

DEPARTMENT OF  
INFORMATION  
ENGINEERING  
UNIVERSITY OF PADOVA



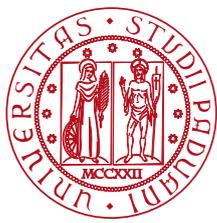
# Empowering Archives Through Annotations

Nicola Ferro and Gianmaria Silvello

Information Management Systems (IMS) Research Group,  
Department of Information Engineering,  
University of Padua, Italy  
`{ferro, silvello}@dei.unipd.it`

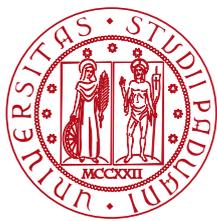
---

Italian Research Conference on Digital Libraries (IRCDL 2012)  
09-10 February 2012, Bari, Italy



# Outline

- Motivations
- Archives and Annotations
- The NESTOR Model as an Interoperability Layer
- An Integration and Visualization Service
- Final Remarks and On-Going Works



# Motivations

- Different representations of archival resources: **how to share and cooperate** in a common environment?
- Annotations are a fundamental means for cooperation: **how to exploit annotations** within different archival systems?
- The **hierarchical structure** of archives and annotations can be used as an **interoperability mean**
- A **common environment** for archives and annotations can be exploited to relate different resources and to create new knowledge

# What is an Archive?



# What is an Archive?



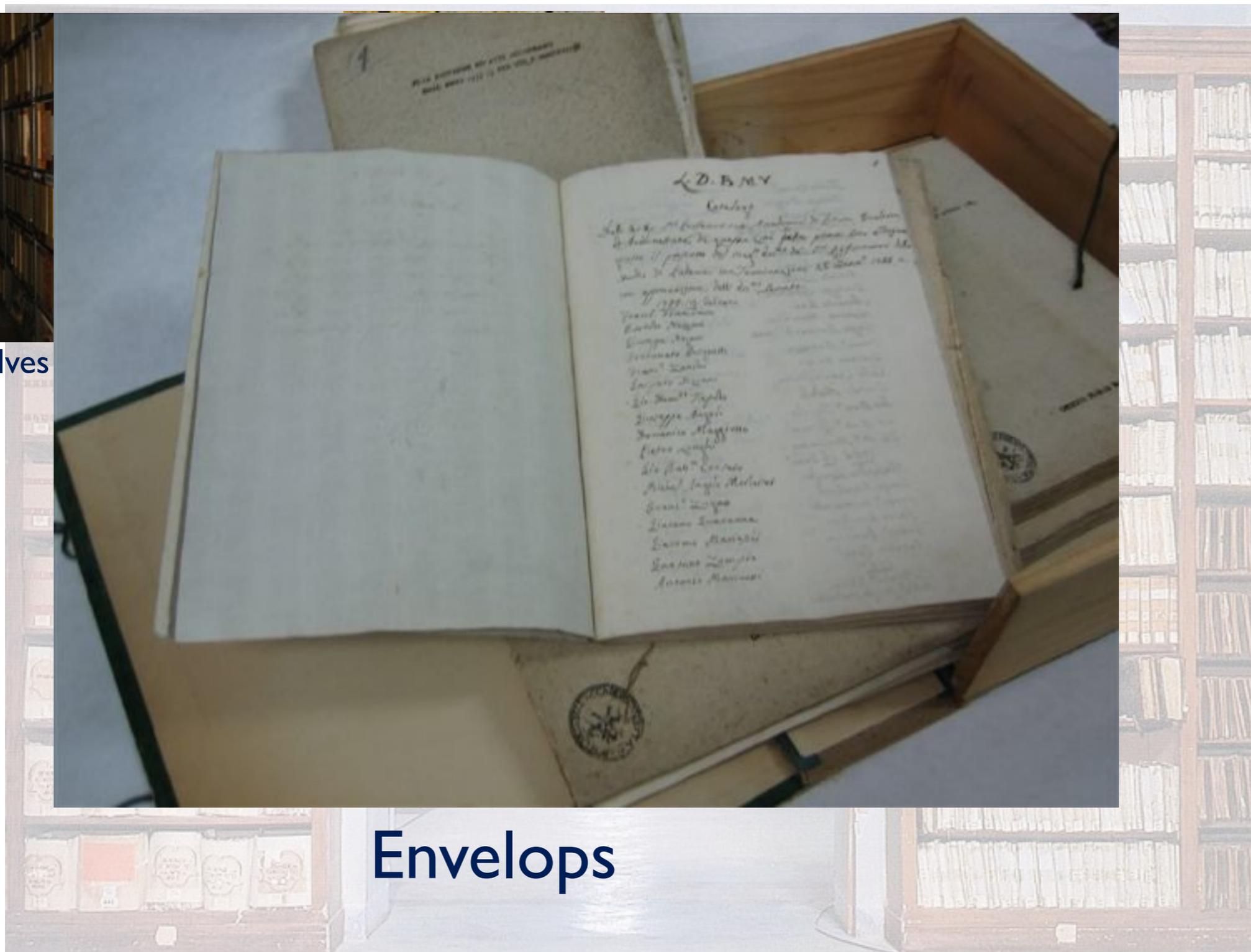
Shelves



# What is an Archive?



Shelves



Envelops

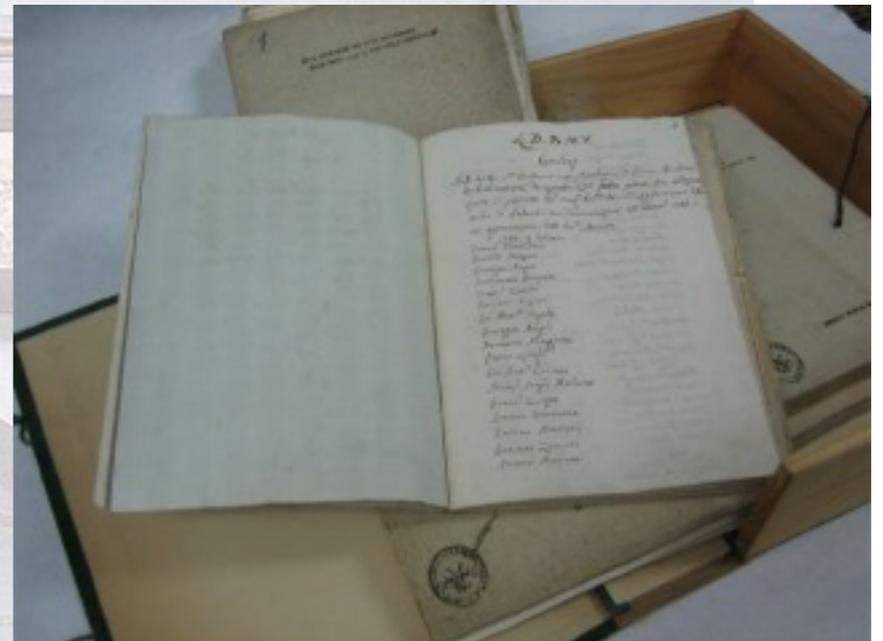
# What is an Archive?



