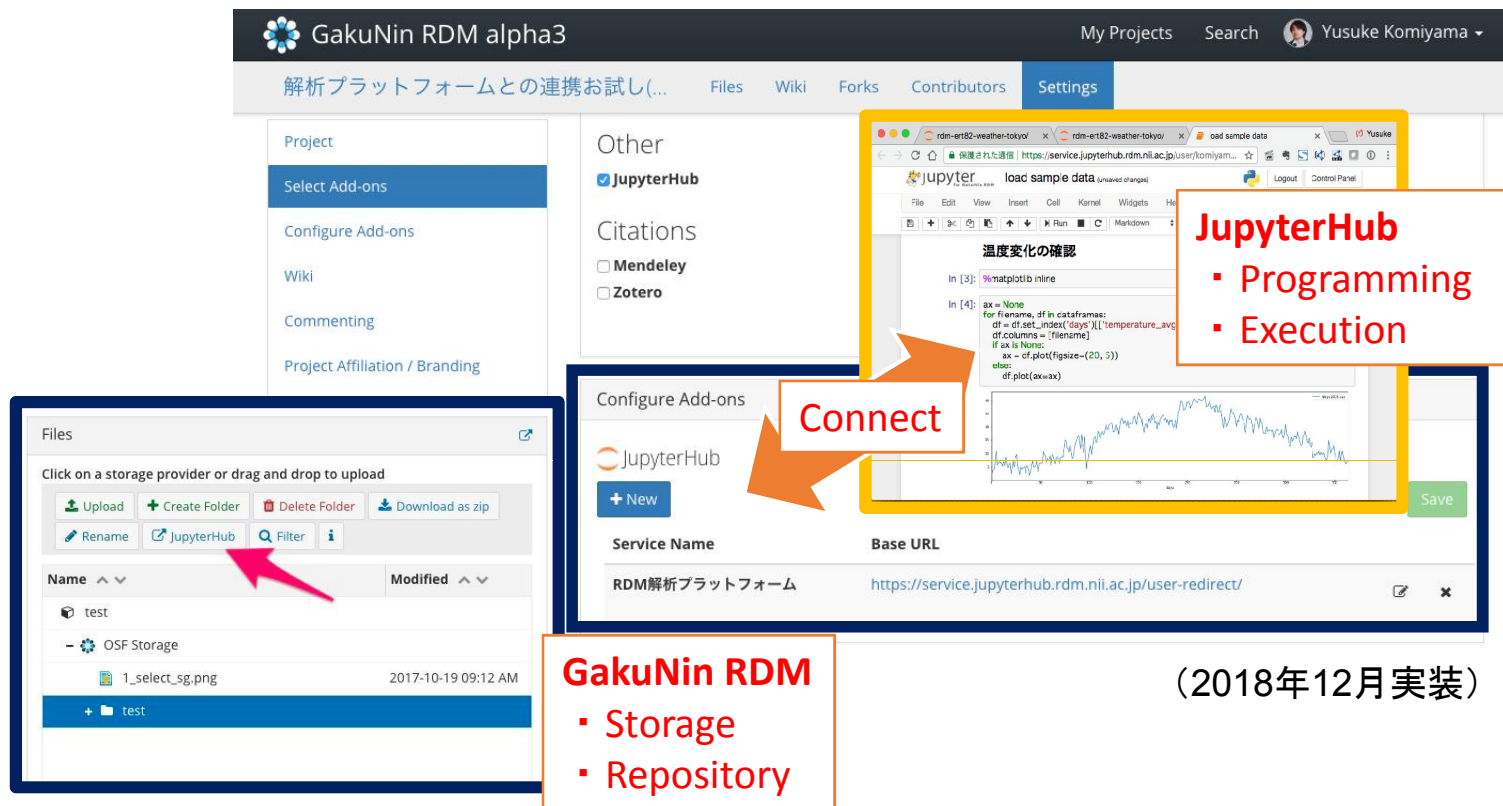
Researcher

- File Management
- Timestamp Proofing
- Long-term Preservation
- ...

Librarian, Research Office

- Metadata Management
- Data Publication
- DOI Registration
- ...

Integration with Data Analysis Tool



GakuNin RDM

- Storage
- Repository

JupyterHub

- Programming
- Execution

Connect

Configure Add-ons

JupyterHub

+ New

Service Name: RDM解析プラットフォーム

Base URL: <https://service.jupyterhub.rdm.nii.ac.jp/user-redirect/>

温度変化の確認

```
In [3]: %matplotlib inline
```

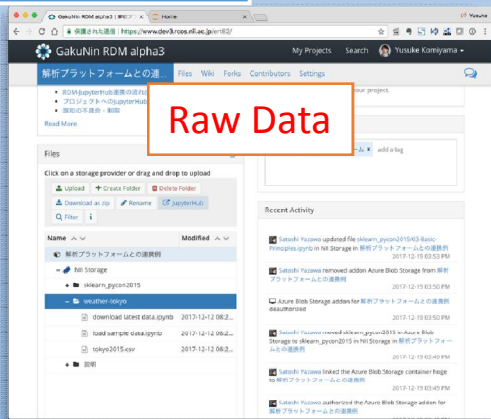
```
In [4]: ax = None
for filename, df in catframes:
    dt = dt.set_index('days')[['temperature_avg',
                                'filetime']]
    if ax is None:
        ax = cf.plot(figsize=(20, 3))
    else:
        df.plot(ax=ax)
```

