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Harmonising Research Reporting – Experiences and Output from UKRISS

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Stephen Trowell, University of Exeter, UK

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

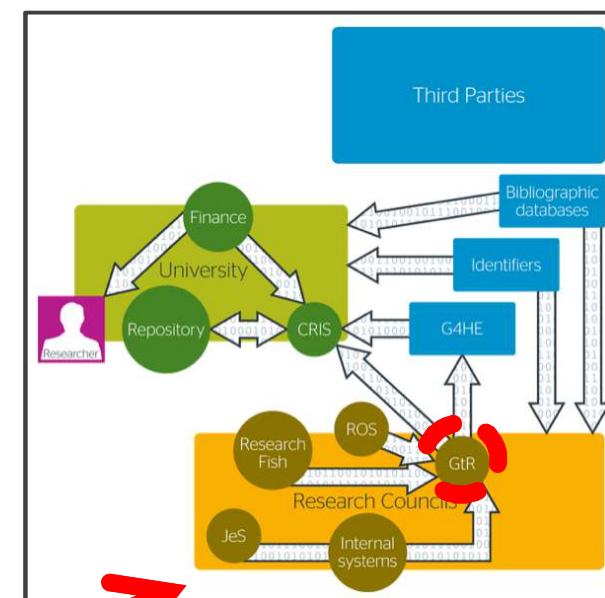
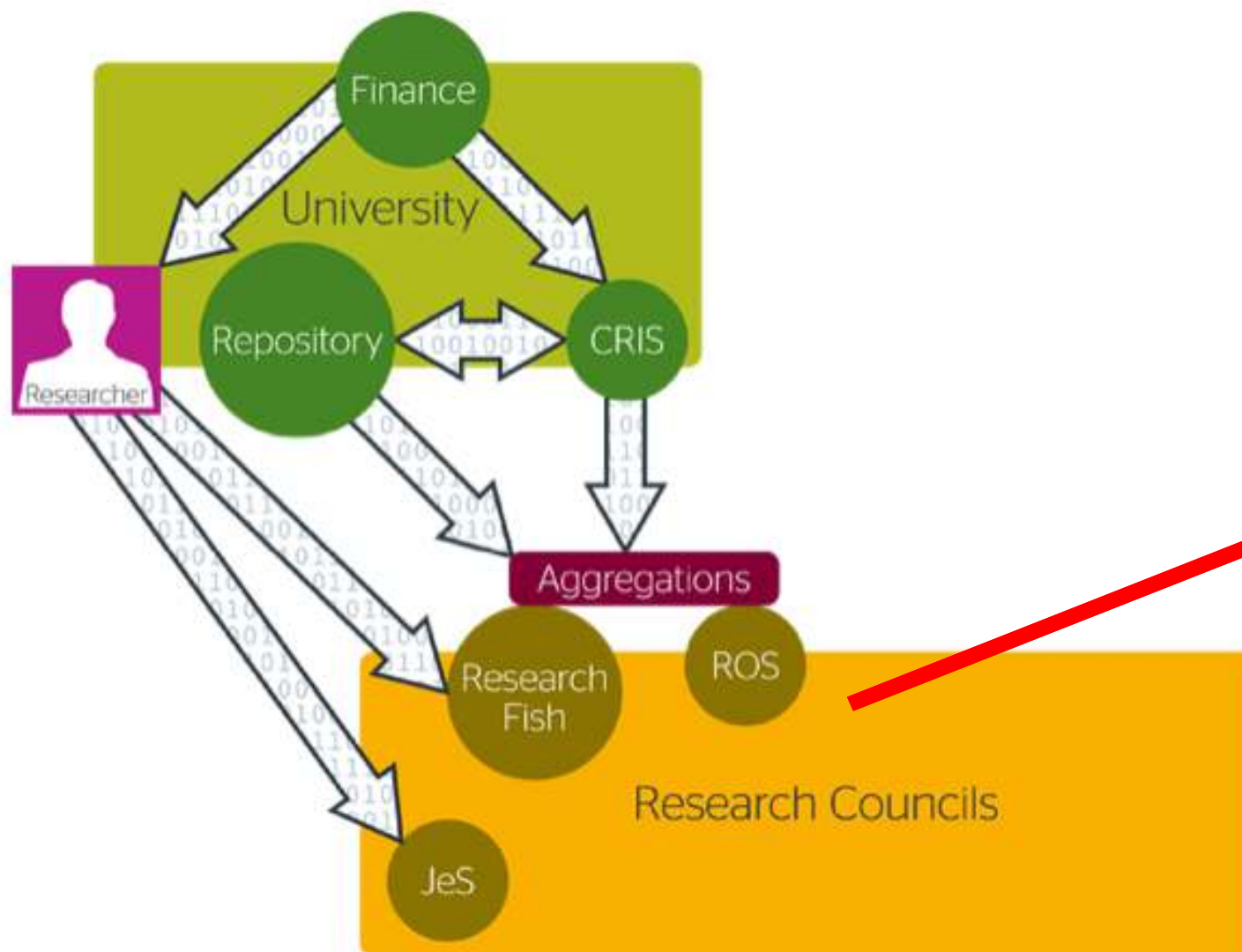
Focus

- Data modelling (feasibility study recommendation 1)

Phase 2 goals

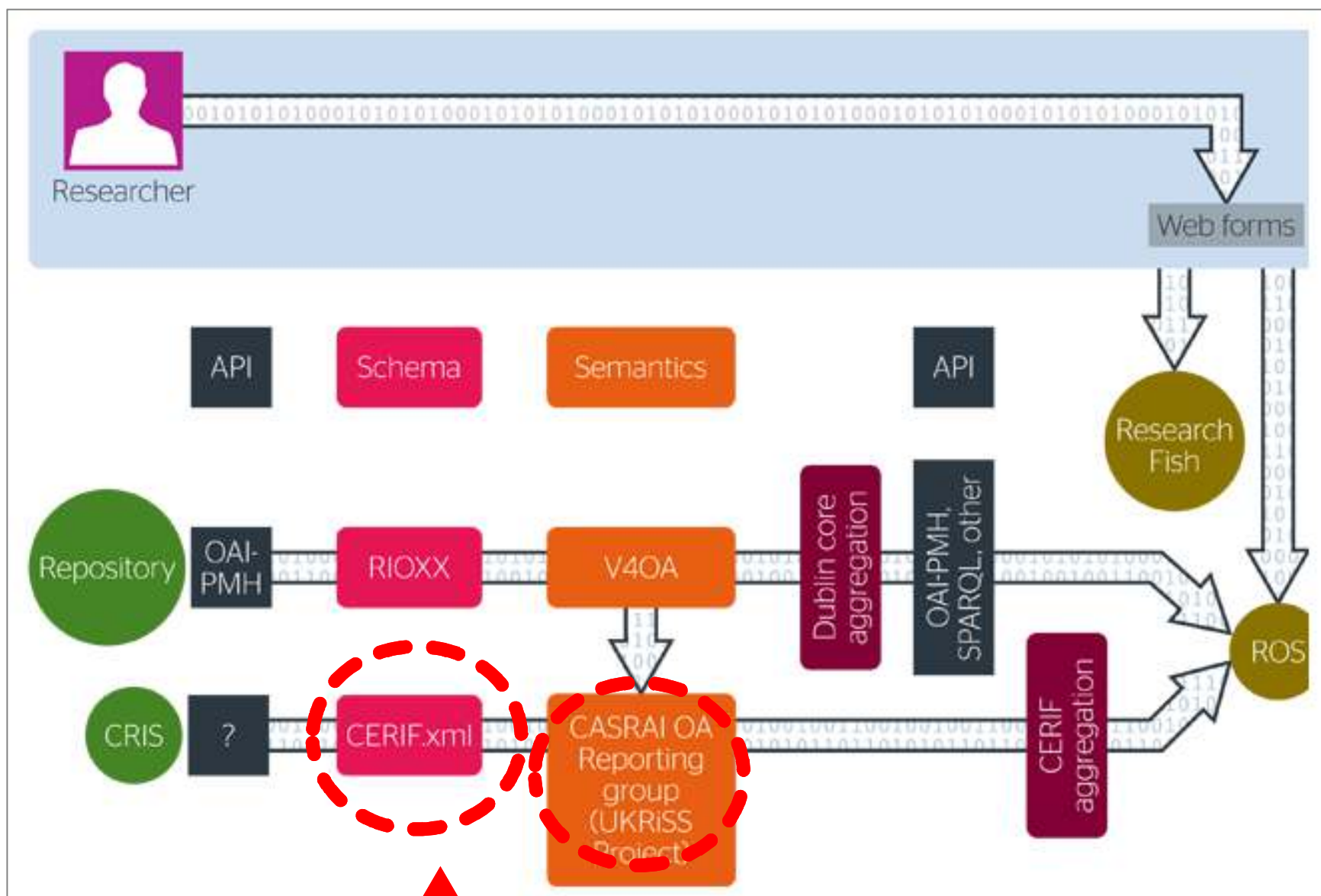
- Investigate harmonisation of research outcomes reporting
 - Reporting fields and vocabularies
 - CERIF mappings
 - Understand relationship to institutional data
- Practical demonstrators and tools
- Business case for harmonisation
- Sustainability
 - Inputs to harmonisation and standardisation
 - Dissemination and stakeholder engagement

Data Flows between Universities and the UK Research Councils



**Source
(Images) by Neil
Jacobs (Jisc):**
<http://www.jisc.ac.uk/publications/generalpublications/2013/data-flow-between-universities-and-research-councils.aspx>

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

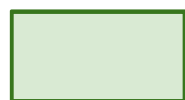
1. Consulting Best Practices

- 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)



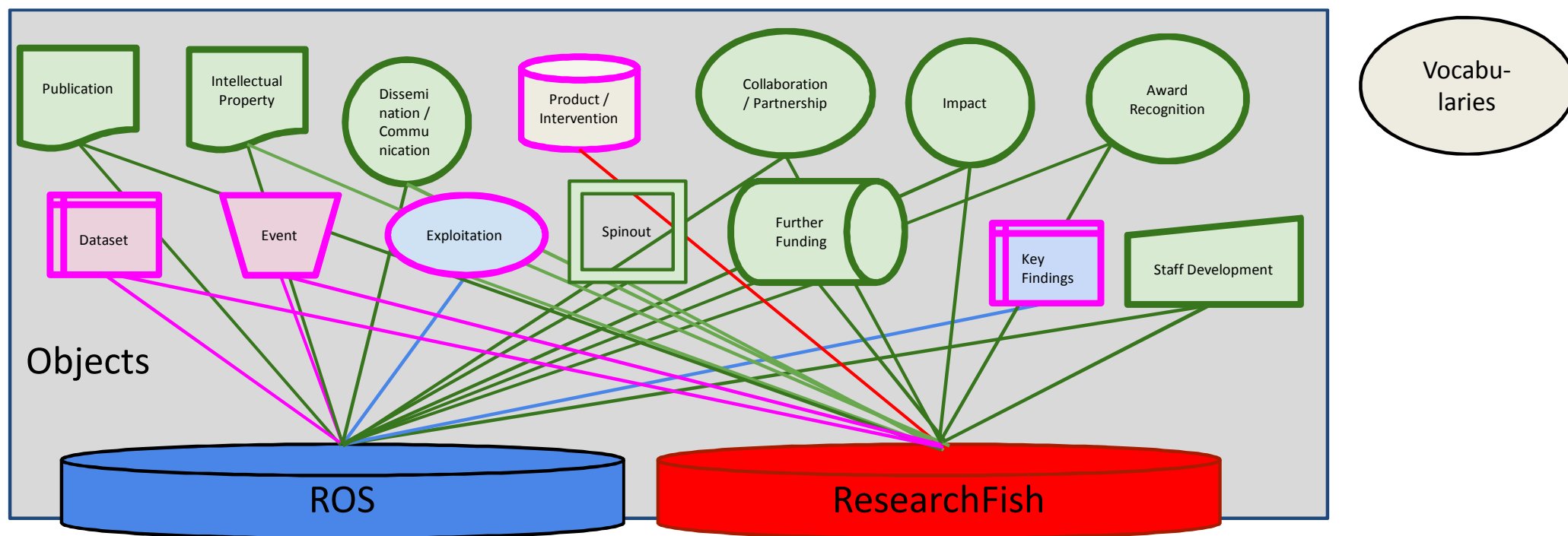
Current Harmonisation

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

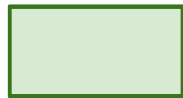


Potential Harmonisation

- 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)



