

ICA-Records in Contexts conceptual model and ontology

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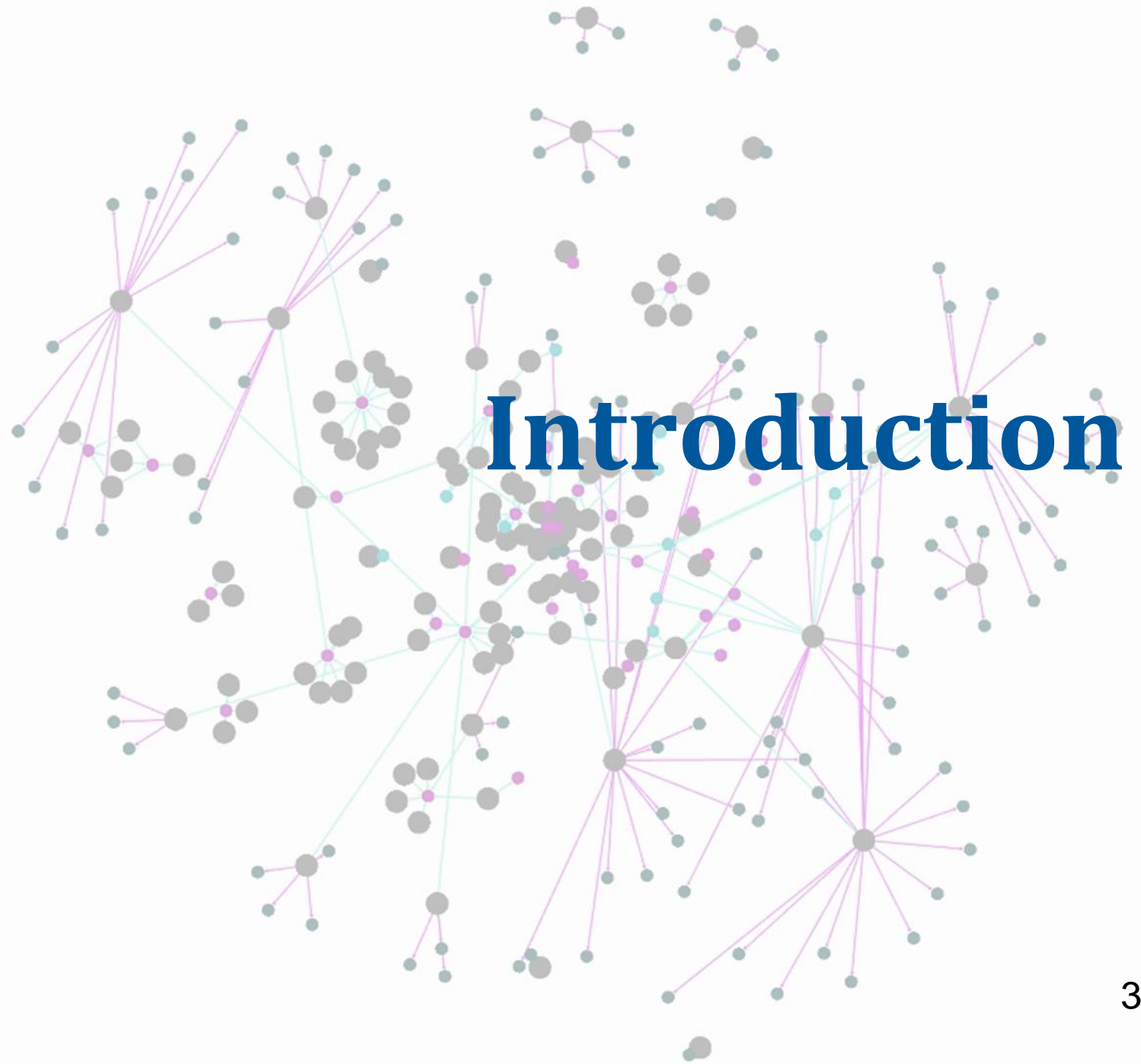


Presentation dated November 22, 2019
(a few details updated on December 20)

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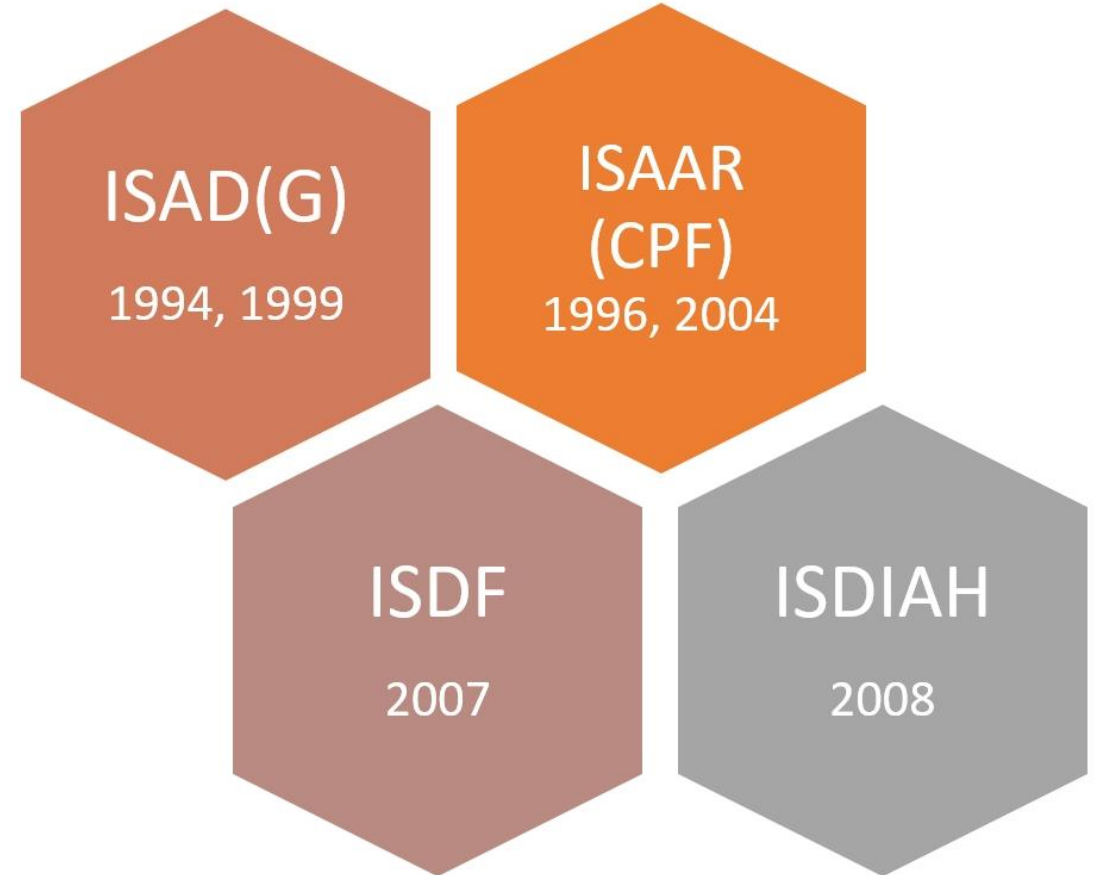
Summary

- Introduction: why *Records in Contexts (RiC)* ? What is it? The schedule
- RiC-CM v0.2: an overview
- From RiC-CM to RiC-O: RiC-O design principles, overview and some examples
- From theory to practice: RiC in use at the Archives nationales de France



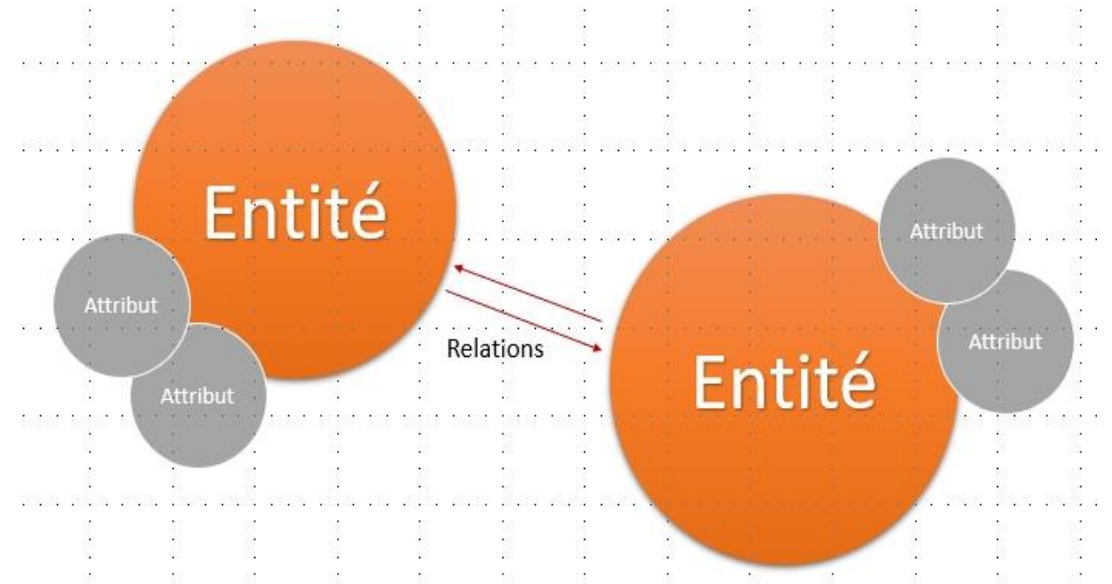
Need to replace the four existing international standards

- Quite old now; published at different dates, thus not perfectly articulated
- However, of course, RiC **must** be backward compatible with them