(2018年12月実装)

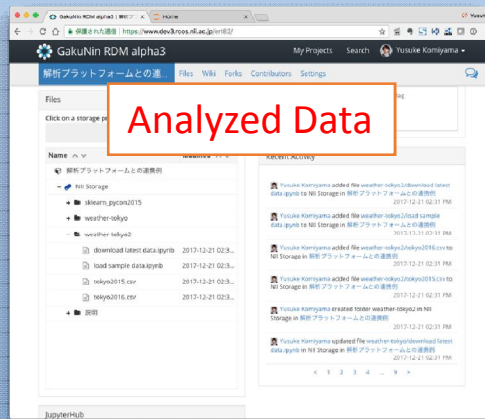
- GakuNin RDM add-on for Data Analysis Tool: JupyterHub
- Easy to Data Transfer between GakuNin RDM and JupyterHub
- GakuNin ID Federation allow uses Single Sign On between Systems

How to Use JupyterHub add-on

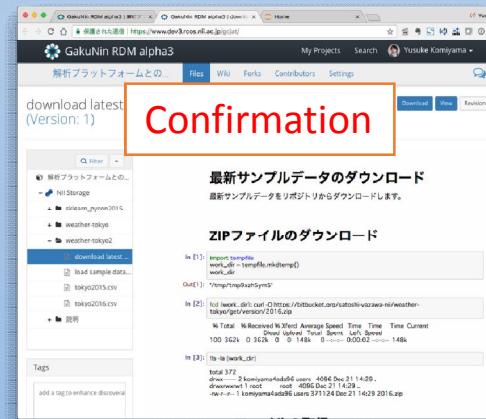
GakuNin RDM



(1) Data transfer from GakuNin RDM to JupyterHub

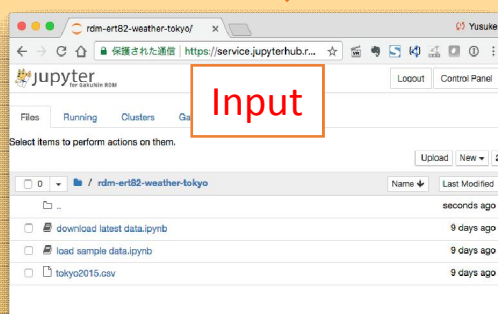


(5) Check transferred files back to GakuNin RDM

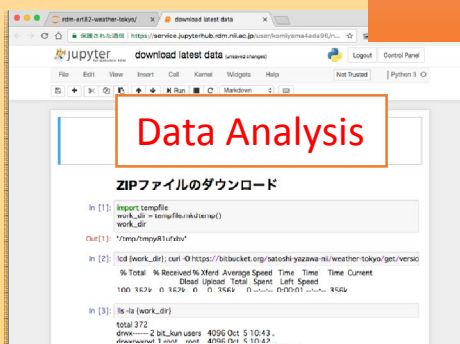


(6) GakuNin RDM can preview IPython Note Book (ipynb) file format

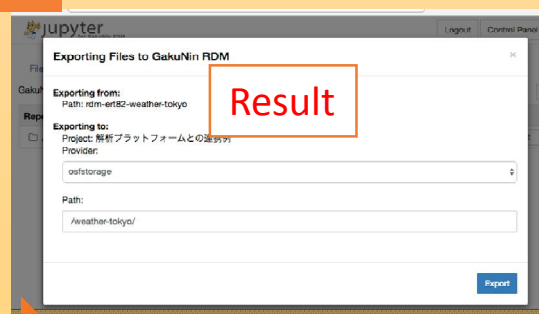
JupyterHub



(2) Check transferred files to JupyterHub

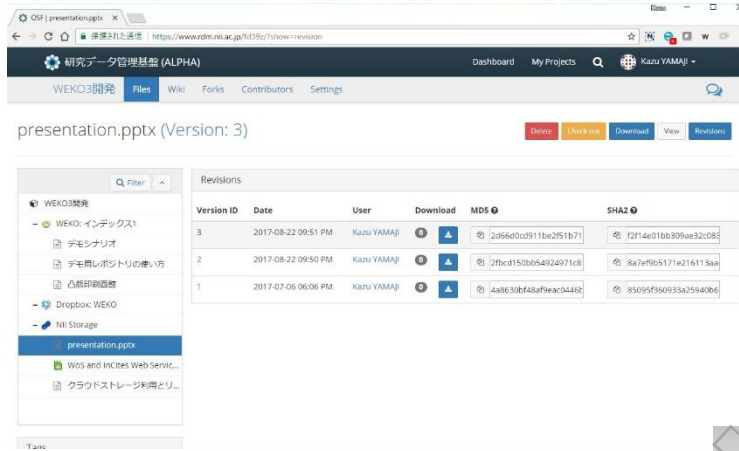


(3) Programming and Execution



(4) Result feedback from JupyterHub to GakuNin RDM

Research Footprint Management



OSF | presentation.pptx

研究データ管理基盤 (ALPHA) Dashboard My Projects Kazu YAMAJI

WEKOの開発 Files Wiki Forks Contributors Settings

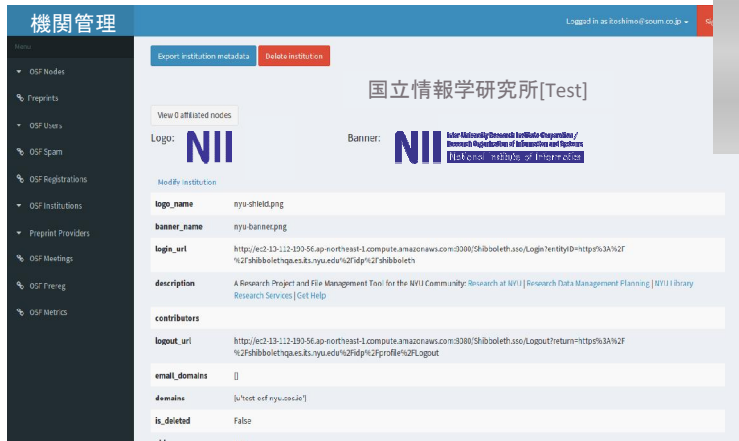
presentation.pptx (Version: 3)

Revisions

Version ID	Date	User	Download	MDS	SHA2
3	2017-08-22 09:51 PM	Kazu YAMAJI	[Download]	2d66d0c9111bc2f51b71	f2f14e01bb809ae32c08
