

機関リポジトリの現状と展望 研究データへの対応の視点

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CODATAジャパン・データサイテーション・ワークショップ, 2015年10月29日

国立情報学研究所では、ソフトウェアWEKOをベースに
機関リポジトリのシステム環境を構築・提供しています。

New Directions for Academic Infrastructure

SINET5 will start in April 2016

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

Flow Analysis



VPN

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



Roles of NII in Repository Promotion

1. Funding (2005-2012)
 - ▶ For start-up
 - ▶ Research and development
 - ▶ Support for IR community activities
2. Adding value service (2005-)
 - ▶ Portal services of repositories
 - ▶ Statistics and evaluation
 - ▶ Support tools
3. Currently ongoing activity (2012-)
 - ▶ IR cloud service: JAIRO Cloud
 - ▶ Organizing the IR promotion committee

History of Open Access Activity in Japan

- 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

284 repositories in Japan

About JAIRO Cloud

▶ Situation in 2011

- ▶ Almost all national universities have their own IRs, while the implementation rate of other public/private universities hovers at 20%
- ▶ The universities which have already owned their IRs were struggling with how to update and maintain the system in the sustainable manner.

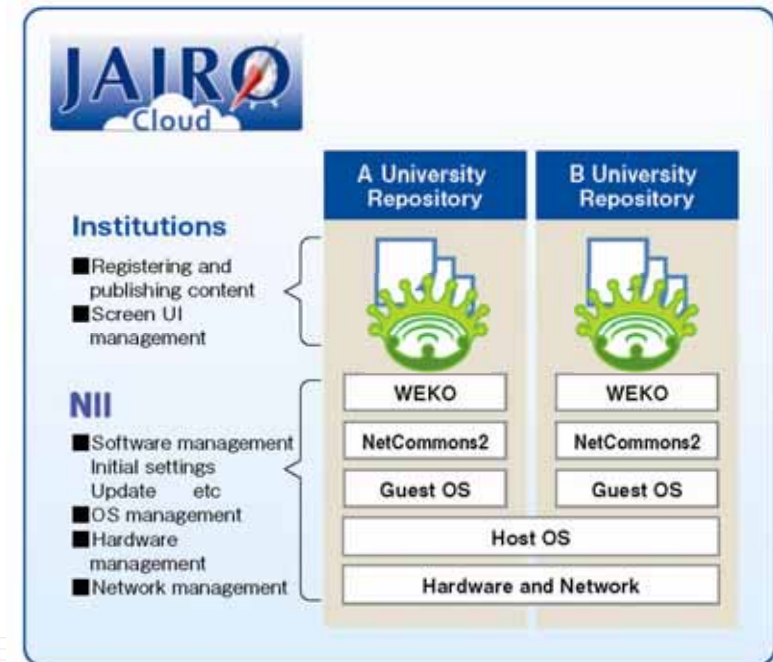


▶ Repository Cloud Service

- ▶ by using our repository software: WEKO

▶ Production Operation in 2012

- ▶ 2012: Only for new institution
- ▶ 2014: Accept migration from existing system



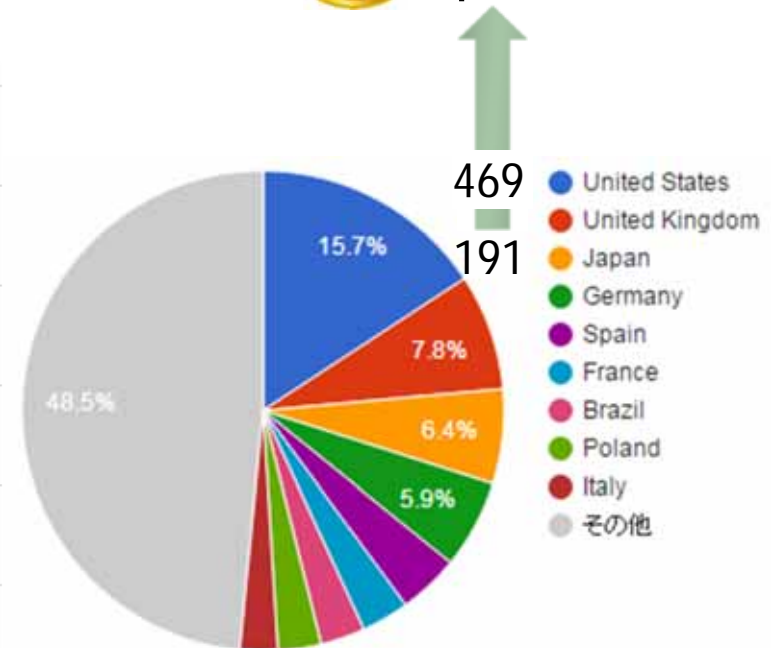
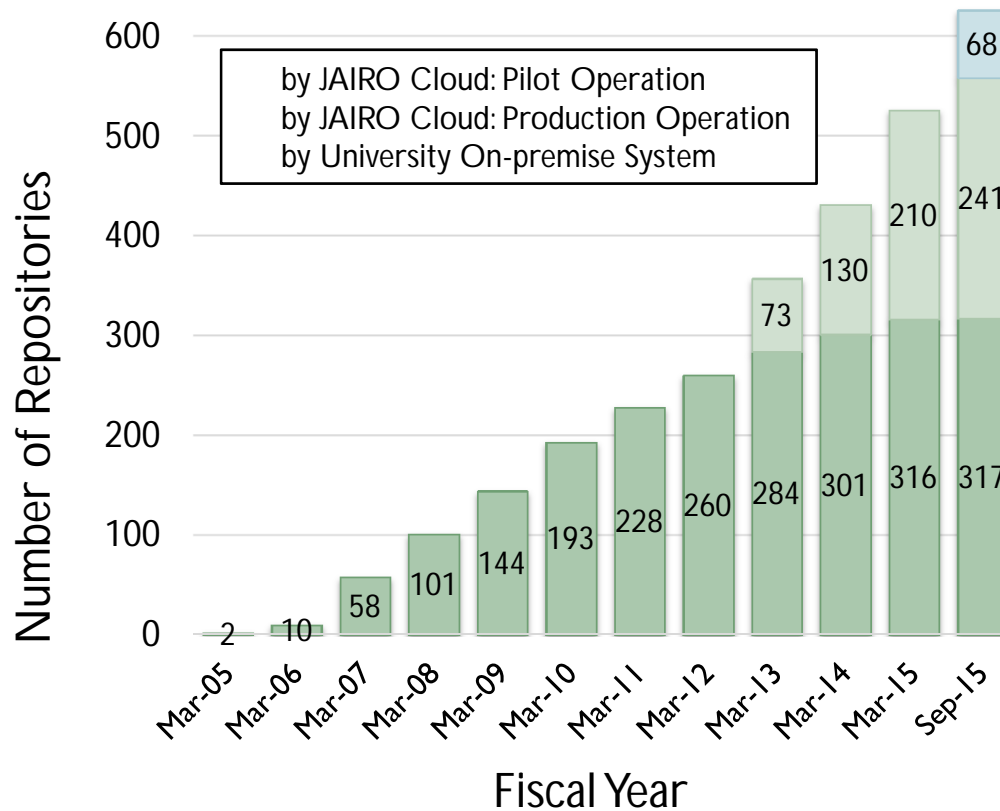
Progress in JAIRO Cloud