Compatible, but different

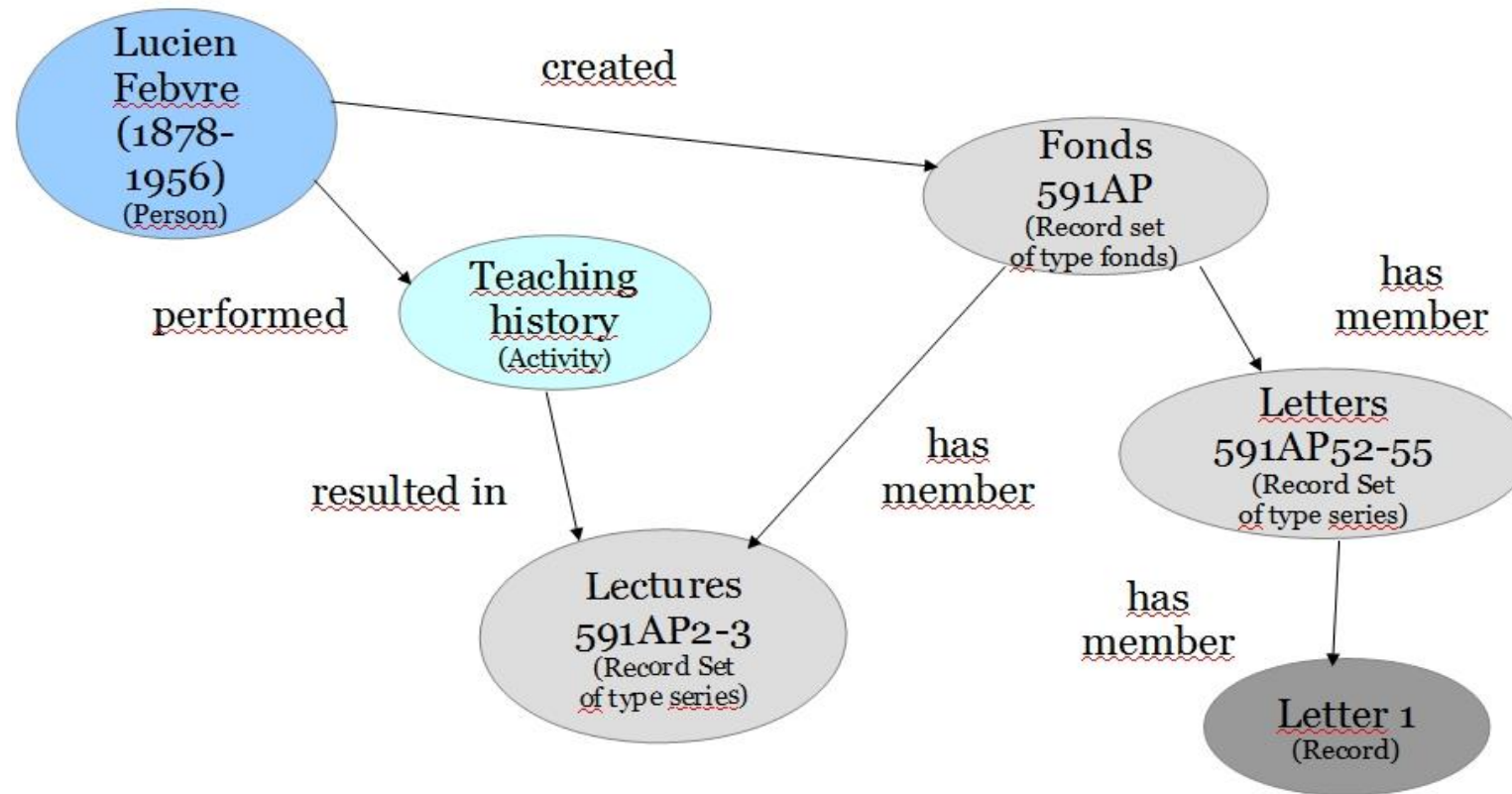
- **RiC focusses on the entities that form the world of archives, not on description rules**
- These entities belong to a few categories, that need to be (re)defined first
- They have properties (**attributes**) of their own
- They may be connected to each other by **relations**



Different, and a step forward

- Consider archives, their history and their multiple layers of contexts
- Enable archivists and records managers to move forward to a more accurate, more nuanced, easier to process, multidimensional description

The archival world seen as an oriented graph: a small example



RiC is developed by EGAD

- A group formed in 2013
- Chair: Daniel Pitti (University of Virginia)
- About 20 persons, from all over the world
- Different views on archives, different positions and skills
- Mandate: 2013-2016, renewed for 2017-2020
- EGAD's work has to be submitted to comments, and it must be continued after 2020



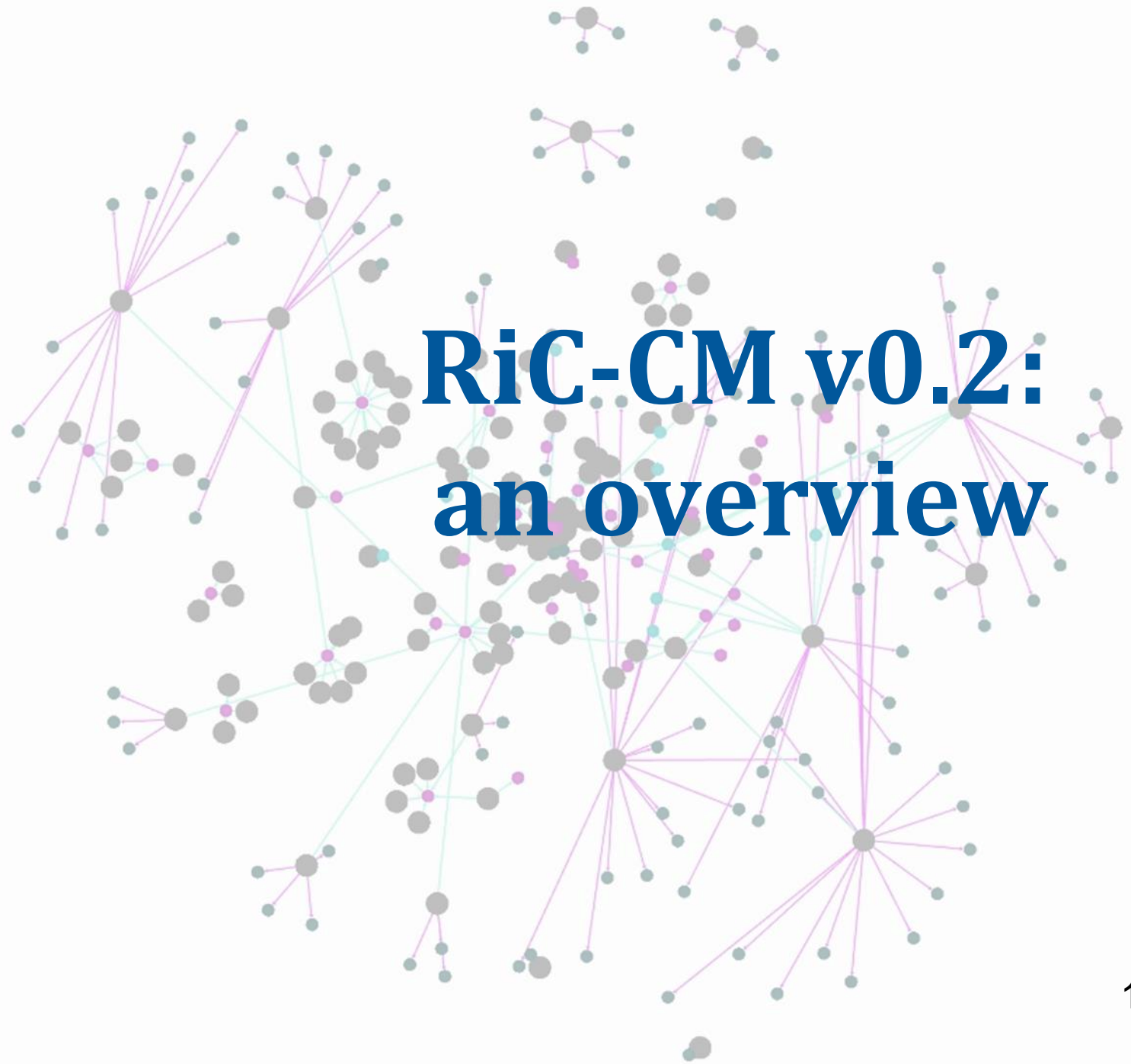
See: <https://www.ica.org/en/egad-steering-committee-0>

RiC, a three-parts standard

- An abstract, implementation-independent, conceptual model (RiC-CM)
- An ontology – i.e. a formal, technical representation of the model using OWL/RDFS/RDF languages (RiC-O)
Main target: defining the vocabulary and rules for archival metadata expressed in the form of RDF datasets (thus enabling to generate, query, publish and share those datasets)
- Application guidelines (RiC-AG)

RiC schedule

- **August 2016: RiC-CM v0.1 published with a call for comments**
A lot of comments received from August 2016 to January 2017, taken into account since
- **February-November 2019:** beta versions of RiC-O sent to persons who applied as early reviewers
- **2019, December 12:**
 - **first public release of RiC-O (v0.1)** with a call for comments
 - **public release of a preview of RiC-CM v0.2**
- **February 2020:** public release of the full RiC-CM v0.2 document
- **November 2020:** public release of RiC-CM and RiC-O v1.0



RiC-CM v0.2: an overview

RiC-CM v0.2 overview: 22 entities



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RiC Entities Hierarchy			
First Level	Second Level	Third Level	Fourth Level
RiC-E01 Thing	RiC-E02 Record Resource	RiC-E03 Record Set	
		RiC-E04 Record	
		RiC-E05 Record Part	
	RiC-E06 Instantiation		
	RiC-E07 Agent	RiC-E08 Person	
		RiC-E09 Group	RiC-E10 Family
			RiC-E11 Corporate Body
		RiC-E12 Position	
		RiC-E13 Mechanism	
	RiC-E14 Event	RiC-E15 Activity	
	RiC-E16 Rule	RiC-E17 Mandate	
	RiC-E18 Date	RiC-E19 Single Date	
		RiC-E20 Date Range	
		RiC-E21 Date Set	
	RiC-E22 Place		

Four essential, core entities : **Record Resource, Instantiation, Agent, Activity**

RiC-CM v0.2 overview: attributes

41 attributes

Attributes common to all entities: identifier, name, descriptiveNote

Attributes for each top level entity (inherited by the sub-entities)

Attributes specific to some entities

Identifier	RiC-A
Name Token	A unique name-token for the attribute based on the natural language Name. If the Name has only one token, then the Name Token will be identical with the Name
Name	A unique natural language name of the attribute
Description	A brief explanation of attribute and its value in identifying and assisting in the understanding of the entity
Specifications	It indicates possible specifications, precisions, annotations or qualifiers of the meaning of the value of an attribute in a concrete description
Extensibility	It indicates the possibility of decomposing the content of the attribute using extensions or specializations in sub-attributes, as well as possible relations with other entities.
Repeatability	It indicates if the attribute can be repeated or not in the concrete description of a particular entity or relationship
Value Type	It reports about the possible existence of a value scheme that allows control of the value of the attribute, using a syntax rule or a list of supported values.
Comments	It provides additional information to understand and use the attribute
Example	It presents examples of application of each attribute

