Technology Implementation Considerations for Records in Contexts (RiC)

Australian Society of Archivists Professional Development Day 2026

22 May 2026

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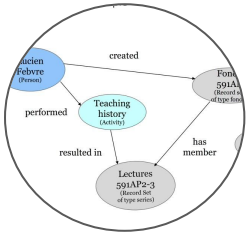
gaia resources

Technology Implementation Considerations for RiC

Gaia Resources has implemented a number of archival management systems (including both QSA and the State Records Office) across Australia. From this experience Piers will talk about the opportunities and changes challenges that RiC will mean for existing archival systems - what works, what doesn't and potential future development pathways for systems in Australia.

What is RiC?



Why would you want to use it?

Opportunities and challenges from RiC

Future?

“If I have seen further it is by standing on the shoulders of Giants.”

Sir Isaac Newton

Technology Implementation Considerations for RiC

What is RiC?

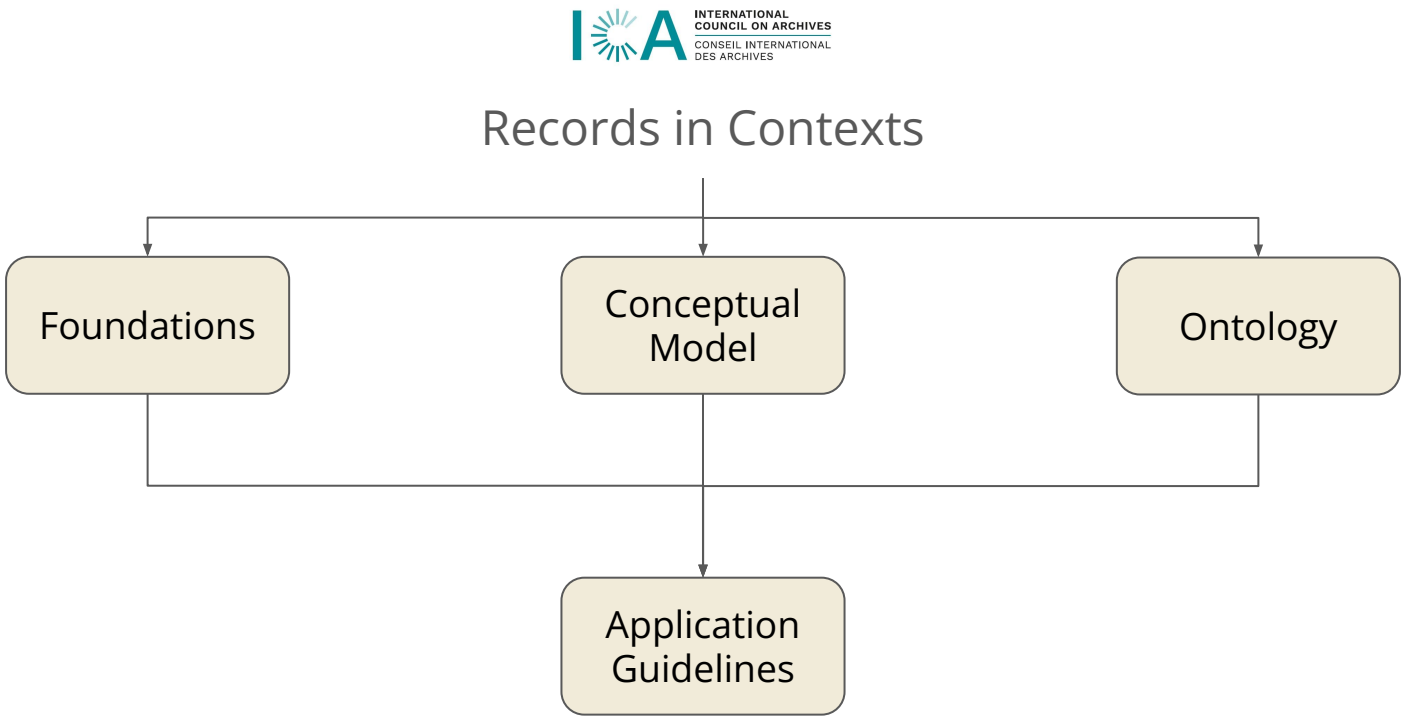
What is RiC?

Records in Contexts (RiC) is the **new ICA standard for describing records**. It is transforming how we describe records and access them, allowing to move to a more contextualized, flexible, accurate, dynamic, and connected approach. By linking records with people, places, and events, RiC enhances discovery, access, and understanding — essential for today's digital world.

Records in Contexts, or **RiC**, is a standard for describing records,[1] created and maintained by the Expert Group on Archival Description (EGAD) of the International Council on Archives (ICA). Version 1.0 of the first three parts of the standard — a high-level conceptual model (RiC-CM),[2] an ontology (RiC-O),[3] and a description of the foundations of the standard (RiC-FAD)[4] — were released in late 2023, whilst version 0.1 of the fourth part, containing application guidelines (RiC-AG),[5] was released in October 2025. It is an official recommendation[6] of ICA that RiC replace the earlier standard ISAD(G), which is in use widespread use directly and in derived form, along with the latter's companion standards ISAAR(CPF), ISDF, and ISDIAH.

"RiC is simply an enhanced and expanded version of the Series System. The rest of the world has caught up and run a long way with it - taking advantage of linked data and taking it to exciting new places."

What is RiC?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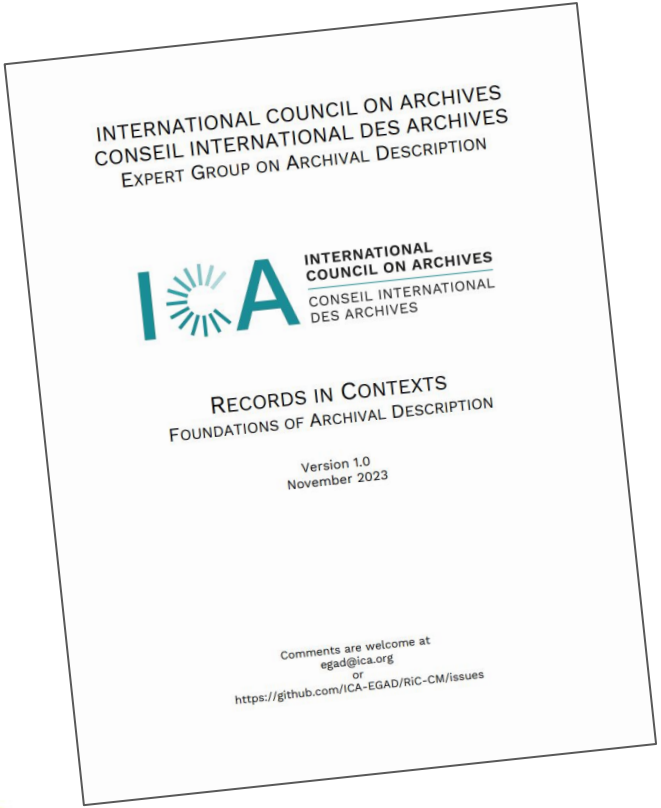
Foundations
Conceptual Model
Ontology
Application Guidelines

What is RiC - Foundations

“Records in Contexts–Foundations of Archival Description (RiC-FAD) is a brief introduction to the principles and purpose of archival description.”

The RiC-FAD document covers:

1. Overview of Records in Contexts
2. The Antiquity of Recordkeeping
3. Early Making and Keeping of Physical Records
4. Enduring Characteristics of Records and Recordkeeping
5. Emergence of the Principle of Provenance
6. Expanding the Understanding of Provenance
7. The Role of the Archivist
8. Role of Record Description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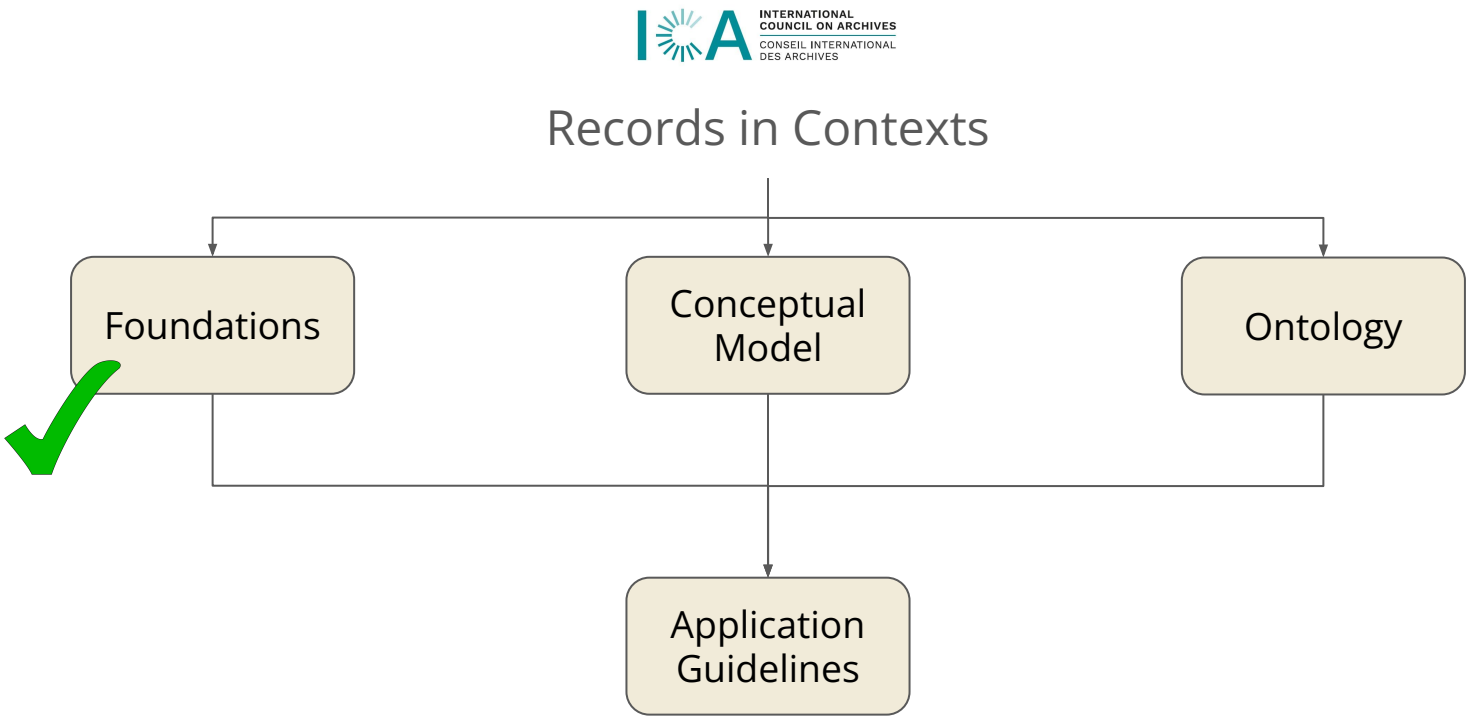
RECORDS IN CONTEXTS
FOUNDATIONS OF ARCHIVAL DESCRIPTION