2	2017-08-22 09:50 PM	Kazu YAMAJI	[Download]	2fbcd152bb64924971c8	3a7e79b5171e216113aa
1	2017-07-06 06:06 PM	Kazu YAMAJI	[Download]	4a8630bf48af9ea34482	85d95f56933a25940b6



Time Stamping Authority



機関管理

Export Institution metadata Delete Institution

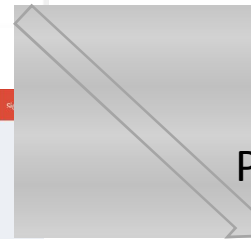
国立情報学研究所[Test]

View 0 affiliated nodes

Logo: [NII] Banner: [NII Research Operations / Research Repository of Informatics and Informatics]

Modify institution

- logo_name: nyy-shield.png
- banner_name: nyy-banner.png
- logo_url: https://ec2-13-112-139-56.ap-northeast-1.compute.amazonaws.com:3380/Shibboleth.sso/Login?entityID=http%3A%2F%2Fshibboleth.jp.es.kyuu.edu%2Fidp%2Fshibboleth
- description: A Research Project and File Management Tool for the NII Community: Research at NII | Research Data Management Planning | NII Library Research Services | Get Help
- contributors: []
- logout_url: http://ec2-13-112-139-56.ap-northeast-1.compute.amazonaws.com:3380/Shibboleth.sso/Logout?return=http%3A%2F%2Fshibboleth.jp.es.kyuu.edu%2Fidp%2Fprofile%2FLogout
- email_domains: []
- is_deleted: False



