



Use Cases of Event Notifications in digital heritage networks

The Decentral Web & Solid
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 **@mielvds**



**dutch digital
heritage
network**

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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

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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](#)

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<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



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Dutch Digital Heritage Network (NDE)

Decentralised discovery infrastructure for heritage information

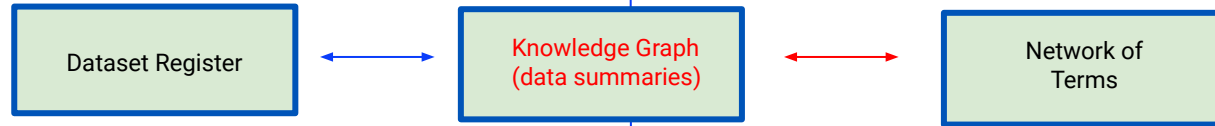
Services

n = 2029



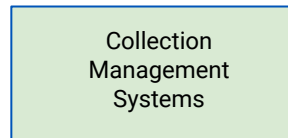
Network

n = 41



Sources

n = 1560



"advertise your data"

*"improve the visibility on
the web"*

"use things not strings"

"discover relevant datasets"

"smarter, more dynamic services"



Dataset Register

The screenshot shows the homepage of the Dataset Register website. The browser's address bar displays the URL <https://datasetregister.netwerkdigitaalerfgoed.nl>. The website header features the logo "datasetregister" on the left and navigation links "Maak", "Valideer", "Meld aan", "Doorzoek", and "Veel gestelde vraag" on the right. The main content area has a background image of a hand interacting with a digital globe. A central white box contains the title "Datasetregister" and the subtitle "Voor alle erfgoeddatasets!". Below this, a paragraph states: "Het datasetregister geeft inzicht in de beschikbaarheid van datasets in het erfgoedveld en stimuleert daarmee het gebruik van deze datasets." At the bottom, two call-to-action boxes are displayed: "Voor erfgoedinstellingen met datasets: voeg een datasetbeschrijving toe" and "Voor gebruikers van erfgoeddata: doorzoek 698 datasetbeschrijvingen".

datasetregister

Maak Valideer Meld aan Doorzoek Veel gestelde vraag

Datasetregister

Voor alle erfgoeddatasets!

Het datasetregister geeft inzicht in de beschikbaarheid van datasets in het erfgoedveld en stimuleert daarmee het gebruik van deze datasets.

Voor erfgoedinstellingen met datasets: voeg een datasetbeschrijving toe

Voor gebruikers van erfgoeddata: doorzoek 698 datasetbeschrijvingen



<https://datasetregister.netwerkdigitaalerfgoed.nl>

Network Of Terms

termennetwerk Veelgestelde vragen Language

Zoeken in gemeenschappelijke thesauri, classificatiesystemen en referenties

voor collectiebeheerders | voor beheerders van terminologiebronnen | voor onderzoekers

Zoeken met woorden Zoeken met URI

Zoekwoorden

Terminologiebronnen

Zoeken

Muziek: personen en groepen

Artiesten, zowel personen als groepen, in de collectie van Muziekweb

Muziekweb

1 term gevonden (in 205 ms)

Dead Can Dance

Veel popmuziek lijkt een herhaling van eerdere zetten, maar Dead Can Dance was van meet af aan één van de echt vernieuwende orkesten. De orkest werd in 1981 opgericht door multi-instrumentalist Brendan Perry en

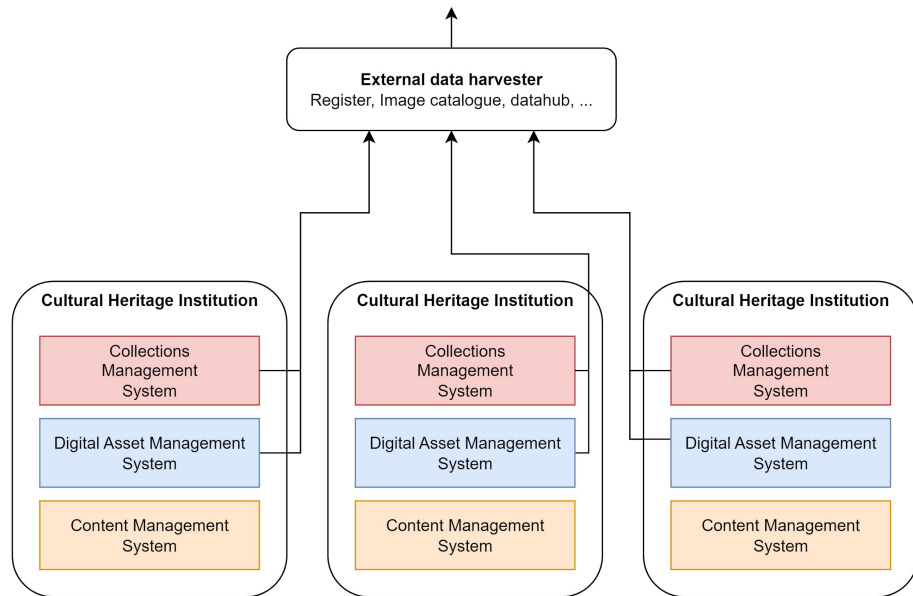
- Adamlink: straten in Amsterdam AdamNet
- Archeologisch Basisregister (ABR) RCE
- Art & Architecture Thesaurus (AAT) Getty
- Brinkman trefwoordthesaurus (Brinkman) KB
- Cultuurhistorische Thesaurus (CHT) RCE
- EuroVoc - thesaurus van de Europese Unie Europese Unie
- GTAA: genres Beeld en Geluid
- GTAA: geografische namen Beeld en Geluid
- GTAA: onderwerpen Beeld en Geluid
- Muziek: genres en stijlen Muziekweb
- Muziek: personen en groepen Muziekweb
- Muziekschatten: onderwerpen SOM
- Muziekschatten: personen SOM
- Nederlandse Thesaurus van Auteursnamen (NTA) KB
- RKDartists RKD
- STCN: drukkers KB
- Thesaurus Nationaal Museum van Wereldculturen NMVW
- Wikidata: alle entiteiten Wikidata
- Wikidata: personen Wikidata
- Wikidata: plaatsen in Nederland en België Wikidata
- Wikidata: straten in Nederland Wikidata