Version 1.0
November 2023

Comments are welcome at
egad@ica.org
or
https://github.com/ICA-EGAD/RiC-CM/issues

https://www.ica.org/ica-network/expert-groups/egad/records-in-contexts-foundations-of-archival-description/

What is RiC?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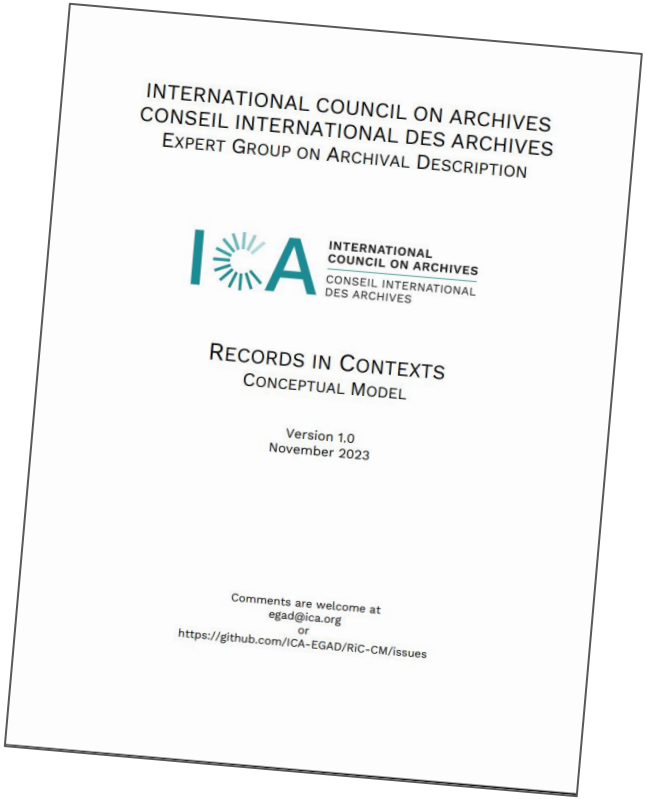
Foundations
Conceptual Model
Ontology
Application Guidelines

What is RiC - Conceptual Model

“RiC-CM is a high-level conceptual model that focuses on intellectually identifying and describing records, the people that created and use(d) them, and the activities pursued by the people that the records both facilitate and document. As a high-level model, RiC-CM is a broad conceptual framework. It does not address the full range of activities needed to manage records, nor does it address the full detail that may be required in any possible context in which it may be applied.

As a point of departure, RiC-CM covers all of the essential content of the four existing International Council on Archives (ICA) description standards: General International Standard Archival Description (ISAD(G)) ; International Standard Archival Authority Records for Corporate Bodies, Persons, and Families (ISAAR(CPF)); International Standard for Describing Functions (ISDF) and International Standard for Describing Institutions with Archival Holdings (ISDIAH). RiC-CM replaces these four standards in one overarching standard. It incorporates from them the core descriptive entities, the properties or attributes of these entities, and the essential relations between the entities.”

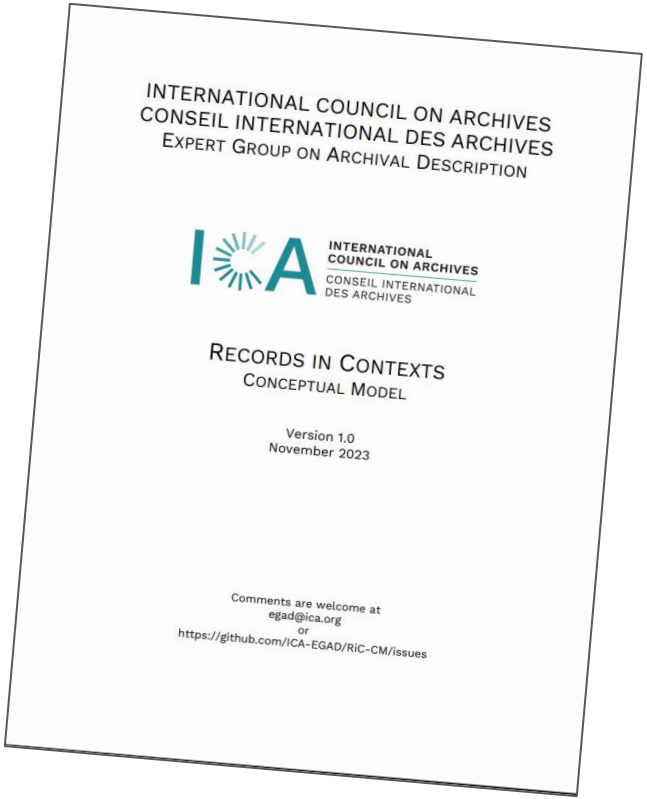


https://www.ica.org/ica-network/expert-groups/egad/records-in-contexts-conceptual-model/

What is RiC - Conceptual Model

“RiC-CM differs from the existing ICA standards in an important way. The existing ICA standards model description, that is, they model a finding aid, whereas RiC-CM models the entities as such, as a basis for describing but without anticipating any particular end product.

RiC-CM emphasizes the intellectual description of records and record contexts. Because analogue and digital records are represented in a wide variety of physical forms, RiC-CM also necessarily addresses description of physical instances of records, but it does not cover all of the attributes and relations that will be required for physically (as opposed to intellectually) managing record instances, for example, the exact physical locations of record instantiations or descriptions of their instantiation containers. To accommodate additional description related to physical management, RiC-CM is designed to be extensible, either through the formal ICA standards development and maintenance process, or through the use of existing standards that address the attributes and relations needed for physical management and preservation of records.”



https://www.ica.org/ica-network/expert-groups/egad/records-in-contexts-conceptual-model/

What is RiC - Conceptual Model

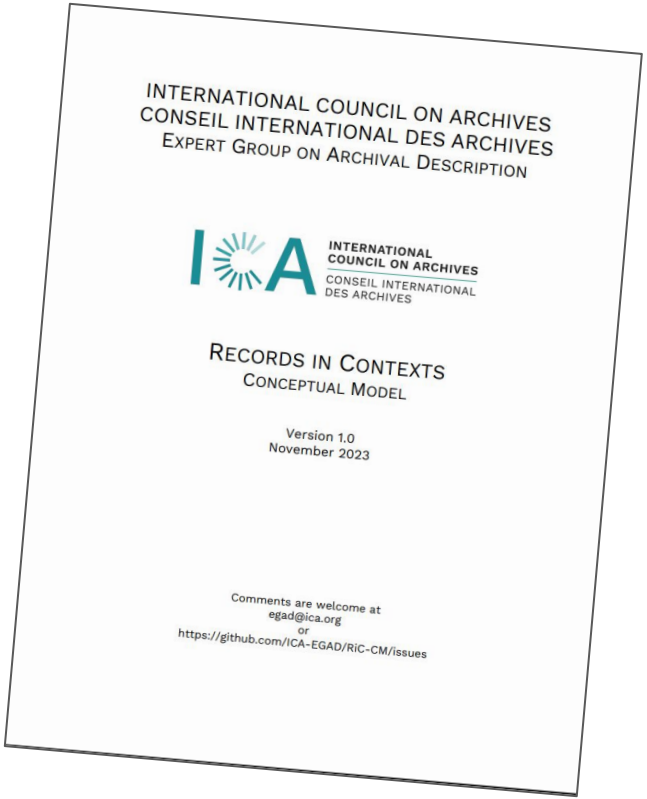
“It follows that RiC-CM is not any of the following, though it may inform the development of each:

● A standard or set of rules for composing or forming descriptive content.

● An implementation specification for developing records management and public access systems.

● A model for physically managing records, though it does provide a framework for the intellectual component of such management.

● A data communication or exchange standard.”



