

Social History of Mathematical Practices in South India

Historical Atlas, & Archive

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About the Work

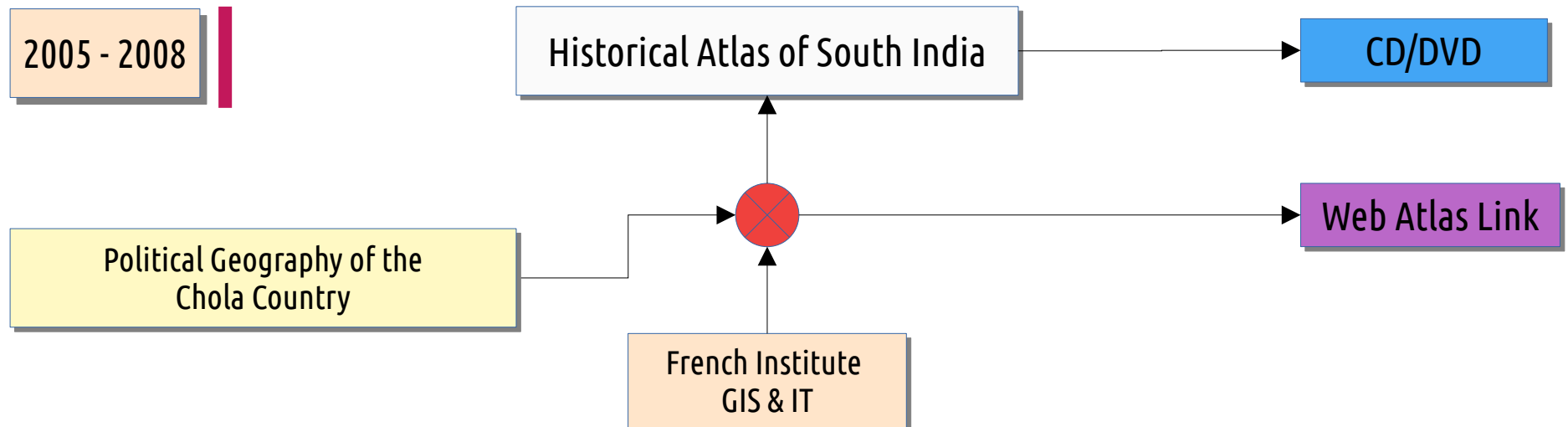
- Atlas and Archive are ***not new entity*** in Humanities & Social Sciences.
- But how it is grounded and applied, both for education and used by archaeologists, historians, linguists, scholars of literature
 - *is questionable ?*
- Developing Atlas & Archive must ***meet the context*** and thus can able to narrate the information collected through scientific process.
- Considerable care and attention is needed to strike a balance between standardization and contextualization of information.

History of the Work

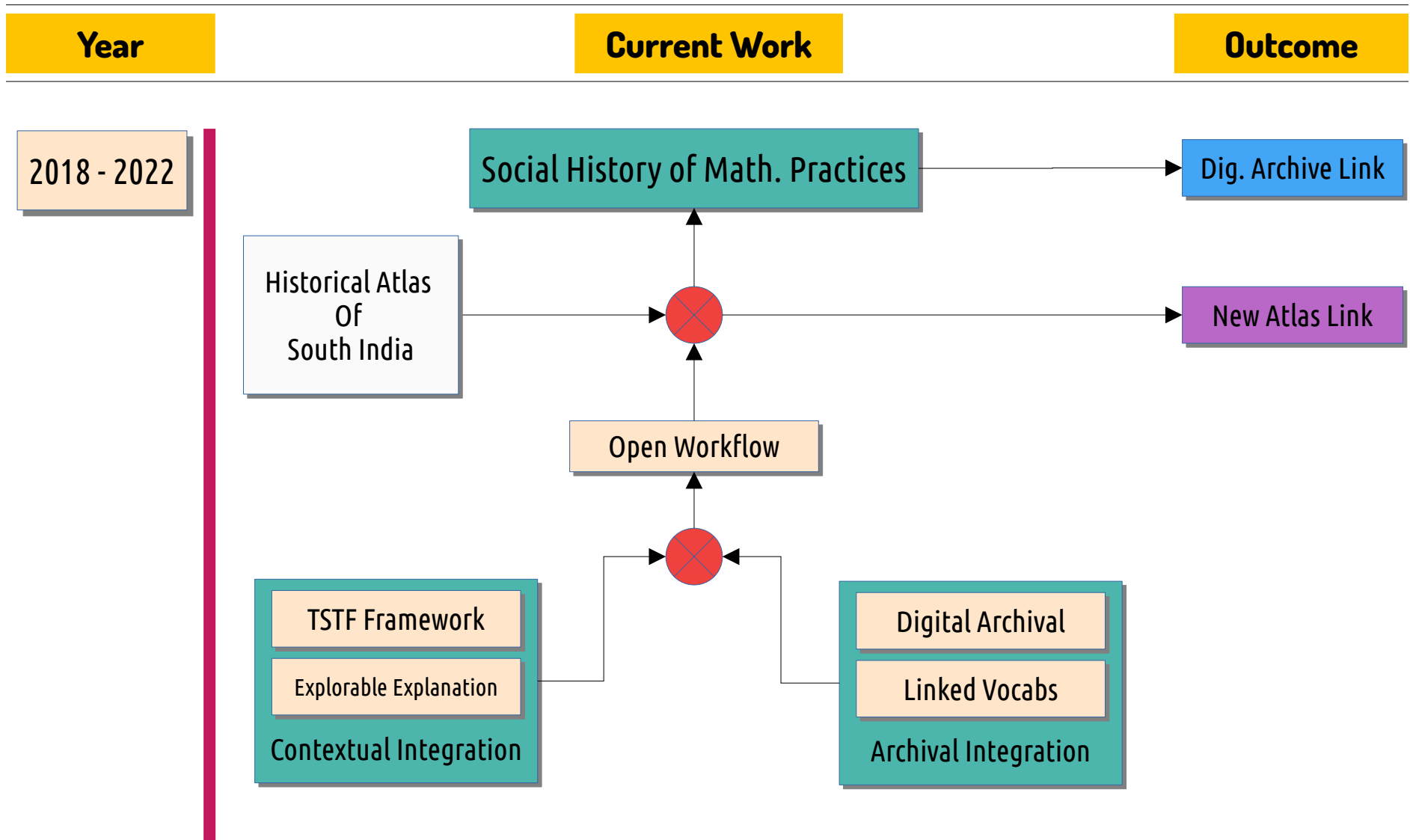
Year	Prior Works	Outcome
1988 - 1992	Historical Atlas of South Asia	Web Atlas Link
1982 - 1986	Atlas of the Mughal Empire	Book Link

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History of the Work



IDENTIFIED PROBLEM(S)

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Siloing	Spreadsheets as isolated graneries each with different data structuring	Lack of language, tools, workflow to materialize info. Diversity & their relationships	Ill backups of data collected, Invisibilization of realized relationships

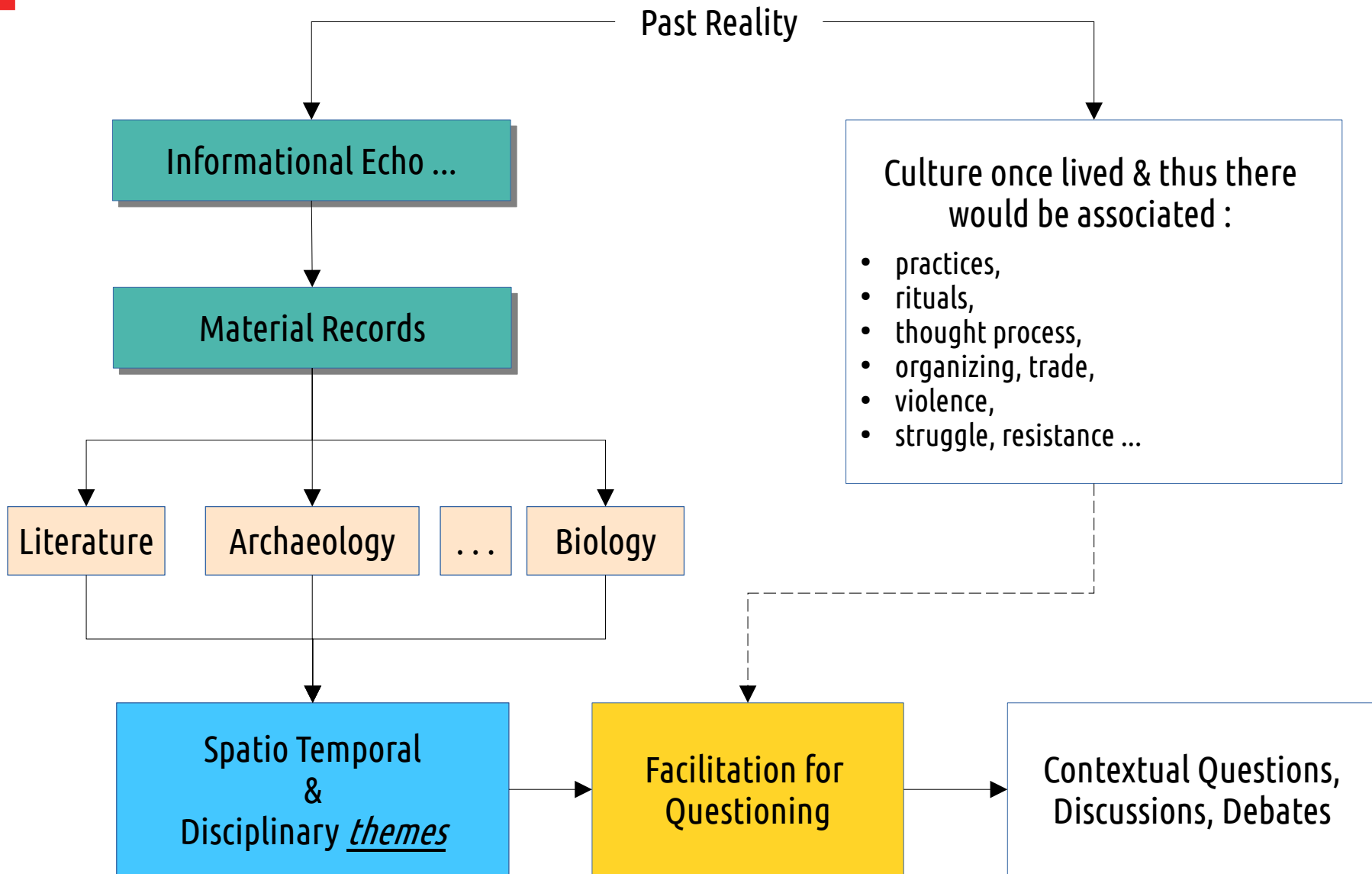
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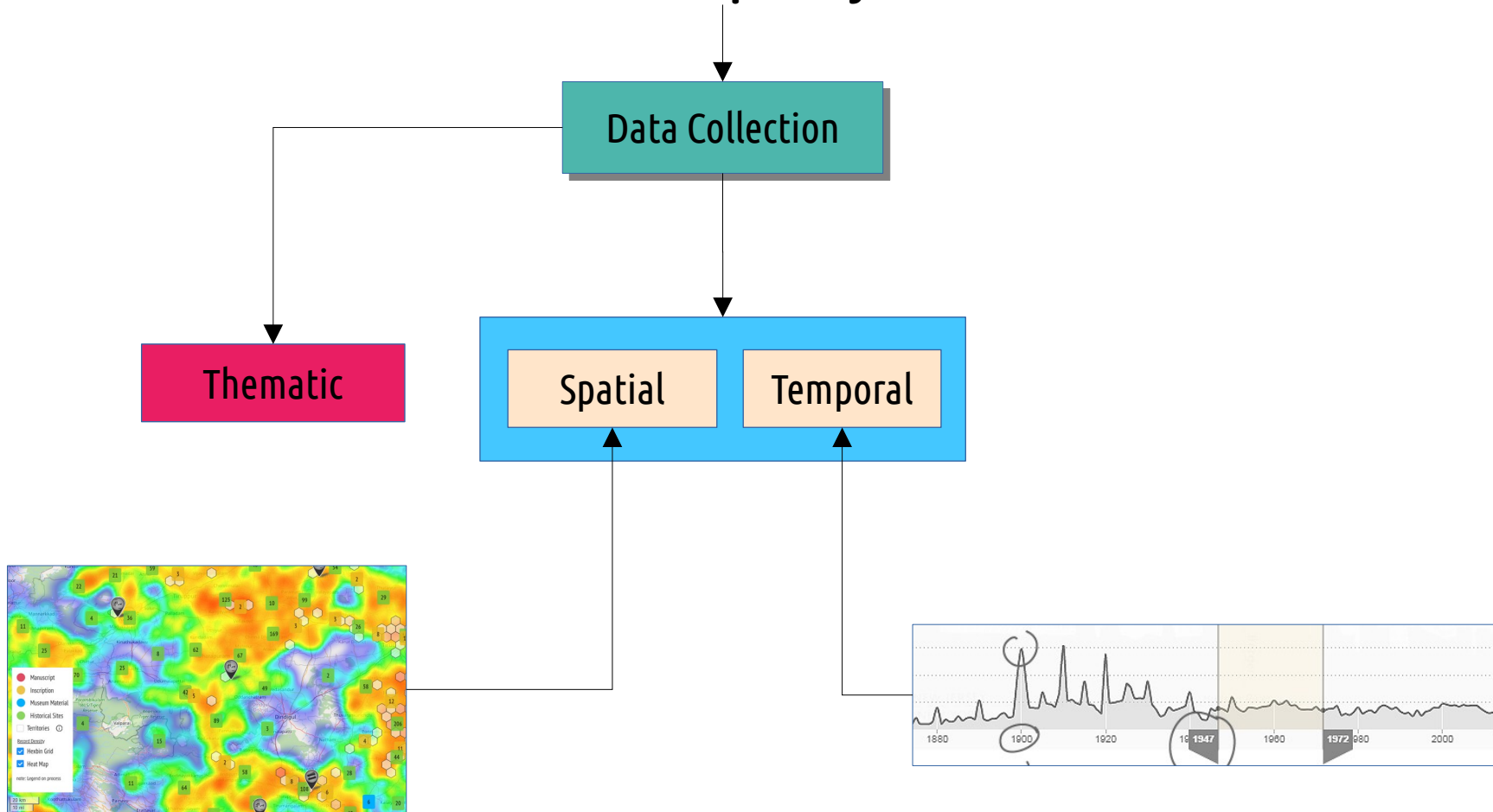
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Invisibilization	Suiting the contextual data to a foreign structure	Lack of customizable, linked open vocabularies for the subject matter	Loss of relationships between data, stressing the expression of the work

What would be a suitable facility ?