Shelves



Folders



Envelops



# What is an Archive?



Shelves



Folders

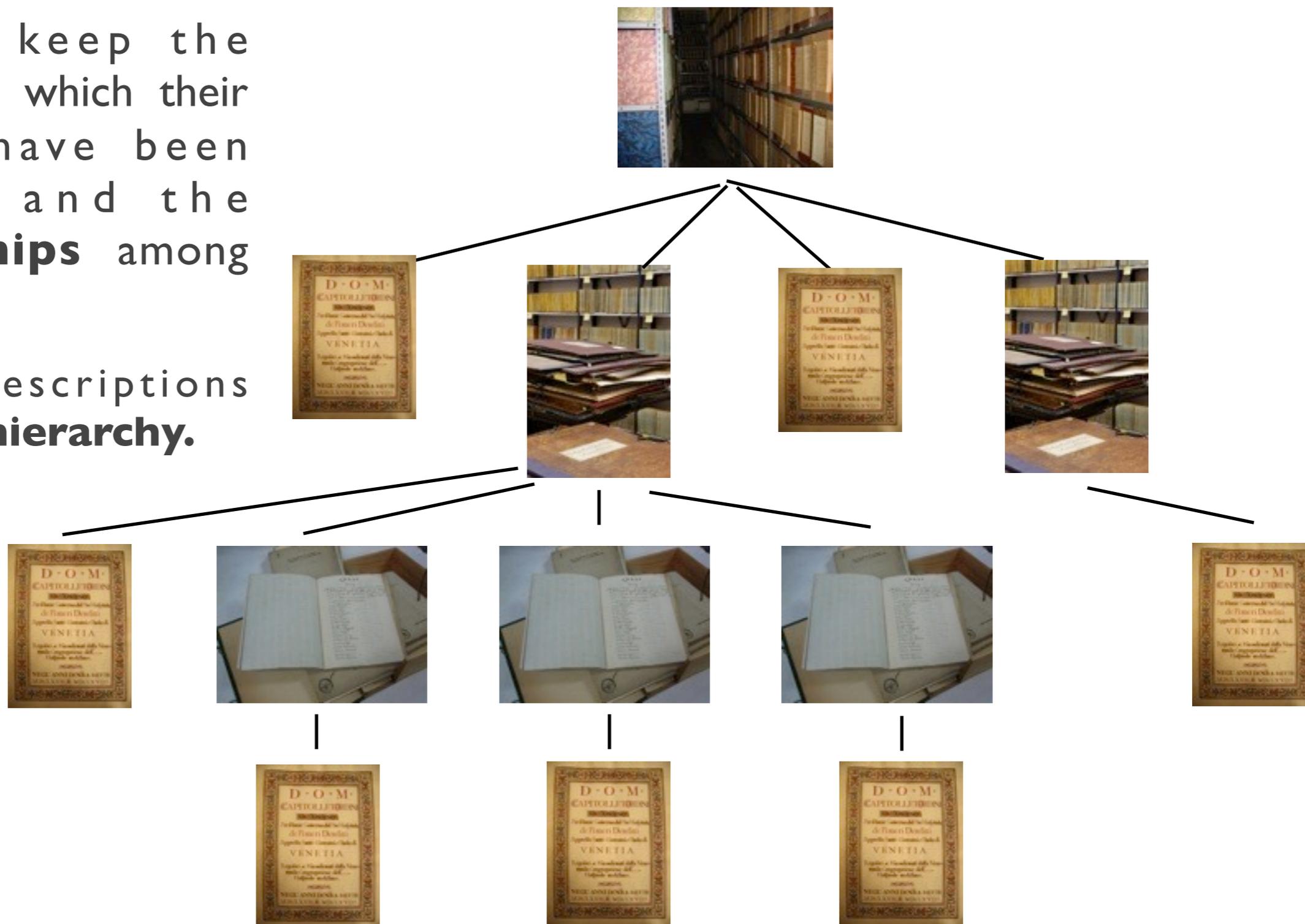


Envelops



Documents (e.g. letters, registers, testaments)

- Archives keep the **context** in which their records have been created and the **relationships** among them.
- Archival descriptions constitute a **hierarchy**.



-  **fonds**
-  **sub-fonds**
-  **series**
-  **document**

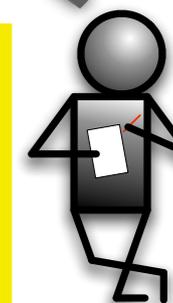
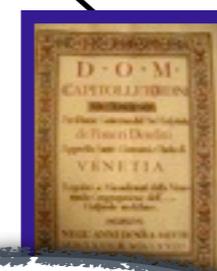
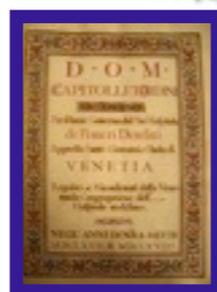


## The Creation Phase

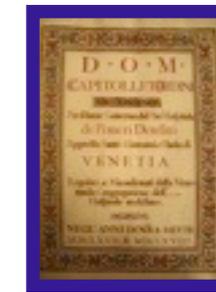
Annotations as a tool for collaboration between archivists



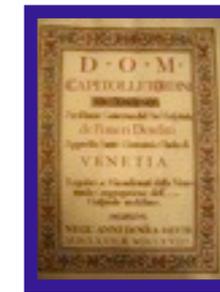
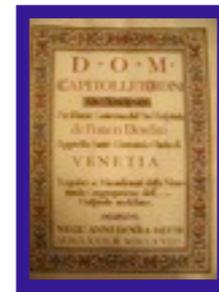
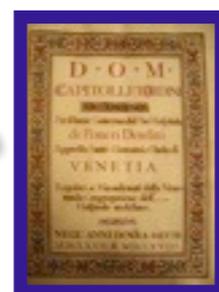
The date of this sub-fonds is uncertain...



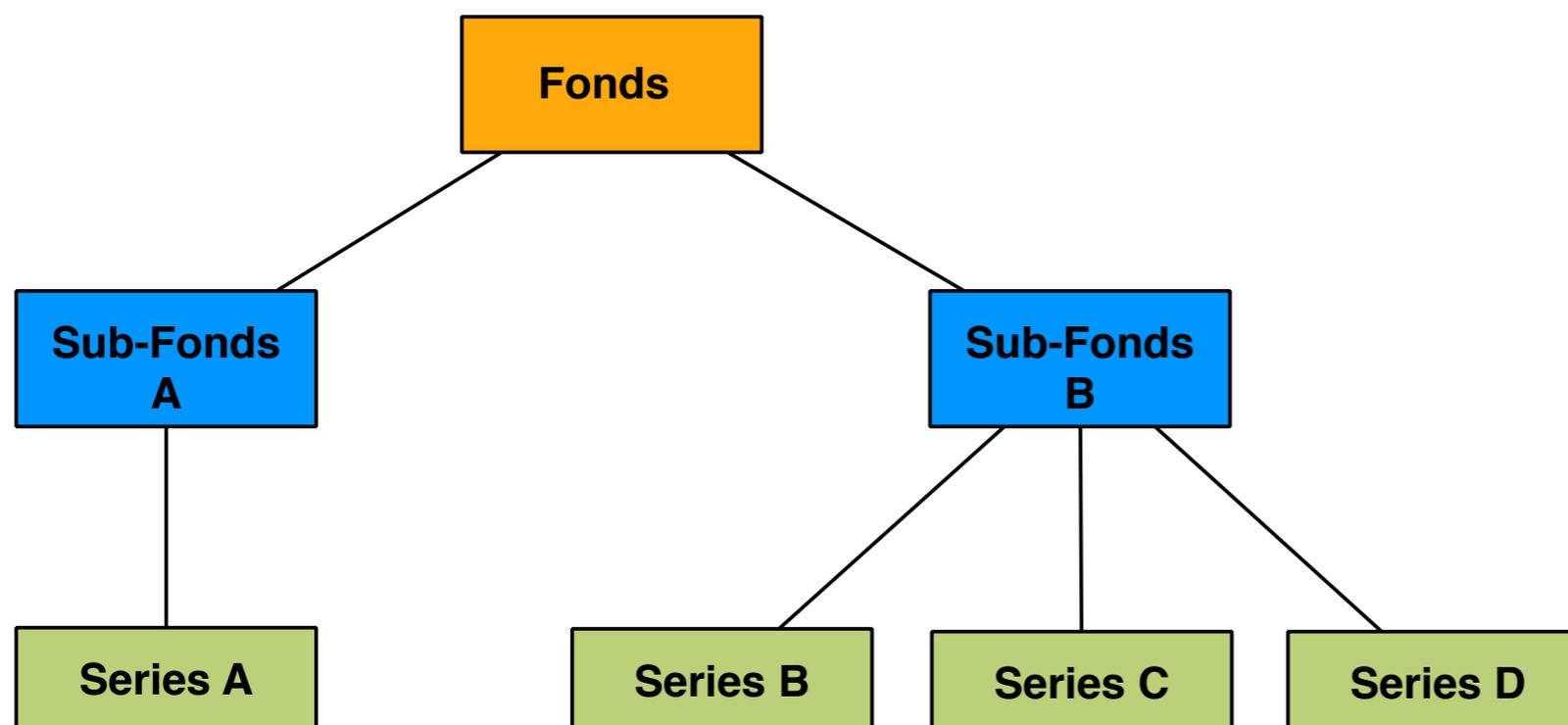
The author of this testament is ... (link to an authority file)



This archival document is related to a series of the "Malmignati" archive



## Archival tree



## EAD file

```
<eadheader>
  [...]
<eadheader>
<archdesc level="fonds">
  [...]
  <did> [...] </did>
  <dsc label="Fonds">
    [...]
    <c01 label="Sub-fonds">
      [...]
    </c01>
    <c01 label="Sub-fonds">
      [...]
      <c02 label="Series">
        [...]
      </c02>
      <c02 label="Series">
        [...]
      </c02>
      <c02 label="Series">
        [...]
      </c02>
    </c01>
  </dsc>
</archdesc>
```

```

<ead>
  <eadheader>
    [...]
  </eadheader>
  <archdesc level="fonds">
    [...]
    <did>
      [...]
    </did>

    <dsc>
      [...]
      <c01>
        [...]
      </c01>
      <c01>
        [...]
        <c02>
          [...]
        </c02>
      </c01>
    </dsc>
  </archdesc>
</ead>
  
```

metadata file

```

<record>
<header>
  <identifier>idComponent01b</identifier>
  <datestamp>2008-03-18</datestamp>
  <setSpec>idEadRoot</setSpec>
</header>
<metadata>
  [...]
</metadata>
</record>
  
```

metadata file

```

<record>
<header>
  <identifier>idComponent01b</identifier>
  <datestamp>2008-03-18</datestamp>
  <setSpec>idEadRoot</setSpec>
</header>
<metadata>
  [...]
</metadata>
</record>
  