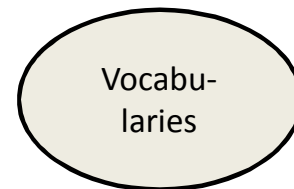
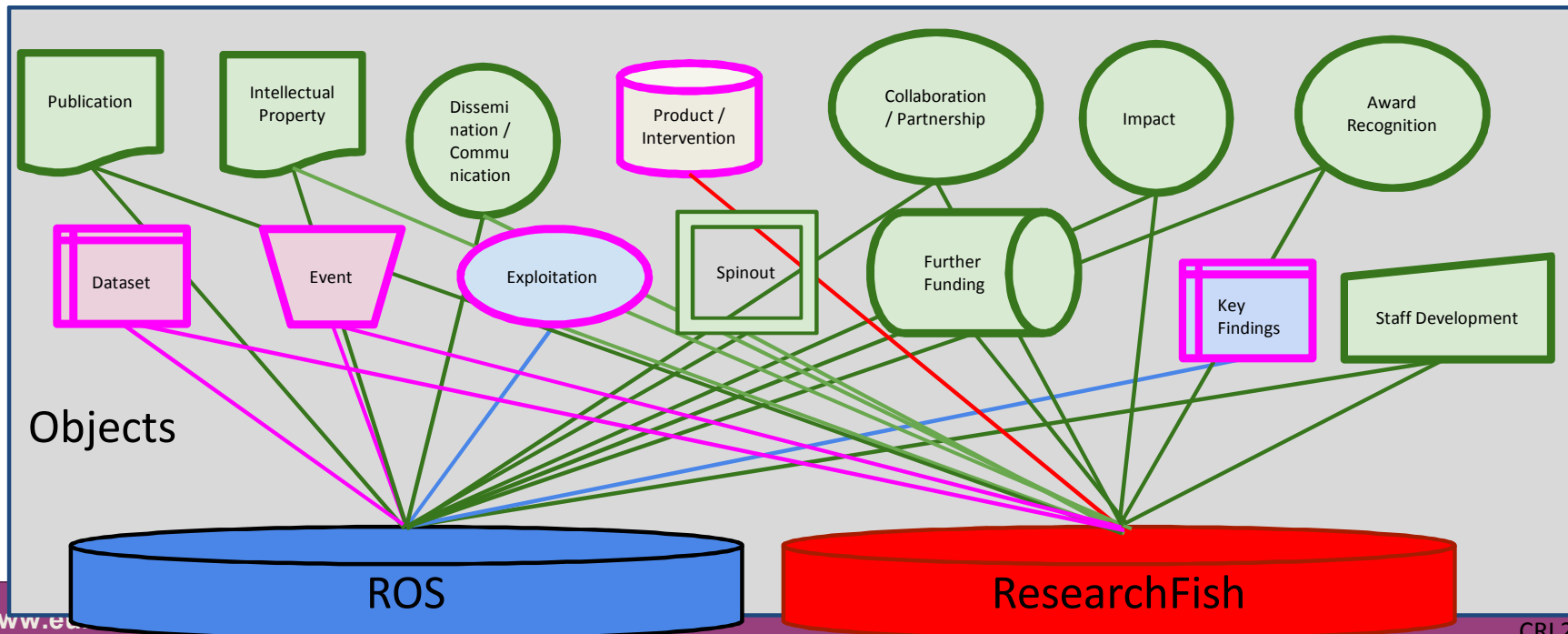
Current Harmonisation

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



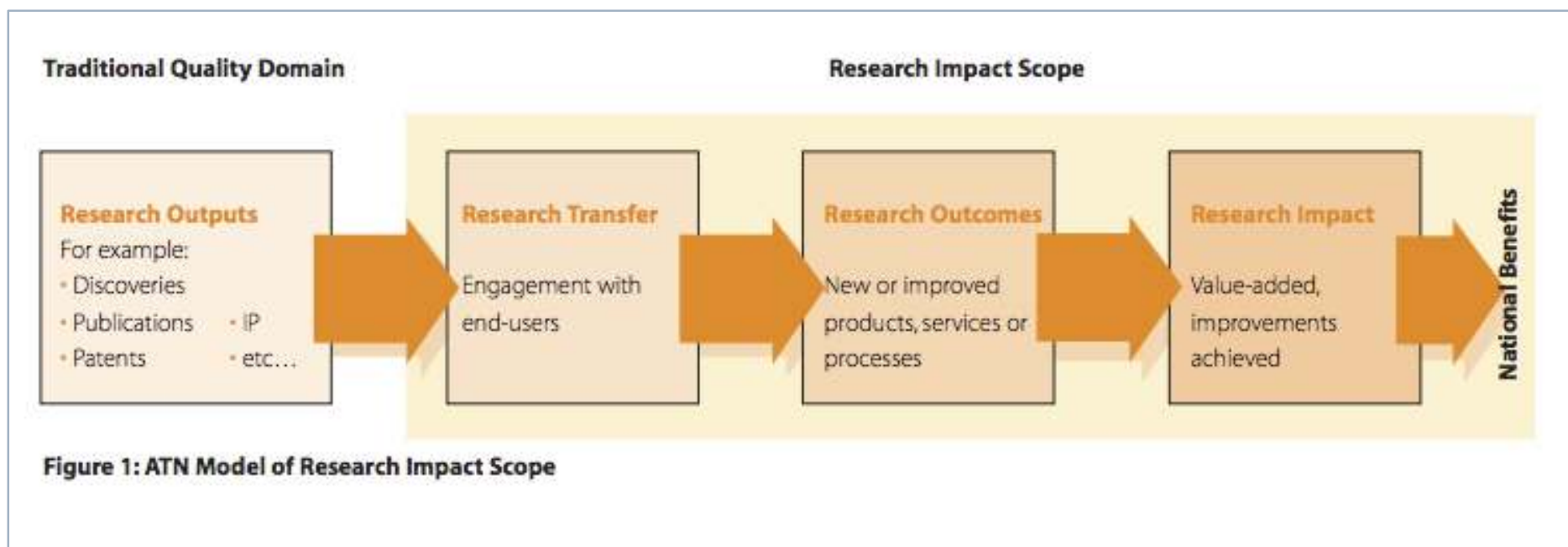
Potential Harmonisation

- 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)*

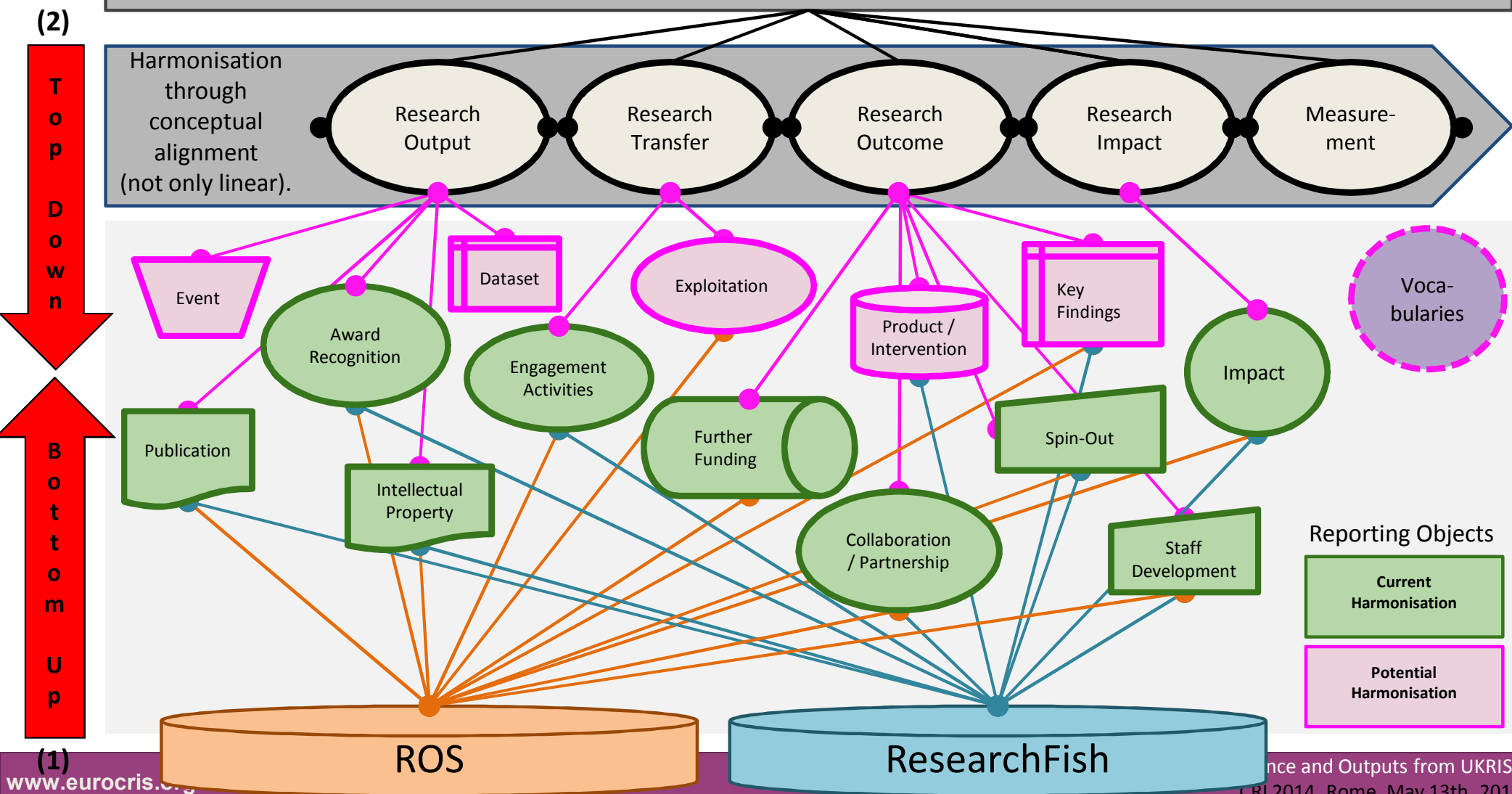


ATN = Australian Technology Network of Universities, which includes Curtin University of Technology, University of South Australia, RMIT University, University of Technology, Sydney and Queensland University of Technology

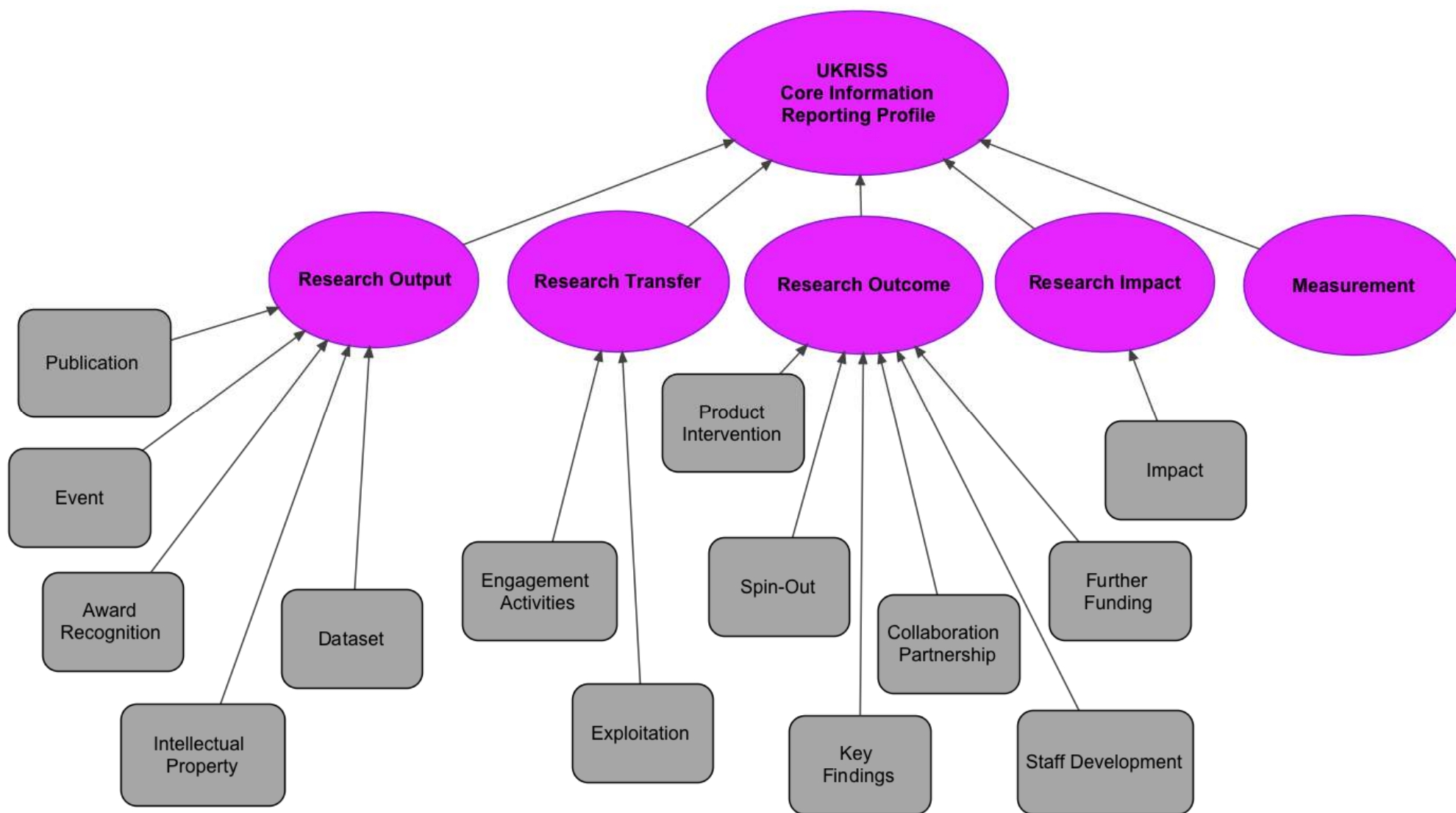
*<http://www.atn.edu.au/docs/Research%20Global%20-%20Measuring%20the%20impact%20of%20research.pdf>