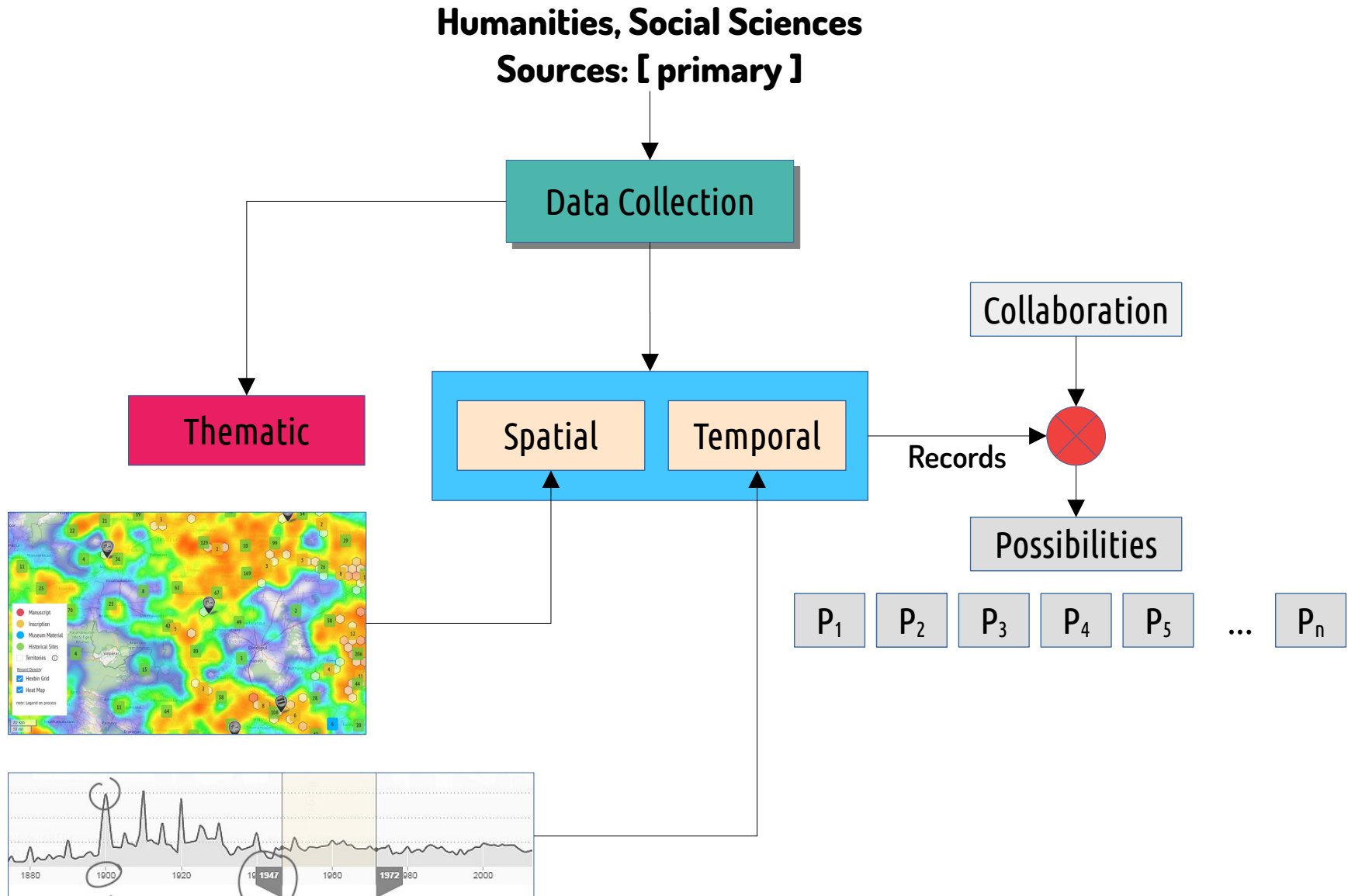


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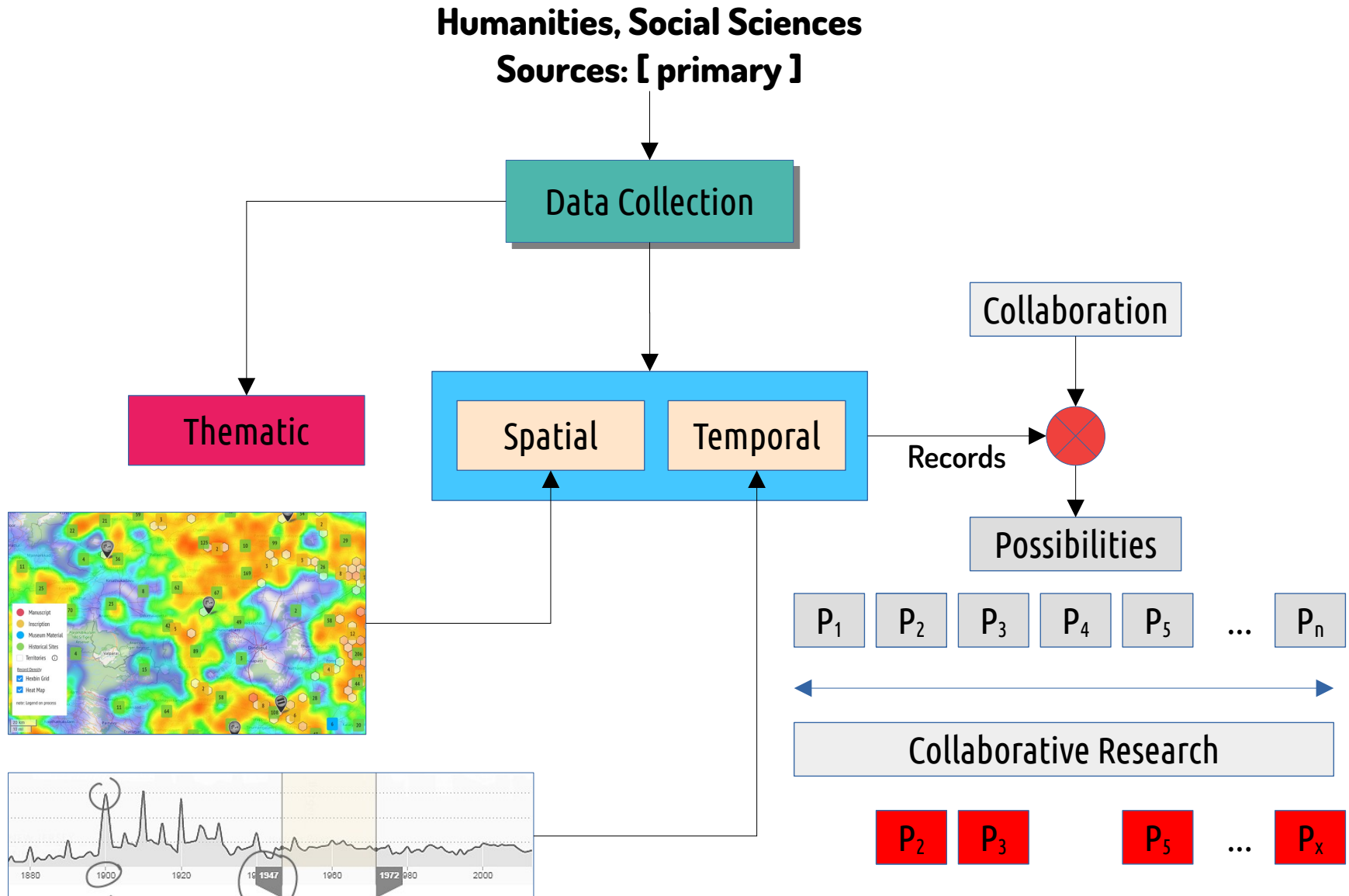
**Humanities, Social Sciences
Sources: [primary]**



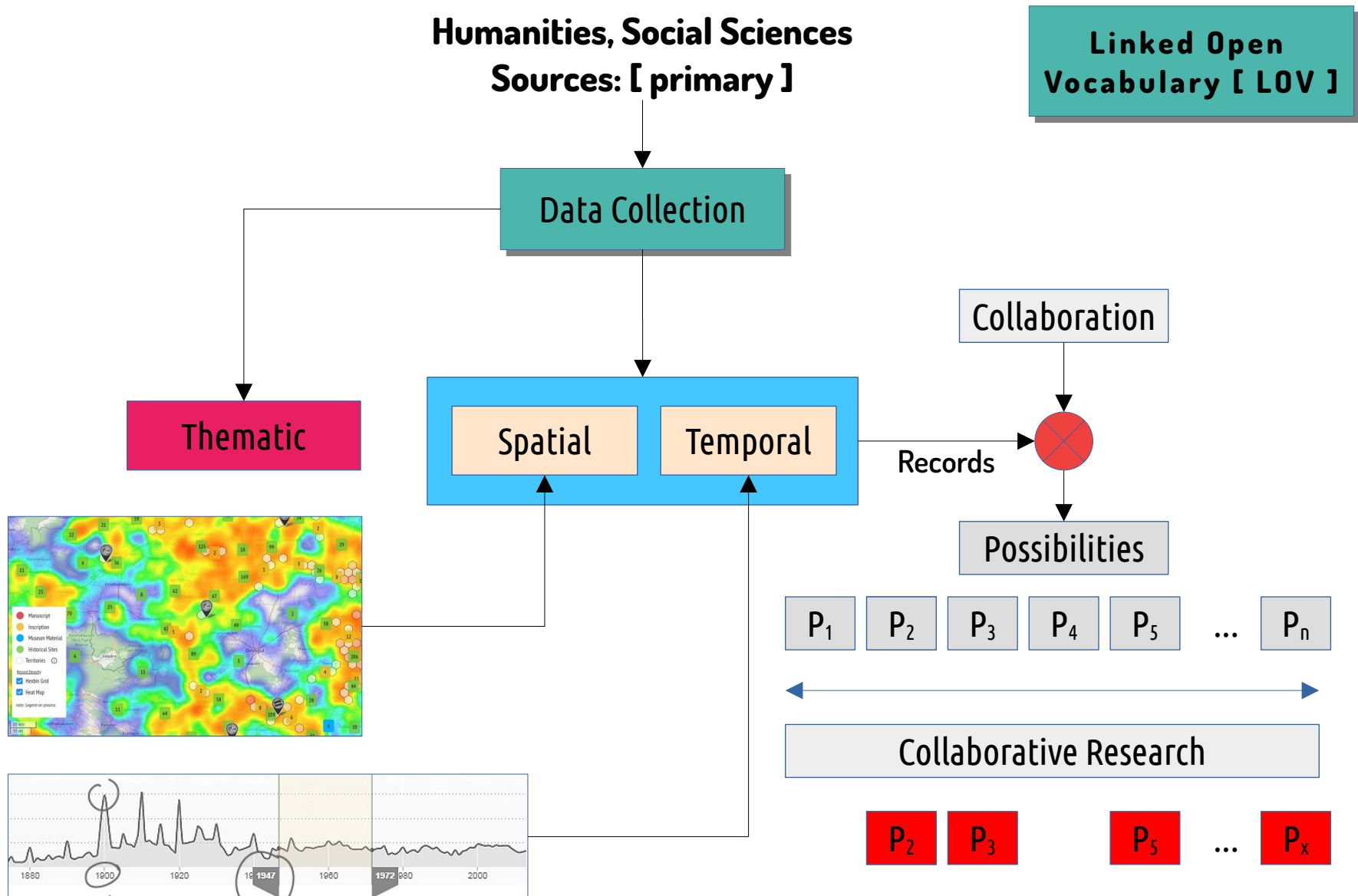
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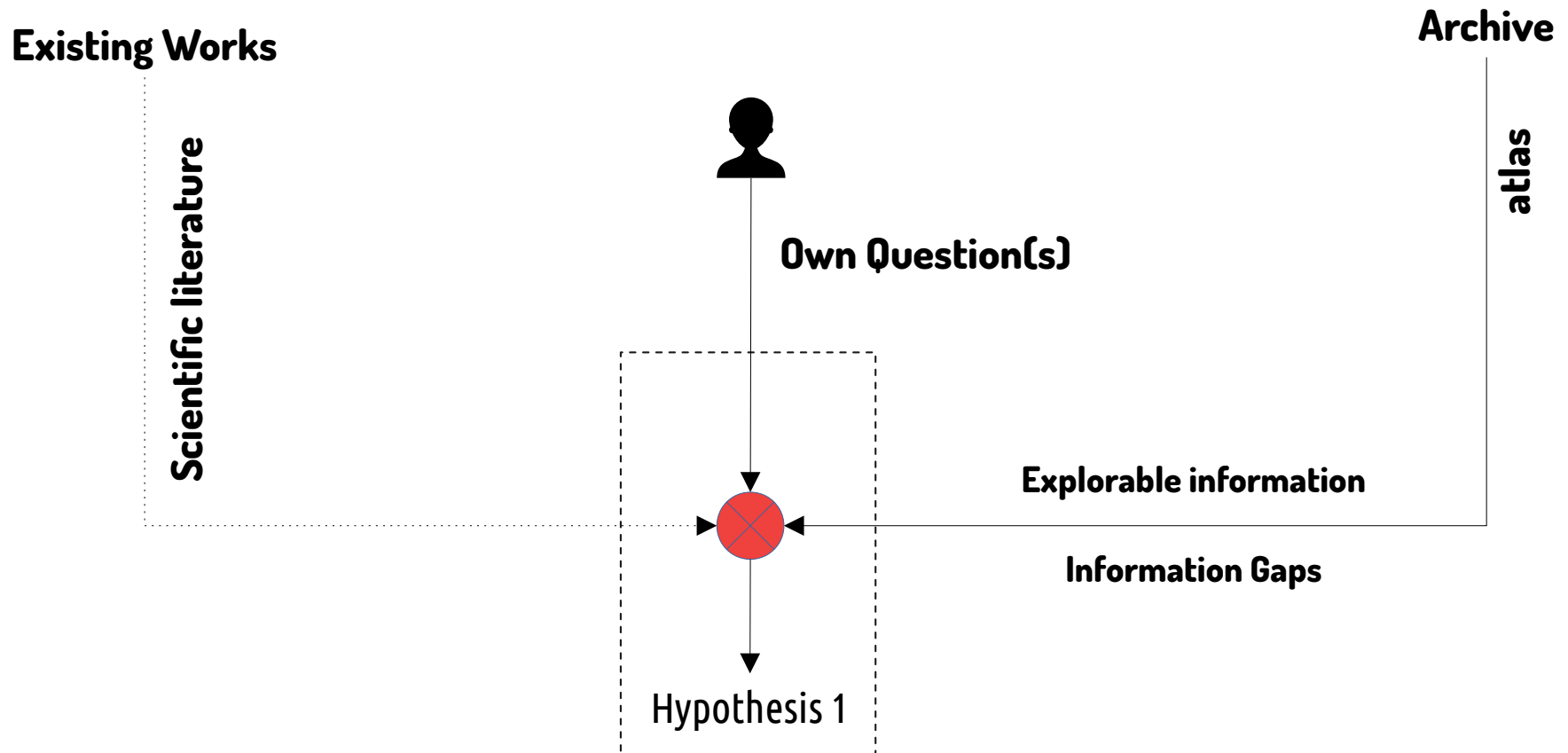
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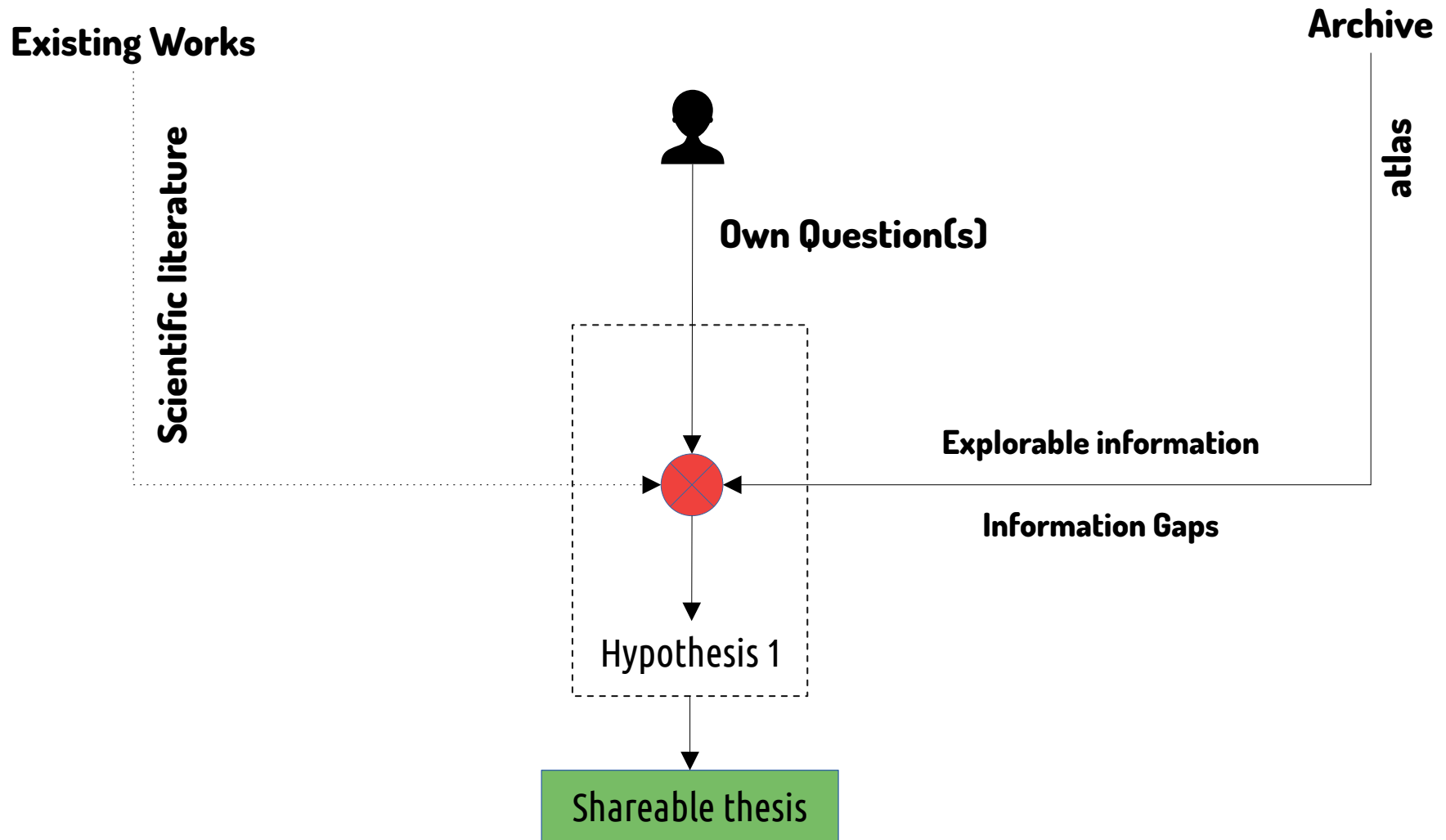
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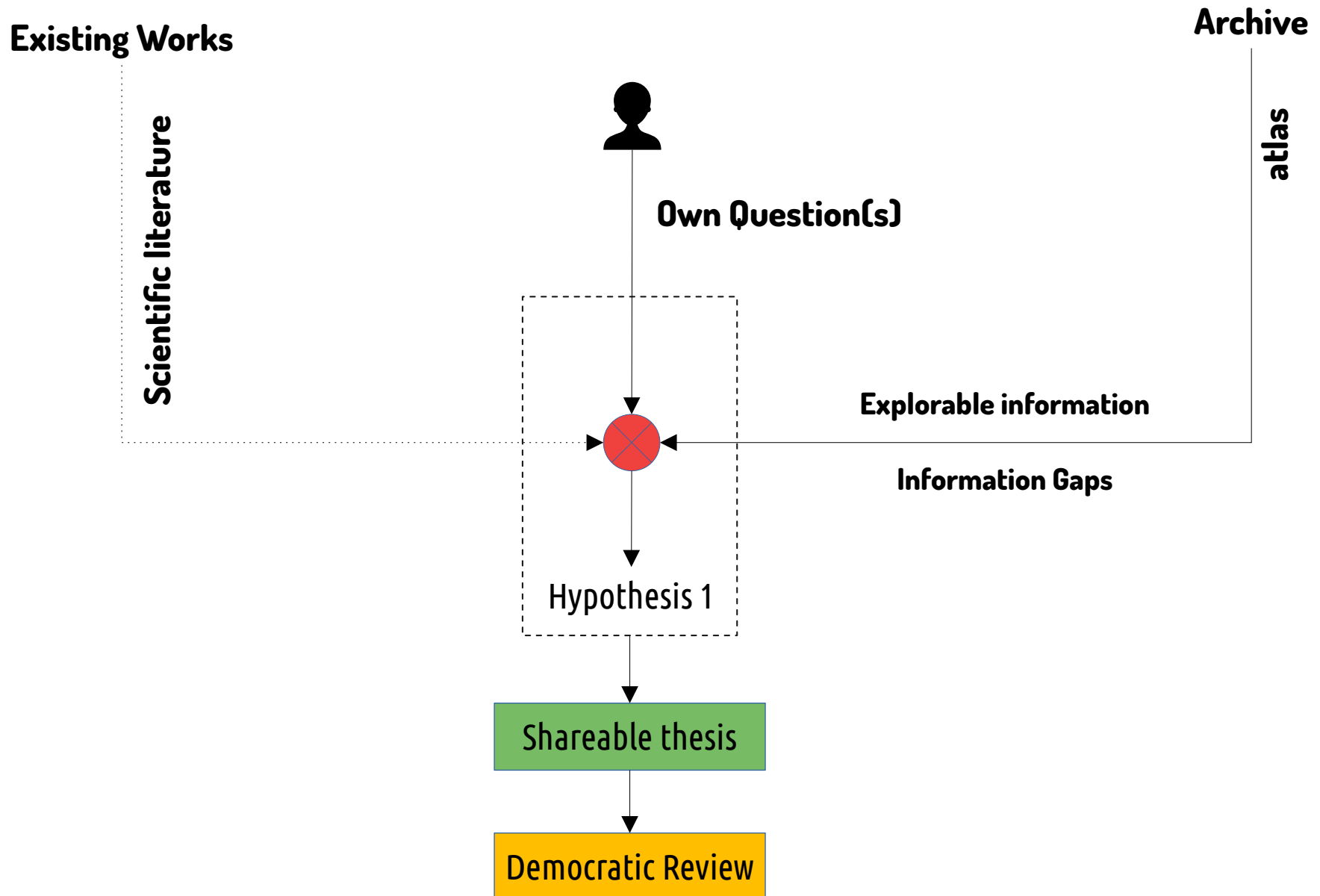
How would people approach it ?