```

metadata file

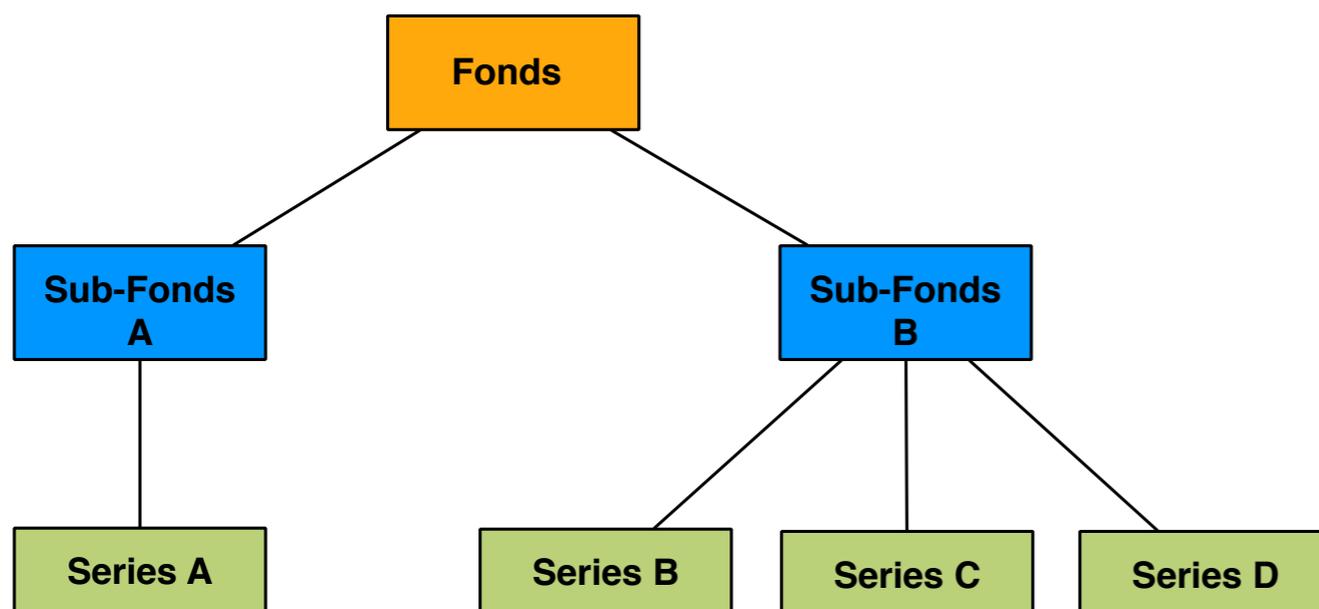
```

<record>
<header>
  <identifier>idComponent01b</identifier>
  <datestamp>2008-03-18</datestamp>
  <setSpec>idEadRoot</setSpec>
</header>
<metadata>
  [...]
</metadata>
</record>
  
```

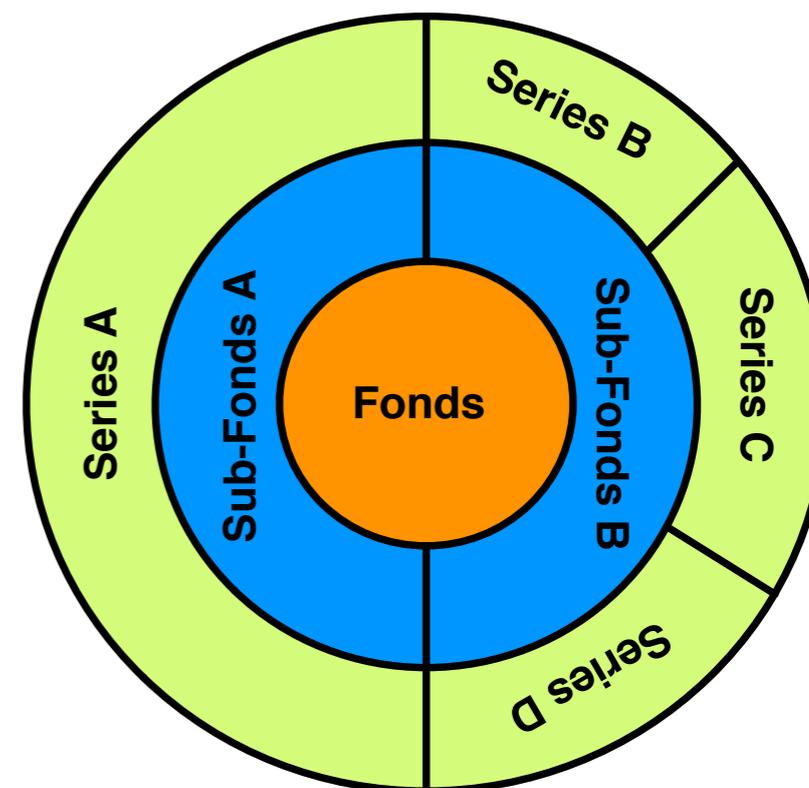
## Archival tree represented by EAD

- Each archival description is represented by a **single metadata file**
- In order to maintain the hierarchical structure each metadata file is linked to a third-part structure (e.g. using and EAD file + XPointers or by means of a DBMS)

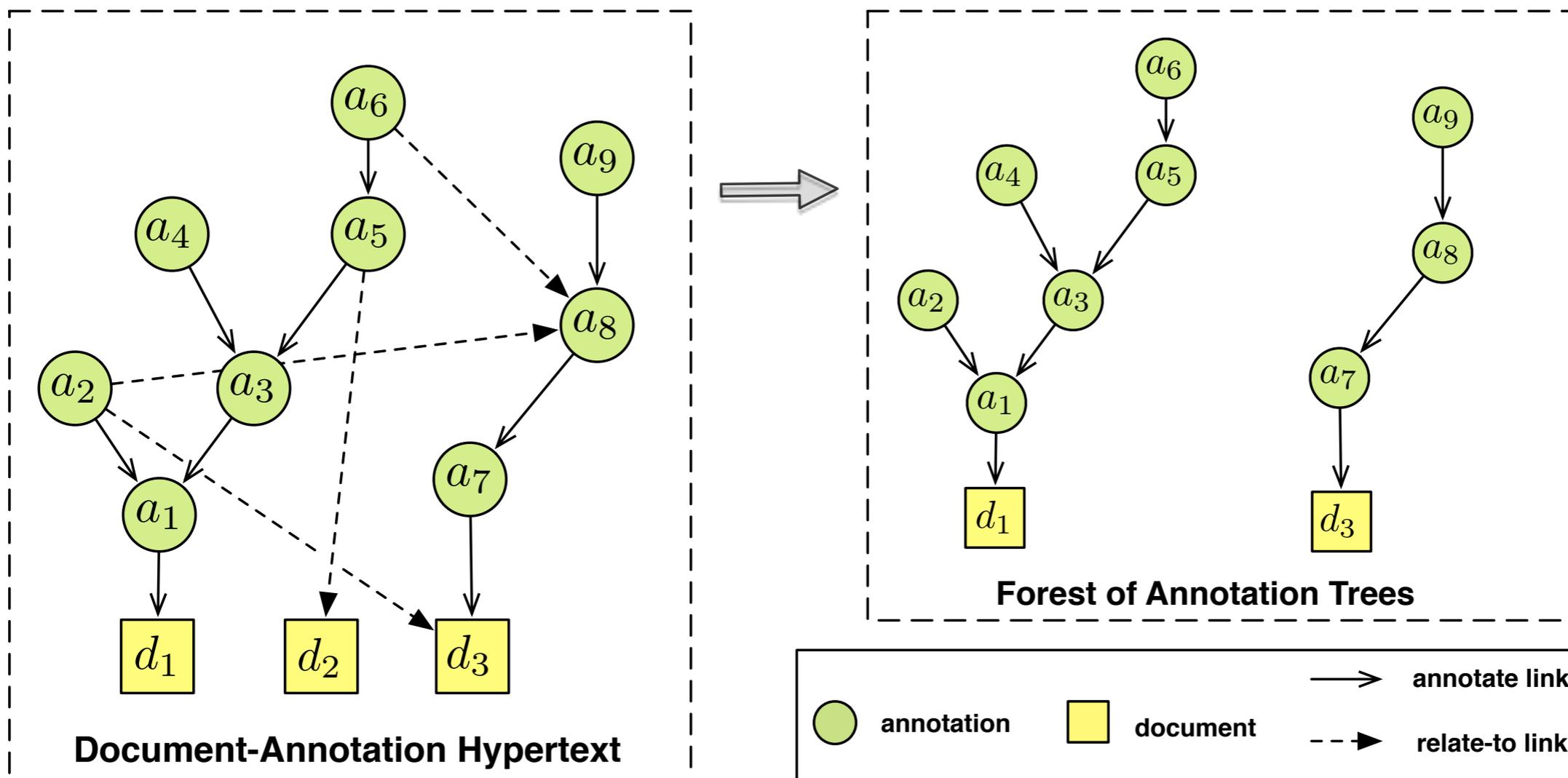
## Archival tree



## The NESTOR Model (INS-M)



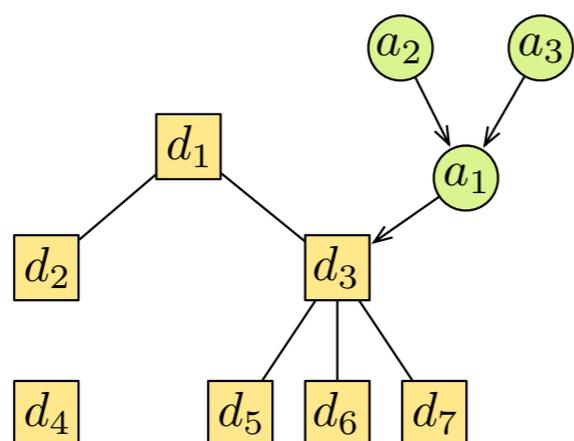
- The hierarchical structure is retained by the inclusion order between the sets
- An archival description is a single metadata file represented as an element belonging to a set



