

# PROHUB

## Protecting Oral Histories Using Blockchain

Recording, 15.07.2022

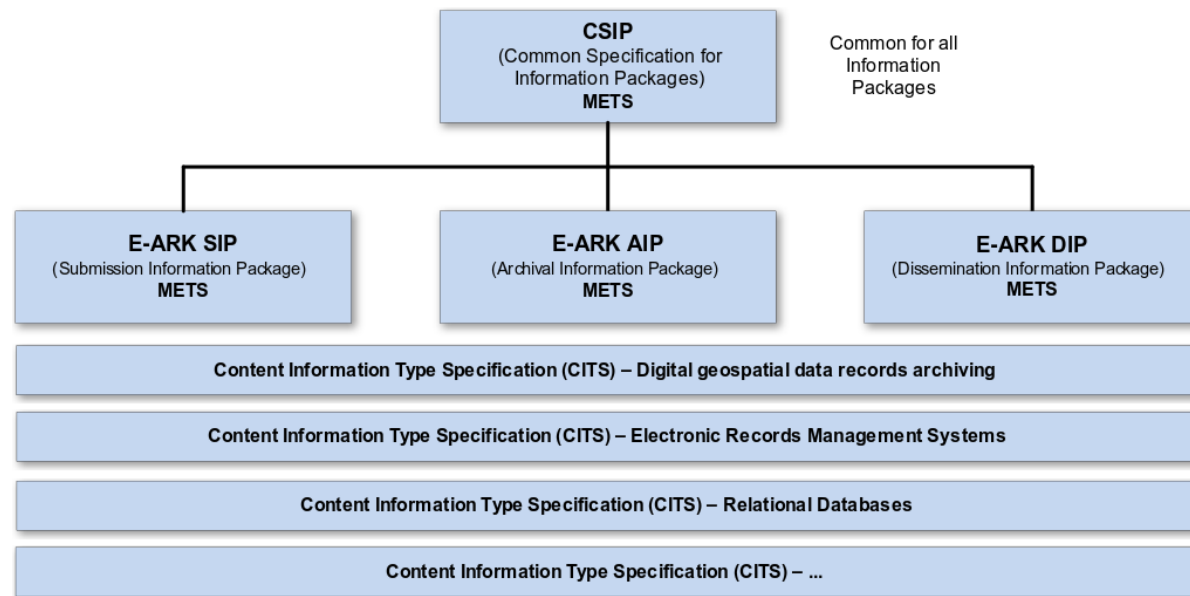
# OVERVIEW

- Concept, Principles, and Use Case
- Stakeholder and Collections
- eArchiving Use Case
- Managing and Persisting Resource Access Information
- Blockchain-verifiable Resource Access Metadata

# E-ARK STANDARDS & EUROPEAN BLOCKCHAIN SERVICE INFRASTRUCTURE



## eArchiving (E-ARK Standards)



## European Blockchain Service Infrastructure



CEF Building Block Synergies



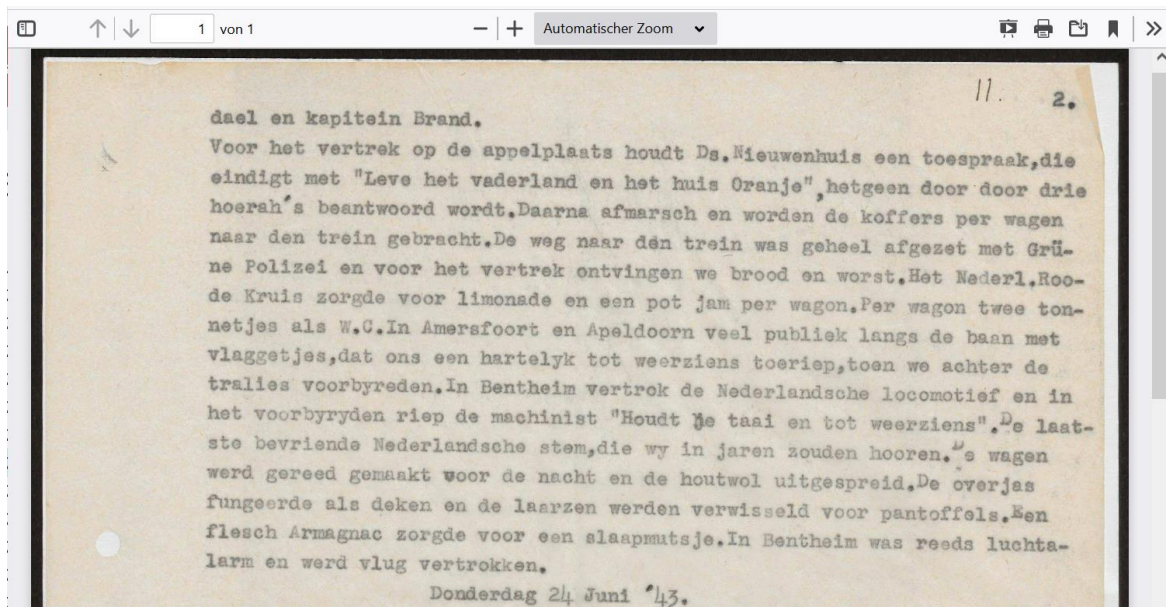
# NIOD'S COLLECTIONS

- The **NIOD Institute for War, Holocaust and Genocide Studies** provided several collections to test the concept of **E-ARK/EBSI based access** mechanisms.
  - Archive 244 European **Diaries and Egodocuments**
    - Diaries reporting stories of pain and loss, fear and hunger and moments of levity while facing greatest misery.
  - Archive 250D **Concentration Camps and Prisons**
    - Personal accounts of former prisoners of concentration camps.
  - Archive 250K **Concentration Camps outside the Netherlands.**
    - Records by private persons, interest groups of former inmates and organizations with the task to determine the fate of missing persons.
  - Archive 817 Ravensbrück **Women's Concentration Camp**
    - The collection includes personal Statements of former prisoners of Ravensbrück.

