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InterPARES Symposium

Ottawa, 29 October 2026

The Role of AI for Records Management: Findings from Case Studies

Marianna Tascone

InterPARES TrustAI

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Agenda

1. Introduction: the CU05 study *2’*
2. **Key functions and remarks on archival functions** *10’*
3. Market Analysis: AI Solutions for Archives and Records Management *1’*
4. Paradata framework *2’*
5. **Case studies** *10’*
    1. **NATO Archives case study**
    2. **The research of Regione Emilia-Romagna**
6. **A Roadmap for Artificial Intelligence** *10’*

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1.
Introduction: the CU05 study

The CU05 study team

Stefano Allegrezza (co-chair) (**Università di Macerata**)
Mariella Guercio (co-chair) (Associazione nazionale archivistica italiana - **ANAI**)
Massimiliano Grandi (Associazione nazionale archivistica italiana - **ANAI**)
Bruna La Sorda (Associazione nazionale archivistica italiana - **ANAI**)
Francesca Magnoni (North Atlantic Treaty Organization - **NATO**)
Maria Mata Caravaca (International Centre for the Study of the Preservation and Restoration of Cultural Property - **ICCROM**)
Samir Musa (Historical Archives of European Union – **HAEU**)
Lluís-Esteve Casellas Serra, **Municipality of Girona – Spain** (connection with AA01 "Employing AI for Retention & Disposition in Digital Information and Recordkeeping Systems (DIRS)")
Nicola Di Matteo (**Halifax University**, Canada)
Eleonora Luzi (Associazione nazionale archivistica italiana - **ANAI**)
Gianni Penzo Doria (**Università di Udine**)
Gabriele Bezzi (**ANAI**)
Stefano Delli Ponti, **Roberto D'Ippolito** (**SIAV**)
Marianna Tascone (**PAR-ER, Regione Emilia-Romagna**)

CU05

The role of AI in identifying or reconstituting archival aggregations of digital records and enriching metadata schemas

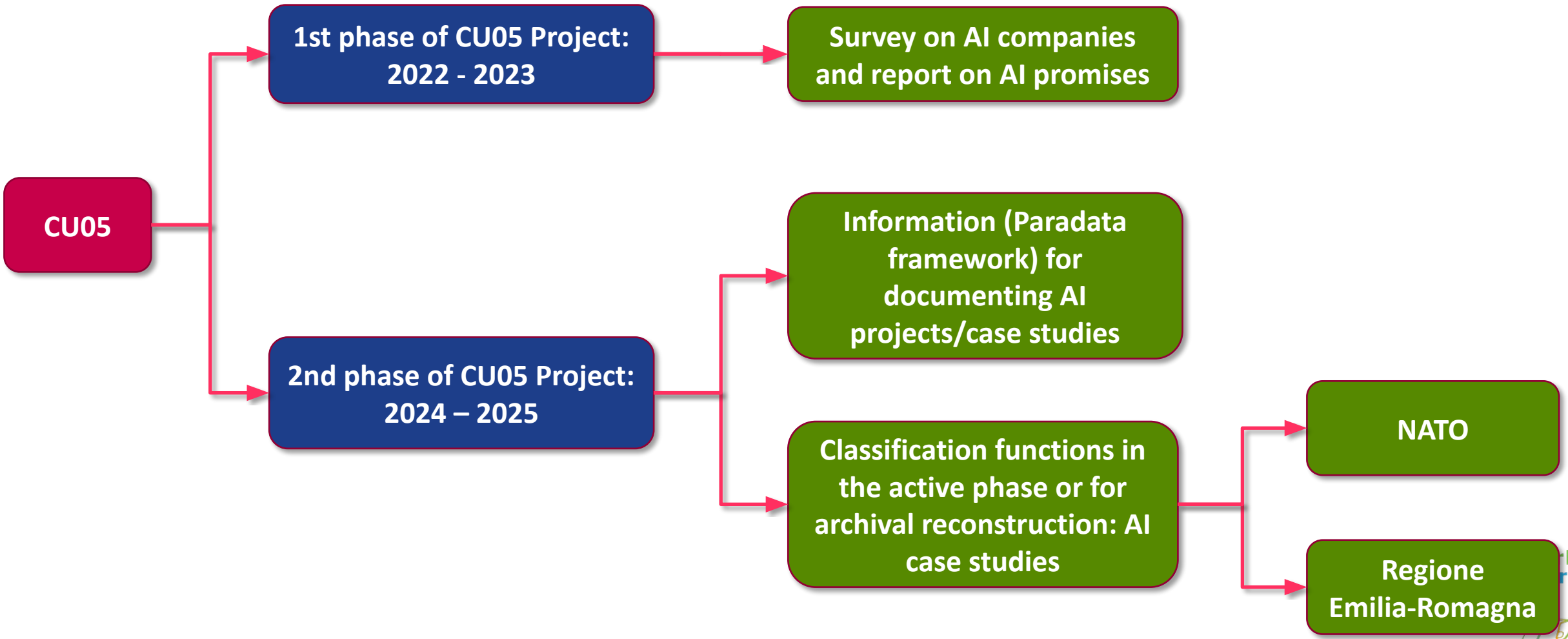
Goal

Investigate the ability/promise of AI to support the **main function for the creation of an archival record system** in the current phase: the definition, the protection and the reconstruction of **archival aggregations consistent with the decision process**

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The CU05 study: overview 2022 - 2026

The Role of AI in Identifying or Reconstituting Archival Aggregations of Digital Records and Enriching Metadata Schemas



2.

Key functions and remarks on archival functions

AI in Records Management: Capabilities and Methodological Challenge

- **AI capabilities**
    - **native**: Data extraction, translation, content generation, clustering, deduplication, and workflow orchestration;
    - **specialized** (via Training): Structured generation, contextual analysis, semantic classification, and advanced retrieval.
- **Methodological challenge & conducted analysis**
    - **conditions & constraints**: AI effectiveness relies on specific technical and operational prerequisites;
    - **synergy of expertise**: Essential collaboration between archivists, records management specialists and AI experts to ensure record integrity, accuracy, and reliability;
    - **synthesized analysis**: Maps core archival functions directly to AI-supported activities and essential quality requirements.

Strategic methodology

The initial objective was to define the scope of application within the core functions of records and archives management, establishing the framework and guiding criteria used to conduct the market survey.

Core Functions
- Mapping and analysis of primary business and document management processes.

