# Modeling Collections of French Local Administration Documents

Nada Mimouni[1], Sylvie Salotti[1], Ève Paul[2]

[1]Université Paris 13, Sorbonne Paris Cité, LIPN, CNRS(, UMR 7030)
[2]Victoires Éditions, Paris, France

December 12th, 2013
JURIX'13, Bologna - Italy

# Context

- Application context: LEGILOCAL project
  - Easy access to local legal data
  - Information access: Queries / Exploring

# Context

- Application context: LEGILOCAL project
  - Easy access to local legal data
  - Information access: Queries / Exploring

- Legal data
  - Highly interconnected → Network of documents
  - Nodes: documents
  - Edges: various types of links

- ⇒ Single document **vs.** All its neighborhood in the graph
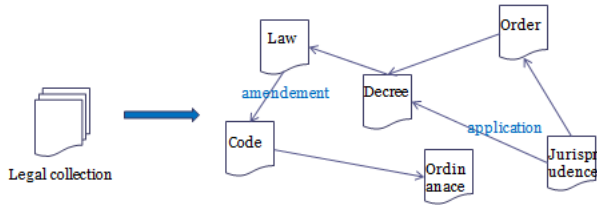
# Outline

**1** **Legal IR issues**

**2** **Related work**

**3** **Characteristics of legal collections**

**4** **Proposed document ontology**
- Document module
- Semantic module
- Time frame

**5** **Querying**

**6** **Conclusion and Future steps**

# Legal IR complexity - Query example 1

« Donne moi la jurisprudence qui applique l'article 1382 sur la responsabilité pour faute du Code Civil* »

«*Give me the case law applying Article 1382 on liability for negligence of the Civil Code »

# Legal IR complexity - Query example 1

« Donne moi la jurisprudence qui applique l'article 1382 sur la responsabilité pour faute du Code Civil* »

«*Give me the case law applying Article 1382 on liability for negligence of the Civil Code »

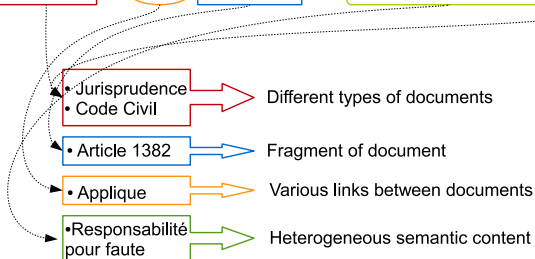« Donne moi la jurisprudence qui applique l'article 1382 sur la responsabilité pour faute du Code Civil* »

# Legal IR complexity - Query example 1

« Donne moi la jurisprudence qui applique l'article 1382 sur la responsabilité pour faute du Code Civil* »

«*Give me the case law applying Article 1382 on liability for negligence of the Civil Code »

« Donne moi la jurisprudence qui applique l'article 1382 sur la responsabilité pour faute du Code Civil* »

- Jurisprudence
- Code Civil  → Different types of documents

- Article 1382  → Fragment of document

- Applique  → Various links between documents

- Responsabilité pour faute  → Heterogeneous semantic content

# Legal IR complexity - Query example 2

« Donne moi la version en vigueur de l'article 1382 du Code Civil et la version précédente*»

«*Give me the version in force of Article 1382 of the Civil Code and the previous version»

# Legal IR complexity - Query example 2

« Donne moi la version en vigueur de l'article 1382 du Code Civil et la version précédente*»

«*Give me the version in force of Article 1382 of the Civil Code and the previous version»

« Donne moi la version en vigueur de l'article 1382 du Code Civil et la version précédente* »

# Legal IR complexity - Query example 2

« Donne moi la version en vigueur de l'article 1382 du Code Civil et la version précédente*»

«*Give me the version in force of Article 1382 of the Civil Code and the previous version»



« Donne moi la version en vigueur de l'article 1382 du Code Civil et la version précédente* »

- Version en vigueur
- Version précédente                    Different versions

- Article 1382                          Fragment of document
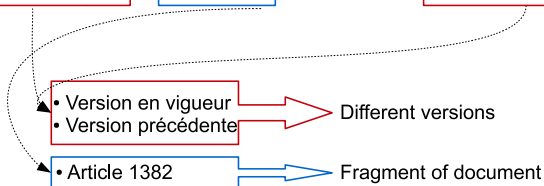
# **Legal standards and ontologies**