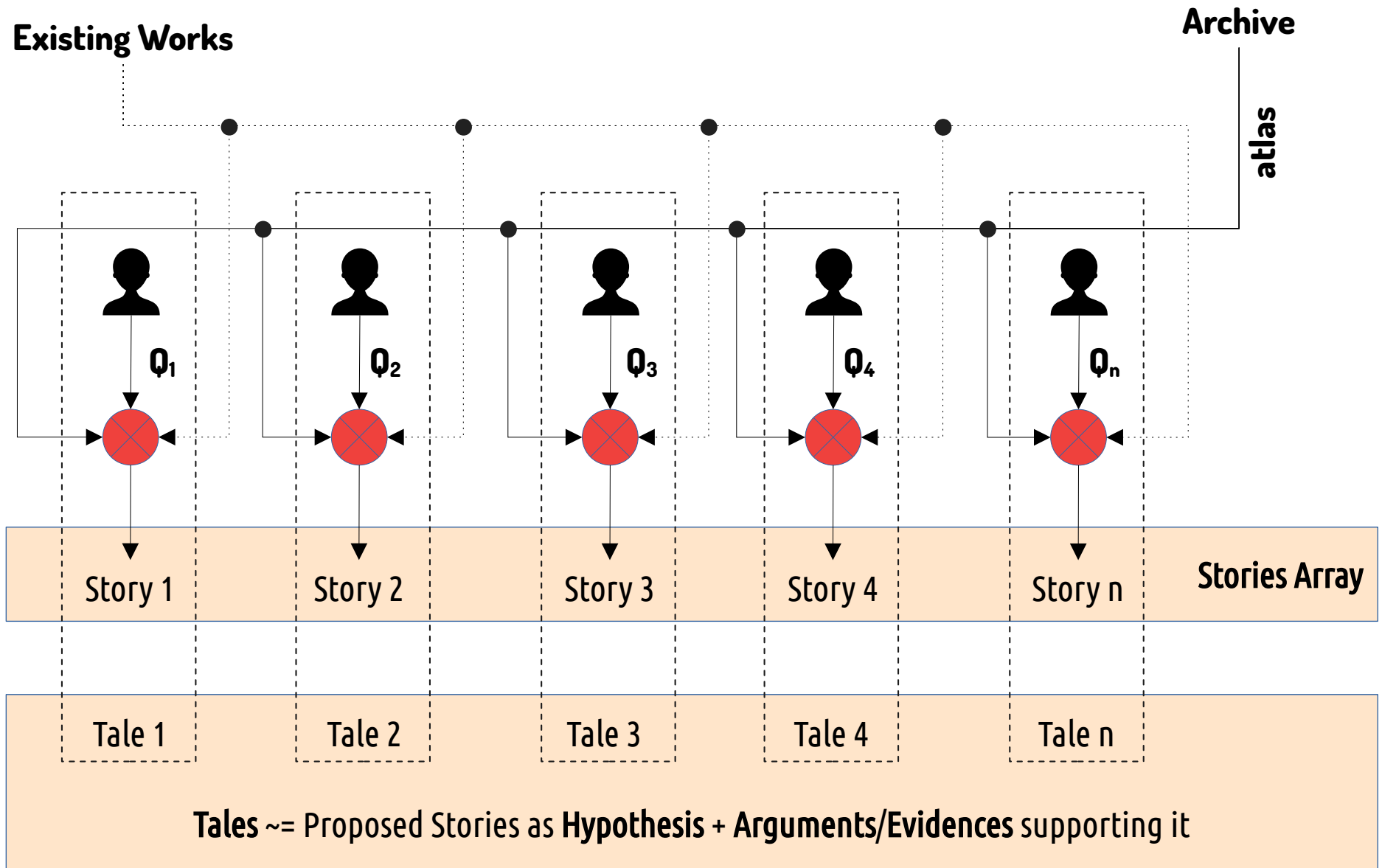
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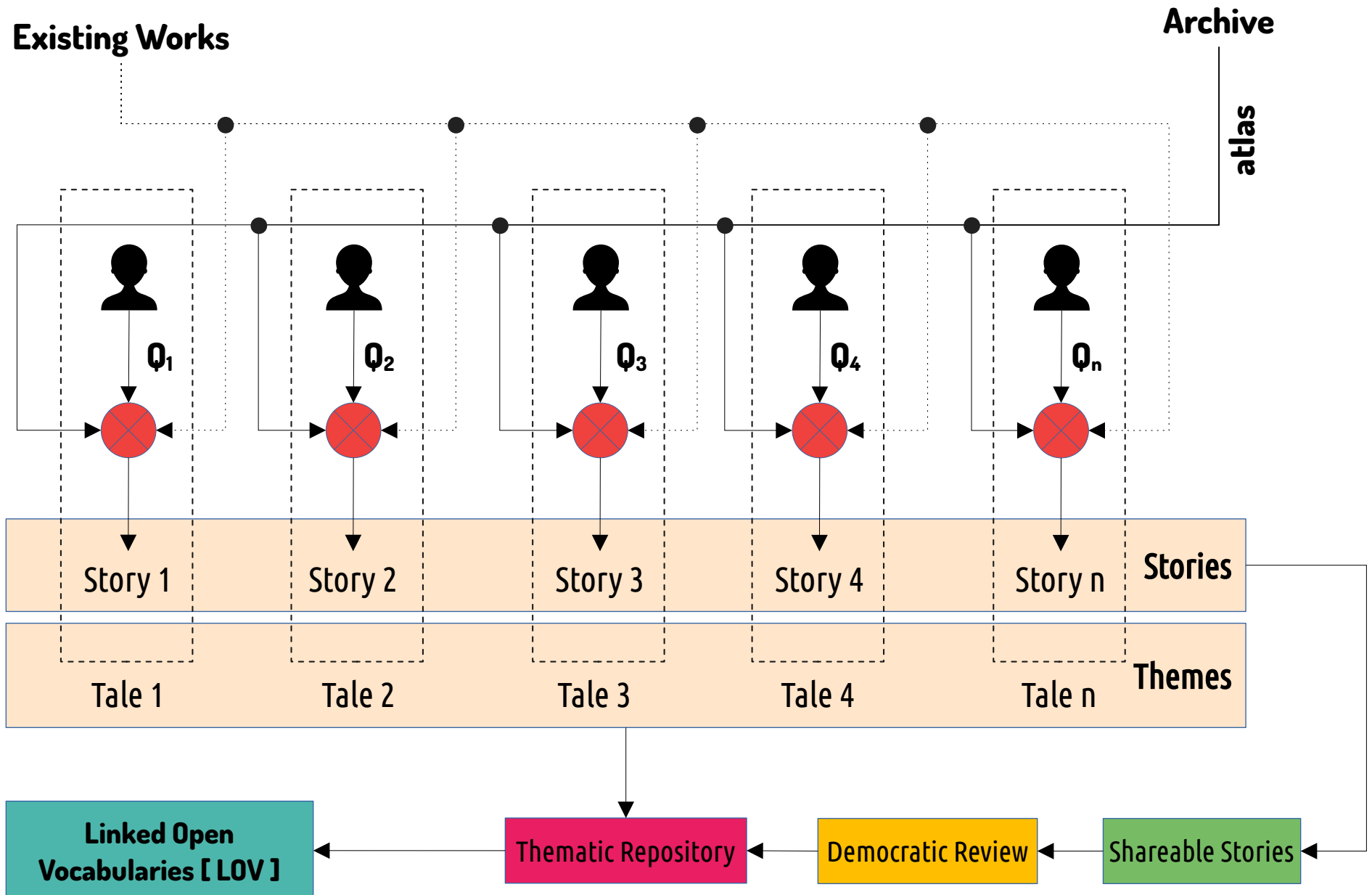
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is collaboration possible ?