UKRISS Core Information Model

UKRISS Core Information Reporting Profile Modeling Approach



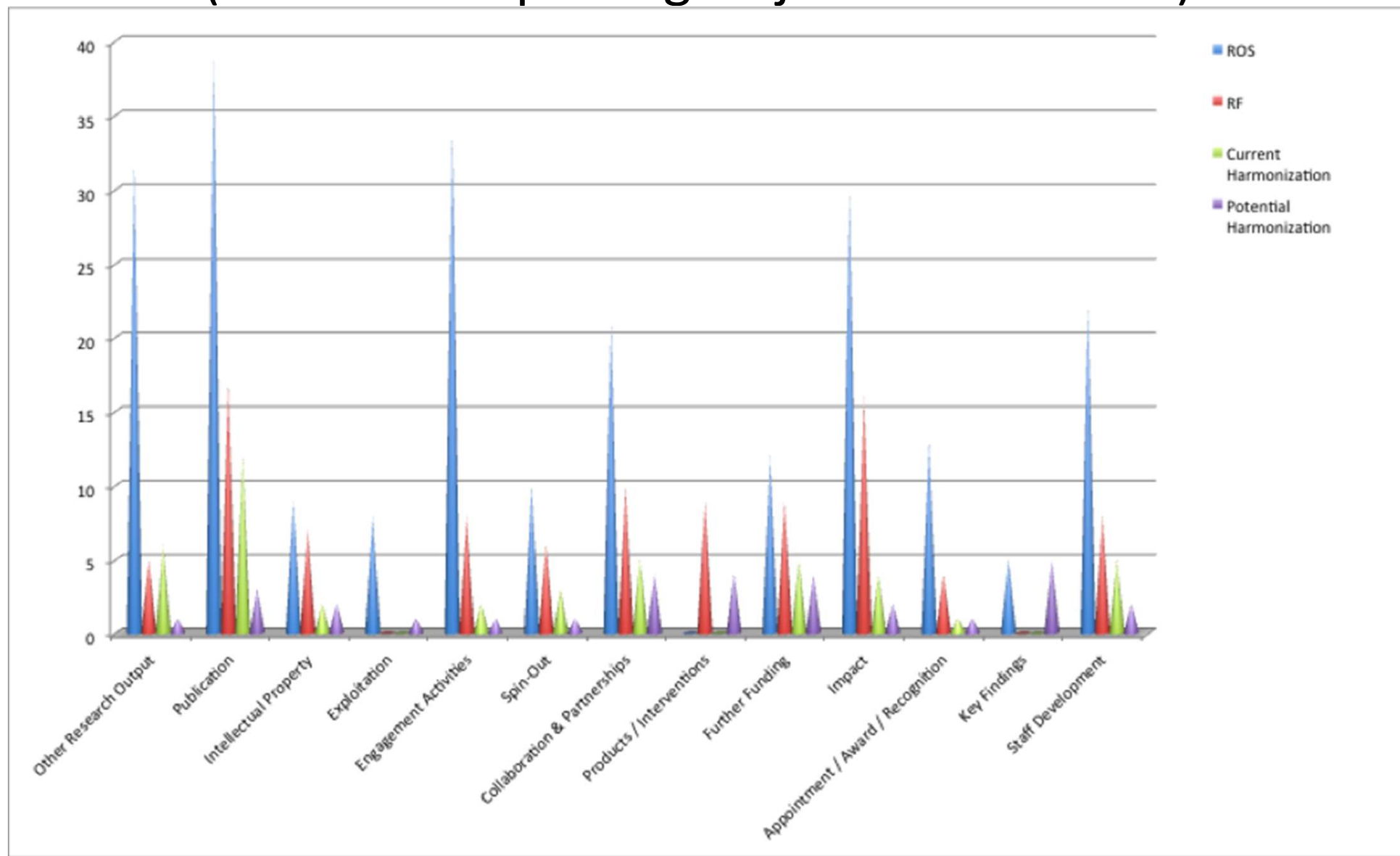
UKRISS Core Information Reporting Profile



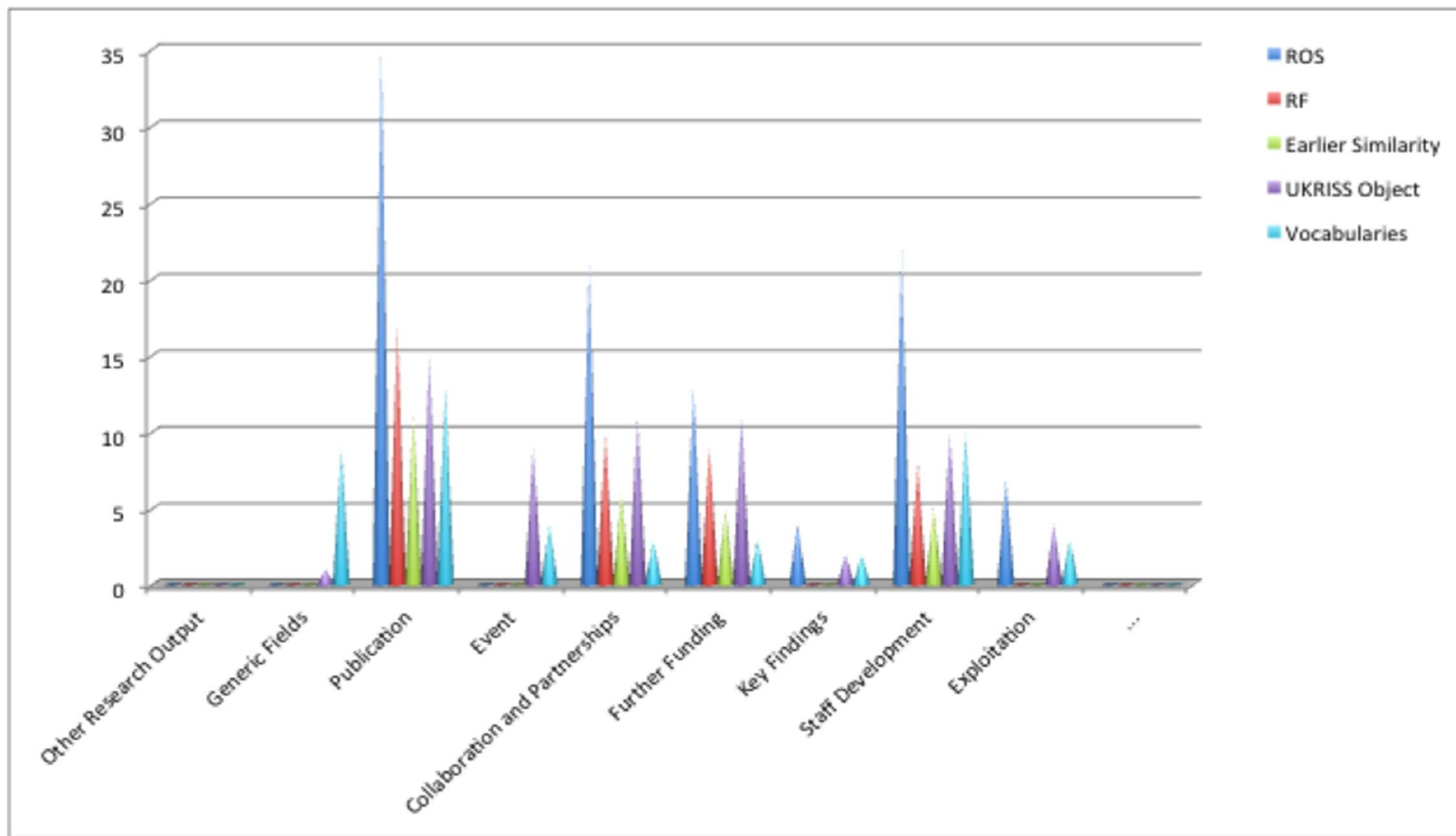


ROS/RF Harmonisation Degrees before UKRISS

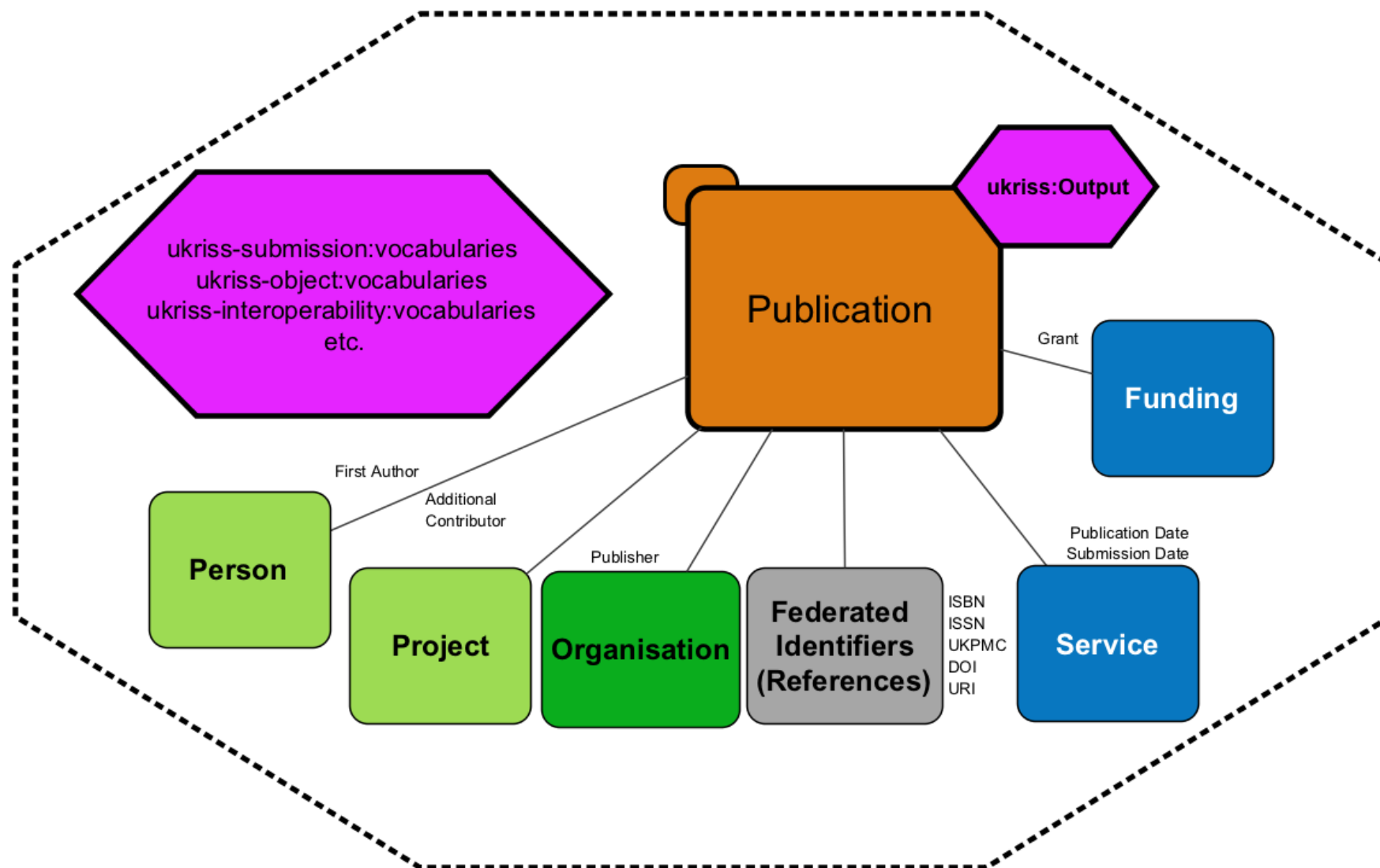
(based on Reporting Object Field Counts)