626 IRs

Proportion of Repositories by Country



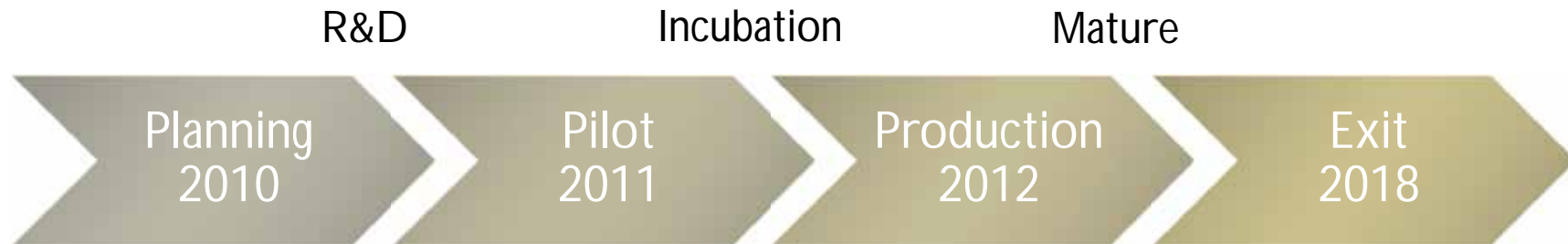
Japan



Total = 2988 repositories

OpenDOAR - 27-Oct-2015

Strategy of JAIRO Cloud



- ▶ Targeting on 400 Institution until 2018
 - ▶ Current growth in 2015 : 8 institutions/month
 - ▶ Many migration requests from their existing on-site repository system
- ▶ Toward the Exit in 2018
 - ▶ 2015: Define charging model and announce to universities
 - ▶ 2017: Start charging and create a new operational framework
 - ▶ 2018: Full business model

Build up the exit model of NII service

- ▶ New R&D: JC for Data Repository

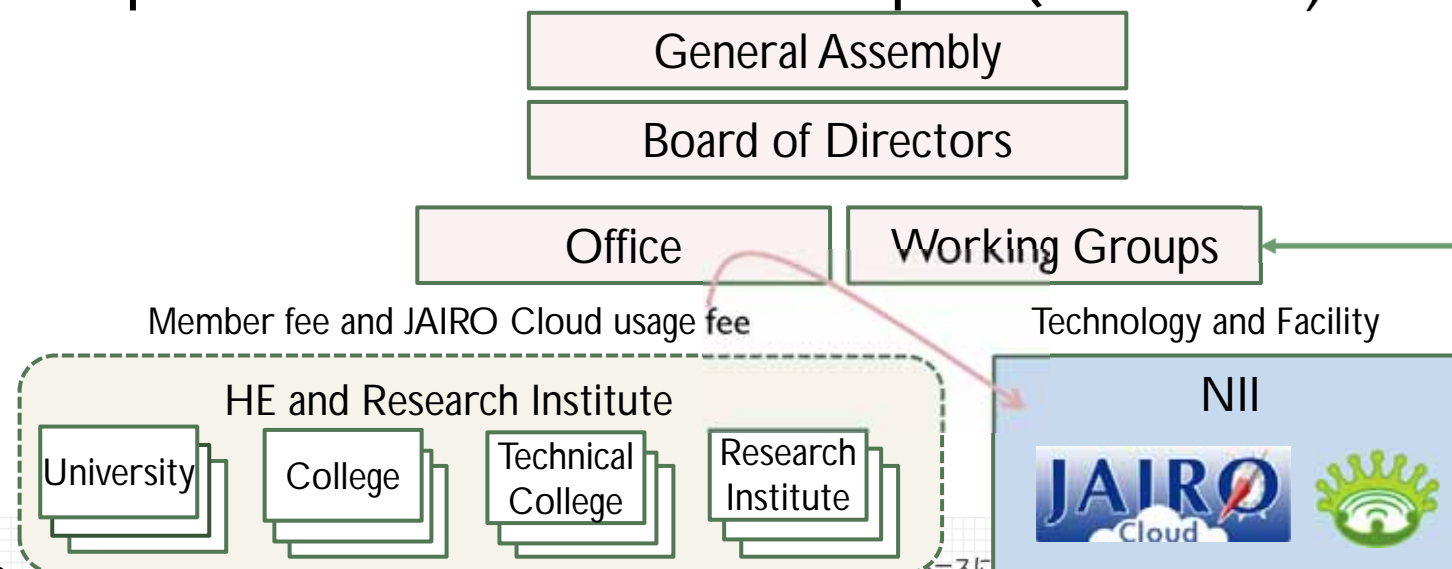
Community Establishment around JAIRO Cloud