Record Resource and Instantiation attributes

RiC-E02x	Record-Resourcex
Attribute-IDx	Attribute-Namex
RiC-A16x	Descriptive-Notex
RiC-A22x	Identifierx
RiC-A28x	Namex
RiC-A03x	Authenticity-Notex
RiC-A07x	Classificationx
RiC-A08x	Conditions-of-Access*x
RiC-A09x	Conditions-of-Use*x
RiC-A10x	Content-Type*x
RiC-A21x	Historyx
RiC-A24x	Integrityx
RiC-A25x	Language*x
RiC-A35x	Record-Resource-Extentx
RiC-A38x	Scope-and-contentx
RiC-A39x	State*x
RiC-A40x	Structurex
RiC-A26x	Legal-Statusx

RiC-E06x	Instantiationx
Attribute-IDx	Attribute-Namex
RiC-A16x	Descriptive-Notex
RiC-A22x	Identifierx
RiC-A28x	Namex
RiC-A03x	Authenticity-Notex
RiC-A04x	Carrier-Extentx
RiC-A05x	Carrier-Type*x
RiC-A08x	Conditions-of-Access*x
RiC-A09x	Conditions-of-Use*x
RiC-A21x	Historyx
RiC-A23x	Instantiation-Extentx
RiC-A24x	Integrityx
RiC-A31x	Physical-Characteristicx
RiC-A33x	Production-Techniquex
RiC-A34x	Quality-of-Representationx
RiC-A37x	Representation-Typex
RiC-A40x	Structurex

RiC-CM v0.2 overview: relations

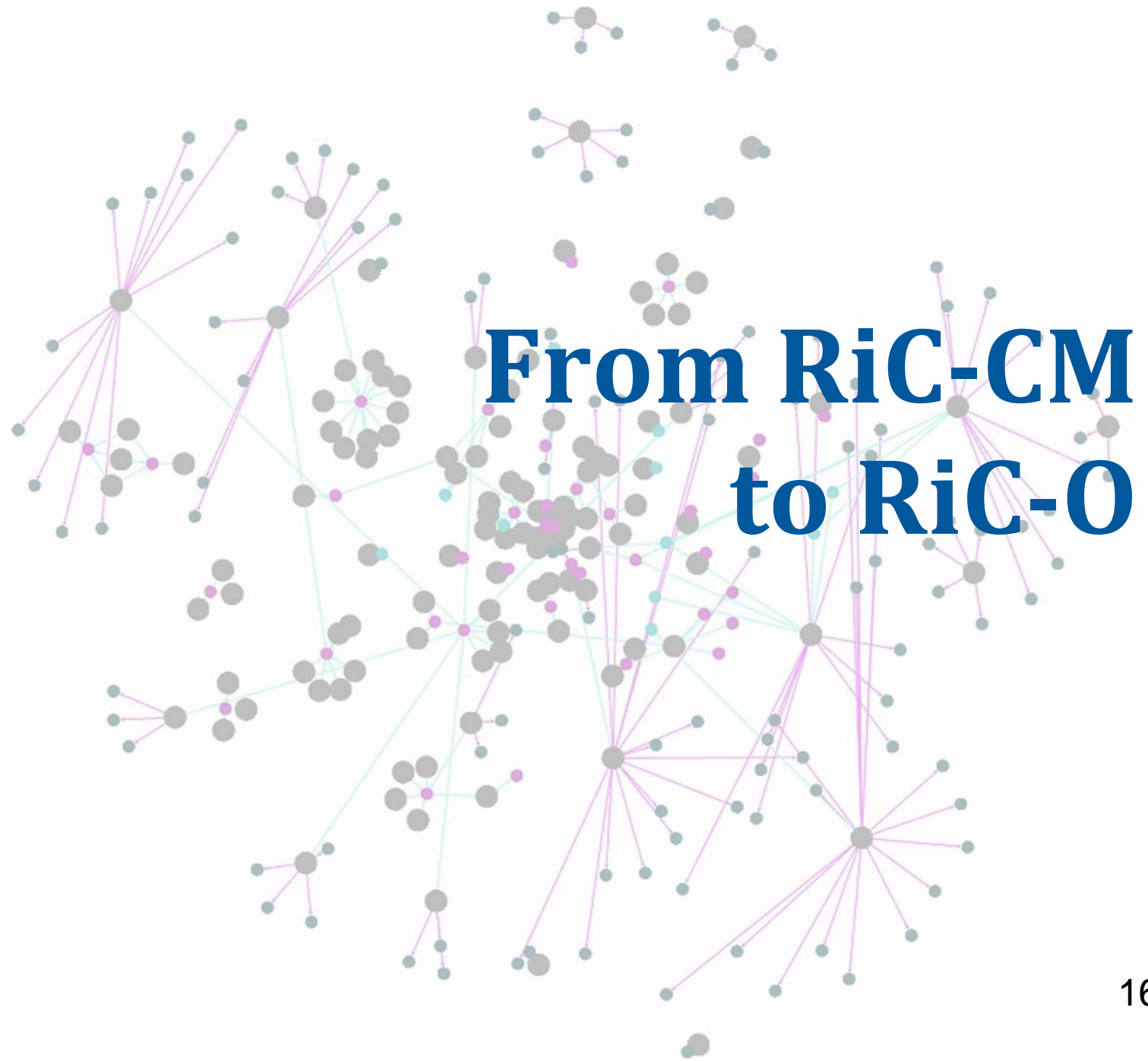
78 relations (and the inverse ones when they are not symmetric)

Grouped and organized in a poly-hierarchical system

The top level one is *'is related to'*

They have attributes (identifier, descriptiveNote, date, place, certainty, source)

- *Whole/part relations*
- *Sequential and temporal relations*
- *Subject relations*
- *Record Resource to Record Resource relations*
- *Record Resource to Instantiation relations*
- *Provenance relations*
- *Instantiation to Instantiation relations*
- *Management relations*
- *Agent to Agent relations*
- *Event relations*
- *Rule relations*
- *Date relations*
- *Spatial relations*



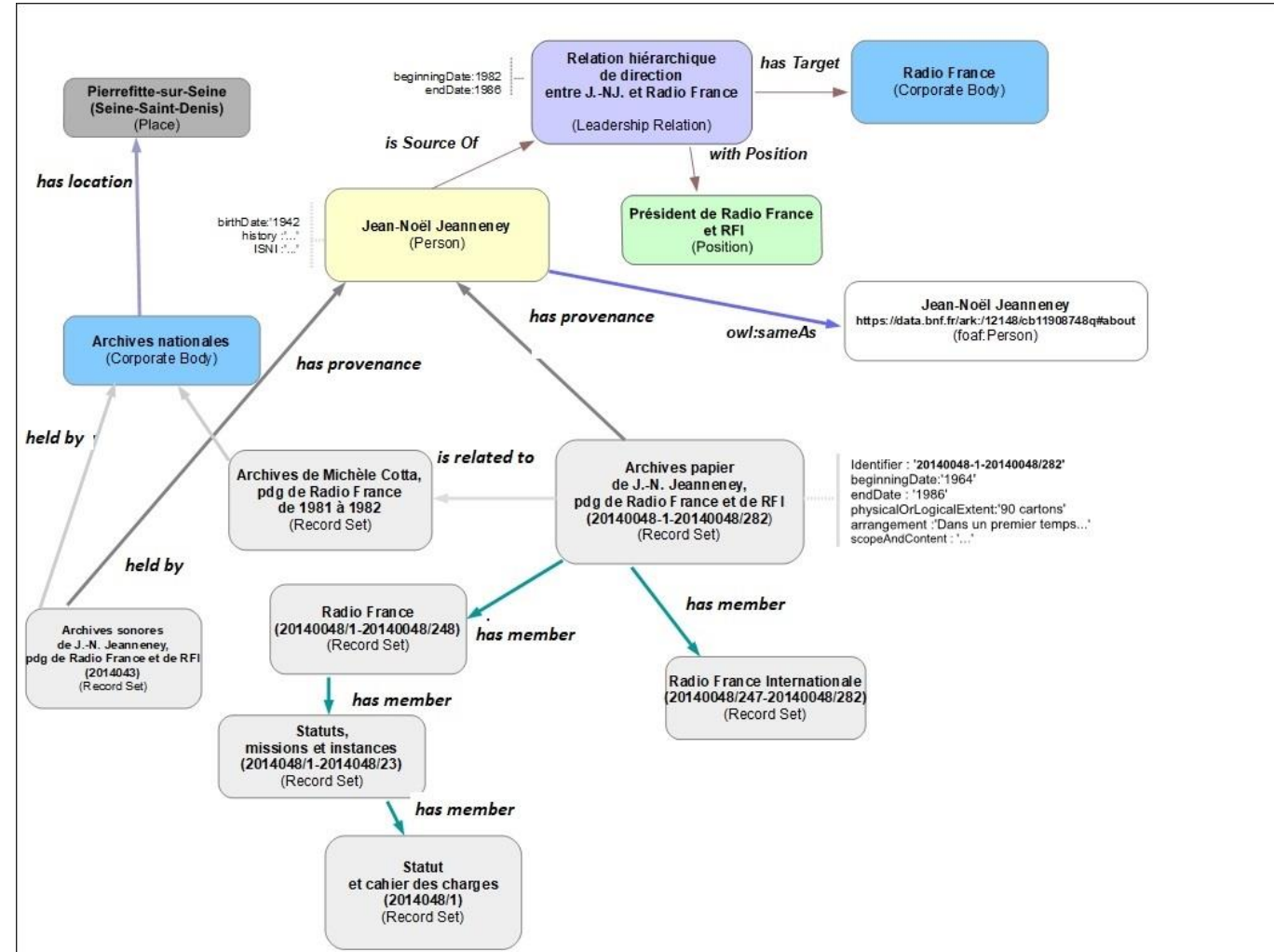
RiC-0 design principles

- 1. A domain, reference ontology**
- 2. (immediately) Usable**
- 3. Flexible**
- 4. Useful**
- 5. Extensible**

See also: <https://www.ica.org/standards/RiC/ontology.html#design-principles>

RiC-O must be immediately usable

- A partial view, conforming to an earlier version of RiC-O, of the graph formed by Jean-Noël Jeanneney's records, from the EAD finding aid available at https://www.siv.archives-nationales.culture.gouv.fr/siv/IR/FRAN_IR_050629



RiC-0 must be useful: querying a graph



```
1 # Les entités qui ont succédé à une entité donnée (ici, n° 51120, France. Ministère de l'Intérieur. Direction des Beaux-Arts. Bureau des Monuments historiques (1839-1848))
2
3 PREFIX rico: <http://www.ica.org/standards/RiC/ontology#>
4 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
5 PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
6
7 SELECT ?entite ?nom ?dateDebut ?dateFin WHERE {
8   <http://data.archives-nationales.culture.gouv.fr/agent/051120> (rico:agentIsSourceOfAgentTemporalRelation/rico:agentTemporalRelationHasTarget)+ ?entite .
9   ?entite rdfs:label ?nom; rico:beginningDate ?dateDebut.
10  OPTIONAL {?entite rico:endDate ?dateFin.}
11
12
13
14
```