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

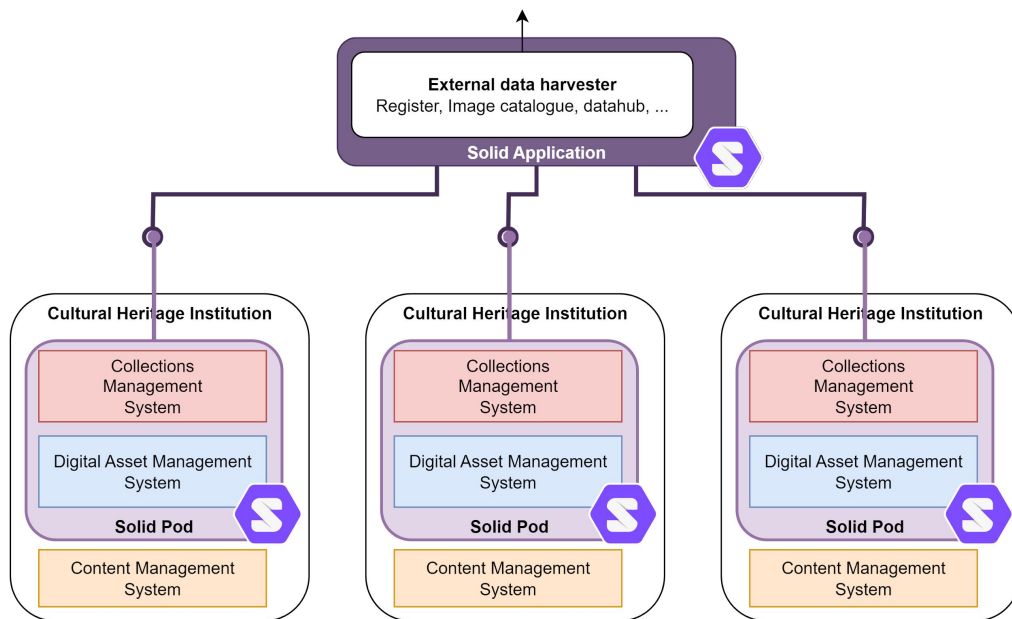


Solid as implementation layer

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

Services

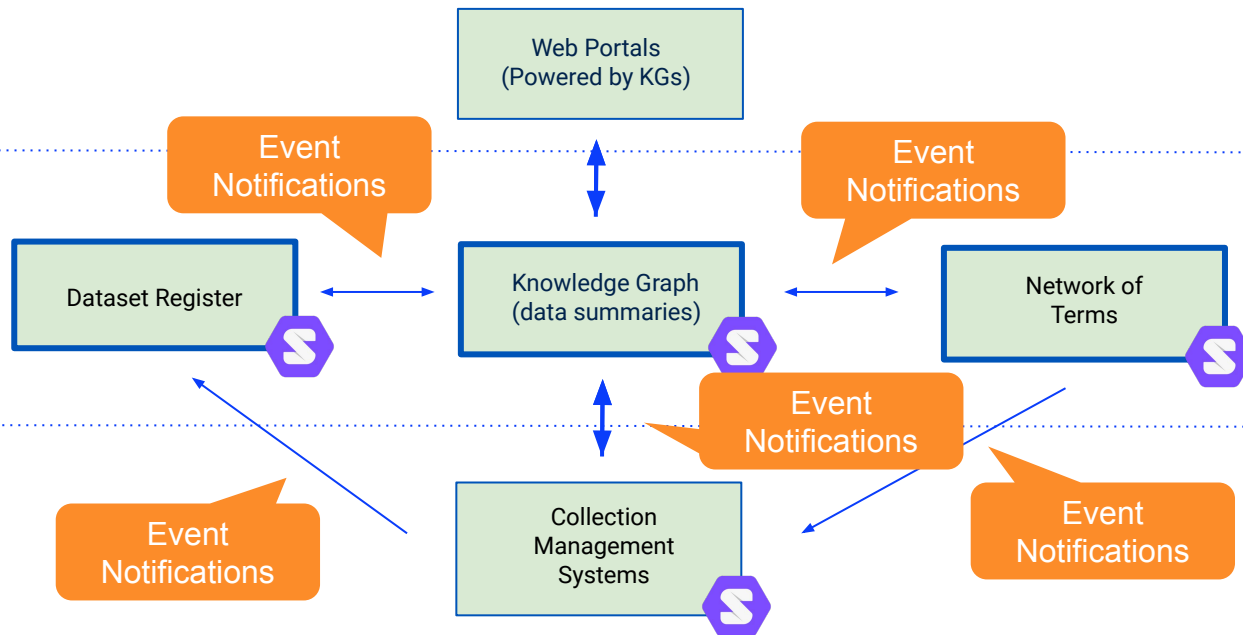
$n = 2029$

Network

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Data nodes provide the network with artifacts

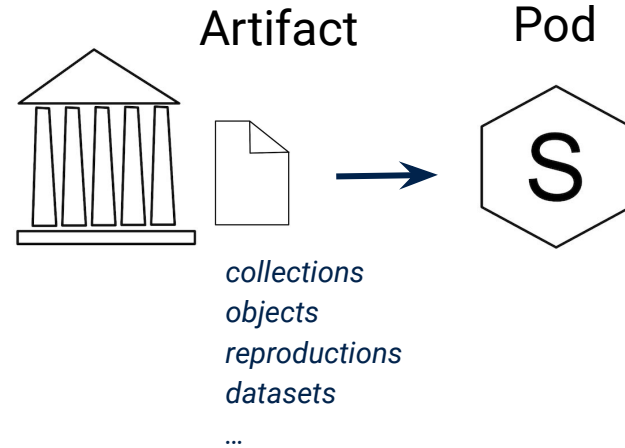
Cultural heritage institutions

Metadata aggregators

Registers

Digital asset systems

...



Service nodes provide services to artifacts

Archives & long-term storage

Metadata cleanup & enrichment

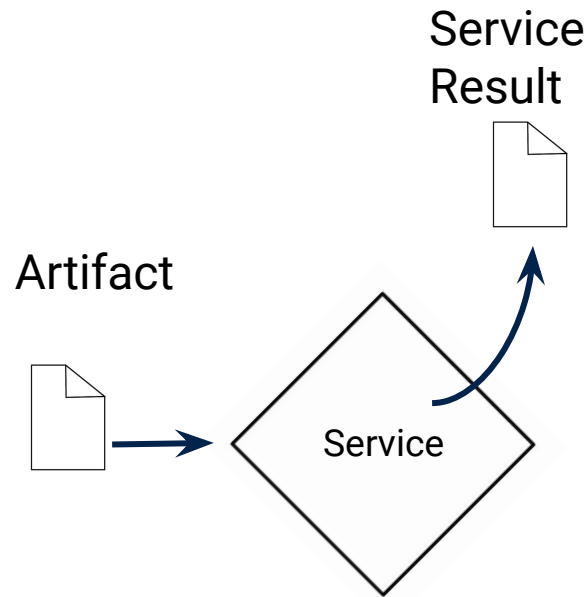
Metadata aggregators (re-dissemination)

Registers (re-dissemination)

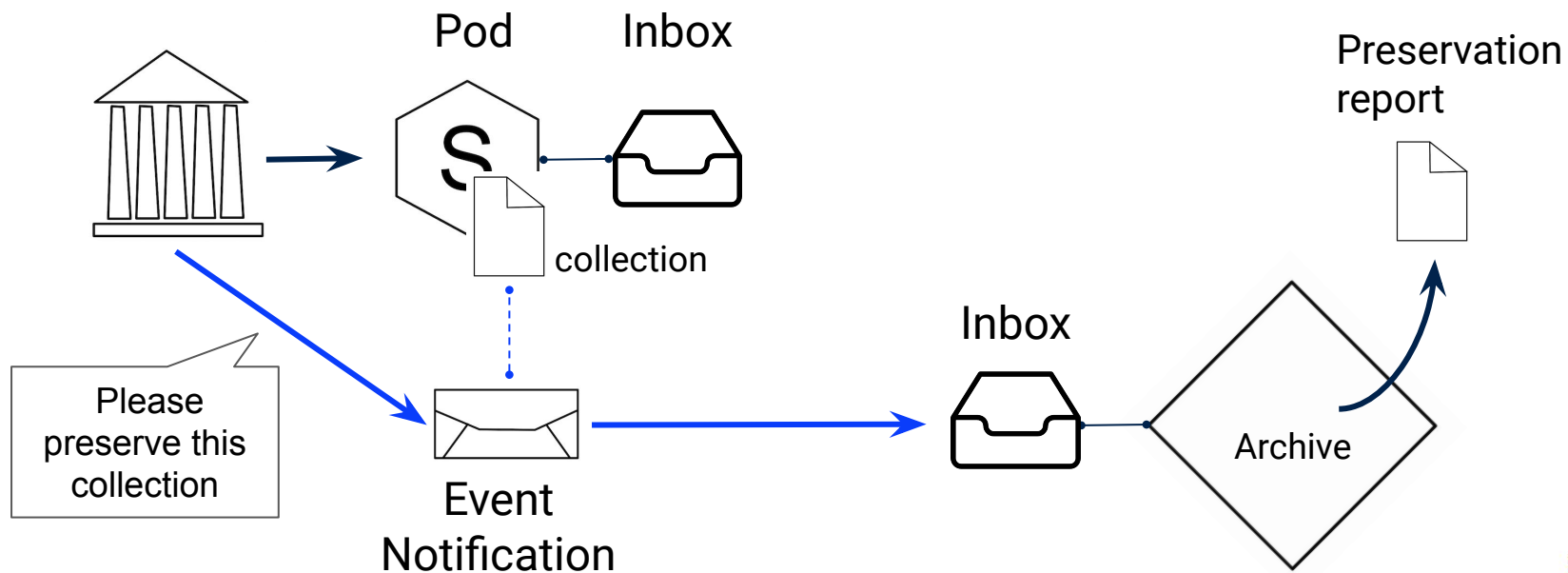
Search indexes

Heritage portal websites

...