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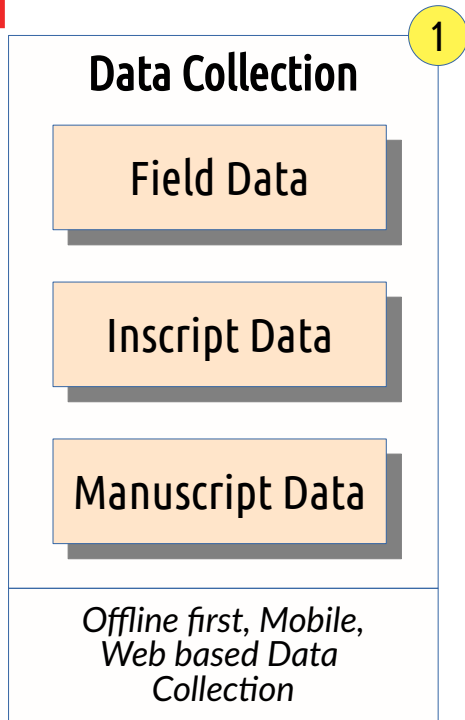




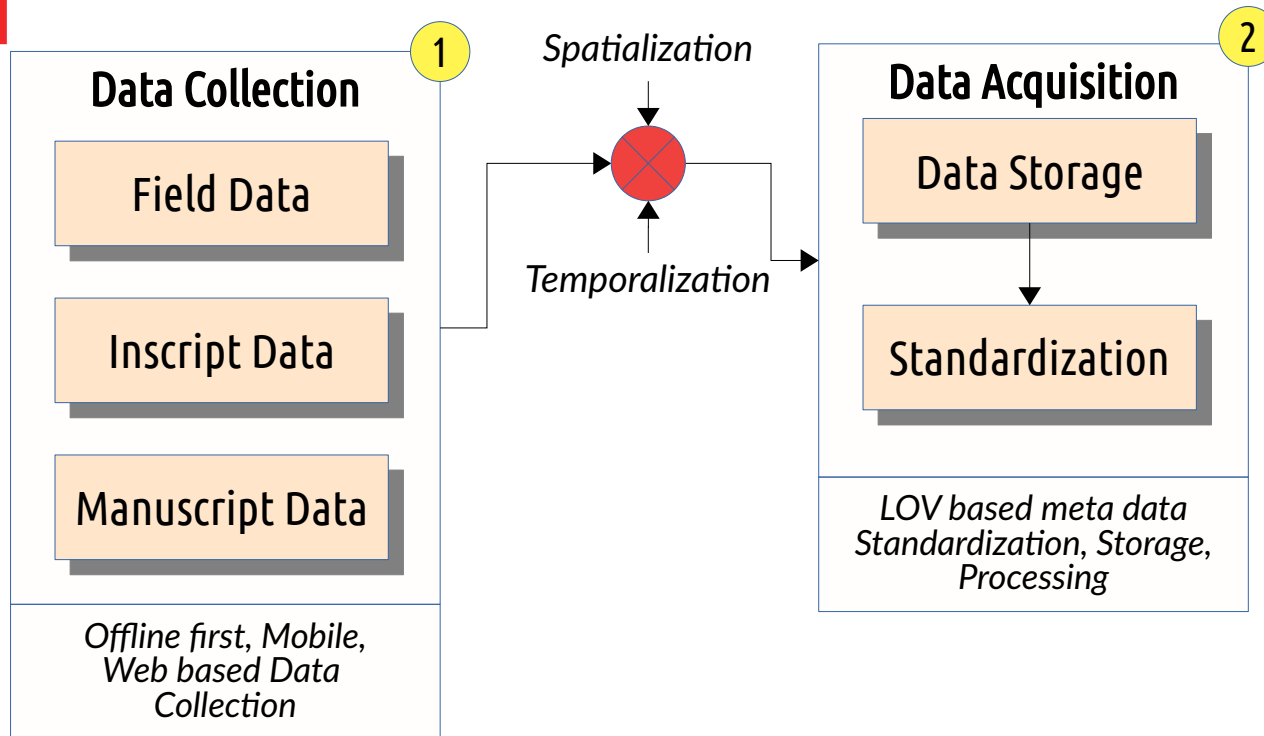
Part 0 – Systems Design

[for architects, designers, developers]

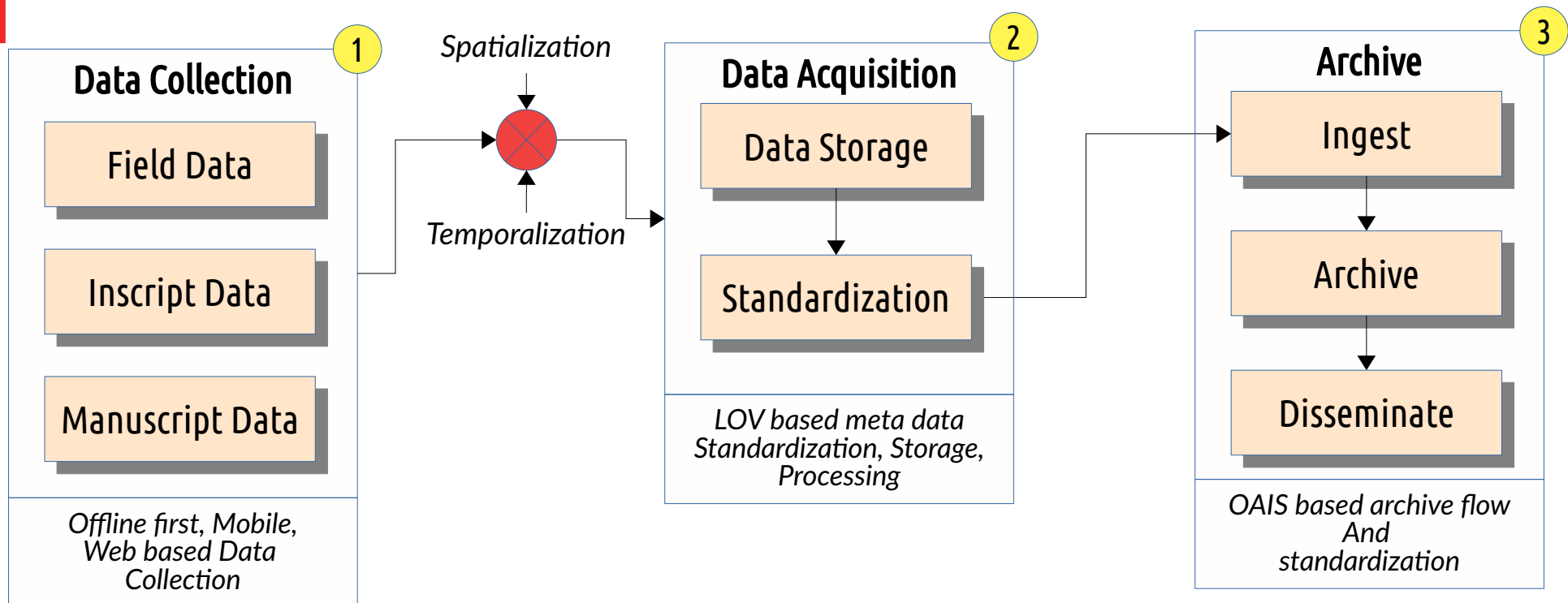
System Integration



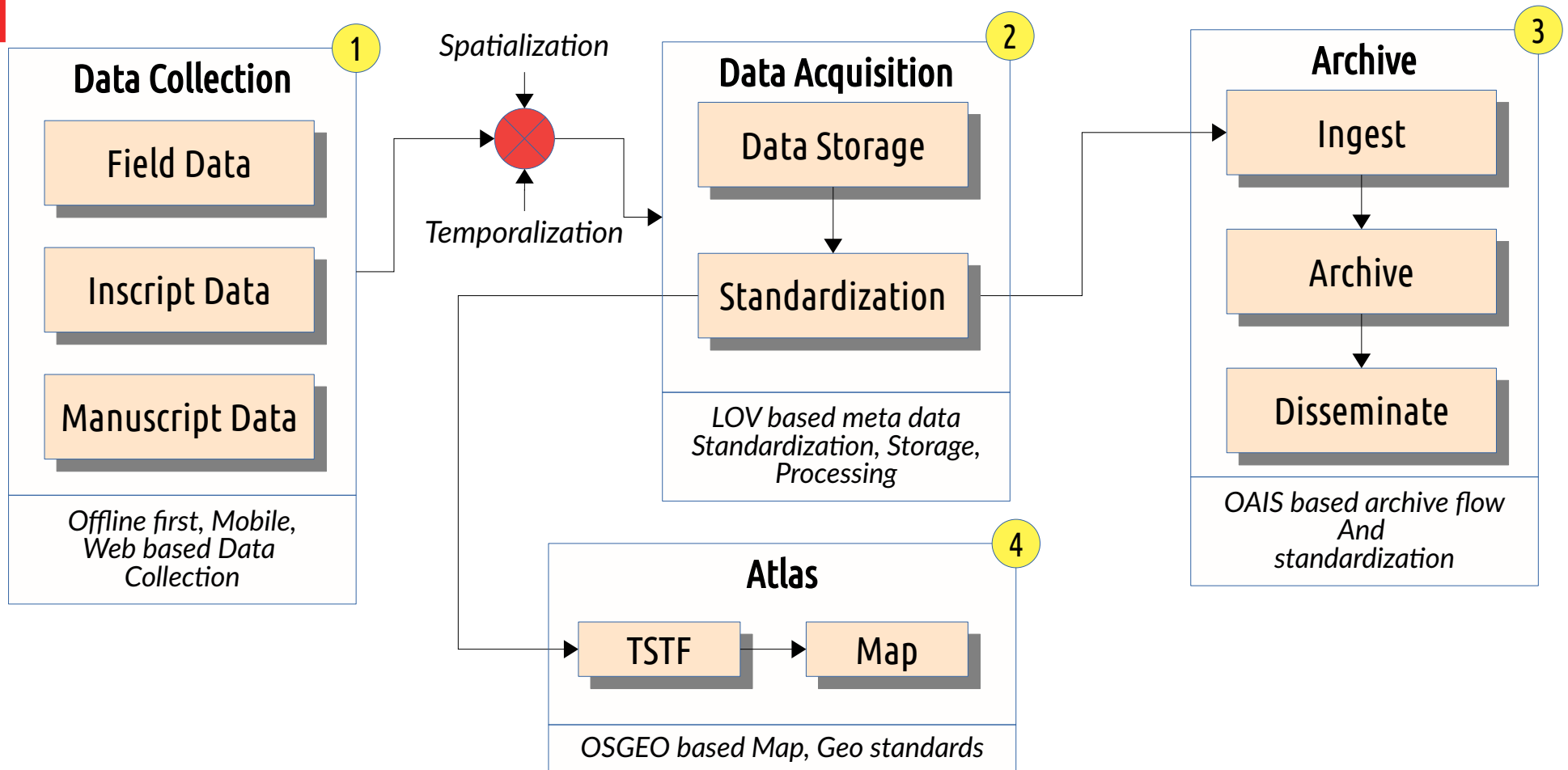
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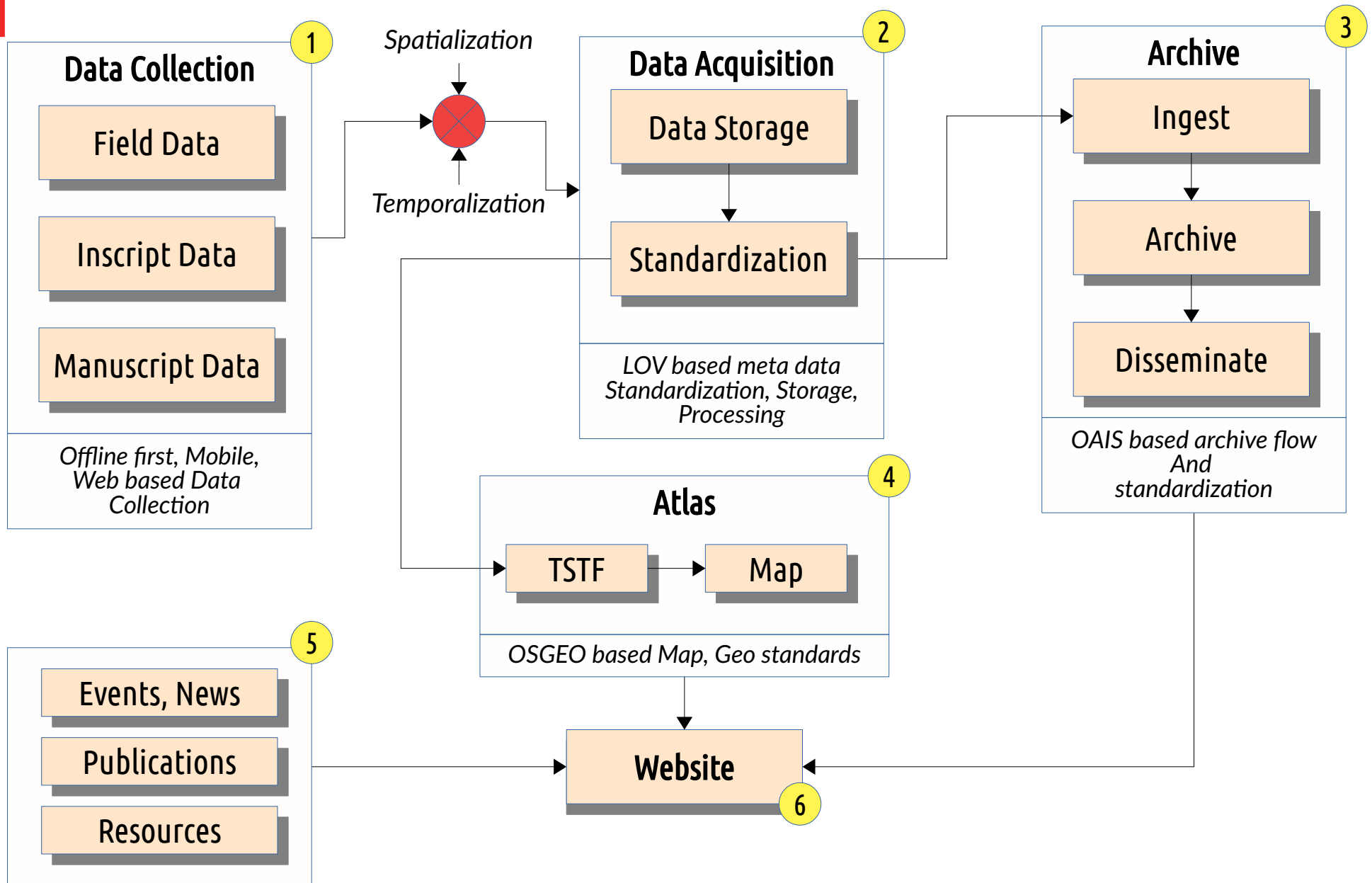
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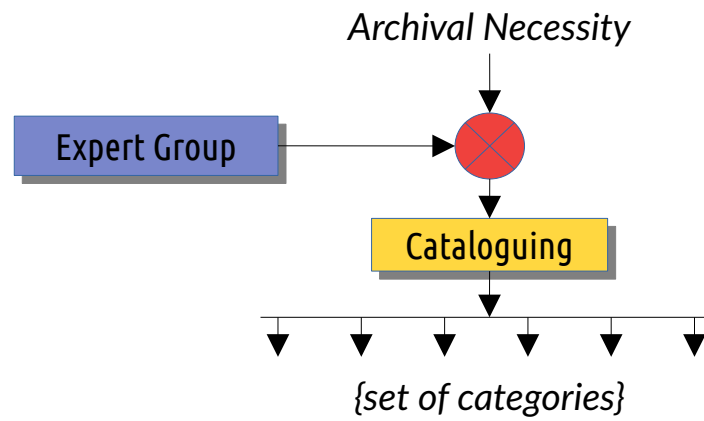