Project Log

Institutional Log

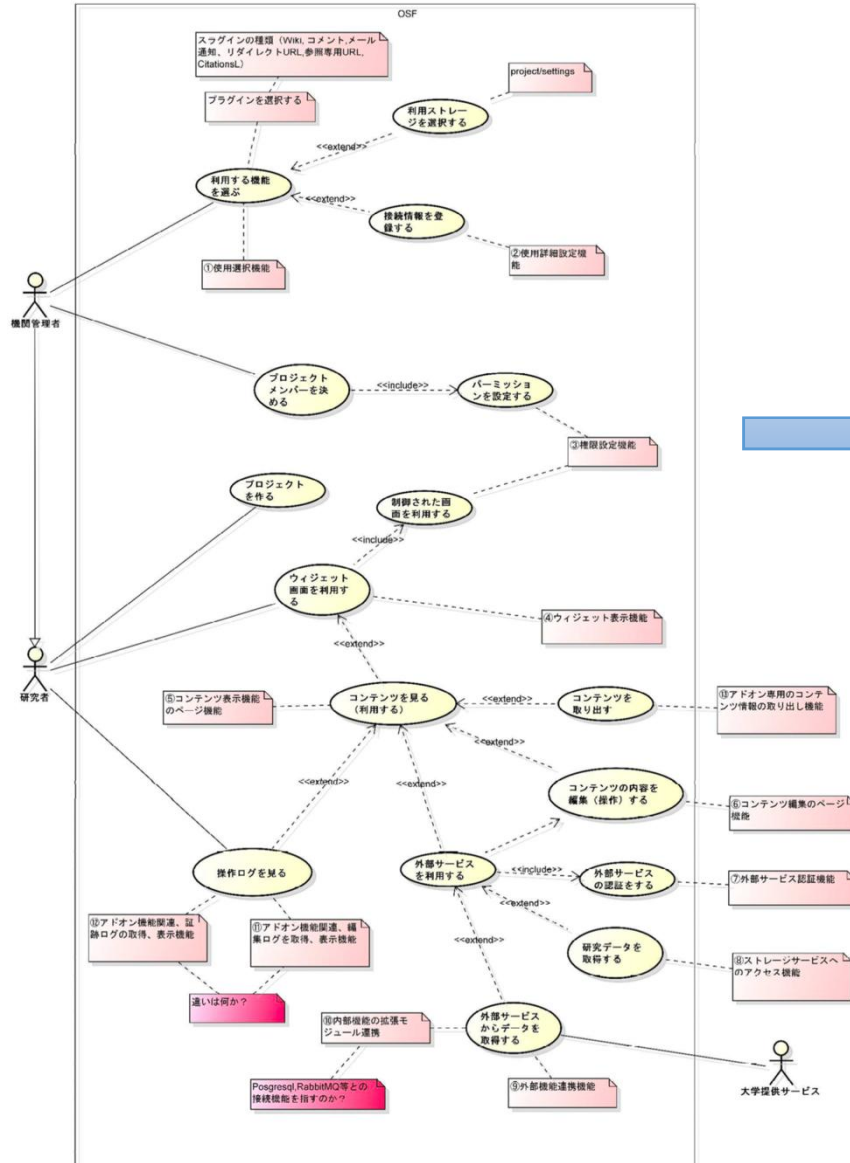


```
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```

XML

Time Stamp 2017.11

Plugin Software Development Kit



Why

- Default Functions = Common Use Case
- Respective Demand in Institutions

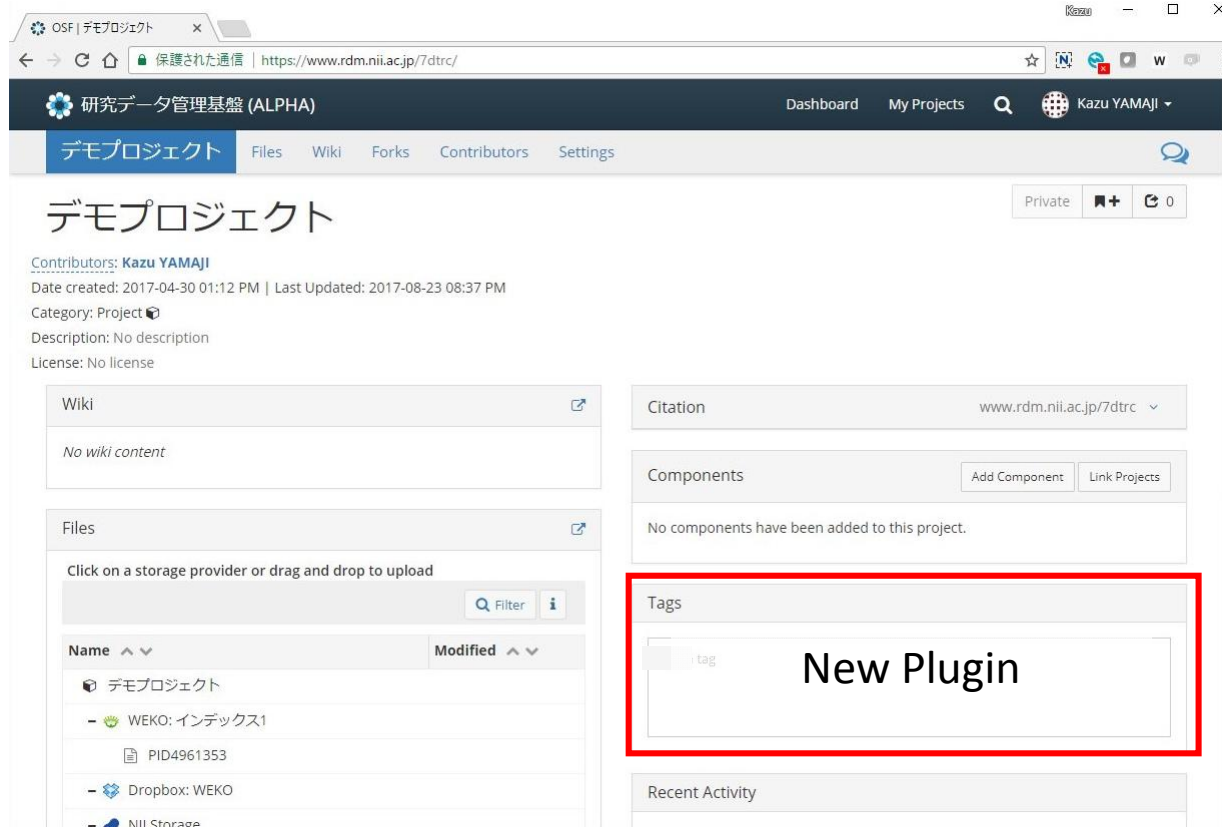


Provide GakuNin Plugin SDK

Libraries

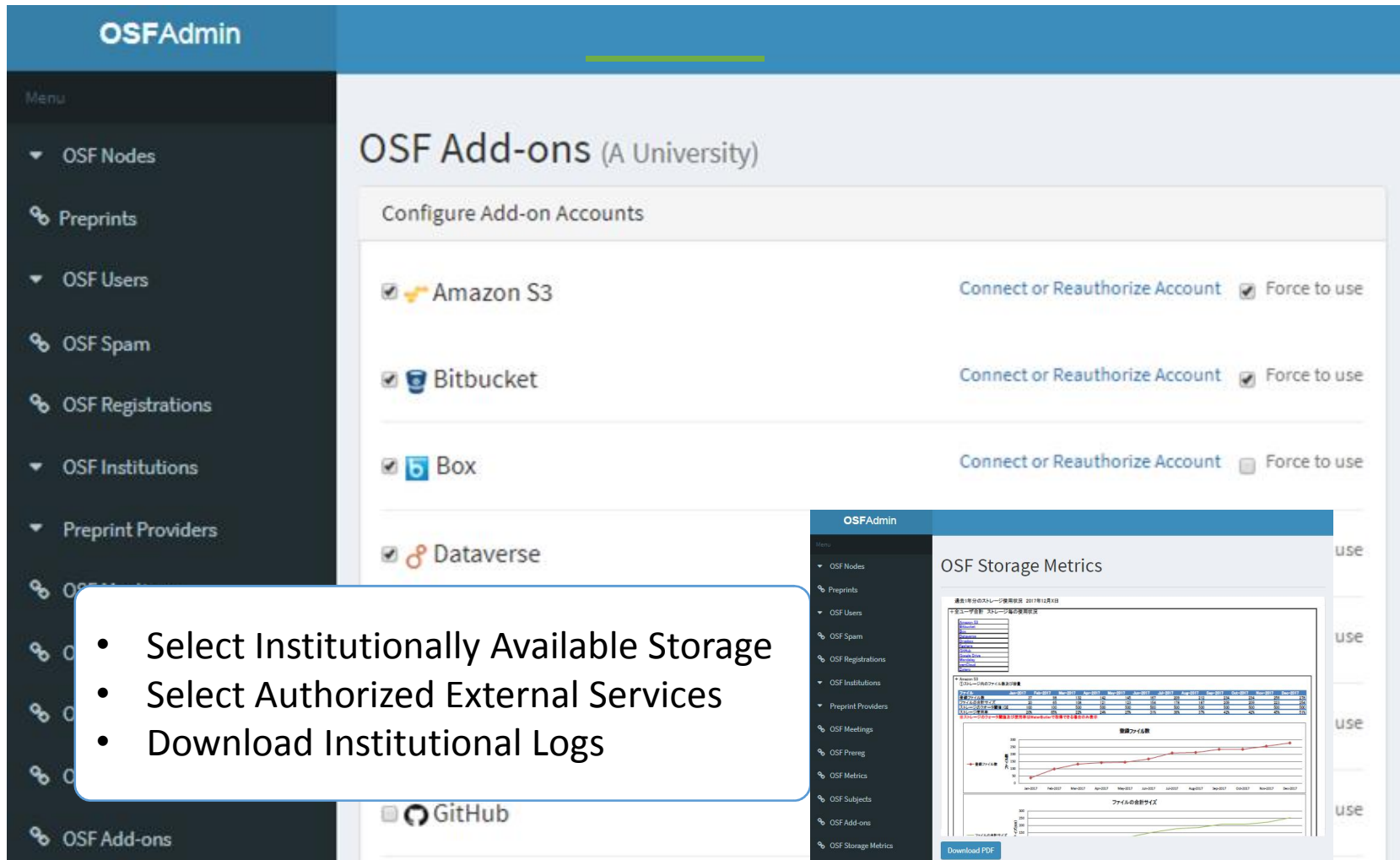
- Available Function Selection
- Storage Selection
- Token Registration
- Project Member Definition
- Permission Definition
- Project Creation
- Widget Screen Function
- Controlled Screen Function
- Content View
- Content Export
- Content Edit
- Log View
- External Service Selection
- External Service Authentication
- External Service Data Aggregation

Screen Image with New Plugin



- Develop New Plugins in Cooperate with Universities and Research Institutes