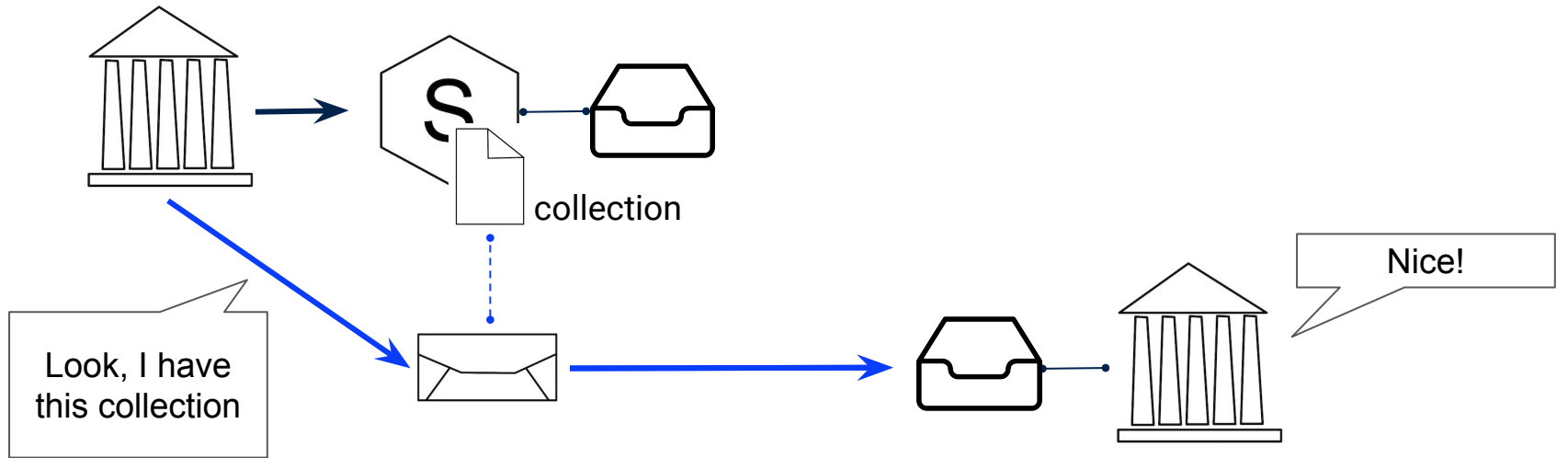


Nodes interact with notifications



I. Informing other parties in the network

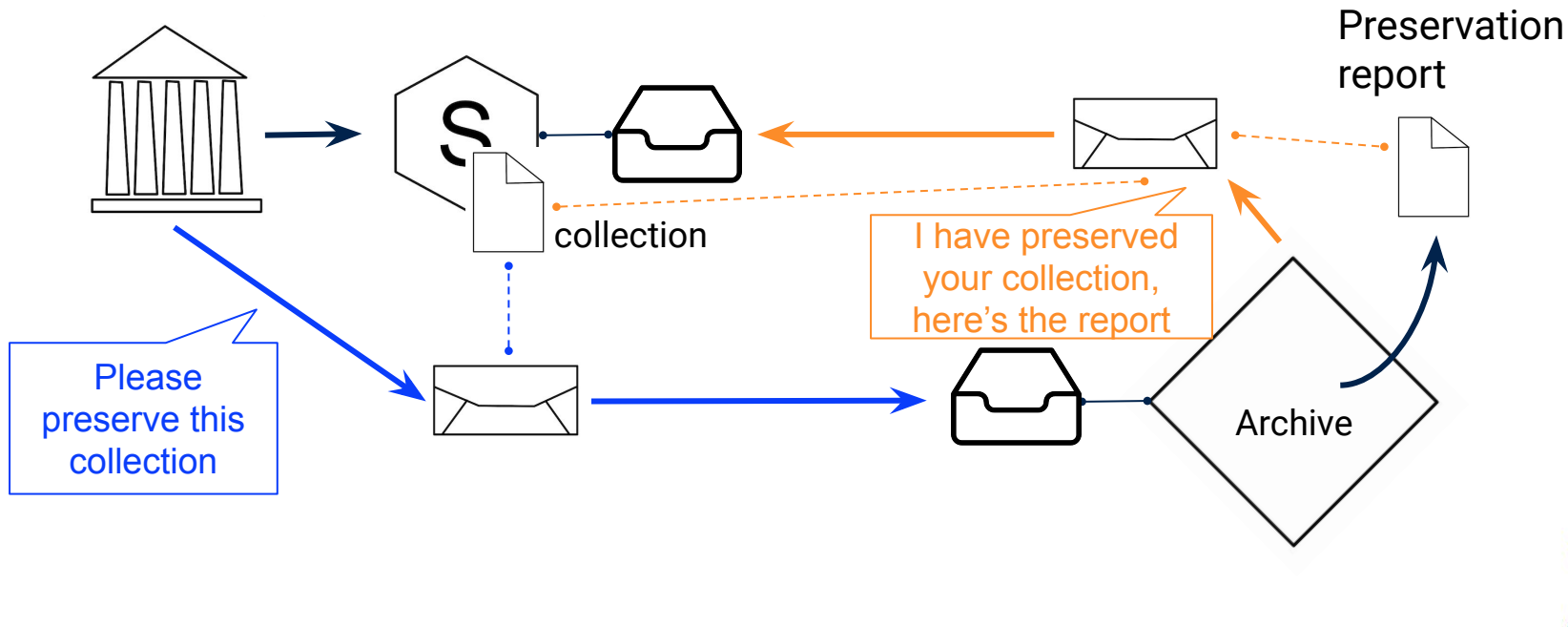
one-way pattern; no response/result expected



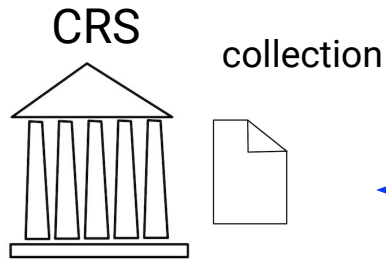
II. Provisioning of value-added services

request-response pattern; more elaborate back and forth

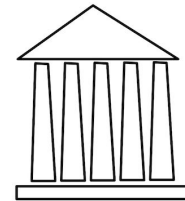
initiator expects response, but not necessarily instantly



Case 1: Collection on loan



Institution A registers a collection of cultural heritage objects



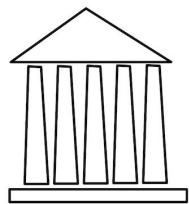
Institution B requests to loan the collection and transfer metadata



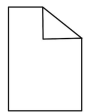
Collection Registration with Solid

The screenshot shows a web browser window displaying the 'Erfgoedobjecten' application. The browser's address bar shows the URL: `https://solid-crs.netwerkdigitaal erfgoed.nl/collection/https%3A%2F%2Fmielvds.solid...`. The application has a dark blue sidebar on the left with the user's name 'Miel Vander Sande' at the top. Below the name is a search bar labeled 'Zoeken' and a list of navigation items: 'Bruikleen', 'Collecties' (with a plus icon), 'Nieuwe collectie', and another 'Nieuwe collectie' item which is currently selected. The main content area has a light gray background. At the top of this area, it says 'Erfgoedobjecten' and 'Een test collectie van erfgoedobjecten'. In the center, there is a stylized illustration of trees and a sun. Below the illustration, the text reads 'Maak je eerste object aan' and there is a prominent orange button labeled 'Object aanmaken'.

