"Academia 2.0"

a.k.a. Structured Commons

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Motivating impulses

Access

"My peer could not access that *published* article"

Bottlenecks

"Today's centralized repository is tomorrow's predatory capture"

Durability of citations

"Today's URL is tomorrow's 404"

Dawn of a new generation

"I fail to see how it is our job a scientists to keep publishers viable; in hindsight, no one believes we should have subsidised horse trainers and blacksmiths to compete with the rise of the automobile."–M. Verstraaten

The Internet is academia's automobile

But how should we use it?

"Academia 2.0" Overview

- Methods and protocols
- to organize registration, dissemination, filtering and preservation of academic scientific works
- using Internet-based distributed storage, open peer review, and open and automated filtering
- and an actionable and threshold-free transition path from the current ecosystem

"Academia 2.0"
Underlying methods

Principles:

Affordable

Suitable for modern digital objects

Open peer review

Reader-directed filtering

Reviewer recognition

Means:

Secure timestamping

Content-based addressing

Semantic web

Post-hoc citations

Academic publishing, a means to an end

Registration: Timely, Verifiable, Affordabl€

Dissemination: Timely, Affordabl€

Filtering: Accountable, Transparent, Effective

Preservation: Durable, Independent

State of the art

	Reg.			Diss.		Filt.			Pres.	
	T	V	A€	T	A€	Ac	Tr	E	D	I
Paper-supported conventional publishers	✗	✓	(✗)	✗	(✗)	✗	✗	?	✓	✓
Online-only publishers supported by subscriptions or APCs	✗	?	✗	✓	✗	✗	✗	?	?	✗
Unstructured **online** self-publishing (eg.blogs)	✓	✗	✓	✓	✓	✗	✓	✗	✗	✓
Public **online** institutional repositories (eg. arXiv)	✓	?	?	✓	✓	N/A			?	✗
New-gen OA journals + **open peer review** (eg theoj.org)	✓	?	?	✓	?	✓	✓	✓	N/A	
Public online institutional repositories + **open peer review**	✓	?	?	✓	✓	✓	✓	✓	?	✗

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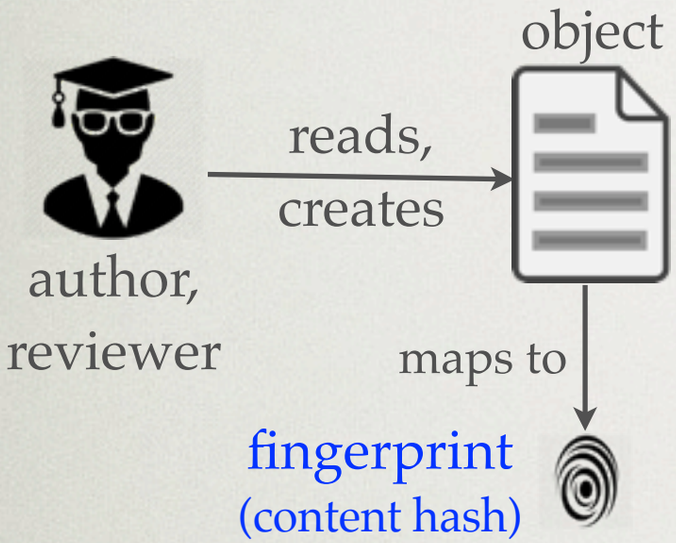
Public **online** institutional repositories (eg. arXiv)	✓	?	?	✓	✓		N/A		?	✗
New-gen OA journals + **open peer review** (eg theoj.org)	✓	?	?	✓	?	✓	✓	✓	N/A	
Public online institutional repositories + **open peer review**	✓	?	?	✓	✓	✓	✓	✓	?	✗