Table Raw Response Pivot Table Google Chart Download as

Filter query results Showing results from 1 to 10 of 10. Query took 0.2s, today at 14:48.

	entite	nom	dateDebut	dateFin
1	http://data.archives-nationales.culture.gouv.fr/agent/051121	"France. Ministère de l'Intérieur. Direction des Beaux-Arts. Bureau des Beaux-Arts, des Musées et des Monuments historiques (1848-1852)"@fr	"1848-01-01"^^xsd:date	"1852-12-31"^^xsd:date
2	http://data.archives-nationales.culture.gouv.fr/agent/051122	"France. Ministère d'État. Division des Beaux-Arts. Service des Monuments historiques (1853-1858)"@fr	"1853-01-01"^^xsd:date	"1858-12-31"^^xsd:date
3	http://data.archives-nationales.culture.gouv.fr/agent/051123	"France. Ministère d'État. Bureau des Monuments historiques (1858-1863)"@fr	"1858-01-01"^^xsd:date	"1863-12-31"^^xsd:date
4	http://data.archives-nationales.culture.gouv.fr/agent/051124	"France. Ministère de la maison de l'Empereur. Surintendance des Beaux-Arts. Bureau des Monuments historiques (1863-1870)"@fr	"1863-01-01"^^xsd:date	"1870-12-31"^^xsd:date
5	http://data.archives-nationales.culture.gouv.fr/agent/051125	"France. Ministère de l'Instruction publique. Direction des Beaux-Arts. Bureau des Monuments historiques (1870-1907)"@fr	"1870-01-01"^^xsd:date	"1907-12-31"^^xsd:date
6	http://data.archives-nationales.culture.gouv.fr/agent/051126	"France. Ministère de l'Éducation nationale. Direction des Beaux-Arts. Bureau des Monuments historiques (1907-1939)"@fr	"1907-01-01"^^xsd:date	"1939-12-31"^^xsd:date
7	http://data.archives-nationales.culture.gouv.fr/agent/051149	"France. Ministère de l'Éducation nationale. Secrétariat général des Beaux-Arts. Direction des services d'architecture. Bureau des Monuments historiques et Sites (1940-1944)"@fr	"1940-01-01"^^xsd:date	"1944-12-31"^^xsd:date
8	http://data.archives-nationales.culture.gouv.fr/agent/051150	"France. Ministère de l'Éducation nationale. Direction de l'architecture. Sous-direction des Monuments Historiques et des Sites (18 août 1945-8 janvier 1959)"@fr	"1945-08-18"^^xsd:date	"1959-01-08"^^xsd:date
9	http://data.archives-nationales.culture.gouv.fr/agent/051151	"France. Ministère de la Culture et de la Communication. Direction de l'Architecture et du Patrimoine. Sous-direction des Monuments Historiques et des Espaces protégés (1959-2009)"@fr	"1959-01-08"^^xsd:date	"2009-12-31"^^xsd:date
10	http://data.archives-nationales.culture.gouv.fr/agent/051153	"France. Ministère de la Culture et de la Communication. Direction générale des patrimoines. Service du patrimoine. Sous-direction des Monuments historiques et des Espaces protégés (2009-...)"@fr	"2009-01-01"^^xsd:date	

Querying the RDF graph of the archival creators at the Archives nationales de France (screenshot from a GraphDB instance installed locally). New questions can be answered (going through the arcs/relations)

RiC-O must be useful: querying a graph (2)



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SPARnatural - requêtes SPARQL naturelles

Personne est en relation avec Famille Murat (famille) +

Et

Personne date de naissance Temps

Et

Trouver Temps nom de la période 1800 1840 Ajouter

```
1 PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
2 PREFIX rico: <http://www.ica.org/standards/RiC/ontology#>
3 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
4 SELECT DISTINCT (STR(?label) AS ?nom) ?link ?graphdb ?start ?end WHERE {
5   ?this <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://www.ica.org/standards/RiC/ontology#Person>;
6   rico:agentIsConnectedToAgentRelation/rico:agentRelationConnects
7   <http://data.archives-nationales.culture.gouv.fr/agent/050577>.
8   ?this rdfs:label|skos:prefLabel ?label FILTER(lang(?label) = 'fr')
9   OPTIONAL { ?this rico:describedBy|rdfs:seeAlso ?link . FILTER(STRSTARTS(STR(?link),
10    'https://www.siv.archives-nationales.culture.gouv.fr/siv')) }
11
12 BIND(IRI(CONCAT('http://localhost:7200/resource?uri=', ENCODE_FOR_URI(STR(?this)))) AS
13 ?graphdb)
14
15 OPTIONAL { ?this rico:birthDate|rico:beginningDate ?start }
16 OPTIONAL { ?this rico:deathDate|rico:endDate ?end }
17 }
18 ORDER BY ?label LIMIT 1000
```

Showing 1 to 10 of 10 entries

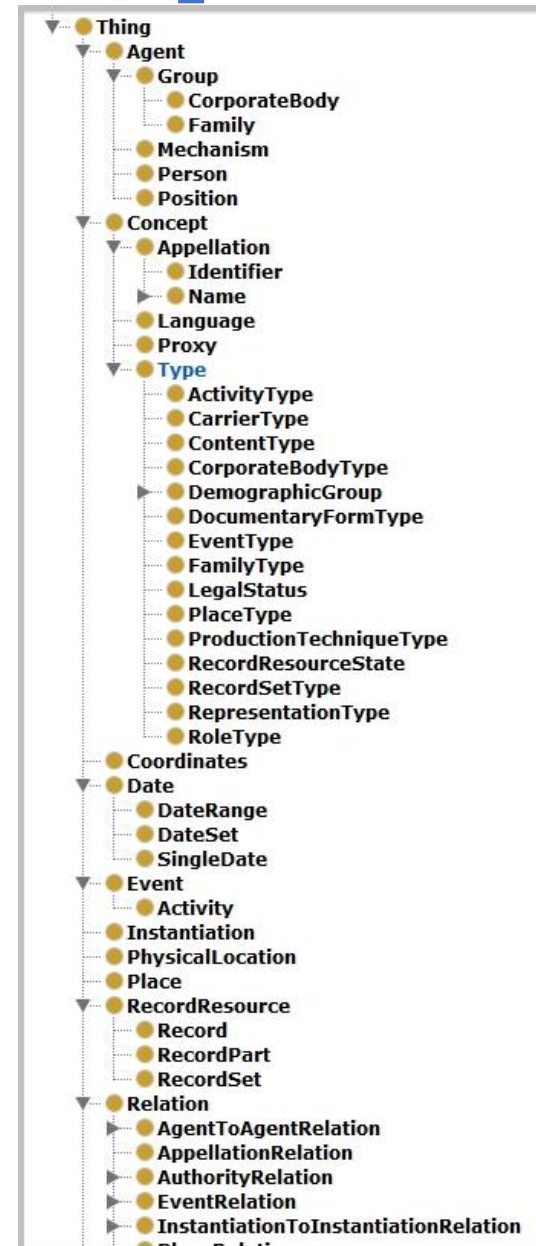
Search: Show 50 entries

nom	link	graphdb	start	end
1 Bonaparte, Caroline (1782-1839)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_050553	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F050553	"1782-03-15""xsd:date	"1839-05-18""xsd:date
2 Murat, Achille (1801-1847 ; prince)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_050556	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F050556	"1801-01-21""xsd:date	"1847-04-15""xsd:date
3 Murat, Charles (1892-1973 ; prince)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_050580	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F050580	"1892-06-16""xsd:date	"1973-12-31""xsd:date
4 Murat, Cécile Ney d'Elchingen (princesse ; 1867-1960)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_051039	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F051039	"1867-08-22""xsd:date	"1960-02-11""xsd:date
5 Murat, Joachim (1767-1815)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_050551	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F050551	"1767-03-25""xsd:date	"1815-10-13""xsd:date
6 Murat, Joachim (1885-1938 ; prince)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_051040	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F051040	"1885-08-06""xsd:date	"1938-05-11""xsd:date
7 Murat, Joachim (1920-1944 ; prince)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_051043	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F051043	"1920-01-16""xsd:date	"1944-07-20""xsd:date
8 Murat, Joachim Joseph Napoléon (1834-1901 ; prince)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_050571	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F050571	"1834-07-21""xsd:date	"1901-10-23""xsd:date
9 Murat, Joachim Napoléon (1856-1932 ; prince)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_050575	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F050575	"1856-02-28""xsd:date	"1932-11-02""xsd:date
10 Murat, Lucien (1803-1878 ; prince)	https://www.siv.archives-nationales.culture.gouv.fr/siv/NP/FRAN_NP_050569	http://localhost:7200/resource?uri=http%3A%2F%2Fdata.archives-nationales.culture.gouv.fr%2Fagent%2F050569	"1803-05-16""xsd:date	"1878-04-11""xsd:date

Querying the RDF graph of the archival creators at the Archives nationales de France through a **user-friendly interface (designed for using SPARQL API with datasets conforming to RiC-O)** (see <https://github.com/sparna-git/Sparnatural>)

From RiC-CM to RiC-O: more components than in RiC-CM

- Classes added in order to provide a more accurate definition and model for some entities (e.g. RiC-CM Place, which is represented by Place, Physical Location and Coordinates)
- Classes that correspond to RiC-CM components that are not entities, when we need to assign attributes to them (Relations) and/or to connect RiC-O to some vocabularies (Type)



... and sometimes several representation methods

It is about RiC-O being **usable** and **flexible**

Examples :

- You can use '*rico:history*' + text (which corresponds to RiC-CM History attribute), or (one to many) '*rico:affectedBy*' + an instance of Event
- You can use '*rico:regulatedBy*' (same as the RiC-CM relation)+ an instance of Rule, or '*rico:ruleFollowed*' + text
- You can use '*rico:type*' + text (see type attributes in RiC-CM), or '*rico:belongsToCategory*' + an instance of Type (e.g. a concept that would be a DocumentaryFormType)
- You can use '*rico:isleaderOf*' (same as the RiC-CM relation) + an instance of Group, or a more complex path, involving an instance of a LeadershipRelation class

About how RiC-CM components are represented in RiC-O, see:

<https://www.ica.org/standards/RiC/ontology.html#fromRiCCM-to-RiCO>

RiC-O HTML view



International Council on Archives Records in Contexts Ontology (ICA RiC-O) version 0.1

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

This HTML view: https://www.ica.org/standards/RiC/RiC-O_v0-1.html

OWL source file: https://www.ica.org/standards/RiC/RiC-O_v0-1.rdf

This HTML view and RiC-O documentation will be improved as soon as possible. We also plan to add examples and diagrams to it.