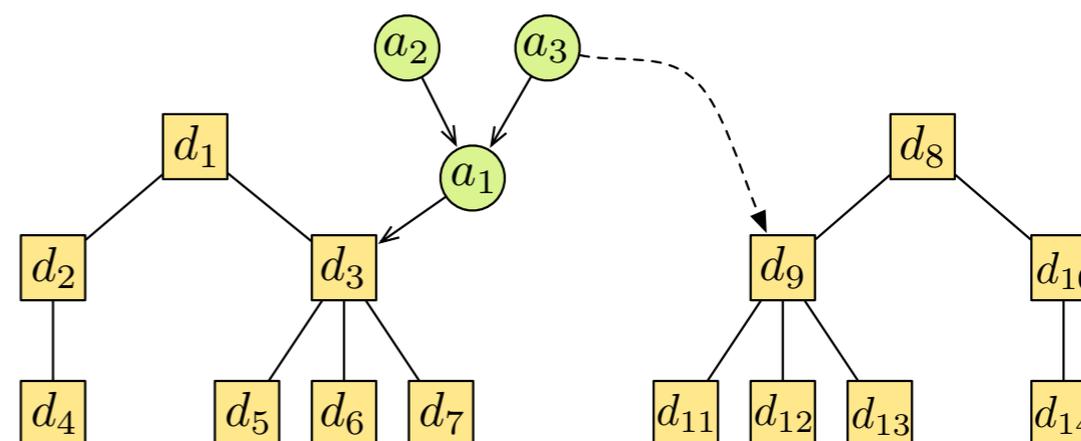
- The are documents and annotations connected by means of *relate-to* and *annotate* link types.
- Annotations are first-class digital objects.

## The Consultation Phase: Seek, Understand, Comment, and Share

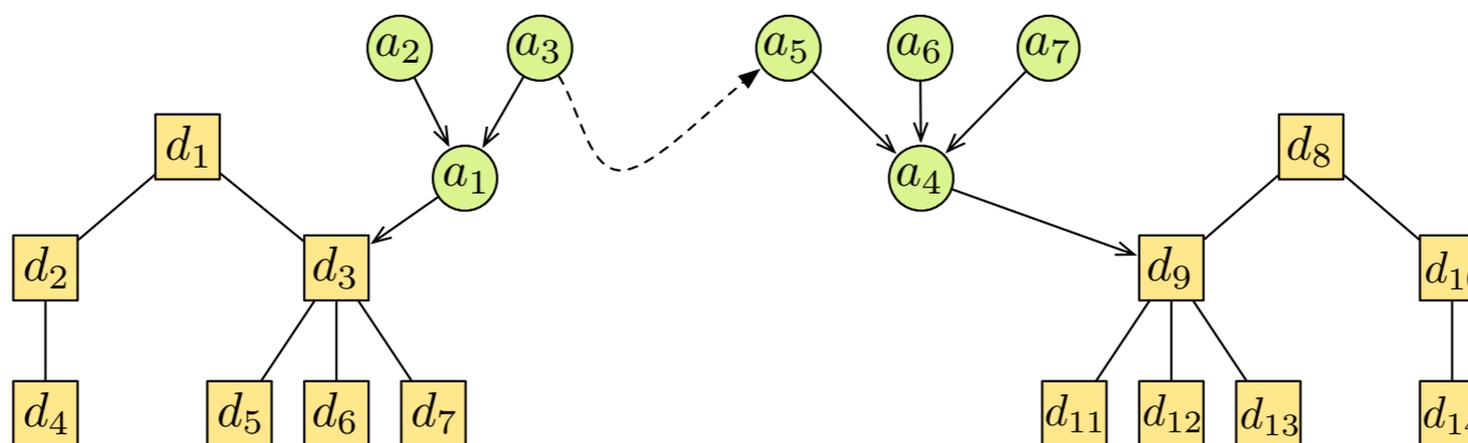
Annotations establish **relations** between different documents or different archives