AI tasks
- Identifying AI tasks for each specific core function.

Requirements
- Defining technical, regulatory, data quality, and interoperability constraints

Controls
- Implementing validation mechanisms, audit trails, and risk governance.

Core Functions

- Core functions of records and archives management systems, as defined in the first phase of this study project:
    - Records Creation
    - Records Registration
    - Automated Classification
    - Records Aggregation and Management
    - Selection and Disposal
    - Archiving and Retrieval

AI core functions of records and archives management systems 1/7

Functions	Supported activities	Requirements and Checks
AI for Records Creation	• Drafting documents • Automatic text completion • Generating abstracts and summaries • Assistance with writing • Personalization • Automatic translation	• Careful legal risk assessment and consideration of: - Ethical content use. - Compliance with intellectual property rights. Compliance with privacy regulations. • Rigorous training and verification to ensure content quality and consistency, preventing AI tendencies toward generalization and oversimplification, particularly in scientific or technical texts. • Regulation and formalization of documentary evidence to ensure the validity of automated decisions and records produced by AI tools

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AI core functions of records and archives management systems 2/7

Functions	Supported activities	Requirements and Checks
AI for Records Registration	• Automatic data recognition and extraction • Data validation • Automatic registration • Provenance recognition • Automatic document assignment (e.g., emails)	Careful analysis and rigorous training on critical information: • Records subject (accuracy, privacy concerns). • Correspondents: senders and recipients (correctness and completeness). Human verification and validation at all stages of planning and implementation

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AI core functions of records and archives management systems 3/7

Functions	Supported activities	Requirements and Checks
AI for Automated Classification	• Content-based classification (managed with OCR) • Extraction of information useful for classification • Creation or compliance with hierarchical structures	• Rigorous selection and verification of supervised learning methods, especially for complex and articulated classification systems • Requirement for well-defined structured information, ideally through classification/file plans and supporting documents • High-level human oversight to ensure consistency in classification operations and hierarchy creation

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AI core functions of records and archives management systems 4/7

Functions	Supported activities	Requirements and Checks
AI for Records Aggregation and Management	• Entity extraction (names of people, places, institutions; event types) to facilitate functional aggregations • Analysis of functional contexts related to classification/file plans and organizational charts • Automatic records grouping guided by algorithms based on formal similarity criteria	• High-level human monitoring of the functional aggregation criteria and their consistency with the classification/file plan, considering the legal significance of the archival bond that governs the creation of records aggregations, particularly in the case of procedural, activity, and business files

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AI core functions of records and archives management systems 5/7

Functions	Supported activities	Requirements and Checks
AI for Selection and Disposal	• Planning selection and disposal • Automation of disposal processes and related documentation through process workflows and reporting templates	• Availability of an accurate and complete retention plan and classification/file plan for records aggregations, from which necessary information can be derived • Definition of forms and reports consistent with legal obligations and internal and external decision-making processes

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AI core functions of records and archives management systems 6/7

Functions	Supported activities	Requirements and Checks
AI for Archiving and Retrieval	• Generation of relevant metadata for preservation, description, and retrieval across the records lifecycle, including records centers and historical archives • Creation of ontologies and formal descriptive models to enable semantic search • Datification of records to improve information reuse and create added value • Anonymization and pseudonymization mechanisms to enable partial access to information *continue…*	• AI can handle complex meanings and perform relevant searches provided qualified metadata and/or domain ontologies exist to limit inevitable ambiguities • AI agents can interact with users during query and search phases if training has accounted for contextual information (classification/file plans, organizational charts, directories) • An accurate and complete retention plan is required for preservation planning

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AI core functions of records and archives management systems 7/7

Functions	Supported activities	Requirements and Checks
AI for Archiving and Retrieval	… • Full-text search with complete indexing • Advanced search using visual and semantic comparison tools, suggesting related searches • Exploration of the archive using information on its hierarchical structure • Support for preservation planning in relation to regulatory and legal obligations, as indicated in the retention plan • Monitoring format and media obsolescence	• AI can handle complex meanings and perform relevant searches provided qualified metadata and/or domain ontologies exist to limit inevitable ambiguities • AI agents can interact with users during query and search phases if training has accounted for contextual information (classification/file plans, organizational charts, directories) • An accurate and complete retention plan is required for preservation planning

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Challenges and Constraints

- **Opportunities conditioned on readiness**
    - AI effectively supports data extraction, summarization, classification, and retrieval, but its success strictly depends on fulfilling specific technical, regulatory, and organizational prerequisites.
- **Constraints, costs, and model opacity**
    - Adoption is hindered by document complexity, error rates, and high costs. Furthermore, commercial cloud models ("black boxes") present severe legal risks, operational opacity, and privacy concerns.

These challenges and constraints lead to conclusions that are consistent with the fundamental principles for trustworthy AI set out by the EU High-Level Expert Group on Artificial Intelligence (European Commission, 2019).

Our primary question was: **replacement or augmentation**?

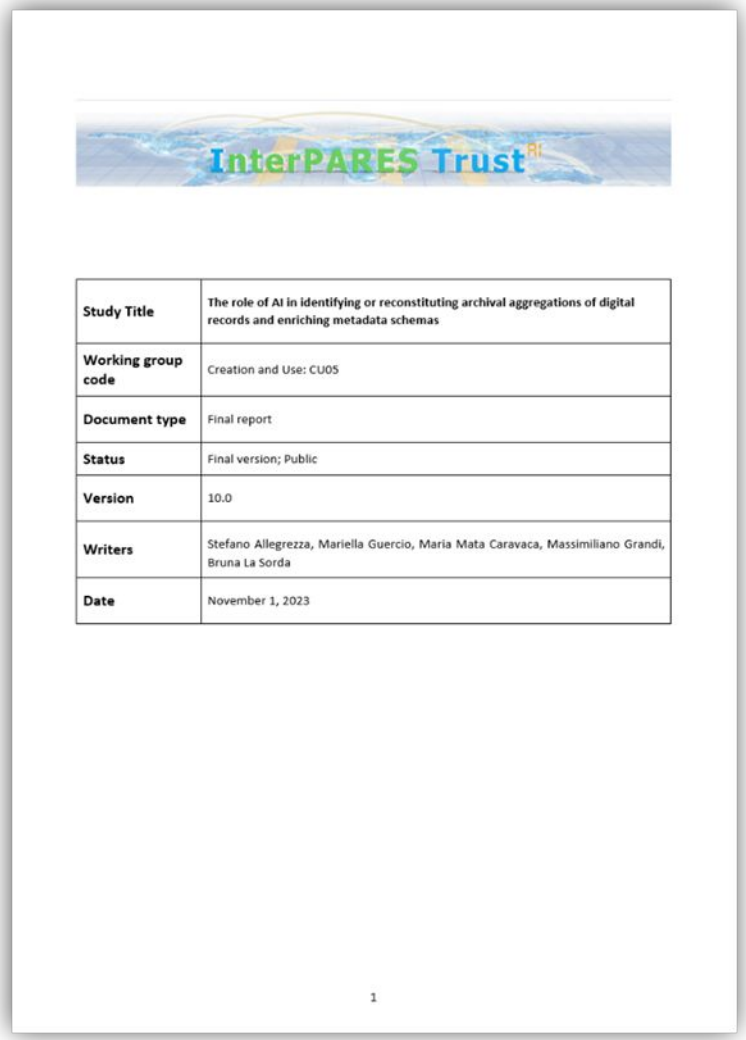
We wanted to evaluate AI as a supportive tool dependent on indispensable human expertise.