- ▶ Institutional Repositories Promotion Committee
 - Area1 WG: Development and implementation of OA policies
 - Area2 WG: Upgrading of infrastructure for future IRs
 - Area3 WG: Content enhancement and utilization
 - Area4 WG: Training and human resource development



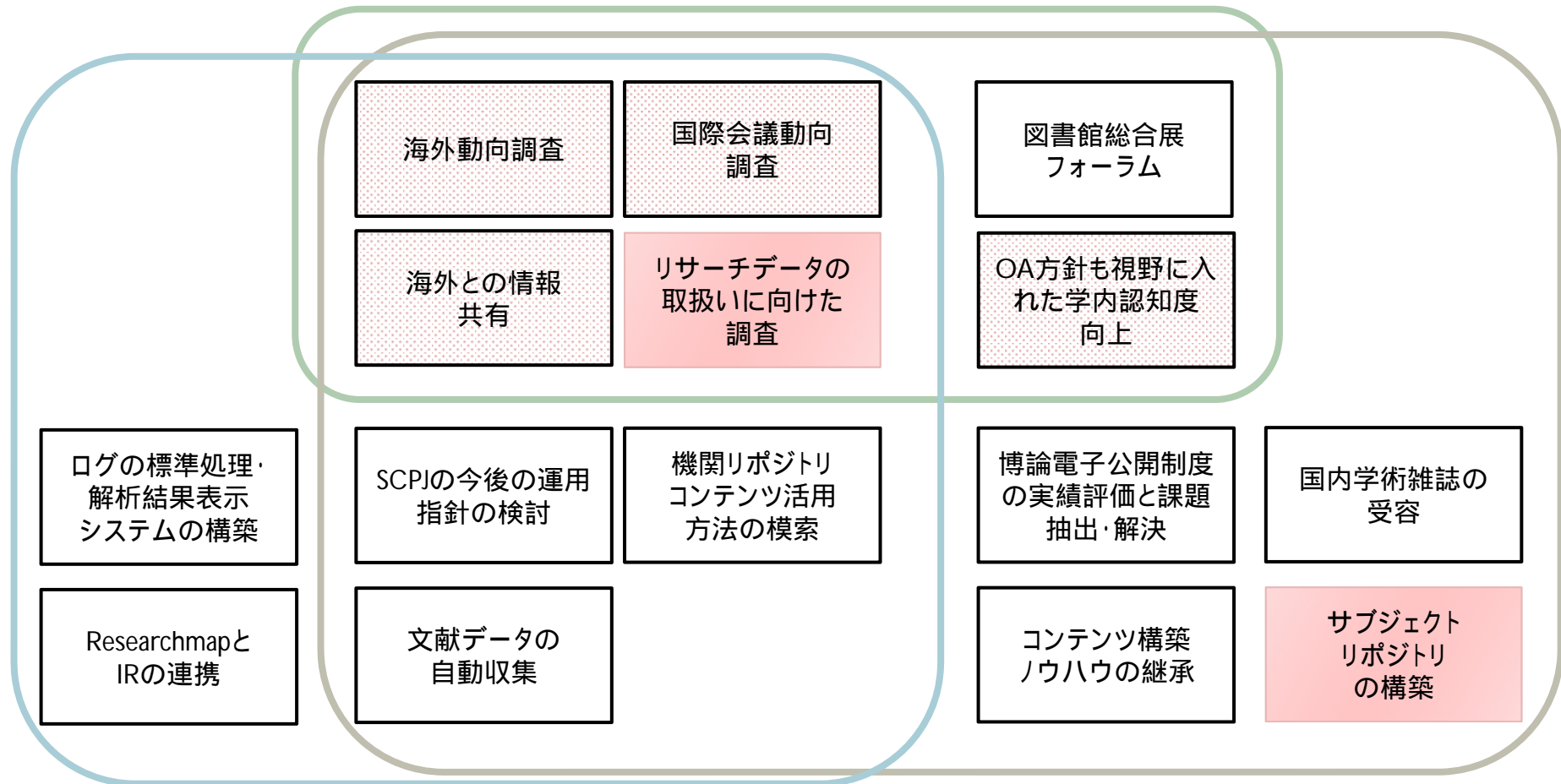
From 2016-

- ▶ Open Access Association Japan (tentative)