Scenario 1: A node annotated by an annotation tree

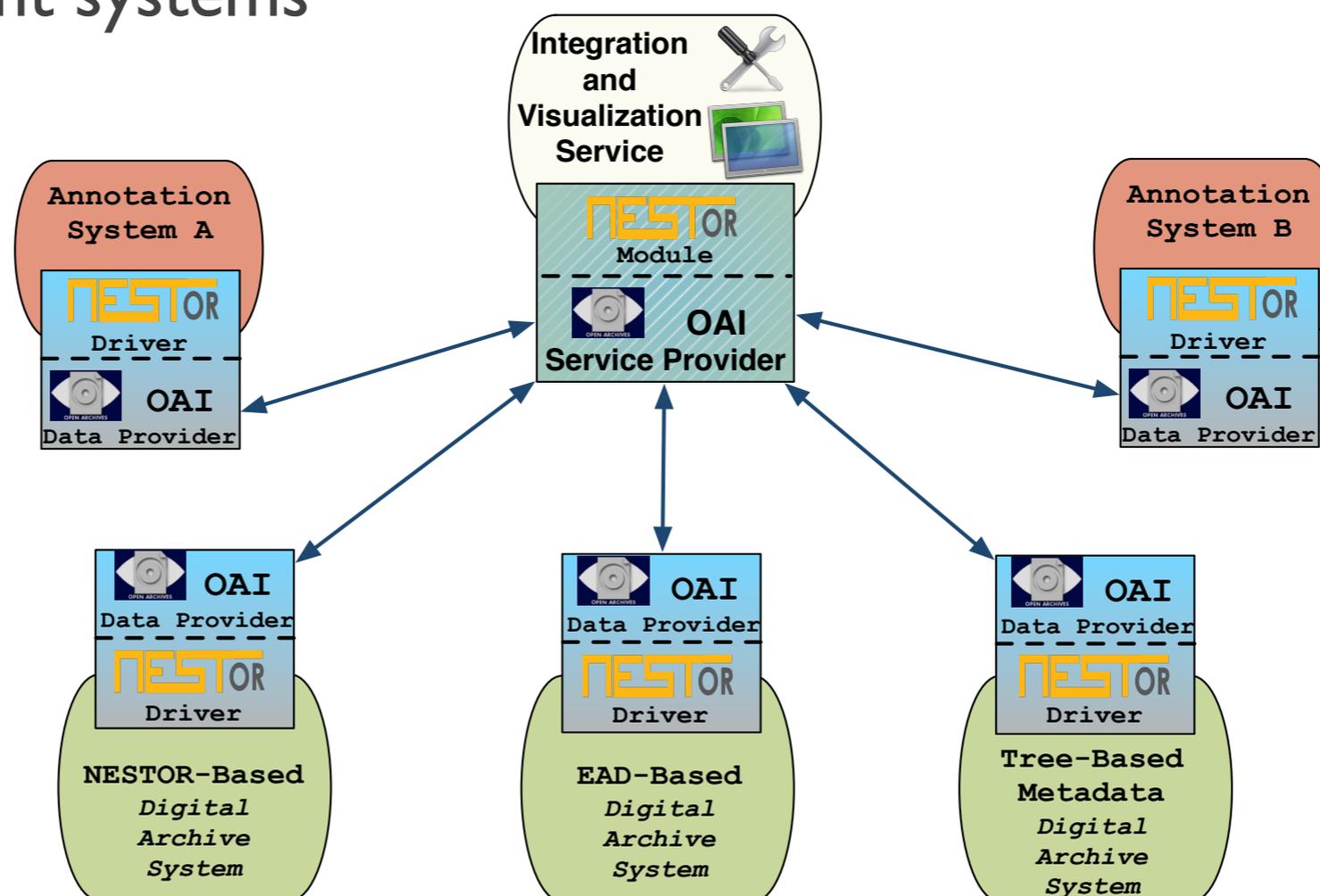


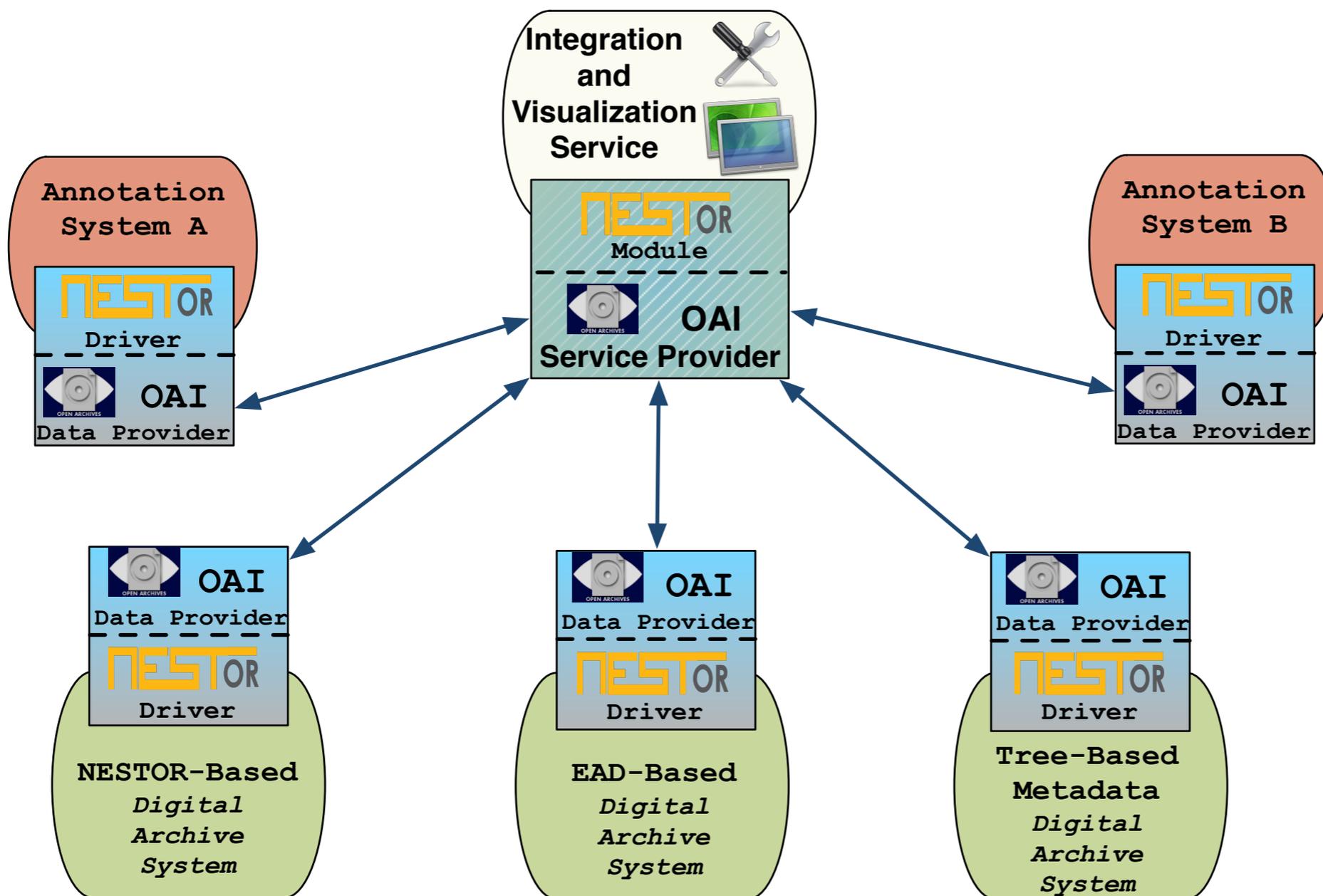
Scenario 2: An annotation connecting two archives by means of a relate-to link

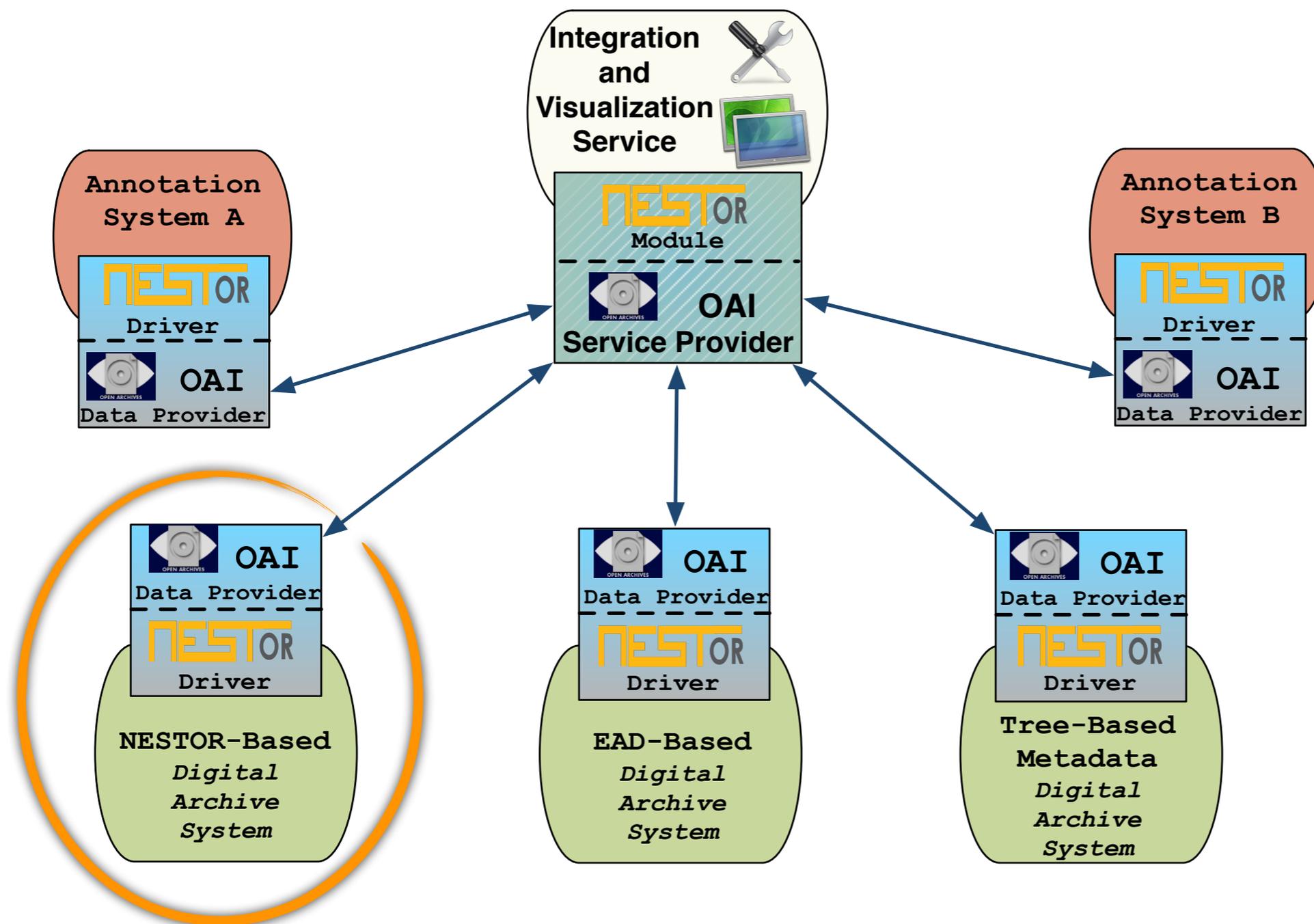


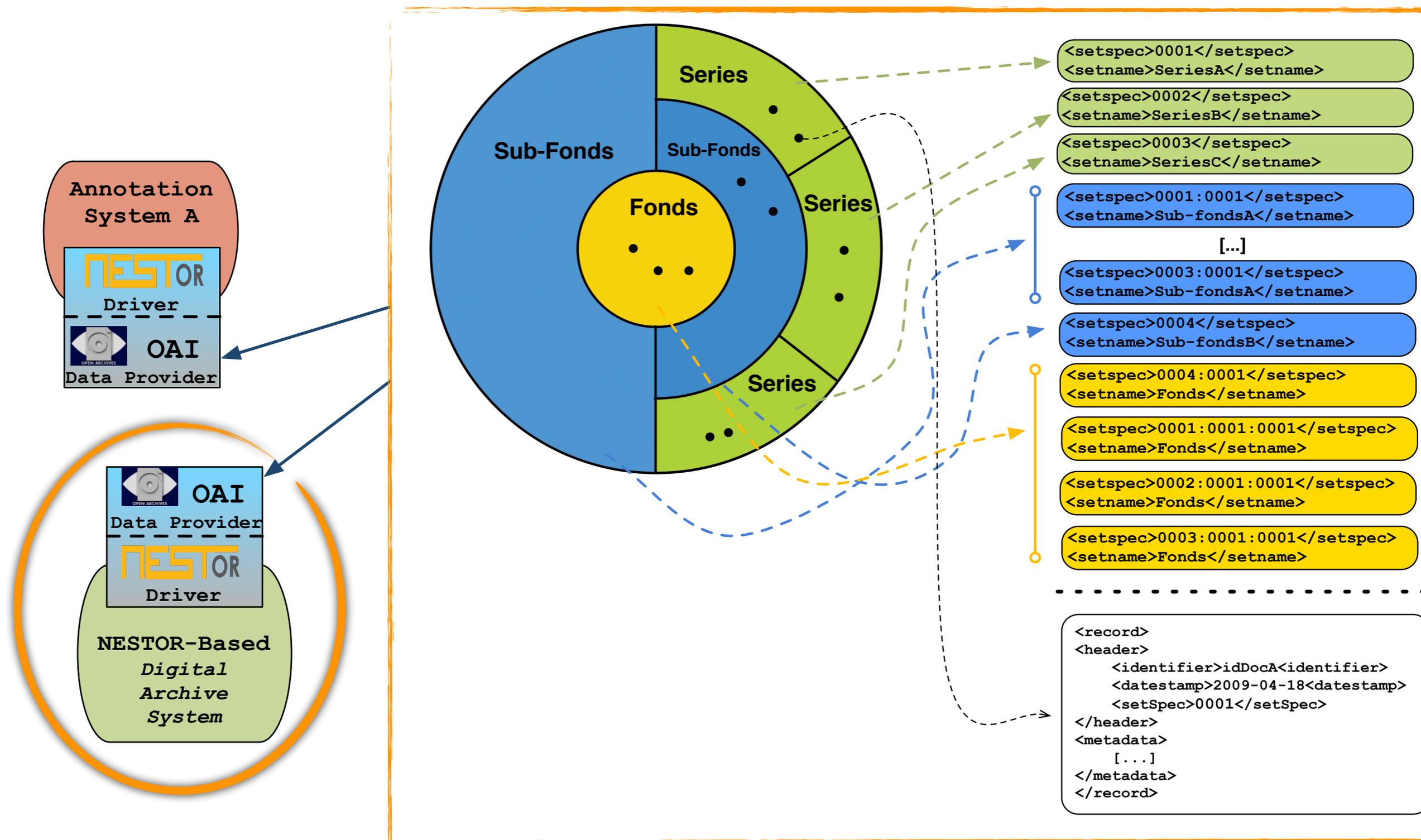
Scenario 3: Two archives connected by a relate-to link defined between two annotations