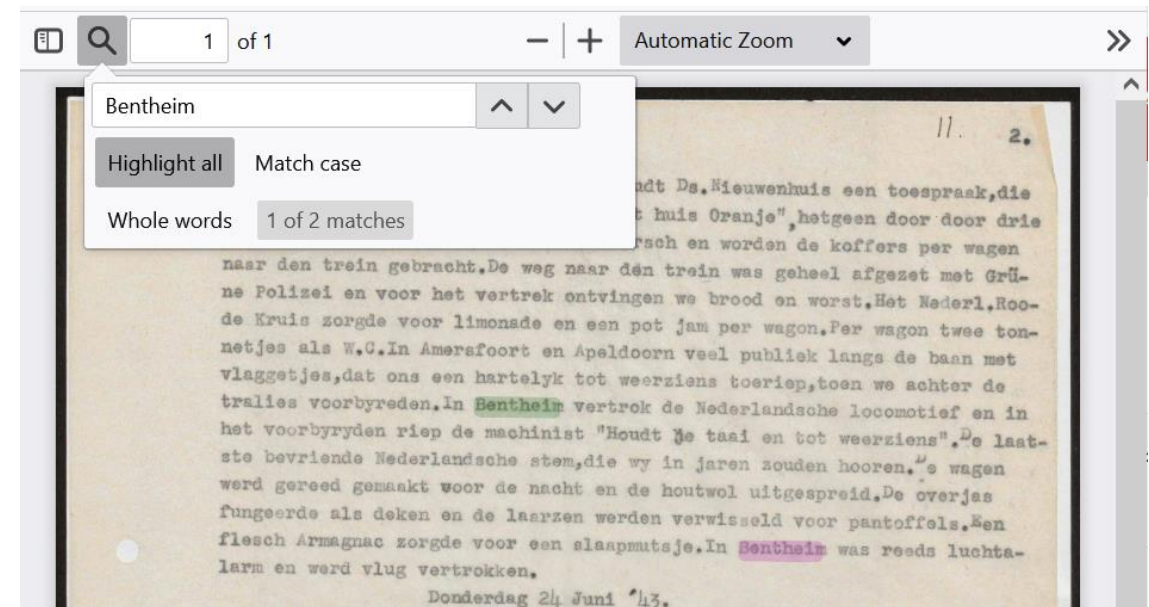
# MASTER/DISSEMINATION REPRESENTATION



## MASTER Image Representation



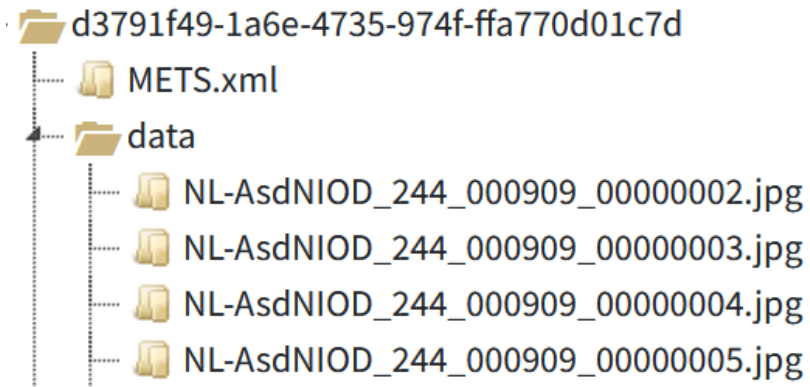
## Searchable PDF Representation



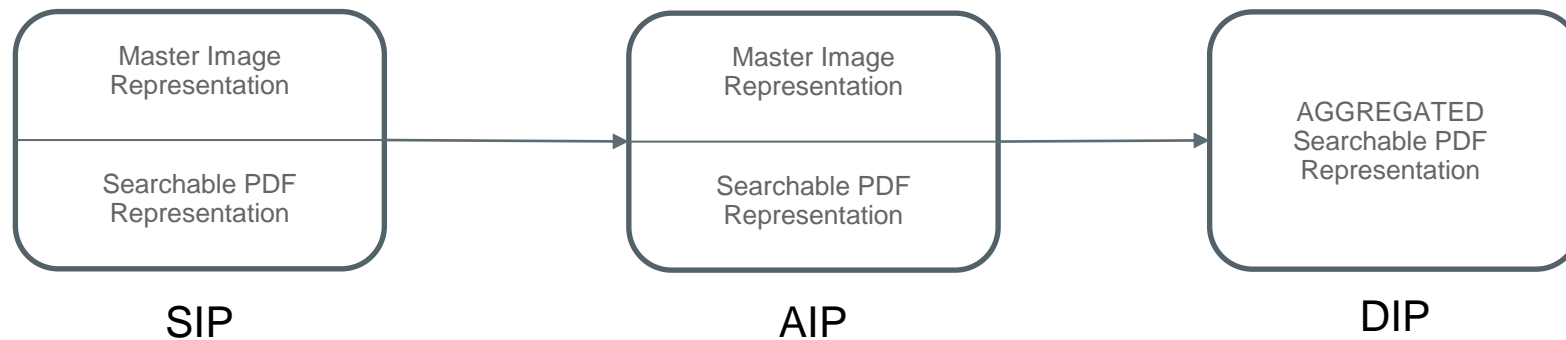
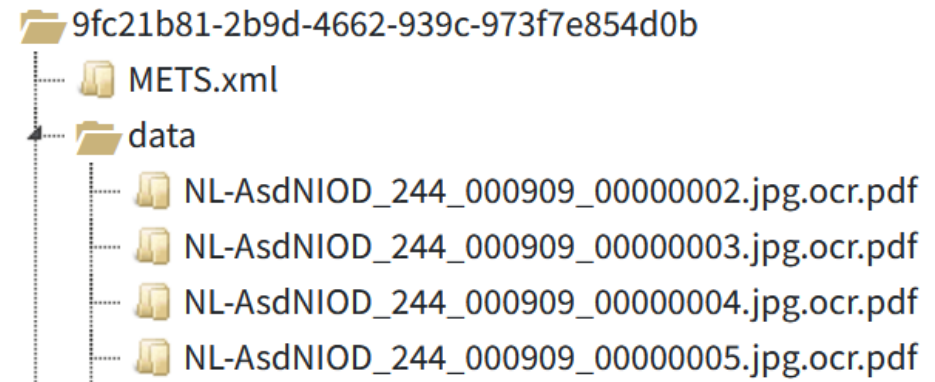
# MASTER/DISSEMINATION REPRESENTATION



## Master Image Representation



## Searchable PDF Representation



# INFORMATION PACKAGE OVERVIEW



Screenshot of the earkweb management interface showing archived information packages.

Administration Information package creation Information package management Search & Access Language admin

## Information package management

### Archived information packages

Search for label, process id, or identifier

Label	Working directory	Information package management	Version	Created	Change
NL-AsdNIOD_250d_01250	e9b31d00-a3f1-44a6-a052-2b8a8d6021ed	urn:uuid:973b6190-539e-4505-b209-7c6629f3d370	00001	01.03.2022 10:56:33	
NL-AsdNIOD_244_00909	2833cfae-9f14-4b9f-81e2-377949094784	urn:uuid:ffb201e1-8d79-4afe-840e-c998ef7faaa3	00002	28.02.2022 19:42:44	
NL-AsdNIOD_244_00920	e0f7ff38-9c39-4d43-8687-64a58aa28117	urn:uuid:8e55a1de-8139-4aef-8647-69c33e73c932	00001	28.02.2022 20:20:50	

Version 1.2 (31.10.2021)



## Information package

Label	NL-AsdNIOD_244_00909
Working directory	/var/data/repo/work/2833cfae-9f14-4b9f-81e2-377949094784
Information package	urn:uuid:ffb201e1-8d79-4afe-840e-c998ef7faaa3
Version	2
Created	04.03.2022 12:29:06

## Representations

Identifier	Label	Description	Access rights
9fc21b81-2b9d-4662-939c-973f7e854d0b	pdfs_with_ocr_scanned_pages	PDF documents with OCR of scanned pages	Restricted access II: hard restriction
d3791f49-1a6e-4735-974f-ffa770d01c7d	images_scanned_pages	Images of scanned pages	Restricted access II: hard restriction



# SEARCH



The screenshot shows a web browser window with the URL `prohub.ait.ac.at/earkweb/access/search`. The page title is "Search & Access" and the sub-section is "Full-text search".

**Search filters:**

- Search term:** Bentheim
- Information package:** Identifier of the information package
- Content type:** odt, doc, html, pdf
- Sort:** Relevance
- Content files only:**

**Search button:** Search

**Search Results:**

1 result found

<code>urn:uuid:ffb201e1-8d79-4afe-840e-c998ef7faaa3 (v2, Mar 4, 2022, 12:29 PM)</code>	
<code>urn+uuid+ffb201e1-8d79-4afe-840e-c998ef7faaa3_v00002_b00001/data</code>	767
<code>/representations/9fc21b81-2b9d-4662-939c-973f7e854d0b/data/NL-AsdNIOD_244_000909_00000012.jpg.ocr.pdf</code>	kB

Version 1.2 (31.10.2021)