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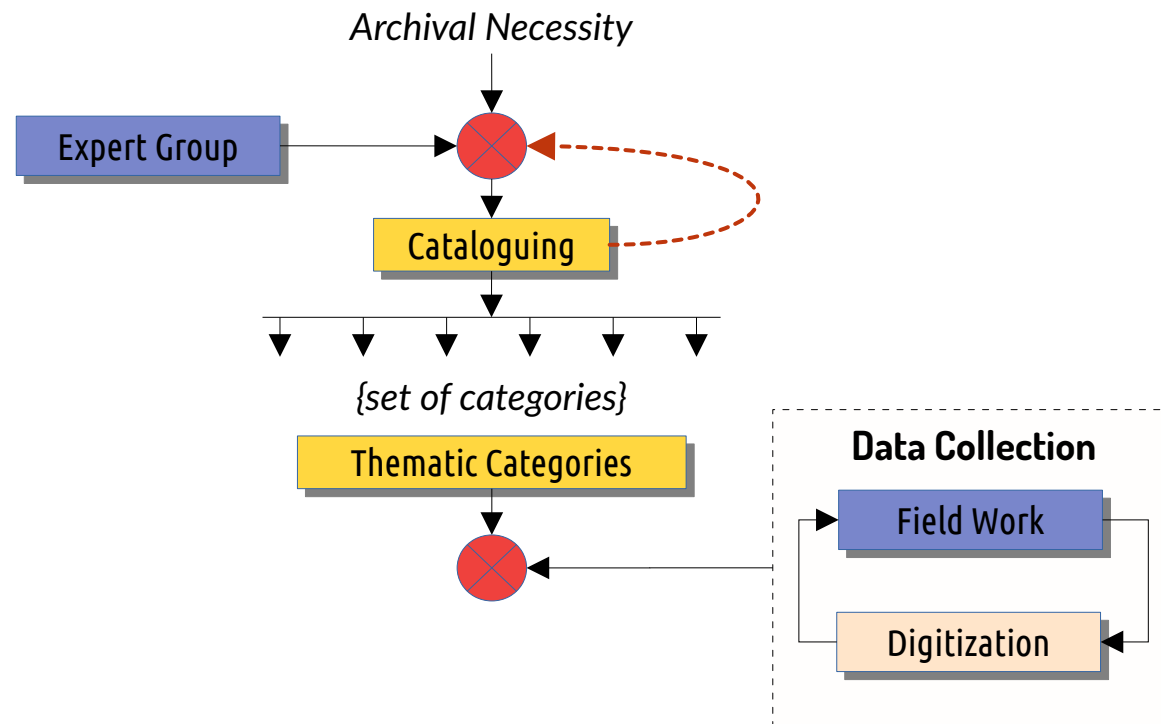
Workflow Integration