機関リポジトリ推進委員会：各WG活動内容

国際WG



技術WG

コンテンツWG

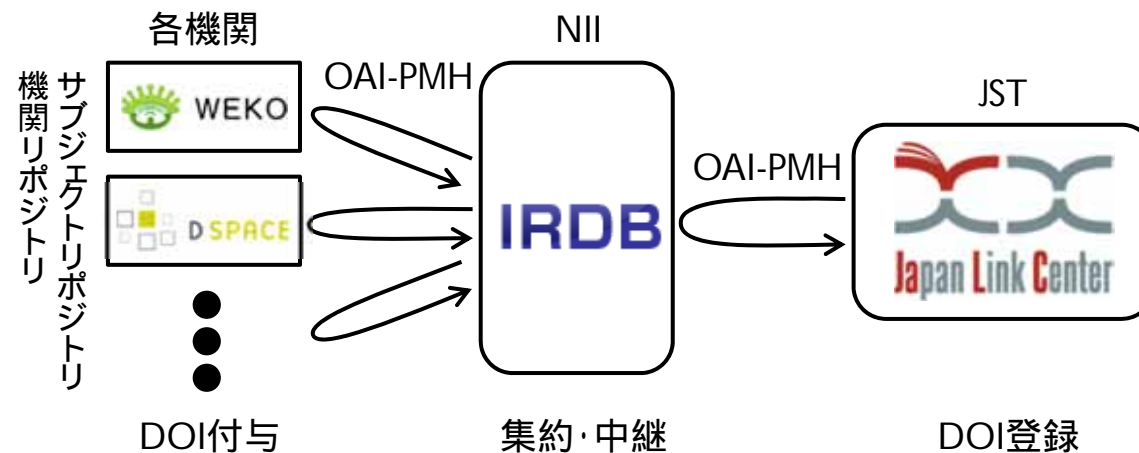
機関リポジトリ推進委員会での リサーチデータの取り扱いに向けた活動

- ▶ Research Data Management **ポリシー**に関する検討
(**ポリシー**)
 - ▶ 海外の大学等のポリシーから何をどう管理すべきかを検討
 - ▶ システム・人材育成的な要件として反映
- ▶ データリポジトリシステムに関する評価
(**システム**)
 - ▶ 主要システムから必要な機能要件を導出
 - ▶ JAIRO Cloudの改良・次世代システムへの反映
- ▶ リポジトリへのデータ登録試行実験
(**ポリシー、システム、人材育成**)
 - ▶ 論文の補遺的なデータ(サプリメンタルデータ)から試行
 - ▶ ワークフローの確認
 - ▶ 必要となるシステム要件の洗い出し