# SEARCH



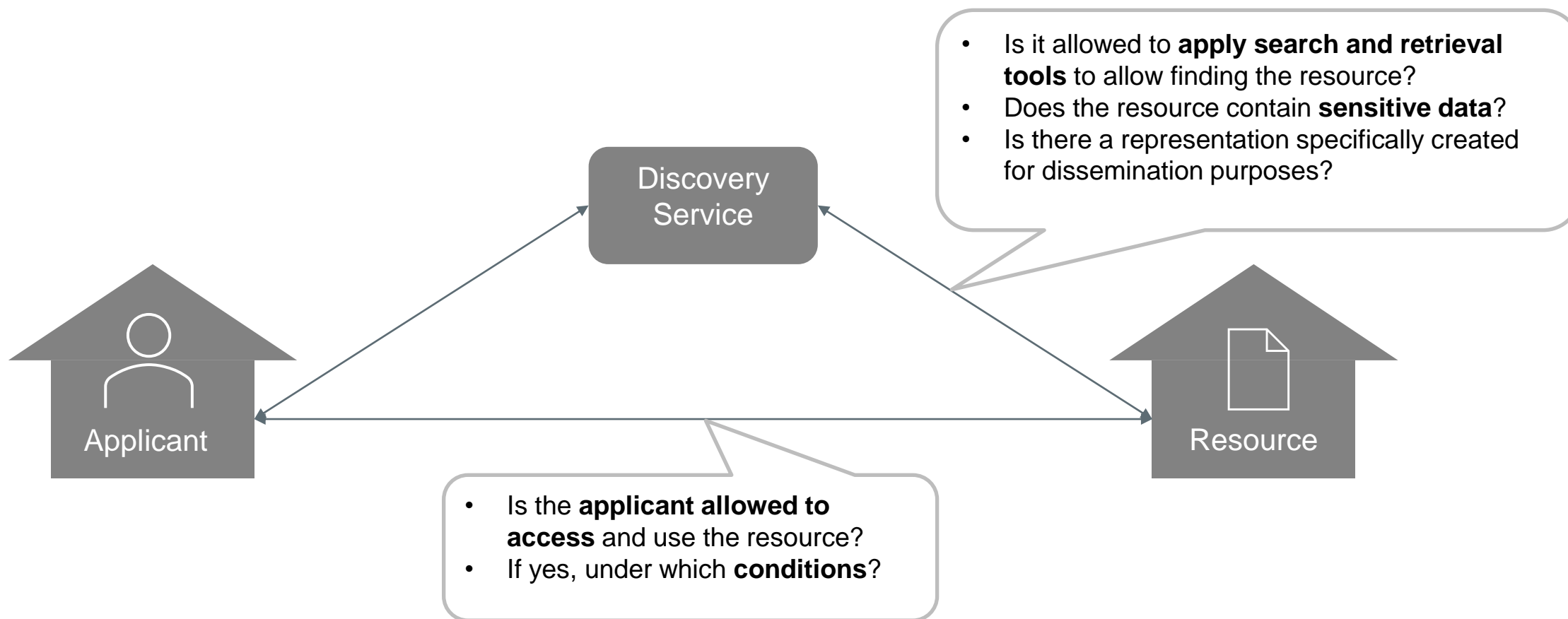
The screenshot displays the Prohub search interface. On the left, the 'Search & Access' sidebar includes a search term 'Bentheim', an information package identifier field, content type filters (odt, doc, html, pdf), a sort dropdown set to 'Relevance', and a checked 'Content files only' option. The main content area shows a search result for a PDF file. A search results table is visible on the right side of the main area:

Result found	Size
998ef7faaa3_v00002_b00001/data	767
2-939c-973f7e854d0b/data/NL-ocr.pdf	kB

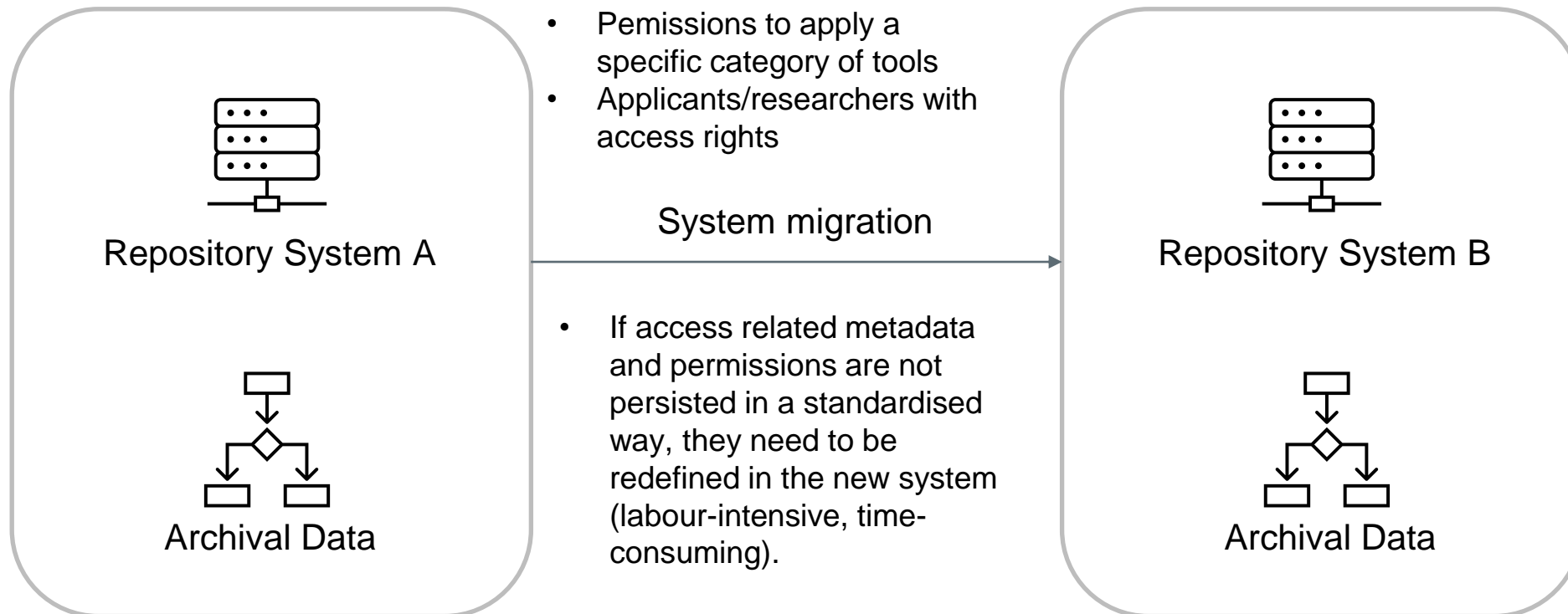
The central window shows a preview of the PDF document with a search overlay for 'Bentheim' highlighting matches in the text. The text is in Dutch and discusses historical events related to Bentheim. The interface also shows browser tabs and navigation elements.



