Use Cases of Event Notifications in digital heritage networks

The Decentral Web & Solid
14 June 2023

Miel Vander Sande - meemoo
miel.vandersande@meemoo.be
@mielvds

dutch digital heritage network

Contents

1. **recap**
   the event notifications protocol

2. **context**
   decentralised discovery infrastructure for heritage information

3. **use cases**
   applications of event notification in digital heritage

4. **wrap-up**
   project takeaways and next steps

Event Notifications in Value-Adding Networks

1 **Introduction**

2 **Conformance**

3 **Document Conventions**

4 **Network entities**
4.1 Agent
4.2 Artifact
4.3 Data Node
4.4 Service Node
4.5 Service Result

5 **Properties in LDN+AS2 Notifications**
5.1 JSON-LD id
5.2 JSON-LD type
5.3 AS2 object
5.4 AS2 actor, AS2 origin, and AS2 target
5.5 AS2 context
5.6 AS2 inReplyTo

6 **Network communication patterns**
6.1 One-way communication patterns
6.1.1 Data Node to Service Node

Event Notifications in Value-Adding Networks

Living Document, 23 September 2022

This version:
https://www.eventnotifications.net

Latest published version:
https://www.eventnotifications.net

Previous Versions:
https://www.eventnotifications.net/0.1/

Issue Tracking:
GitHub
Inline In Spec

Editors:
Patrick Hochstenbach (Ghent University Library)
Miel Vander Sande (meemoo - Flemish Institute for Archives)
Ruben Dedecker (IDLab - Ghent University)
Paul Walk (Antleaf)
Martin Klein (Los Alamos National Laboratory)
Herbert Van de Sompel (IDLab - Ghent University)

PUBLIC DOMAIN To the extent possible under law, the editors have waived all copyright and related or neighboring rights to this work. In addition, as of 23 September 2022, the editors have made this specification available under the Open Web Foundation Agreement Version 1.0, which is available at http://www.openwebfoundation.org/legal/the-owf-1-0-agreements/owfa-1-0. Parts of this work may be from another specification document. If so, those parts are instead covered by the license of that specification document.

https://www.eventnotifications.net

Event Notifications in Value-Adding Networks

Enables **interactions** between nodes about **adding value** to artifacts

“artifact” and “value” are defined by the **domain where it is applied**

In digital heritage networks:

- artifacts: descriptions of **collections, objects, reproductions, datasets,** …
- value: **visibility, findability, preservation**, … of objects and collections

Contents

1. **recap**
   the event notifications protocol

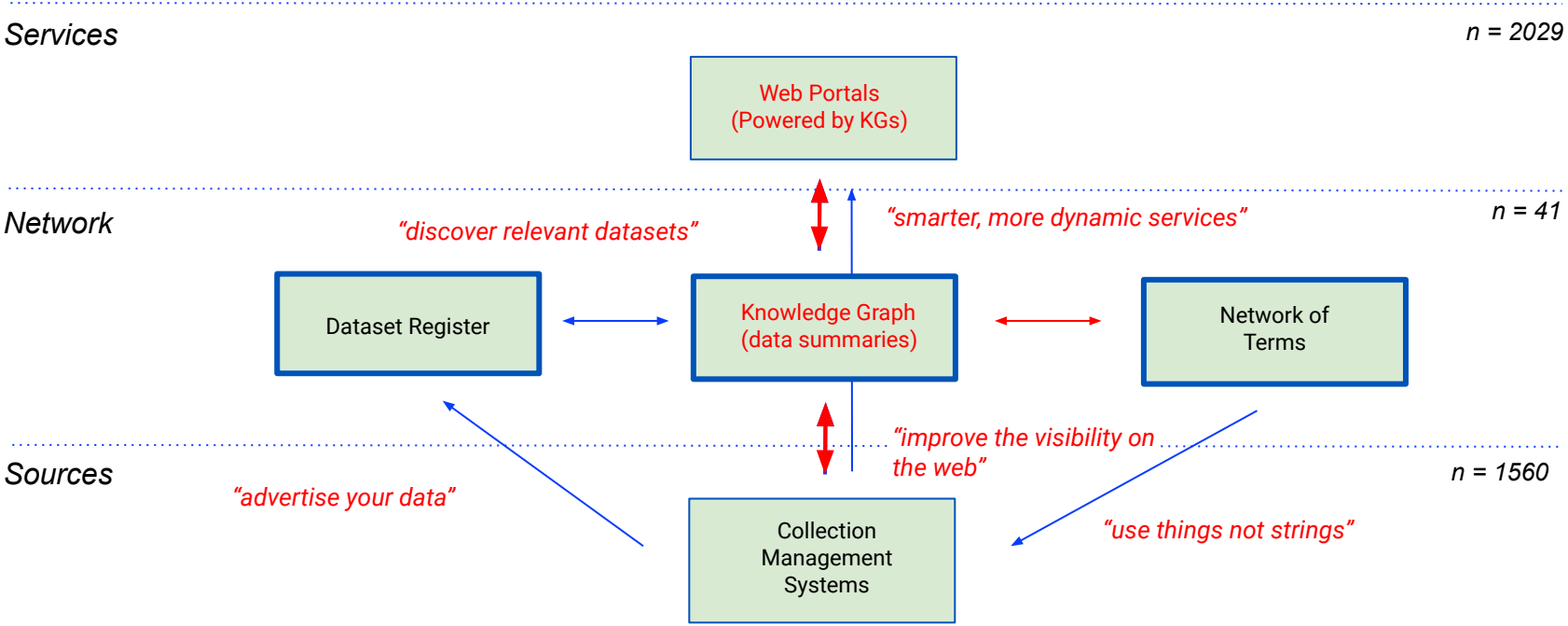
2. **context**
   decentralised discovery infrastructure for heritage information

3. **use cases**
   applications of event notification in digital heritage

4. **wrap-up**
   project takeaways and next steps

Dutch Digital Heritage Network (NDE)

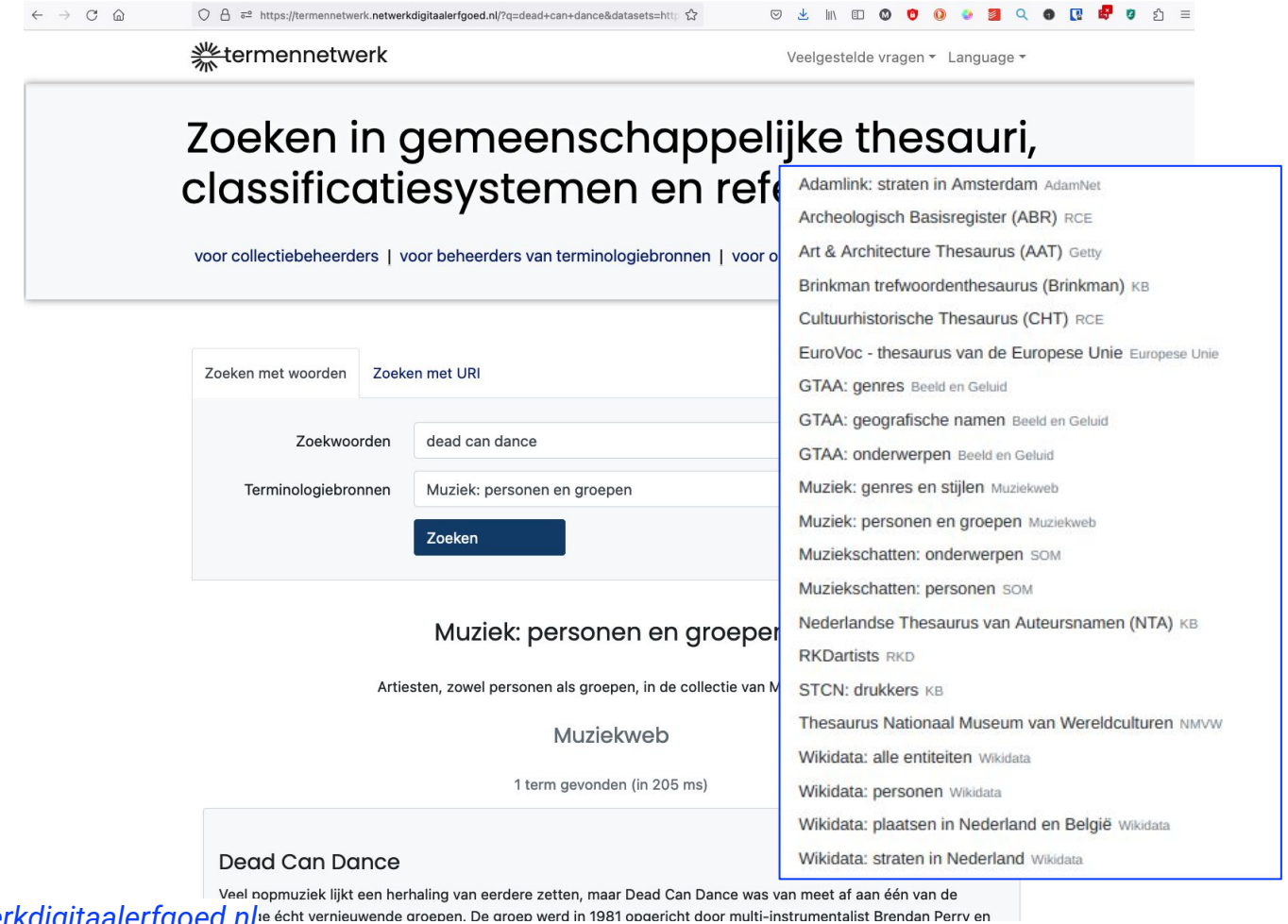
Decentralised discovery infrastructure for heritage information



Dataset Register

https://datasetregister.netwerkdigitaalerfgoed.nl

Network Of Terms

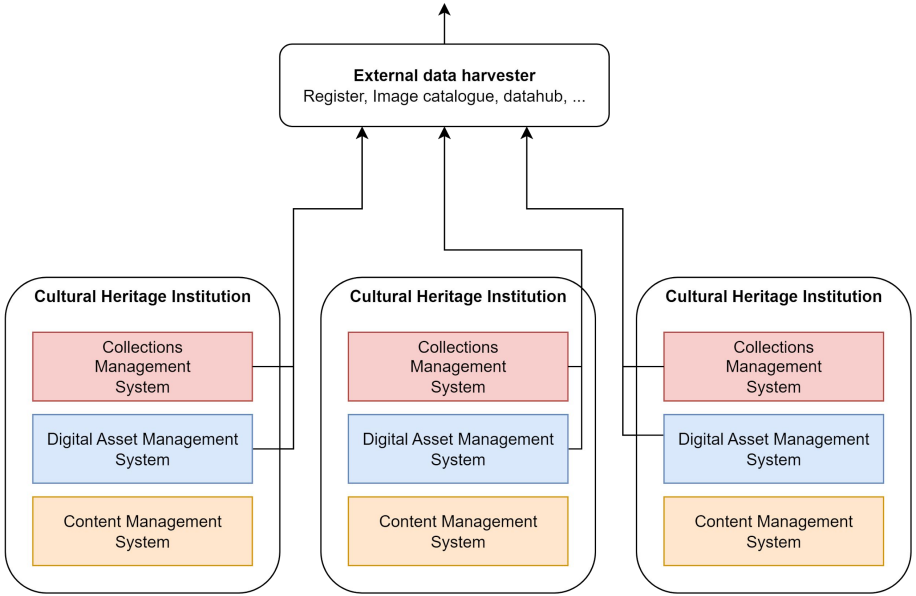


https://termennetwerk.netwerkdigitaalerfgoed.nl

Role of decentralization in digital heritage

Aggregators as a result of **upscaling operations and reach** of cultural heritage institutions