Ontology metadata

This version:

Version 0.1 - 2019-12-12

Creators:

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

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Publisher:

International Council on Archives

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Abstract

RiC-O (Records in Contexts-Ontology) is an OWL ontology for describing archival record resources. As the second part of Records in Contexts standard,

This version, which is v0.1, is **the current official release**; it is **compliant with RiC-CM v0.2 preview**, that was published on 2019, December 12.

RiC-O provides a generic vocabulary and formal rules for creating RDF datasets (or generating them from existing archival metadata) that describe in a co using the logic of the ontology.

- This human-readable view displays RiC-O documentation (metadata, introduction, definition of every component)
- See https://www.ica.org/standards/RiC/RiC-O_v0-1.html
- Will soon include diagrams and specific examples

RiC-O OWL file

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF xmlns="https://www.ica.org/standards/RiC/ontology#"
  xmlns:cc="http://creativecommons.org/ns#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:skos="http://www.w3.org/2004/02/skos/core#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:ric-dft="https://www.ica.org/standards/RiC/vocabularies/documentaryFormTypes#"
  xmlns:ric-rst="https://www.ica.org/standards/RiC/vocabularies/recordSetTypes#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:rico="https://www.ica.org/standards/RiC/ontology#"
  xmlns:dcterms="http://purl.org/dc/terms/"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:html="http://www.w3.org/1999/xhtml"
  xml:base="https://www.ica.org/standards/RiC/ontology">
  <owl:Ontology rdf:about="https://www.ica.org/standards/RiC/ontology#"
    <owl:versionInfo xml:lang="en">Version 0.1 - 2019-12-12</owl:versionInfo>
    <dcterms:issued rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2019-12-12</dcterms:issued>
    <dc:publisher xml:lang="en">International Council on Archives</dc:publisher>
    <dc:creator xml:lang="en">International Council on Archives Expert Group on Archival
      Description (ICA EGAD)</dc:creator>
    <dc:contributor xml:lang="en">Daniel Pitti (University of Virginia, USA), chair of
      EGAD</dc:contributor>
    <dc:contributor xml:lang="en">Aaron Rubinstein (University of Massachusetts Amherst, USA), member of EGAD</dc:contributor>
    <dc:contributor xml:lang="en">Tobias Wildi (Docuteam GmbH, Switzerland), member of EGAD</dc:contributor>
    <dc:contributor xml:lang="en">Miia Herrala (National Archives of Finland), member of EGAD</dc:contributor>
    <dc:creator xml:lang="en">Florence Clavaud (Archives nationales de France), member of EGAD, lead of EGAD RiC-O team</dc:creator>
    <dcterms:contributor rdf:resource="http://www.isni.org/0000000039584825"/>
    <rdfs:label xml:lang="en">International Council on Archives Records in Contexts Ontology (ICA RiC-O)
      version 0.1</rdfs:label>
    <dcterms:title xml:lang="en">International Council on Archives Records in Contexts Ontology
      (ICA RiC-O) version 0.1</dcterms:title>
    <cc:license rdf:resource="https://creativecommons.org/licenses/by/4.0/" />
    <dcterms:creator rdf:resource="https://data.bnf.fr/ark:/12148/cb169702205#about"/>
    <dc:rights xml:lang="en">Copyright 2019, International Council on Archives
      (ICA)</dc:rights>
    <dcterms:publisher rdf:resource="http://www.wikidata.org/entity/Q1421986"/>
    <skos:historyNote rdf:parseType="Literal">
      <html:div xml:lang="en">
        <html:p>A first beta version of RiC-O was developed in 2017 and used by the National
          Archives of France for building a proof of concept (<html:a href="http://piaaf.demo.logilab.fr">http://piaaf.demo.logilab.fr</html:a>).</html:p>
        <html:p>The EGAD then continued to develop the ontology and this process entered a new
```

- See https://www.ica.org/standards/RiC/RiC-O_v0-1.rdf
- It is an XML file (of course it can be easily converted to other RDF serialization formats e.g. Turtle)
- Use at least an XML editor for accessing it
- Or, better, an ontology editor like [Protégé](#)

RiC-0 team's work plan till December 12, 2019

- Making RiC-0 v0.1 compliant with the latest version of RiC-CM v0.2 > **DONE**
- Simplifying some parts or components > **DONE**
- **Formally articulating the Relation classes and the corresponding direct object properties > DONE**
- Authoring a **full English internal documentation** (metadata and introduction; labels, definitions, plus sometimes scope notes for every component) > **DONE**
- Suggesting some possible mappings with other models > **work in progress**
- **Preparing an HTML version for human readers**, to be accessed online through content negotiation along with the OWL/RDFS source file > **DONE**
- Providing a few **RDF examples**, hopefully in English, French and Spanish > **will be done before the end of January**
- **Publishing RiC-0 v0.1 through the ICA website, along with a public call for comments > DONE**
- Making the source files and some other resources listed above accessible through a **Git public repository > will be done before the end of January**

From theory to practice: RiC-O projects

- The SNAC Cooperative probably
 - The French portal on Archives (FranceArchives) probably
 - Maybe, the next version of ATOM software
 - Maybe, the SONAR(idh) project (<https://sonar.fh-potsdam.de/>)
 - and RiC is already in use at the Archives nationales de France
-
- It is highly probable that no project or institution will use the whole RiC-O. They will rather use a part of it, and also extend it (add some subclasses or subproperties for specific needs).



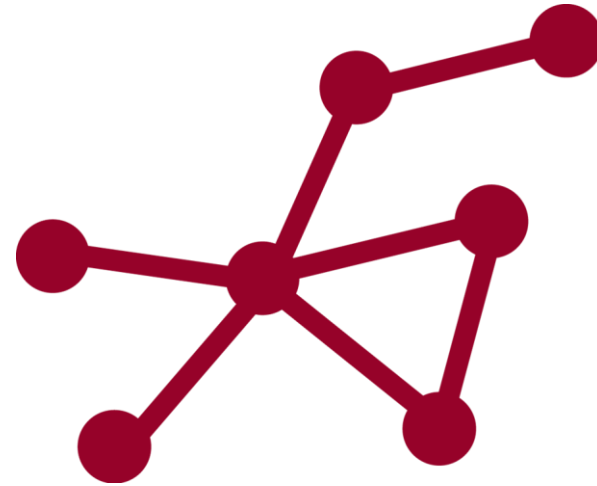
From theory to practice

RiC in use at the ANF

The PIAAF prototype (online since March 2018)

- « Pilote d'Interopérabilité pour les Autorités Archivistiques Françaises »
= Pilot for Interoperable Archival Authorities in France
- Actually, it is not only about archival authority records, it is also about finding aids
 - But the archival authority records (and vocabularies) are key metadata components for interconnecting datasets created by different institutions or projects

A proof of concept



Deliverables

- RDF datasets & **conversion tools**
- A web application (demonstration) and data visualisation libraries
- **An assessment report** (about the results, the methodology and the prospects)

Project supported by the French Ministry of Culture

Participants



**ARCHIVES
NATIONALES**

{ BnF | } CRIHN

- Authority records
- Finding aids



Logilab



**Demo web
app.**

Main steps

- 2015 – organization
- 2016 – preparation of the source metadata sets, call to tender
- 2017 – RDF conversion, development of the web application (4 iterations), test workshops
- **2018, March 1st – the prototype is online**
(<http://piaaf.demo.logilab.fr>)

The source datasets chosen for the project: nature and scope

- **A small selection of ‘real world’ EAC-CPF authority records describing archival creators, plus some EAD finding aids** from each of the partners
- **Relevant, controllable** (amount, characteristics...), possible to interconnect with the data provided by the others
- Selection from two functional domains :
 - management of historical monuments and “civil buildings”
 - management of public reading and public librarieswithin the French governments from the 19th century to nowadays

RiC-O classes that were used

RiC:Agent,
RiC:CorporateBody,
RiC:Person
RiC:GroupType
RiC:FunctionAbstract
RiC:Position
RiC:Mandate
RiC:Event
RiC:AgentName
RiC:Place
RiC:Relation
RiC:Description
RiC:Record
RiC:RecordSet
RiC:Proxy
RiC:FindingAid

Conversion to RDF: aims

The process should not result in loss of information

A lot of objects are described/represented/referred to (sometimes in an implicit way) in the source metadata (much more than the archival creators and records that are their main subjects):

- **in the authority records** : names, events, positions, activities, places, relations between the archival creators ;
- **in the finding aids** : through the XML node tree, aggregation and sequential relations; provenance relations; entities that are the subjects of the records described; digital copies of the primary records...

From one authority record encoded in EAC-CPF, and describing one person...

...one can generate and interconnect RDF resources of many different categories