Structured Commons: interactions



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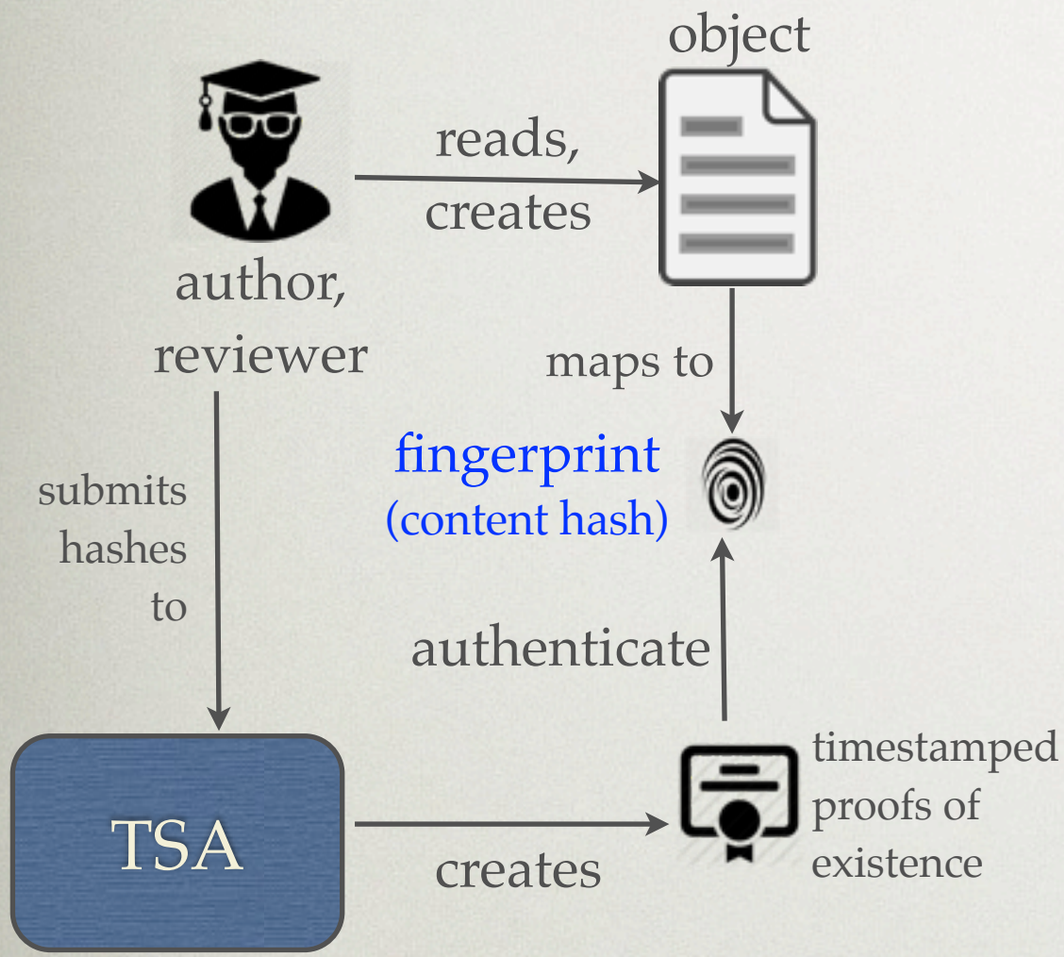