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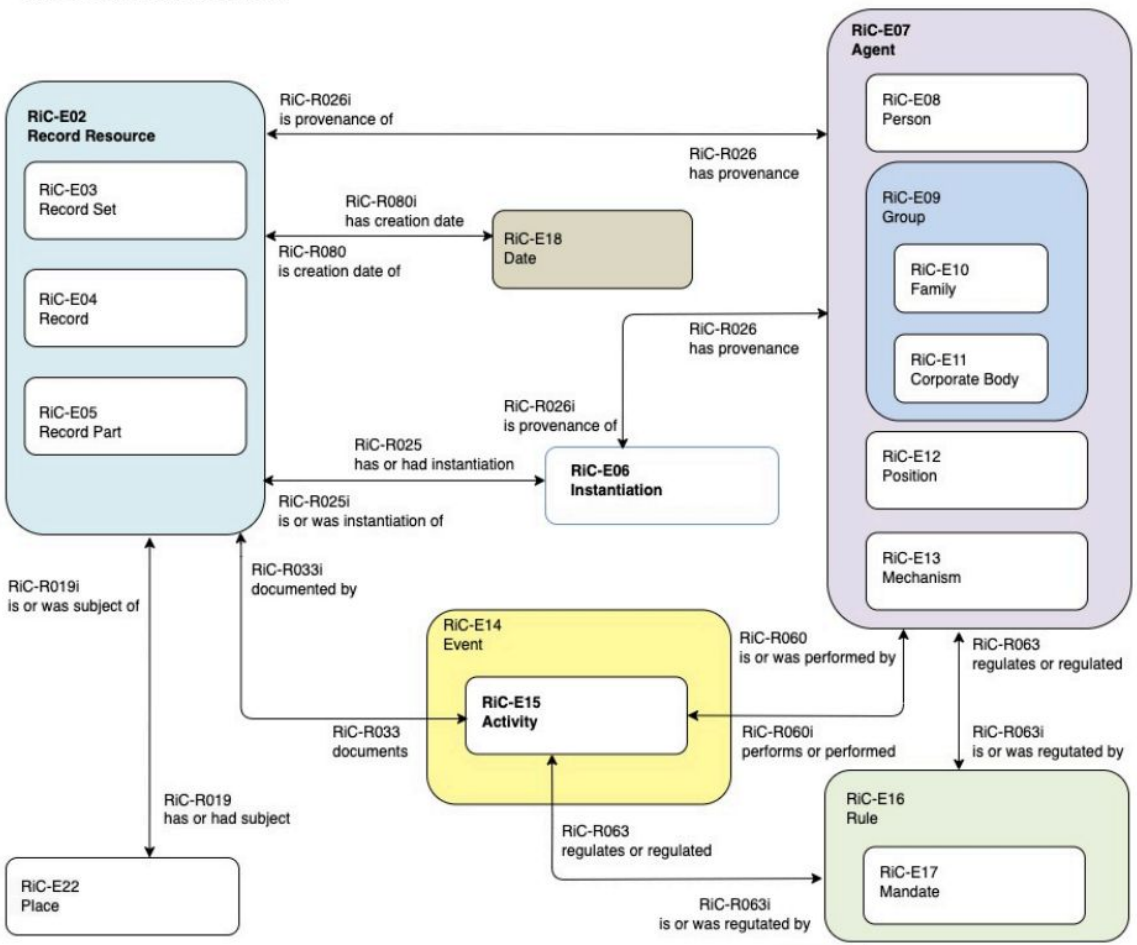
RiC-CM v1.0: a global overview
RiC-E02
Record Resource
RiC-E03
Record Set
RiC-E04
Record
RiC-E05
Record Part
RiC-R026i
is provenance of
RiC-R026
has provenance
RiC-E07
Agent
RiC-E08
Person
RiC-E09
Group
RiC-E10
Family
RiC-E11
Corporate Body
RiC-R080i
has creation date
RiC-R080
is creation date of
RiC-E18
Date
RiC-R026
has provenance
RiC-R026i
is provenance of
RiC-R025
has or had instantiation
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is or was instantiation of
RiC-E06
Instantiation
RiC-E12
Position
RiC-E13
Mechanism
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RiC-E14
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Created by ICA-EGAD in September 2023.
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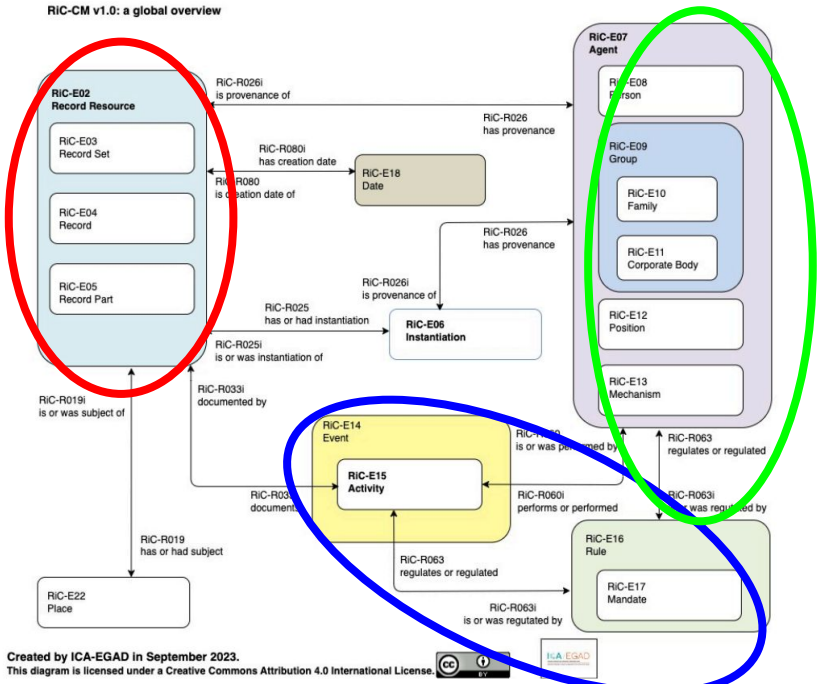
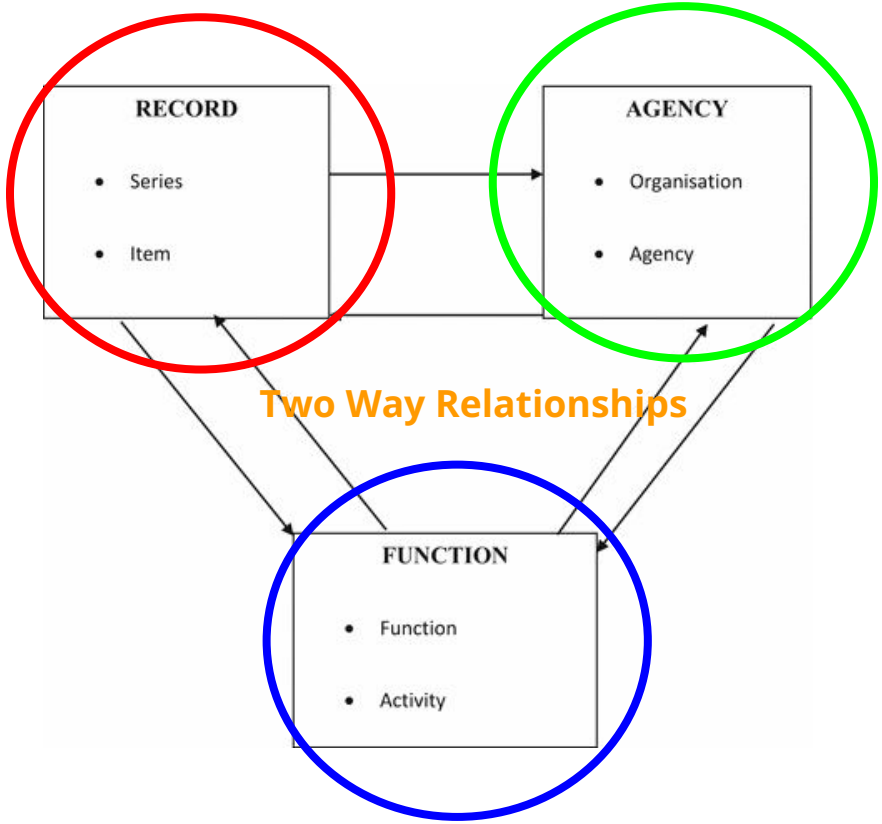
Looks familiar?





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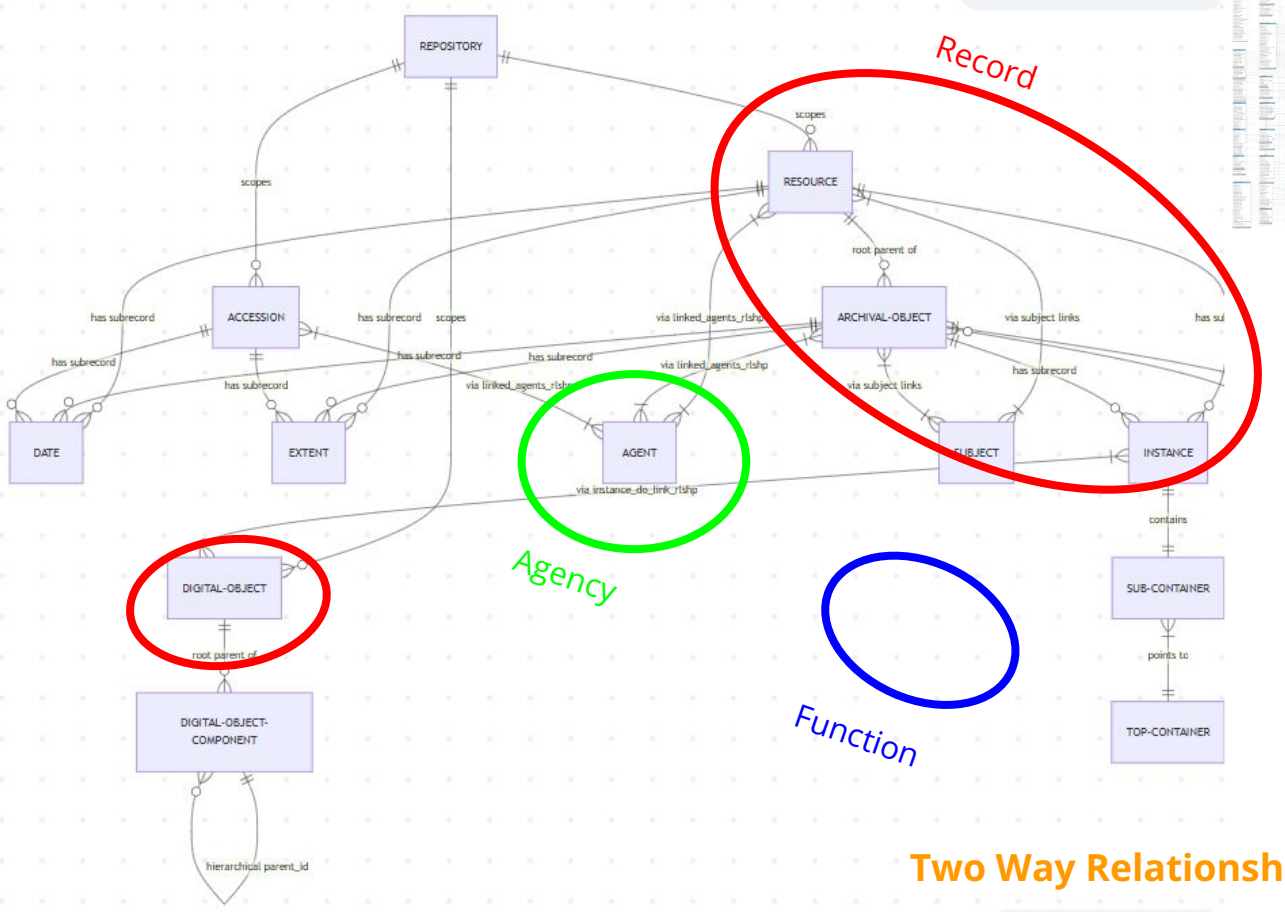
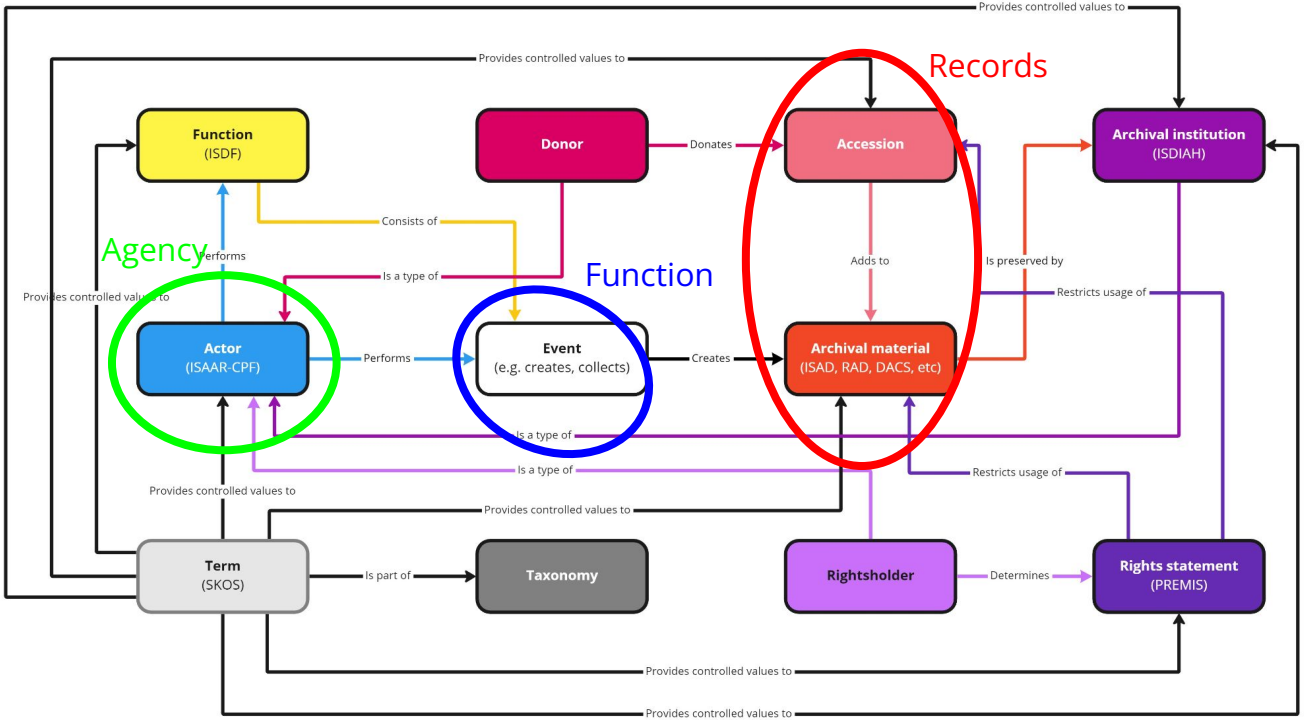