# MANAGING RESOURCE ACCESS

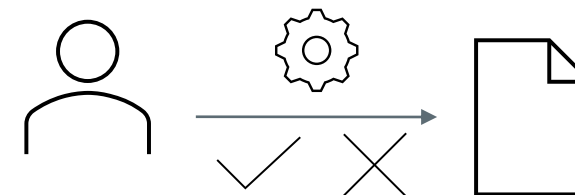
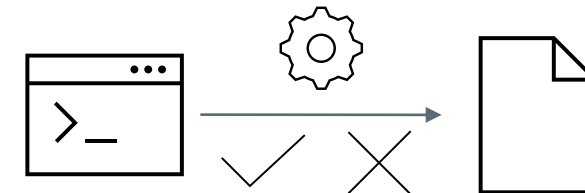
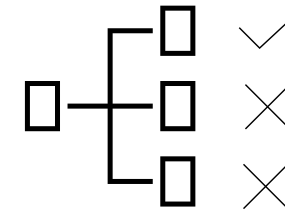


# SYSTEM MIGRATION



# REQUIREMENTS

1. It must be possible to define *rights statements* on **information package, representation, or file level**.
2. It must be possible to define *rights statements* related to the application of **software agents** enabling information retrieval, such as Optical Character Recognition (OCR) or full-text indexing software, for example.
3. It must be possible to define *rights statements* regarding information **applicants**.