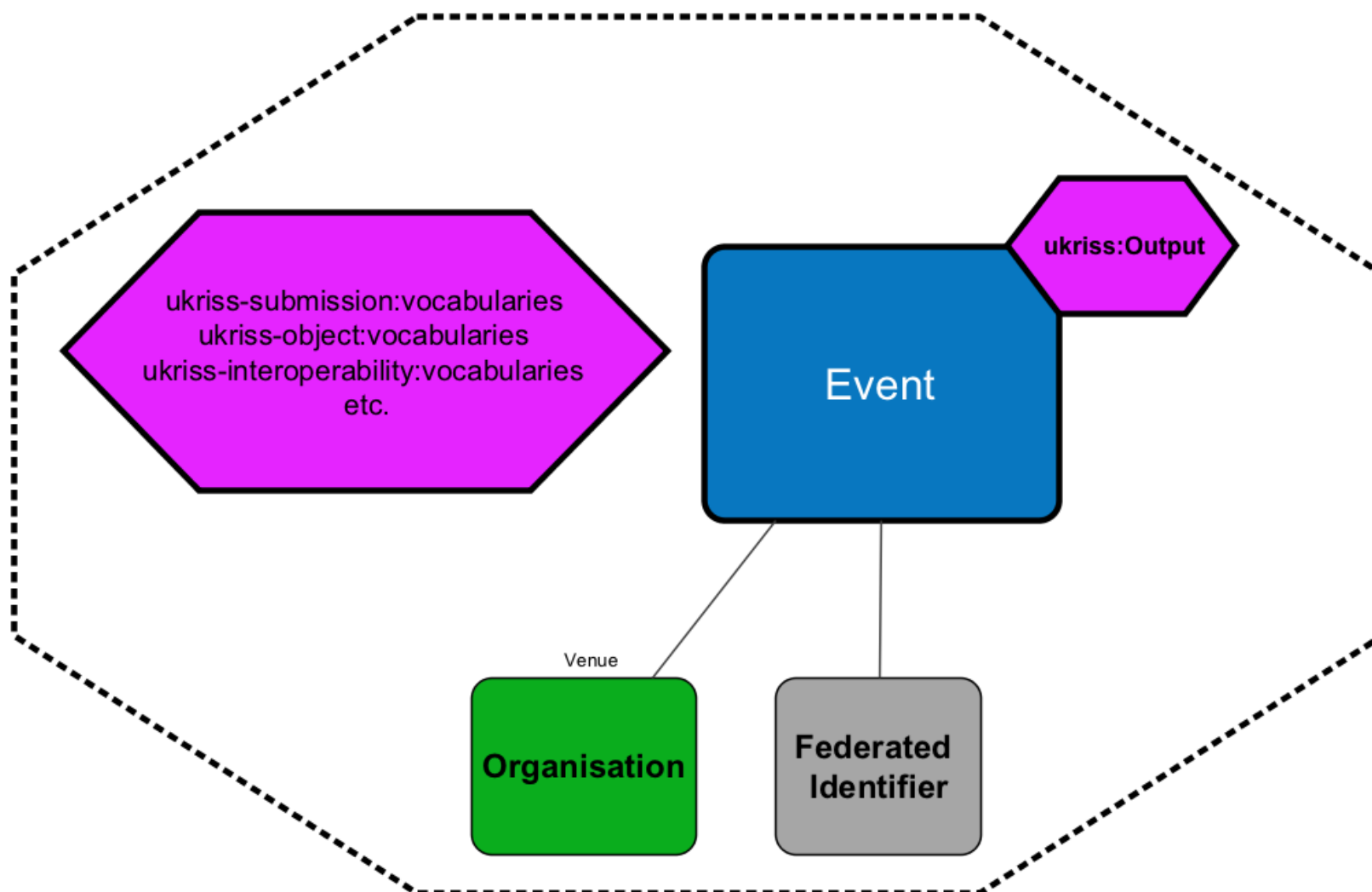
ROS/RF Harmonisation Degrees after UKRISS (for selected Reporting Objects – based on field counts)