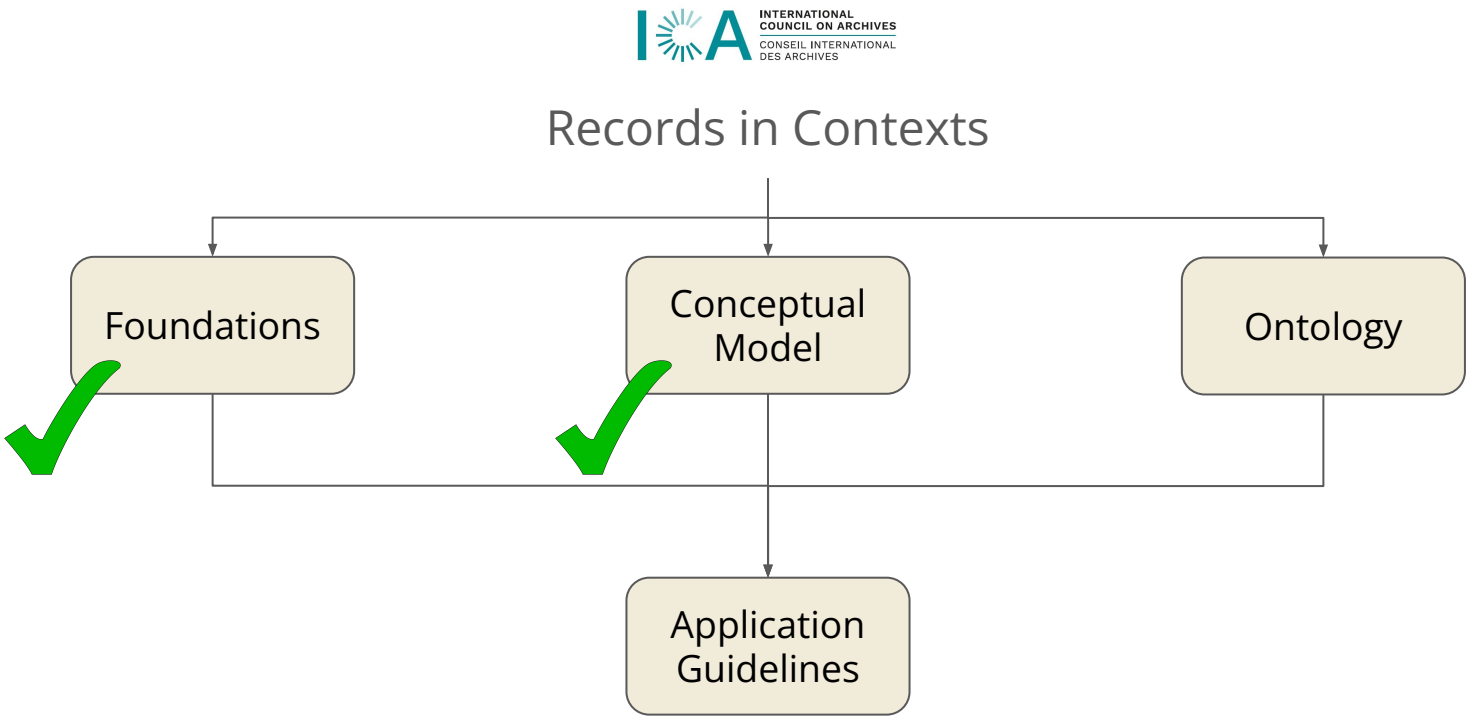
Two Way Relationships!

Looks familiar?



Two Way Relationships!

What is RiC?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Foundations
Conceptual Model
Ontology
Application Guidelines

Sorry, we’re about to start getting a little bit technical…

What is RiC - Ontology

In information science, an **ontology** encompasses a representation, formal naming, and definitions of the categories, properties, and relations between the concepts, data, or entities that pertain to one, many, or all domains of discourse. More simply, an ontology is a way of showing the properties of a subject area and how they are related, by defining a set of terms and relational expressions that represent the entities in that subject area. The field which studies ontologies so conceived is sometimes referred to as *applied ontology*.[1]

WIKIPEDIA 25 years of the free encyclopedia

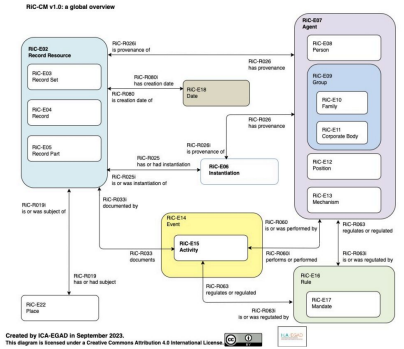
In plain English, an ontology is a "digital rulebook" that defines what things exist in a specific world and how they are allowed to relate to one another.

OR

It’s a controlled vocabulary for the metadata fields.

What is RiC - Ontology

Think of the RiC ontology as a set of definitions for three things:



1. The "Things" (Classes)
In the archival world, not everything is a "record." The ontology defines the specific categories allowed. In RiC, these are things like:

- Record Resource (The document or file)
- Agent (The person or department that made it)
- Activity (The reason it was made)
- Place (Where it happened)

2. The "Labels" (Attributes)
These are the details we track for each "thing."
Example: A Record Resource can have a "Date," a "Title," or a "Physical State." The ontology ensures everyone uses the same label so the computer doesn't get confused between "Date of Creation" and "Date of Acquisition."

3. The "Connections" (Relationships)
This is the most powerful part of an ontology. It defines how the "things" interact.
Example: Instead of just saying a person is "linked" to a file, the ontology allows us to be precise: "Person A is the creator of Record B" or "Record C is a previous version of Record D."

What is RiC - Ontology

“RiC-O (Records in Contexts-Ontology) is an OWL ontology for describing archival record resources. As the third part of Records in Contexts standard, it is a formal representation of Records in Contexts Conceptual Model (RiC-CM).

An OWL ontology is a way of structuring knowledge (including hierarchies and relationships) so that they are easily shared and linked with other datasets)

RiC-O provides a generic vocabulary and formal rules for creating RDF datasets to describe any kind of archival record resource, whether natively or by transforming existing metadata (or generating them from existing archival metadata). It supports publishing RDF datasets as Linked Data, querying them using SPARQL, and making inferences.”

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ICA/EGAD

International Council on Archives Records in Contexts Ontology (ICA RiC-O) version 1.1

Ontology IRI: https://www.ica.org/standards/RiC/ontology

This HTML view: https://www.ica.org/standards/RiC/RiC-O_1-1.html

OWL source file: https://www.ica.org/standards/RiC/RiC-O_1-1.rdf

Table of contents

- Ontology metadata
- Namespaces used
- Introduction
  - RiC-O design principles
  - Understanding RiC-O: a quick overview of some features
    - From RiC-CM to RiC-O
    - RiC-O documentation and annotation properties
  - Next steps
- RiC-O classes
- RiC-O datatype properties
- RiC-O object properties
- RiC-O annotation properties
- RiC-O named individuals
- Appendix I: list of changes made since the release of RiC-O v0.1

Ontology metadata

This version: **Version 1.1 - 2025-05-22.**

See also the project on GitHub, where other resources can be found: https://github.com/ICA-EGAD/RiC-O, and the accompanying website (https://ica-egad.github.io/RiC-O/)

Prior versions: RiC-O 1.0.2; RiC-O 1.0.1; RiC-O 1.0

Incompatible with version: 0.2

Creator:

International Council on Archives Expert Group on Archival Description (ICA EGAD)

Contributors (in alphabetical order of their last names):

Florence Clavaud (Archives nationales de France), member of EGAD and lead of EGAD RiC-O team from 2012

Regine I. Heberlein (University of Princeton, USA), member of EGAD and EGAD RiC-O team from 2023 to 2024

Miia Herrala (National Archives of Finland), member of EGAD and EGAD RiC-O team from 2016 to 2022

Jan Krause-Bilvin (docuteam, Switzerland), member of EGAD and EGAD RiC-O team from 2023

Daniel Pitti (University of Virginia, USA), chair of EGAD from 2012

https://www.ica.org/standards/RiC/RiC-O_1-1.html

Linked Data is a concept, whereby we connect data through the use of Unique Web Identifiers. So data in one “table” can connect to data in another “table” through these links.

OWL is the Web Ontology Language. This is the “grammar and logic” - or the rules - that enable Linked Data to be implemented.

RDF is the Resource Description Framework which is the vocabulary or words that we utilise within the linked data system that utilises OWL

An **ontology** defines which words that we use in the RDF triples and covers “the things, the labels and the relationships” from earlier

We store all this in a **graph** database. Unlike a relational database (a collection of lists), a graph database is a collection of connections. It’s the tech that stores all the above.

SPARQL is the way we search this big network that we’ve created - SPARQL Protocol and RDF Query Language.