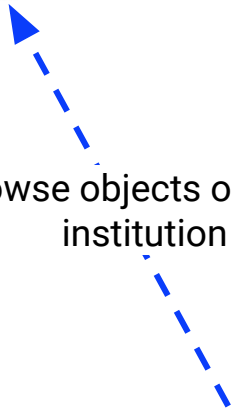
SolidCRS A



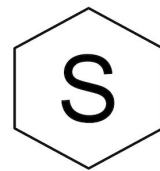
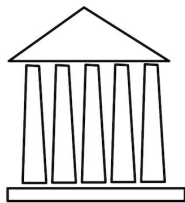
object
description



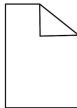
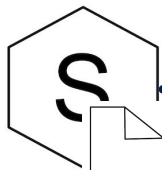
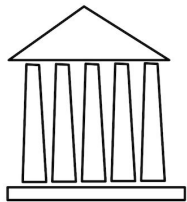
browse objects of other
institution



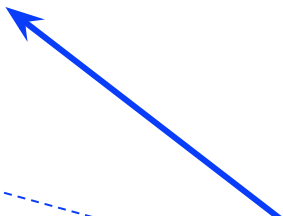
SolidCRS B



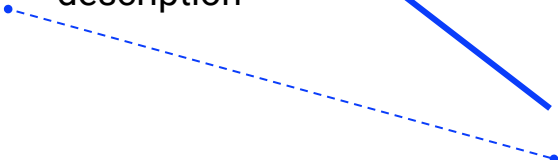
SolidCRS A



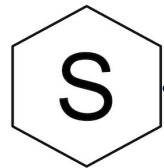
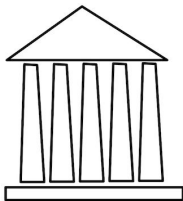
object
description



Request to
loan object



SolidCRS B



Request loan in SolidCRS

https://solid-crs.netwerkdigitaalergoed.nl/loan

Miel Vander Sande

Zoeken

Bruikleen

Collecties (+)

Erfgoedobjecten

Bruikleen
Nieuwe aanvraag tot bruikleen

Aanvraag verzenden

Nieuwe aanvraag

In behandeling

Goedgekeurd

Inkomende aanvragen

Alle

Geef de url van een collectie in

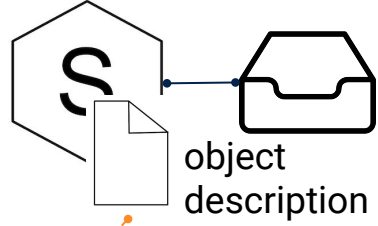
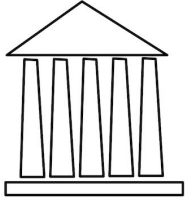
lidcommunity.net/heritage-collections/catalog#collection-eb789e99-edb2-4410-99de-8b7607ad1911

Opmerkingen

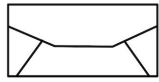
Annuleren

Bevestigen

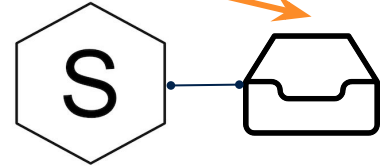
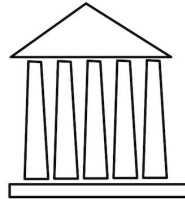
SolidCRS A



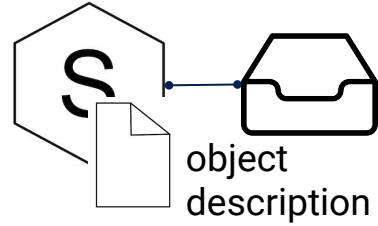
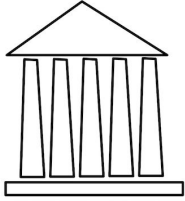
Accept loan request



SolidCRS B

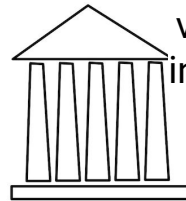


SolidCRS A

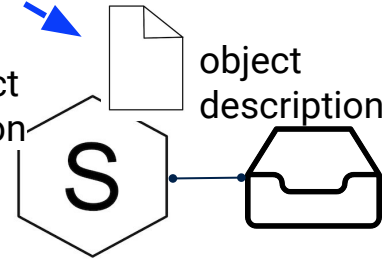


description is
link to description is
created in Pod B

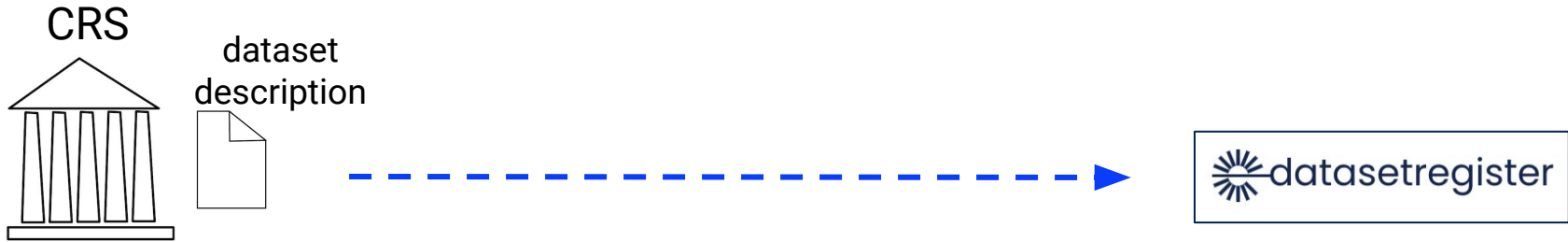
SolidCRS B



visible as object
in loan collection

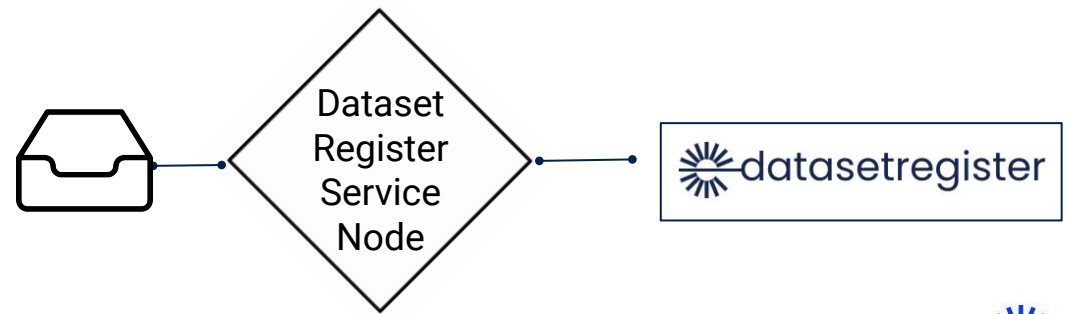
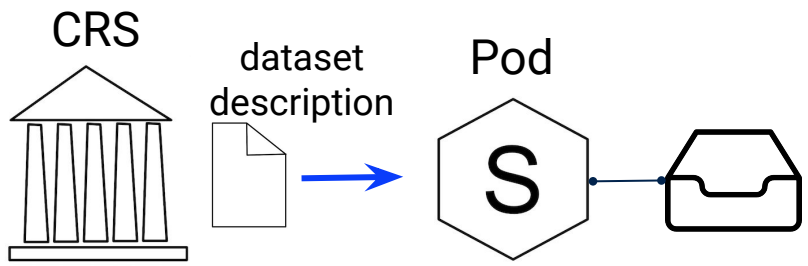