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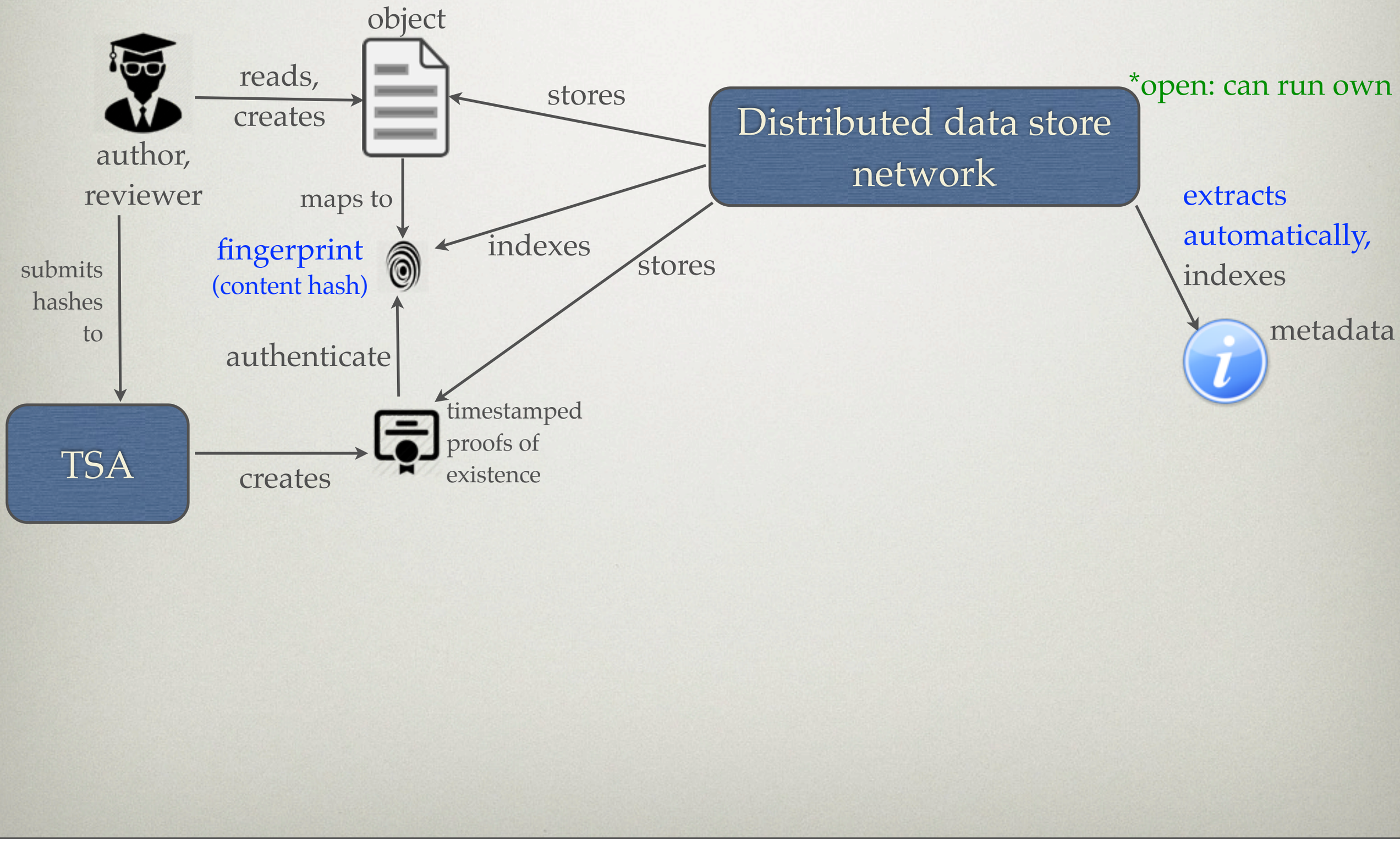