Linked Data: Concept

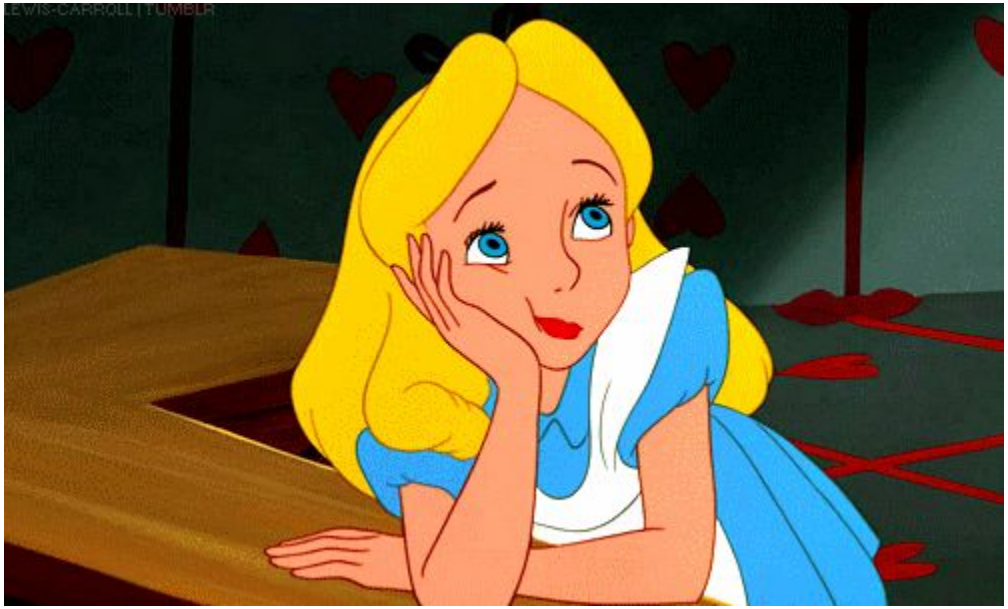
OWL: How we implement that concept

RDF: The data containers we use in OWL

Ontology: The words we use in the containers

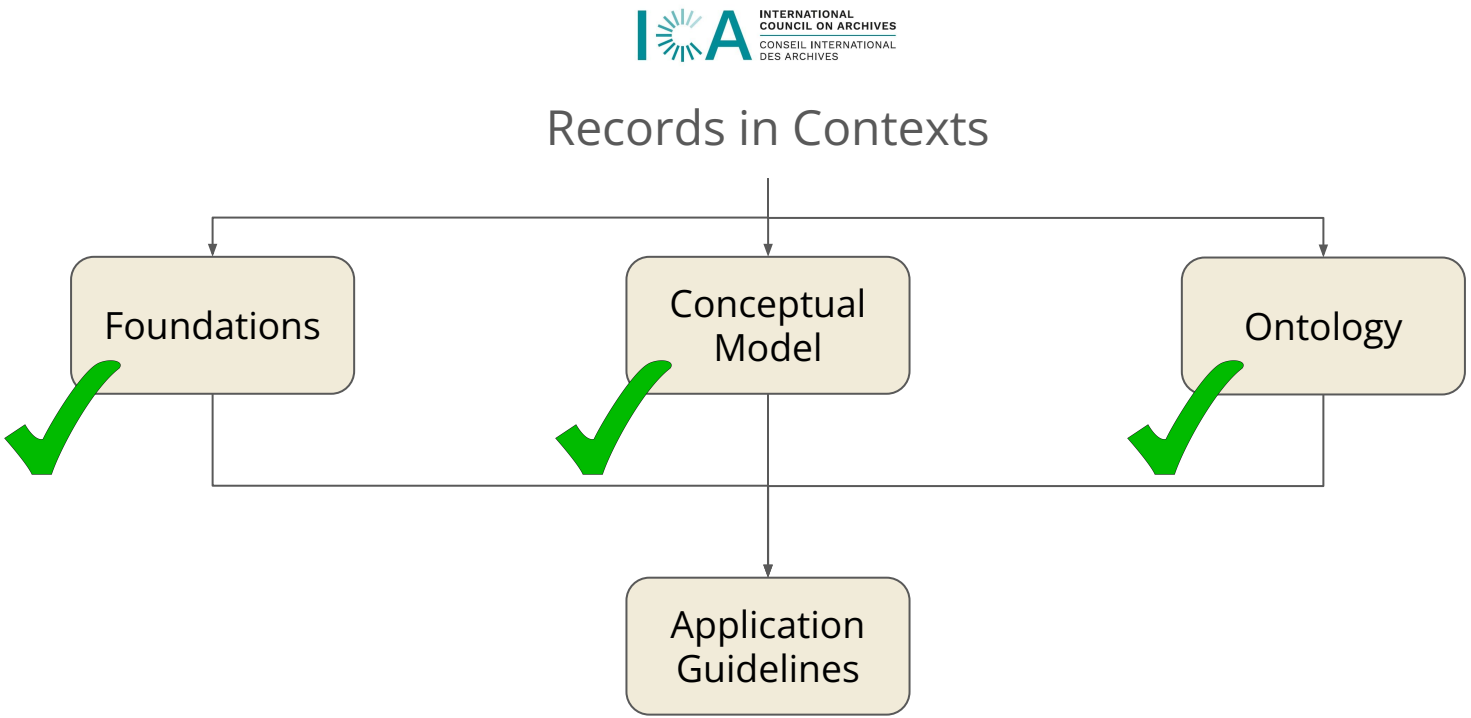
Graph database: The engine room where it’s all stored

SPARQL: How we search it all



We’re done on the technical side for the minute…

What is RiC?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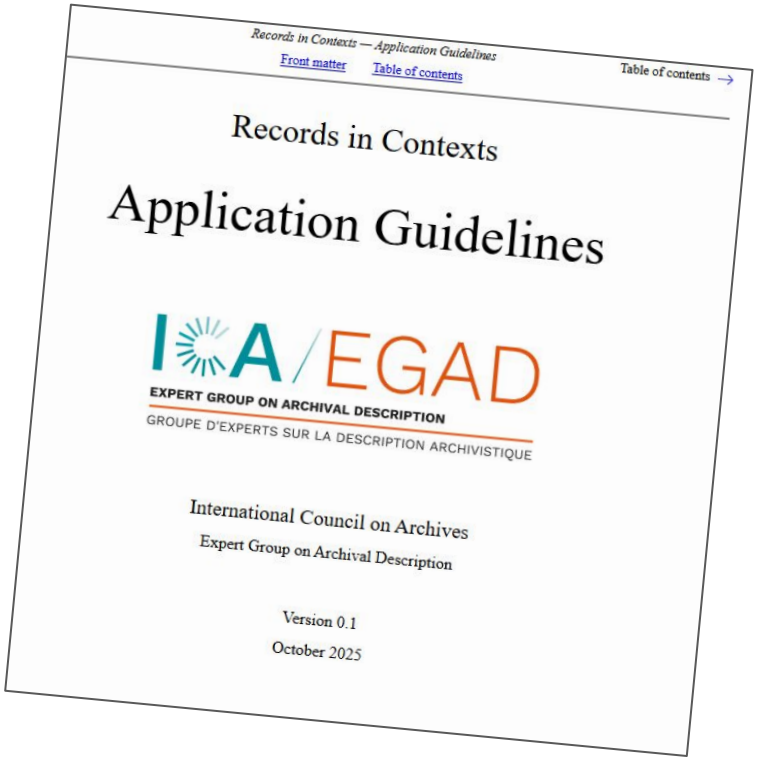
Records in Contexts
Foundations
Conceptual Model
Ontology
Application Guidelines

What is RiC - Application Guidelines

“The International Council on Archives (ICA) Expert Group on Archival Description (EGAD) recognizes that RiC significantly differs conceptually from the previous ICA standards, in particular ISAD(G), the most widely used and influential. RiC-AG is intended to help the archival community understand RiC, in particular RiC-CM. RiC-AG is also intended to help archives and developers that support archives in developing strategies for implementing RiC, and in managing the transition from existing practices and systems to RiC-based practices and systems.

In developing RiC-AG, the EGAD recognizes that archives differ in current approaches to description and in the systems that support these practices. As a result, scenarios for using RiC will vary considerably. To assist in designing the RiC-AG, the EGAD solicited user stories from the community in April 2024. EGAD also re-examined user comments collected after the publication of the RiC-CM 0.2 consultation draft. The goal of the survey and review of past comments was to help the EGAD in identifying appropriate content for the RiC-AG. Nevertheless, while RiC-AG aims to provide broad guidance that will be helpful across a range of scenarios, it does not offer specific guidance that will address every possible user context.”



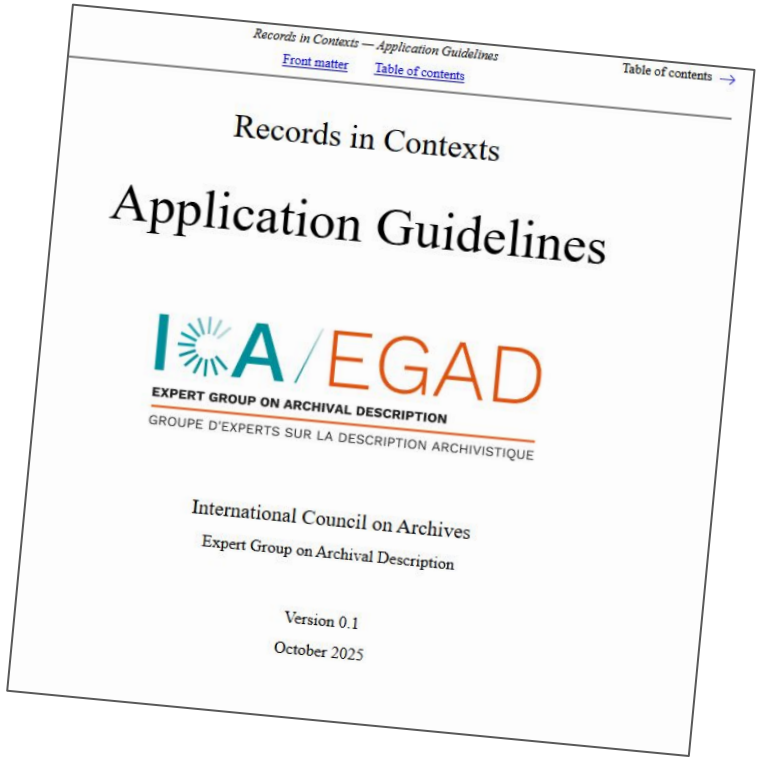
https://ica-egad.github.io/RiC-AG/

What is RiC - Application Guidelines

The RiC Application Guidelines include:

1. What are the benefits of using RiC?
2. Getting started with RiC
3. Implementation strategies
4. Combining RiC with other standards
5. Mappings
6. FAQ

This is a general guide for you to consider if you're thinking about implementing RiC within your organisation - a good place to start!