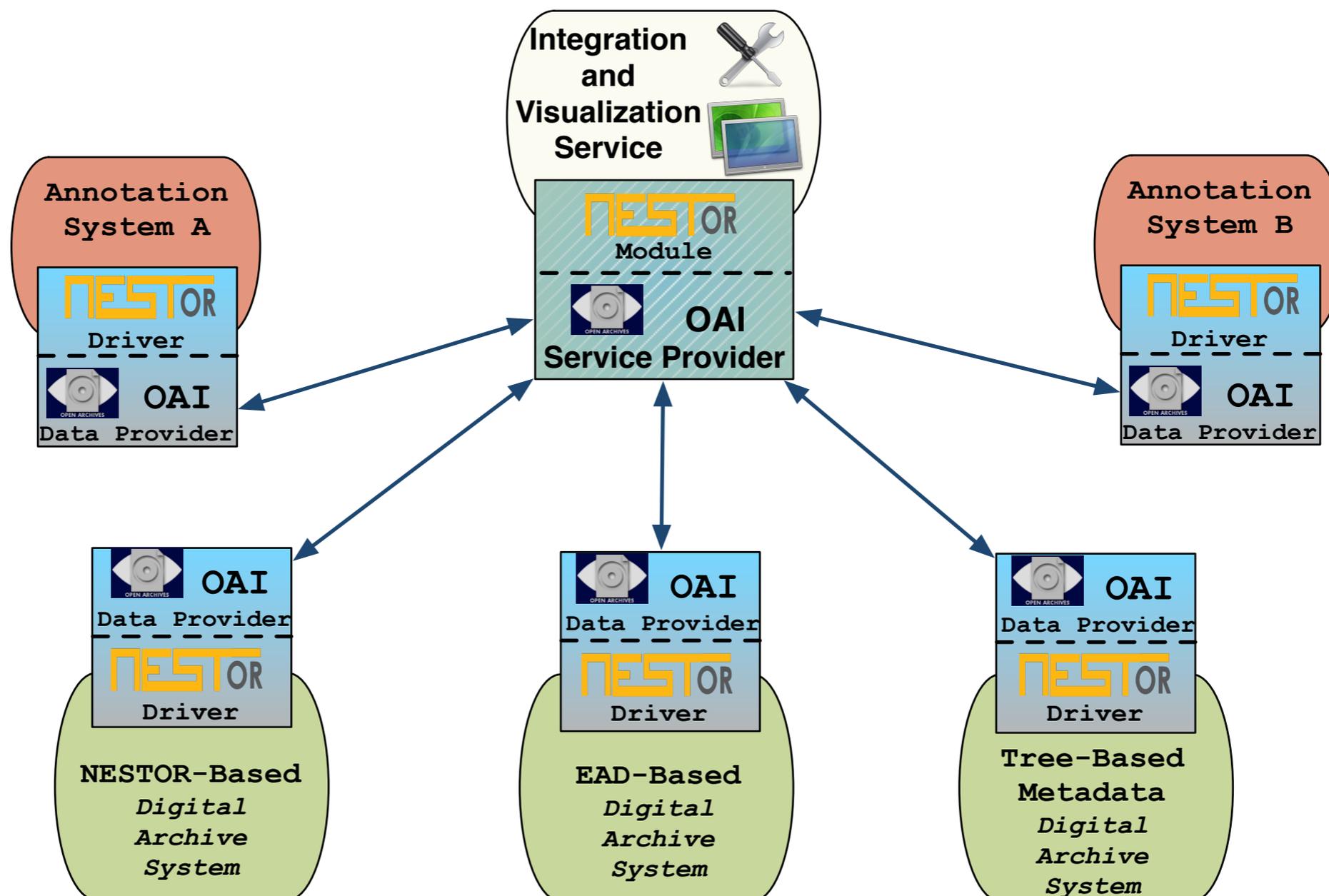
- The NESTOR Model constitutes a **common layer** to **model** and **represent** the archival and annotation structure, the archival metadata and the annotations
- **OAI-PMH** allows us to **share** descriptions and annotations between different systems