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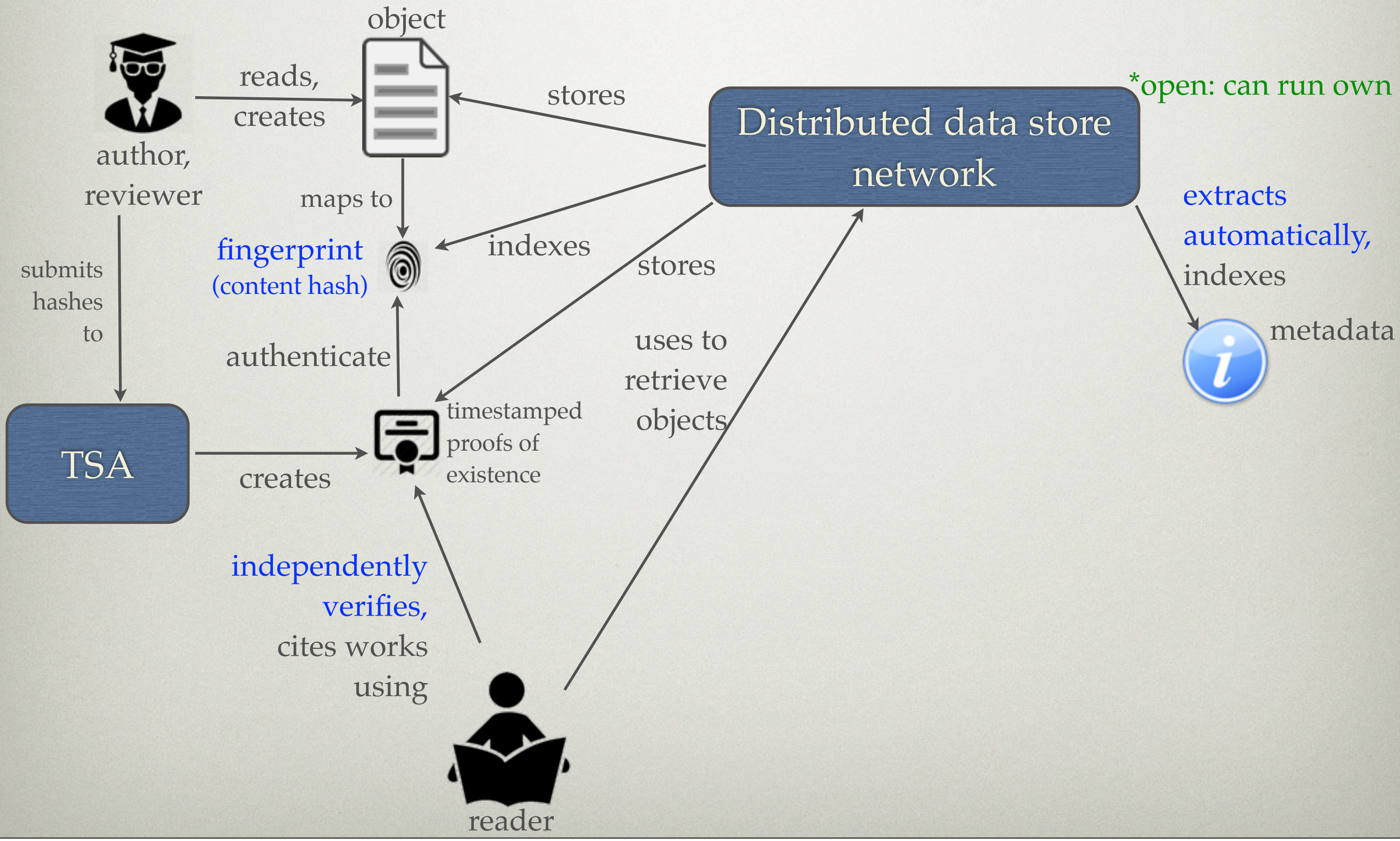