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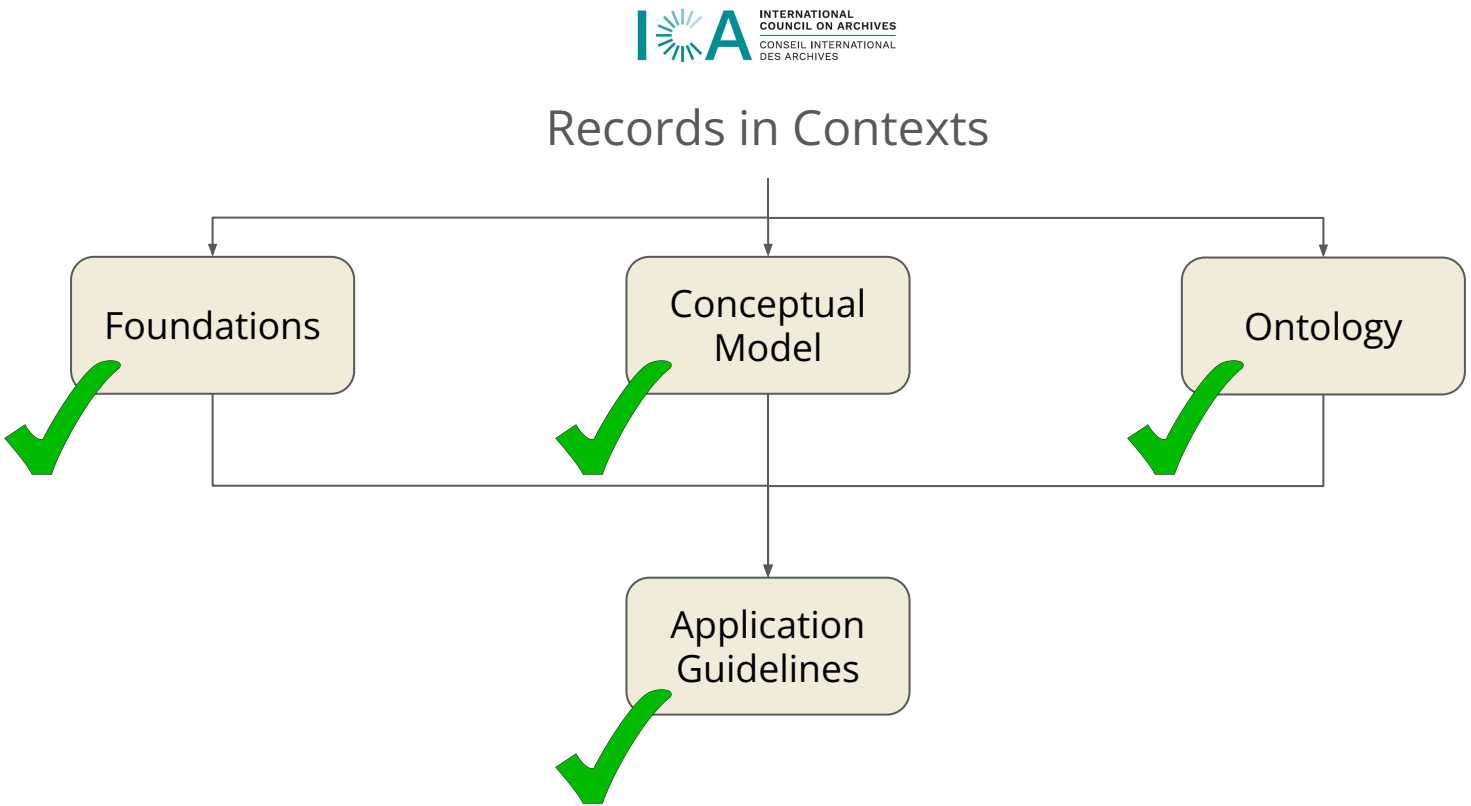
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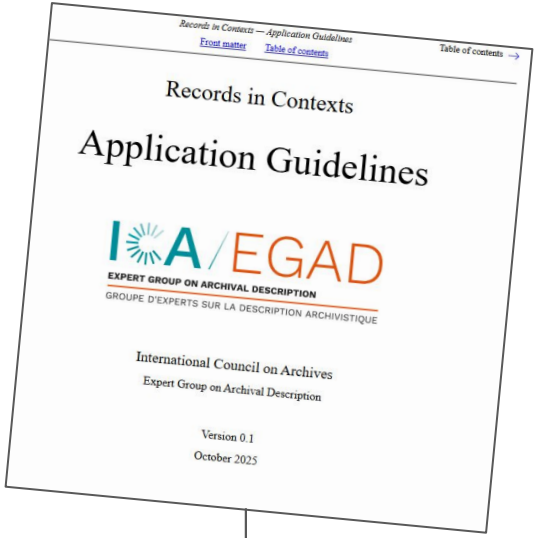
Records in Contexts
Foundations
Conceptual Model
Ontology
Application Guidelines

Technology Implementation Considerations for RiC

Why use RiC?

Why use RiC?



- For end users
- For archival practitioners
- For IT Managers and CIOs
- For General Managers

https://ica-egad.github.io/RiC-AG/

Why use RiC?

For end users

The benefit for end users comes mostly from the network structure that is one of the foundations of RiC. After all, records may not only be related through a common provenance, but may also be related to common people and places. This makes it easier for end users to answer questions like: 'what archival material is available about my home?' or 'what archival material relates to my grandmother?' or 'what archival material relates to healthcare in the 1950s?'.

For archival practitioners

Flexibility in hierarchies - multiple relationships can exist

Various points of entry into the record itself - from the entity or other places, so you don't need to know and understand the hierarchy

Records can be instantiated more than once - digital and physical

Flexibility in how you would describe your archives

https://ica-egad.github.io/RiC-AG/

Why use RiC?

For IT Managers and CIOs

With Records in Contexts we have one global and consistent reference model, maintained by and for the professional community which uses it. It can be used as a way to break down internal silos and design a data-oriented enterprise architecture. In this architecture, processes can be organized more efficiently using software components that are interoperable and easily interchangeable - if the components comply with the standard. The resulting architecture is better suited to archival processes and will meet the needs of existing and future end users.

For archival practitioners

The introduction of Records in Contexts in your organization is worth the extra effort and resources as it results in greater control of the ever-increasing amount of data. Through a better understanding of the components of the data and the software, the quality of the metadata in your collection improves, as well as the efficiency of the processes handling it.

Records in Contexts makes your organization ready for the future.

https://ica-egad.github.io/RiC-AG/

Technology Implementation Considerations for RiC

Opportunities and Challenges from RiC

Opportunities and Challenges from RiC

Opportunities

- *Flexibilities in hierarchies*
- *Various points of entry*
- *Records can be instantiated more than once*
- *Flexibility in describing archives*
- Multiple Instantiations
- Linkages between datasets
- Artificial Intelligence
- Something rather special…

The migration from old data standards to the new one

Challenges

- Data changes
- System changes

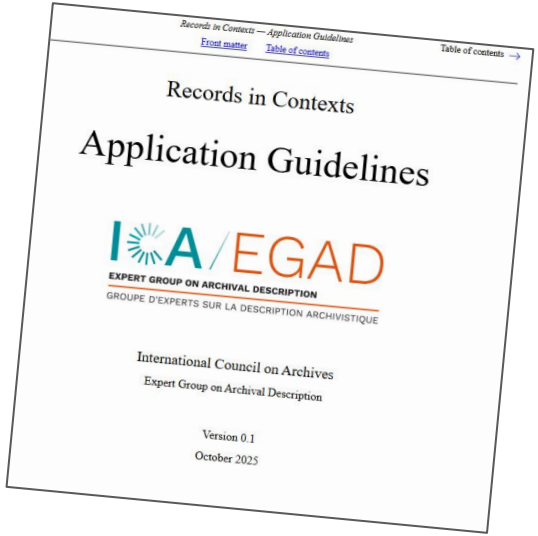
Opportunities

For end users

For IT Managers and CIOs

For General Managers

For archival practitioners



Flexibility in hierarchies - multiple relationships can exist

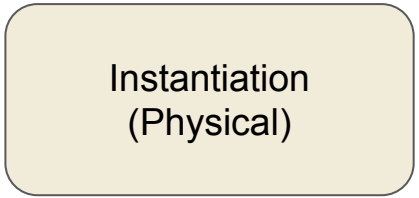
Various points of entry into the record itself - from the entity or other places, so you don't need to know and understand the hierarchy

Records can be instantiated more than once - digital and physical

Flexibility in how you would describe your archives

Opportunities - Multiple Instantiations

Multiple instantiations mean intellectual control separated from physical or digital management. This is especially relevant for the ease of deaccessioning one instantiations but keeping archival control across the record.



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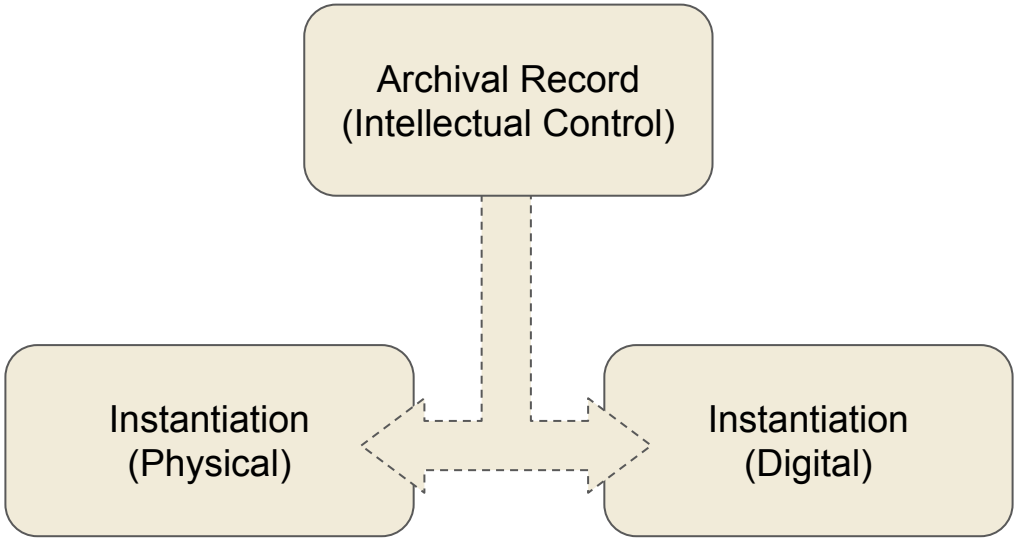


Opportunities - Linkages

Linked Data brings a range of opportunities into play; the best of which is in the name - **Links**.

End users of collections are frequently unaware of the existence of related holdings in other collections. What if this were possible? It could steer users into collections that they were unaware of, increasing the results of their research as well as expanding their awareness of other collections.

This example - the first computer purchased for the Western Australian government - for $388,000 in 1968 - is listed in the WA Museum catalogue with information about the company that manufactured it in the State Records Office collection and the receipt for it's purchase buried within Cabinet Minutes also at SRO.

Using linked data across all these organisations could make these relationships far more obvious.

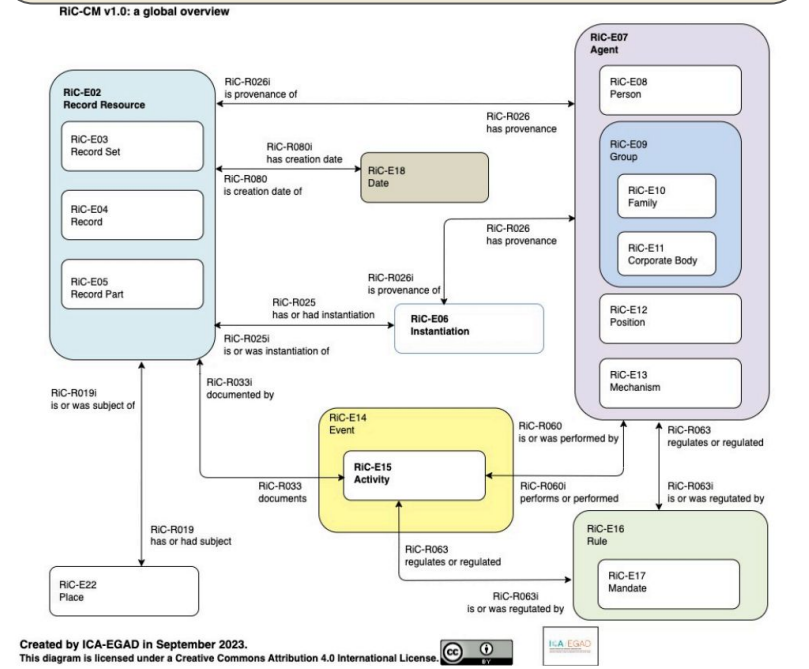
Opportunities - AI

Ready for the future - think about how ready RiC is for integration with Artificial Intelligence such as through a **GraphRAG** (Retrieval-Augmented Generation) approach.

How GraphRAG Works:

1. **The Query:** You ask a question (e.g., "How are these two archival series related?").
2. **Retrieval from the Graph:** Instead of the AI just "guessing" based on its training, it queries the Graph. It looks for the specific nodes and edges that represent the factual truth.
3. **Context Construction:** The system pulls those specific "triples" (Subject-Predicate-Object) and turns them into a text summary.
4. **Augmentation:** This factual summary is fed into the LLM along with your original question.
5. **Generation:** The AI writes a response based only on the facts retrieved from the graph.