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3.

Finding from a survey on AI market promises

https://interparestrustai.org/assets/public/dissemination/Report-CU05-Survey-of-the-Companies_v121.pdf



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Study Title	**The role of AI in identifying or reconstituting archival aggregations of digital records and enriching metadata schemas**
Working group code	Creation and Use: CU05
Document type	Final report
Status	Final version; Public
Version	10.0
Writers	Stefano Allegrezza, Mariella Guercio, Maria Mata Caravaca, Massimiliano Grandi, Bruna La Sorda
Date	November 1, 2023

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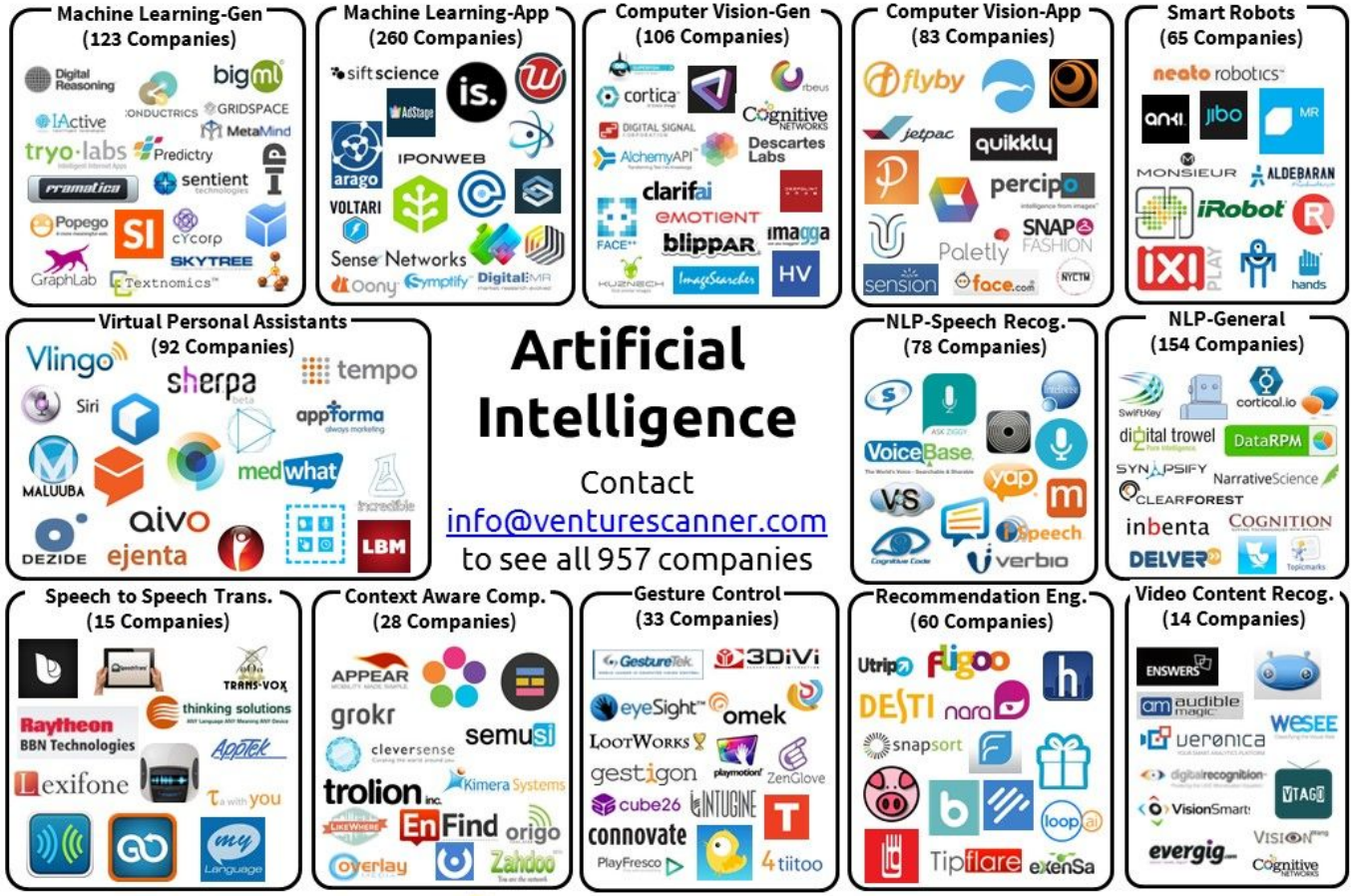
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The first phase of CU05 Project 2022-2023

Develop a survey for companies that declare they use AI in the field or ERMS/EDMS.
They are **hundreds of companies!**

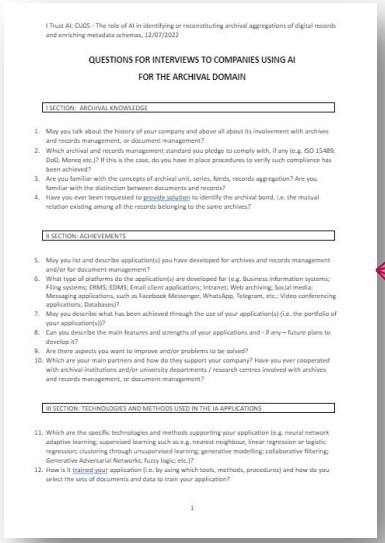
We identify **28 companies** relevant to the scope of the CU05 study on the basis of:

- their **portfolio**
- their **direct involvement in the record field**
- their **compliance** with regulatory frameworks and standards relevant in the domain
- their **general reputation**.