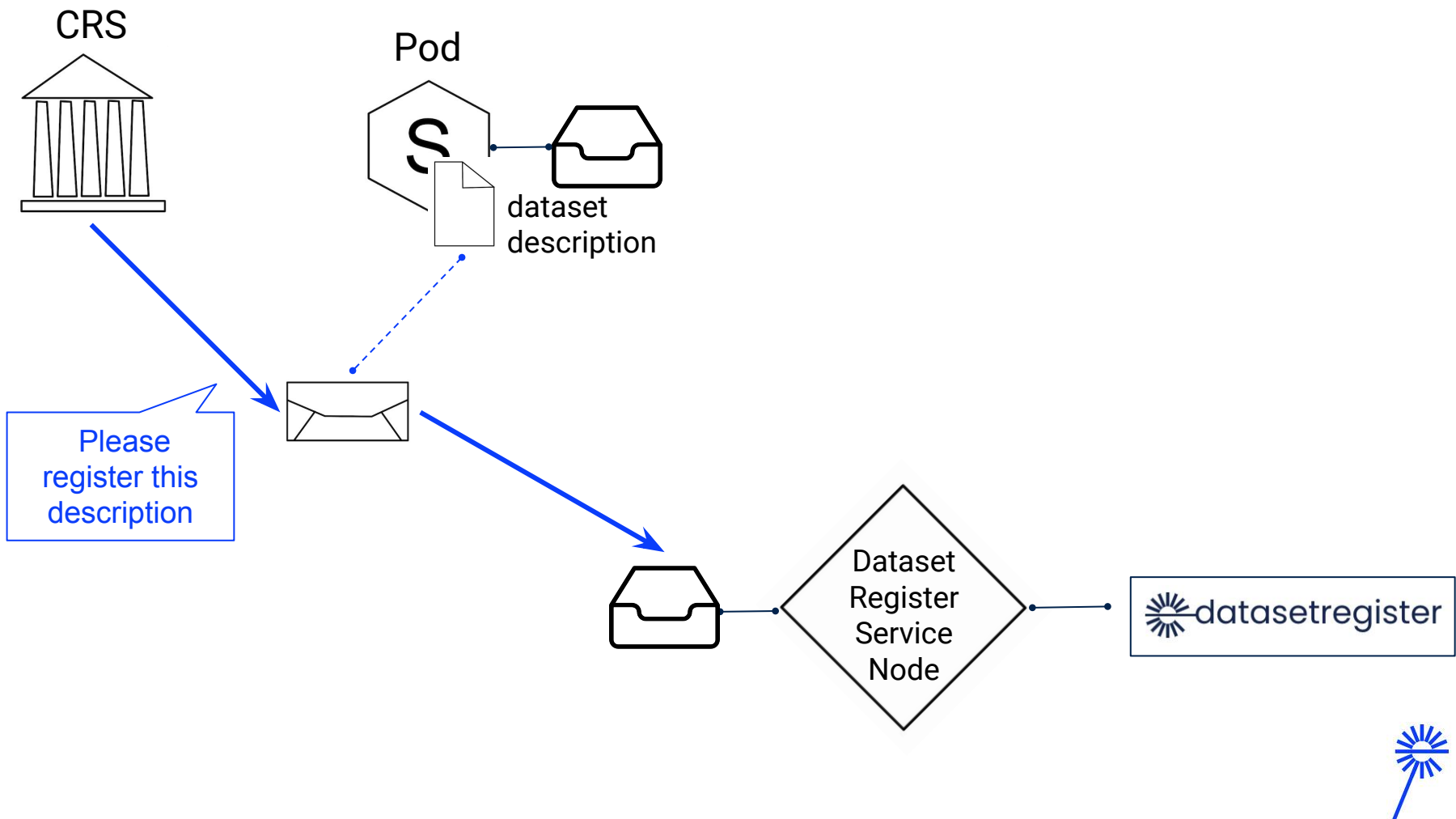
Case 2: Registering datasets

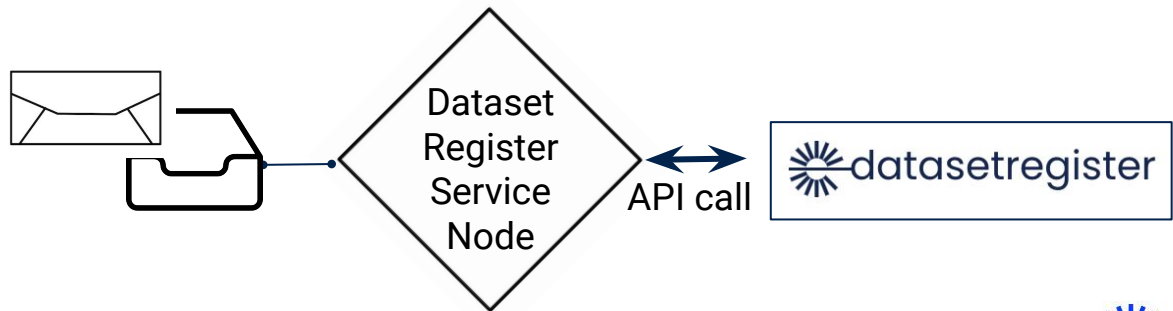
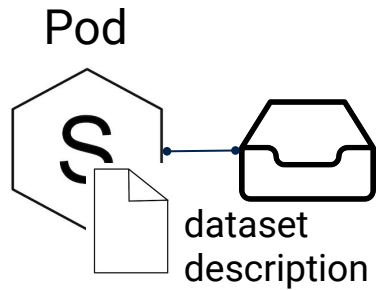
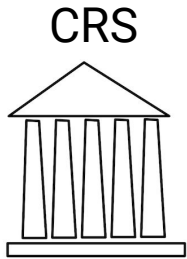


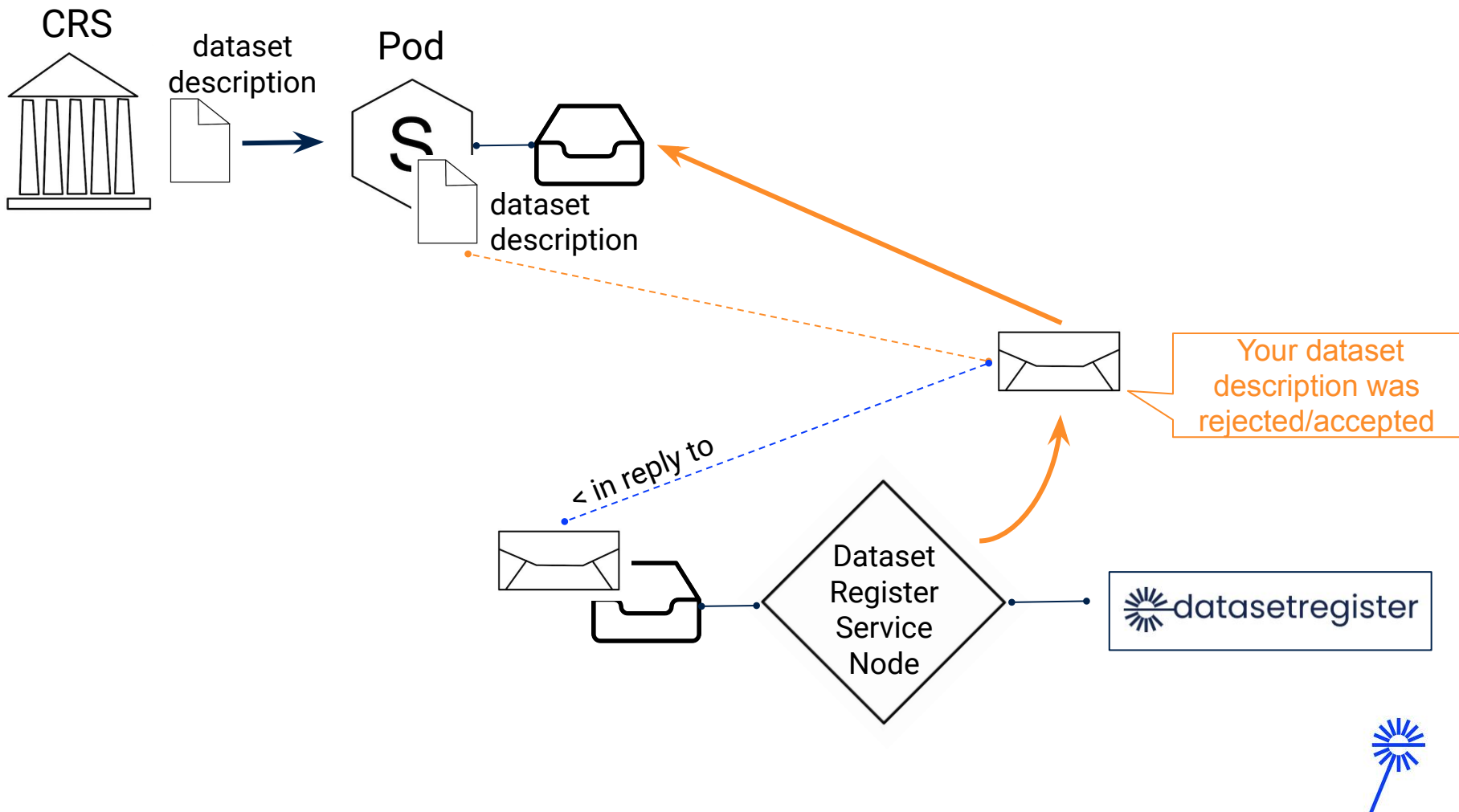
Institution A wants to register a dataset in NDE's dataset register