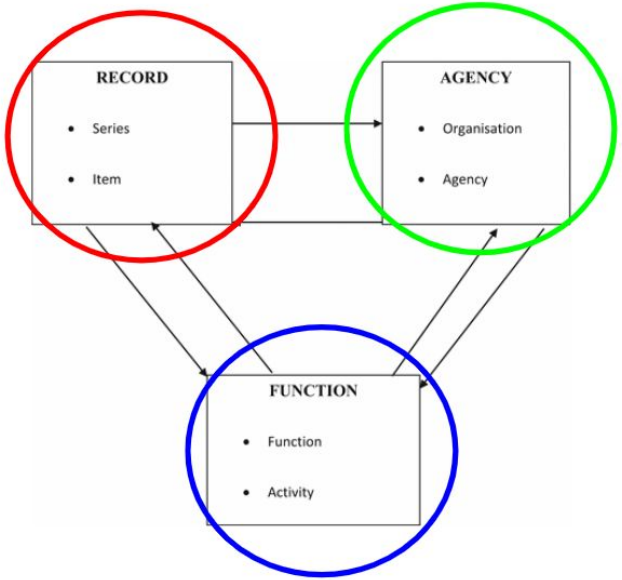
AI Model



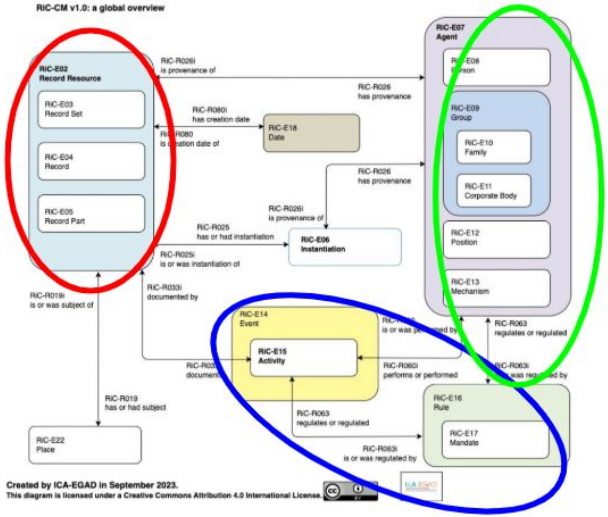
Opportunities - Something Special

“National pride - we paved the way for RiC so now we need to be at the forefront of implementing RiC. Let’s take advantage of our head start!”

Challenge and Opportunity - Australian Series System



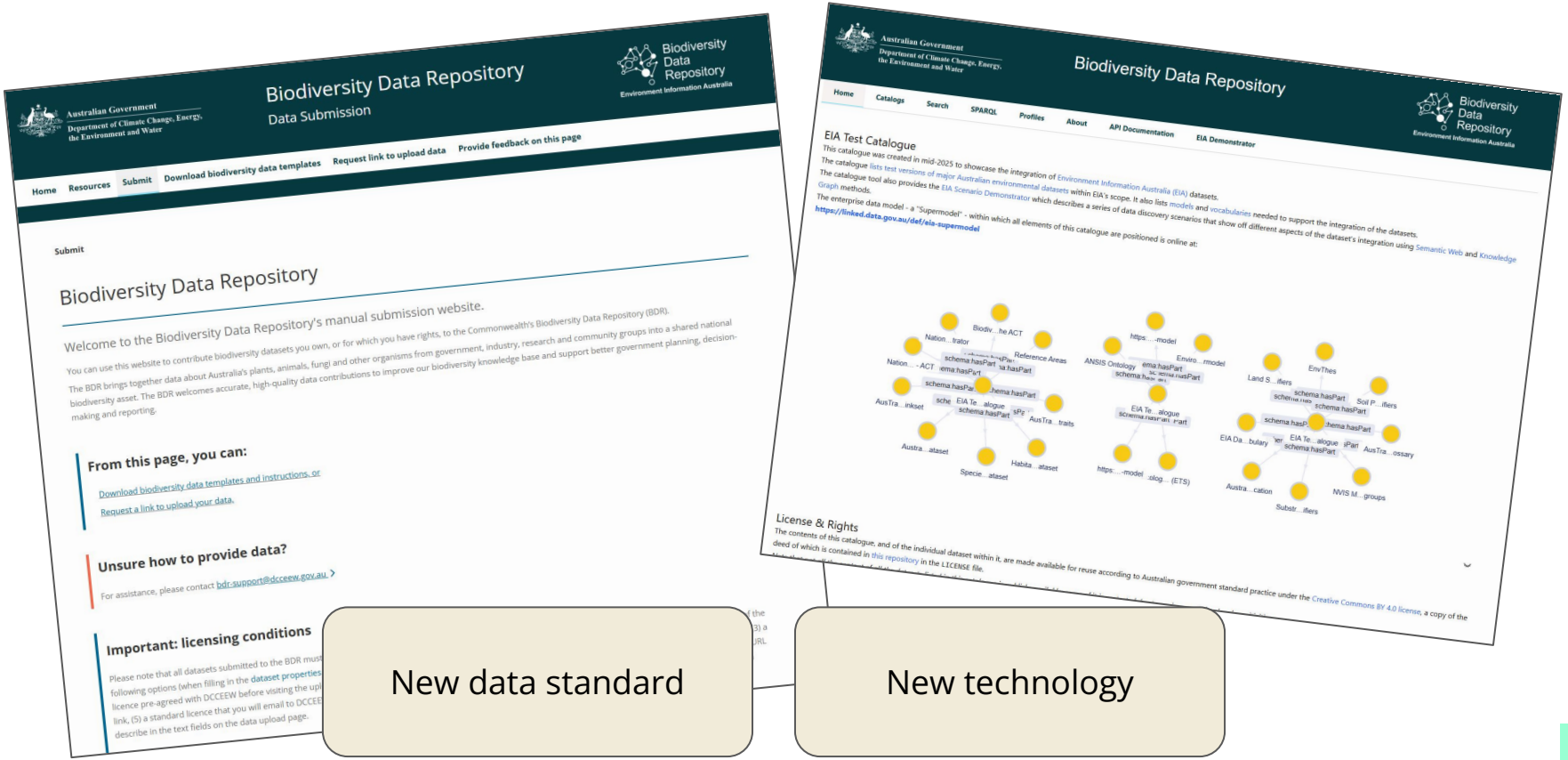
There is a data migration exercise to map and move from the Australian Series System to the RiC standard



Challenge and Opportunity - Australian Series System

Australian Series System	RiC Code	RiC Name	Description
No equivalent	RiC-E01	Thing	Any idea, material thing, or event within the realm of human experience.
No equivalent	RiC-E02	Record Resource	Information produced or acquired and retained by an agent in the course of life or work activity.
Series	RiC-E03	Record Set	One or more records that are grouped together by an agent based on the records sharing one or more attributes or relations.
Item	RiC-E04	Record	Discrete information content formed and inscribed, at least once, by any method on any carrier in any persistent, recoverable form by an agent in the course of life or work activity.
Part (ISAD)	RiC-E05	Record Part	Component of a record with independent information content that contributes to the intellectual completeness of the record. Eg: a single page or photograph
Representation (QSA)	RiC-E06	Instantiation	The inscription of information made by an agent on a carrier in any persistent, recoverable form as a means of communicating information through time and space.
Authority Record (ISAAR)	RiC-E07	Agent	A thing that performs activities in the world.
Person (ISAAR)	RiC-E08	Person	An individual human being.
No equivalent	RiC-E09	Group	Two or more agents that act together as an agent.
Family (ISAAR)	RiC-E10	Family	Two or more persons related by birth, or through marriage, adoption, civil union, or other social conventions that bind them together as a socially recognized familial group.
Corporate Body (ISAAR)	RiC-E11	Corporate Body	An organized group of persons that act together as an agent, and that has a recognized legal or social status.
No equivalent	RiC-E12	Position	The functional role of a person within a group.
No equivalent	RiC-E13	Mechanism	A process or system created by a person or group that performs an activity.
No equivalent	RiC-E14	Event	Something that happens or occurs in time and space.
Function	RiC-E15	Activity	The doing of something for an agent designed purpose.
Mandate	RiC-E16	Rule	Conditions that govern the existence, responsibility, or authority of an agent; or the performance of an activity by an agent; or that contribute to the distinct characteristics of

Challenges - Technology Change



New data standard

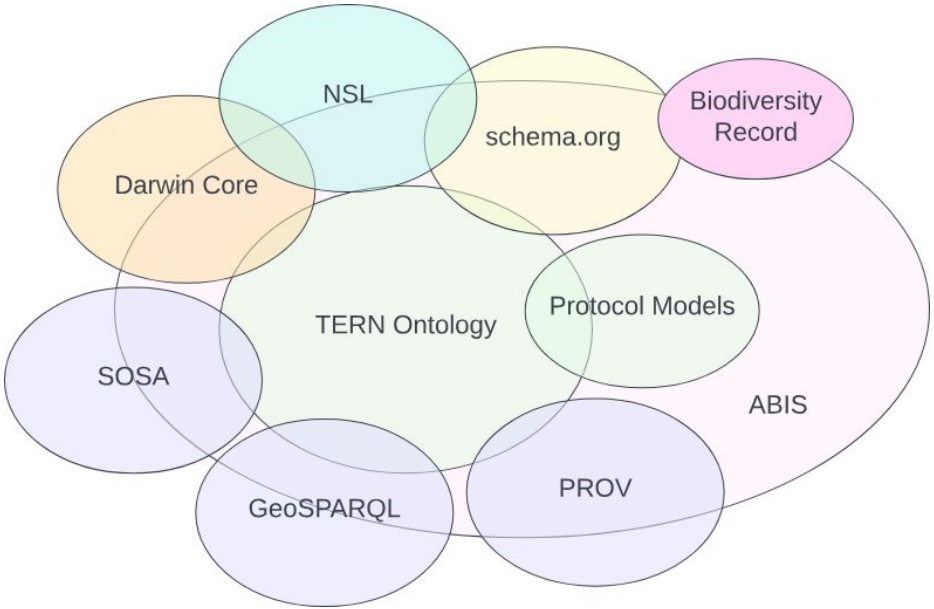
New technology

Challenges - Technology Change (Data)

Australian Biodiversity Information Standard (ABIS)