- Create Developer's Community of GakuNin RDM

Institutional Management Function



OSFAdmin

Menu

- OSF Nodes
- Preprints
- OSF Users
- OSF Spam
- OSF Registrations
- OSF Institutions
- Preprint Providers
- OSF Add-ons

OSF Add-ons (A University)

Configure Add-on Accounts

- Amazon S3 [Connect or Reauthorize Account](#) Force to use
- Bitbucket [Connect or Reauthorize Account](#) Force to use
- Box [Connect or Reauthorize Account](#) Force to use
- Dataverse [Connect or Reauthorize Account](#) Force to use

Callout Box:

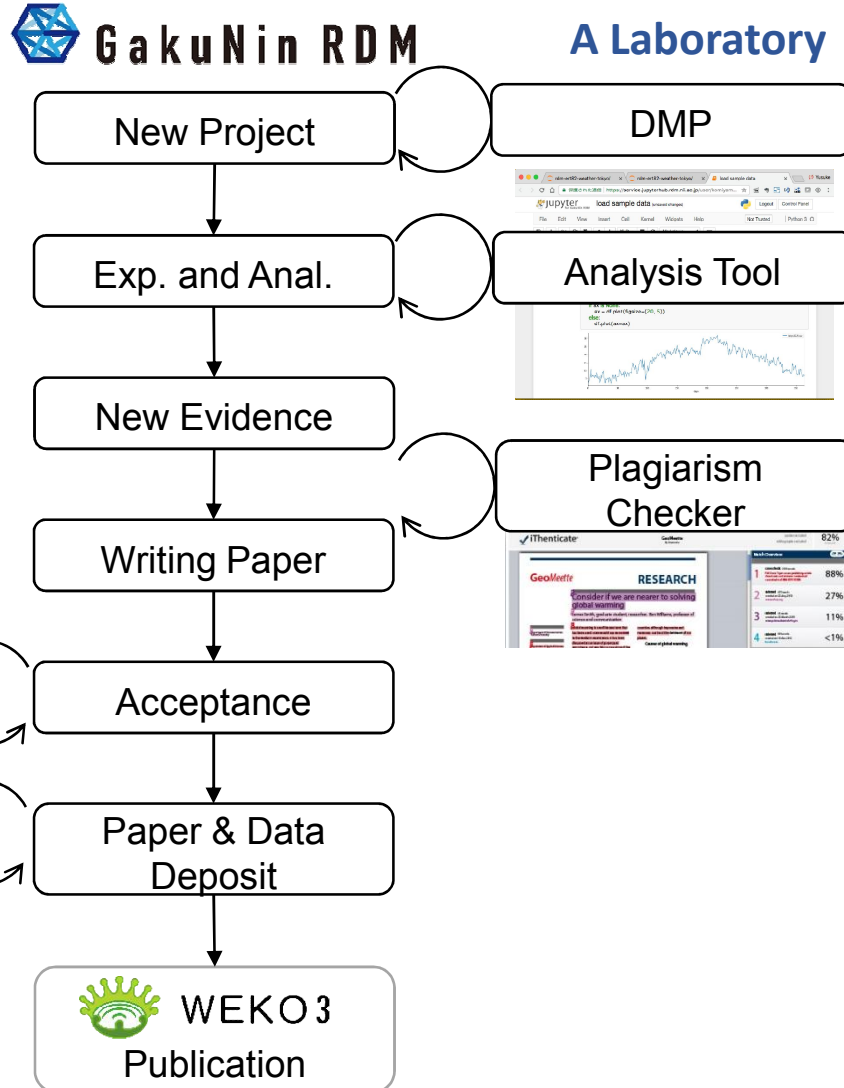
- Select Institutionally Available Storage
- Select Authorized External Services
- Download Institutional Logs

OSF Storage Metrics

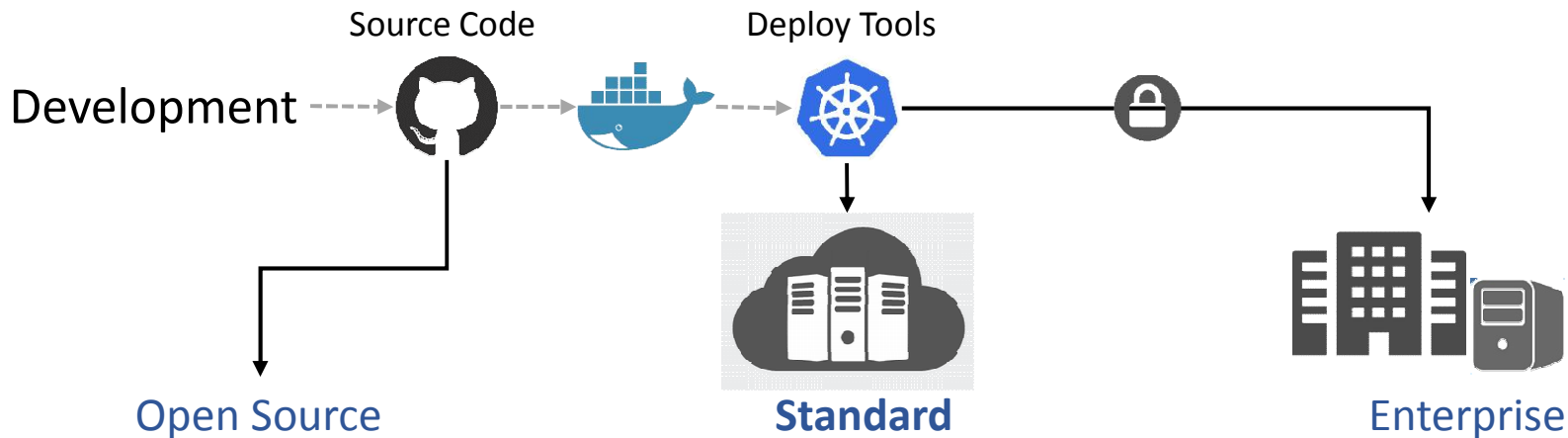
Download PDF

Use Case of GakuNin RDM in Institution