```
-<eac-cpf xsi:schemaLocation="urn:isbn:1-931666-33-4 schema/cpf-modified.xsd">
+<control></control>
-<cpfDescription>
  -<identity>
    <entityId>ISNI 0000 0003 8432 0062</entityId>
    <entityType>person</entityType>
    <nameEntry localType="preferredFormForProject" scriptCode="Latn" xml:lang="fre" xml:id="FRAN_an_050789-d249e170">
      <part>Jeanneney, Jean-Noël (1942-....)</part>
    </nameEntry>
  </identity>
  -<description>
    -<existDates>
      -<dateRange>
        <fromDate standardDate="1942-04-02">2 avril 1942</fromDate>
        </dateRange>
      </existDates>
    +<occupations></occupations>
    -<biogHist>
      -<p>
        Jean-Noël Jeanneney est né en avril 1942 à Grenoble. Après des études aux lycées Montaigne et Louis-le-Grand à Paris, il est reçu à l'École normale supérieure de la rue d'Ulm où il est élève de 1961 à 1966. Diplômé contemporaine à l'université de Nanterre comme assistant puis maître-assistant. Docteur ès-lettres, en 1975, avec une thèse intitulée "François de Wendel en République, l'Argent et le pouvoir", il est nommé profes
      </p>
    </biogHist>
    <!-- etc. -->
  </description>
  -<relations>
    -<cpfRelation xlink:href="FRAN_NP_051355" xlink:type="simple" cpfRelationType="associative" xlink:arcrole="http://www.piaaf.net/ontology/piaaf#isDirectorOf" xml:id="FRAN_re_050789-d249e369">
      <relationEntry>Bibliothèque nationale de France (1994-....)</relationEntry>
      -<dateRange>
        <fromDate standardDate="2002-03-01">mars 2002</fromDate>
        <toDate standardDate="2007-03-31">mars 2007</toDate>
      </dateRange>
    </cpfRelation>
    -<cpfRelation cpfRelationType="identity" xlink:href="http://catalogue.bnfr.fr/ark:/12148/cb11908748q" xlink:type="simple" xml:id="FRAN_re_050789-d249e430">
      <relationEntry>Jeanneney, Jean-Noël (1942-....)</relationEntry>
      -<dateRange>
        <fromDate standardDate="1942-04-02">2 avril 1942</fromDate>
      </dateRange>
      -<descriptiveNote>
        <p>Notice d'autorité BnF</p>
      </descriptiveNote>
    </cpfRelation>
    -<cpfRelation xlink:href="FRAN_NP_005419" xlink:type="simple" cpfRelationType="associative" xlink:arcrole="http://www.piaaf.net/ontology/piaaf#isDirectorOf" xml:id="FRAN_re_050789-d249e473">
      <relationEntry>Radio France</relationEntry>
      -<dateRange>
        <fromDate standardDate="1982-01-01">1982</fromDate>
        <toDate standardDate="1986-12-31">1986</toDate>
      </dateRange>
      -<descriptiveNote>
        <p>Jean-Noël Jeanneney a été président de Radio France et RFI</p>
      </descriptiveNote>
    </cpfRelation>
    -<resourceRelation resourceRelationType="creatorOf" xlink:href="FRAN_IK_050629" xlink:type="simple" xml:id="FRAN_re_050789-d249e490">
      <relationEntry localType="archival">
        <relationEntry>Archives papier de Jean-Noël Jeanneney président-directeur général de Radio France et de Radio France Internationale de 1982 à 1986 (1964-1986)</relationEntry>
      </relationEntry>
    </resourceRelation>
  </relations>
</cpfDescription>
</eac-cpf>
```

Diagram illustrating the structure of the EAC-CPF record and the categories of RDF resources it generates:

- Name**: Points to the `<nameEntry>` element.
- CorporateBody**: Points to the `<relationEntry>` element for Bibliothèque nationale de France.
- AgentLeadershipRelation**: Points to the `<relationEntry>` element for Jeanneney, Jean-Noël.
- Position**: Points to the `<relationEntry>` element for Radio France.
- RecordSet**: Points to the `<relationEntry>` element for Archives papier.
- ArchivalProvenanceRelation**: Points to the `<resourceRelation>` element.

Issues that had to be solved

- Which objects are to be described as autonomous RDF resources? What URIs should we assign to them?
- How should we represent the (dated and documented) relations between agents?
- How should we handle the quite abstract entities described by the SIAF?
- How should we handle the objects resulting from the combination of a domain and an activity?
- How should we handle the sequences within record set aggregations?

Representing a relation between two agents

```
<cpfRelation xlink:href="FRAN_NP_005419" xlink:type="simple" cpfRelationType="associative"
  xlink:arcrole="http://www.piaaf.net/ontology/piaaf#isDirectorOf">
  <relationEntry>Radio France</relationEntry>
  <dateRange>
    <fromDate standardDate="1982-01-01">1982</fromDate>
    <toDate standardDate="1986-12-31">1986</toDate>
  </dateRange>
  <descriptiveNote>
    <p>Jean-Noël Jeanneney a été président de Radio France et RFI</p>
  </descriptiveNote>
</cpfRelation>
```