# REQUIREMENT 1: OBJECT LEVELS



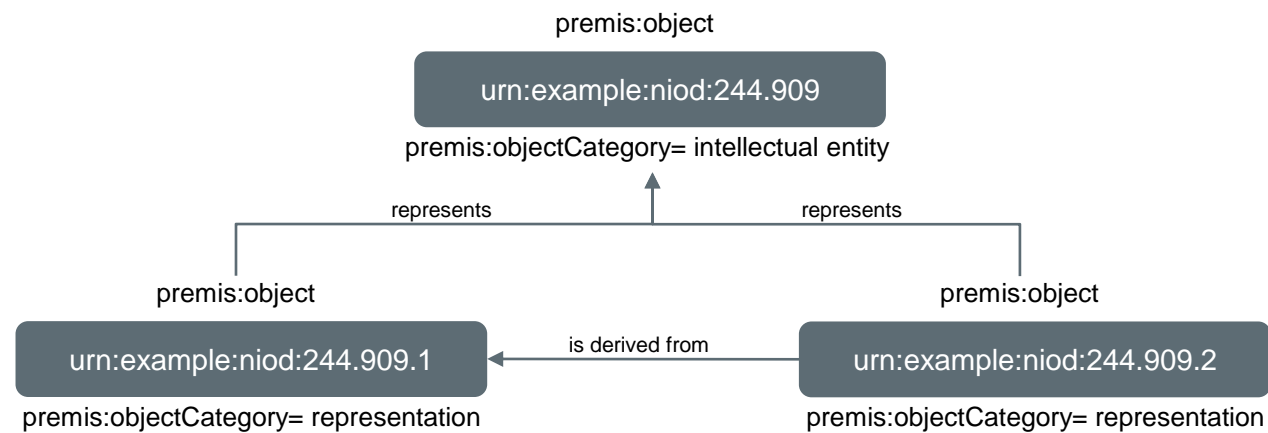
premis:object

urn:example:niod:244.909

premis:objectCategory= intellectual entity



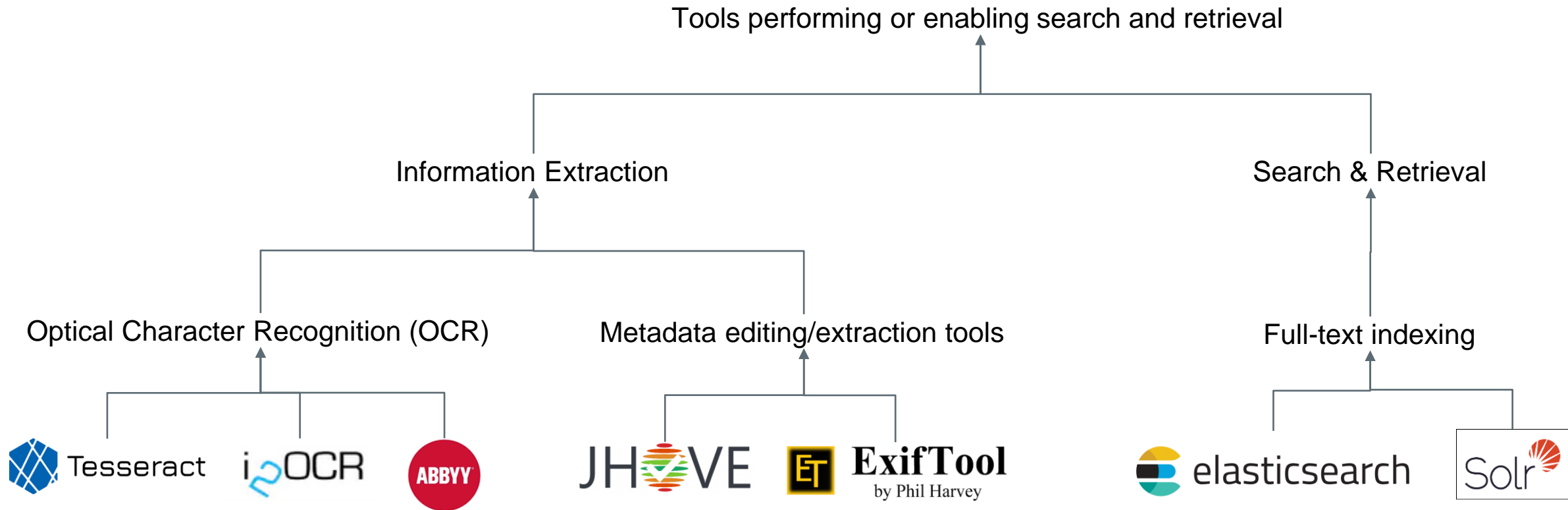
# REQUIREMENT 1: OBJECT LEVELS



PREMIS Objects for the information package, representation, or file level can be defined and therefore rights statements can relate to the objects at these levels.