Integrations are **short-lived** for often non-technical reasons

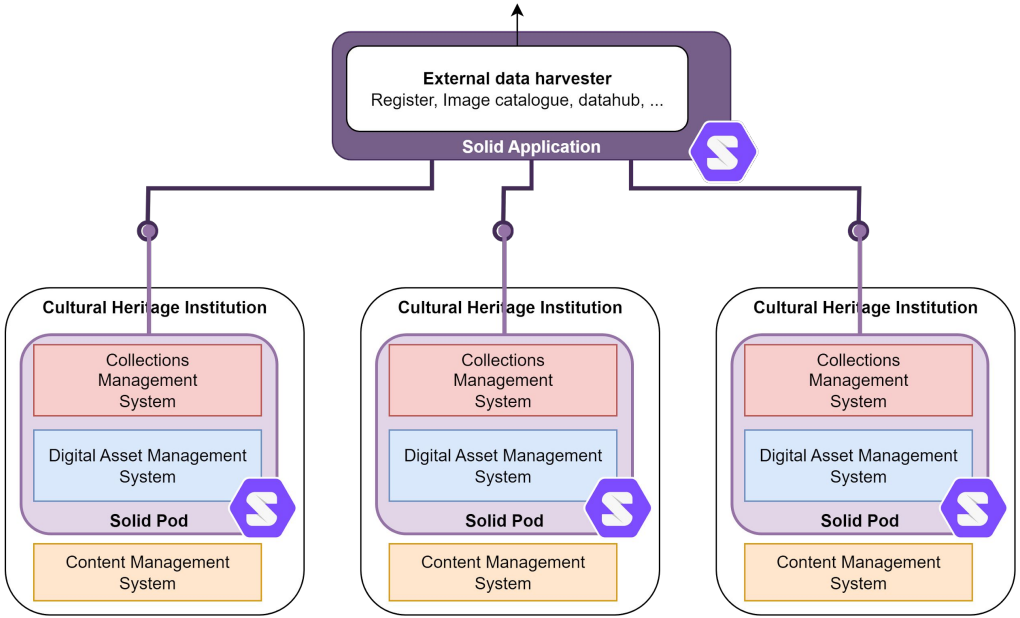


Solid as implementation layer

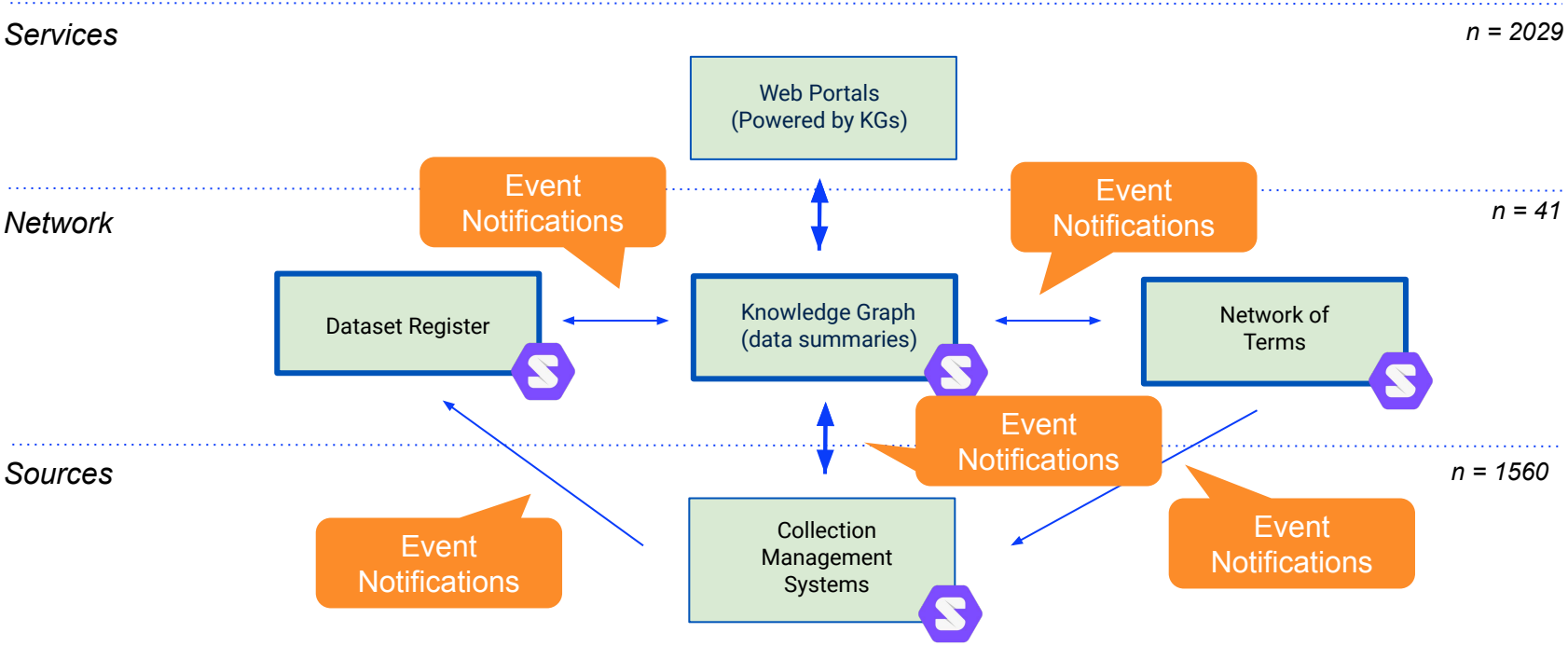
Facilitate fast **reorientation** rather than stop it
= decoupling via open standards & decentralized Web

Linked Data at the core

Comes with **authentication** for identifying CHIs, services and portals



ErfgoedPOD:
Solid as implementation layer for discovery infrastructure



Contents

1. **recap**
   the event notifications protocol

2. **context**
   decentralised discovery infrastructure for heritage information

3. **use cases**
   applications of event notification in digital heritage

4. **wrap-up**
   project takeaways and next steps

Data nodes provide the network with artifacts

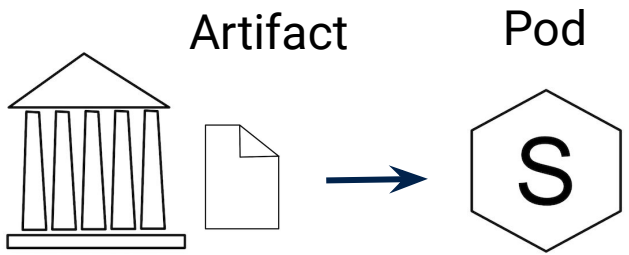
Cultural heritage institutions

Metadata aggregators

Registers

Digital asset systems

…



collections
objects
reproductions
datasets
…

Service nodes provide services to artifacts

Archives & long-term storage

Metadata cleanup & enrichment

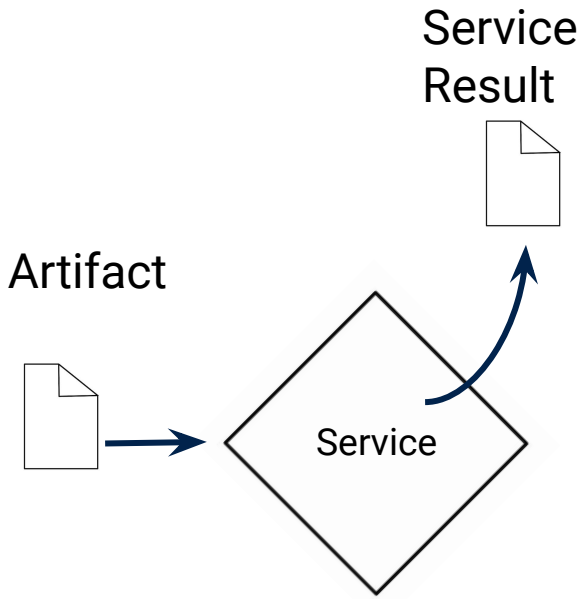
Metadata aggregators (re-dissemination)

Registers (re-dissemination)