```
<rdf:Description rdf:about="http://www.piaaf.net/rerelations/FRAN_agent_relation_050789-d249e473">
  <rdf:type rdf:resource="http://www.ica.org/standards/RiC/ontology#AgentLeadershipRelation"/>
  <rdfs:label xml:lang="fr">Relation
    de "leadership" ou de direction entre les agents "Jeanneney, Jean-Noël (1942-....)" et "Radio France"</rdfs:label>
  <RiC:description xml:lang="fr">Jean-Noël Jeanneney a été président de Radio France et RFI</RiC:description>
  <RiC:beginningDate rdf:datatype="http://www.w3.org/2001/XMLSchema#date">1982-01-01</RiC:beginningDate>
  <RiC:endDate rdf:datatype="http://www.w3.org/2001/XMLSchema#date">1986-12-31</RiC:endDate>
  <RiC:leadershipBy rdf:resource="http://www.piaaf.net/agents/FRAN_person_050789"/>
  <RiC:leadershipOn rdf:resource="http://www.piaaf.net/agents/FRAN_corporate-body_005419"/>
  <!--coll='FRAN'-->
  <RiC:leadershipWithPosition rdf:resource="http://www.piaaf.net/positions/FRAN_position_050789-d249e473"/>
</rdf:Description>
```

The conversion process



0-generateIdentifiers.xsl
1-processFunctions.xsl
2-processLegalStatuses.xsl
3-processMandates.xsl
4-processEvents.xsl
5-processAgentNames.xsl
6-processPlaces.xsl
7-processPositions.xsl
8a-8d-processRelations...xsl
9-processGroupTypes.xsl
10-processAgents.xsl
11-12-recordsSets.xsl
13-processProxies.xsl



agent-names
agents
events
group-types
mandates
places
positions
proxies
record-sets
records
relations
vocabularies
functions.rdf
legal-statuses.rdf

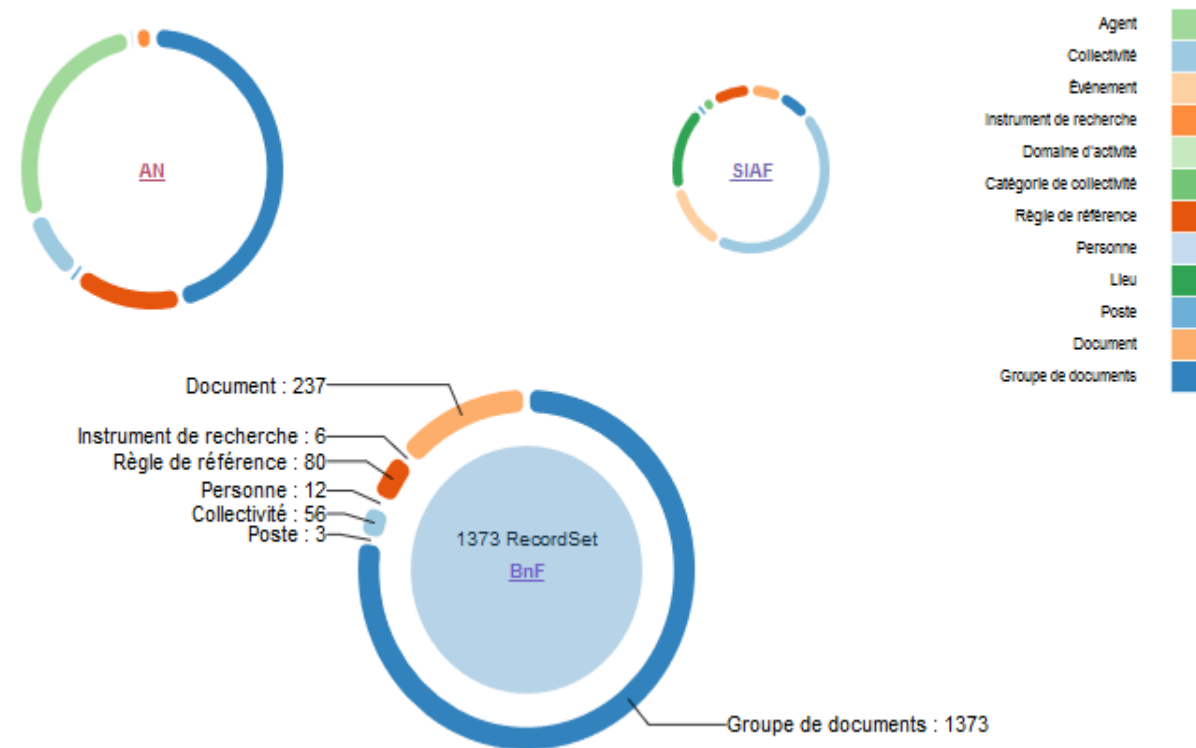
The conversion results

- 940 agents (from 262 EAC-CPF records)
- 20 group types (from 14 EAC-CPF records)
- 547 agent names
- 335 mandates
- 114 events
- 140 places
- 28 positions
- 16 legal statuses, 91 functional domains
- 2062 record sets, 291 records (from 2187 <c> elements in the EAD files)
- About 1600 relations (entities)

See also:

<http://piaaf.demo.logilab.fr/stats/>

Répartition des ressources par catégorie



Findings

This proved to be not trivial, but could be realized and resulted in rich RDF datasets, that had the expected level of quality

- The experience with data processing by implementing RiC-O in this early state of development was **extremely encouraging**.
- It showed that:
 - **RiC-O works to express the complexity of archival description!**
 - you can get interesting results from real world existing archival metadata
 - we (specially at the ANF) could imagine going much further

Specific findings

Issues that should be carefully considered before any RDF conversion of archival metadata

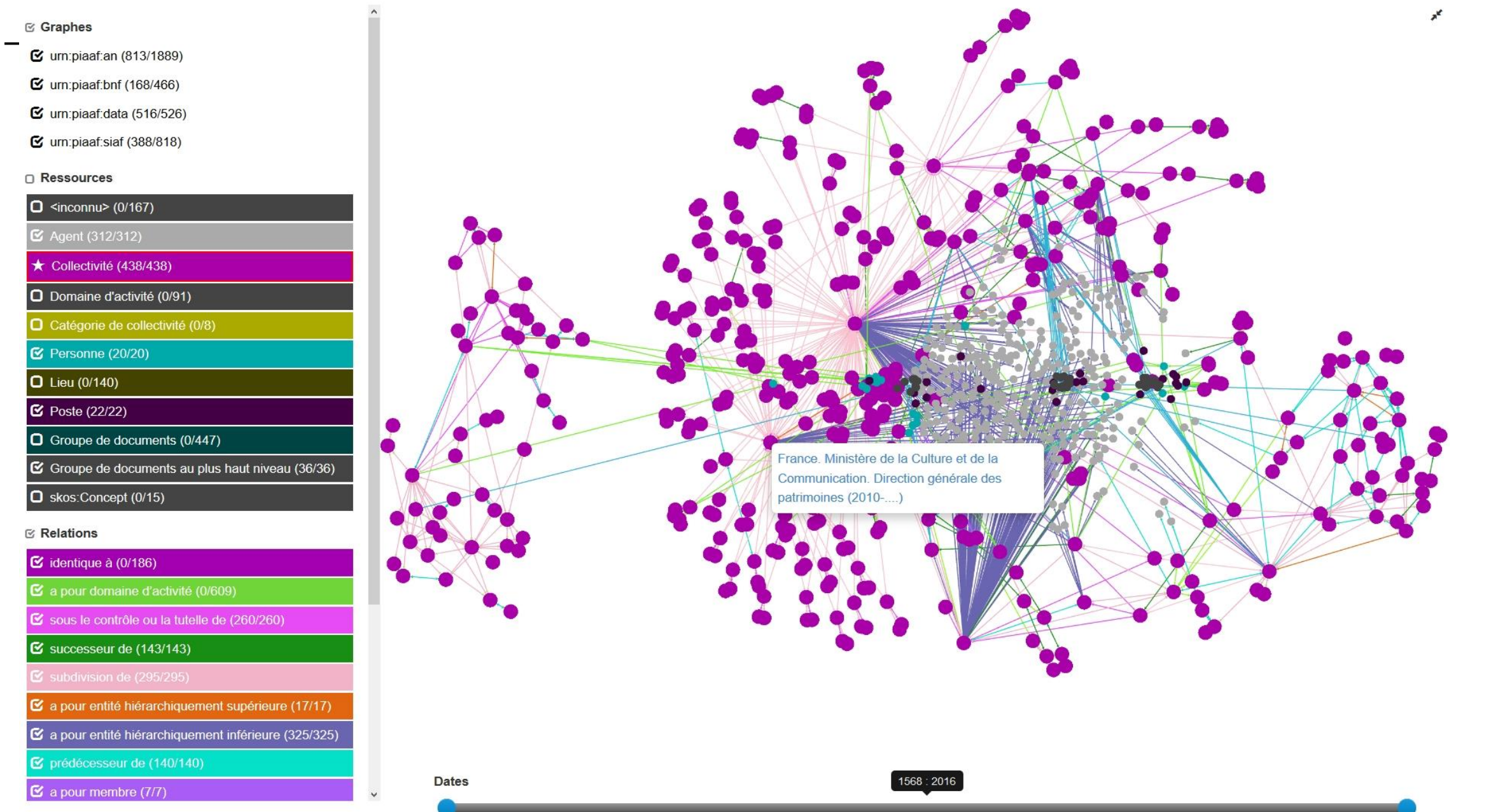
- The EAC-CPF and EAD 2002 models have a few limitations
- **The objects described should have persistent local identifiers**
- As concerns the EAD files, a strategy for representing the levels of description should be defined (should all the archival units be converted or not? should the lower levels inherit some metadata of higher levels or not? If so, what metadata? Etc.)
- **The source metadata should include more controlled access points (that should be defined and described using vocabularies or authority files)**
- And, above all, **it is essential to check the quality of the metadata to be converted**

PIAAF interface

<http://piaaf.demo.logilab.fr>

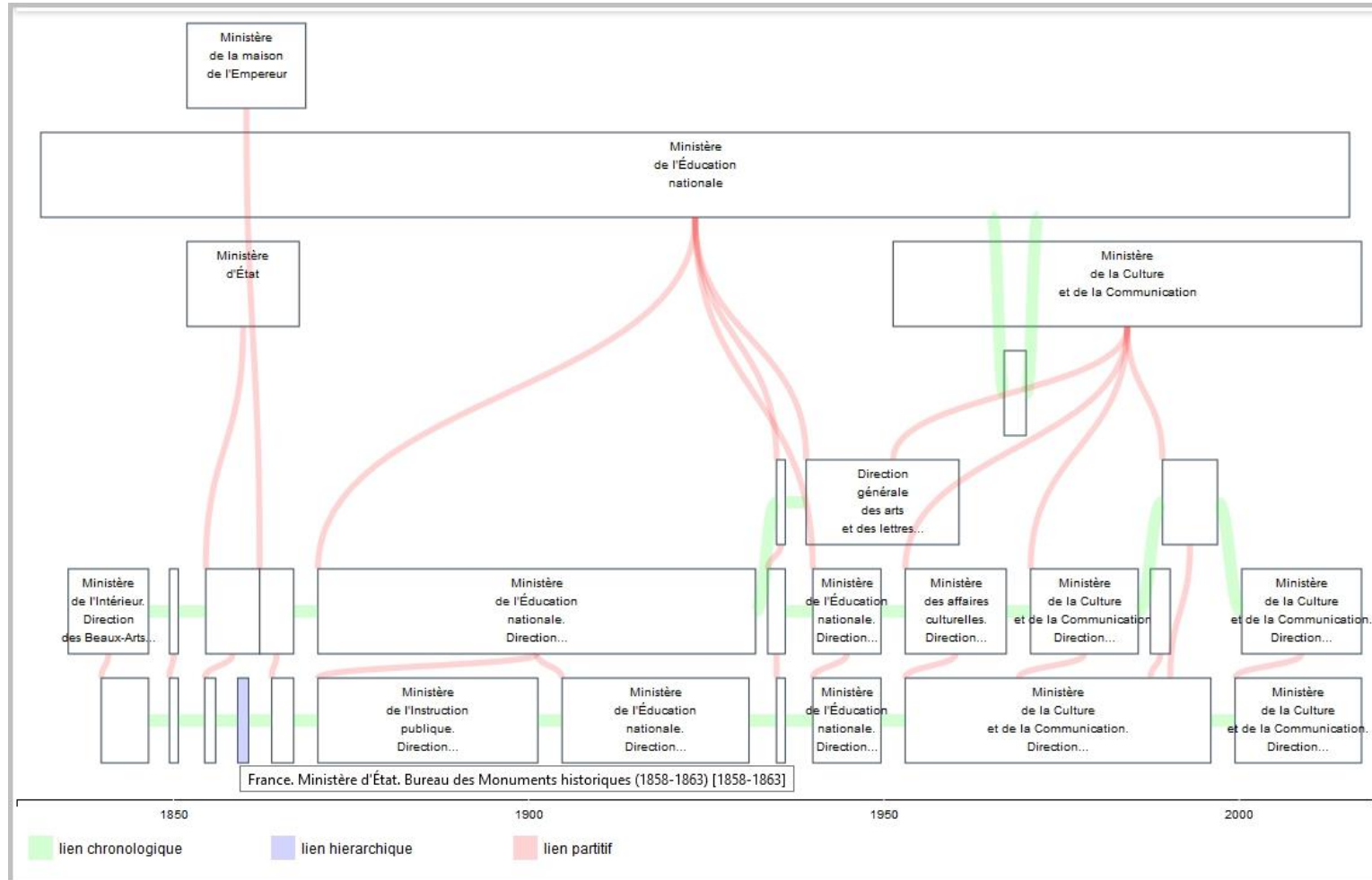
Includes :

- A tutorial (<http://piaaf.demo.logilab.fr/editorial/help>)
- A full text search engine and several pages which allow you to browse and explore the RDF graphs (see the following example slides)
- A SPARQL endpoint with some pre-recorded queries (<http://piaaf.demo.logilab.fr/sparql>)
- A tab showing how you can align the PIAAF ANF RDF archival metadata and the BnF ones, using either ISNI, or BnF ARK URIs taken from <http://data.bnf.fr> as linkage keys (<http://piaaf.demo.logilab.fr/alignments>)
- The project documentation (accessible from the vertical menu that is on the left of the home page)



Screenshot of the record sets tab (<http://piaaf.demo.logilab.fr/ric/CorporateBody>), some other entity types having been selected, as well as all the relations between these entities

An example of a «diagramme chronologico-hiérarchique»

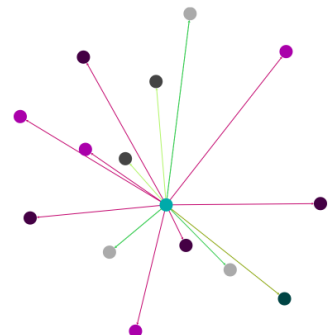


Jeanneney, Jean-Noël (1942-....)

http://www.piaaf.net/agents/FRAN_person_050789

Start layout

- Graphes
- urn:plaaf:an
- Resources
- <inconnu>
- ric:Agent
- ric:CorporateBody
- ric:Person
- ric:Position
- ric:RecordSet
- Relations
- associatedWithRelation
- hasProvenanceRelation
- headOf
- sameAs



Attributs

rdfs:label	Jeanneney, Jean-Noël (1942-....)
ric:birthDate	1942-04-02
ric:history	<p>Jean-Noël Jeanneney est né en avril 1942 à Grenoble. Après des études aux lycées Montaigne et Louis-le-Grand à Paris, il est reçu à l'École normale supérieure de la rue d'Ulm où il est élève de 1961 à 1966. Diplômé de l'Institut d'études politiques de Paris en 1964, agrégé d'histoire en 1965, il consacre une année, avant son service militaire, à faire le tour du monde grâce à une bourse Singer-Pollignac. Il enseigne ensuite l'histoire contemporaine à l'université de Nanterre comme assistant puis maître-assistant. Docteur ès-lettres, en 1975, avec une thèse intitulée "François de Wendel en République, l'Argent et le pouvoir", il est nommé professeur des universités à Sciences Po en 1977. Il y enseigne depuis lors l'histoire politique, l'histoire culturelle et l'histoire des médias, sujets sur lesquels il a publié de multiples ouvrages, parmi divers livres touchant à d'autres domaines. Il est l'auteur de nombreux documentaires historiques pour la télévision, de 1973 à 2009. Il appartient à l'équipe fondatrice de la revue L'Histoire. Il a été co-président fondateur du Festival International de Radio France et de Montpellier (1985-1986). Il a présidé, entre 1991 et 2000, le Conseil scientifique de l'Institut d'Histoire du temps présent. Il a été chroniqueur au Journal du Dimanche de 1999 à 2001. Il a été membre du Conseil d'administration (1987-1991 puis 1993-1995) puis de surveillance (1995-2002) des éditions du Seuil et président du Conseil d'orientation de la chaîne de télévision câblée « Histoire » de 1997 à 2004, membre du Conseil d'administration de l'École normale supérieure entre 1998 et 2004, membre du Haut Conseil de l'Institut du monde arabe de 2003 à 2008, membre du Conseil d'administration du Fonds d'action SACEM de 1982 à 2013. Il préside le Conseil scientifique des « Rendez-vous de l'Histoire de Blois » depuis 2003. Il est président d'honneur du Festival International du film historique de Pessac depuis 1990. Il préside le jury du Prix du livre d'Histoire du Sénat depuis 2007, les Rencontres de la photographie d'Arles depuis septembre 2009. Depuis mars 1998, il co-préside l'association Europartenaires. Il produit l'émission hebdomadaire « Concordance des temps », sur France Culture, depuis 1999. Il a exercé diverses activités publiques : président de Radio France et de Radio France Internationale de 1982 à 1986, président de la Mission du Bicentenaire de la Révolution française et de la Déclaration des droits de l'homme et du citoyen (1988-1989), secrétaire d'État au Commerce extérieur (1991-1992) puis à la Communication (1992-1993) sous la seconde présidence de François Mitterrand. Il a été conseiller régional de Franche-Comté de 1992 à 1998. Il a été enfin président de la Bibliothèque nationale de France de mars 2002 à mars 2007, y conduisant en particulier un combat pour la création d'une bibliothèque numérique européenne. Il est docteur honoris causa de l'Université libre de Bruxelles.</p>

Relations ayant cette ressource comme sujet

rdf:type	http://www.ica.org/standards/RIC/ontology#Person
owl:sameAs	http://data.bnf.fr/ark:/12148/cb11908748q#foaf:Person http://fr.dbpedia.org/resource/Jean-No%C3%ABJ_Jeanneney
ric:associatedWithRelation	http://www.piaaf.net/relation/FRAN_agent_relation_050789-d249e256 http://www.piaaf.net/relation/FRAN_agent_relation_050789-d249e279 http://www.piaaf.net/relation/FRAN_agent_relation_050789-d249e302 http://www.piaaf.net/relation/FRAN_agent_relation_050789-d249e322

Archives papier de Jean-Noël Jeanneney, Président-directeur général de Radio France (1964-1986)

Start layout

- Graphes
- urn:plaaf:an
- Resources
- ric:Person
- ric:RecordSet
- Relations
- originatedBy

Attributs

ric:title	Archives papier de Jean-Noël Jeanneney président-directeur général de Radio France et de Radio France Internationale de 1982 à 1986 (1964-1986)
-----------	---

Relations ayant cette ressource comme sujet

rdf:type	http://www.ica.org/standards/RIC/ontology#RecordSet
ric:mainSubjectOf	https://www.siv.archives-nationales.culture.gouv.fr/siv/IR/FRAN_IR_050629
ric:originatedBy	http://www.piaaf.net/relation/FRAN_ProvenanceRelation_050789-d249e496

Relations ayant cette ressource comme objet

ric:originatedObject	http://www.piaaf.net/relation/FRAN_ProvenanceRelation_050789-d249e496
----------------------	---

Screenshots of the pages on Jean-Noël Jeanneney in the ANF graph (on the left, http://piaaf.demo.logilab.fr/resource/FRAN_person_050789) and on the right, his archives as the director of Radio France (http://piaaf.demo.logilab.fr/resource/FRAN_record-set_050629-top)

A success, and its limitations

- Proof of concept done!
Though we did not have enough time for doing everything that had been foreseen
- Prototype was welcome and considered both very interesting and opening new pathes
- Another benefit of the project came from collaboration: we learned more about the practice, and perspective, of the three institutions, and could see how much they determine, and even shape, the metadata created
- Of course it remains a proof of concept...
- **So we have moved forward**

An institutional programme: entering and successfully completing an « archival (metadata) transition »

- The ANF are now designing their information system master plan for the next years
- Hopefully, this plan should include a set of tasks aiming to **switch to one unique global descriptive metadata model**
Several metadata silos, several 'models', ambiguities, redundancies, inconsistencies, implicit information, difficulties as concerns sharing knowledge, several end user interfaces...
Moving to a unique, relevant, fully documented, scalable, framework
- **Moving from semi-structured metadata to a graph of data**
- **This model should be based on RiC** (probably both simplified and extended)
- First discussions, workshops and concrete tasks already ongoing inside the institution

Preparing data for a Linked Data repository

Home > Getting Started

Getting Started

Test drive the converter

To run your first conversion :

1. double-click on `ricoconverter.bat` (or `ricoconverter.sh` on Linux or Mac - make sure it is executable),
2. hit `Enter` to leave the default values for the input parameters of the script;
3. wait a couple of seconds for the conversion to finish, and look in the generated output folder `output-<date_of_day>` for the result of the conversion;

The few sample files provided by default in the `input` folder have been converted to RiC-O.

Display the Help message

To print the help message and get the details of all the possible commands and options, run `ricoconverter.bat` and type "help" at the prompt for the command :