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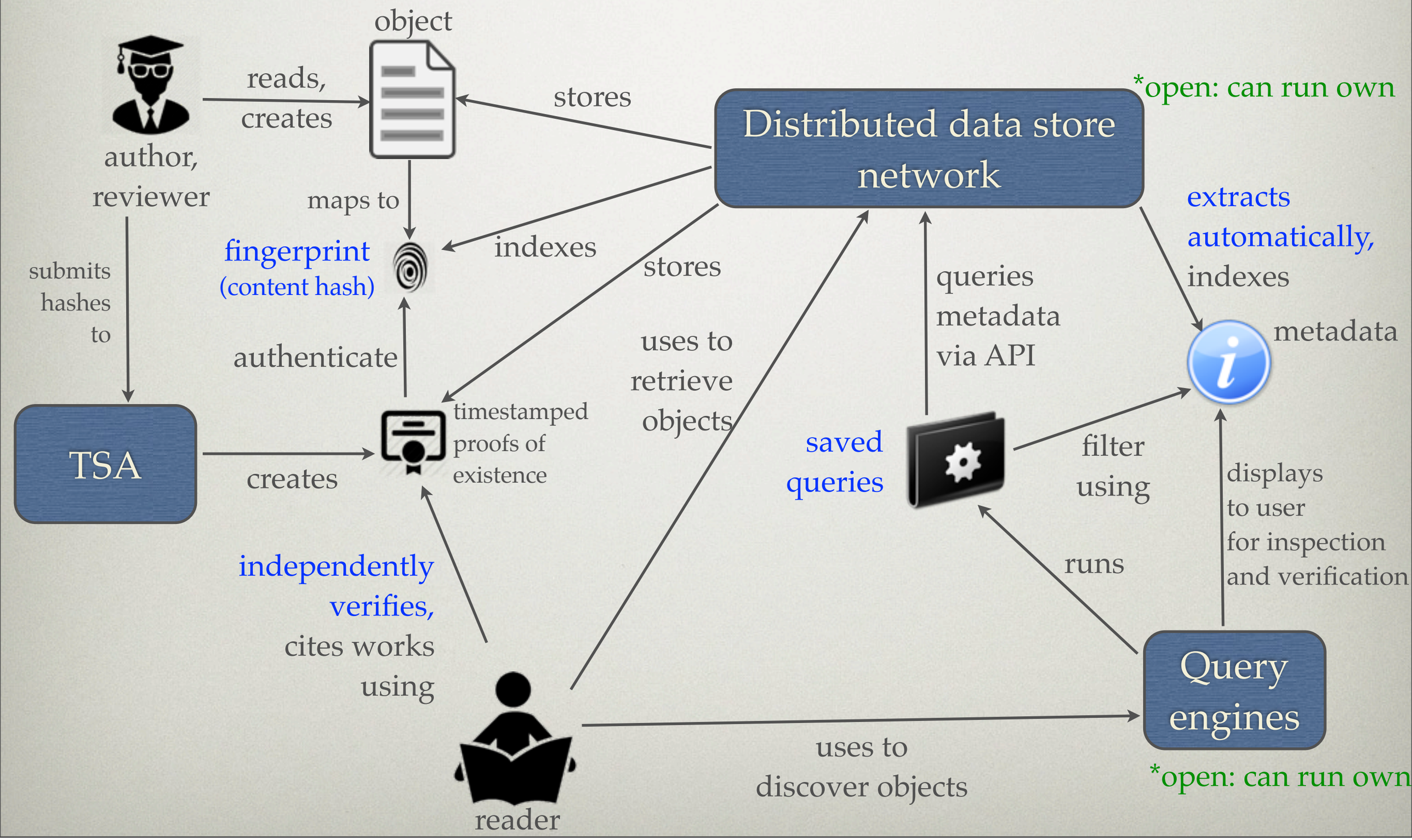