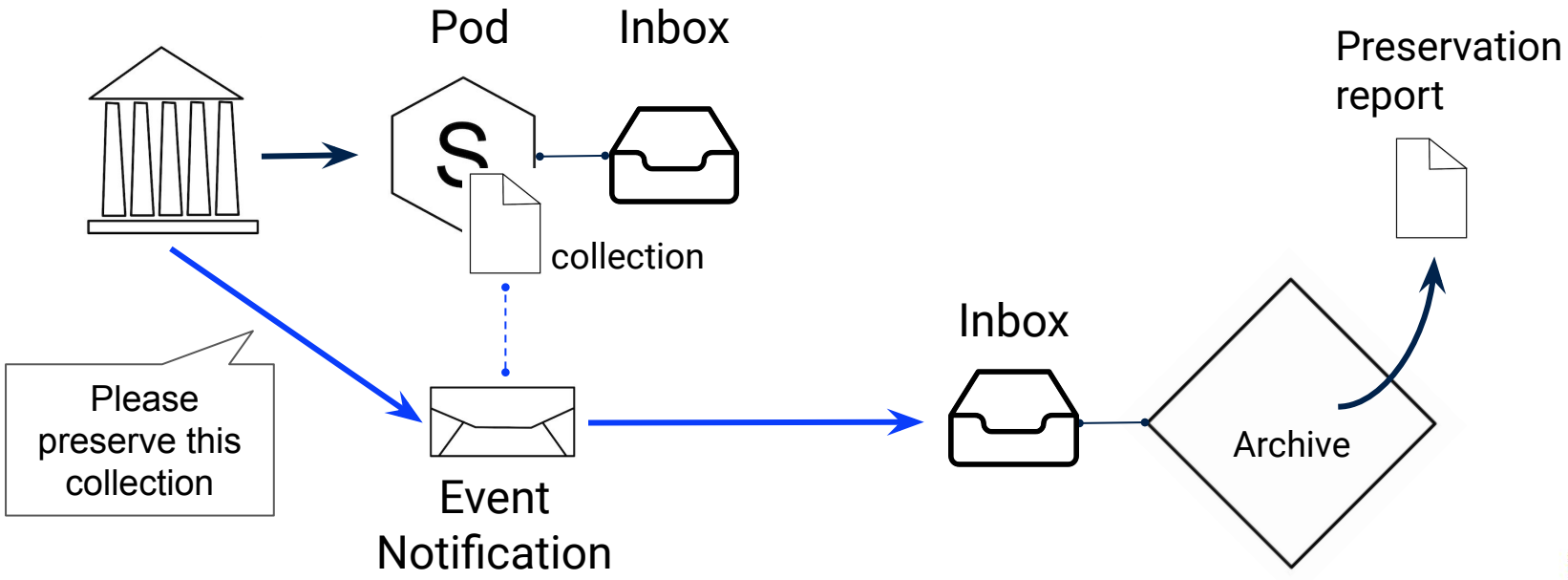
Search indexes

Heritage portal websites

…

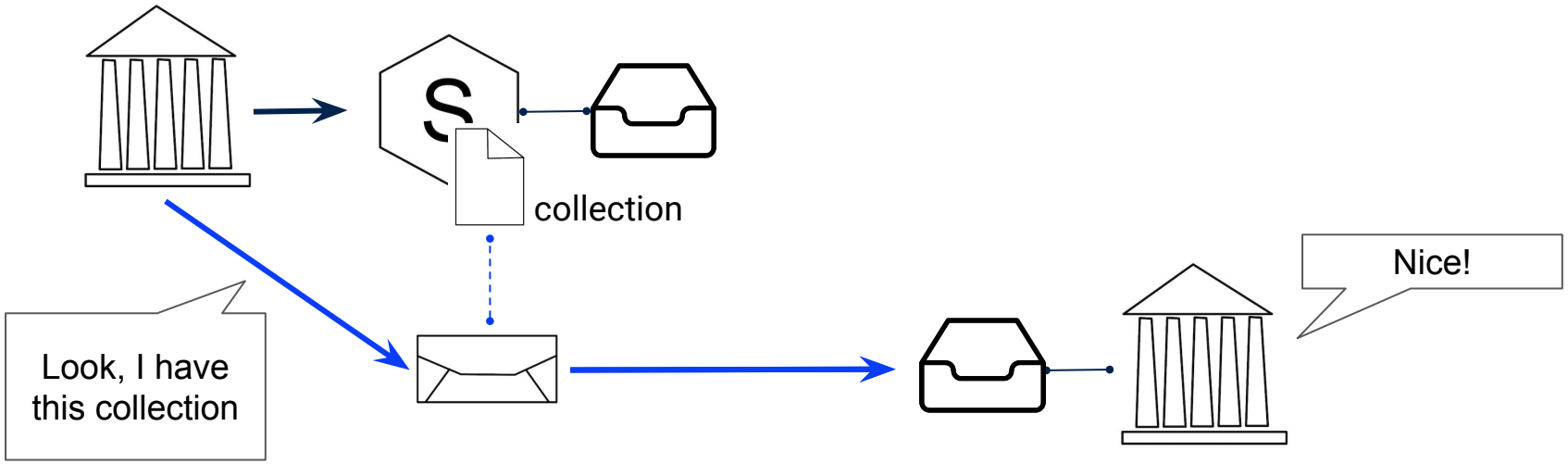


Nodes interact with notifications



I. Informing other parties in the network

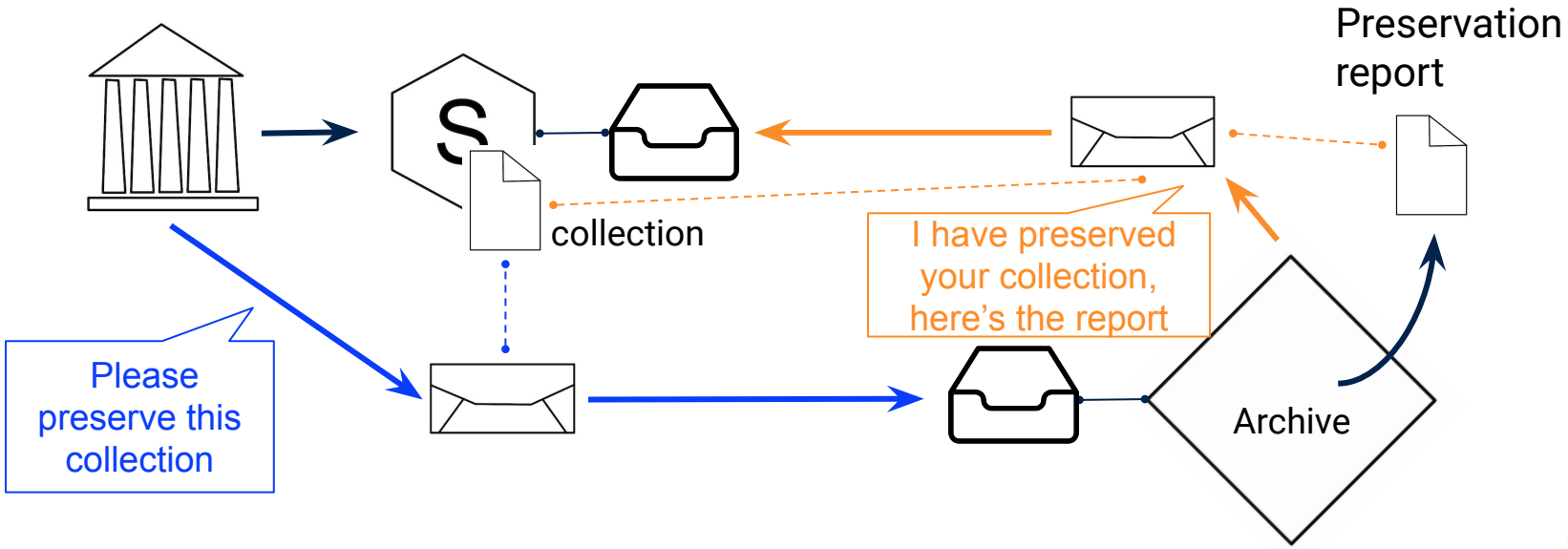
one-way pattern; no response/result expected