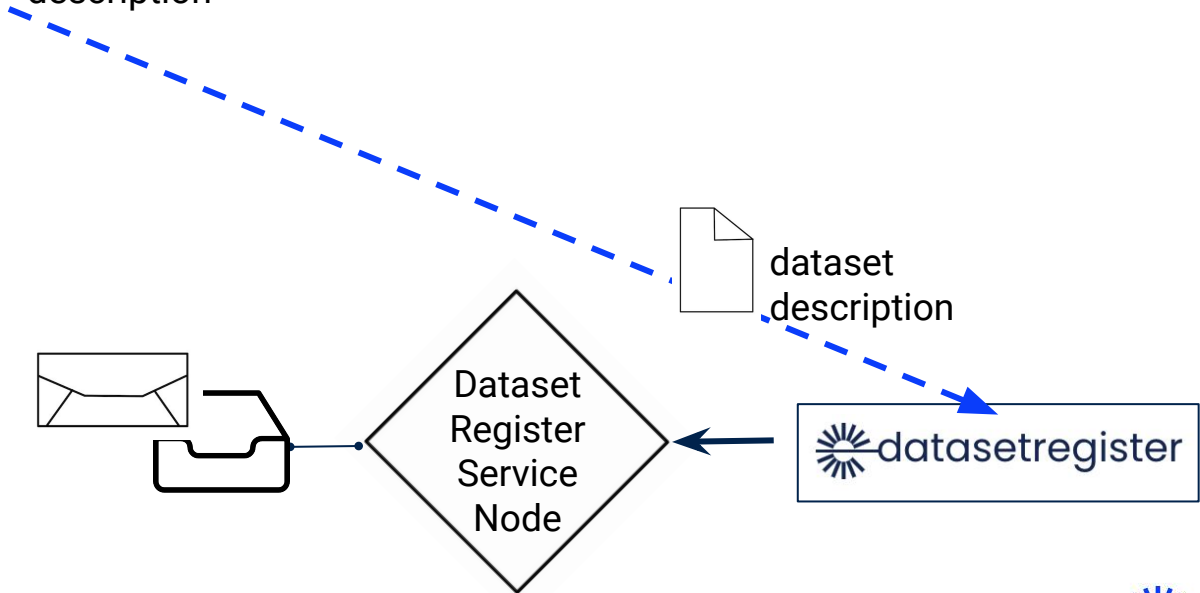
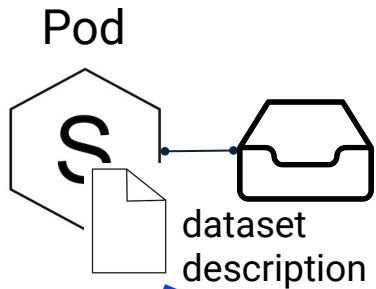
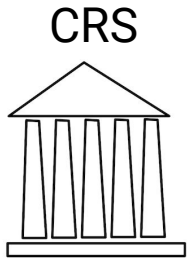


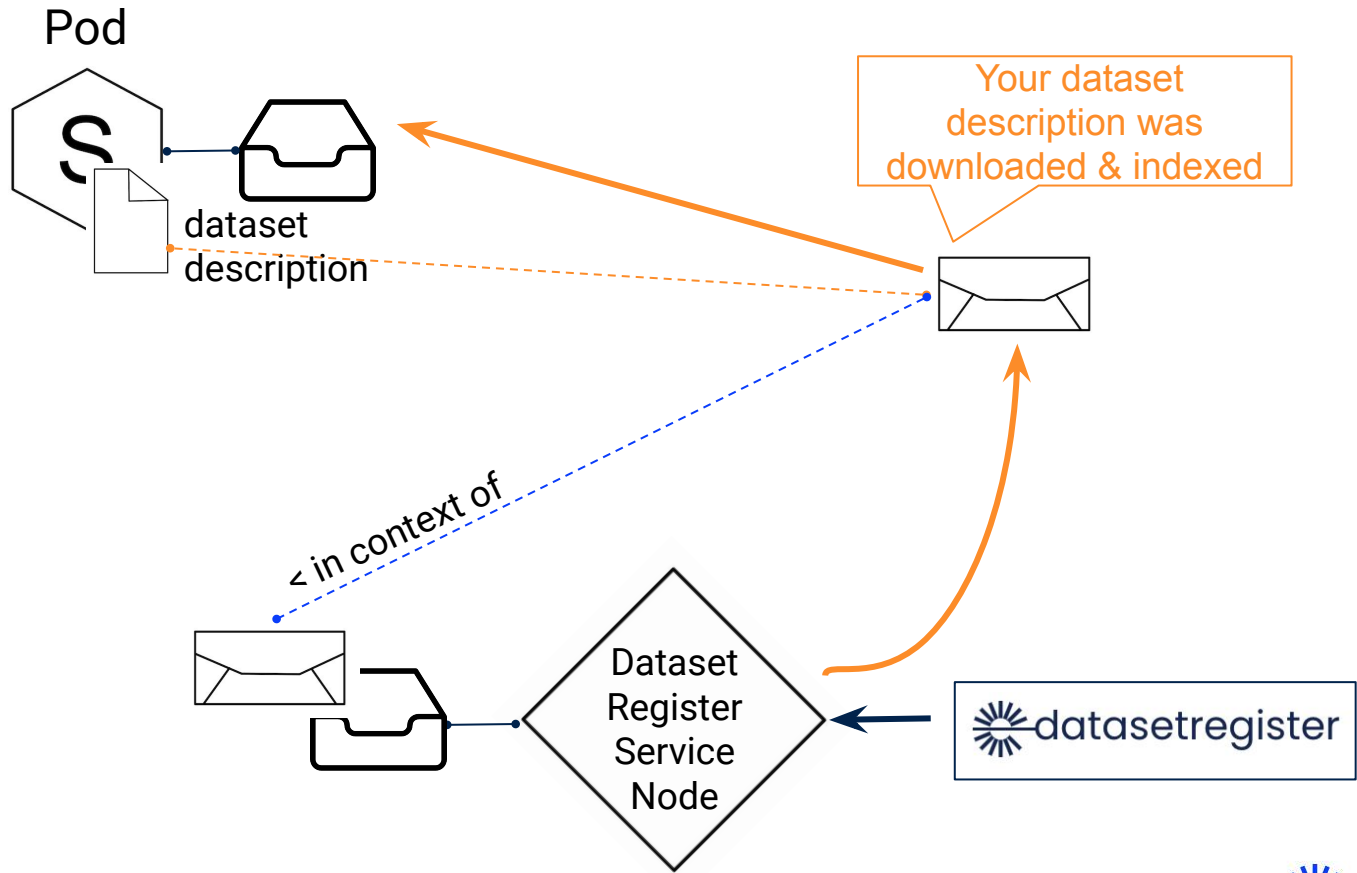
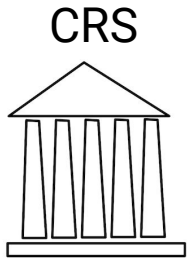