The list was neither exhaustive nor definitive, but a **starting point**

The questionnaire: the sections



I Trust AI: CUOS - The role of AI in identifying or reconstituting archival aggregations of digital records and enriching metadata schemas, 12/07/2022

QUESTIONS FOR INTERVIEWS TO COMPANIES USING AI
FOR THE ARCHIVAL DOMAIN

I SECTION: ARCHIVAL KNOWLEDGE

1. May you talk about the history of your company and above all about its involvement with archives and records management, or document management?
2. Which archival and records management standard you pledge to comply with, if any (e.g. ISO 15489, DoD, Moreq etc.)? If this is the case, do you have in place procedures to verify such compliance has been achieved?
3. Are you familiar with the concepts of archival unit, series, fonds, records aggregation? Are you familiar with the distinction between documents and records?
4. Have you ever been requested to provide solution to identify the archival bond, i.e. the mutual relation existing among all the records belonging to the same archives?

II SECTION: ACHIEVEMENTS

5. May you list and describe application(s) you have developed for archives and records management and/or for document management?
6. What type of platforms do the application(s) are developed for (e.g. Business information systems; Filing systems; ERMS; EDMS; Email client applications; Intranet; Web archiving; Social media; Messaging applications, such as Facebook Messenger, WhatsApp, Telegram, etc.; Video conferencing applications; Databases)?
7. May you describe what has been achieved through the use of your application(s) (i.e. the portfolio of your application(s))?
8. Can you describe the main features and strengths of your applications and - if any – future plans to develop it?
9. Are there aspects you want to improve and/or problems to be solved?
10. Which are your main partners and how do they support your company? Have you ever cooperated with archival institutions and/or university departments / research centres involved with archives and records management, or document management?

III SECTION: TECHNOLOGIES AND METHODS USED IN THE IA APPLICATIONS

11. Which are the specific technologies and methods supporting your application (e.g. neural network adaptive learning; supervised learning such as e.g. nearest neighbour, linear regression or logistic regression; clustering through unsupervised learning; generative modelling; collaborative filtering; Generative Adversarial Networks; fuzzy logic; etc.)?
12. How is it trained your application (i.e. by using which tools, methods, procedures) and how do you select the sets of documents and data to train your application?

1

25 questions

I SECTION → achievements

II SECTION → specific capabilities (for recordkeeping and email systems)

III SECTION → technologies and methods used in the IA applications

IV SECTION → audit-checks -- key performance indicators

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Main findings

Classification

All the companies declared they had **developed AI solutions for the indexing and/or classification of records.**
Only one company declared that its platform can be trained to automatically generate (without human intervention) labels and tags related to any **classification scheme**; in all other cases, **human intervention is considered essential** to obtain reliable (*acceptable?*) results.

Filing/aggregation

As regards the **creation (or re-consitution) of records aggregations**, this possibility (in terms of acceptable quality) 0is limited to very specific cases, such as:

- when there are well-defined specifications on the **types of documents**
- when there is **qualified** and **sufficient information on the original structure**, allowing the identification of **functional relationships** between documents

Automatic or semi-automatic aggregation based on document content can be only suggested and **usually needs to be supported by user validation**.

Archival bond

The **recreation of the archival bond** – when lost or not explicitly defined – is recognized as a **complex activity without the significant help of archivists** or users and/or consistent descriptive information available

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General outcome

Terminology is a crucial challenge.

When interacting with companies, the archival community must pay close attention to clarifying the **meaning of terms**, such as the difference between **records**, **documents**, and **information**, and the difference between **classification**, **indexing** and **categorization**.



It is best to avoid talking to **sales representatives** and instead contact **information management personnel**, **software engineers**, and **archivists** (if any).

4.
Paradata Framework

Documenting AI case studies/projects: a methodological framework

Information framework for documenting AI projects

- **based on Paradata** concept developed by another TRUST AI study (the information about the procedure(s) and tools used to create and process information resources, along with information about the persons carrying out those procedures)
- **integrated by ISO 23507:2025**, Information Preparation to Enable Long-Term Use – **IPELTU**
- included the **information** and the **documentation** on procedure(s) and tools used to plan, design, implement, verify AI projects and case studies
- **encouraged by the regulation (EU) Data AI act**

Framework for documenting AI projects (additional information in OAIS)

INFORMATION FRAMEWORK FOR DOCUMENTING AI PROJECTS			
based on the AI application life cycle and project phases; Adaptaion by CU05 Study project for documenting case studies, 15/01/2025			
Lifecycle of AI application (based on InterPARES Study RP04)	Phases of Data Collection (From: IPELTU 2024)		
	1. Planning	2. Executing	3. Closing
1. Identification and preparation of datasets			
2. Produce AI model			
3. Train AI model			
4. Evaluate AI model			
5. Implement AI model			
6. Improve AI model			
7. Monitor operations			

5.

Field testing from case studies



NATO
(North Atlantic Treaty Organization)





