

SciOp and decentralized research data rescue

Julian Fietkau (TIB Open Science Lab)

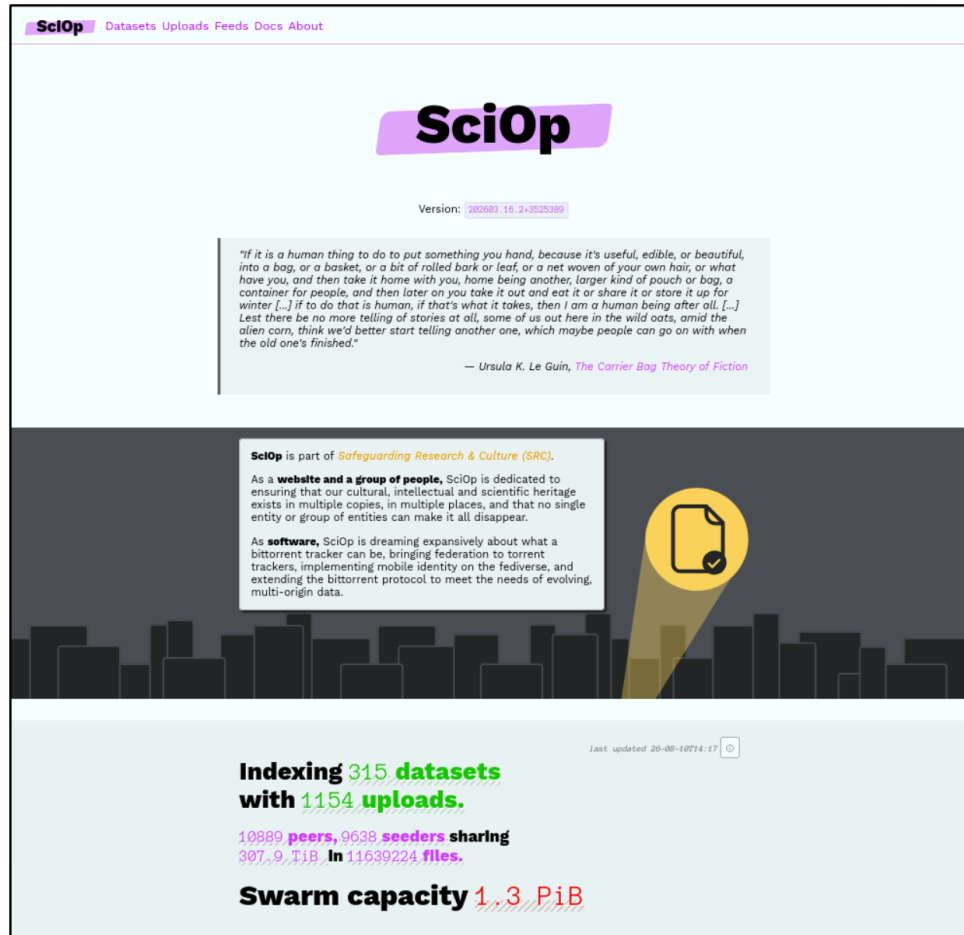
Berlin FediDay 2026

September 12, 2026



@julian@fietkau.social
@tibosl@openbiblio.social

What is SciOp?