- XML Legal standards
  - Standard representation of the structure of legal texts
  - Interoperability and exchange of sources between parliamentary bodies $\rightarrow$ Analysis, comparison
  - Reference and modification management, automatic updating
  - Akomantoso, Metalex

- Legal ontologies
  - Describe domain concepts
  - CLO - DOLCE, LKIF core (Top ontologies)

# Existing legal IR systems

- Legifrance

---

**Article L131-1**

Abrogé par Loi n°96-142 du 21 février 1996 - art. 12 (V) JORF 24 février 1996

Le maire est chargé, sous le contrôle administratif du représentant de l'Etat dans le département, de la police municipale, de la police rurale et de l'exécution des actes de l'autorité supérieure qui y sont relatifs.

**Liens relatifs à cet article**

**Cité par:**
  Décret n°68-134 du 9 février 1968 - art. 1 (Ab)
  Décret n°73-378 du 27 mars 1973 - art. 55 (Ab)
  Loi n°87-565 du 22 juillet 1987 - art. 5 (Ab)
  Décret n°90-394 du 11 mai 1990 - art. 4 (Ab)
  Loi n°2004-811 du 13 août 2004 - art. 100 (Ab)
  CODE DES COMMUNES. - art. L122-22 (Ab)

**Codifié par:**
  Décret 77-90 1977-01-27

**Nouveaux textes:**
  Code général des collectivités territoriales - art. L2212-1 (V)
  Code général des collectivités territoriales - art. L2212-1 (V)

Legifrance results screen

- Normattiva
- UK Legislation

# **Existing legal IR systems**

- Legifrance
- Normattiva



Retrieve versions of a document in force at different dates.

- UK Legislation

# Existing legal IR systems

- Legifrance
- Normattiva
- UK Legislation

| Changes that affect | | | | Made by | | |
|---|---|---|---|---|---|---|
| ☐ Changed Legislation | ☐ Year and Number | Changed Provision | Type of effect ❓ | ☐ Affecting Legislation Title | ☐ Year and Number | Affecting Provision |
| not available | 1838 No. 1 | specified amended provision(s) | Commencement Order | The Ecclesiastical Offices (Terms of Service) Measure 2009 (Appointed Day No. 4) Instrument | 2010 No. 8 | Instrument made by Archbishops |
| INTERPRETATION MEASURE 1925 (No. 1) | 1925 No. 1 | s. 4 | repealed | Statute Law (Repeals) Act 2004 | 2004 c. 14 | Sch. 1 Pt. 6 Group 5 |
| ECCLESIASTICAL COMMISSIONERS (LOANS FOR CHURCH TRAINING COLLEGES) MEASURE 1931 No. 2) | 1931 No. 2 | s. 1 | transfer of functions | The National Institutions of the Church of England (Transfer of Functions) Order 2007 | 2007 No. 1556 | art. 2 |
| ECCLESIASTICAL COMMISSIONERS (LOANS FOR CHURCH TRAINING COLLEGES) MEASURE 1931 No. 2) | 1931 No. 2 | s. 3 | text amended | The National Institutions of the Church of England (Transfer of Functions) Order 2007 | 2007 No. 1556 | Sch. para. 1 |

Search for changes made by legislation since 2002.
Retrieve versions of a document in force at different dates.

# Existing legal IR systems

- Legifrance
- Normattiva
- UK Legislation

**Results**

- Legal links are treated as document legal status.
- Point-in-time access.

# **Motivation**

- Existing legal IR systems
    - One type of link between documents (modify)
    - One still needs to navigate through multiple links to get full information

- Real legal needs
    - Consider multiple types of links
    - Represent multiple types of documents with different structures
    - Consider temporal aspects
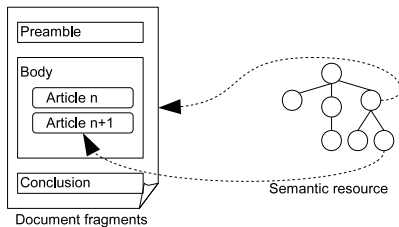    - Consider semantic content