II. Provisioning of value-added services

request-response pattern; more elaborate back and forth

initiator expects response, but not necessarily instantly

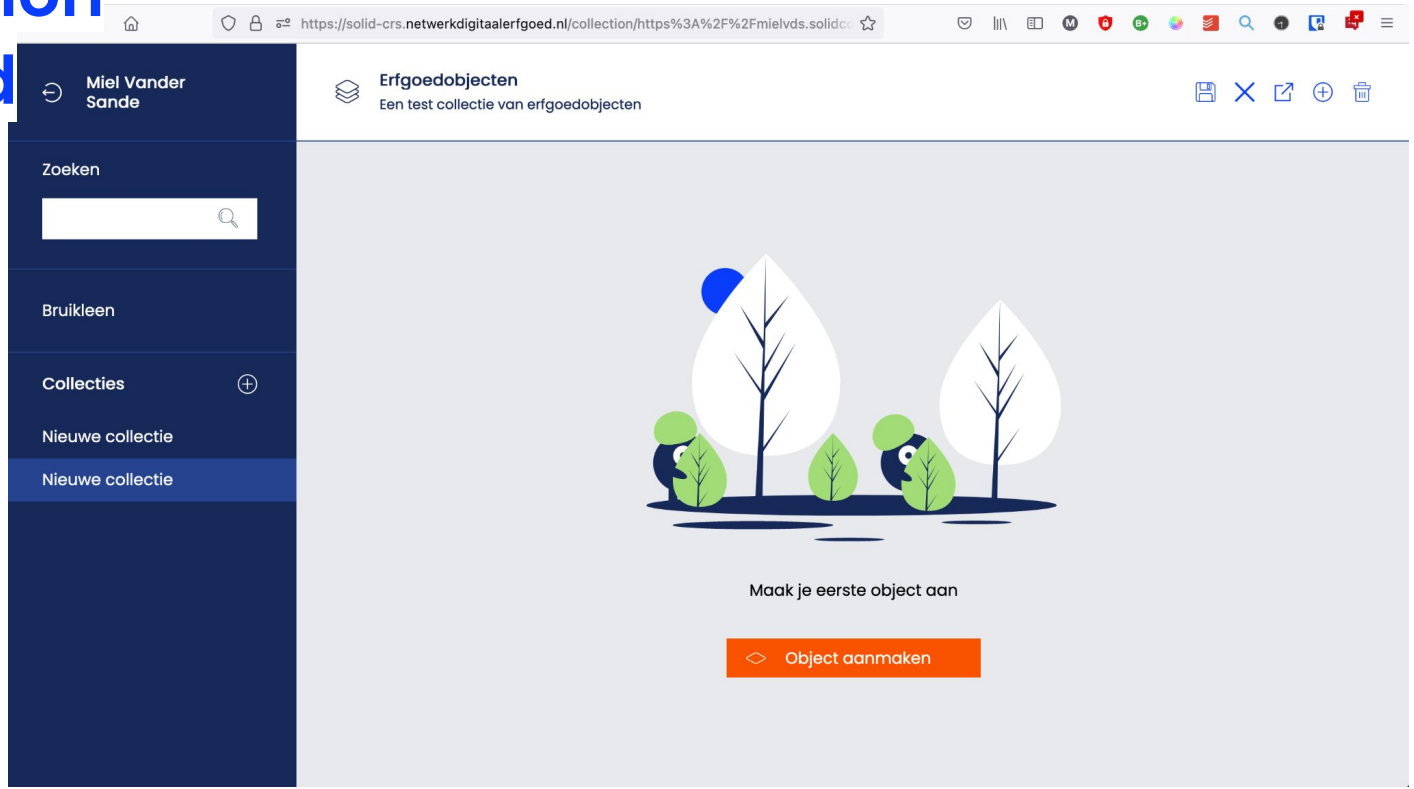


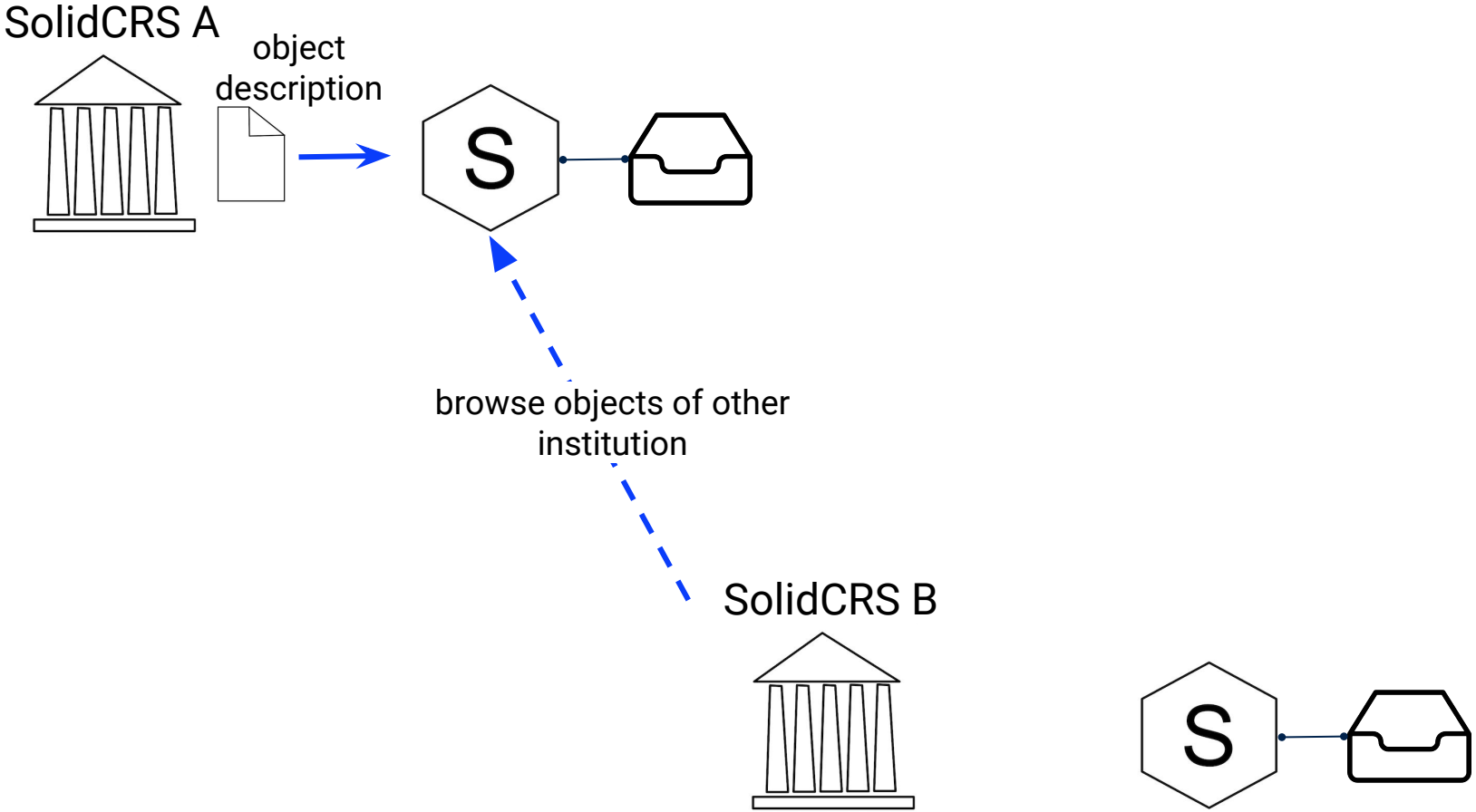
Case 1: Collection on loan

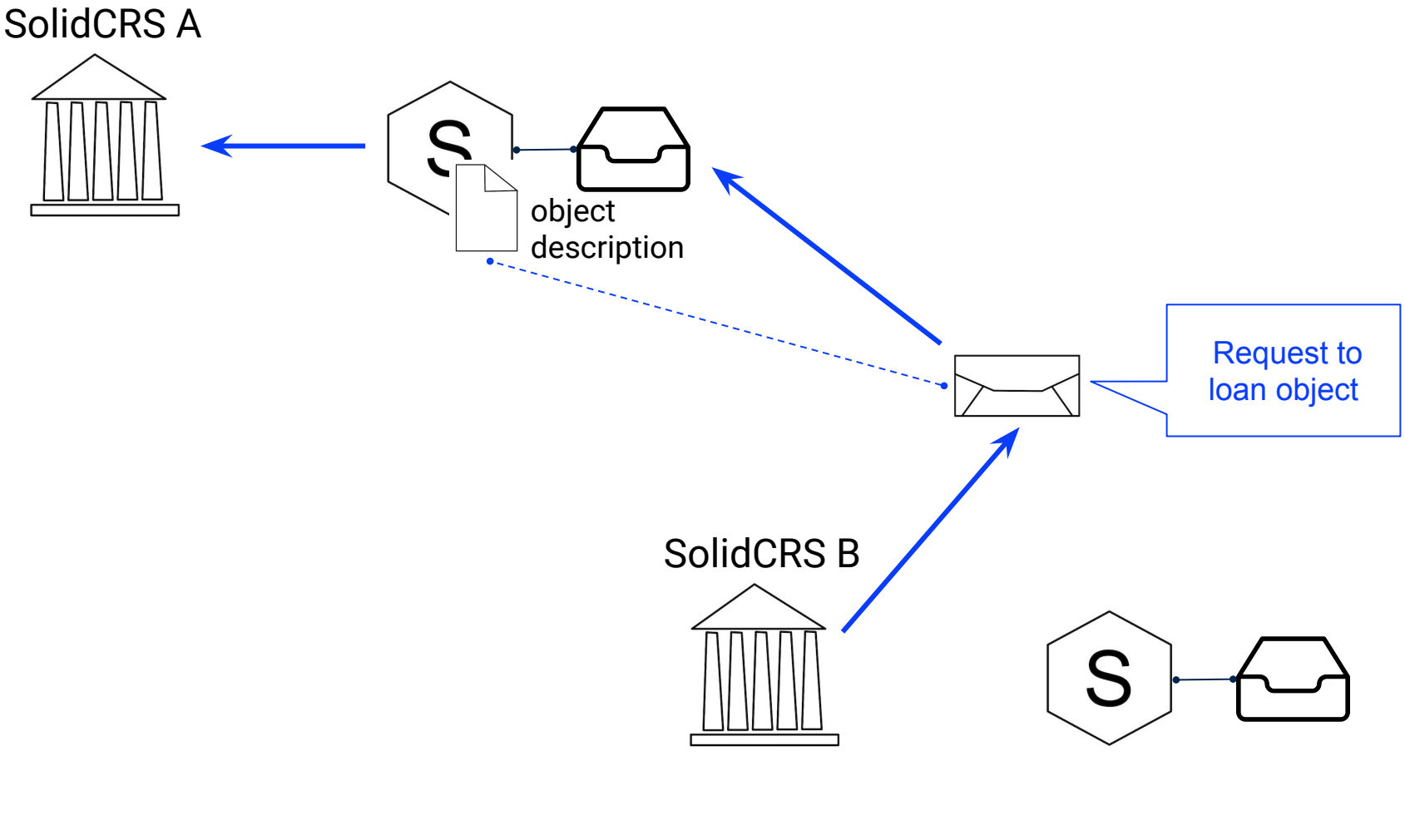
Institution A registers a collection of cultural heritage objects