STAGE 1



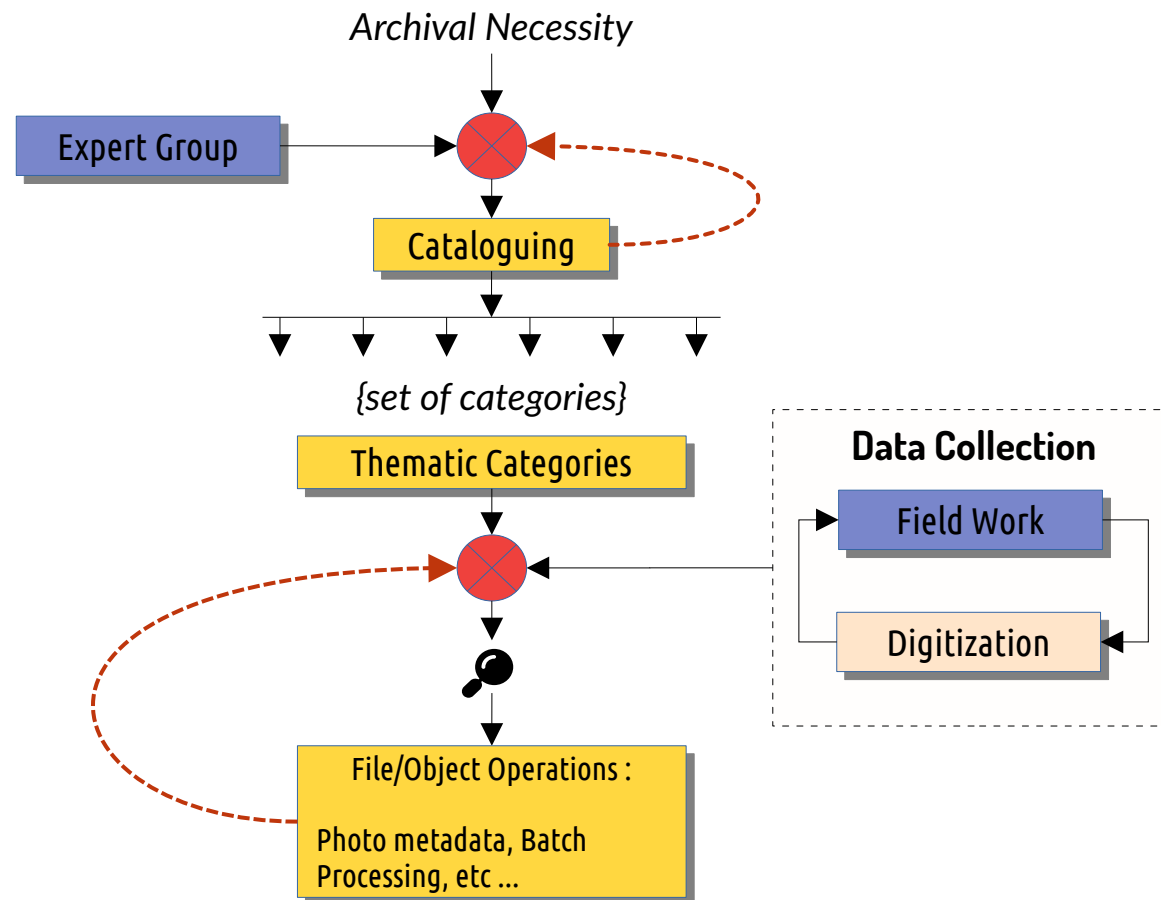
Workflow Integration

STAGE 1
STAGE 2



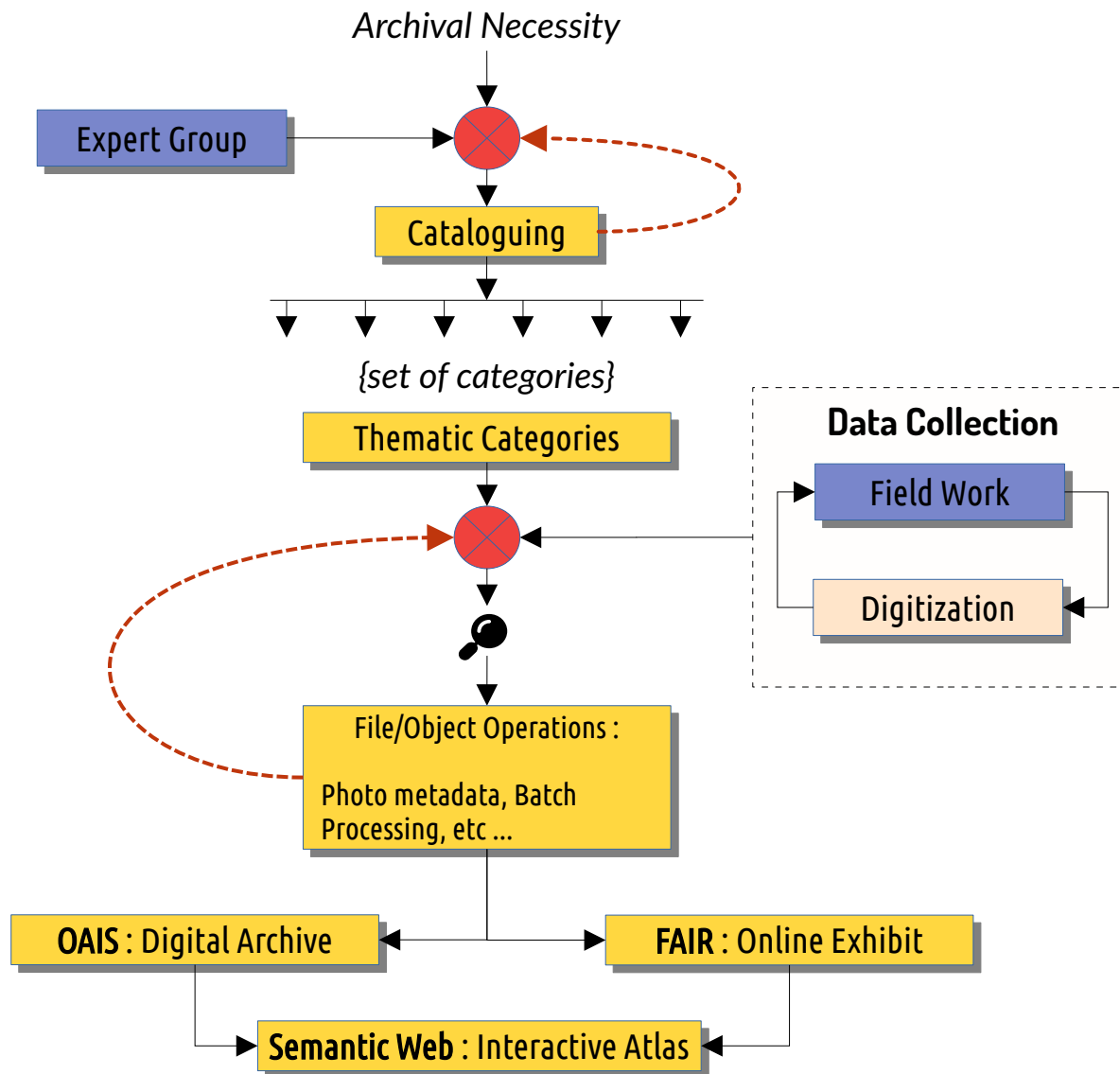
Workflow Integration

STAGE 1
STAGE 2
STAGE 3

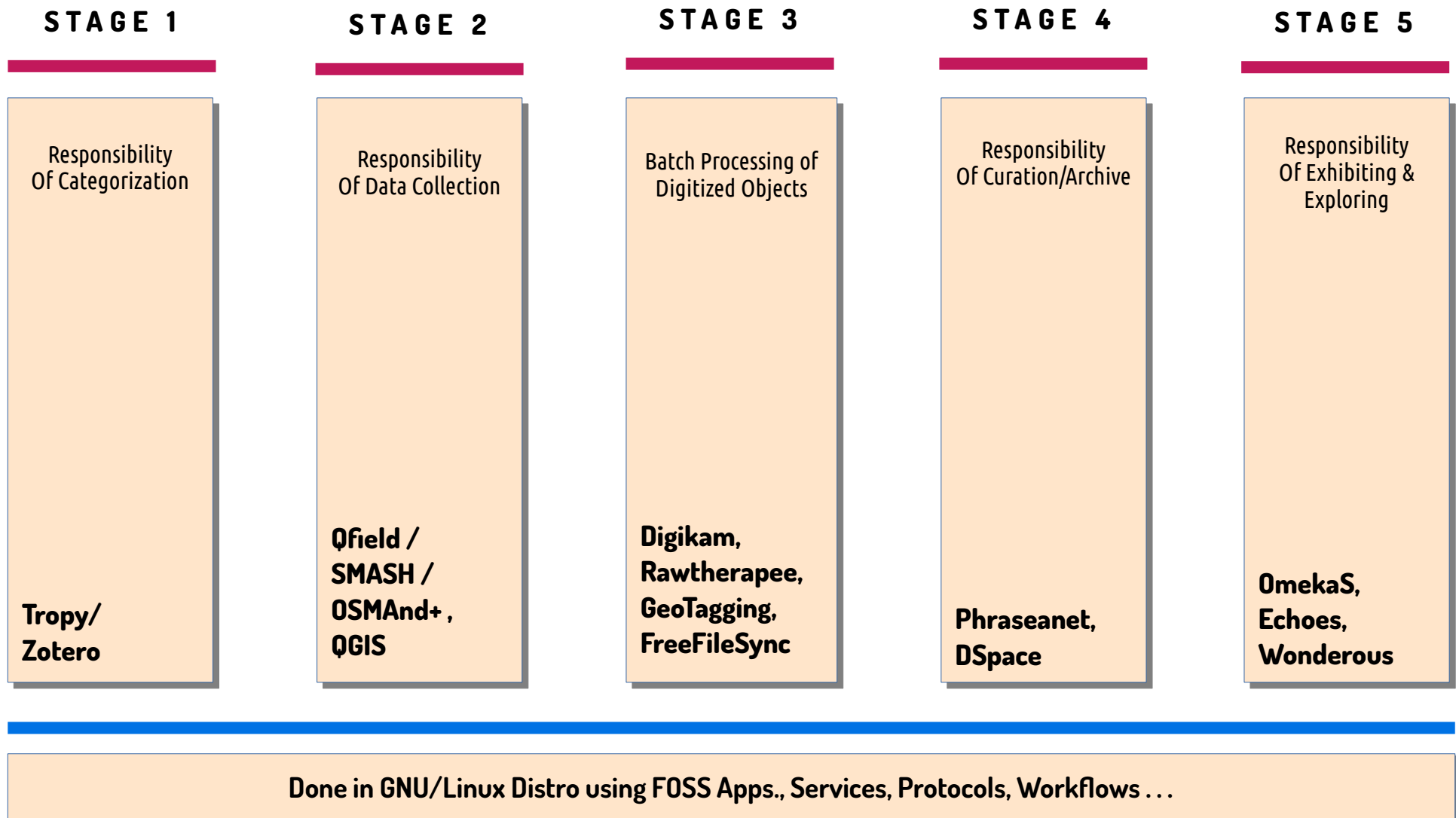


Workflow Integration

STAGE 1
STAGE 2
STAGE 3
STAGE 4,5



FOSS Tool chain in the Workflow

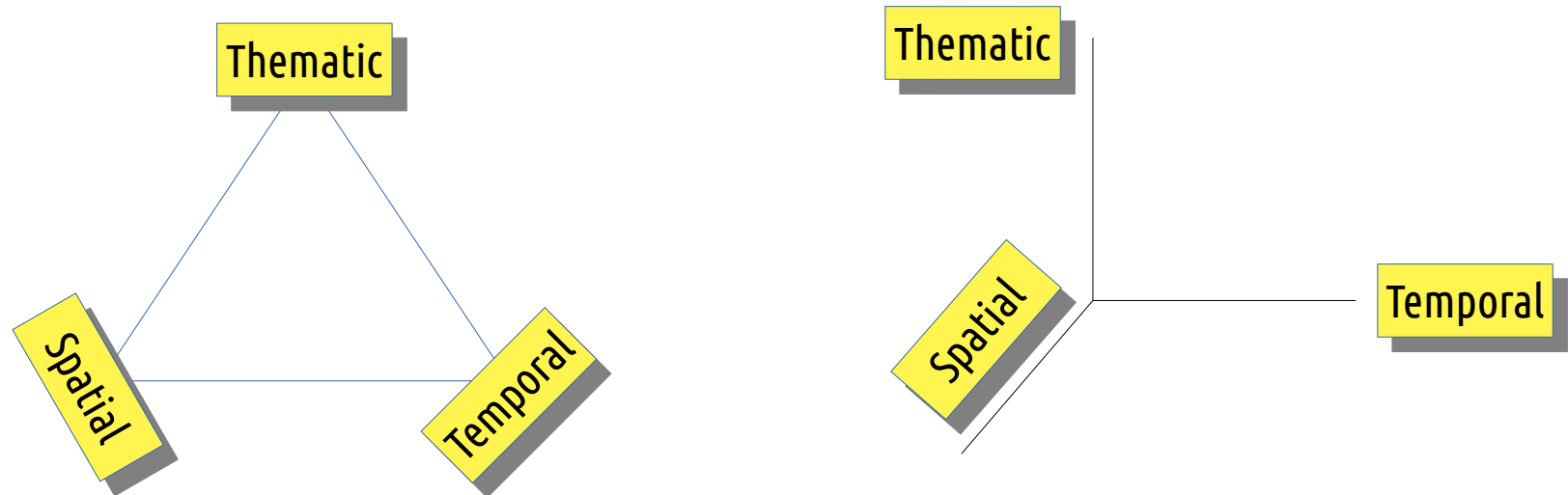




Part 1 - Atlas Demonstration

Development strategy of Historical Atlas

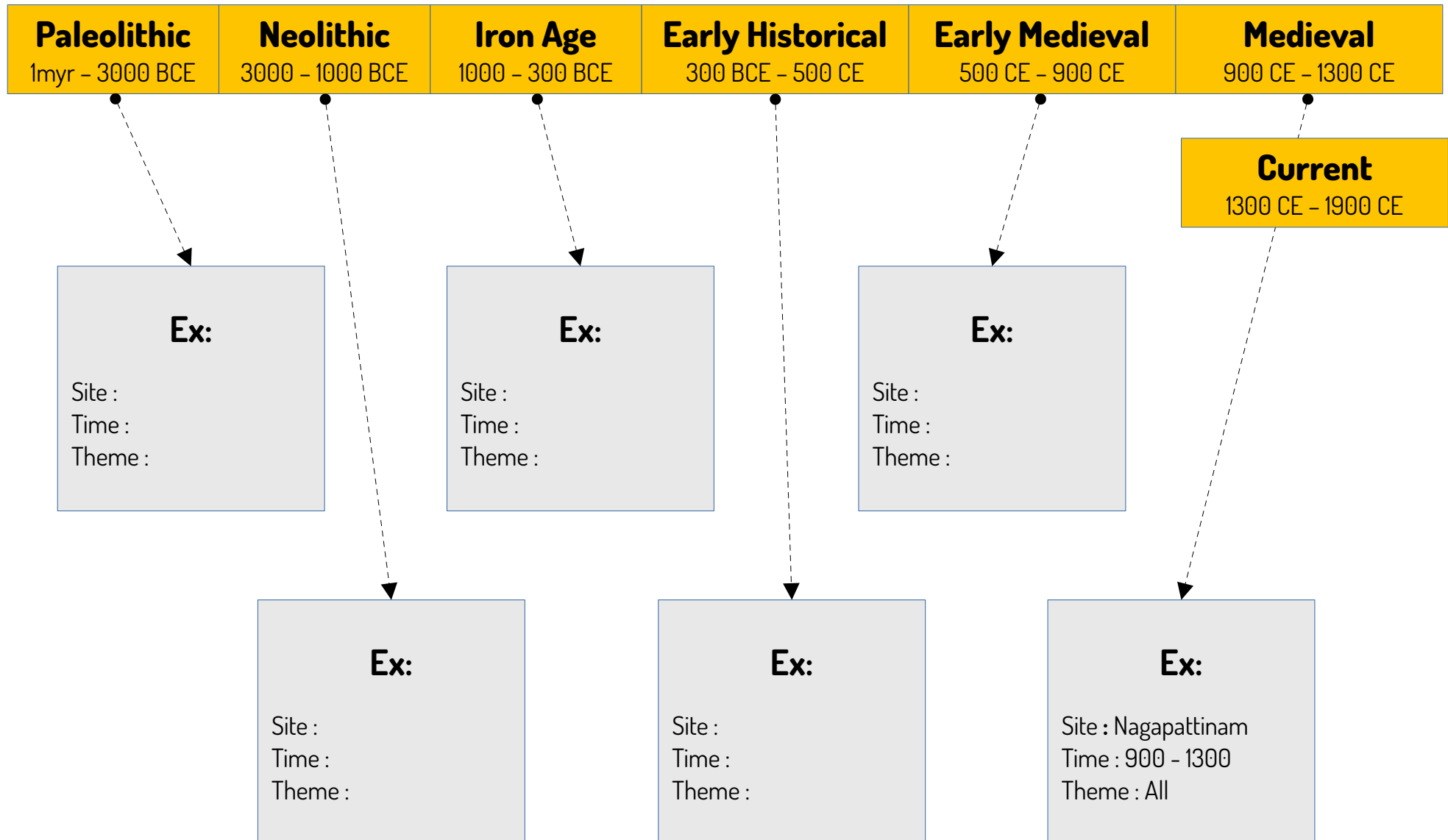
- Embeds an highly interactive timeline [temporal/chronological feature]
- Responsive data flow between Space as well as Temporal components
- Atlas exploration must lead to access of the archived information
- Seamless Cross filtering is challenging because :
 - Fuzzy nature of archeological information (accurate but need not precise)
 - Different data structures used in earlier version of atlas, not compatible to open standards
 - No clear Metadata vocabulary available to help standardize data collection



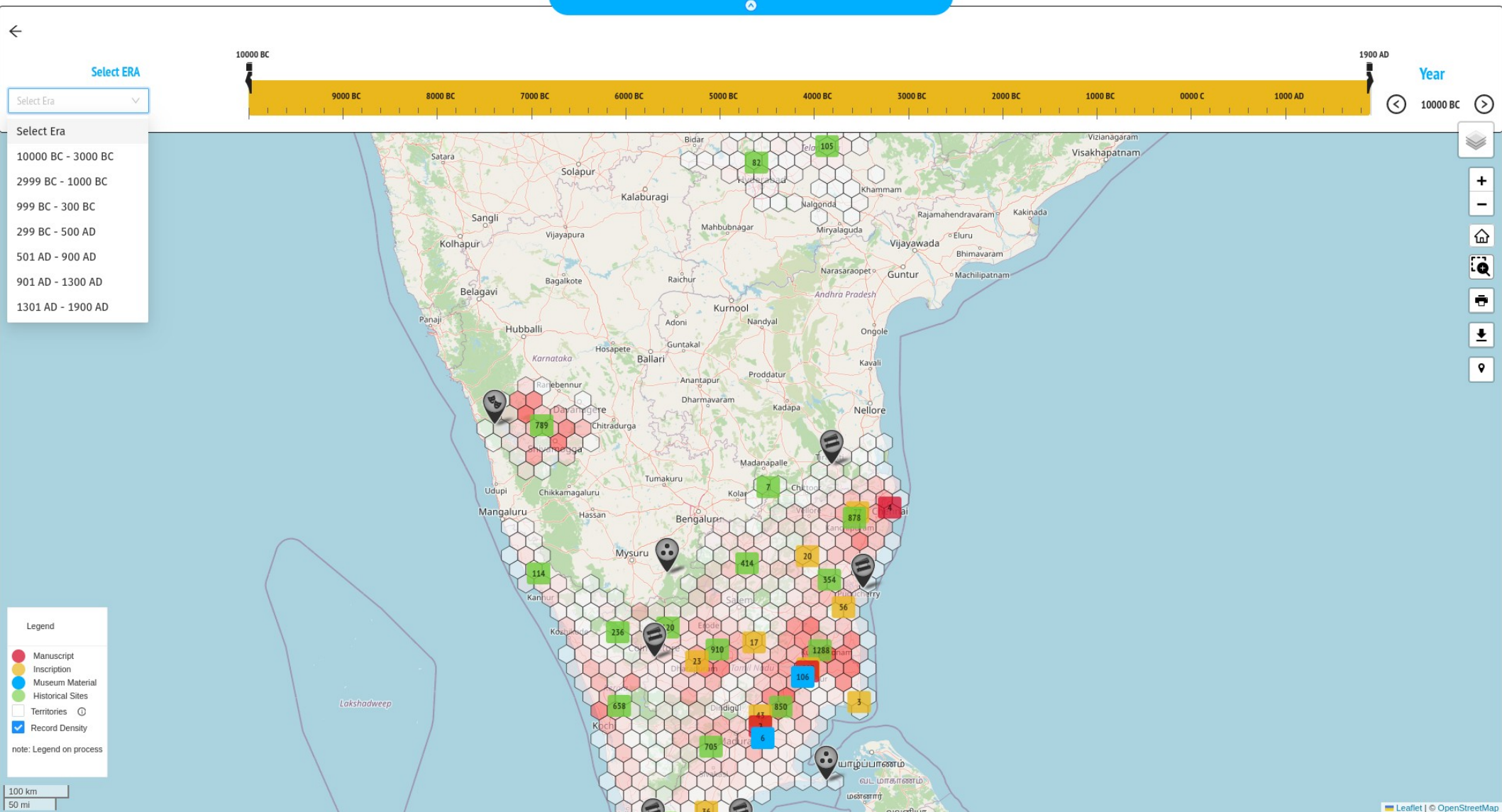
Knowledge base matching with TSTF

Knowledge base	TSTF System Parameters						
Theme (<i>Knowledge</i>)	Economic, Social, Cultural, Political						
Space (<i>Region of Interest</i>)	TamilNadu, Kerala, Karnataka, Andhrapradesh						
Metrology Data	District & Period	Linear Meas.	Volume Meas.	Weigh. Meas.	Time Meas.	Sl. Vol. Ref No.	Location
Temporal (<i>Timeline</i>)	Prehistoric, Historic						
	1myr – 3000 BCE	3000 – 1000 BCE	1000 – 300 CE	300 – 500 CE	500 – 900 CE	900 – 1300 CE	1300 – 1600 CE

Temporal Dimension

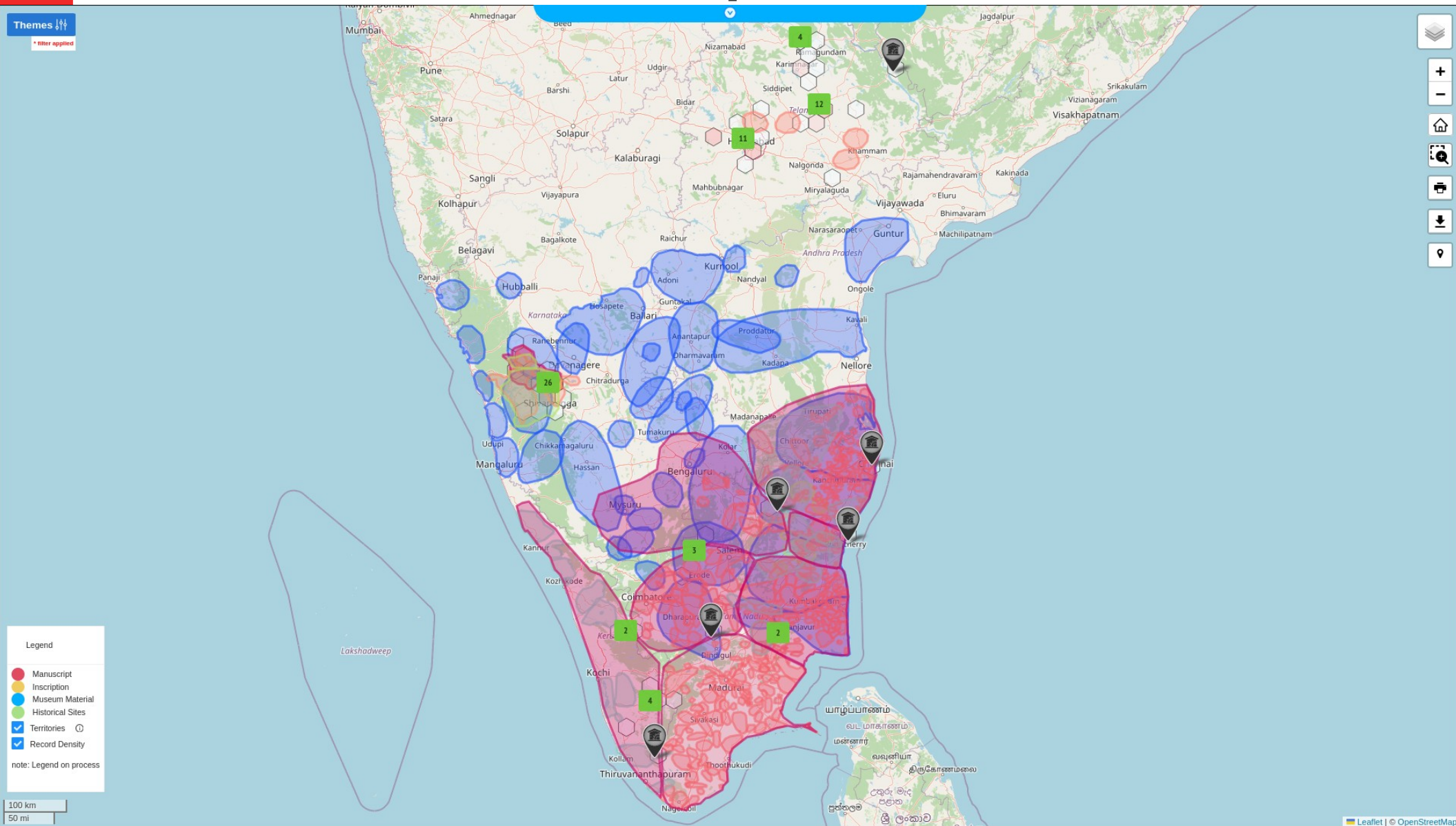


Visual Expression ...