# Our goals

## Documents

- The semantic content
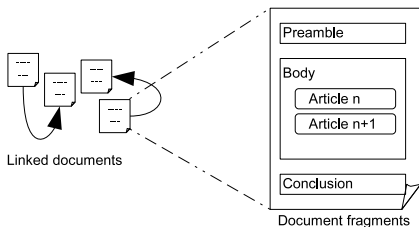- The Structure/fragments of text



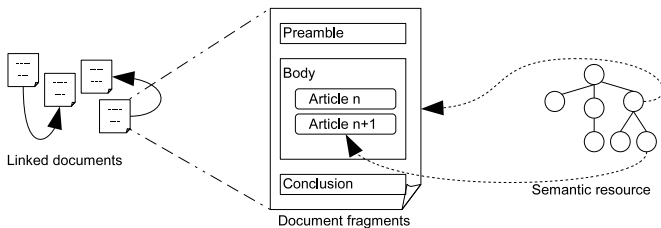Document fragments

Semantic resource

# Our goals

### Documents

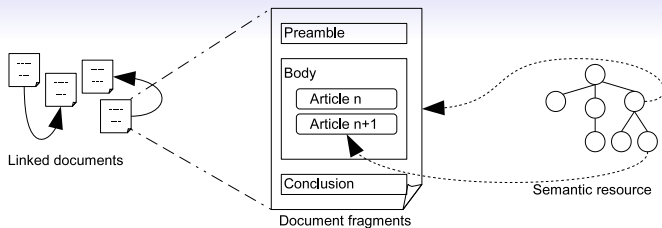- The semantic content
- The Structure/fragments of text

### Links

- Time: versioning
- Intertextual relationship



Linked documents

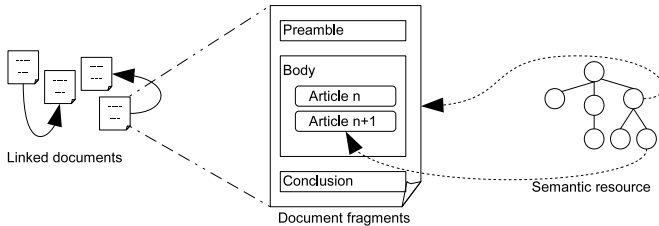Document fragments

# Approach



Linked documents

Preamble

Body

Article n

Article n+1

Conclusion

Document fragments

Semantic resource
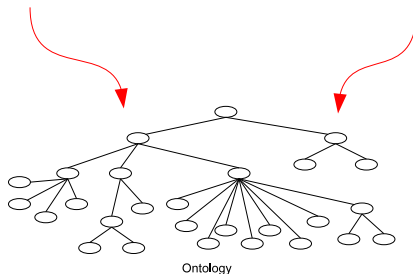
# Approach



Represent homogenously all information about the collection

# Approach



- Linked documents
- Preamble
- Body
  - Article n
  - Article n+1
- Conclusion
- Document fragments
- Semantic resource

- Benefits
  - New search facilities for legal texts (document's neighborhood)
  - Help readers (citizens) in comprehending law quickly
  - Help lawyers in their tasks
  - Support law makers in developing, validating and maintaining legal texts
  - etc.

# **Needs for legal IR / Ontology modules**

1. Document structure
   - Sections, paragraphs, articles, etc.
2. Document type
   - Code, case law, decision, etc.
3. Relations between documents
   - Modification, abrogation, codification, etc.
4. Semantic description of the content
   - Domain concepts or entities
5. Time frame
   - Creation date, modification date, version.

