Harmonising Research Reporting – Experiences and Output from UKRISS

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The Project

• **Duration**
  - 16 month: March 2012 – June 2013
  -> **Extension** until January 2014

• **Funding**
  - JISC – Research Information Management Programme

• **Structure**
  - **Phase 1:** Requirements and Recommendations
  - Feasibility Study November 22nd, publicly released January 2013
  - **Phase 2:** Proof-of-Concept, Sustainability

• **Partners**
  - King’s College London (lead), British Library, Brunel University, Cottage Labs, Exeter University, euroCRIS, University of Edinburgh (unfunded)
Background

CERIF
- Standard for representation of research information

JISC EXRI-UK report (2009)
- Recommended adoption of CERIF across UK HE sector

JISC report (2010) – Business case for CERIF
- Reduction in complexity and administrative effort

JISC report (2012) – Adoption of CERIF in UK HEIs
- 51 UK institutions have a CERIF-compliant CRIS (30%)

Outputs systems
- ROS - Research Outputs System (RCUK), Research Fish, Gateway to Research (BIS)

JISC projects
- (IRIOS 1&2, RMAS, CERIF in Action, Readiness for REF, MICE, DESCRIBE, BRUCE)

International perspective
HESA Information Landscape Report (2012)
Phase 2 Objectives

Focus
• Data modelling (feasibility study recommendation 1)

Phase 2 goals
• Investigate harmonisation of research outcomes reporting
  • Reporting fields and vocabularies
  • CERIF mappings
  • Understand relationship to institutional data
• Practical demonstrators and tools
• Business case for harmonisation
• Sustainability
  • Inputs to harmonisation and standardisation
  • Dissemination and stakeholder engagement
Data Flows between Universities and the UK Research Councils

Source (Images) by Neil Jacobs (Jisc):
Data Flows between Universities and the UK Research Councils
UKRISS Modeling Approach

1. Bottom-Up Analysis
   a. ROS (ROS) objects and fields
   b. ResearchFish (RF) objects and fields

1. Consulting Best Practices
   a. MICE; REF; DESCRIBE; CRISPool, etc.
   b. **Essential:** “Theory-building and logic-modelling is essential to establish causal inference in evaluation.”

1. Top-Down Use-Case driven Modeling
   a. “institution submits final report to funder”
Results: Bottom-up Analysis (object-harmonisation)

Current Harmonisation
- Objects (e.g. Publication; IP; Partnerships, etc.)
- via e.g. Mappings to UKRISS Model

Potential Harmonisation
- Objects (e.g. Dataset; Event; Exploitation; Key Findings; Product/Intervention)
- via e.g. Extension assigning Objects to the UKRISS Model
Results: Bottom-up Analysis (field-harmonisation)

Current Harmonisation

- Semantic Similarity such as e.g.
  - RF: “Provide a short name/title for this output.”
  - ROS: “Series Title”

Potential Harmonisation

- Semantic Similarity through extensions such as e.g.
  - Mapping to UKRISS:Output Types (via ROS/RF Mappings)
  - Extensions such as UKRISS IDs (e.g. OrgID; PersonID, etc).
UKRISS Modeling Approach

Following Best Practice - Recommend a higher level overarching Reporting Model as introduced in: “Measuring the Impact of Research” (2007)*

ATN = Australian Technology Network of Universities, which includes Curtin University of Technology, University of South Australia, RMIT University, University of Technology, Sydney and Queensland University of Technology

UKRISS Core Information Model

URISS Core Information Reporting Profile Modeling Approach

Harmonisation through conceptual alignment (not only linear).

Research Output  Research Transfer  Research Outcome  Research Impact  Measurement

Event  Award Recognition  Dataset  Exploitation  Product / Intervention  Key Findings  Impact
Publication  Intellectual Property  Engagement Activities  Further Funding  Collaboration / Partnership  Staff Development  Spin-Out

ROS  ResearchFish

Report: Engaging and Communicating the Outputs from UKRISS
UKRISS Core Information Reporting Profile

- Research Output
  - Publication
  - Event
  - Award Recognition
    - Intellectual Property
  - Dataset
  - Engagement Activities
- Research Transfer
  - Product Intervention
- Research Outcome
  - Spin-Out
  - Collaboration Partnership
    - Key Findings
    - Staff Development
- Research Impact
  - Impact
  - Further Funding
- Measurement
ROS/RF Harmonisation Degrees before UKRISS (based on Reporting Object Field Counts)
ROS/RF Harmonisation Degrees after UKRISS
(for selected Reporting Objects – based on field counts)
UKRISS Reporting Object: Publication
UKRISS Reporting Object: Event

- ukriss-submission:vocabularies
- ukriss-object:vocabularies
- ukriss-interoperability:vocabularies
  etc.

Event

Venue

Organisation

Federated Identifier

ukriss:Output
UKRISS Reporting Object: Collaboration

- ukriss-submission:vocabularies
- ukriss-object:vocabularies
- ukriss-interoperability:vocabularies etc.

- Person
- Organisation
- Federated Identifiers (References)
- Measurement

Result

Product

ukriss: Collaboration

ukriss: Outcome

Contact

Collaborating Organisation

Financial Contribution

Team Contribution

Partner Contribution

ORCID OrgID
UKRISS Reporting Object: Further Funding

- ukriss-submission:vocabularies
- ukriss-object:vocabularies
- ukriss-interoperability:vocabularies etc.