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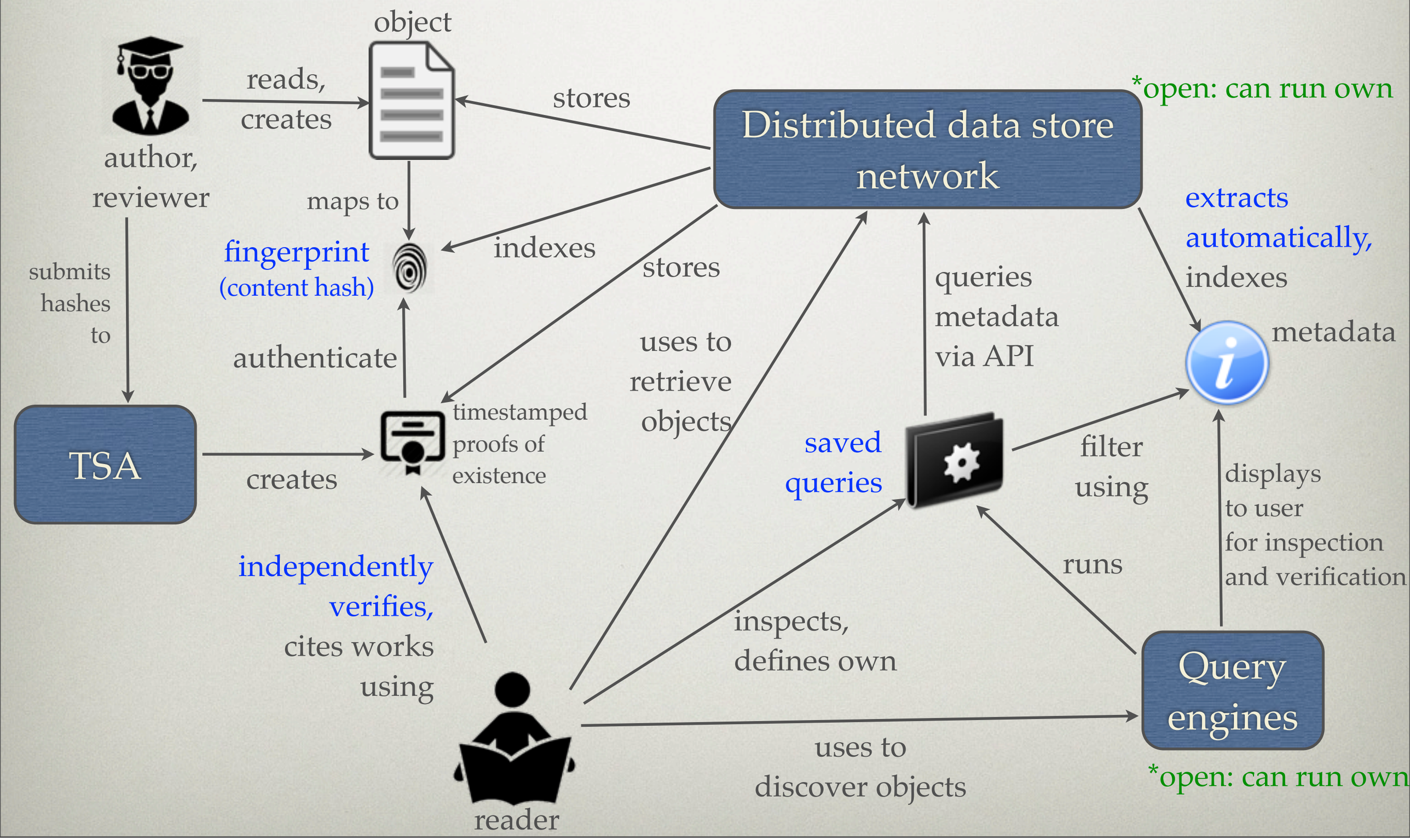