1. Document module
   - Document structure
   - Document type
   - Collection: relations between documents
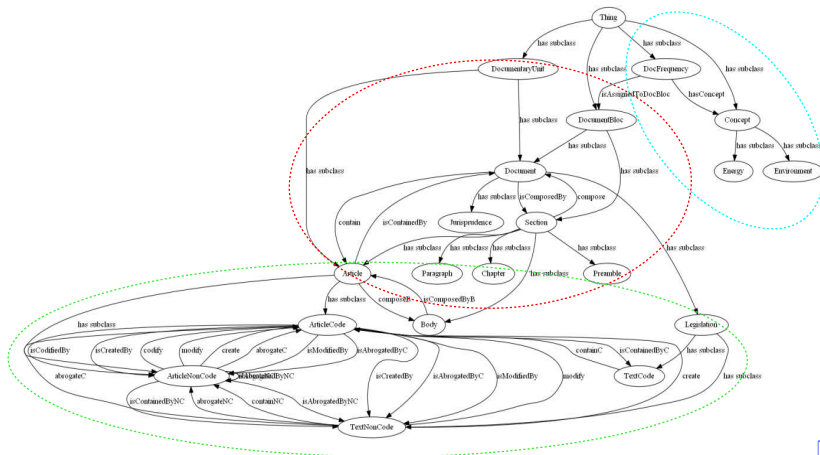2. Semantic module
   - Semantic description of the content
3. Time frame
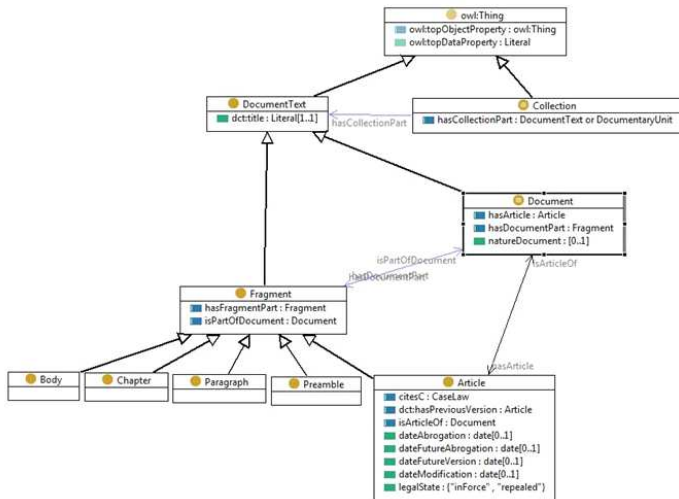   - Dates related to a document

# One ontology for all: Overview

# Document Module: Structure
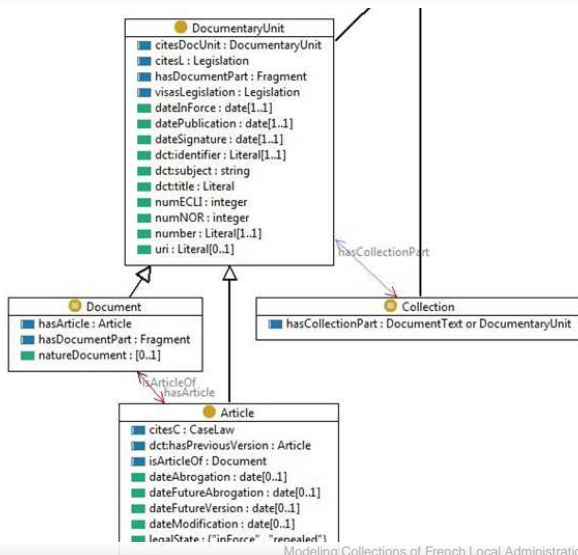
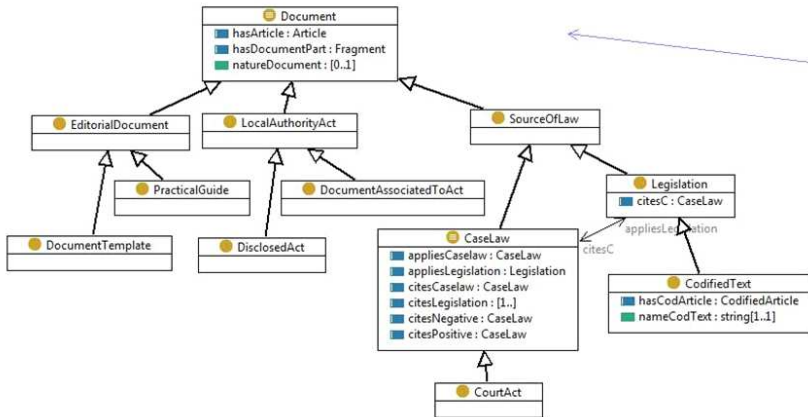- **Document fragment: Paragraph, Chapter, Preamble, Body, Article**