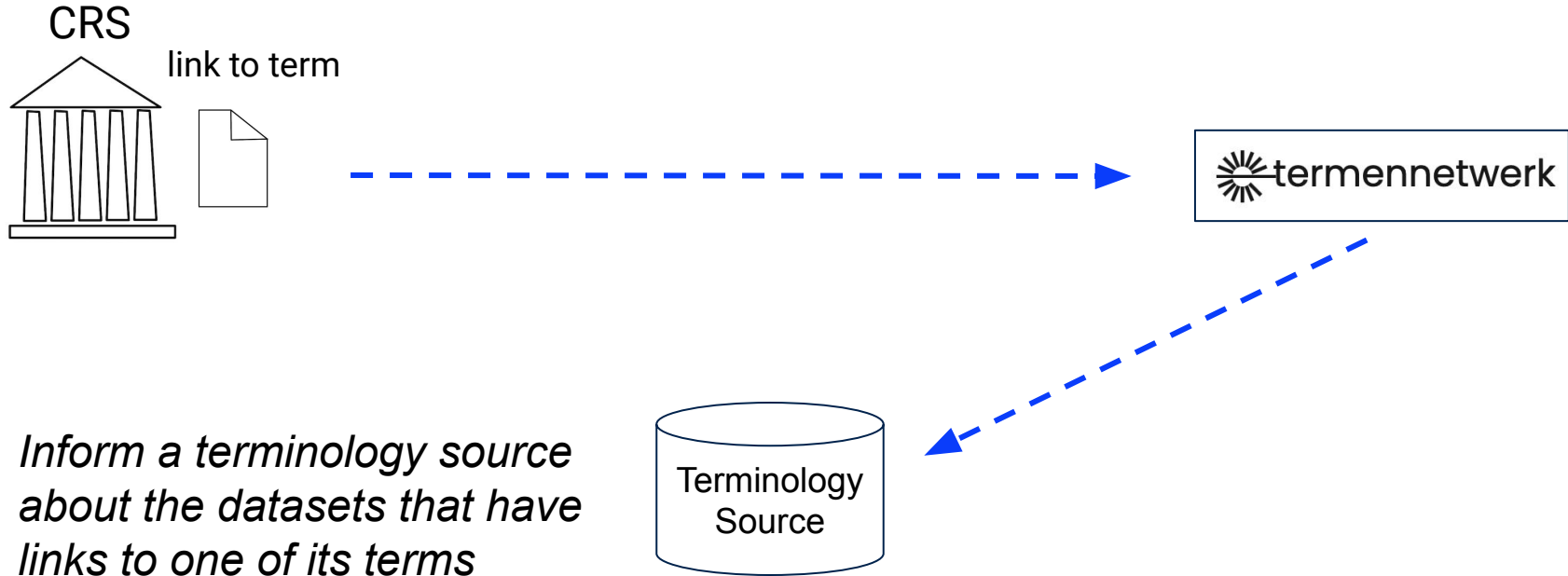


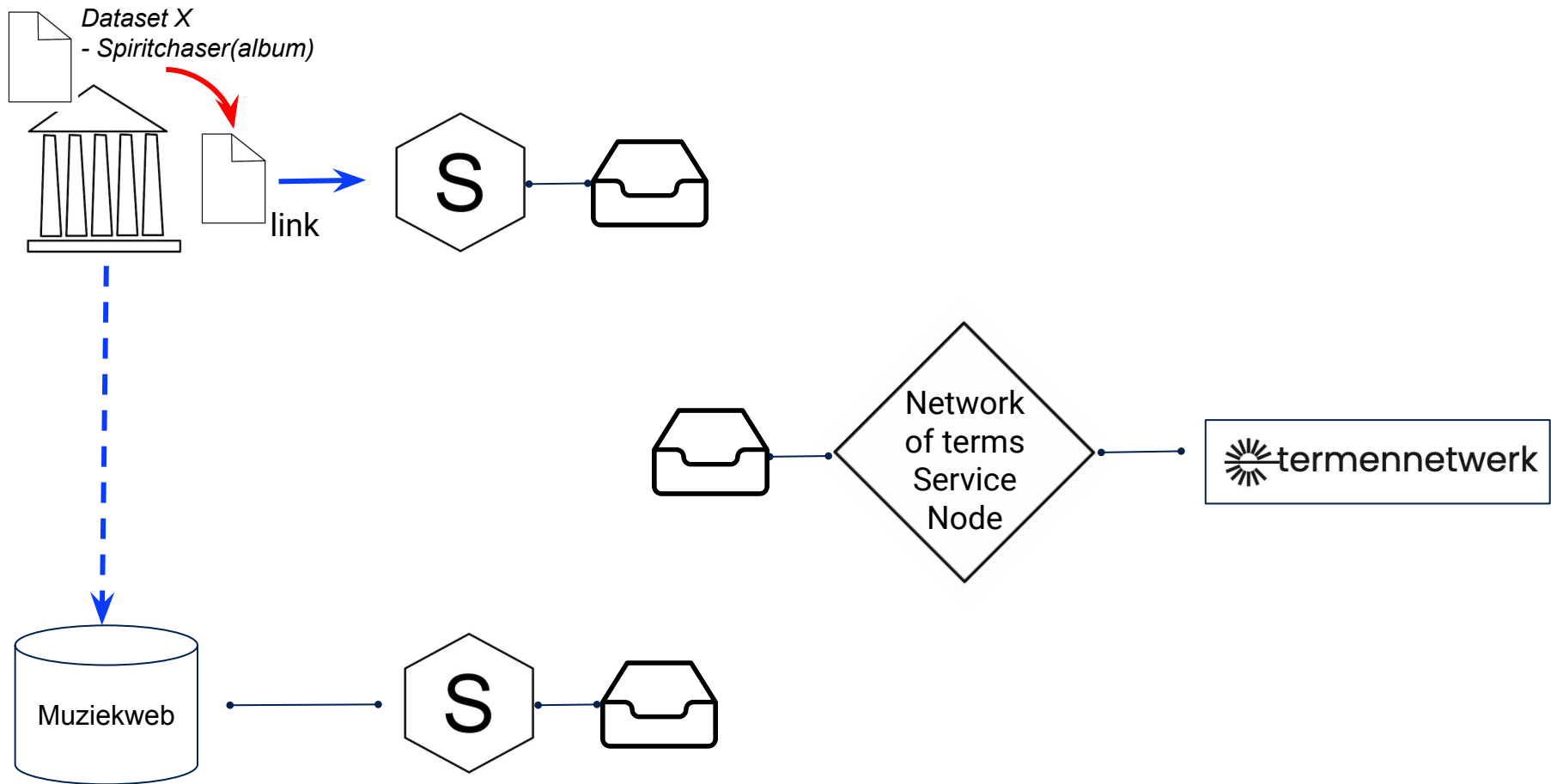


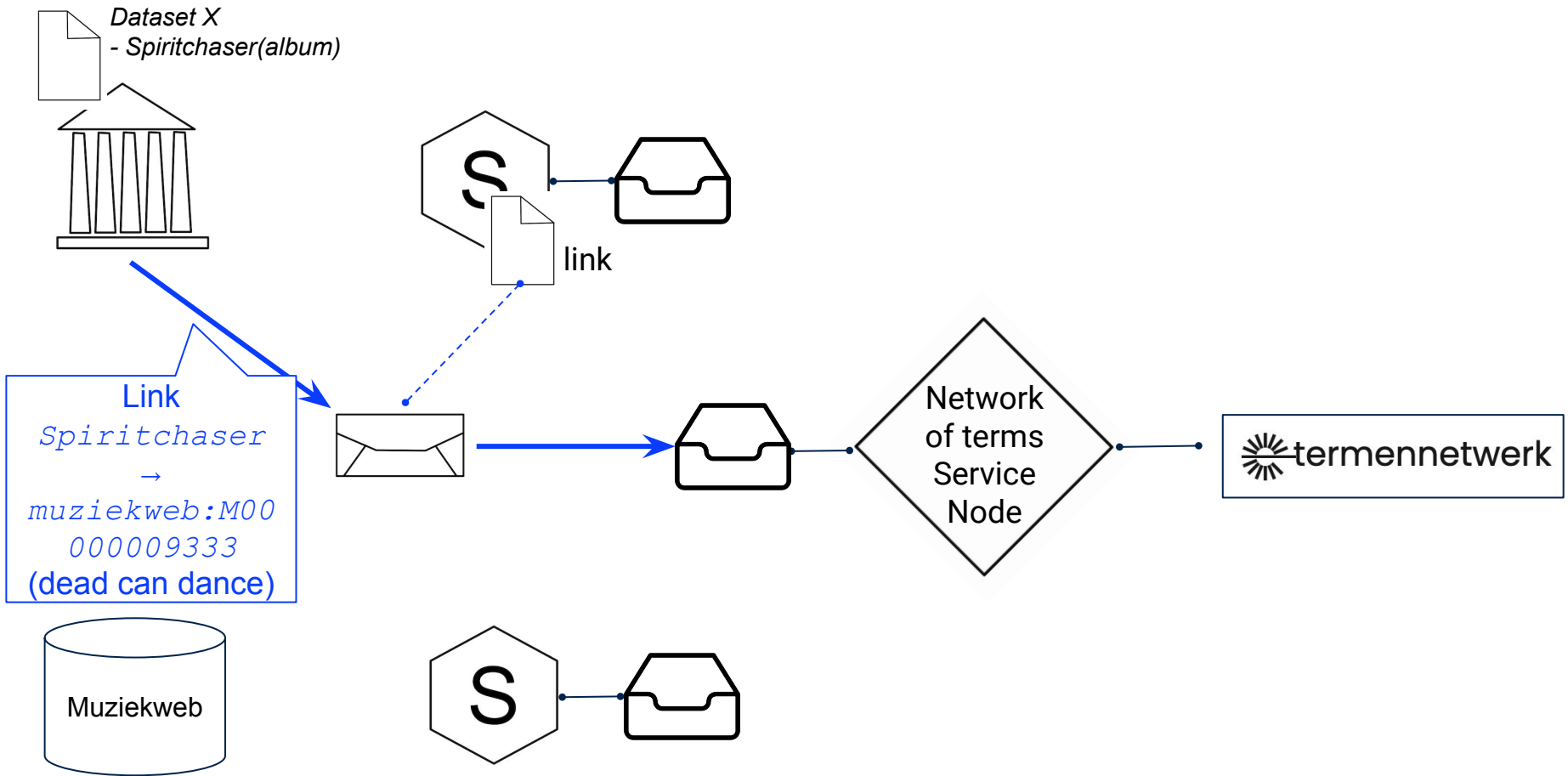




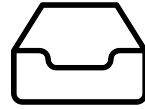
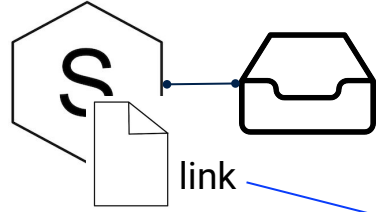
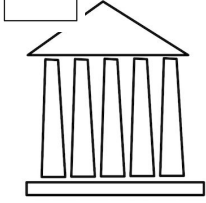
Case 3: Linking back







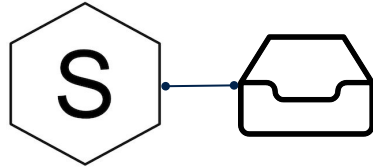
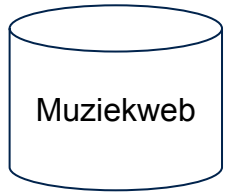
Dataset X
- Spiritchaser(album)



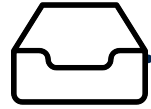
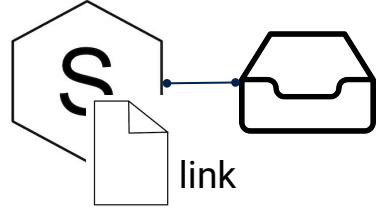
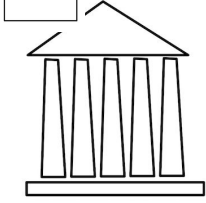
Network
of terms
Service
Node



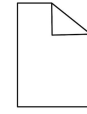
backlink



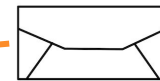
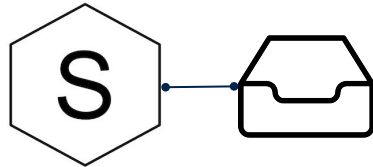
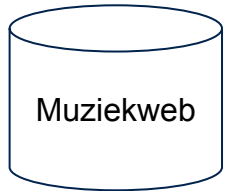
Dataset X
- Spiritchaser(album)



Network
of terms
Service
Node



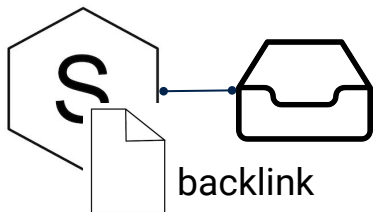
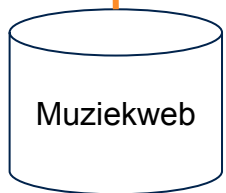
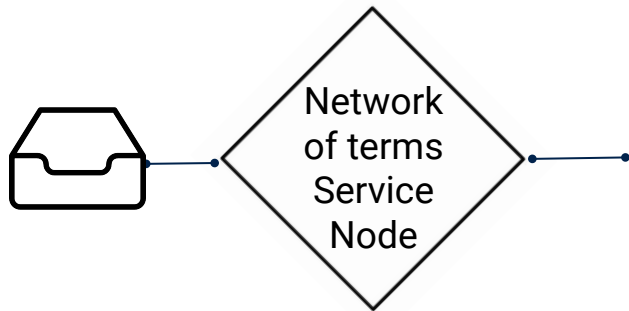
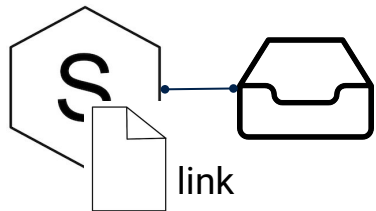
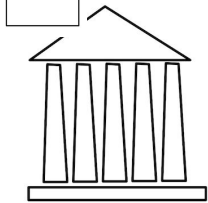
backlink



Dataset X has link
Spiritchaser
→
muziekweb:M000
00009333



Dataset X
- Spiritchaser(album)



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



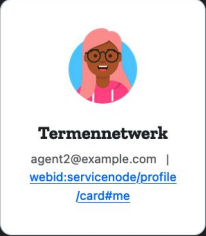
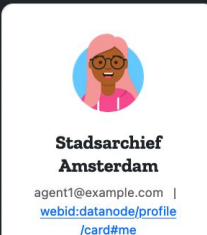


Reports and demo

Project output at

<https://github.com/ErfgoedPod>

(WIP; will be finalized in summer)

- Typescript library: evno
- Demo applications of use cases

Service Node	Sent	Received	Data Node	Sent	Received