Institution B requests to loan the collection and transfer metadata

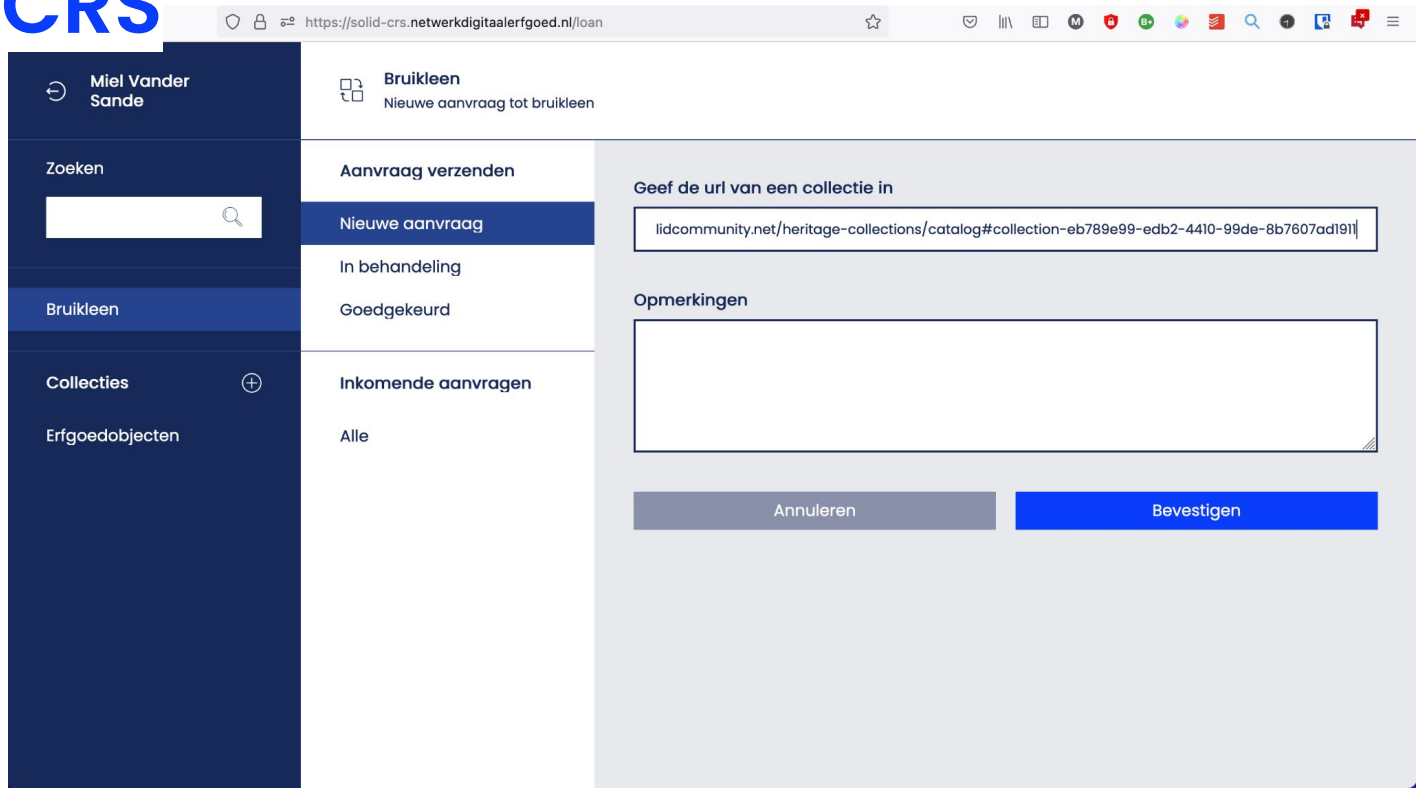
Collection Registration with Solid

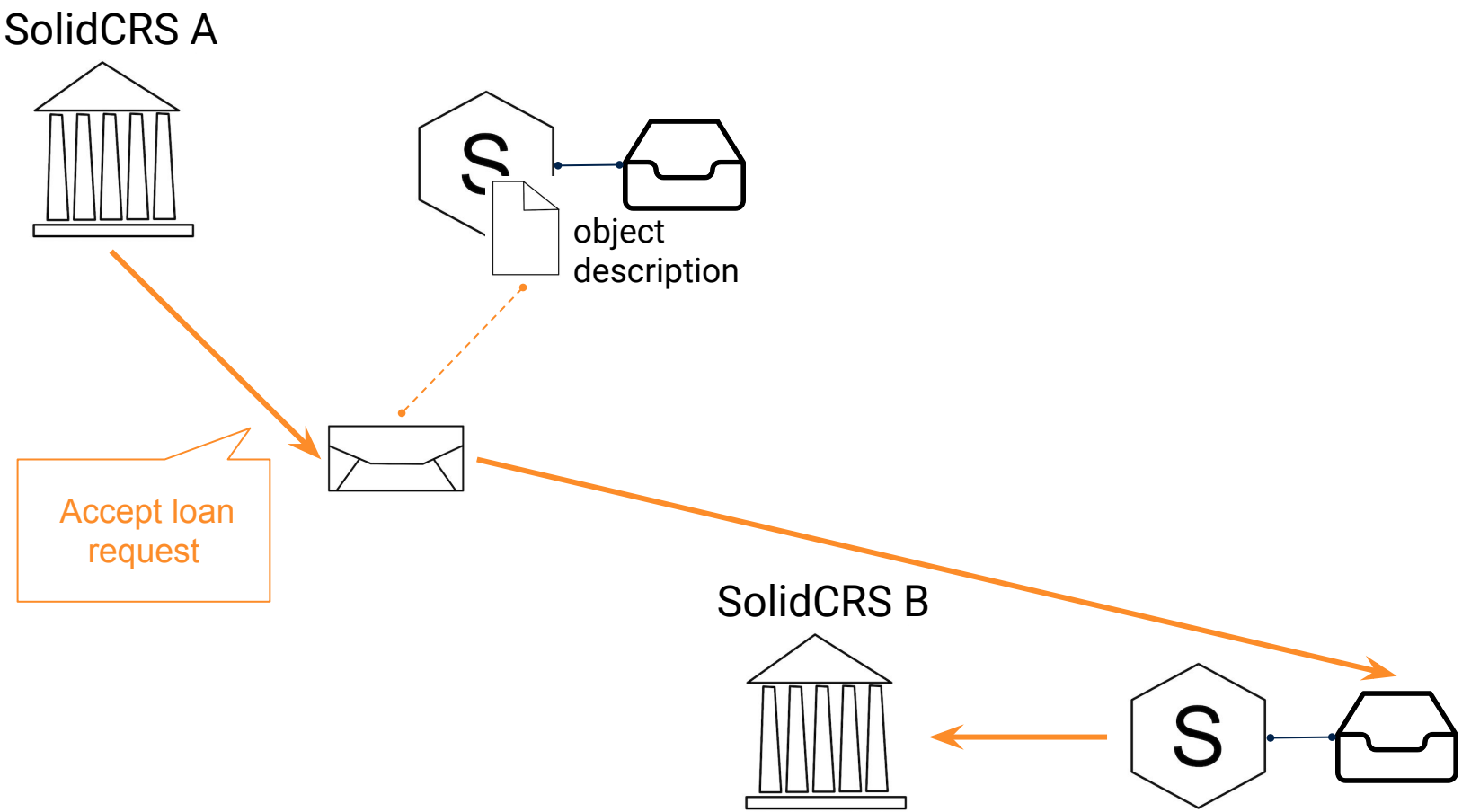



SolidCRS A
object
description
S
browse objects of other
institution
SolidCRS B
S

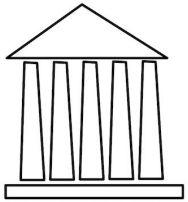

SolidCRS A
object
description
Request to
loan object
SolidCRS B

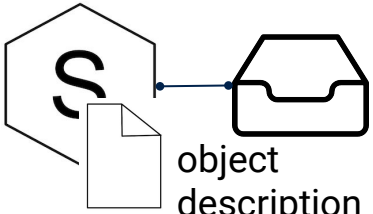
Request loan in SolidCRS




SolidCRS A
object
description
Accept loan
request
SolidCRS B

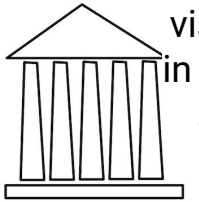
SolidCRS A



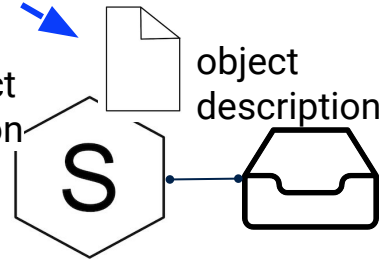


description is
link to description is
created in Pod B

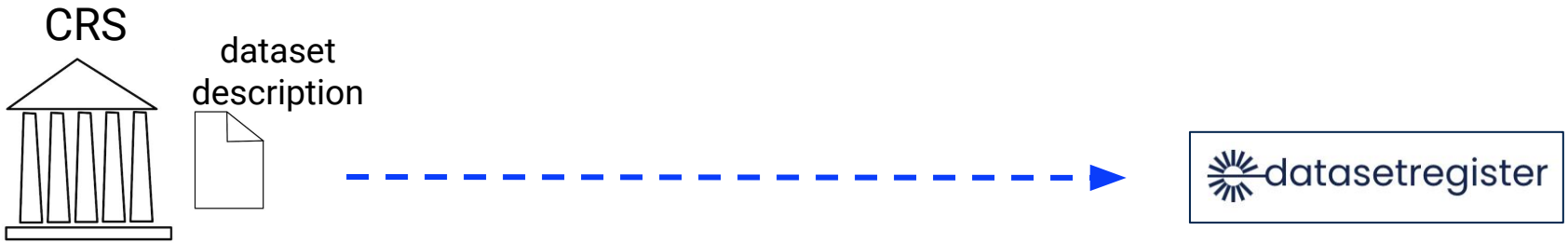
SolidCRS B



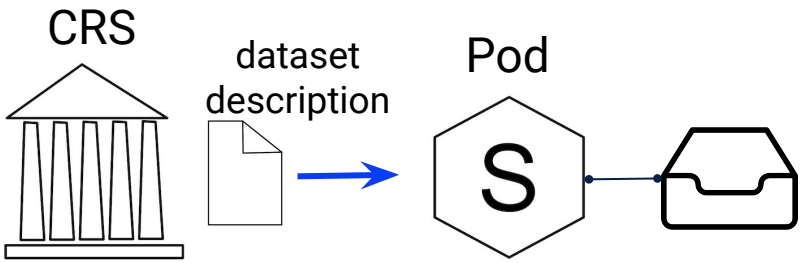
visible as object
in loan collection

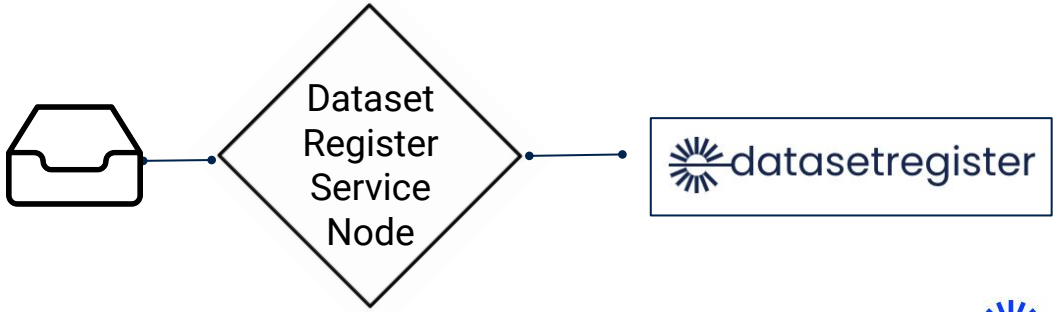


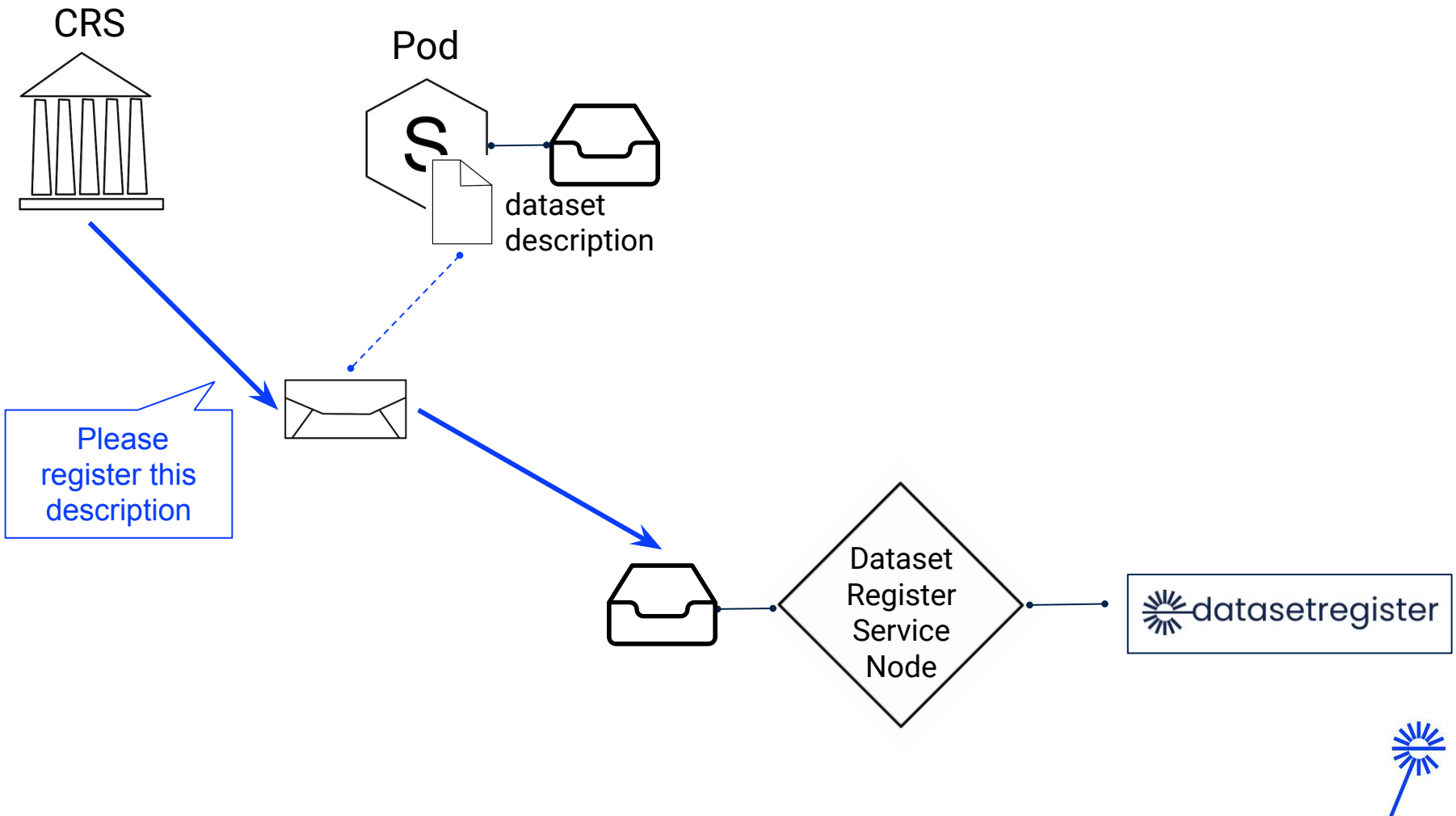
Case 2: Registering datasets

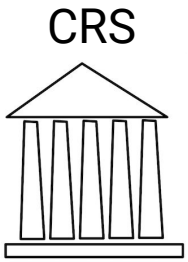


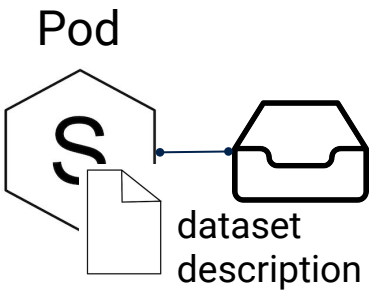
Institution A wants to register a dataset in NDE's dataset register