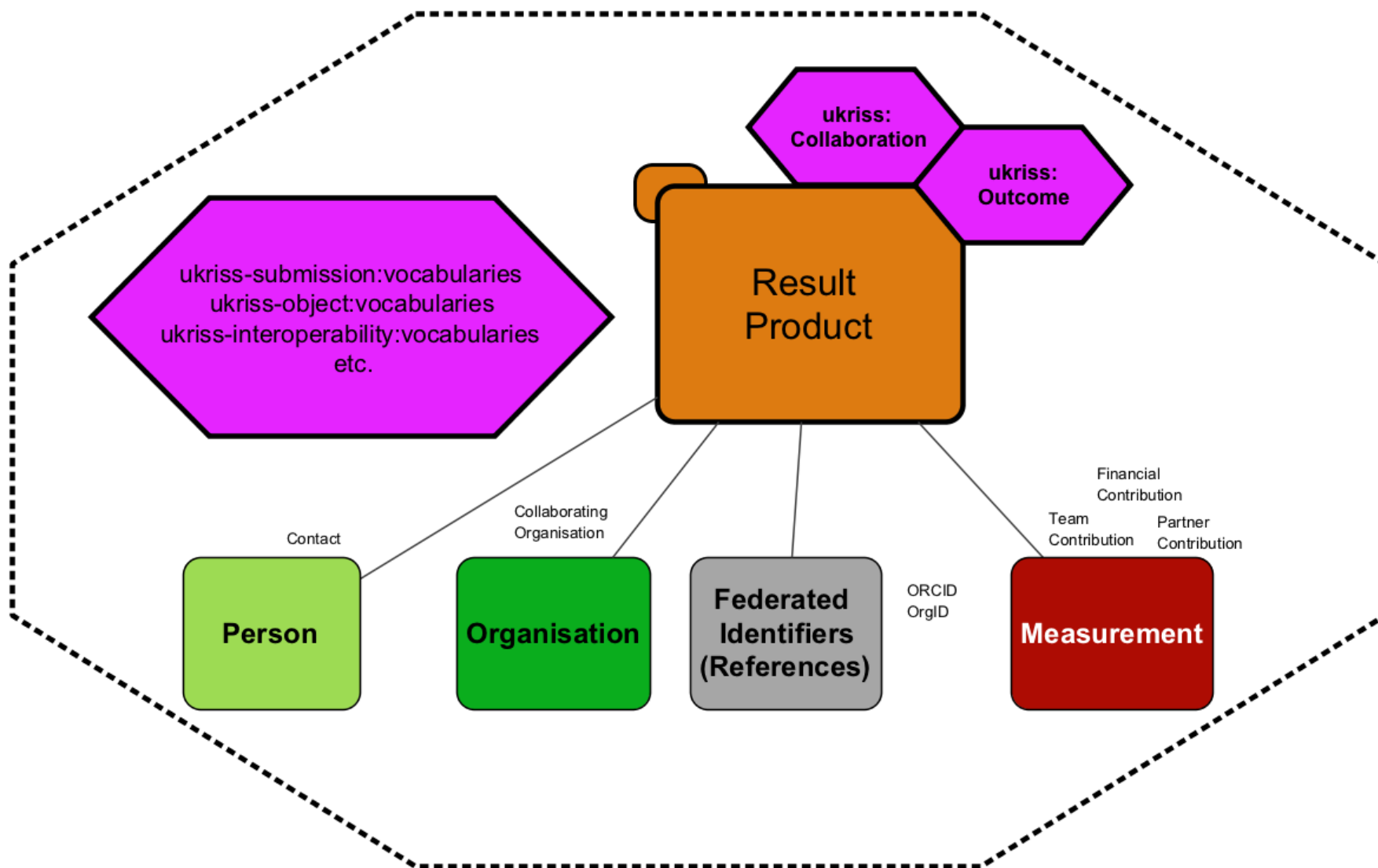
UKRISS Reporting Object: Publication



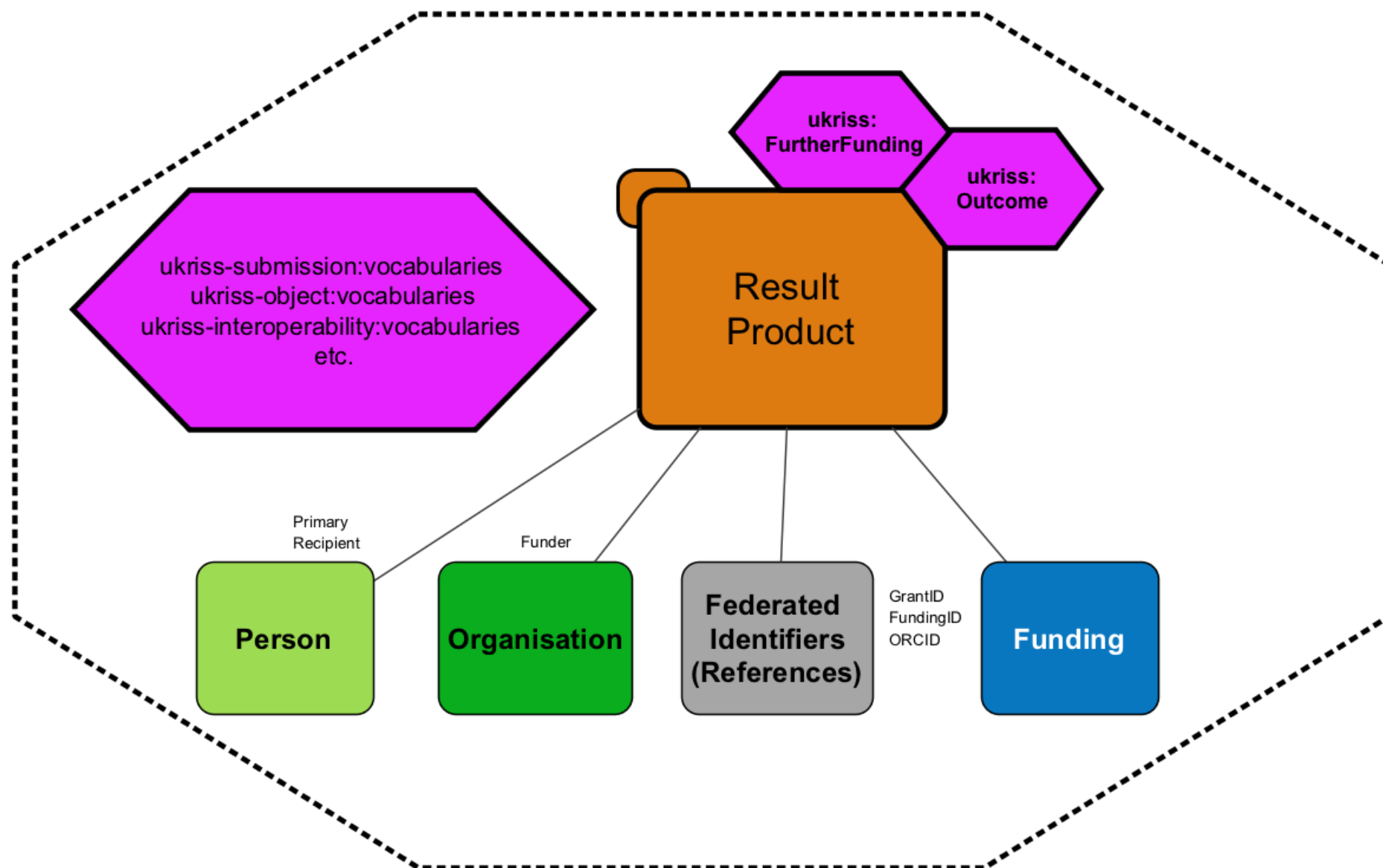
UKRISS Reporting Object: Event



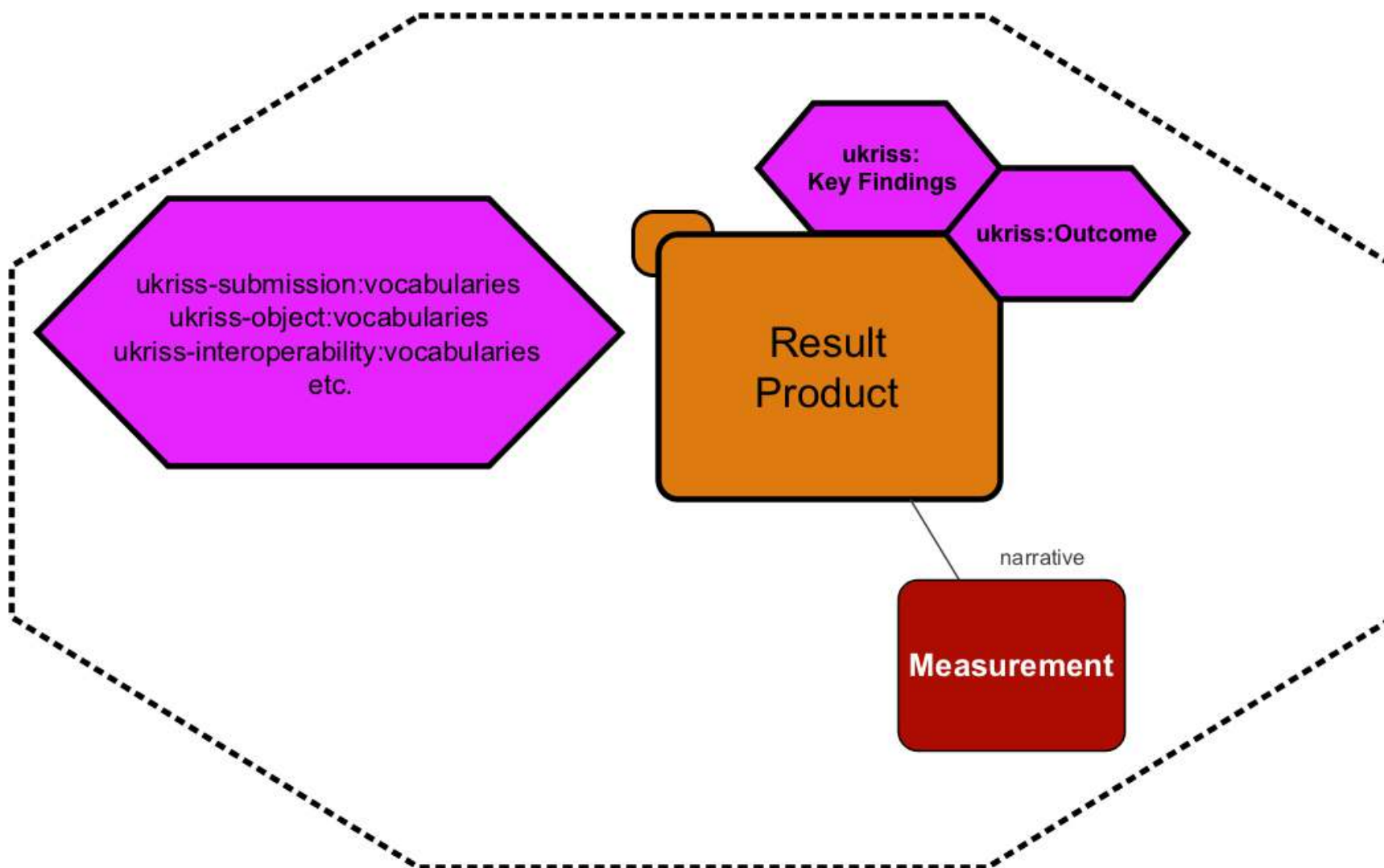
UKRISS Reporting Object: Collaboration



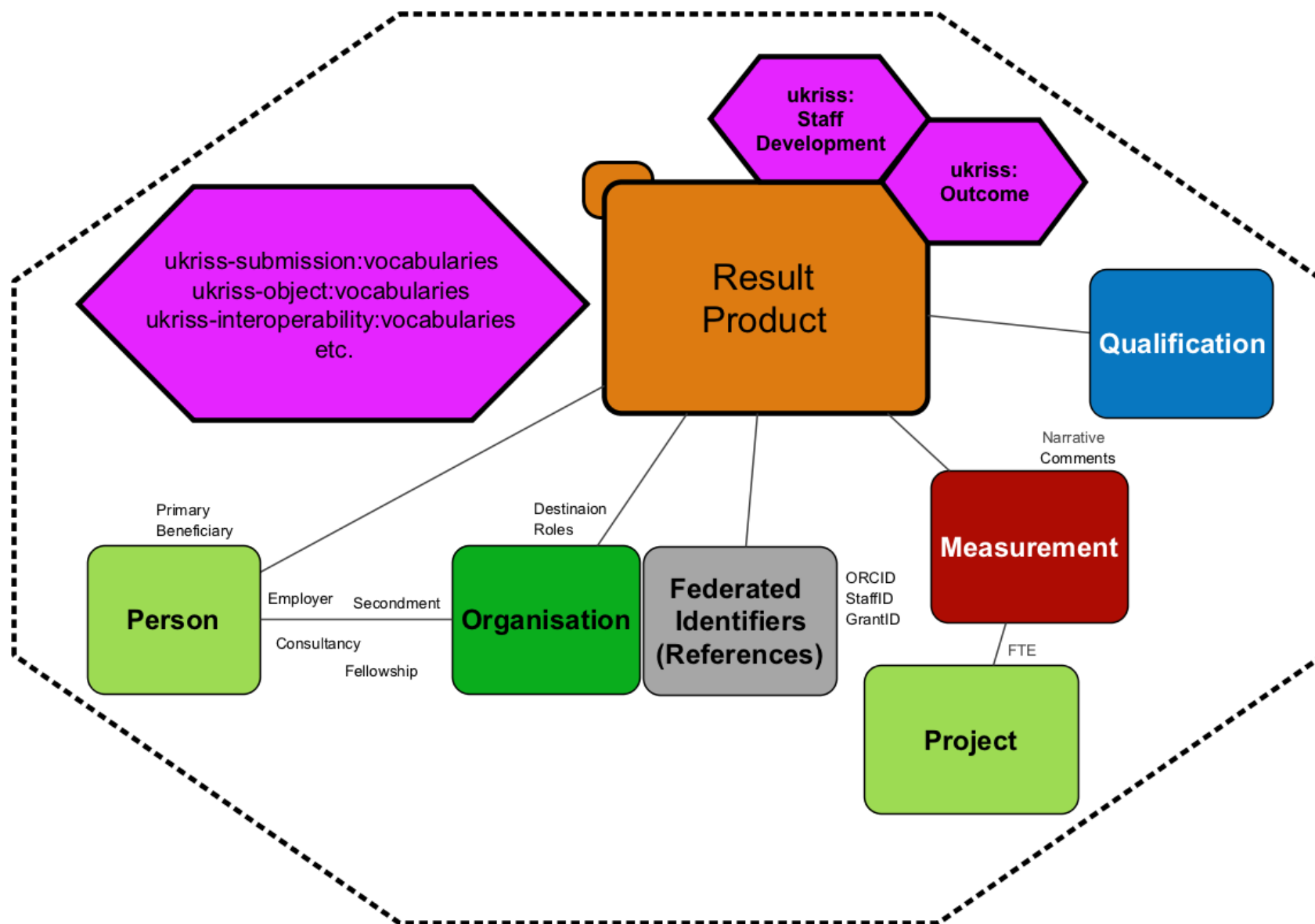
UKRISS Reporting Object: Further Funding