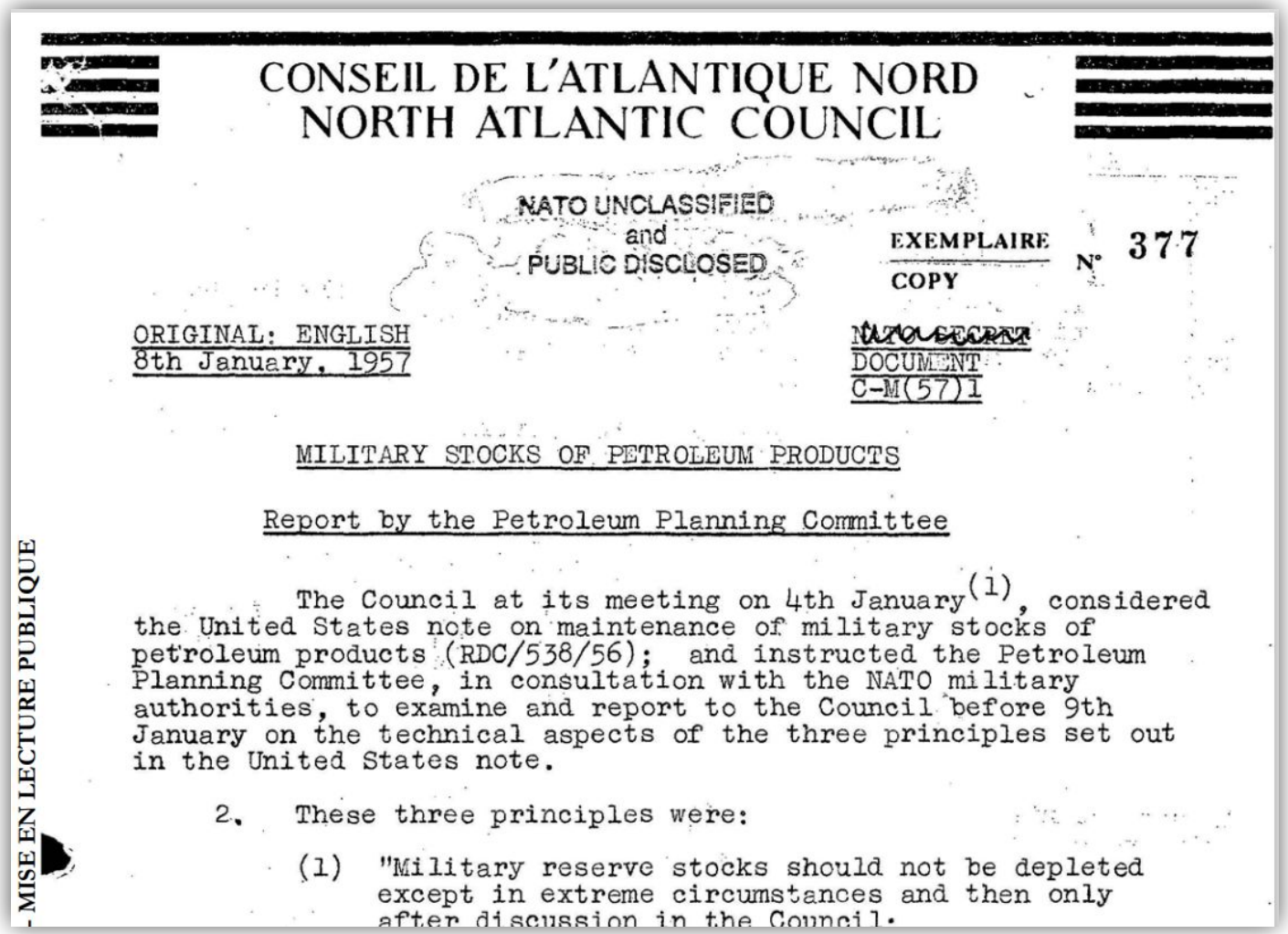
ParER
(Polo archivistico regione Emilia-Romagna)



2nd Study Project 2024 – 2025: NATO Archives case study

NATO OTAN

RECORDPOINT



CONSEIL DE L'ATLANTIQUE NORD
NORTH ATLANTIC COUNCIL

NATO UNCLASSIFIED
and
PUBLIC DISCLOSED

EXEMPLAIRE / COPY N° 377

ORIGINAL: ENGLISH
8th January, 1957

~~NATO SECRET~~
DOCUMENT
C-M(57)1

MILITARY STOCKS OF PETROLEUM PRODUCTS

Report by the Petroleum Planning Committee

The Council at its meeting on 4th January(1), considered the United States note on maintenance of military stocks of petroleum products (RDC/538/56); and instructed the Petroleum Planning Committee, in consultation with the NATO military authorities, to examine and report to the Council before 9th January on the technical aspects of the three principles set out in the United States note.

2. These three principles were:

(1) "Military reserve stocks should not be depleted except in extreme circumstances and then only after discussion in the Council;

- MISE EN LECTURE PUBLIQUE

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NATO Archives case study - Objective & Platform

Case Study – NATO

Goals

- **classify** records according to rules and regulations;
- **automatically flag and alert for high risk** of sensitive data and/or security markers;
- **perform text summarization** of given records; and
- **make inferences about the organization or person** that has made or received and then set aside the records

Evaluation of commercial AI tools RecordPoint's Records365

The company providing the technology for the case study is RecordPoint, from Australia. RecordPoint made available for the study its platform called Records365. Records365 is an in-place records management platform that can ingest data from any digital content source

Corpus

The NATO Archives made 14,000 declassified records, dating from the 1950s to the 1990s, available for the case studies. Most of these records belong to the NATO Committees series. They have all been scanned and OCR-processed and are available in PDF format

Paradata Framework application

The case study was documented retrospectively through the application of the Paradata Framework.

NATO Archives case study - Findings

Automated Classification: Results & Limitations	Accuracy (60%–98%): performance achieved by combining rules-based systems with supervised machine learning.
	Key Requirements: Depends on well-defined archival structures and robust training datasets (over 50 records per series).
	Major Obstacles: Poor OCR quality (microfilm scans) and multi-decade record variability.
	Ineffective on thematic collections (insufficient samples) and unable to infer complex functional relationships not present in existing metadata.
Metadata Enhancement & Text Summarization	PII Detection: High rate of false positives (Microsoft Presidio lacked training on historical/NATO contexts).
	Entity Extraction: Promising but immature; constrained by technical limits on custom taxonomies.
	Summarization (LLMs): Produced overly generic summaries; requires domain-specific prompting informed by archival diplomatic and entails high computational costs.
Methodological Takeaways	**Centrality of the Archivist: Dataset quality, preparation, and expert validation dictate AI performance more than the technology itself, as highlighted by the application of the Paradata Framework.**
	No "Magic" Fix: AI cannot reconstruct contextual or functional relationships absent from baseline recordkeeping structures.
	Verdict: Machine learning augments rather than replaces archival knowledge—its success relies on sound recordkeeping principles and ongoing human oversight.

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NATO Archives case study - Conclusions

- **Performance Depends on Existing Structure**
    - AI effectiveness directly reflects the quality and granularity of the underlying classification.
    - Currently performs best on simple, well-structured schemes rather than complex, ambiguous archival hierarchies.
    - Transitioning to born-digital records without coherent filing plans creates critical structural gaps.
- **Understanding context is a complex task**. AI cannot reconstruct complex functional relationships if they are missing from existing metadata or organizational frameworks.
- Key Conclusion
    - Requires heavy investment: effective adoption demands significant human expertise, ongoing customisation, and financial resources.
    - Complementary, not a replacement: AI augments archival practice; its success remains entirely dependent on sound recordkeeping principles.