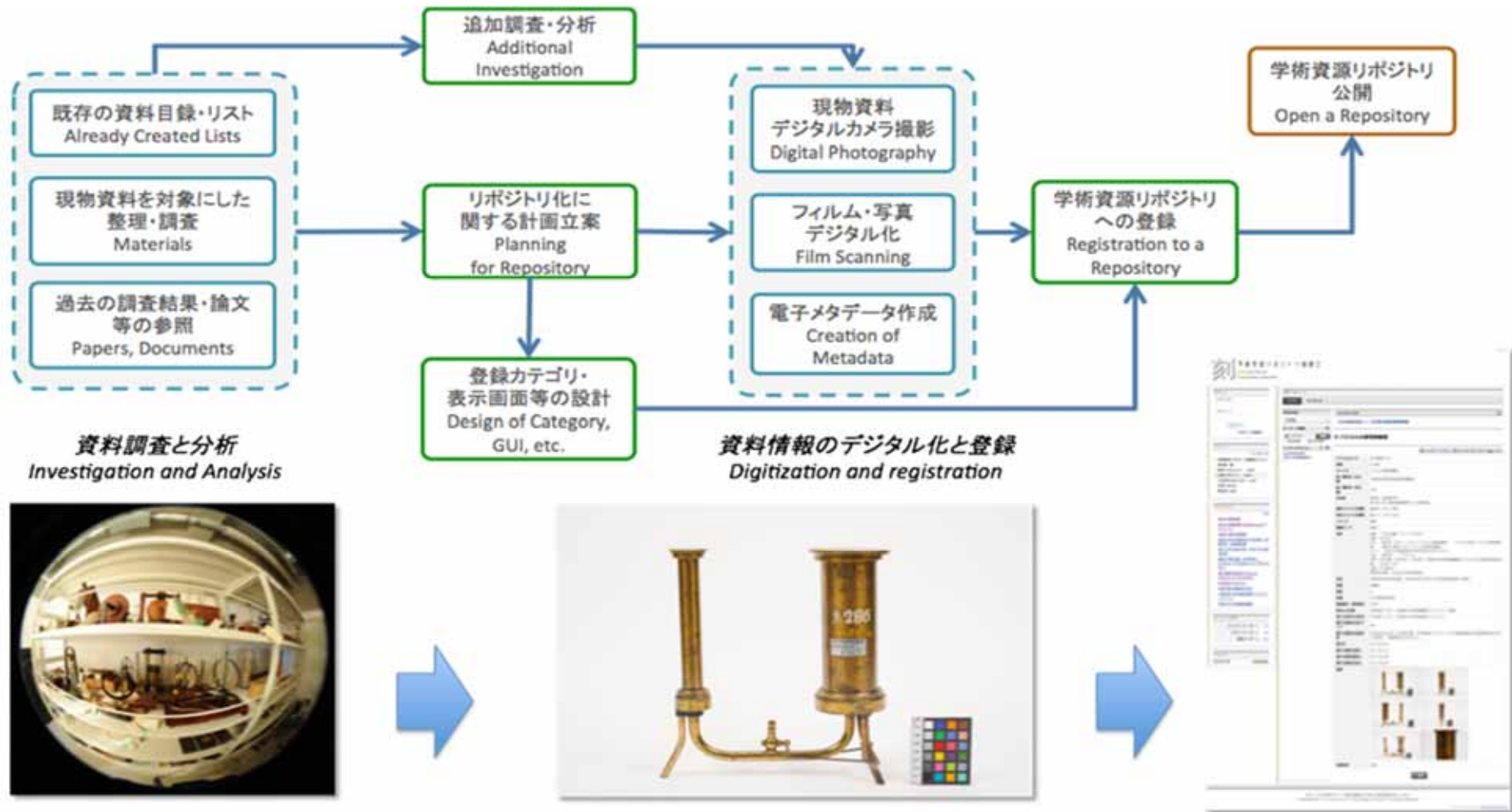
JaLC：データDOI付与実験

- ▶ 歴史的資料物写真データ
 - ▶ 使用範囲：公開データ
 - ▶ 件数：1000件程度
 - ▶ データ管理責任者：学術資源リポジトリ協議会

- ▶ 科学衛星観測データ
 - ▶ 使用範囲：公開データ
 - ▶ 件数：1000件程度
 - ▶ データ管理責任者：金沢大学

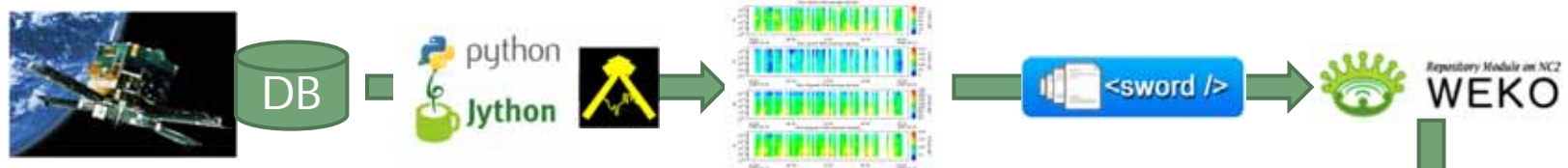


WEKOと博物館資料



(一社)学術資源リポジトリ協議会としての活動

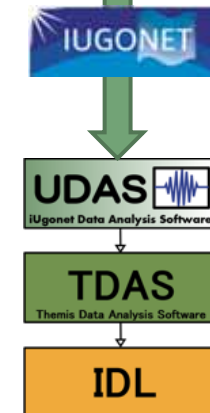
WEKOと衛星観測データ



Akebono VLF/MCA Data Repository

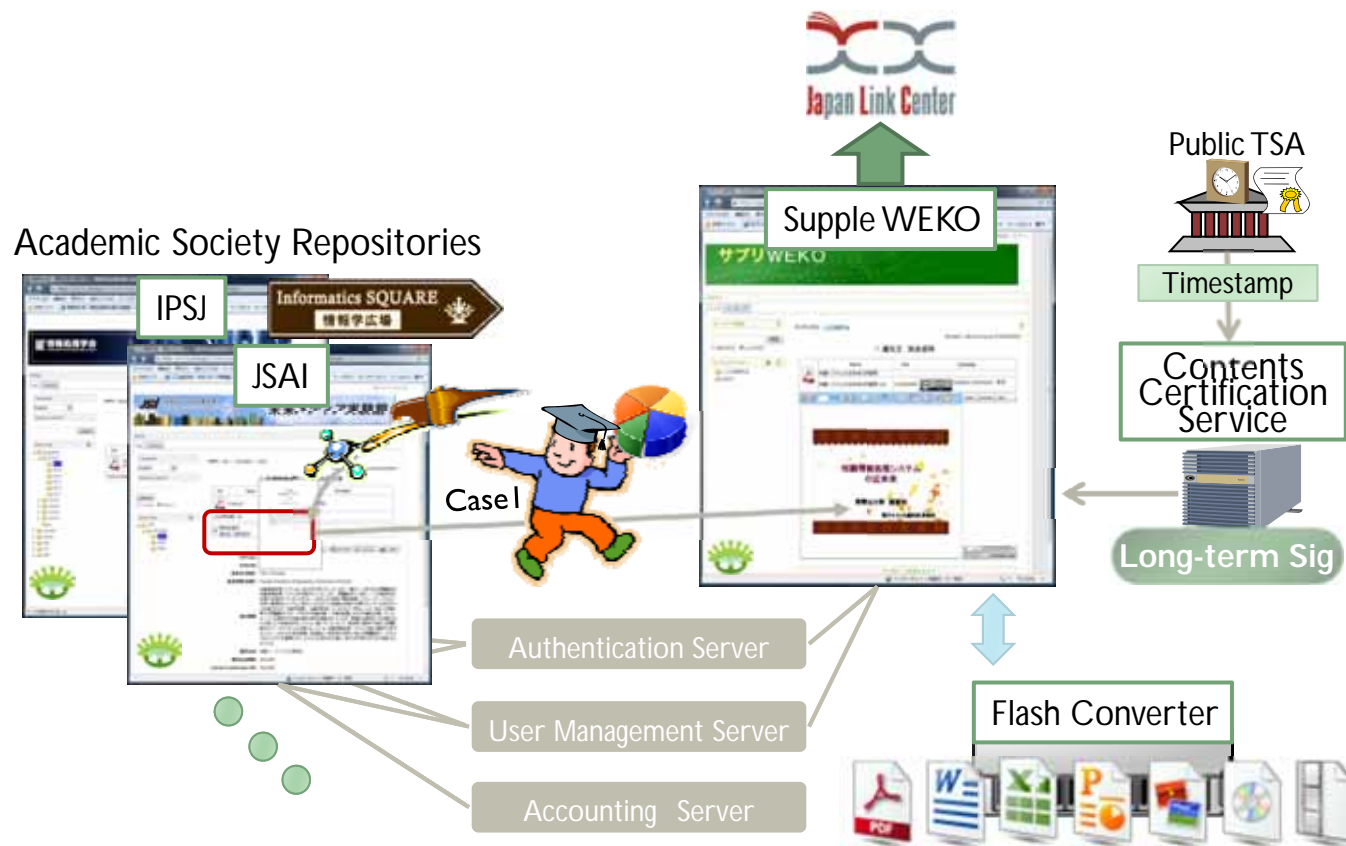
©Kanazawa University

The screenshot shows the website's main interface. On the left is a sidebar with a menu, a link list, and a counter. The main content area includes a welcome message in Japanese and English, explaining that the site provides spectrum data from the MCA (Multi-channel Analyzer) on the Akebono (EXOS-D) satellite. It mentions that data from 2012 to 2014 is available. Below this is a search section with a language dropdown (set to Japanese), a keyword search box, and a list of items. The first item is 'ak_h1_mca_20140601_v02.cdf', which is a screenshot of a VLF spectrum plot.