Result Product

Primary Recipient
- Person

Funder
- Organisation

Funding
- Federated Identifiers (References)
  - GrantID
  - FundingID
  - ORCID
UKRISS Reporting Object: Exploitation

- ukriss-submission:vocabularies
- ukriss-object:vocabularies
- ukriss-interoperability:vocabularies etc.

Result Product

- ukriss: Exploitation
- ukriss: Research Transfer

Organisation

Federated Identifiers (References)

Measurement

Exploitation Organisation

StartDate

EndDate

OrgID

narrative

How exploit
UKRISS Reporting Object: Spin-Out

- ukriss-submission:vocabularies
- ukriss-object:vocabularies
- ukriss-interoperability:vocabularies
  etc.

- Company
- Organisation
- Federated Identifiers (References)
- Measurement
  CompanyID
  RegistrationNo
  PartnerID
  Formation Date

Result Product

ukriss: Spin-Out

ukriss: Outcome
UKRISS Reporting Object: Product/Intervention

- ukriss-submission:vocabularies
- ukriss-object:vocabularies
- ukriss-interoperability:vocabularies
  etc.

Result Product

- ukriss:Product
  Intervention
- ukriss:Outcome

Federated Identifiers (References)

UKCRN
ISCTN
InterventionID

Measurement

narrative
UKRISS Reporting Object: Engagement

ukriss-submission:vocabularies
ukriss-object:vocabularies
ukriss-interoperability:vocabularies etc.

Result Product

Publication
Organisation
Federated Identifiers (References)
GeoBBox

Measurement

Edition
Involved body
Location
OrgID
ResourceID
Narrative
Notable Impact
Other Information

Event

Harmonising Research Reporting in the UK – Experience and Outputs from UKRISS
CRI 2014, Rome, May 13th, 2014
UKRISS Reporting Object: Award

- ukriss-submission:vocabularies
- ukriss-object:vocabularies
- ukriss-interoperability:vocabularies
  etc.

Prize

- Primary Recipient
- Awarding Organisation
- Federated Identifiers (References)

Measurement

- Date Awarded
- AwardID
- ORCID

Narrative
UKRISS Reporting Object: Dataset
UKRISS Reporting Object: Impact

- **ukriss-submission:vocabularies**
- **ukriss-object:vocabularies**
- **ukriss-interoperability:vocabularies** etc.

**Measurement**
- Impact first materialised
- How did Research contribute?
- Who Benefited?
- Economic Findings
- Summary of Economic / Societal Impact
- Other Information
- Other Involvement
- Other Information

**Indicator**
- How achieved?
- Who affected?
- Unexpected Impacts
- Impact Statement

**Federated Identifiers (References)**
- ImpactID URI
Visualisation of a validated Publication record in CERIF
Schematic of the Crosswalk Connector interfaces
CERIFy e.g. Publication (UKRISS Output)

Reference to relevant Mapping/Work in Snowball Metrics:
Anna Clements, St. Andrews
Lisa Colledge, Elsevier
Brigitte Jörg, euroCRIS
http://www.snowballmetrics.com
UKRISS at ReConnect13 (Ottawa)

Research Information Standards
Machine Anatomy in UK and Germany

Annual CASRAI International Conference
Ottawa, October 16-18, 2013

Mathias Riechert, Institute for Research Information and Quality Assurance (IFQ), Berlin, GER
Brigitte Jörg, euroCRIS, EU / CASRAI, INT
UKRISS at ReConnect13 (Ottawa)

- Publication ✓
- Intellectual Property
- Product/Intervention
- Spin-Out
- Collaboration/Partnership
- Further Funding ✓
- Staff Development ✓
- Dissemination/Communication
- Exploitation
- Award / Recognition ✓
- Key Findings
- Impact
- Dataset
- Event
- Underlying Vocabularies were not considered here

= UK – DE Overlap
Deliverables

• Core Information Reporting Profile
  – Reporting Objects in CERIF
  – Formal CERIF XML Mappings
  – Indication of Vocabulary Boundaries
  – Core Reporting Profile in Excel sheet
  – CERIF XML example for each reporting object

• Final Report End of January 2014
Lessons Learned

• Demonstration of the feasibility and potential benefits of harmonised research reporting guided by a formal domain model for the multiple involved organisations in the research ecosystem.

• Model ensures consistent usage and re-usage of defined reporting objects and sub-objects.

• All involved stakeholders need to participate in the definition of requirements to ensure a conceptual clarity and as well support with the process of implementation, if harmonisation is to benefit the national, and subsequently the global research ecosystem.
Summary - Conclusion

• Need for Harmonisation is obvious
  – National
  – International

• UKRISS Main Destination of Results
  – CASRAI UK Working Group on Contributions and OA Reporting

• Long-term Governance Model needs to be discussed

• Business Case / Efficiency
  – Re-Usability demonstrated
  – Standardised Interchange possible
  – Harmonisation (Alignment) required incrementally

• Need: Agreed Requirements by all stakeholders

• Need: CERIF to dedicate further thoughts towards formal definitios of contextual or object boundaries
Results and more details available at:

http://ukriss.cerch.kcl.ac.uk