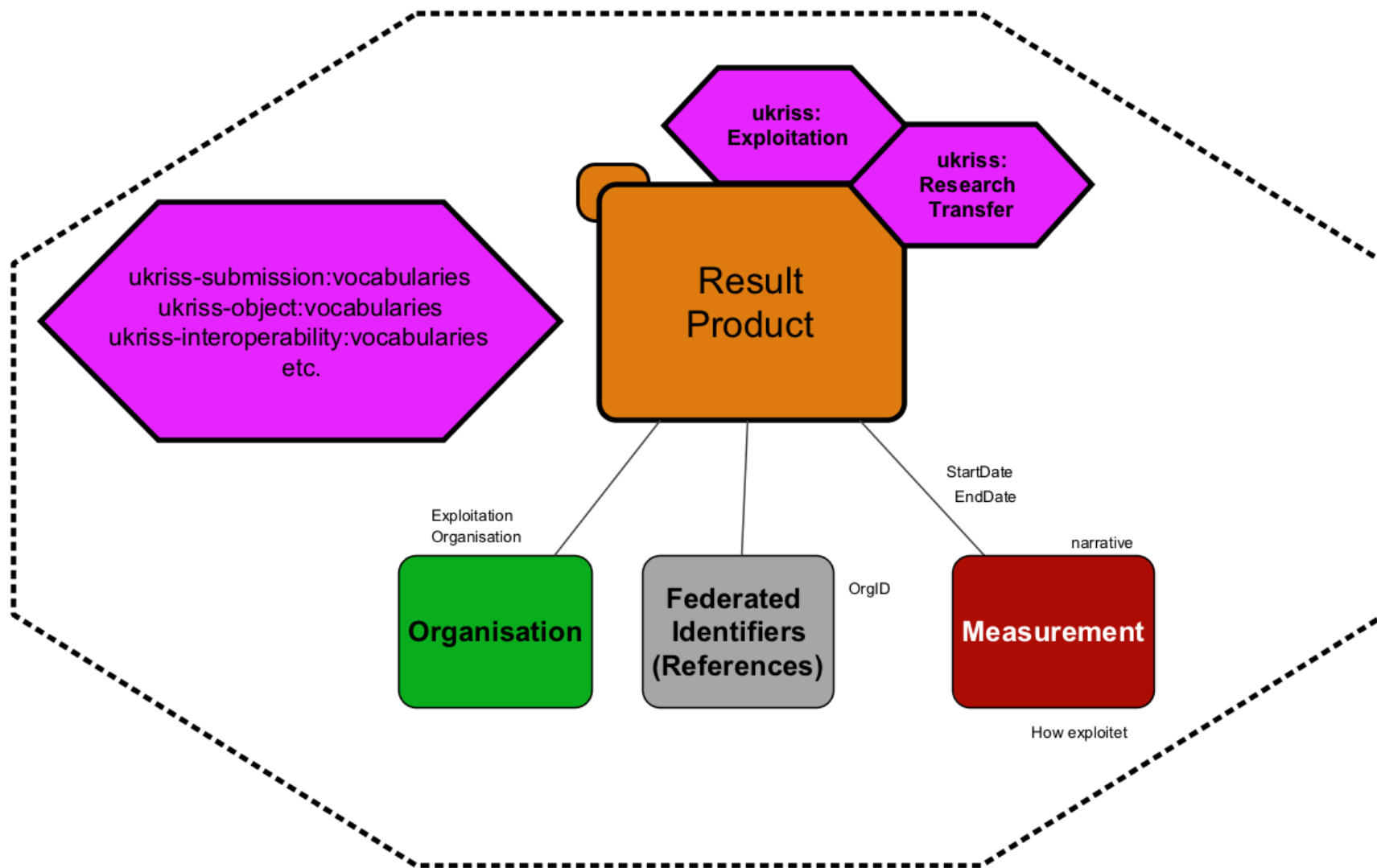
UKRISS Reporting Object: Key Findings



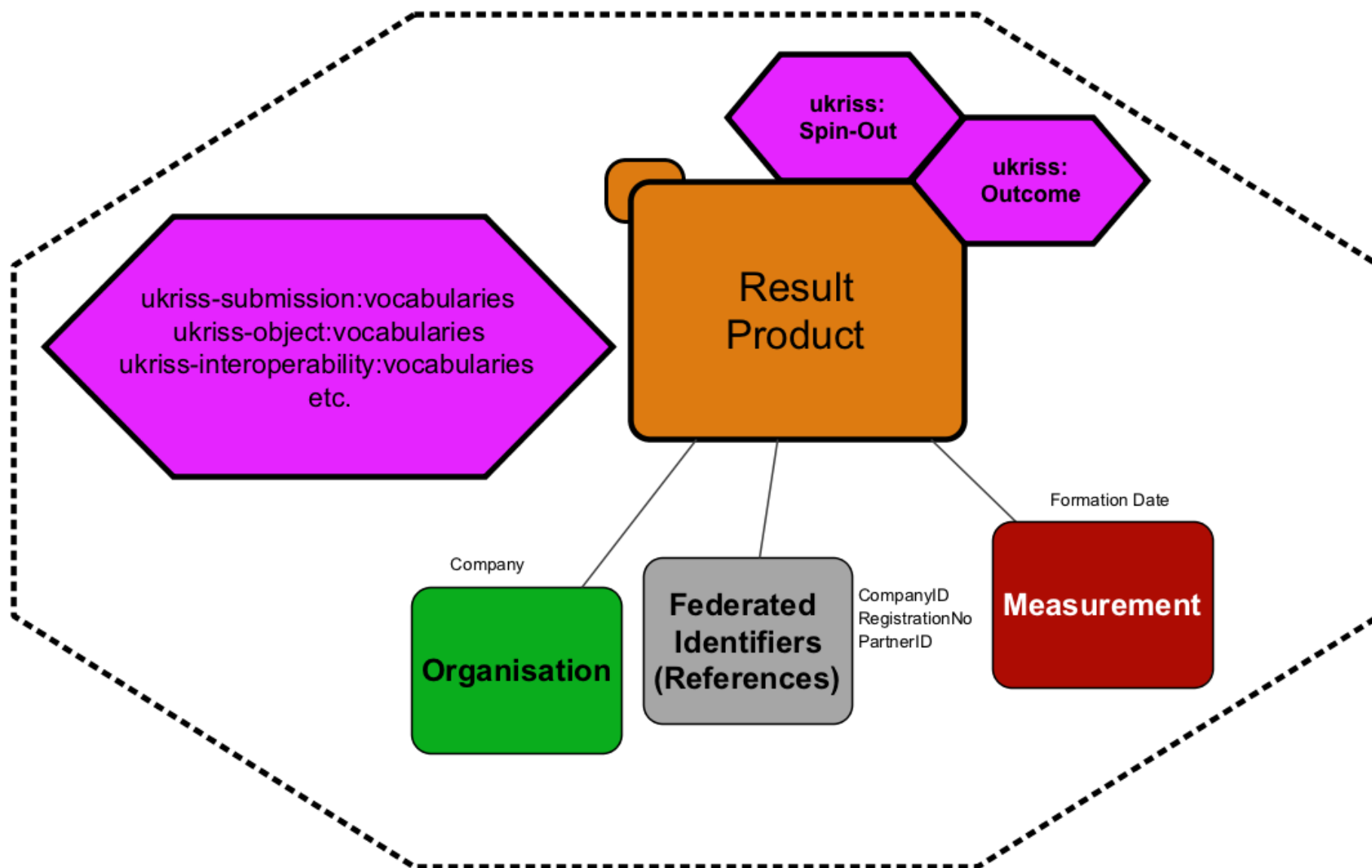
UKRISS Reporting Object: Staff Development



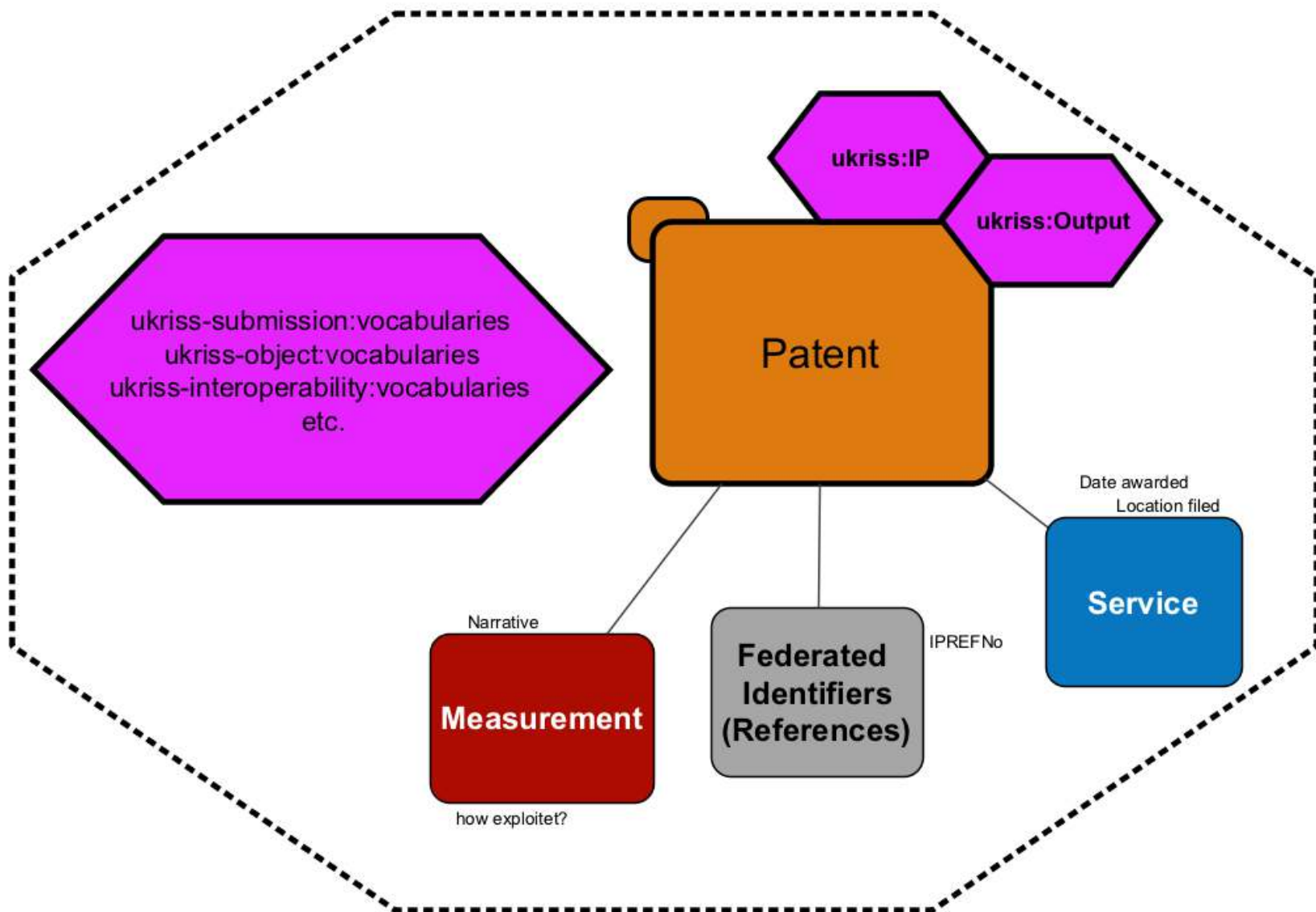
UKRISS Reporting Object: Exploitation



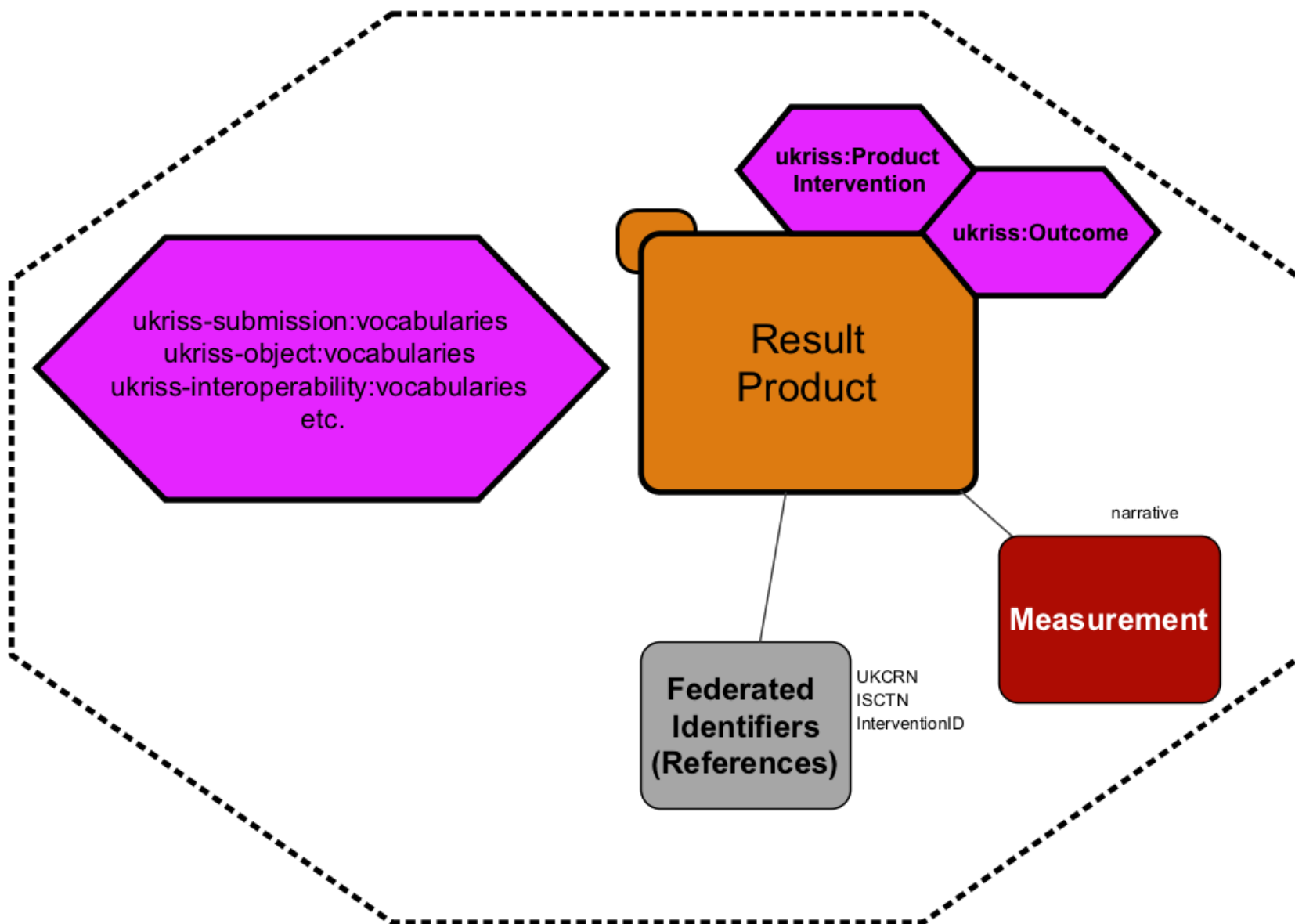
UKRISS Reporting Object: Spin-Out



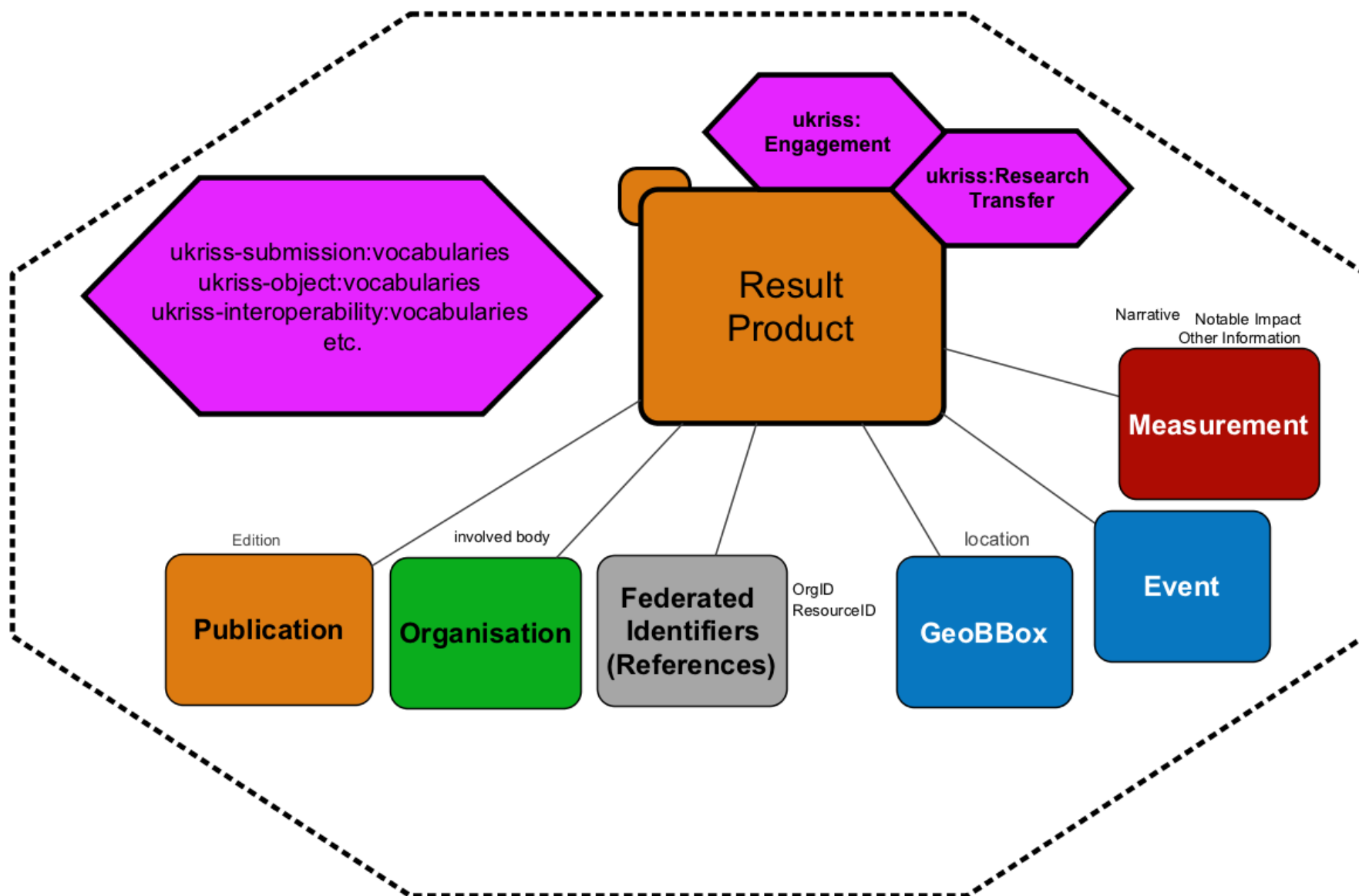
UKRISS Reporting Object: Intellectual Property