GakuNin RDM is now developing function which can customize available plugin and workflow depending on respective requirement in each institution



How to deploy GakuNin RDM



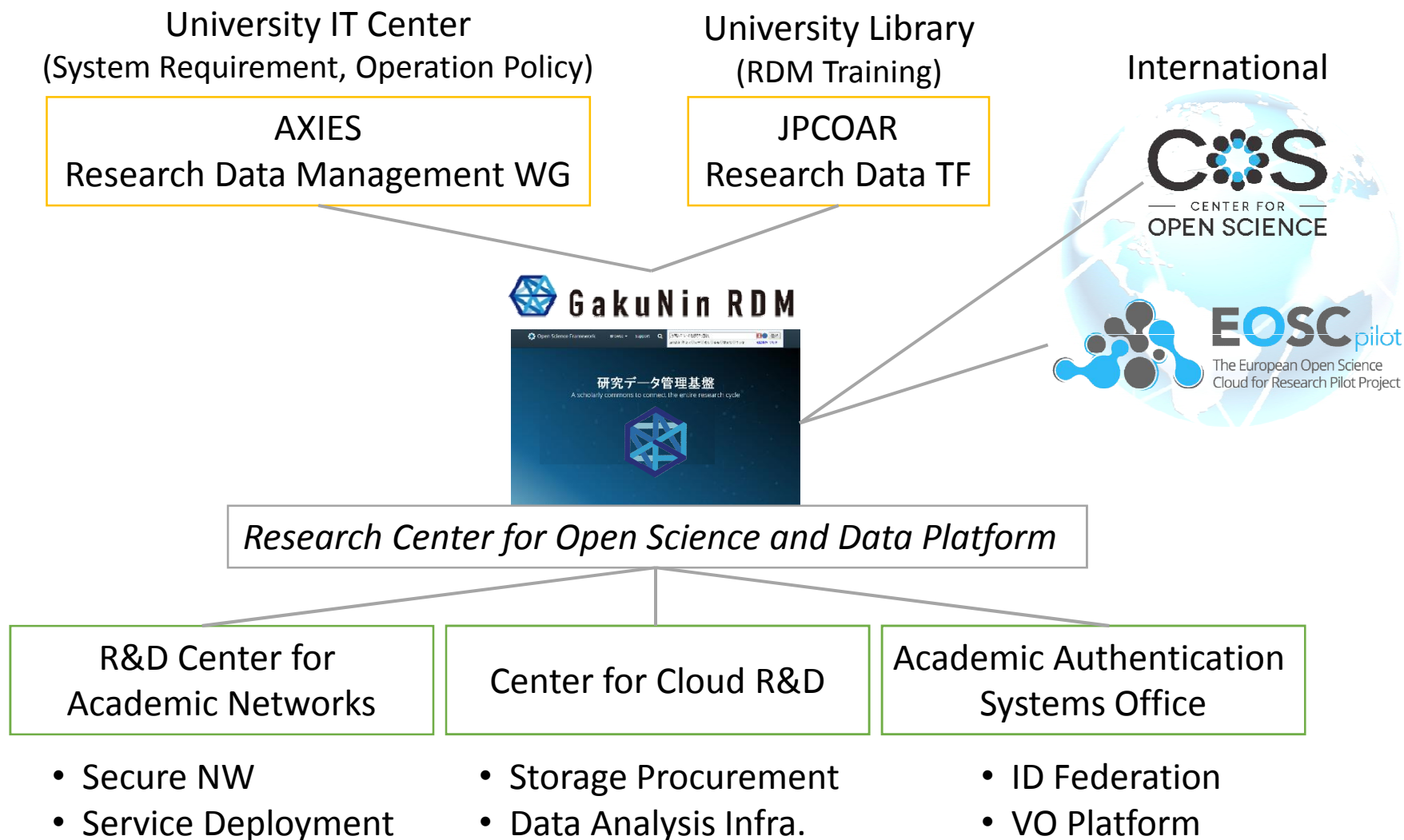
- For institution who want to operate On-Premise manner GakuNin RDM
- Provide source code and documents
- Share operation knowledge

- SaaS service from NII by using public cloud
- Enable to use institutional storage by connecting GakuNin RDM
- GakuNin authentication

- For institution who cannot use NII's SaaS service due to institutional policy
- Provide deploy code or direct deploy from NII
- Use Institutional IdP

Considering Several Option according to the Institutional Policies

Internal and External Collaboration



Collaboration with Research Institutes

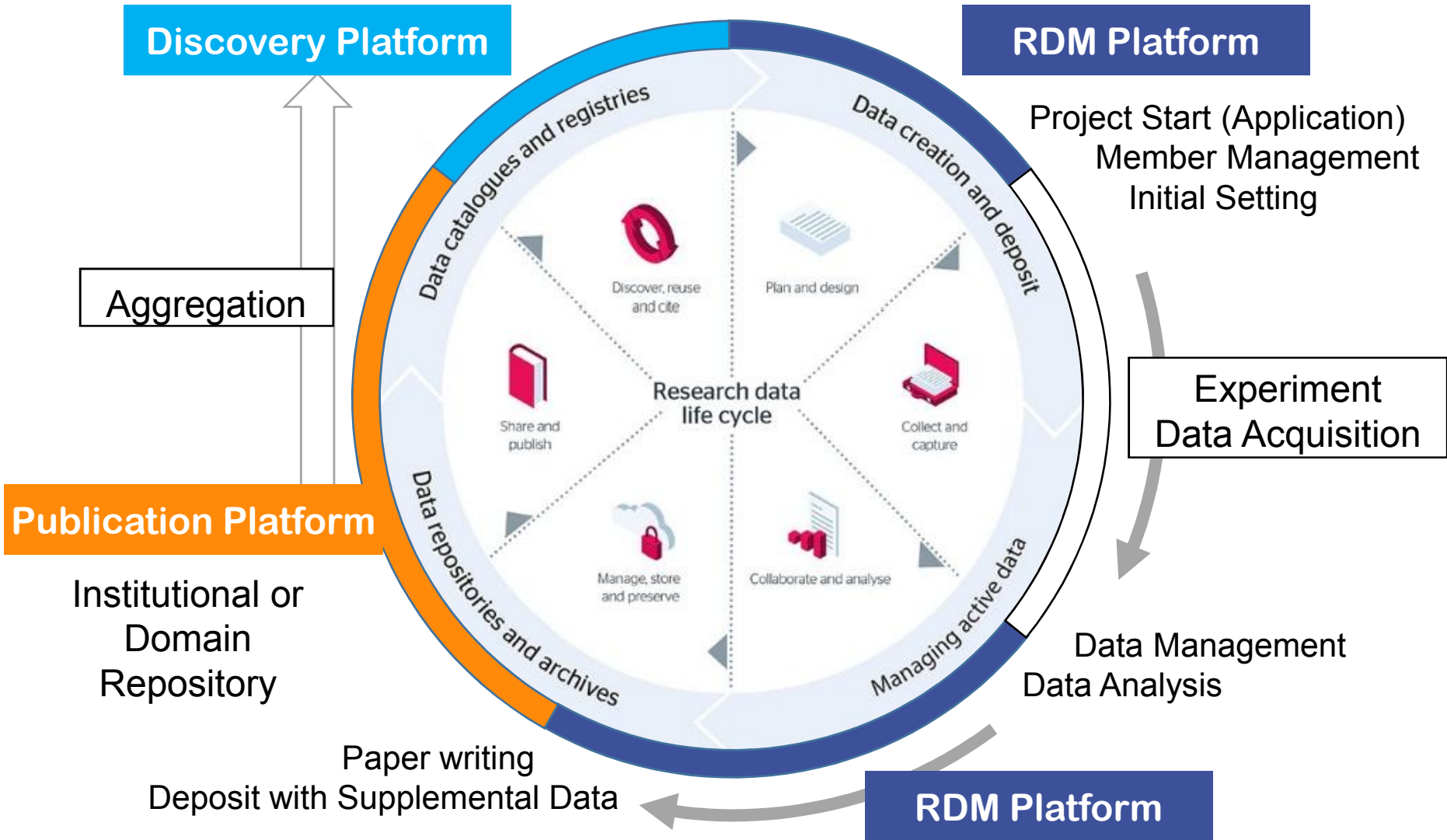
- *Material Science*
 - NIMS, Data Platform Center