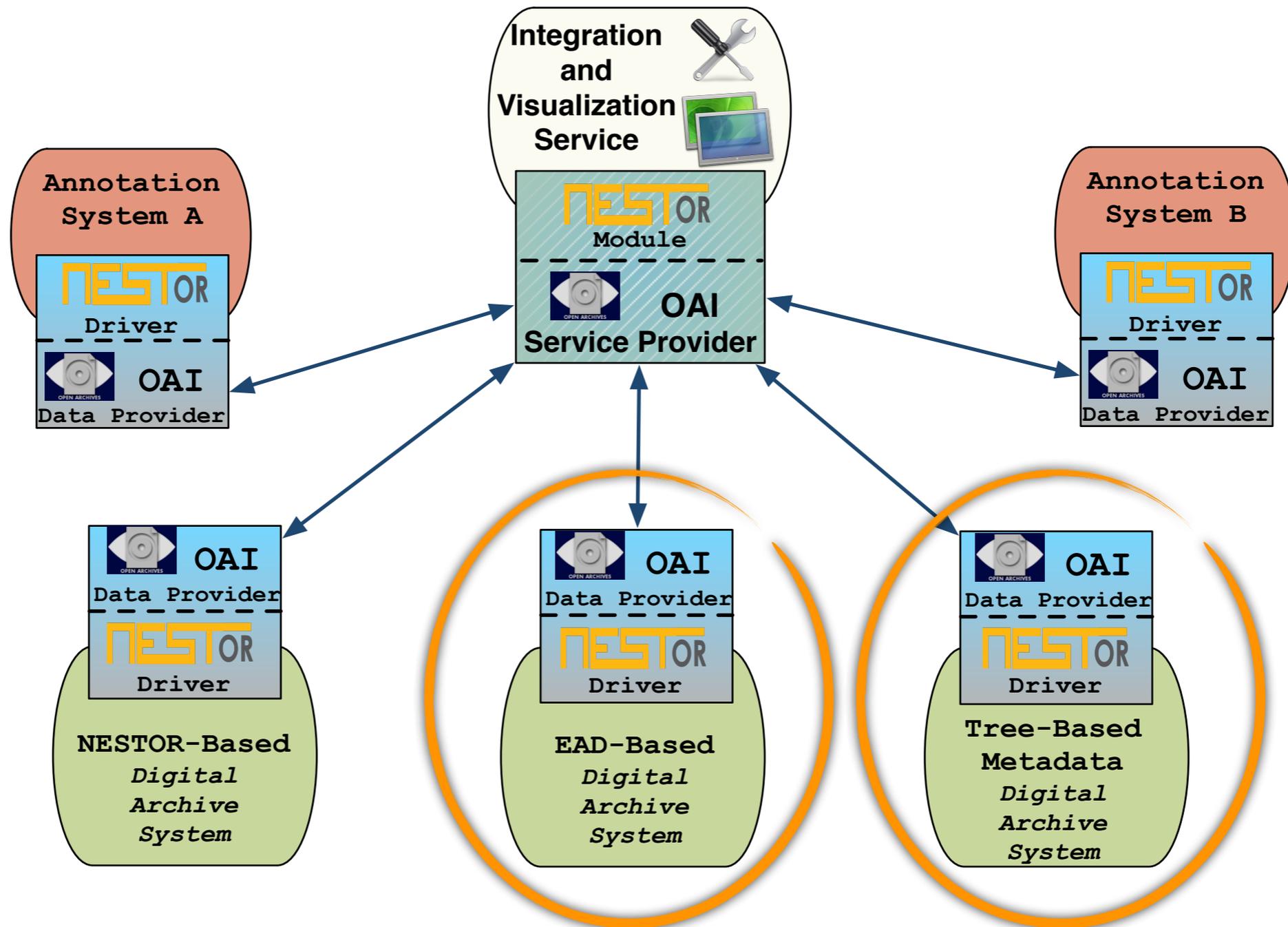


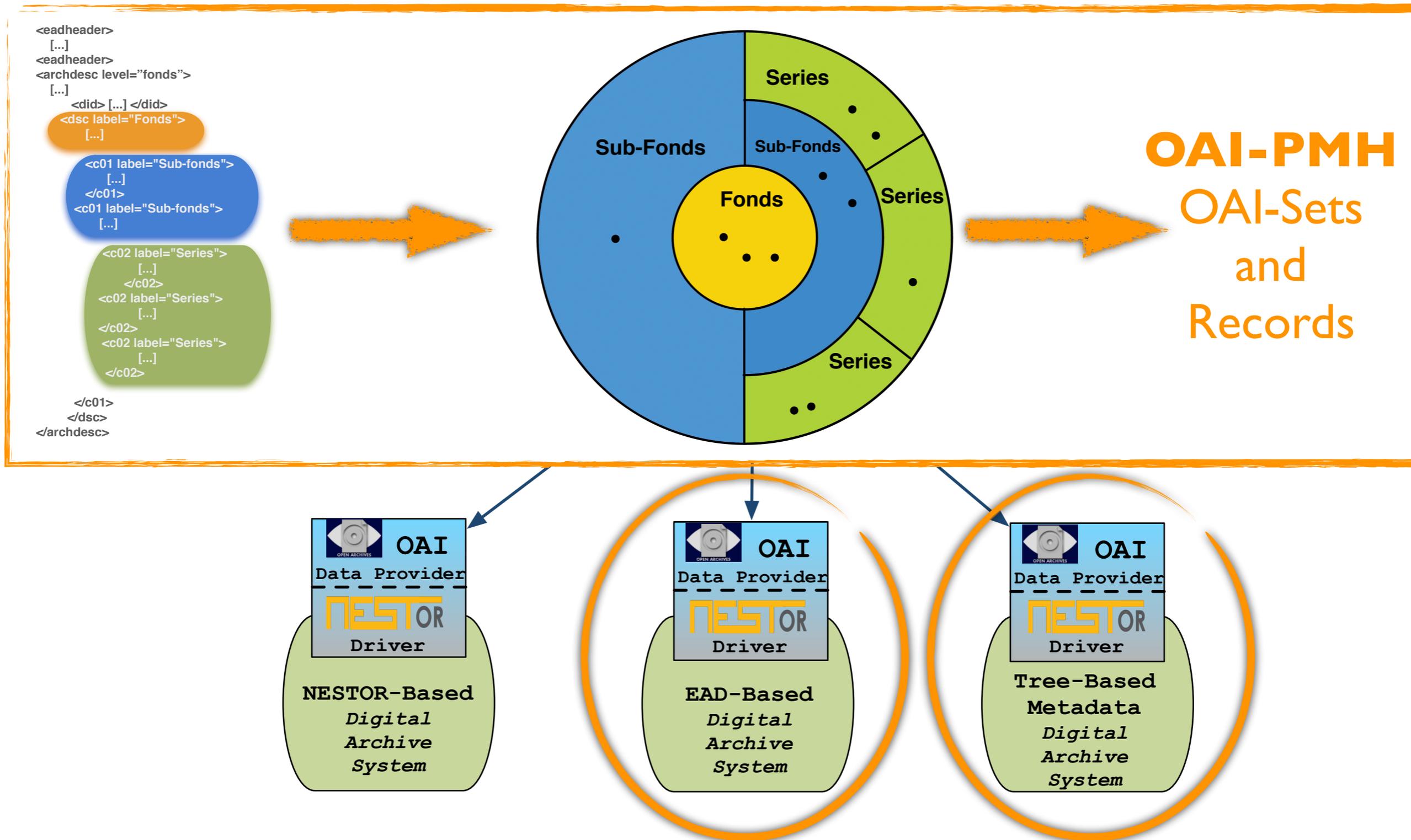


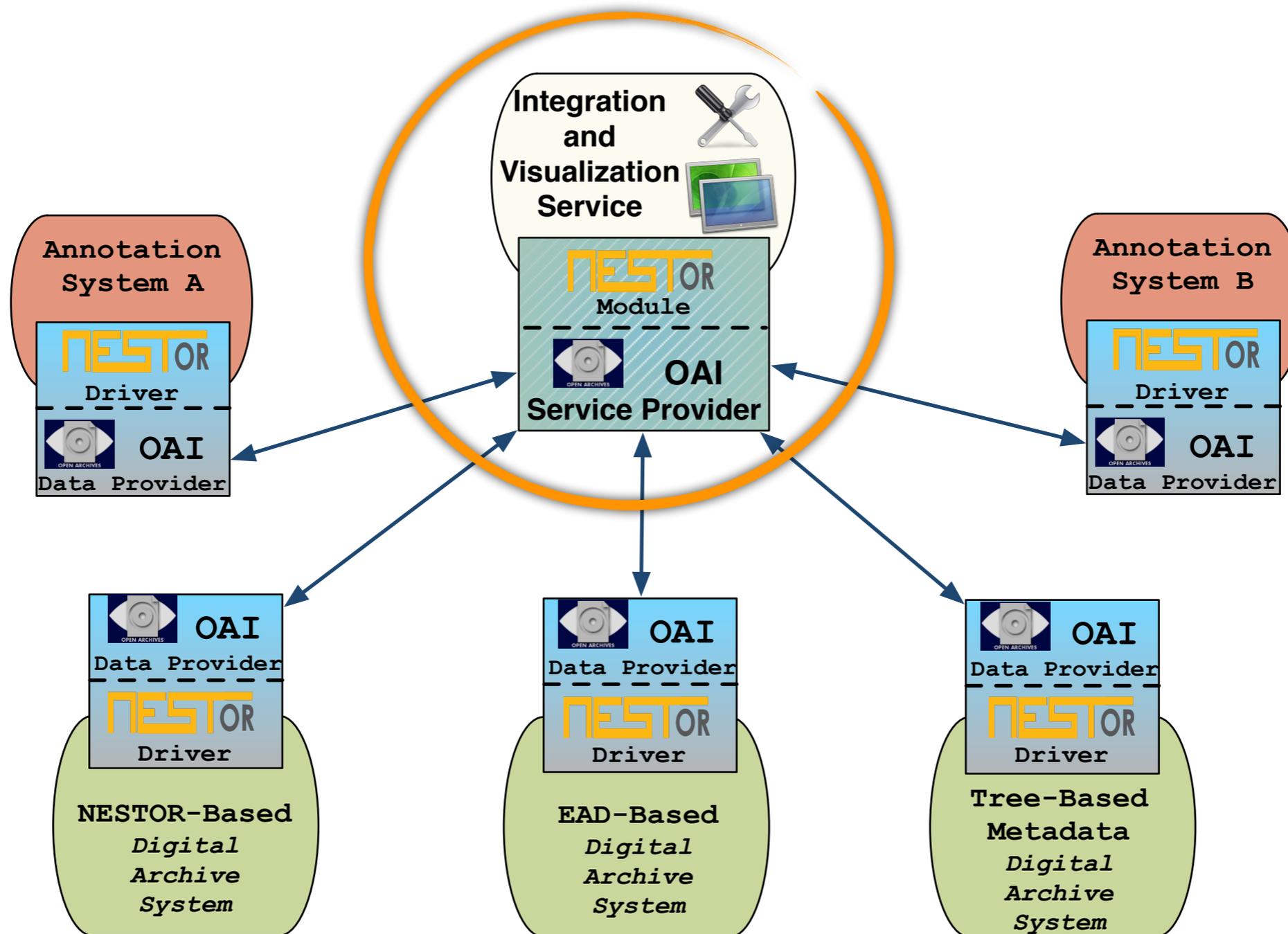


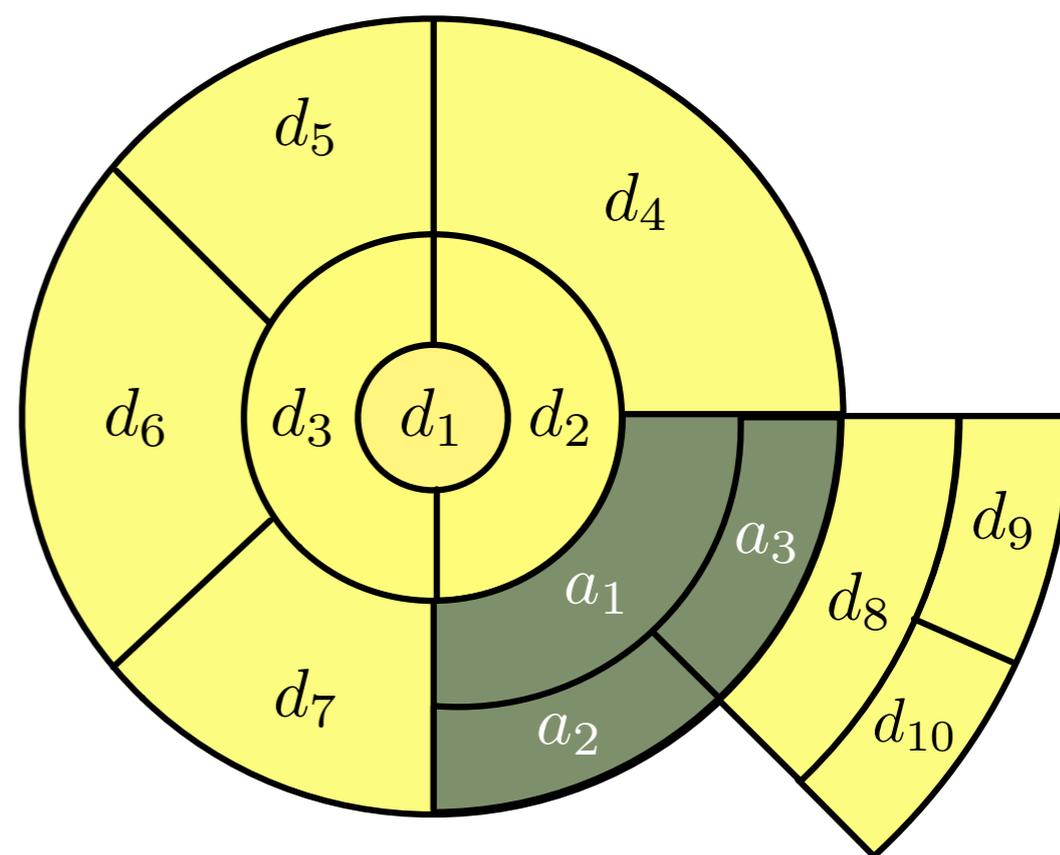
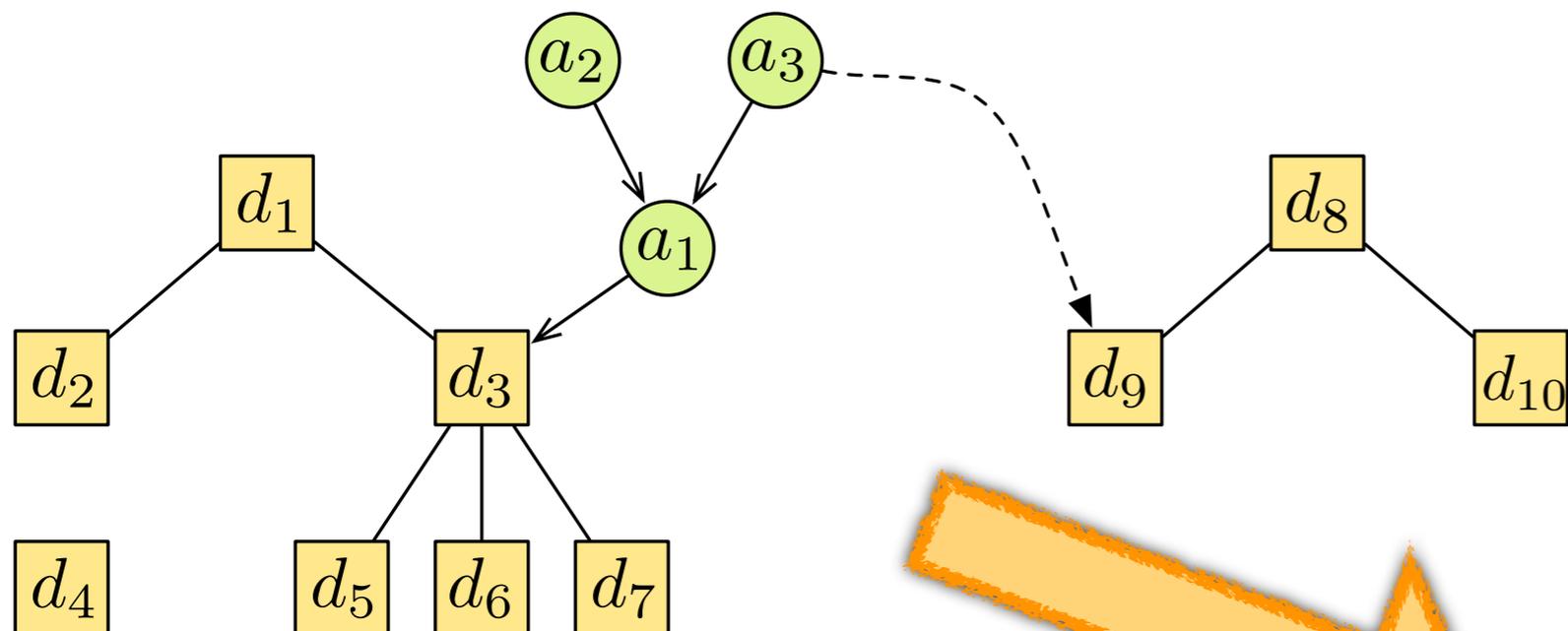












**Uniform representation**  
of archival resources and  
annotations

We can connect **different  
archives** represented in  
different ways through  
**annotations**

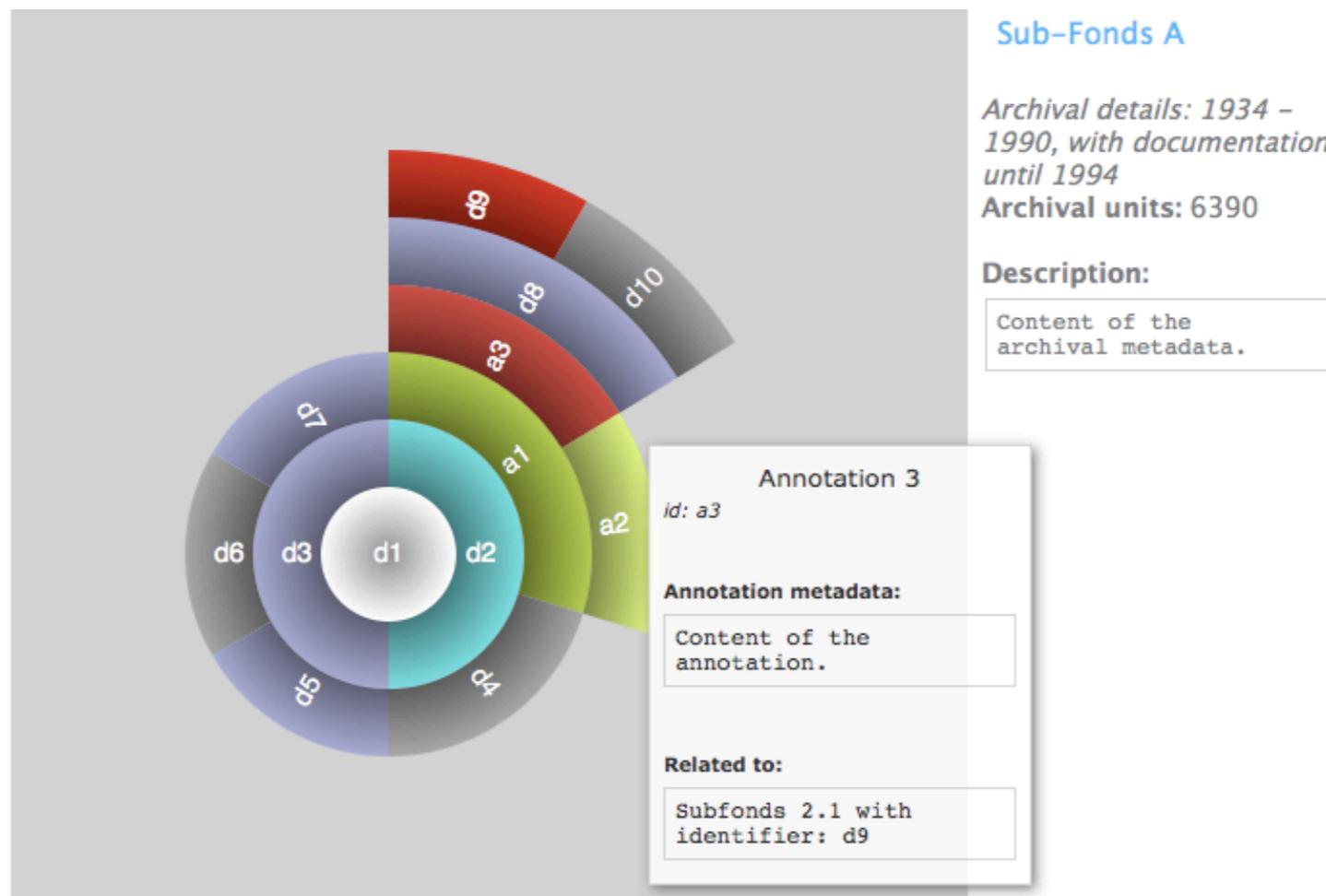
- The DocBall representation can be used as an alternative or together with the classical hierarchy visualization based on the tree

## Annotated Archives Visualization Tool

DocBall visualization of archives and annotations.

Left click to rotate the DocBall to the selected circular sector and see its details.

Powered by  
**NESTOR**



- The NESTOR Model is used a common layer to allow **interoperability** between different archival representations
- **Annotations** are considered as first-class resources and their structure can be represented through the **NESTOR Model**
- A **common and shared environment for archival metadata** and annotations exchanged through OAI-PMH allows the creation of an integration service
- The DocBall representation can be exploited also to propose **alternative visualizations** of the resources