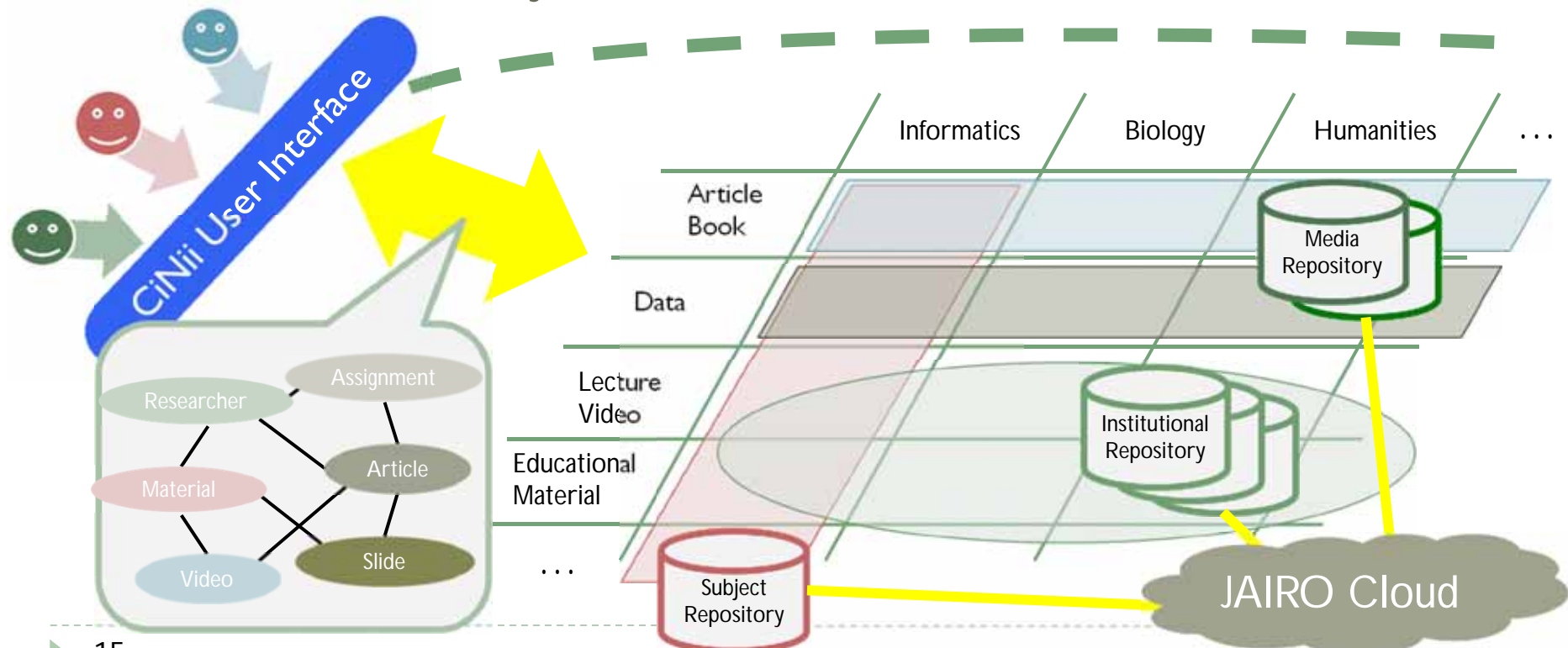
データDOI付与実験の発展

- ▶ 情報学広場サービスにおけるサプリメンタルデータに対するDOIの付与



Future of CiNii

- ▶ Integrated user interface for scholarly activities
 - ▶ Automated linkage system among heterogeneous resources from JAIR Cloud
- ▶ Supporting multiple types of repositories
 - ▶ Institutional, Subject, Media



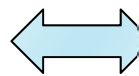
NIIのデータへの取り組みは
大学図書館頼みだけか？
CiNiiとWEKOだけか？

GakuNin Cloud (planned)

- ▶ NII helps universities/research institutes start to use cloud services:
 - ▶ checklist for cloud services and evaluation using the checklist
 - ▶ negotiation for pricing

universities/research institutes

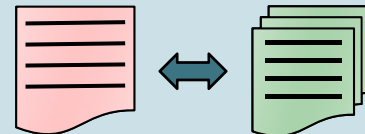
- making spec. using the checklist and evaluation results
- procurement



portal

GakuNin Cloud

checklist evaluation

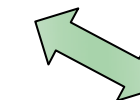
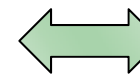


NII committee

- checklist
- evaluation
- negotiation for pricing

cloud providers

- evaluation of services using checklist
- reference price list



Inter-Cloud Service (planned)