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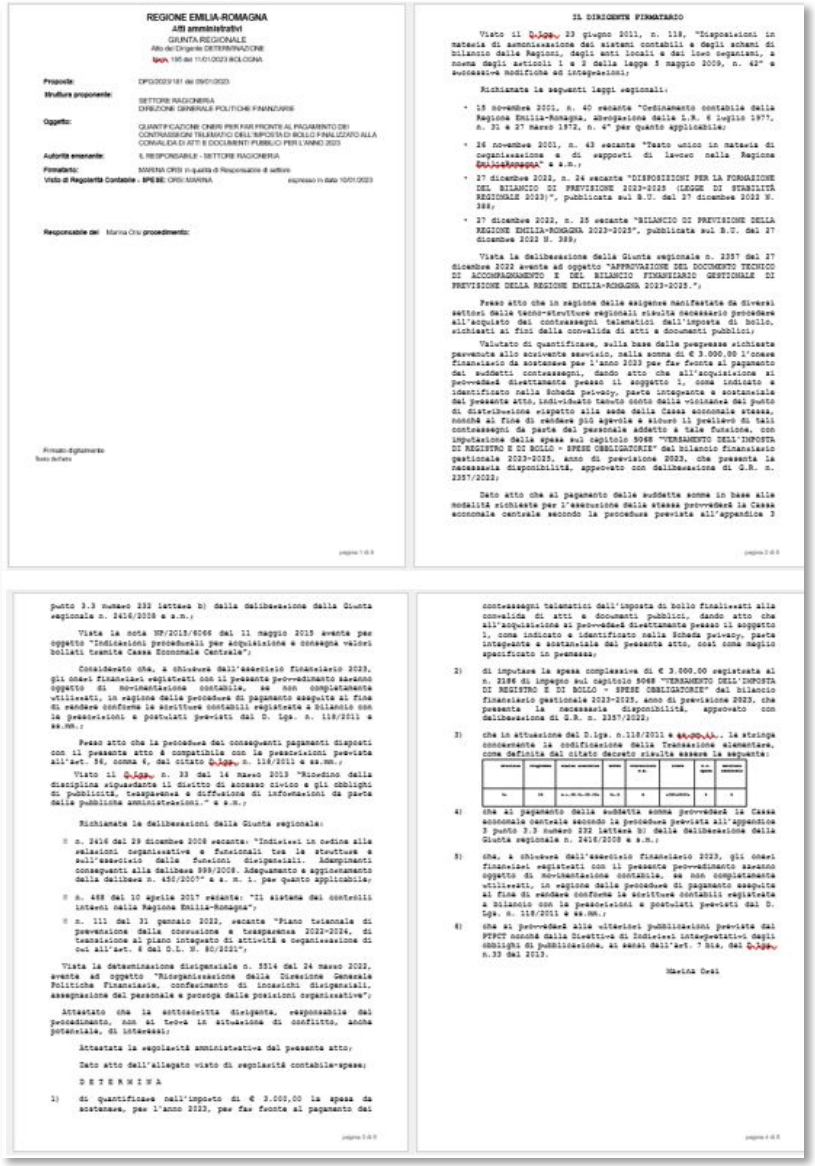
2nd Study Project 2024 – 2025: Regione Emilia-Romagna Case Study

parer
POLO ARCHIVISTICO DELL'EMILIA-ROMAGNA

RegioneEmilia-Romagna

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

20 YEARS OF INNOVATION
far networks



REGIONE EMILIA-ROMAGNA
Atti amministrativi
GIUNTA REGIONALE
Atto del Dirigente DETERMINAZIONE

Proposta:
Struttura proponente: SETTORE RAGIONERIA
DIREZIONE GENERALE POLITICHE FINANZIARIE
Oggetto: QUANTIFICAZIONE ONERI PER FAR FRONTE AL PAGAMENTO DEI CONTRASSEGNI TELEMATICI DELL'IMPOSTA DI BOLLO FINALIZZATO ALLA CONVALIDA DI ATTI E DOCUMENTI PUBBLICI PER L'ANNO 2023
Autorità emanante: IL RESPONSABILE - SETTORE RAGIONERIA
Firmatario:
Visto di Regolarità Contabile - SPESE:

Responsabile del: procedimento:

IL DIRIGENTE FIRMATARIO

Richiamate le seguenti leggi regionali:

Vista la delibera della Giunta regionale n. 2357 del 27 dicembre 2022 avente ad oggetto "APPROVAZIONE DEL DOCUMENTO TECNICO DI ACCOMPAGNAMENTO E DEL BILANCIO FINANZIARIO GESTIONALE DI PREVISIONE DELLA REGIONE EMILIA-ROMAGNA 2023-2025.";

Preso atto che in ragione delle esigenze manifestate da diversi settori delle tecno-strutture regionali risulta necessario procedere all'acquisto dei contrassegni telematici dell'imposta di bollo, richiesti ai fini della convalida di atti e documenti pubblici;

Valutato di quantificare, sulla base delle pregresse richieste pervenute allo scrivente servizio, nella somma di € 3.000,00 l'onere finanziario da sostenere per l'anno 2023 per far fronte al pagamento dei suddetti contrassegni, dando atto che all'acquisizione si provvederà direttamente presso il soggetto 1, come indicato e identificato nella Scheda fornitori, parte integrante e sostanziale del presente atto, individuato tenuto conto della vicinanza del punto di distribuzione rispetto alla sede della Cassa economale stessa, nonché al fine di rendere più agevole e sicuri il prelievo di tali contrassegni da parte del personale addetto a tale funzione, con imputazione della spesa sul capitolo 5068 "VERSAMENTO DELL'IMPOSTA DI REGISTRO E DI BOLLO - SPESE OBBLIGATORIE" del bilancio finanziario gestionale 2023-2025, anno di previsione 2023, che presenta la necessaria disponibilità, approvato con deliberazione di G.R. n. 2357/2022;

Dato atto che al pagamento della suddetta somma in base alle modalità richieste per l'esecuzione della stessa provvederà la Cassa economale centrale secondo la procedura prevista all'appendice 3 punto 3.3 numero 332 lettera b) della deliberazione della Giunta regionale n. 2416/2008 e s.m.;