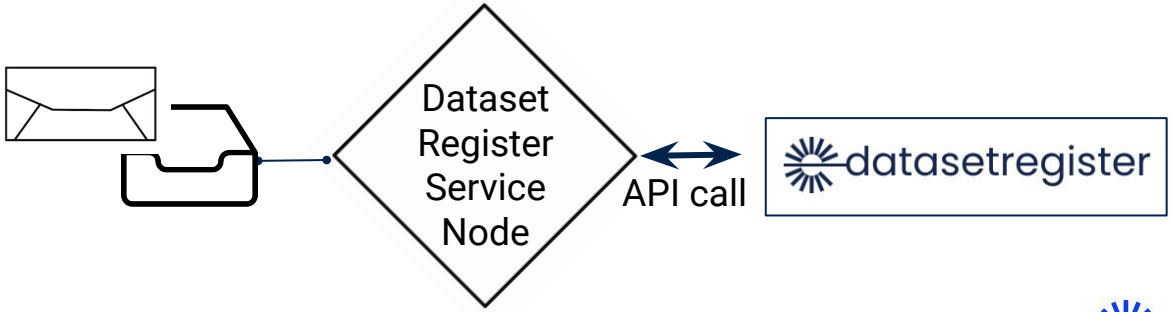

CRS
dataset
description
Pod
S

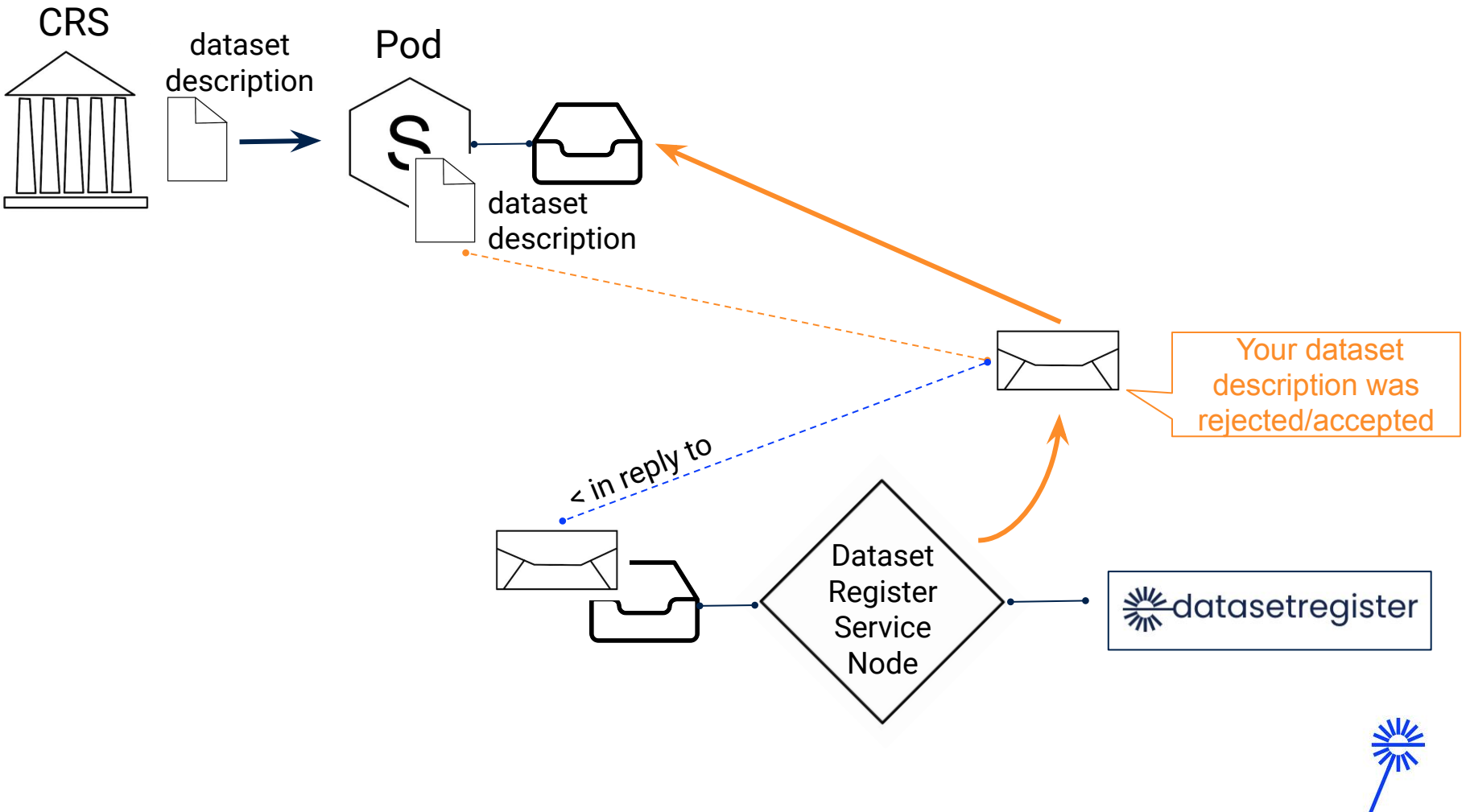

Dataset
Register
Service
Node
datasetregister

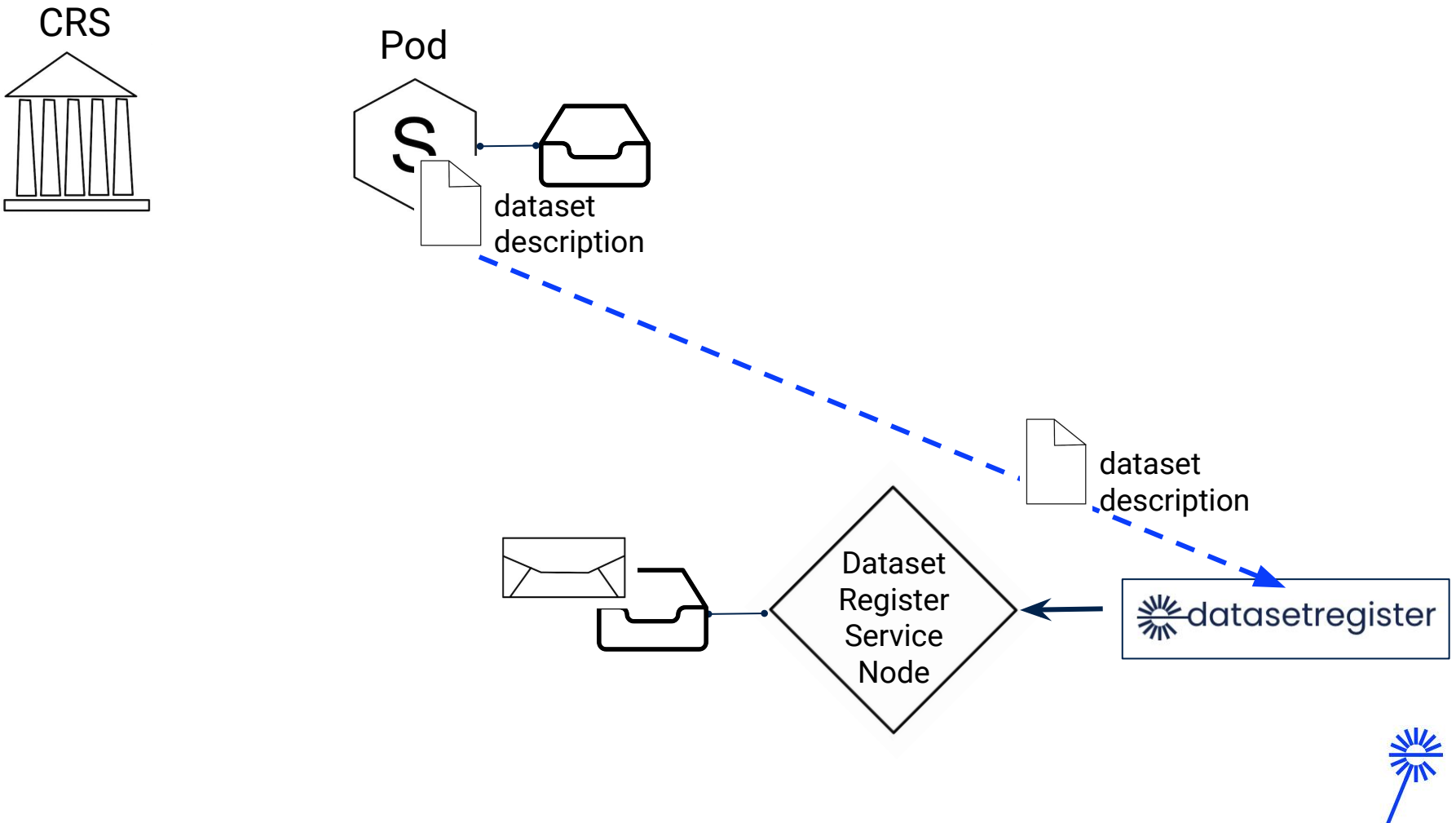

CRS
Pod
dataset
description
Please
register this
description
Dataset
Register
Service
Node
datasetregister

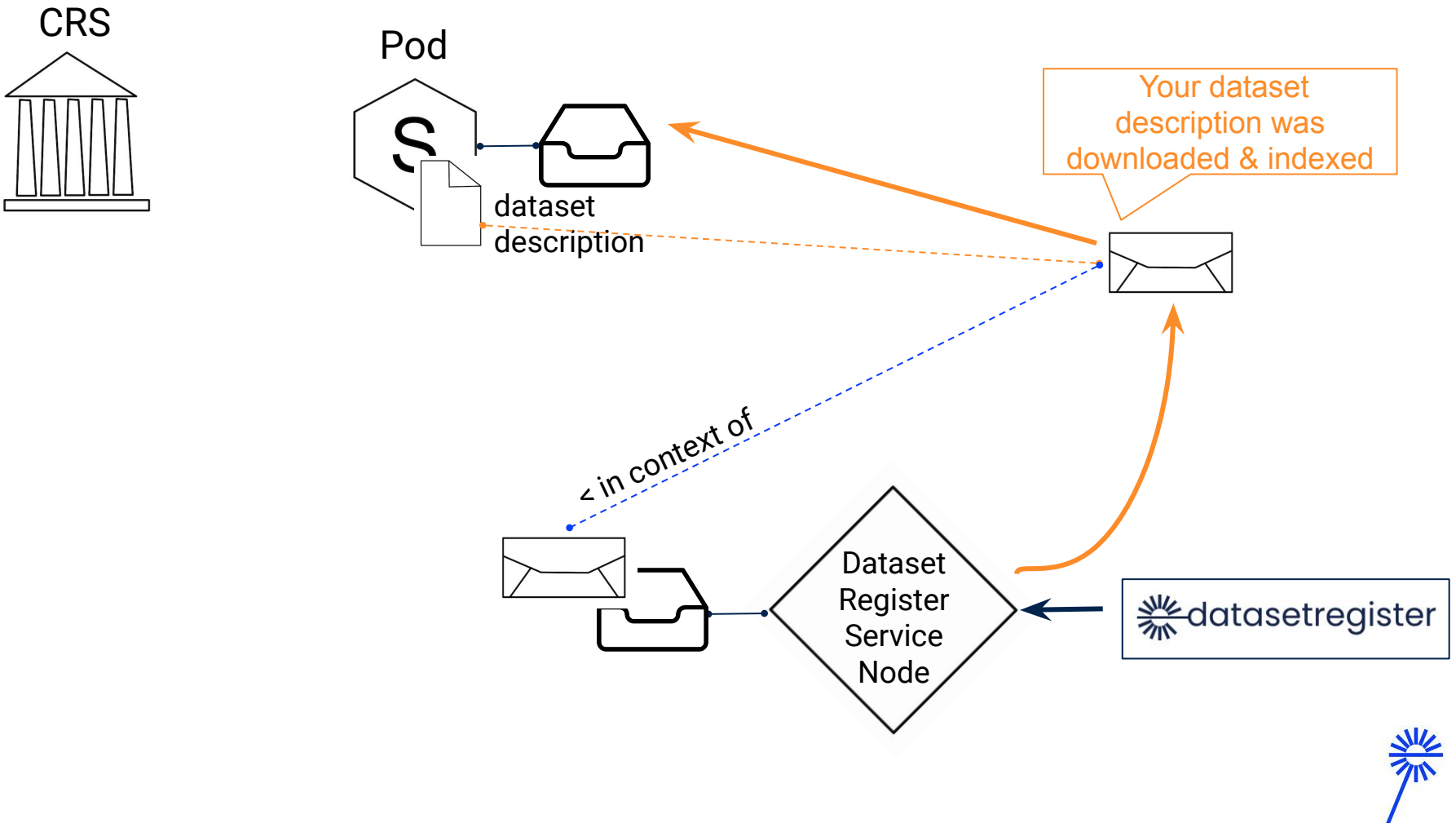

CRS


Pod
dataset
description

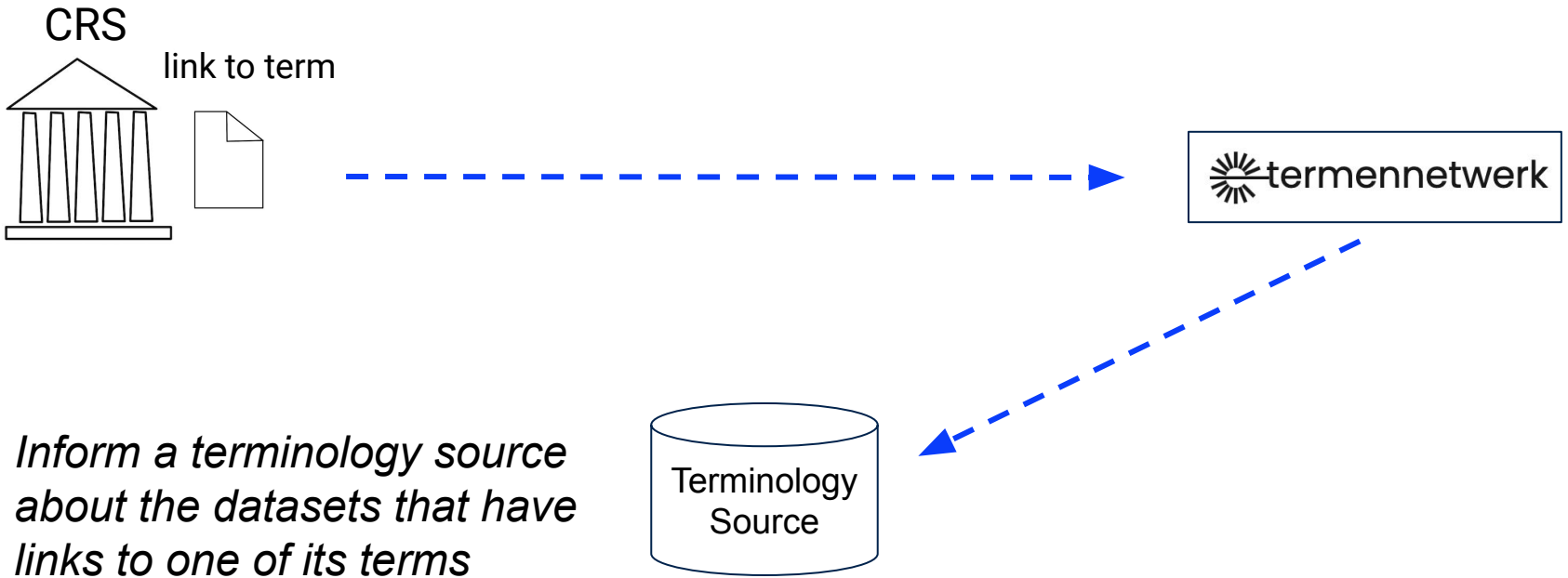

Dataset
Register
Service
Node
API call
datasetregister


CRS
dataset description
Pod
dataset description
Your dataset description was rejected/accepted
< in reply to
Dataset Register Service Node
datasetregister