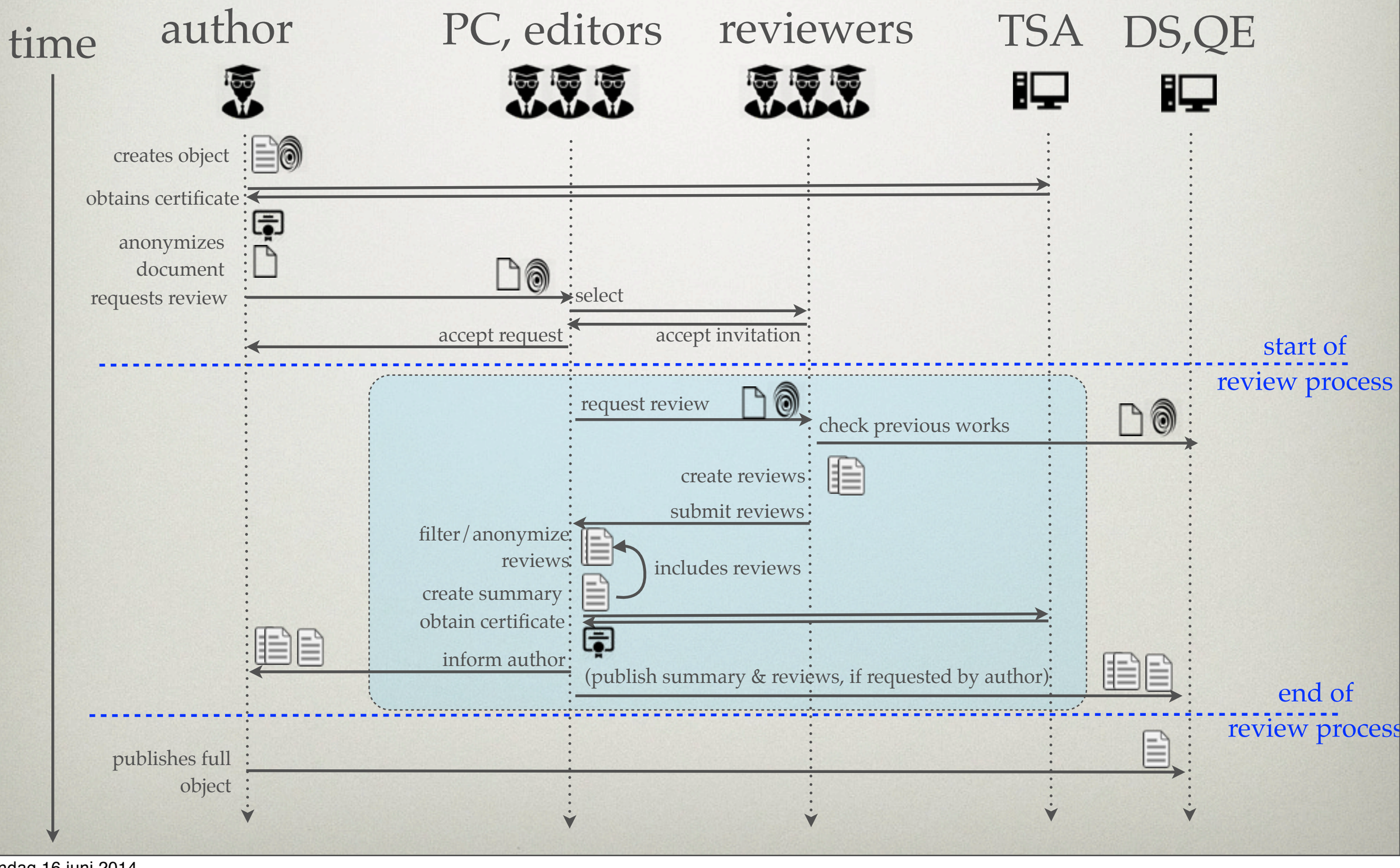
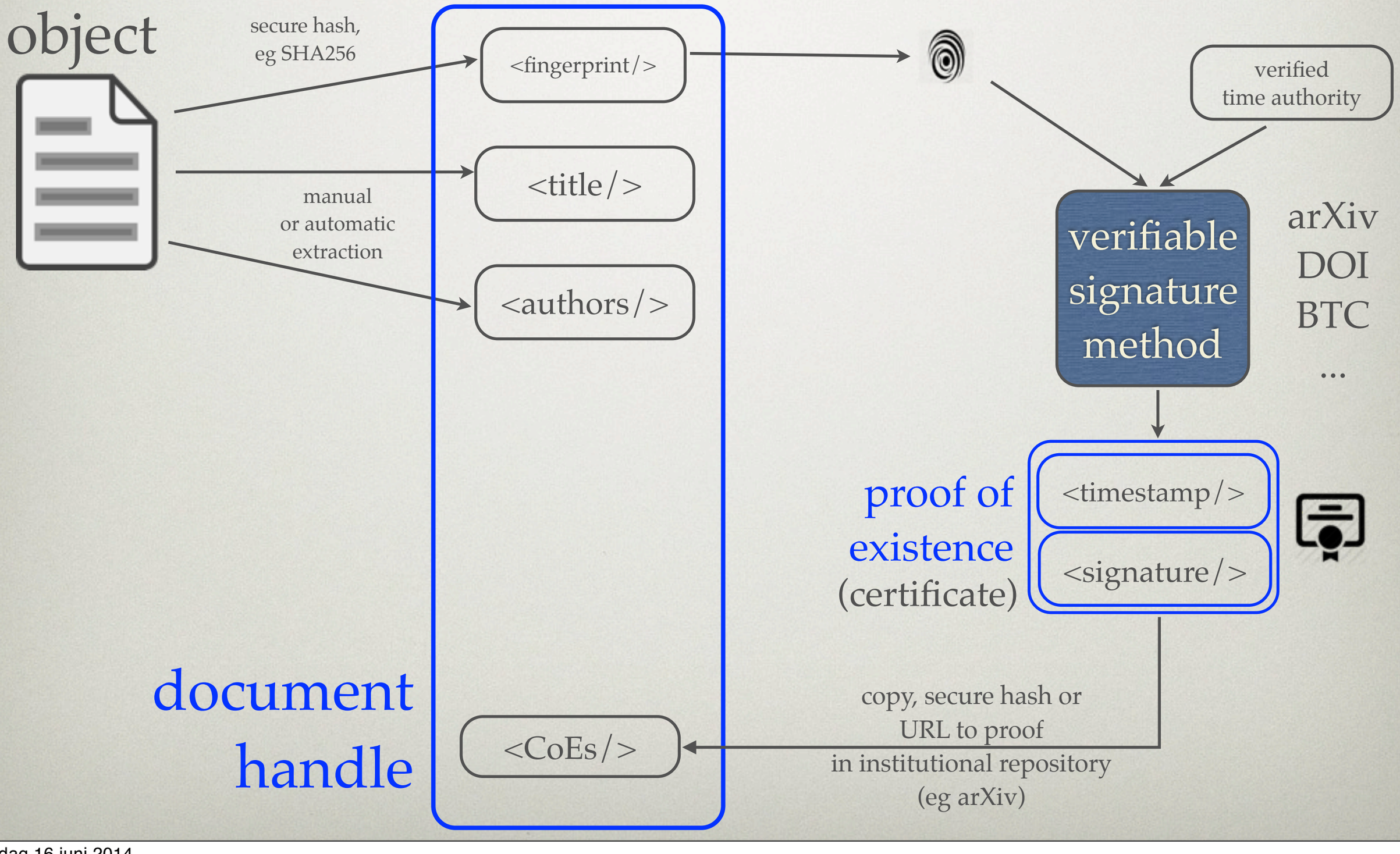