- *Aerospace Science*
 - JAXA, Security and Information Systems Department
 - The University of Aizu,
Research Center for Advanced Information Science and Technology
- *Astronomy*
 - National Astronomical Observatory of Japan,
Astronomy Data Center
- *Social Science*
 - Rikkyo University, Center for Statistics and Information
- *Medical Sciences*
 - The University of Tokyo, The Institute of Medical Science
- *Agriculture*
 - NARO, Institute for Agro-Environmental Sciences






Experimental Plan with Universities and Research Institutions

- **αTesting#1 : March 2017**
Object : Obtain feedback from IT Center in Large Scale Institutions
Participants : Hokkaido University, Tohoku University, Kyoto University, Osaka University, Kyushu University, Nagoya Institute of Technology, National Institute for Environmental Studies.
- **αTesting#2 : October 2017 (on-going)**
Object : Obtain feedback from Laboratory Use Case
Participants : The University of Tokyo, Nagoya University, Tsukuba University, Keio University, Aizu University, Fukushima Medical University, RIKEN, JAXA
- **βTesting#1 : May 2018**
Object : Middle Scale Experiment by adopting New Functions developed in 2017
- **Institutional Feasibility Study : July- 2018**
Object : Obtain feedback from Institutional and Domain Specific Use Case

Relationship between Research Data Infrastructure and Research Workflow



Deployment Plan

- FY2016
 - Initial Development
 - α Testing with major Universities
- FY2017
 - System Development   
 - Small Scale Feasibility Study (β Testing)
- FY2018
 - Large Scale Feasibility Study
- FY2019
 - Pilot Operation
- FY2020
 - Production Operation

RCOS
yamaji@nii.ac.jp