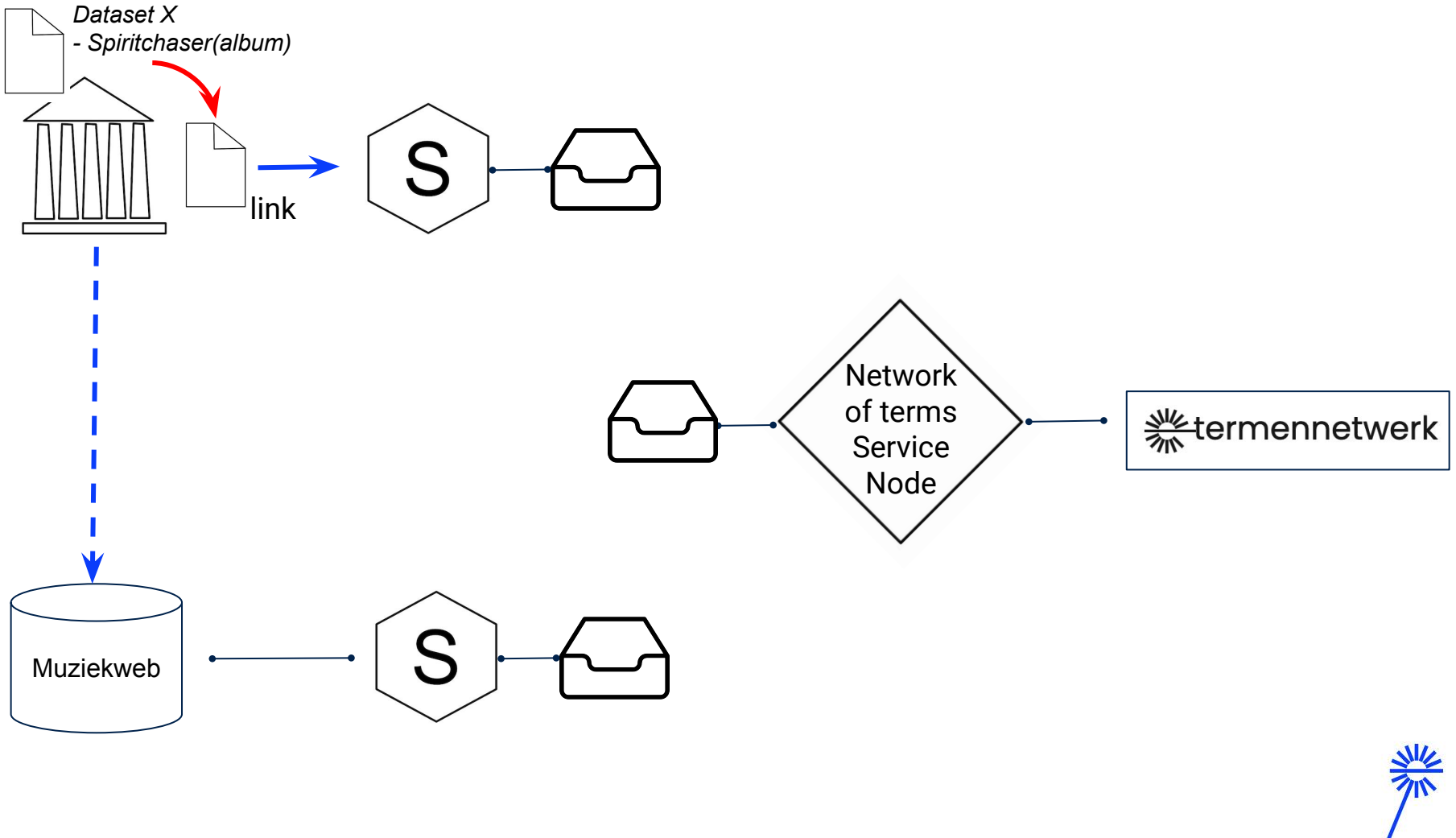

CRS
Pod
dataset
description
dataset
description
Dataset
Register
Service
Node
datasetregister

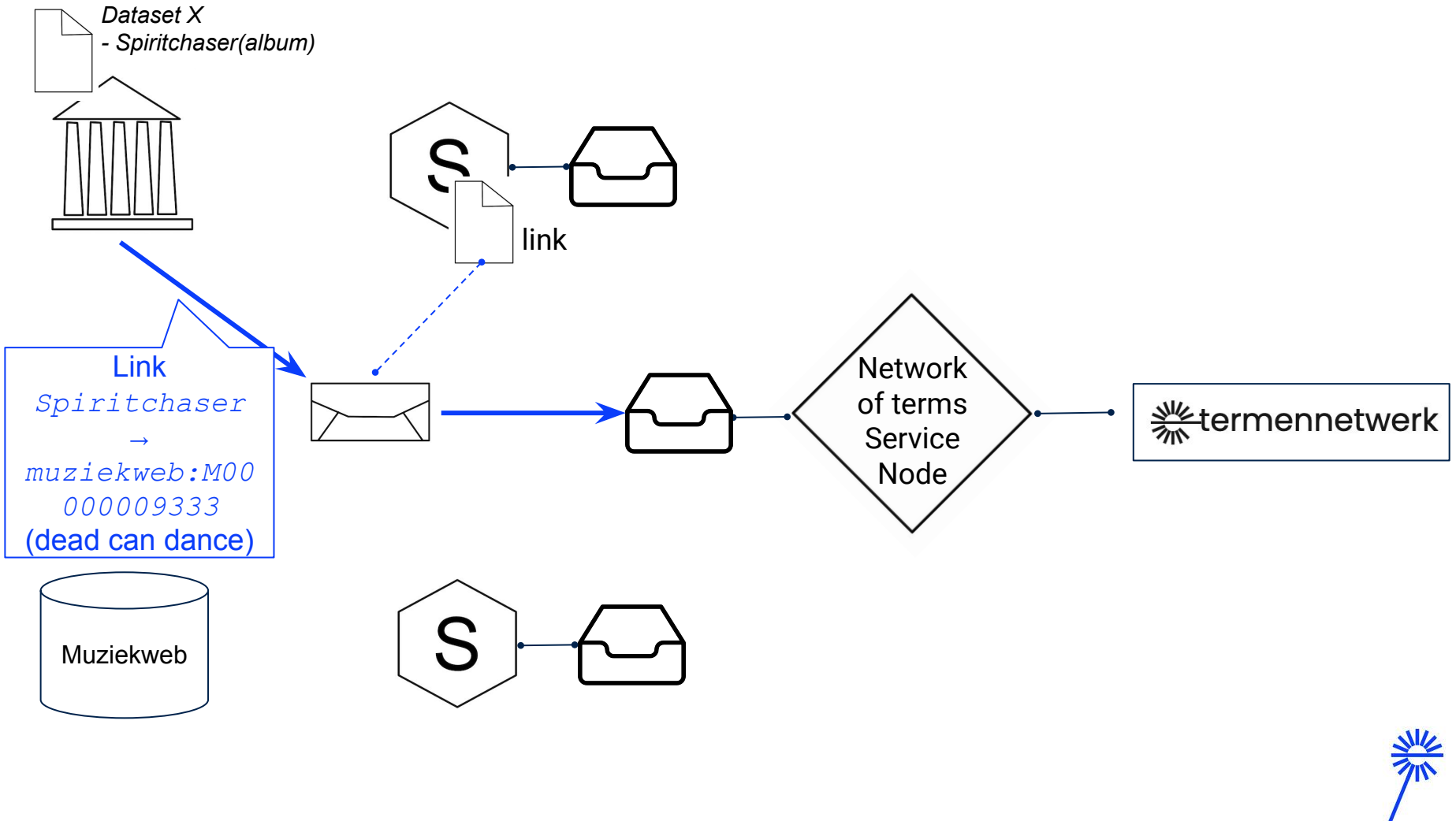

CRS
Pod
dataset
description
Your dataset
description was
downloaded & indexed
< in context of
Dataset
Register
Service
Node
datasetregister