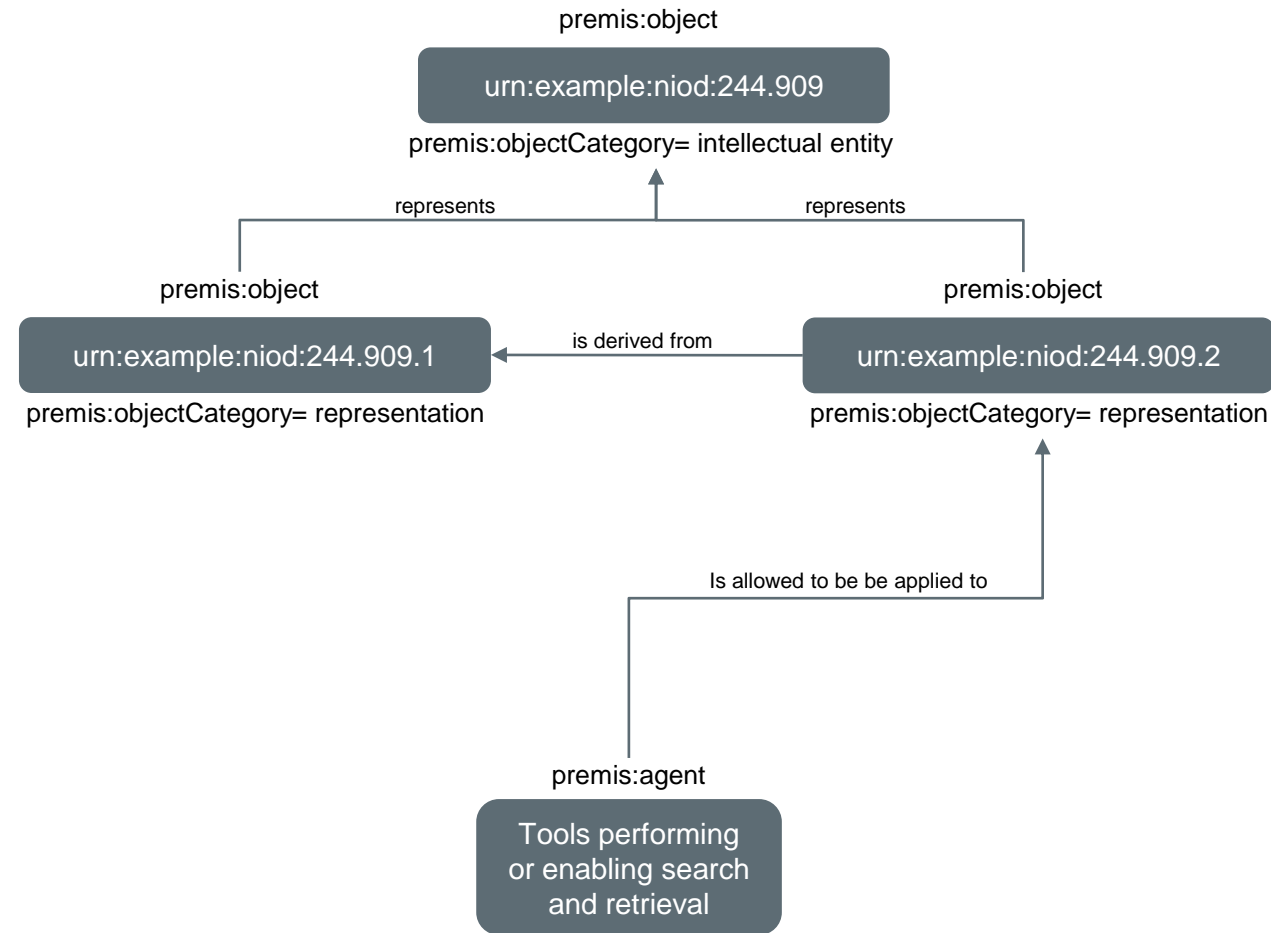
# REQUIREMENT 2: SOFTWARE AGENTS

Tools performing or enabling search and retrieval

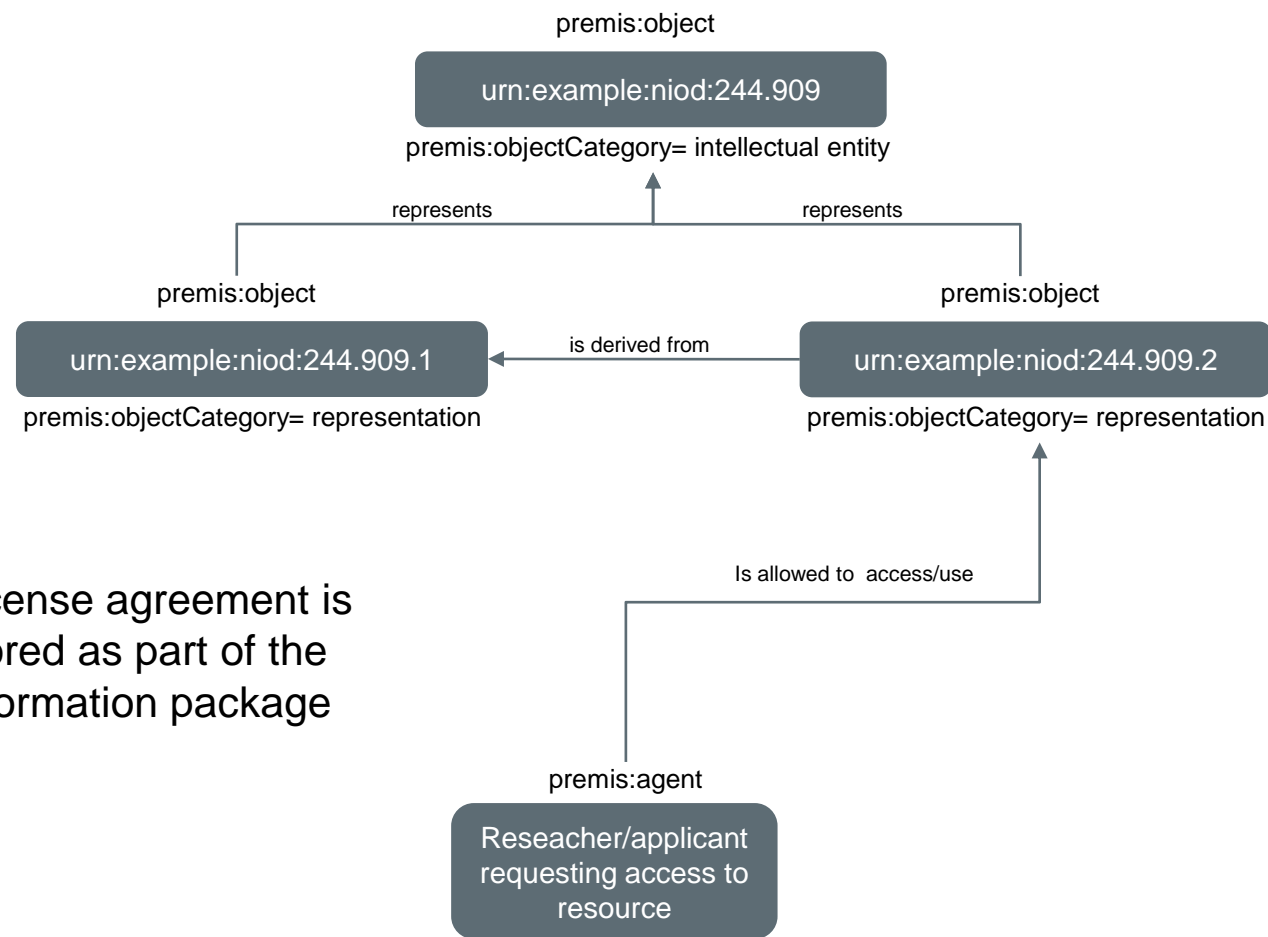


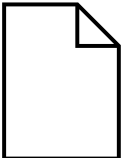


# REQUIREMENT 2: SOFTWARE AGENTS



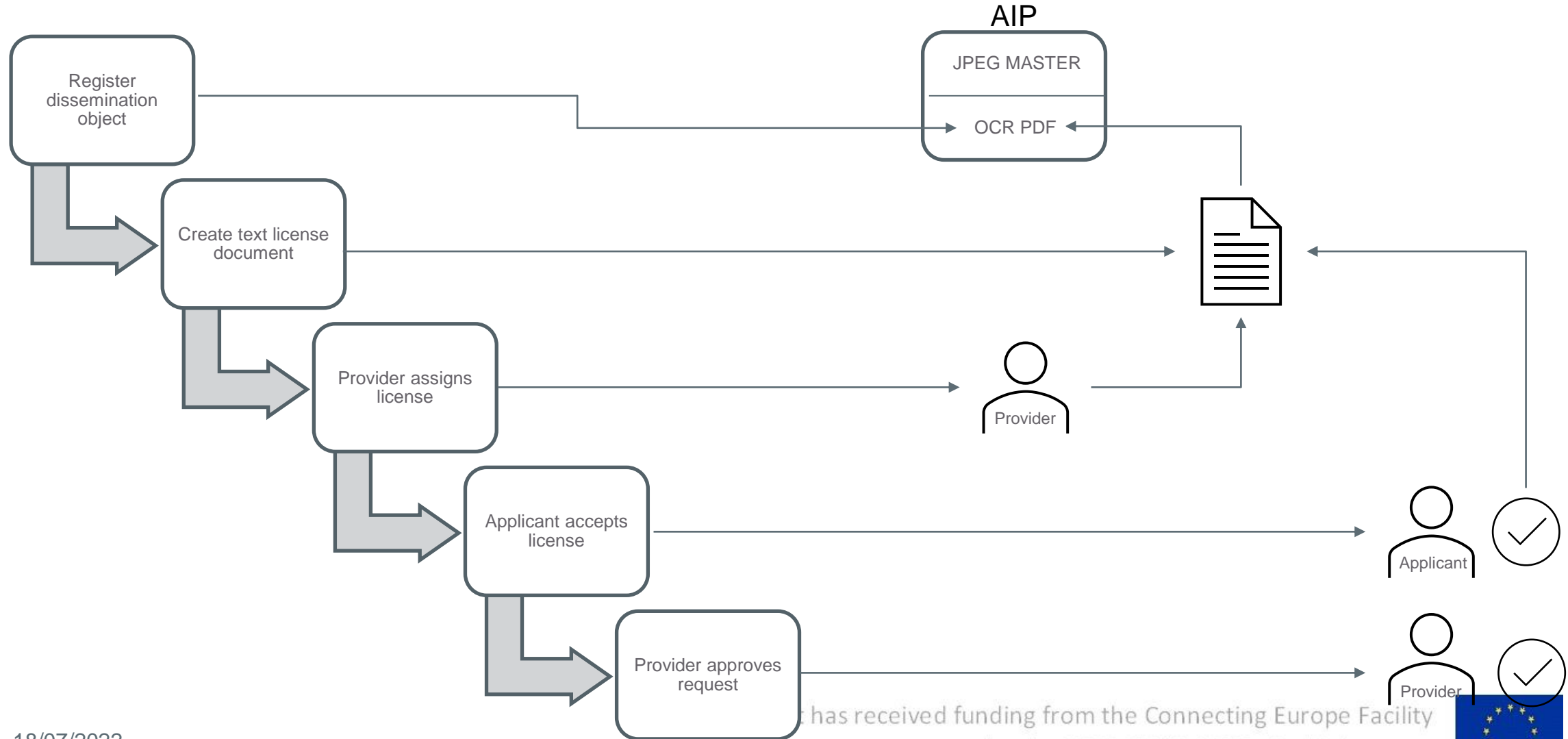
# REQUIREMENT 3: APPLICANT



 License agreement is stored as part of the information package



# BLOCKCHAIN OBJECT REGISTRATION AND LICENSE AGREEMENT PROCESS



18/07/2022

... has received funding from the Connecting Europe Facility (CEF) Telecom programme by the 2020-EU-IA-0185 eArchiving grant