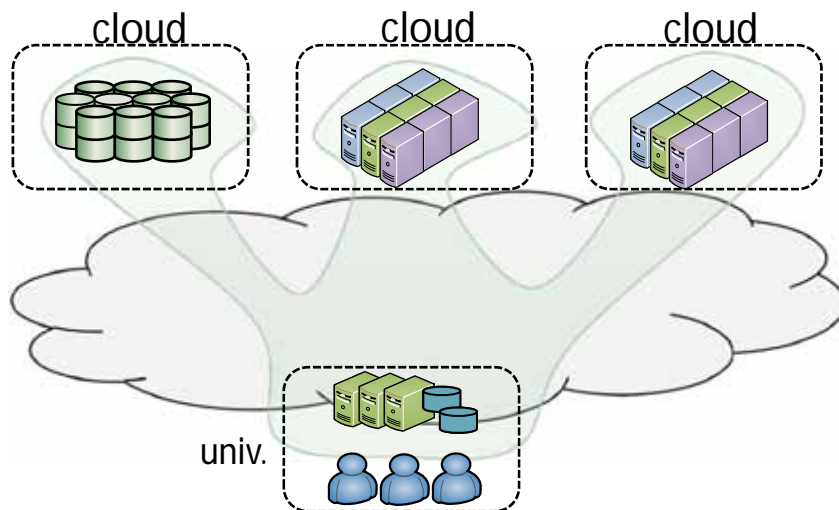
on-demand config. of inter(hybrid)-cloud settings via SINET

- ▶ distributed cloud resources including related software and a virtual network to connect their resources

hybrid cloud with multiple public clouds



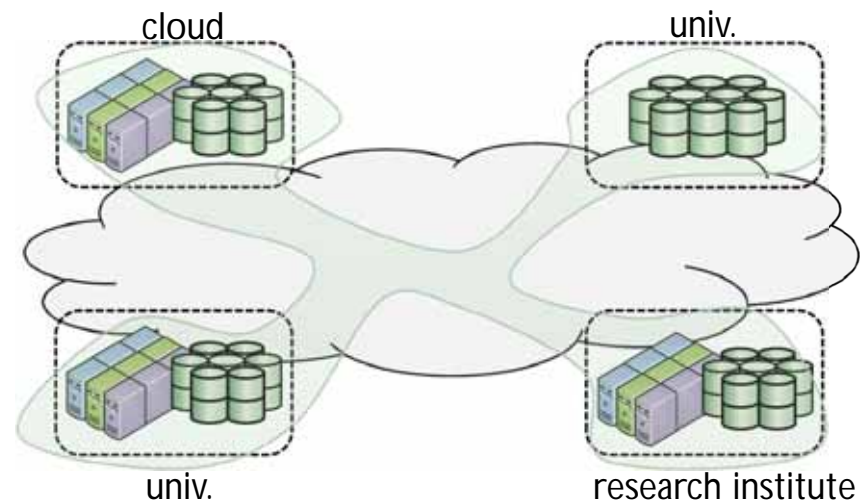
secure and high-speed access to public clouds



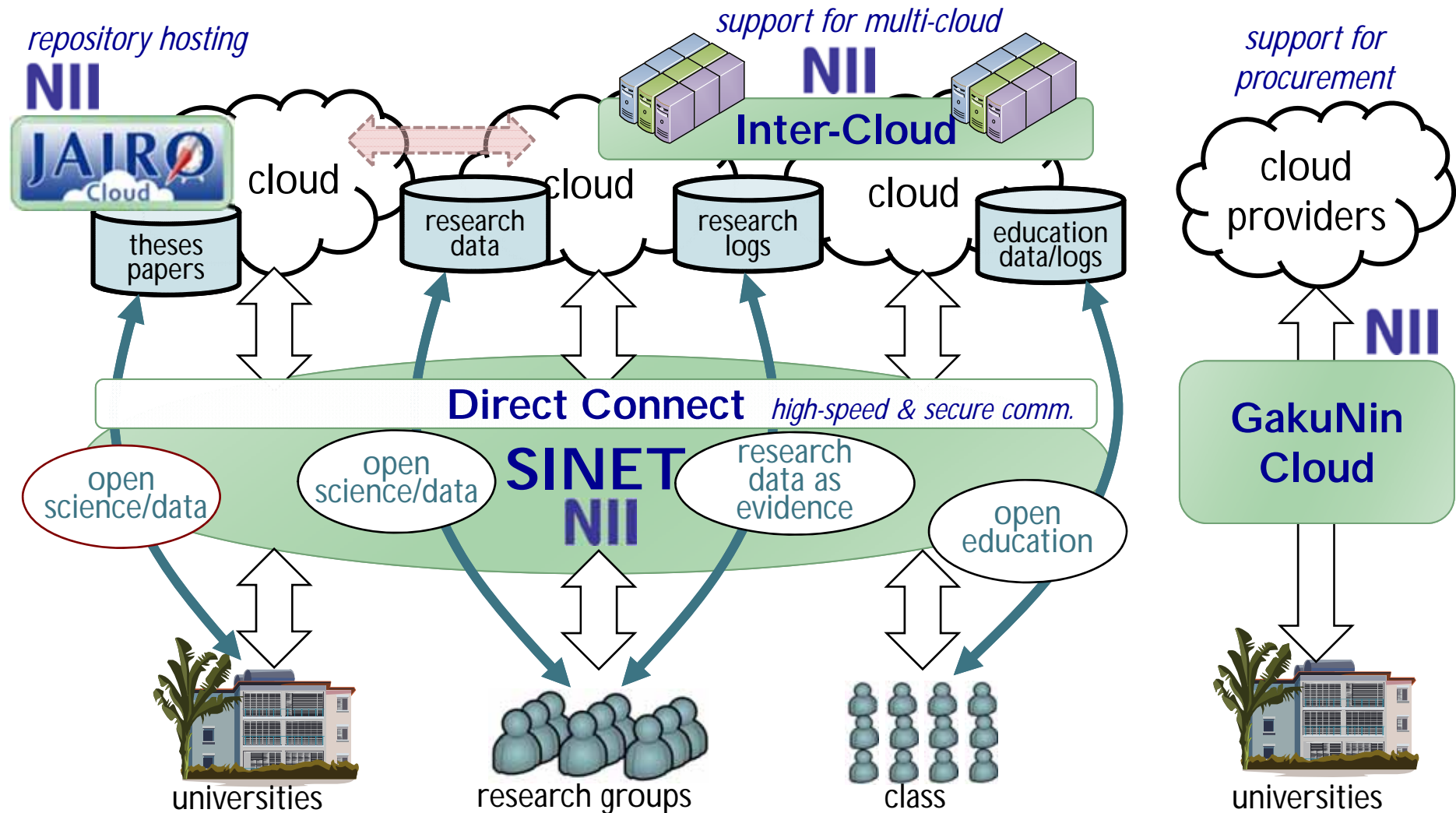
resource federation among multiple institutes/clouds