EXAMPLE IMPLEMENTATION OF OPEN PEER REVIEW



Mechanism:
Proofs of existence



Mechanisms: distributed storage

- Dual network:
  - Institutional data store network:
    Repositories + peering replication contracts
  - Peer-to-peer data store network:
    DHT, inspired by / reuses Bittorrent
- Magnet URIs for location and retrieval
- Metadata calculus:
  - Formal framework for edits & merges
  - Manages evolution of metadata extraction algorithms & conflicting updates over time
- Open and extensible metadata extraction algorithms

Structured Commons: Transition path

Crawl and index* private PDF/BibTeX repositories

Lobby researchers to run P2P DS software

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Lobby conference organizers to release* review summaries

Lobby university libraries to run DS/QE software

Structured Commons: Transition path

Crawl and index* private PDF/BibTeX repositories

Lobby conference organizers to release* review summaries

Run conferences and journals "as usual" just w/ different tools

Lobby researchers to run P2P DS software

Lobby university libraries to run DS/QE software

Demonstrate and promote SC-based research metrics for career development

Structured Commons: Grassroots, bottom-up

- **No special tools or technology needed** to start using Structured Commons fingerprints, citation formats and review objects
- **Existing platforms/projects can be transparently extended** towards support for "Academia 2.0" & Structured Commons
- **New tools & businesses can be evolved later, as needed**, after scientists start using SC fingerprints and citation formats
- Avoids "Build it, they will come" (NIH)
- Avoids "Give your content to us, so we can serve it using our platforms" (lock-in)
- Avoids "Change your workflows/tools and adopt our own" (inertia)

Structured Commons: Community & Steering

- **Structured Commons** is the name given to the model and infrastructure that supports the vision for "Academia 2.0"
- Structured Commons is a community initiative – anyone can participate and contribute http://www.structured-commons.org
- The **Structured Commons Technical Steering Committee** (SCTSC) is responsible for **maintaining the documentation** (protocols, methods, guidelines) and **example tool implementations**, **published in the public domain**

Structured Commons: Current & future work

- **Formal research**: metadata calculi
- Architecture **specifications** (SCEPs):
  - Document handles, metadata formats
  - Protocols for peer review
- **Empirical experiments** using prototype:
  - Simulations of open peer review & QE filtering
  - Pre-evaluation research metrics using shadow network
- **Marketing & PR:**
  - Integration in Open Access initiatives
  - Partnerships with current technology projects

Thank you!

References

- Structured Commons
  http://www.structured-commons.org
- Aca 2.0: Questions & Answers
  http://arxiv.org/abs/1404.7753
- Structured Commons Extension Proposals (SCEPs)

  http://www.structured-commons.org/scep0000.html