URL: <https://echoes.ifpindia.org>

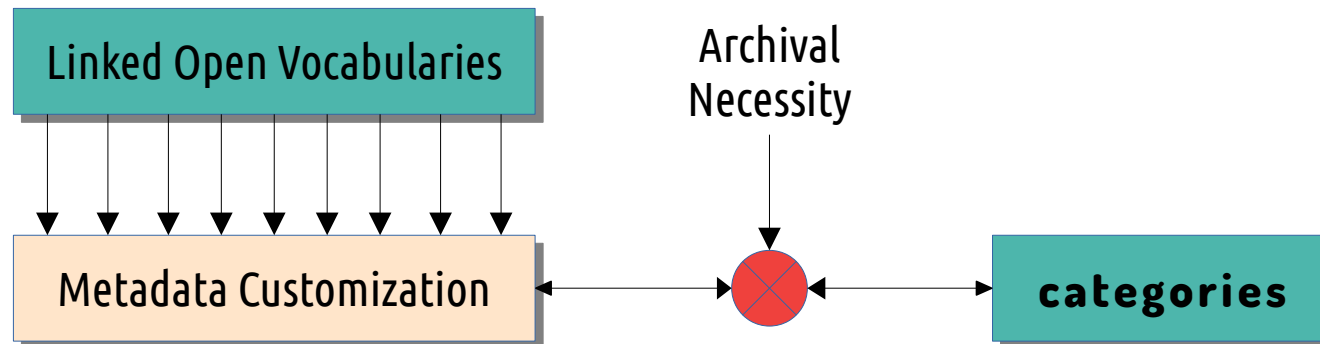
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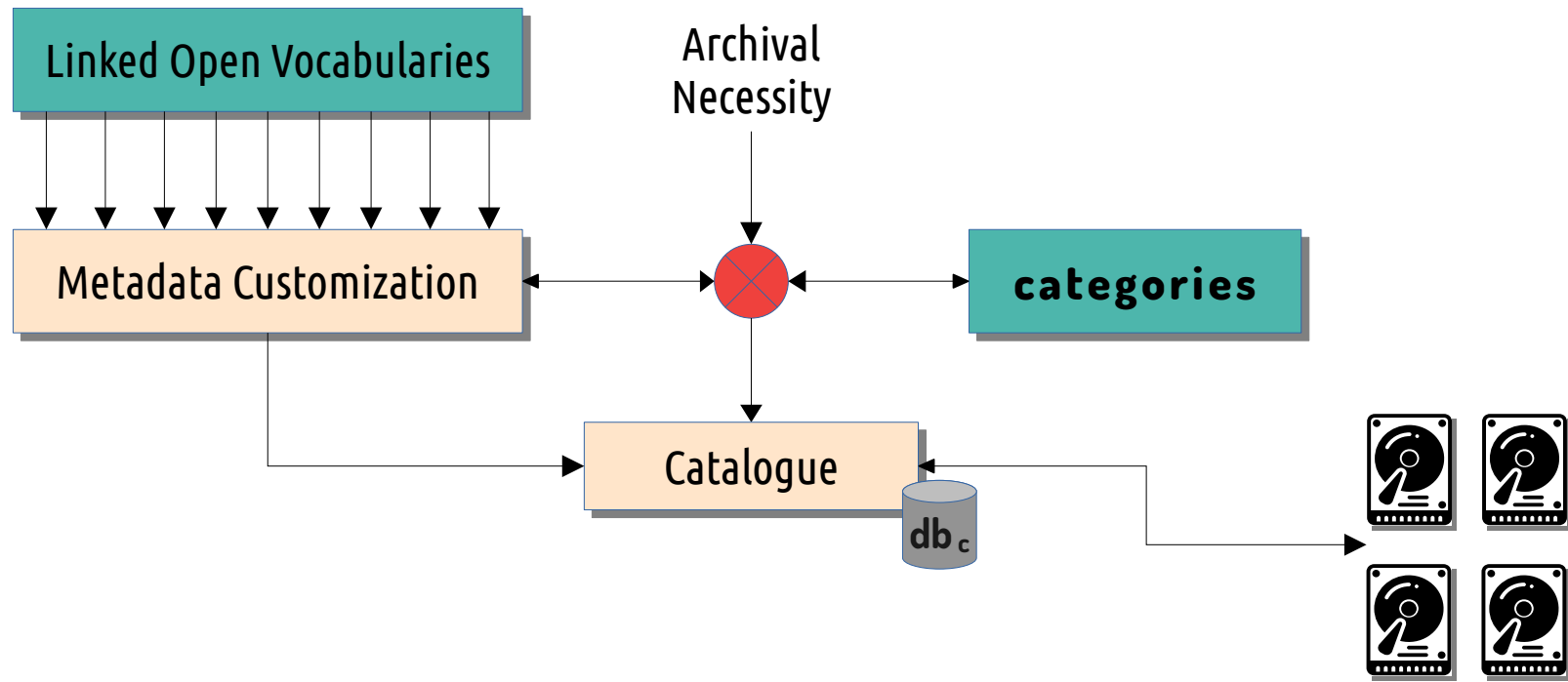


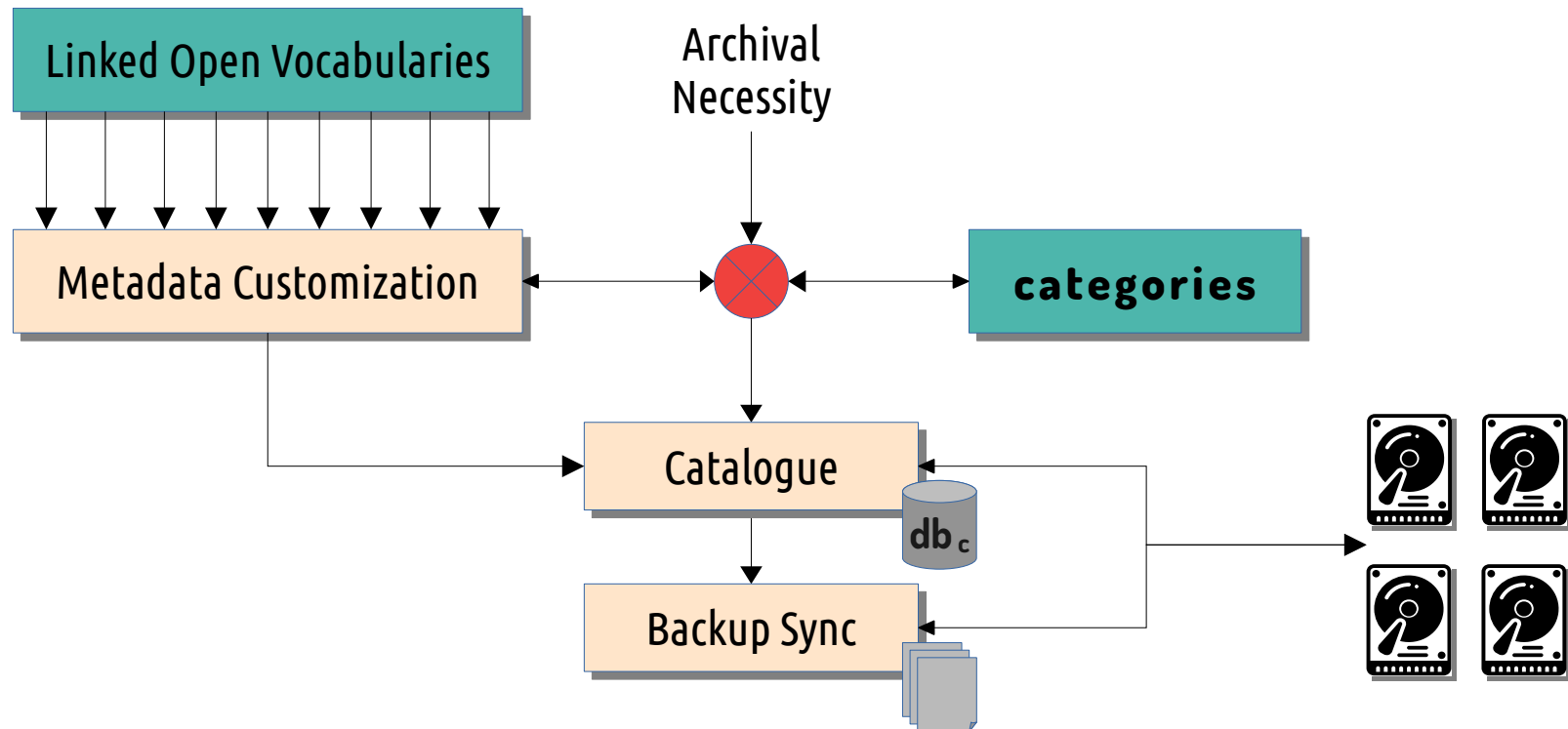
Part 2 - Open Archival Process

Meaningful - Cataloge, Archive, Exhibit

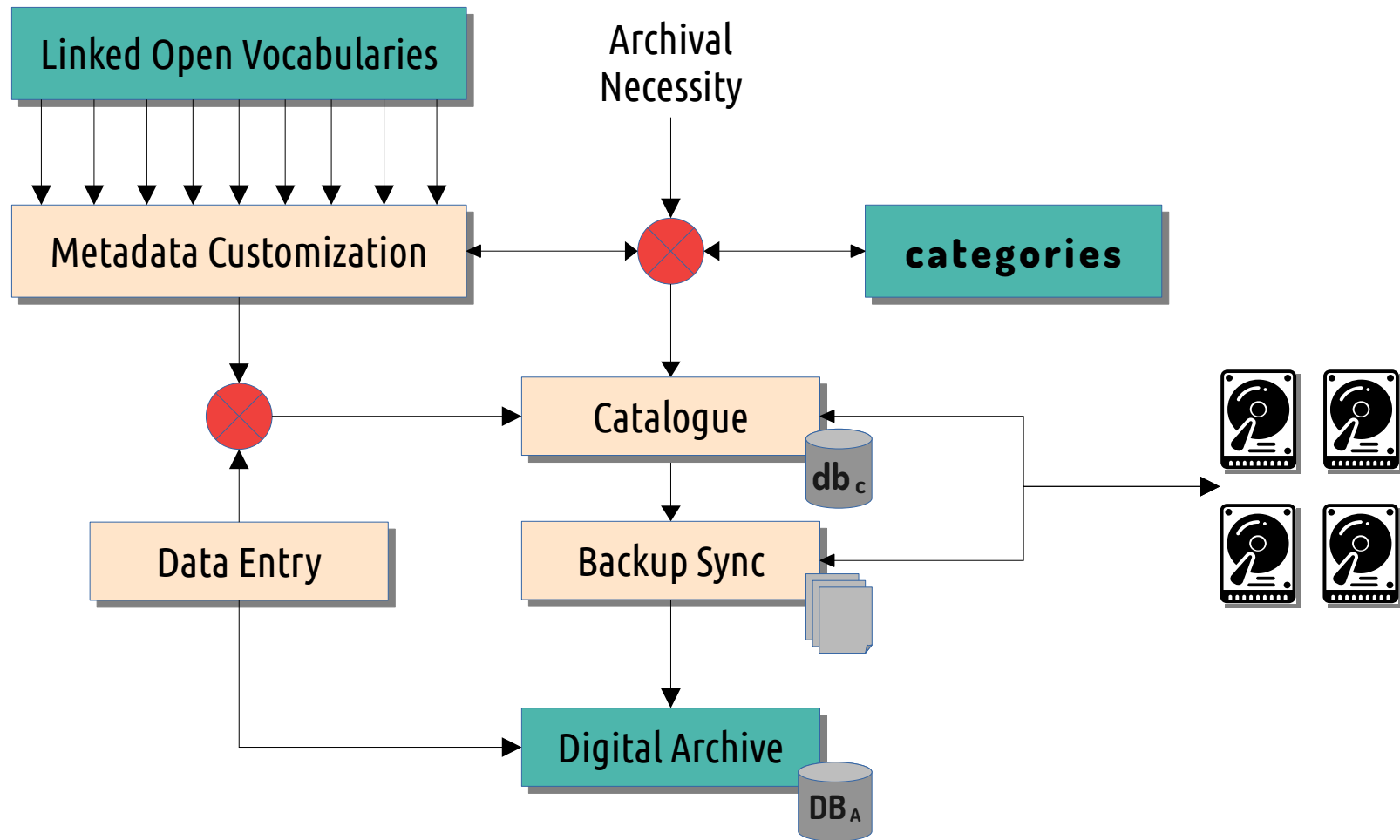


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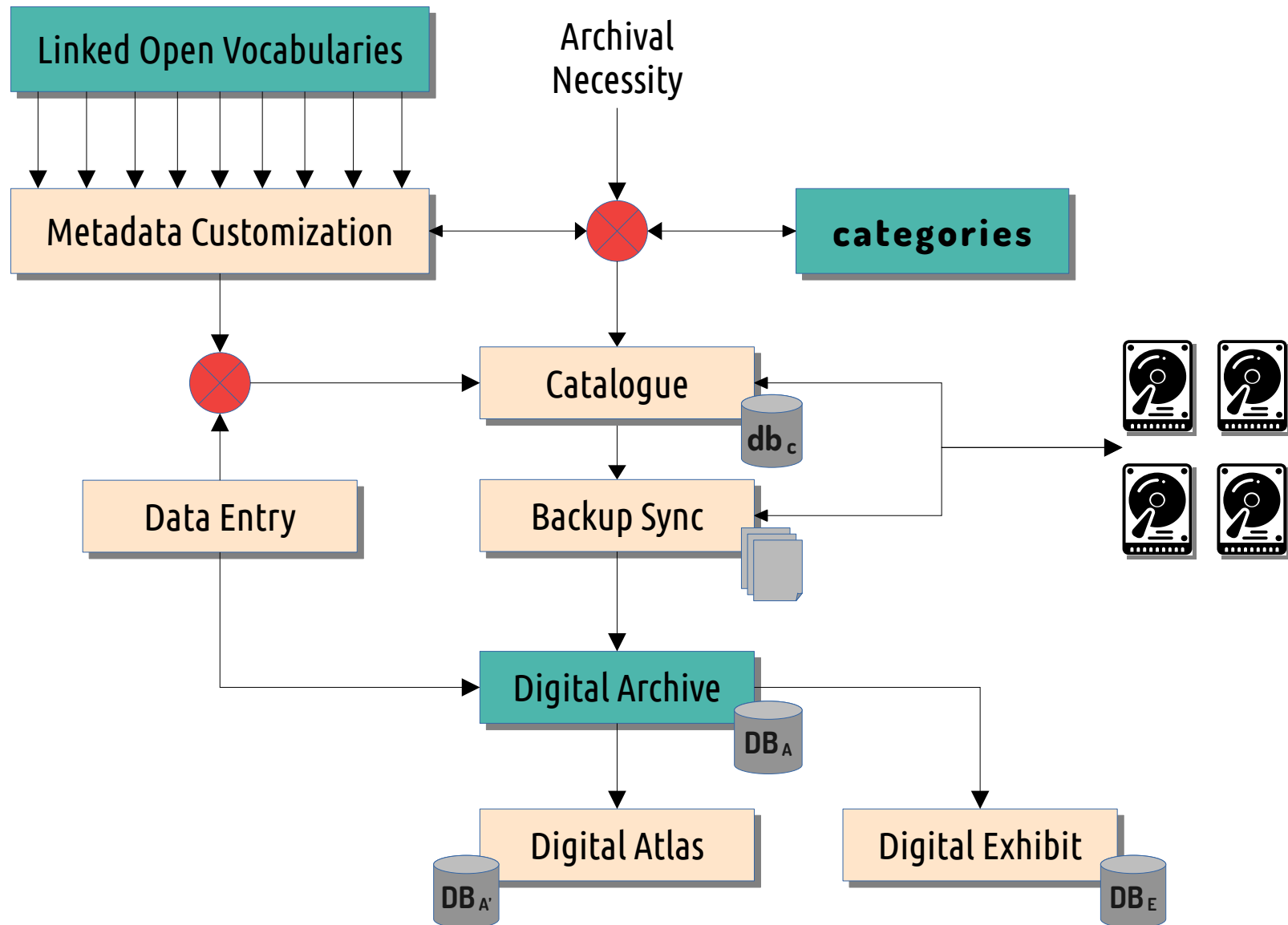