# EUROPEAN BLOCKCHAIN SERVICES INFRASTRUCTURE (EBSI)



## What is EBSI?

The European Blockchain Services Infrastructure (EBSI) is a market-friendly distributed blockchain network based on open standards and transparent governance model.



Source: <https://ec.europa.eu/digital-building-blocks/wikis/display/EBSI/What+is+ebsi>

18/07/2022

This project has received funding from the Connecting Europe Facility (CEF) Telecom programme by the 2020-EU-IA-0185 eArchiving grant



# EBSI USE CASES



Identity

Diploma

Social security


Document traceability

(Coming soon)



## Document traceability

The **Document traceability Use Case** aims to leverage blockchain to create trusted digital audit trails, automate compliance checks – for example in time-sensitive processes – and to prove data integrity. The intention is also to serve as generic registration and traceability capabilities for other EBSI Use cases.

Documentation 

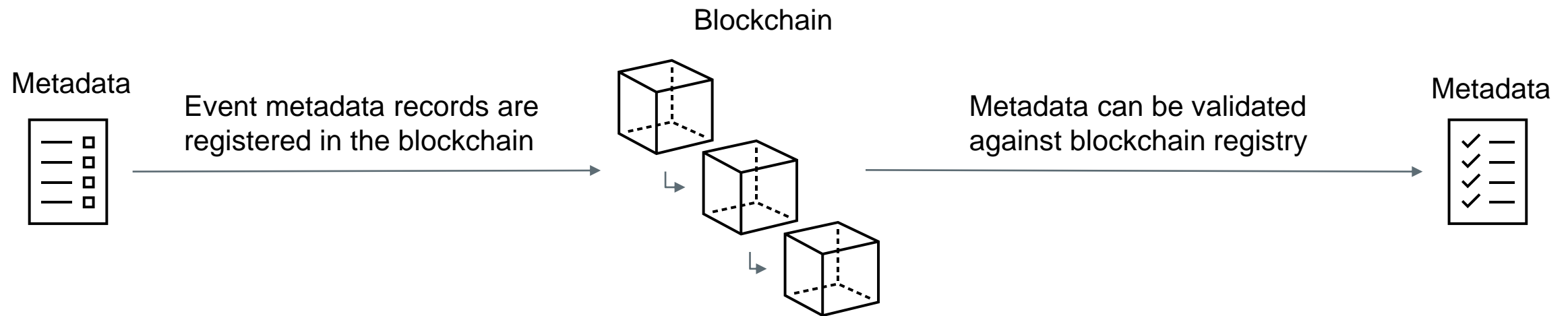
Source: <https://ec.europa.eu/digital-building-blocks/wikis/display/EBSI/Use+cases>

18/07/2022

This project has received funding from the Connecting Europe Facility (CEF) Telecom programme by the 2020-EU-IA-0185 eArchiving grant



# BLOCKCHAIN BACKED METADATA



- **Authenticity of resource access metadata is guaranteed**
- **Tampering of resource access metadata is prevented**

THANK YOU!

<http://prohub.ait.ac.at>