```
"" :: Welcome to Ric-O Converter 20190604 ::
```

```
Enter command to execute (convert_arrange, convert, validate, test, version, help) [press enter for 'convert_arrange']:help ""
```

Script folder content

In the script folder you will find the following directories :

- `documentation` : contains this documentation :-)
- `input`, `input-50`, `input-500`, `input-5000` and `input-all` : contains samples EAC files to be converted with the `convert_arrange` and `convert` commands;
- `input-validation` : the default input folder for validating data using the `validate` command;
- `parameters` : contains the parameter files for each command; you need to modify these files if you want to adjust the options of a command;
- `shapes` : contains the shapes definition file used by the `validate` command;
- `unit-tests` : contains the unit test files used by the `test` command;
- `vocabularies`
- `xslt` : contains the XSLT files used by the `convert_arrange` and `convert` commands to convert EAC to RiC-O; the main one is `eac2rico.xslt`;

Commands and parameters

The converter contains a few commands, the major ones are `convert_arrange`, `convert`, and `validate`.

Each command is associated to a set of parameters, and these parameters are listed in a property file under the `parameters` subfolder, in a file with the same name as the command; e.g. the options for the command `convert_arrange` are in `parameters/convert_arrange.properties`.

Designing a « semantic web module » is a subset of the IS master plan.

This will most probably be a front end module.

Meanwhile, we are working on converting the whole of our EAD and EAC-CPF metadata to RDF.

Developing **ricoconverter**:

- an **open source** tool
- **easy to install and run**
- configurable
- documented in English
- including unit tests
- fast and efficient
- **public official release in February**

2020

Enhancing the quality of our descriptive metadata

Consistency and accuracy of metadata depend (among other choices) on using authority records and controlled vocabularies.

Also, authority data:

- are **bridges** allowing interconnexions **within our metadata** and **to other metadata**;
- **can help to build efficient, easy to understand, end user interfaces**

Enhancing quality implies:

- that our authority data be richer, better structured, aligned to other ones

Several projects, including: **enriching the lists of places so that they are described as geo-historical entities ; building a thesaurus for indexing the activities of corporate bodies; creating authority records for any agent which has relations with the records we keep; etc.**

- that they are much more used by our colleagues

Several projects including: changing the IS functionalities; training courses, events on data quality, changing practice; a **named entities recognition project**

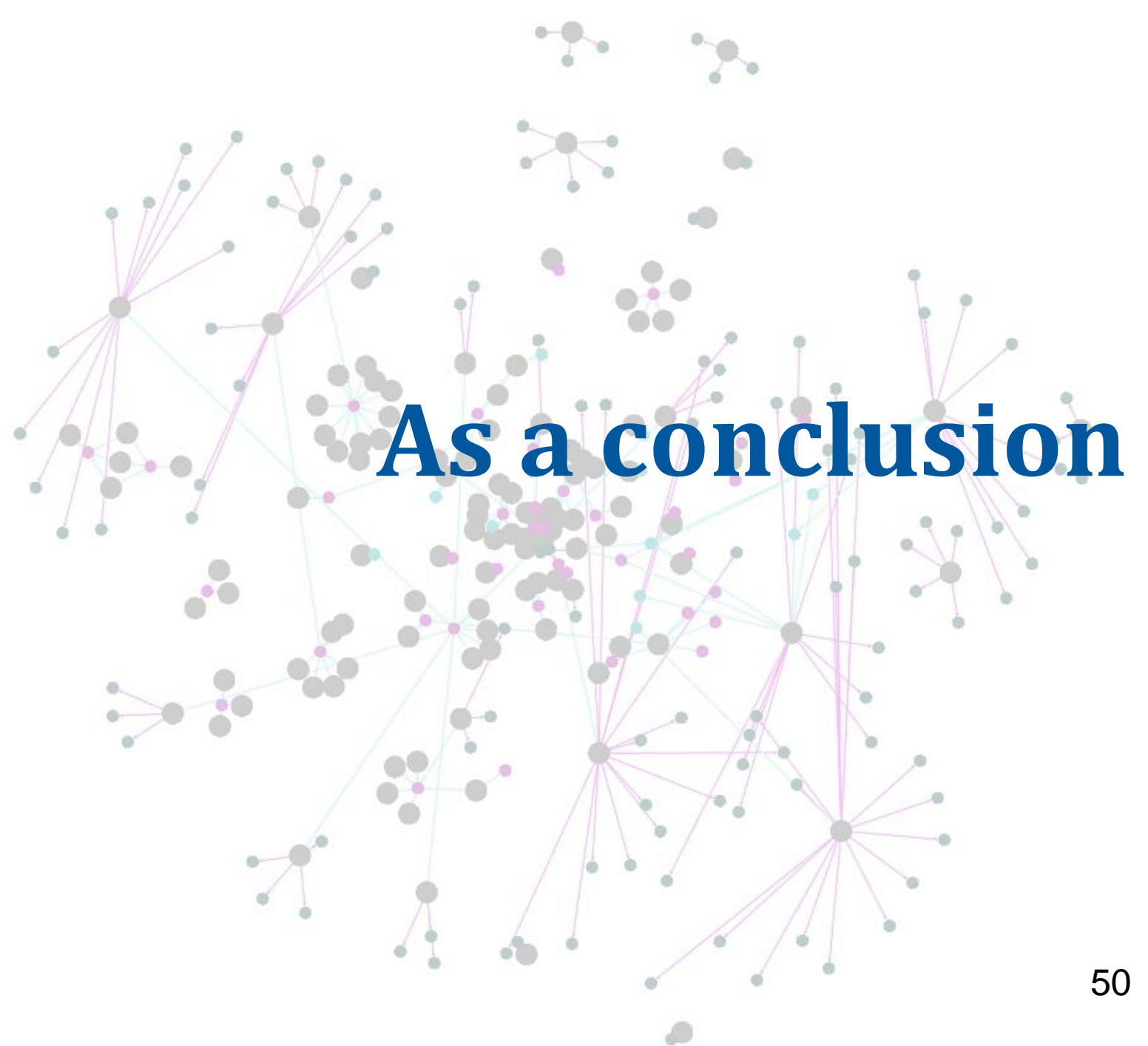
In short

Medium to long-term projects, that cannot be successful without enough human resources

Quality management (of metadata) is the core of these projects

Collective and collaborative by essence

They also are articulated with the strategies and metadata repositories of other institutions, teams, portals and research projects.



RiC schedule!

- December 2019 : [public release of RiC-CM v0.2 preview and RiC-O v0.1](#)
- From December 2019 to November 2020 : EGAD calls for comments (and will enable forking and creating pull requests to the Git RiC-O repository)

Records in Contexts is already a collaborative project, and will need feedback and proposals from the interested communities

- November 2020 : public release of RiC-CM and RiC-O v1.0

ICA-EGAD will organize...

- Conferences
For example: a conference in the ANF, on January 28 ([programme](#))
- Long presentations enabling the audience to comment and provide feedback
- Workshops
- Training courses