R&E collaboration



Cloud Services for Open Science



Principles of Clark Report 1

Research Infrastructure Review Panel in AU

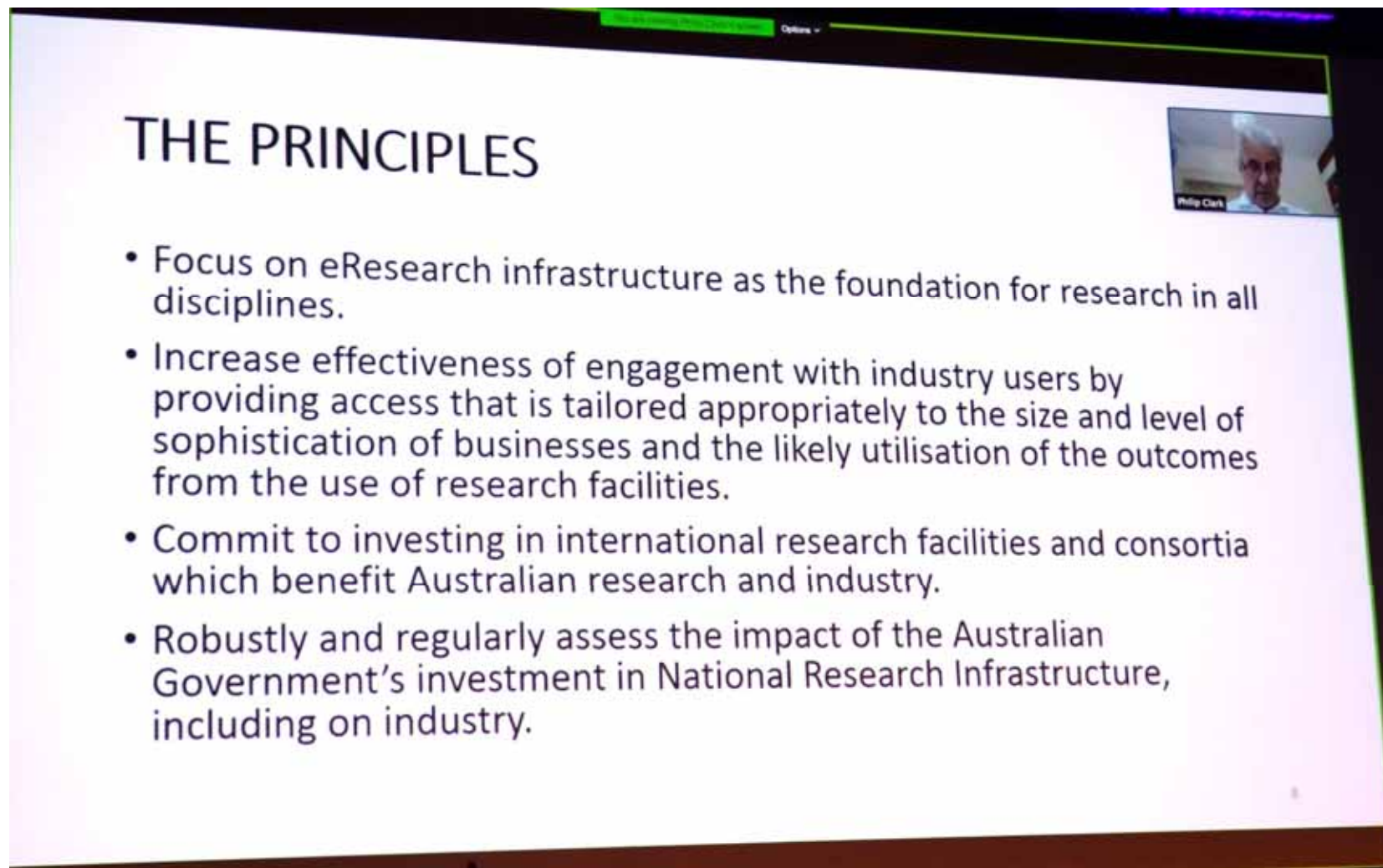
THE PRINCIPLES

- 1 Excellent research requires excellent infrastructure.
- 2 Research infrastructure includes physical and human capital.
- 3 Continuing and predictable funding for programmes is essential
- 4 A coordinated whole-of-government approach is essential
- 5 Whenever funding is provided for research, appropriate additional funding must be set aside for investment in infrastructure to support that research.
- 6 Focus on Australia's research strengths and on agreed National Science and Research Priorities.
- 7 Focus on collaboration: NCRIS has clearly demonstrated the benefits of a national networked and collaborative approach.

National Collaborative Research Infrastructure Strategy (NCRIS)

Principles of Clark Report 2

Research Infrastructure Review Panel in AU



THE PRINCIPLES

- Focus on eResearch infrastructure as the foundation for research in all disciplines.
- Increase effectiveness of engagement with industry users by providing access that is tailored appropriately to the size and level of sophistication of businesses and the likely utilisation of the outcomes from the use of research facilities.
- Commit to investing in international research facilities and consortia which benefit Australian research and industry.
- Robustly and regularly assess the impact of the Australian Government's investment in National Research Infrastructure, including on industry.

Philip Clark