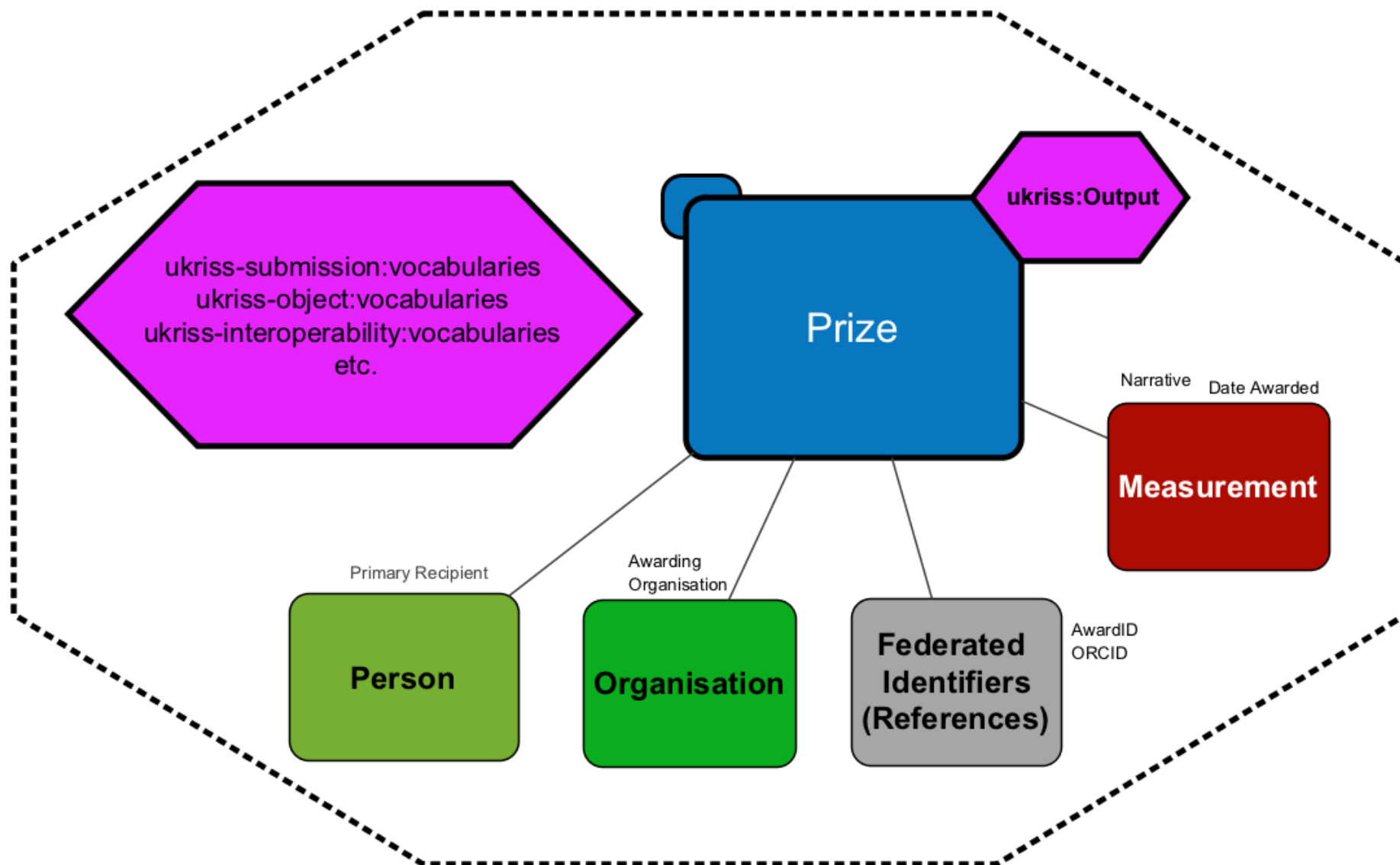
UKRISS Reporting Object: Product/Intervention