Vista la nota NP/2015/6066 del 11 maggio 2015 avente per oggetto "Indicazioni procedurali per acquisizione e consegna valori bollati tramite Cassa Economale Centrale";

Considerato che, a chiusura dell'esercizio finanziario 2023, gli oneri finanziari registrati con il presente provvedimento saranno oggetto di non-imputazione contabile, se non completamente utilizzati, in ragione della procedura di pagamento eseguita al fine di rendere conforme le scritture contabili registrate a bilancio con le prescrizioni e postulati previsti dal D. Lgs. n. 118/2011 e ss.mm.;

Preso atto che la procedura dei conseguenti pagamenti disposti con il presente atto è compatibile con le prescrizioni previste all'art. 56, comma 6, del citato D.Lgs. n. 118/2011 e ss.mm.;

Visto il D.Lgs. n. 33 del 14 marzo 2013 "Riordino della disciplina riguardante il diritto di accesso civico e gli obblighi di pubblicità, trasparenza e diffusione di informazioni da parte delle pubbliche amministrazioni." e s.m.;

Richiamate le deliberazioni della Giunta regionale:

- n. 2416 del 29 dicembre 2008 recante: "Indirizzi in ordine alle relazioni organizzative e funzionali tra le strutture e sull'esercizio delle funzioni dirigenziali. Adempimenti conseguenti alla delibera 999/2008. Adeguamento e aggiornamento della delibera n. 450/2007" e s. m. i. per quanto applicabile;
- n. 468 del 10 aprile 2017 recante: "Il sistema dei controlli interni nella Regione Emilia-Romagna";
- n. 111 del 31 gennaio 2022, recante "Piano triennale di prevenzione della corruzione e trasparenza 2022-2024, di trasmissione al piano integrato di attività e organizzazione di cui all'art. 6 del D.L. N. 80/2021";

Vista la determinazione dirigenziale n. 5314 del 24 marzo 2022, avente ad oggetto "Riorganizzazione della Direzione Generale Politiche Finanziarie, conferimento di incarichi dirigenziali, assegnazione del personale e proroga delle posizioni organizzative";

Attestato che la sottoscritta dirigente, responsabile del procedimento, non si trova in situazione di conflitto, anche potenziale, di interessi;

Attestata la regolarità amministrativa del presente atto;

Dato atto dell'allegato visto di regolarità contabile-spesa;

D E T E R M I N A

1) di quantificare nell'importo di € 3.000,00 la spesa da sostenere, per l'anno 2023, per far fronte al pagamento dei contrassegni telematici dell'imposta di bollo finalizzati alla convalida di atti e documenti pubblici, dando atto che all'acquisizione si provvederà direttamente presso il soggetto 1, come indicato e identificato nella Scheda fornitori, parte integrante e sostanziale del presente atto, così come meglio specificato in premessa;

2) di imputare la spesa complessiva di € 3.000,00 registrata al n. 2186 di impegno sul capitolo 5068 "VERSAMENTO DELL'IMPOSTA DI REGISTRO E DI BOLLO - SPESE OBBLIGATORIE" del bilancio finanziario gestionale 2023-2025, anno di previsione 2023, che presenta la necessaria disponibilità, approvato con deliberazione di G.R. n. 2357/2022;

3) che in attuazione del D.Lgs. n.118/2011 e s.m.m.i., la stringa concernente la codifica della transazione elementare, come definita dal citato decreto risulta essere la seguente:

4) che al pagamento della suddetta somma provvederà la Cassa economale centrale secondo la procedura prevista all'appendice 3 punto 3.3 numero 332 lettera b) della deliberazione della Giunta regionale n. 2416/2008 e s.m.;

5) che, a chiusura dell'esercizio finanziario 2023, gli oneri finanziari registrati con il presente provvedimento saranno oggetto di non-imputazione contabile, se non completamente utilizzati, in ragione della procedura di pagamento eseguita al fine di rendere conforme le scritture contabili registrate a bilancio con le prescrizioni e postulati previsti dal D. Lgs. n. 118/2011 e ss.mm.;

6) che si provvederà alle ulteriori pubblicazioni previste dal PTPCT nonché dalla Direttiva di Indirizzi interpretativi degli obblighi di pubblicazione, ai sensi dell'Art. 7 bis, del D.Lgs. n.33 del 2013.

Marina Orsi

InterPARES TrustAI

Regione Emilia-Romagna Case Study

Regione Emilia-Romagna

Goal

- Evaluate the effectiveness of various AI models for the automated, unsupervised classification of public records.

Methodology & Scale

- Comparison of Two Parallel Experiments Conducted by ParER: University of Bologna vs. FarNetworks S.r.l.
- Dataset: Over 3,000 public records analyzed.

Tested Models & Techniques

- Models: Traditional (K-means, TF-IDF), Lightweight (BART, RoBERTa), LLMs (GPT-4o, GPT-4.1, Gemini, Llama, Mistral Small).
- Approaches: Zero-shot prompting, Silver Datasets for lightweight classifiers, Fine-tuning, and Chunking trials

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Regione Emilia-Romagna Case Study: Comparative experiment

Features	Academic Experimentation with Università di Bologna	Internal experimentation at ParER
Duration	2023-2025	2025-2026
Dataset	A selection of **1,728** managerial acts (*provvedimenti amministrativi*, adopted to conclude complex processes), characterized by long texts and heterogeneous forms. All documents are in Italian and were originally in PDF format.	A selection of **1,519** item of incoming and outgoing correspondence registered in Protocol register. All documents are in Italian, predominantly born-digital, and comprise multiple files of various formats.
Nature of the Data	Public records already **available** online.	Public records **not available** online..
Objective	Classification based on **National Classification's Scheme Model** for Regions). 19 top-level items with descriptive text.	Classification based on **classification scheme** of the RER, 21 Level I classes. 21 top-level items identified by name only, without a description
Approach	Traditional algorithms (K-means, TF-IDF), smaller models (BART, RoBERTa), and Large Language Models (GPT-4o, GPT-4.1, Gemini, Llama, Mistral Small) for unsupervised clustering, Zero-shot classification, Promptiing experiments, Creation of a Silver dataset	Zero-shot classification with Mistral small 3,1 and GPT 4.1. Chunk test, fine tuning test.
Top Model	GPT-4o (Level I Precision: 65%).	GPT-4.1 (Level I Precision: 74%).
Strength	Effective handling of long, bureaucratic texts due to model scale.	High coverage (96%) and management of contexts up to 1 million tokens.
Critical Issues	Textual heterogeneity and irrelevant legislative citations.	Lack of textual descriptions for TRER classification categories; heterogeneity of content.