# Document Module: Structure

- **Document unit: Article, Document (citable objects)**



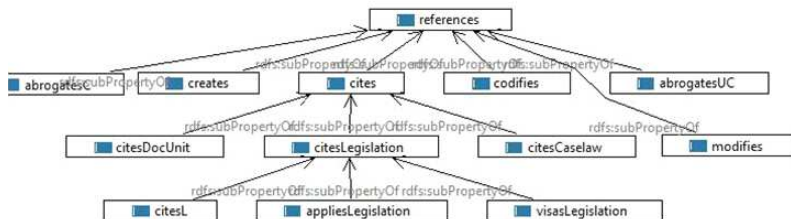Modeling Collections of French Local Administration Documents

# Document Module: Collection

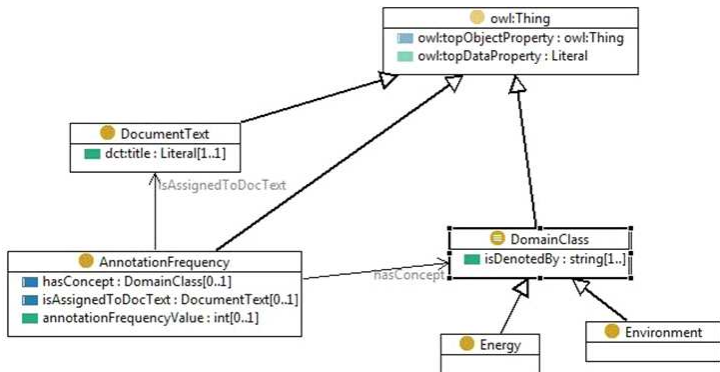- **Many types of documents: Document (Legislation, Case law, etc.)**

# Document Module: Collection
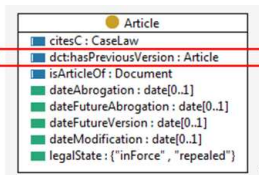
- **Many types of links between documents**
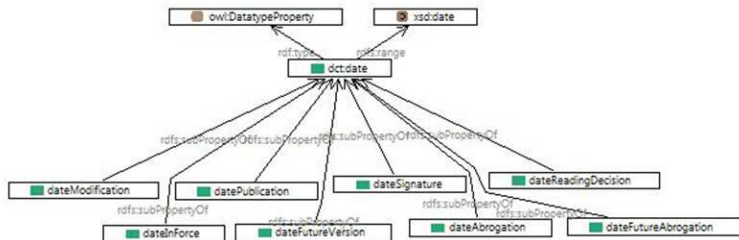
# Semantic Module

**Domain classes**

# Time frame

- **Versions of an article**



- **Dates**

# Modeling legal collection

**Instantiate the ontology to produce a set of RDF triples**

- Model documents and their types (Legislation, Juriprudence, etc.)
- Articles (ArticleCode, etc.)
- Domain concepts (Energy, Environment, etc.)
- Relations between classes (hasConcept, isModifiedBy, etc.)

$\Rightarrow$ A knowledge base query-able with SPARQL (Relational queries)

# **Querying on different aspects**

- Semantic query: semantic content of a law text
  - *Which articles are about "liability for negligence"?*
    - *Classes "DomainClass" and "DocumentFragment"*

- Relational query: different versions of a law text (document or article)
  - *Which are the different versions of the "Article 1382" of "Civil Code"?*
  - *Give me the version in force of "Article 1328" along with its "modification date"?*
    - *Classes "Article" and "UncodifiedText"*
    - *Property "hasPreviousVersion"*
    - *Property "dateModification"*

- Relational queries: documents types / links types
  - *Which case law applies the Article 1382 of the "Civil Code"?*
  - *By which text the "Article 1382" of the "Civil Code" was created?*
    - *Classes "Case law", "Article" and "CodifiedText"*
    - *Link "applies"*
    - *Link "isCreatedBy"*

# Conclusion and future steps

- Modeling a collection of documents
  - Meet the needs of the LEGILOCAL project (validation)
    - Semantic content descriptors
    - Intertextual relationships
    - Documents fragments
    - Versions

- Perspectives
  - Querying: a user friendly interface to send queries
  - Results: display answers as graphs of interconnected documents
  - Evaluation: user satisfaction

# Thank you