sciop.net

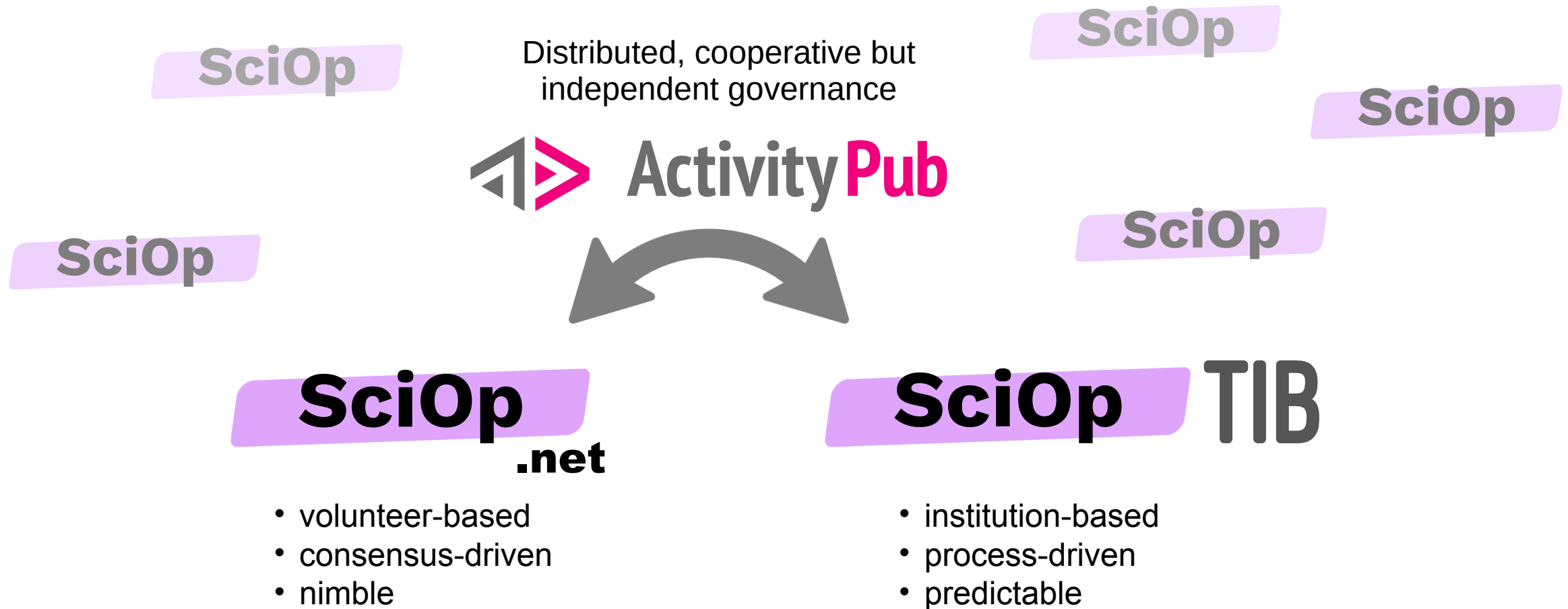
- A BitTorrent metadata aggregator geared towards endangered research data
- A FLOSS project (EUPL) with its code hosted on Codeberg
- An initiative coordinated by SRC:



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Why federate a BitTorrent index?



How to extend ActivityPub

- ActivityPub “comes with” a base set of actions and object types
 - Follow, Like, Share, ...
 - People, groups, social media posts (short or long), images/videos/documents, ...
- Implementers can invent their own types and describe corresponding behavior to provide new functionality

Fediverse Enhancement Proposal (FEP)

<https://fediverse.codeberg.page/fep/>

- Examples:
 - FEP-0837: Federated Marketplace
 - FEP-044f: Consent-respecting quote posts
 - FEP-c0e0: Emoji reactions

Torrents, uploads, datasets

- **Torrent** files are already key-value stores of (mostly) text data
 - InfoHash
 - Files, file part hashes
 - Known trackers
- Re-encode to JSON(-LD) to make torrent metadata accessible to ActivityPub data flows
- This is really easy but incredibly cool
- An **upload** contains
 - Name
 - Description
 - Owner
 - Torrent info
 - (Maybe) more metadata
- Corresponds to a concrete set of files (in the torrent)
- A **dataset** is a named, describable, versioned representation of a real-world dataset
 - One or several authors
 - May exist in multiple versions (derived or competing)
 - Potentially collaborative (wiki-like)
 - One *dataset* can correspond to several *uploads*



Actors and identities

- **FEP-ef61: Portable Objects**
- Actors use key-based (DID) identities instead of hostname-based
- Can move seamlessly between servers
- Can be represented on multiple servers simultaneously
- Delegation of authority can be fine-grained

Non-https IDs will initially be incompatible with much of the current fediverse.



Breaking backward compatibility

Adventurous ActivityPub projects often feel the conflicting pulls of establishing new protocol extensions and maintaining content compatibility with existing fediverse software.

SciOp's federation plans will knowingly be incompatible with current platforms such as Mastodon.

This need not be forever.

Project roadmap: <https://sciop.net/docs/intro/roadmap/>

Sounds cool – now what?

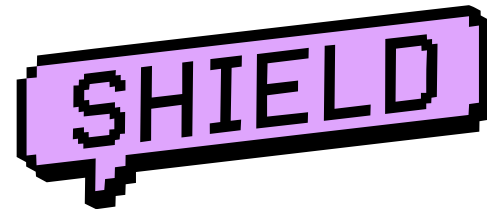
- Everything presented here is being planned
- There is currently only one SciOp instance, sciop.net
 - And it doesn't federate yet
- SRC & the SciOp team are active and motivated
- The SHIELD team at TIB is working on the second instance, SciOp TIB
- If you'd like to get involved, contact SRC (or me!)



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Project SHIELD

shield.tib.eu

Funded by German Research Foundation
(DFG), project number **581851694**



[@julian@fietkau.social](https://fietkau.social) / [@tibosl@openbiblio.social](https://openbiblio.social)