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Regione Emilia-Romagna Case Study: Analysis of the result

In the internal experiment the results of classification at the first level are fairly similar to those obtained with the academic experiment.
The results are not considered sufficient for unsupervised automatic classification. The match at the third classification level, which is regarded as the reference level, is only 31%, meaning less than one correct response out of three.

The real goal!

Metrics	Mistral Small 3.1	GPT 4.1
Coverage (% of classified records)	60% (600 unclassified records)	96% (59 unclassified records)
Precision on classified records (level I match)	46%	74%
Precision on classified records (level II match)	35%	52%
Precision on classified records (level III match)	19%	31%
Average number of classes returned	media 3,3 sigma 7,1	1
Qualitative notes	More cautious but often "silent"; higher recall at Level II.	Responds almost every time; higher overall accuracy in exact matches.

Regione Emilia-Romagna Case Study: Conclusions and next step

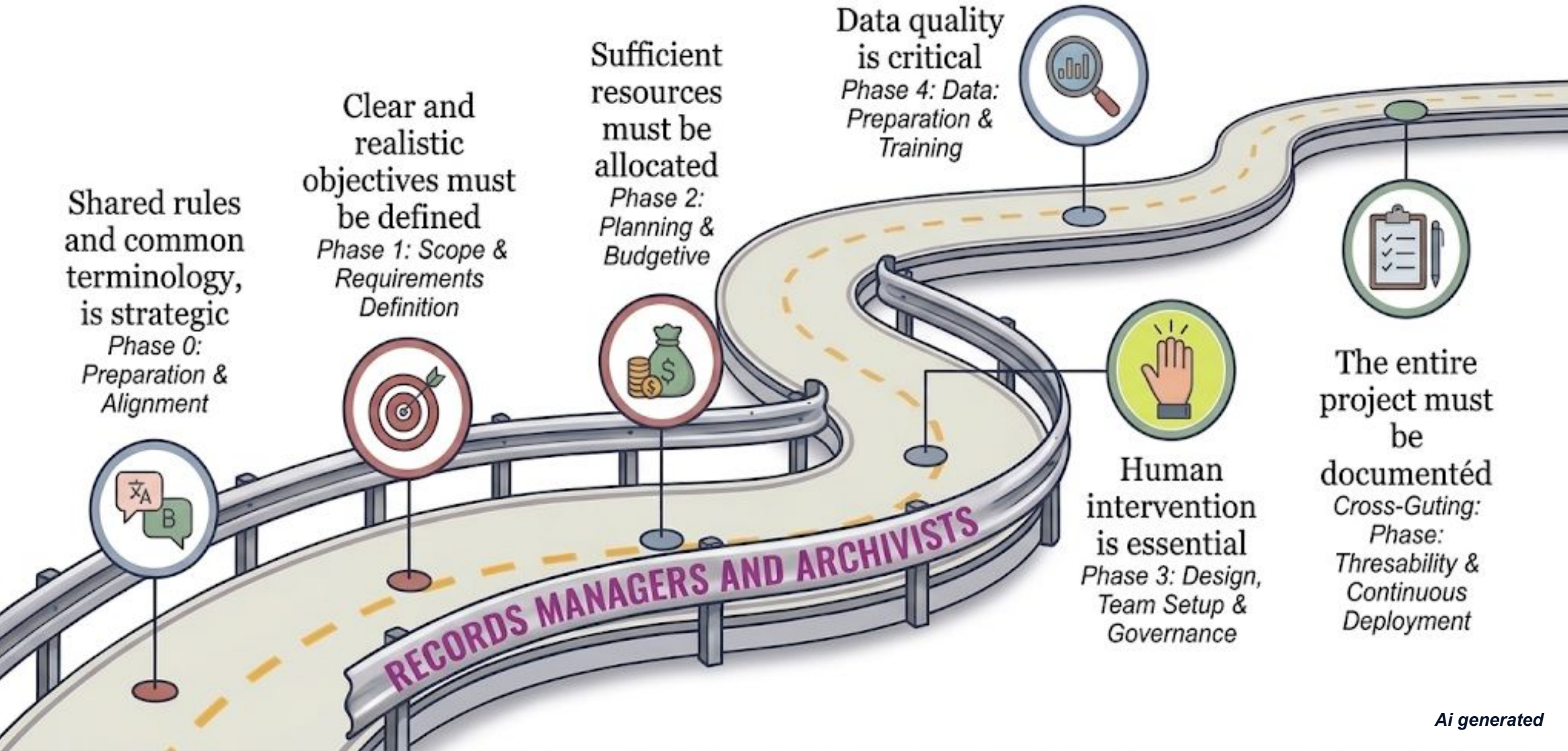
- Governance Drives Quality:
    - **output quality is directly proportional to the maturity of records management governance**.
    - Data preparation and validation represent a critical challenge.
- Human-in-the-Loop is Essential:
    - Human expertise remains irreplaceable for context understanding;
- Evolving AI Landscape:
    - AI technology is still maturing. Experimental results show that traditional approaches like fine-tuning and standard RAG are losing ground to prompt engineering and agentic RAG (orchestration of multiple large and small AI models).

PaRER is currently building a system to address these challenges through human-in-the-loop frameworks powered by Agentic RAG architectures.
However, technology alone is not enough: therefore, **we must revise our records management tools.**

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6.
A Roadmap for Artificial Intelligence

A Roadmap for Artificial Intelligence



Ai generated

Key aspects for archival professionals

1. **Understanding how AI works**. It is essential to understand how AI operates, as well as its requirements, capabilities, and limitations.
2. **A granular and robust understanding of archival functions**. Working with large-scale datasets and automated processes requires close attention to detail in order to define appropriate criteria and mechanisms for supervision, validation, correction, and refinement of AI systems.
3. **The ability to anticipate exceptions and particular cases** that may disrupt the consistency of the datasets being processed or introduce biases into the expected results.
4. **The capacity to break down and sequence processes and tasks that make up archival functions**, since solving complex problems usually will require modular AI solutions, each applied to a specific component of the overall problem.

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AI to help or AI to solve?

AI is a boost that enhances existing infrastructure capabilities — but if the underlying infrastructure is not well governed, AI doesn't fix the problem; it amplifies the chaos and scales the disaster.



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Thank you for your attention!

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