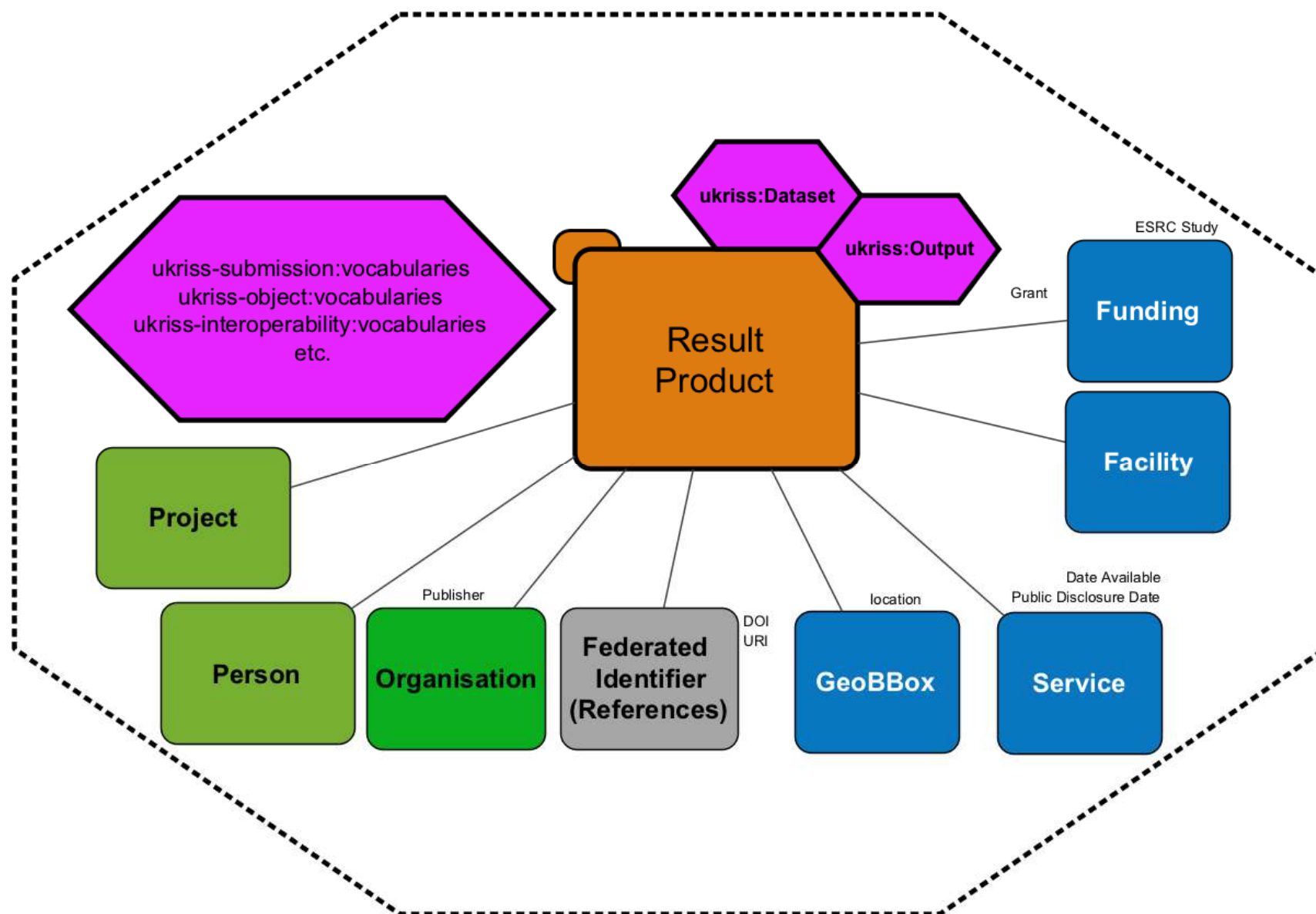
UKRISS Reporting Object: Engagement



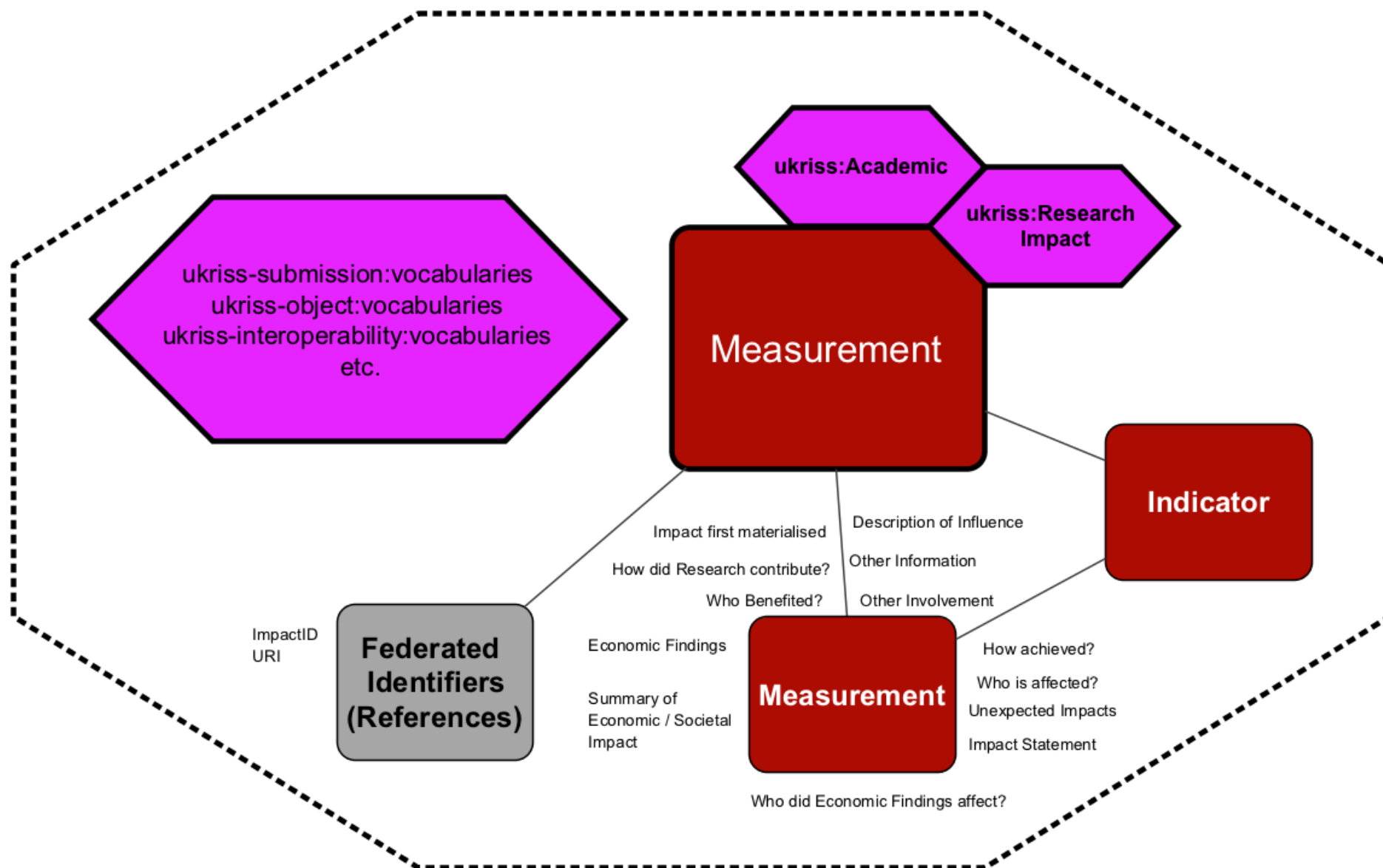
UKRISS Reporting Object: Award



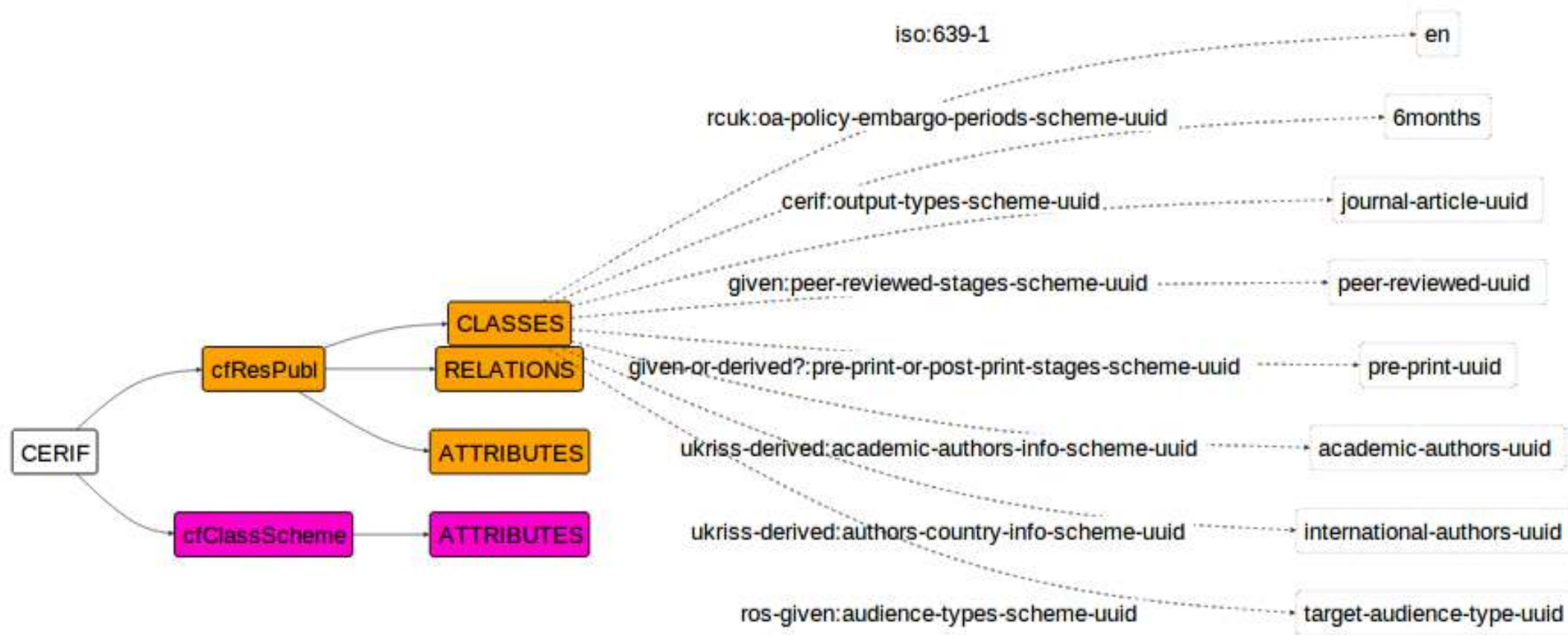
UKRISS Reporting Object: Dataset



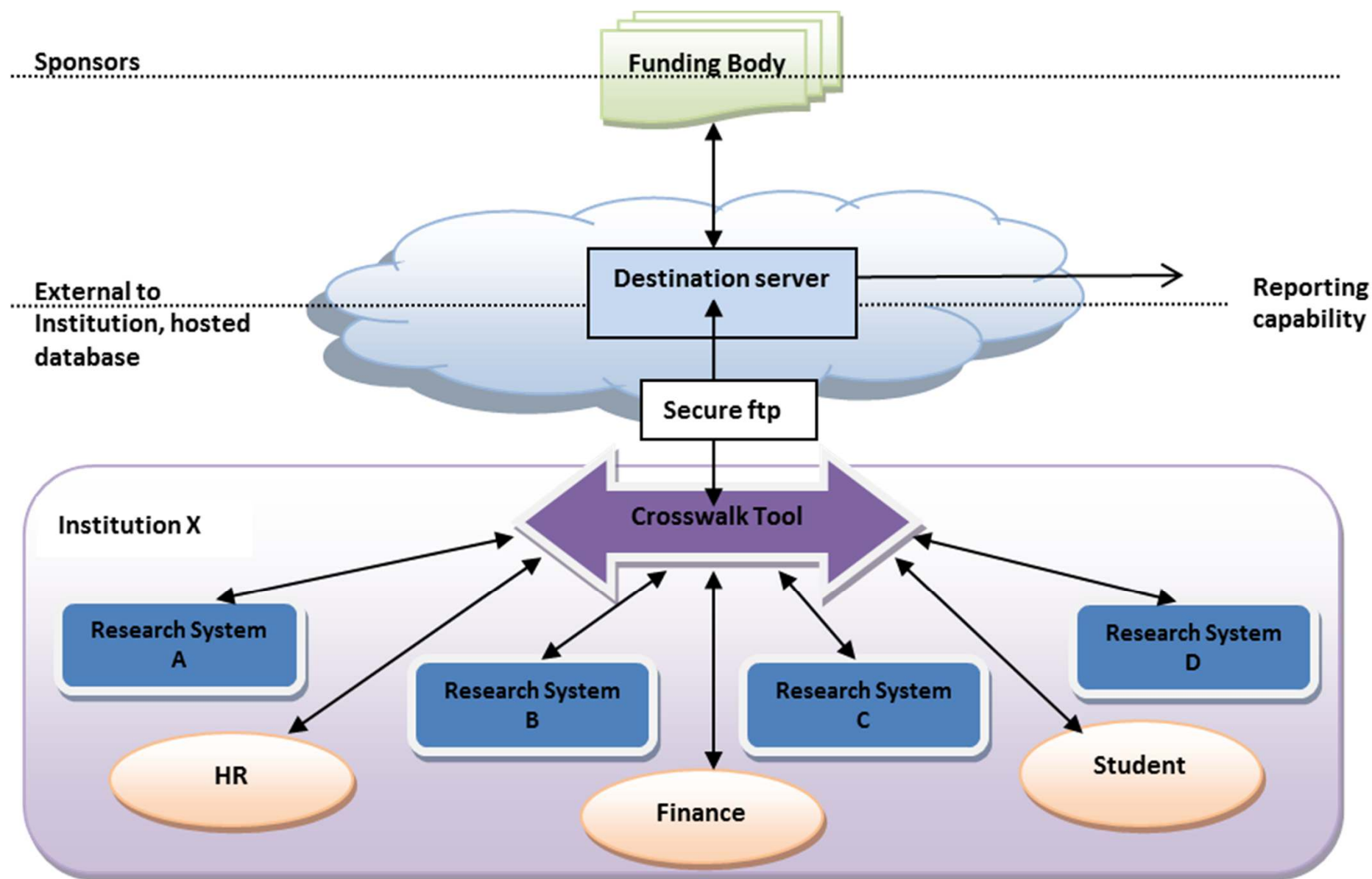
UKRISS Reporting Object: Impact



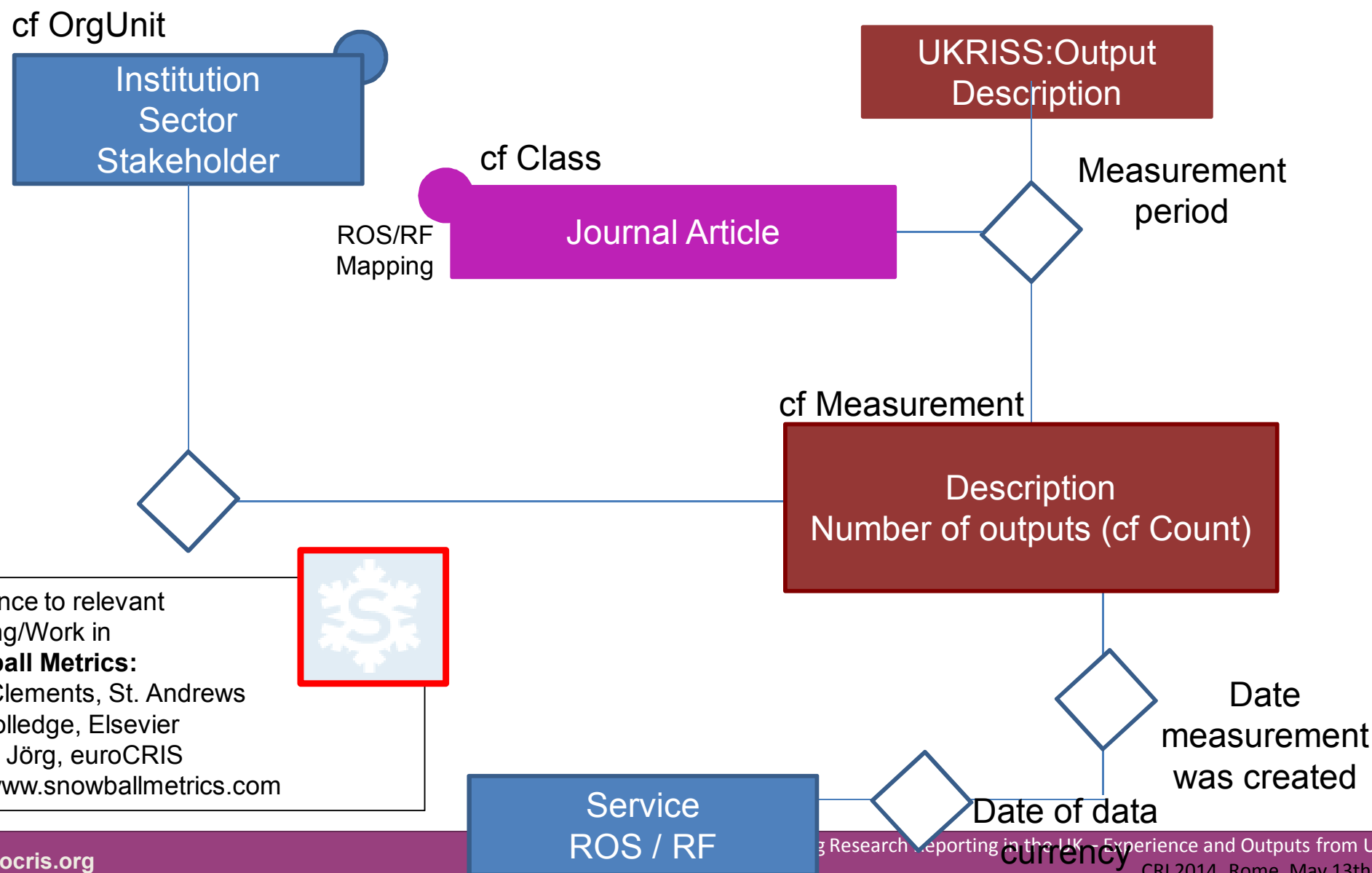
Visualisation of a validated Publication record in CERIF



Schematic of the Crosswalk Connector interfaces



CERIFy e.g. Publication (UKRISS Output)



UKRISS at ReConnect13 (Ottawa)

Joint Presentation!
See also slides by
Mathias Riechert, IFQ



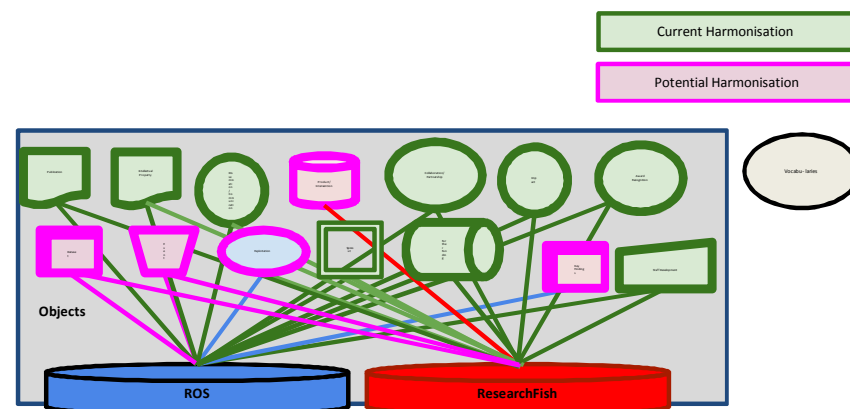
Research Information Standards Machine Anatomy in UK and Germany

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 definitions of contextual or object boundaries**

UKRISS Blog

Results and more details available at:

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