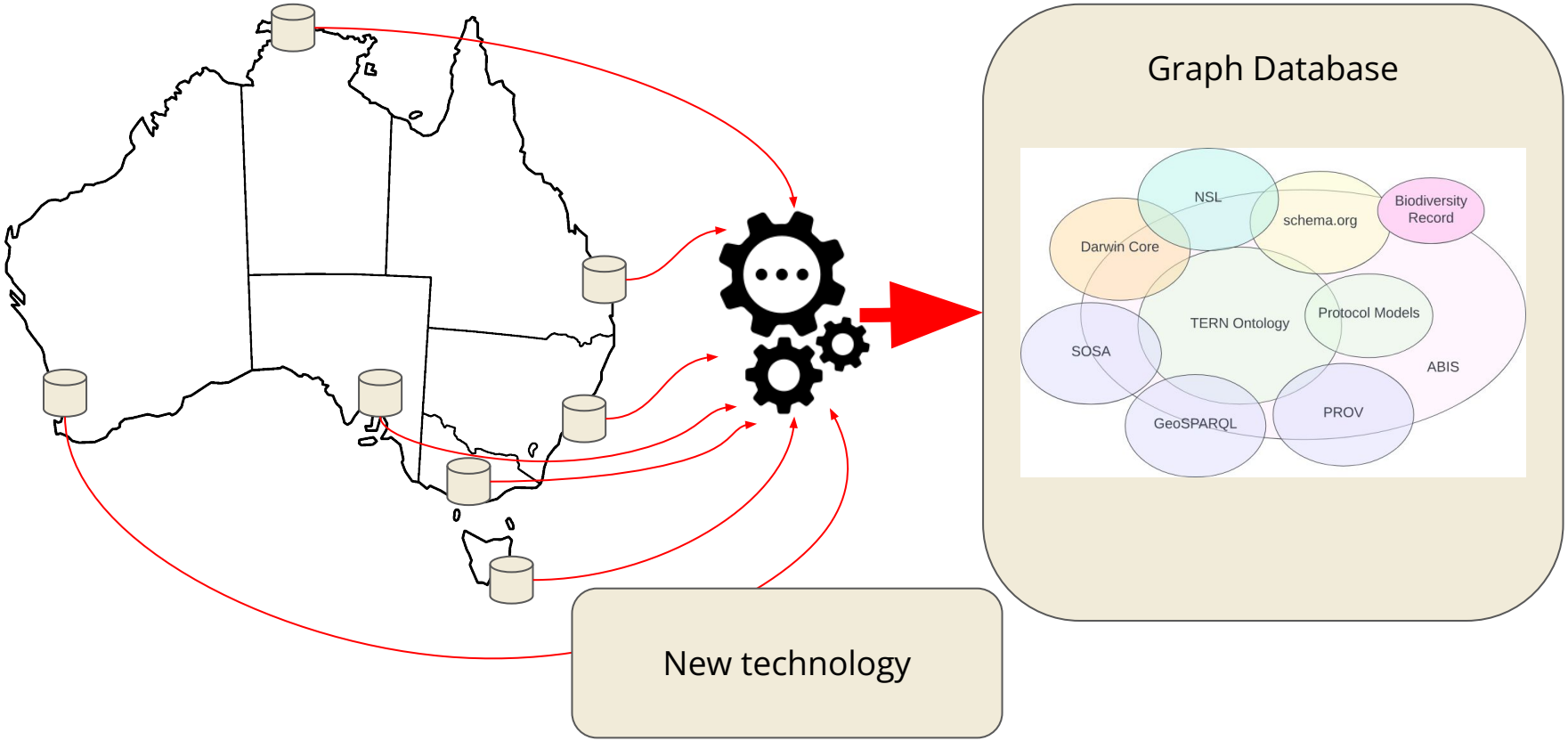
“ABIS is an Australian standard that specifies how information about biodiversity is to be represented for exchange and use. It is a flexible data model for the biodiversity domain that allows the capture of richer and more detailed information than alternative models.

The standard is structured using Resource Description Framework (RDF), a World Wide Web Consortium (W3C) "standard model for data on the web" W3C’s RDF note. RDF makes *graphs* of data, which have a node-edge-node structure connecting bits of information using defined relationships.”



New data standard

Challenges - Technology Change (System)



Technology Implementation Considerations for RiC

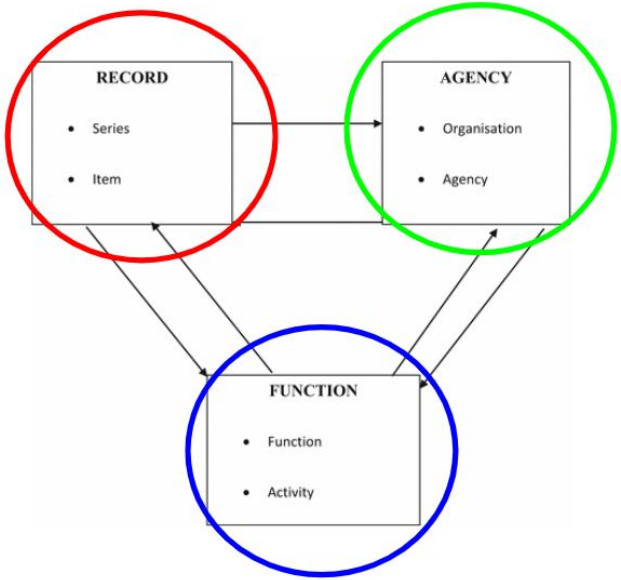
Future?

Future?

What does it mean for our **data**?

What does it mean for our **systems**?

Future Data



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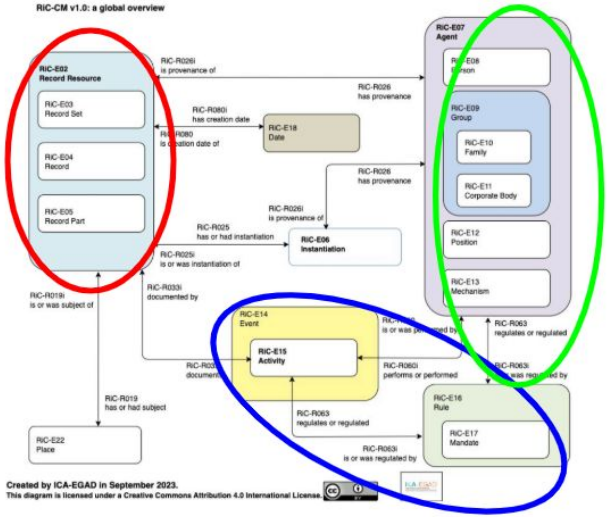

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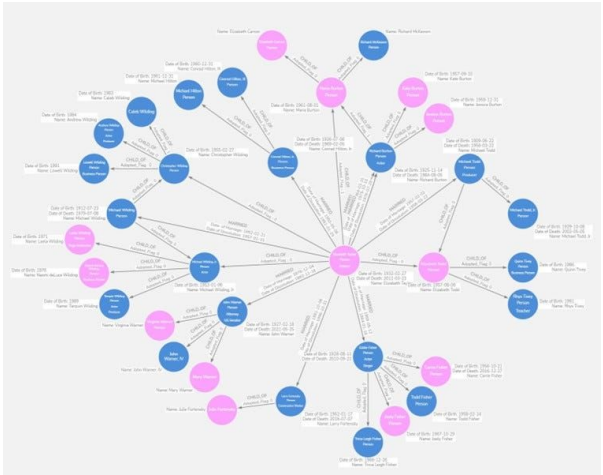
Future Systems



GraphDB

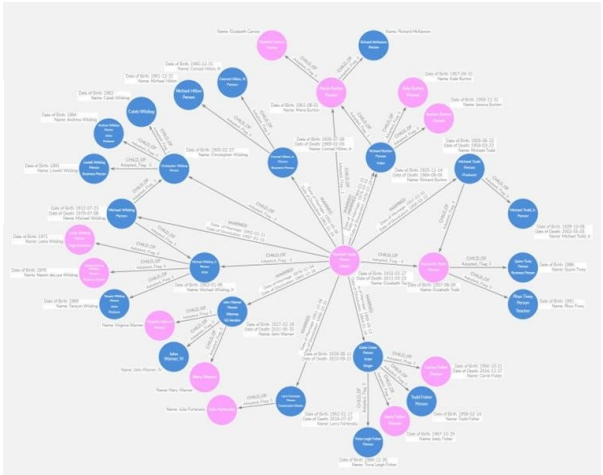
Stardog

Jena

blazegraph™

ANZO

Future Systems



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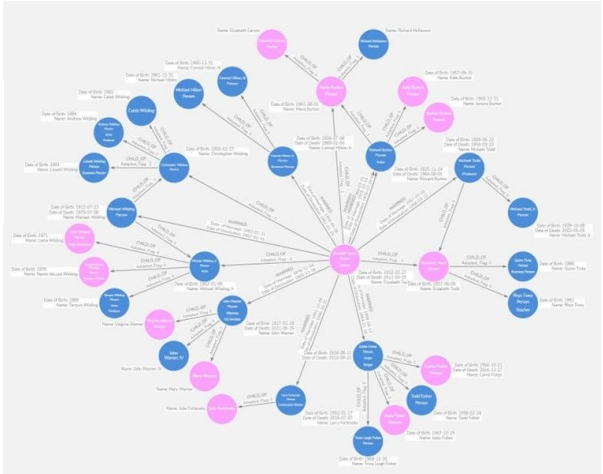
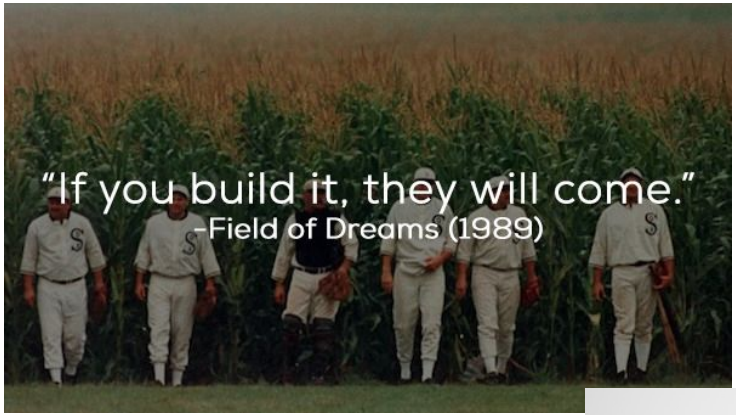


GAP

Future Systems



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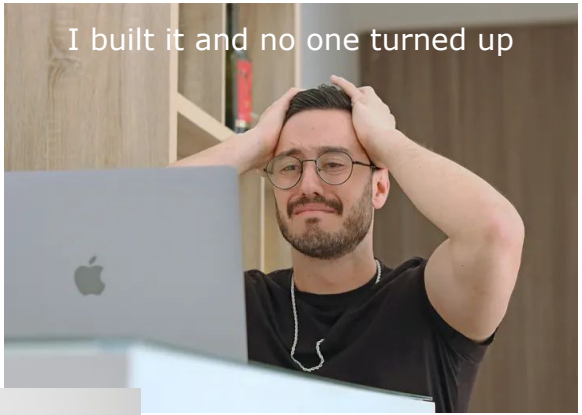


If you want it, ask!

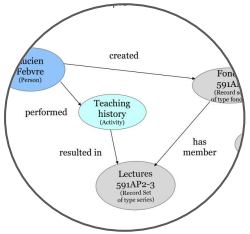
Technology Implementation Considerations for RiC

Summary

Summary

Gaia Resources has implemented a number of archival management systems (including both QSA and the State Records Office) across Australia. From this experience Piers will talk about the opportunities and changes challenges that RiC will mean for existing archival systems - what works, what doesn't and potential future development pathways for systems in Australia.

What is RiC?



Why would you want to use it?

Opportunities and challenges from RiC

Future?

Thank you.

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gaia resources