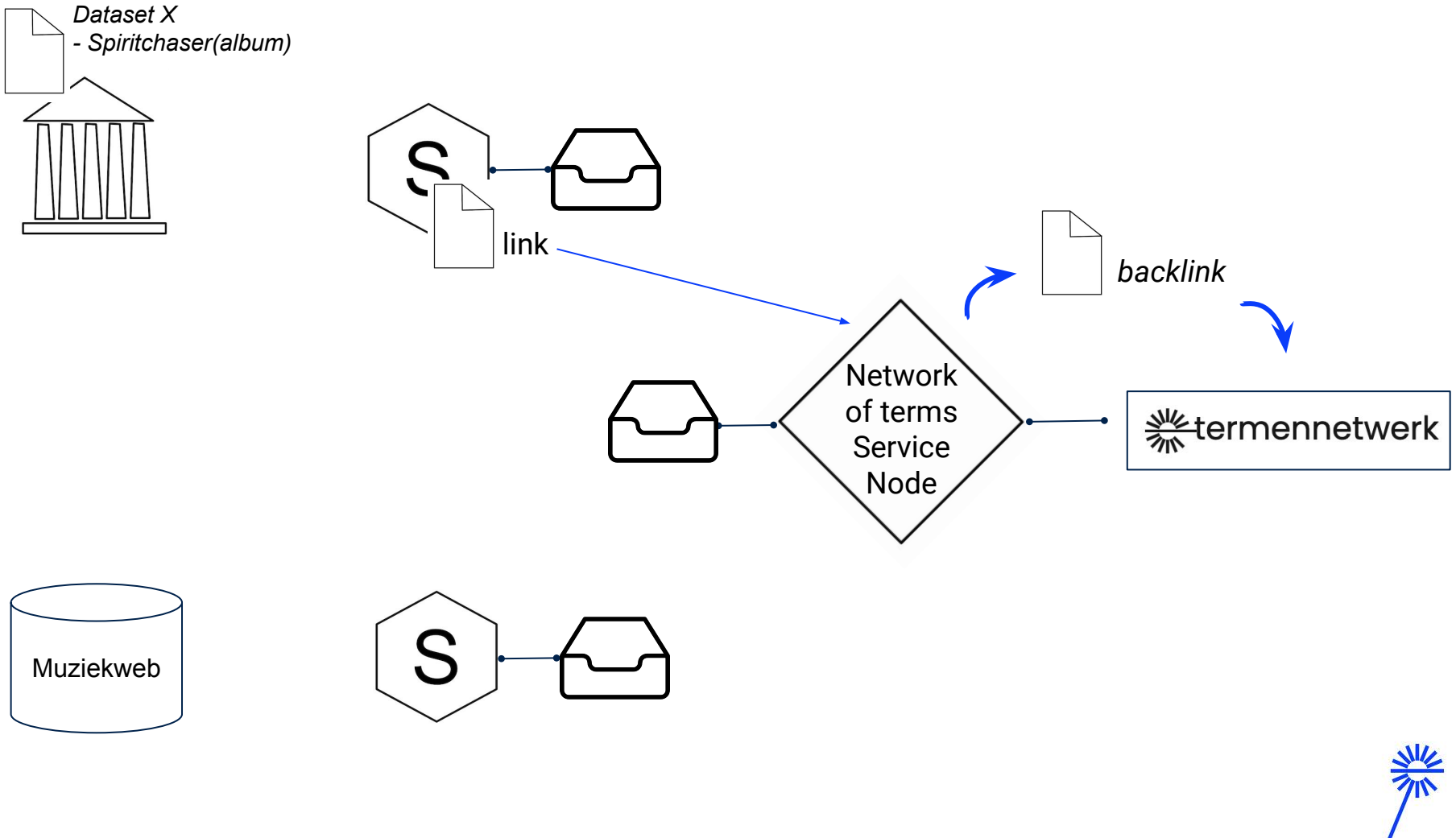
Case 3: Linking back

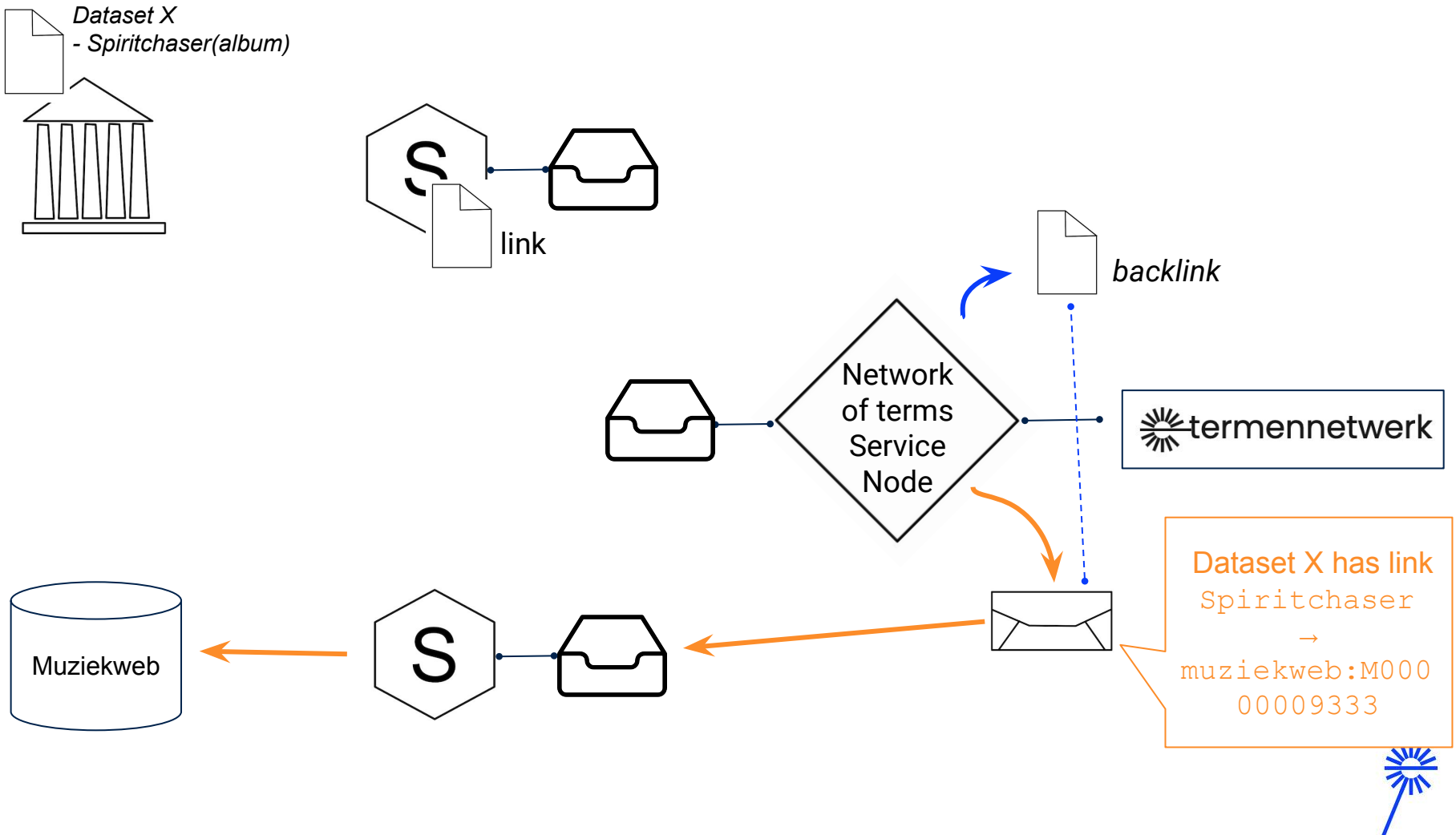


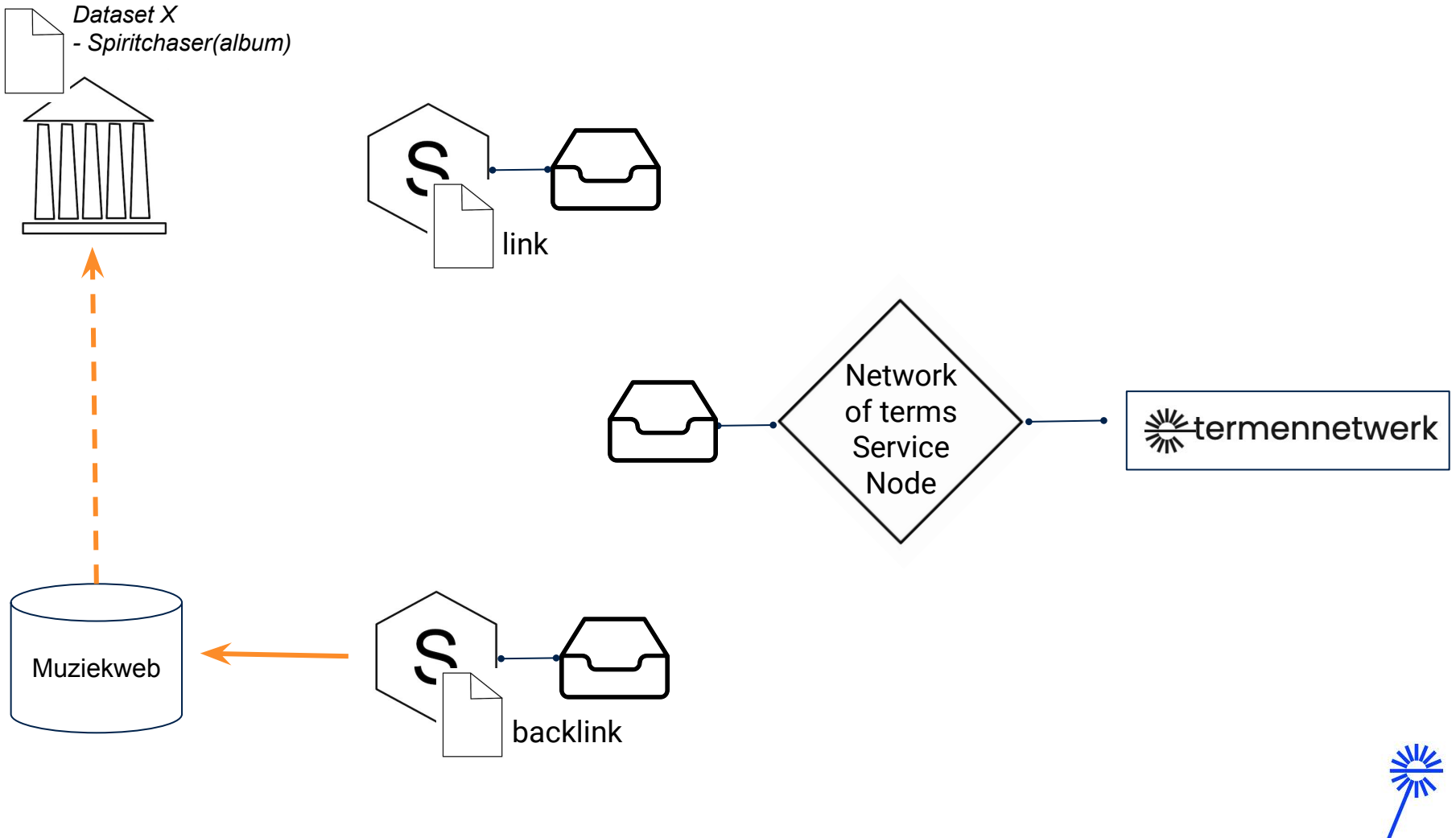
Inform a terminology source about the datasets that have links to one of its terms


Dataset X
- Spiritchaser(album)
link
S
Network of terms Service Node
termennetwerk
Muziekweb
S


Dataset X
- Spiritchaser(album)
S
link
Link
Spiritchaser
→
muziekweb:M00
000009333
(dead can dance)
Network
of terms
Service
Node
termennetwerk
Muziekweb
S


Dataset X
- Spiritchaser(album)
S
link
backlink
Network
of terms
Service
Node
termennetwerk
Muziekweb
S


Dataset X
- Spiritchaser(album)
link
backlink
Network of terms Service Node
termennetwerk
Dataset X has link
Spiritchaser
→
muziekweb:M000
00009333
Muziekweb


Dataset X
- Spiritchaser(album)
link
Network of terms Service Node
termennetwerk
Muziekweb
backlink

Contents

1. **recap**
   the event notifications protocol

2. **context**
   decentralised discovery infrastructure for heritage information

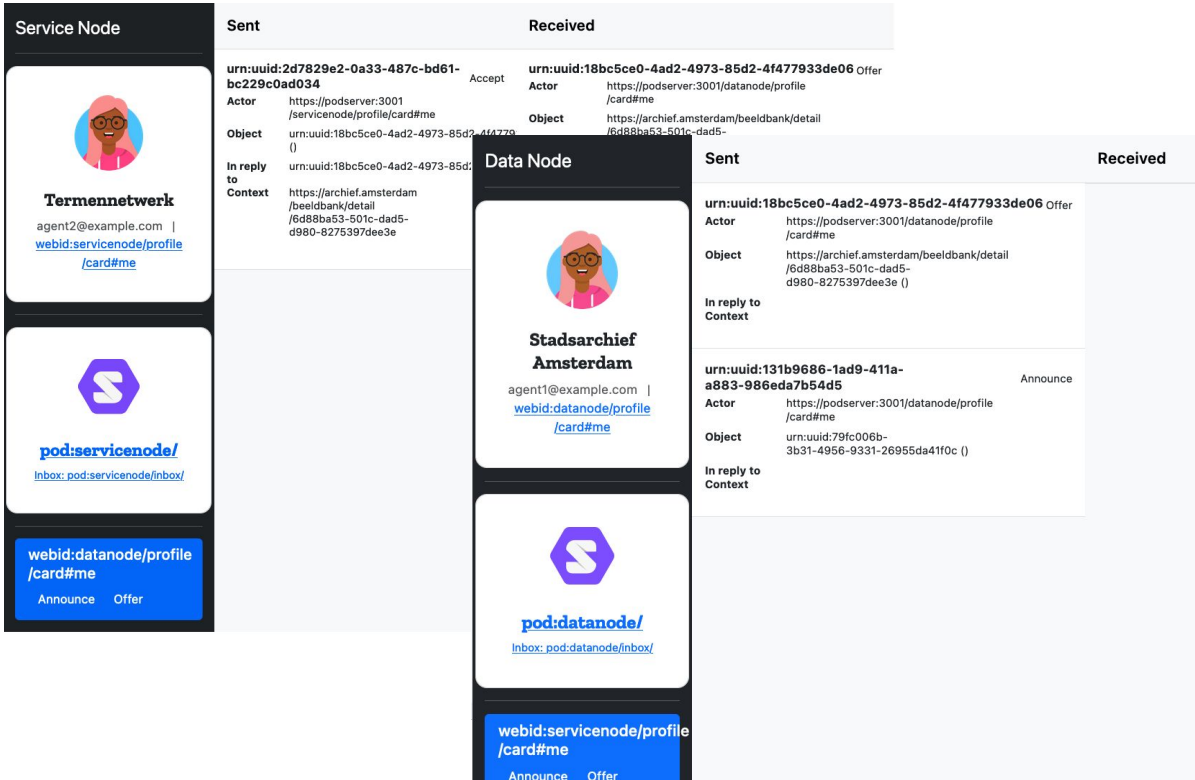
3. **use cases**
   applications of event notification in digital heritage

4. **wrap-up**
   project takeaways and next steps

Reports and demo

Project ouput at https://github.com/ErfgoedPod
(WIP; will be finalized in summer)

- Typescript library: evno
- Demo applications of use cases



Next steps

Further identification of **business processes in digital heritage networks**

and analyse how they can be decentralized (services? messages? lifecycle?)

Creating a **heritage-specific vocabulary** for notification payloads

as extension for the generic event notifications protocol

Enable **automation** of workflows

by using orchestration and policies

Thanks for your attention!

Please contact us tech@netwerkdigitaalerfgoed.nl
or miel.vandersande@meemoo.be for any additional information!