 <p>Terminetwerk agent2@example.com webid:servicenode/profile/card#me</p>	<p>urn:uuid:2d7829e2-0a33-487c-bd61-bc229c0ad034 Accept</p> <p>Actor https://podserver:3001/servicenode/profile/card#me</p> <p>Object https://podserver:3001/datanode/profile/card#me</p> <p>In reply to Context https://archieff.amsterdam/beeldbank/detail/6d88ba53-501c-dad5-d980-8275397dee3e</p>	<p>urn:uuid:18bc5ce0-4ad2-4973-85d2-4f477933de06 Offer</p> <p>Actor https://podserver:3001/datanode/profile/card#me</p> <p>Object https://archieff.amsterdam/beeldbank/detail/6d88ba53-501c-dad5-d980-8275397dee3e</p>	 <p>Stadsarchief Amsterdam agent1@example.com webid:datanode/profile/card#me</p>	<p>urn:uuid:18bc5ce0-4ad2-4973-85d2-4f477933de06 Offer</p> <p>Actor https://podserver:3001/datanode/profile/card#me</p> <p>Object https://archieff.amsterdam/beeldbank/detail/6d88ba53-501c-dad5-d980-8275397dee3e</p> <p>In reply to Context</p>	
 <p>pod:servicenode/ Inbox: pod:servicenode/inbox/</p>			 <p>pod:datanode/ Inbox: pod:datanode/inbox/</p>	<p>urn:uuid:131b9686-1ad9-411a-a883-986eda7b54d5 Announce</p> <p>Actor https://podserver:3001/datanode/profile/card#me</p> <p>Object https://podserver:3001/datanode/profile/card#me</p> <p>In reply to Context</p>	
<p>webid:datanode/profile/card#me Announce Offer</p>			<p>webid:servicenode/profile/card#me Announce Offer</p>		

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!

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