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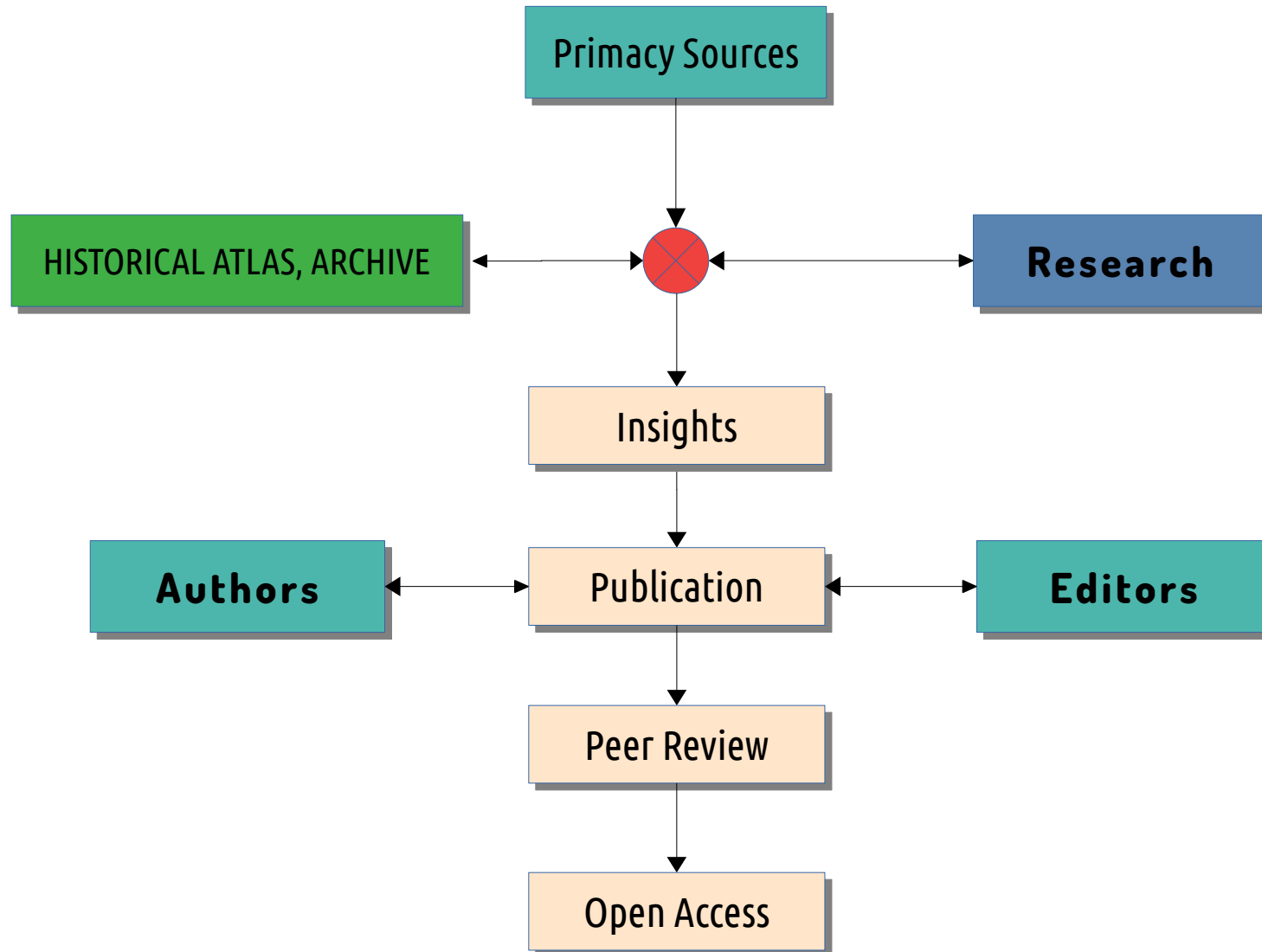
IDENTIFIED PROBLEM(S) – thus Roadmap

Problem	Pattern	Cause	Effect
Ontology	No commonly agreeable semantic relationship	Lack of building Concordance with respect to Context	Arbitrariness in Information structuring
Information Architecture	Architecture of information from data structure is left to Developer	Contextual metadata schema/ontology not provided by the Archival consortiums	No interoperability between information repositories
III Interoperability	Unnecessary redundancies, copies, held without connecting to anything meaningful	Not understanding the importance of commonly agreeable set of metadata authoring	Repositories cannot share database, even when they have same/similar records
III Semantics	User cannot figure out the relationship between themes, materials, sources, etc..	No agreement between architecture, ontology, database schema, metadata authoring	Archives end up becoming catalogues of disconnected entities, adding more effort to infer relations

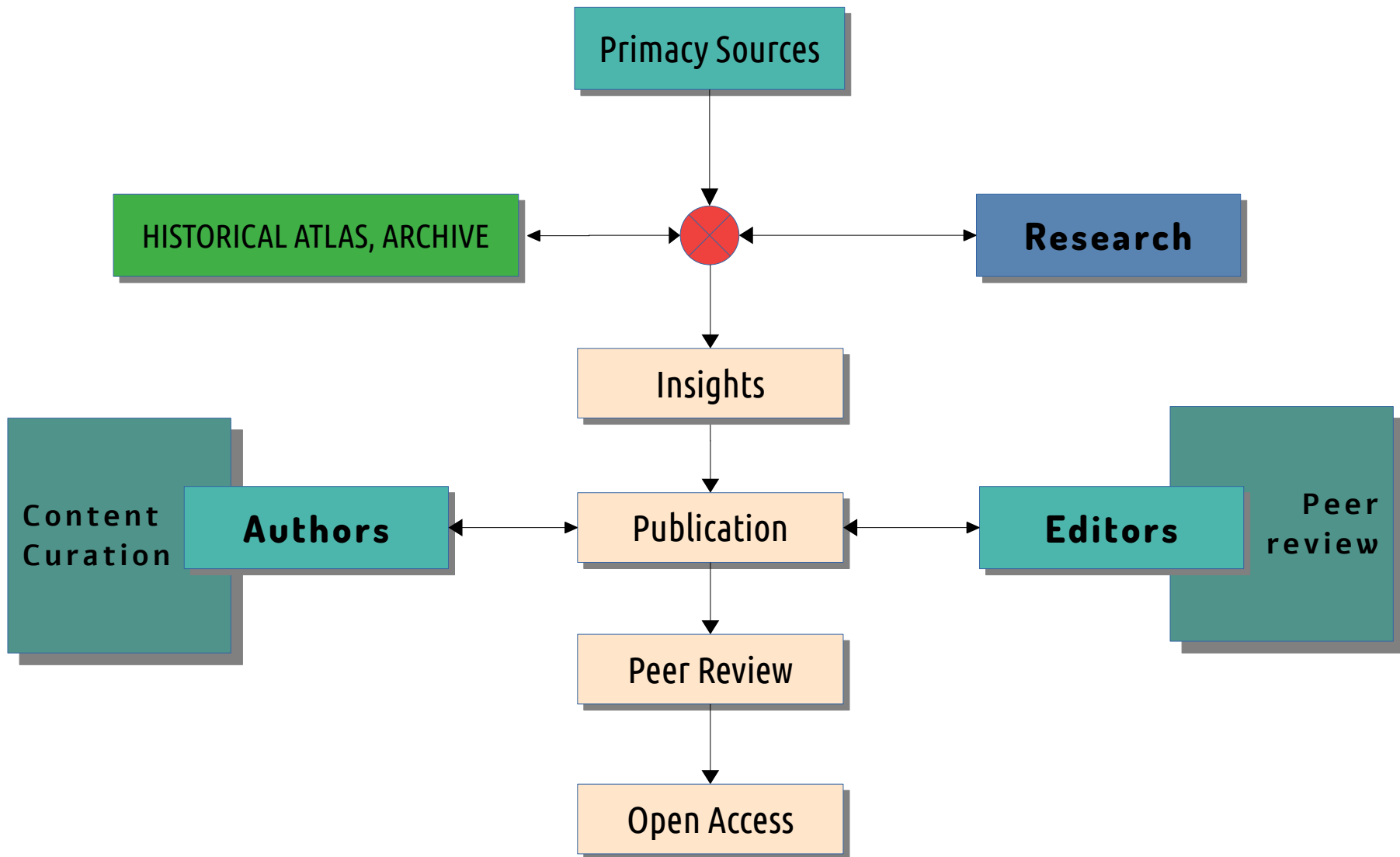


Part 3 – Open Access Publication

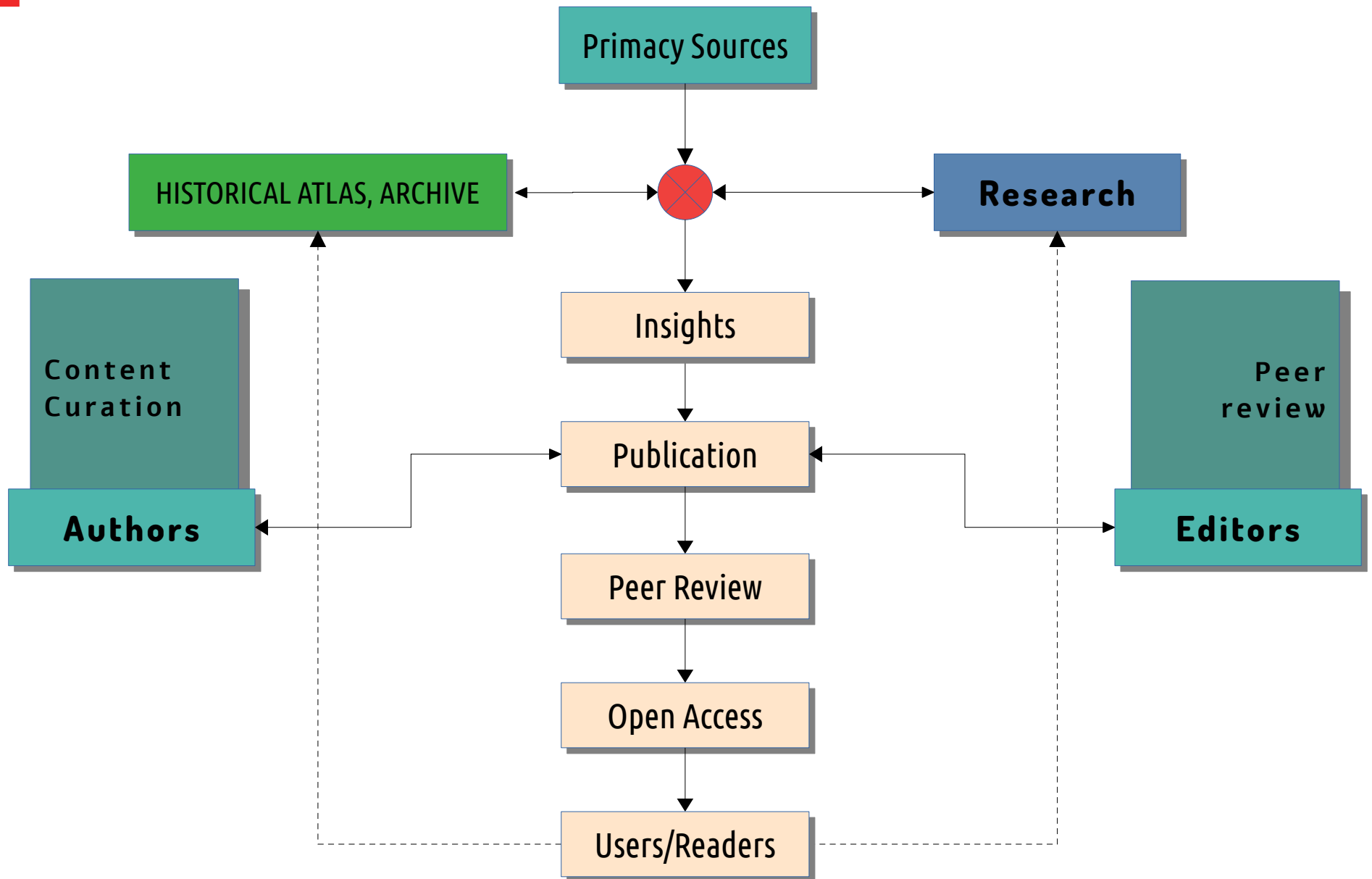
From Sources, to Insights to Dissemination



From Sources, to Insights to Dissemination



From Sources, to Insights to Dissemination



Roadmap

- So far, complete integration for seam less data flow and information dissemination are semi-manually handled.
- FOSS based android survey tools like : Qfield, SMASH are being tested out, but require more rigorous training for the field work.
- DBMS are yet to be standardized for service utilization. So far, each data table are in their own floating space.
- The project nature, demands technology development to be in parallel and thus integration will be time demanding but reliably achieved.
- Archive will be made sensitive to the context of the work & its diverse dimensions.



Viluppuram
GNU/Linux Users
Group



Free Software &
Hardware
Movement



Coopon SciTech
LLP



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For Any Feedback !



Roadmap/Call for

- Tools reliability and testing for workflow is done
- Curation of digitized objects through the workflow process is understood
- Digital Vocabulary and Glossary that provides **context** to public is yet to be done
- Diversity in material archiving through “language” channels are yet to be adapted by scholars interested in such collective work
- Need to find participation for Metadata annotation
- Call for FOSS community to contribute code for humanities
- Work is necessary in using standardized temporal classification scheme, codification, etc..
- Peer review, Story creation, Hypothesis sharing are required to engage with research and dissemination process
- Vision set to become one of the aiding tools for Humanities knowledge organization