



Learning to be patient

Ten years of implementing standards

Enno Meijers – CTO Dutch Digital Heritage Network

SWIB 2025 - 18 november 2025



**dutch digital
heritage
network**

An update on my earlier talk



The image shows a YouTube video player interface. At the top left is the YouTube logo with 'NL' next to it. To its right is a search bar with the word 'Search' inside. Further right are icons for search and a microphone. The main video area shows a man with grey hair and glasses, wearing a dark blazer over a patterned shirt, speaking. Below the video, there is a white text box containing the name 'Enno Meijers' and his affiliation 'National Library of the Netherlands'. To the right of this text is the 'SWIB17' logo, which includes the text 'Semantic Web in Libraries'.

YouTube^{NL} Search

Enno Meijers
National Library of the Netherlands

SWIB17
Semantic Web in Libraries

A distributed Network of Heritage Information



Contents

- What do we aim for?
- Where are we now?
- What will we do next?
- What have we learned?





What do we aim for?

Dutch Digital Heritage Network



Archives



Libraries



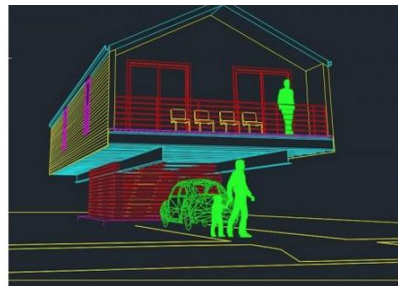
Museums



Media



Digital humanities



Design & digital culture



Performing art



Other networks



Focus on user

“Users want to be able to find and use relevant sources available from archives, libraries, museums, and other collections, preferably in as few searches as possible and at the lowest possible cost.”

Right now, users cannot easily locate a coherent overview of relevant sources.”



National Digital Heritage Strategie

The aim of the National Digital Heritage Strategy is to make digital heritage more accessible to everyone, enabling people and communities to experience heritage in the ways that suit them best.

<https://zenodo.org/records/14760720>



Goals for the network

- Making heritage information widely usable
- Based on a sustainable approach, from source to end user applications
- Fostering a dynamic understanding of heritage
- Building the data space for cultural heritage for the entire Kingdom



Key principles

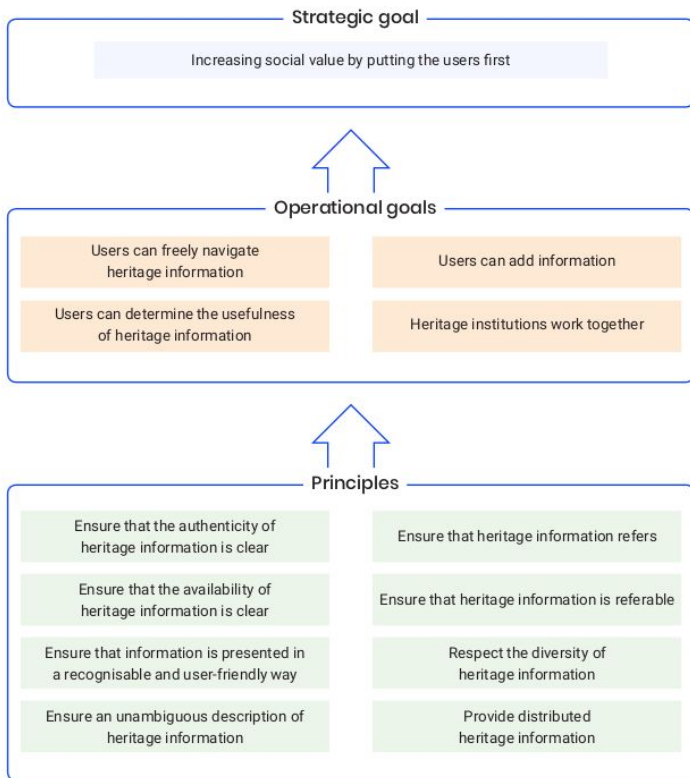
- Anticipating (re)use
- Everyone has a role to play
- Agreements are leading
- Decentralise where possible, centralise where necessary



The background is a solid blue color. It features several white, stylized dandelion-like patterns. These patterns consist of a central circle with lines radiating outwards, forming a fan shape. Some patterns are complete, while others are partially cut off by the edges of the frame. The patterns are scattered across the image, with a large one in the top right, a medium one in the top left, a medium one in the bottom left, a small one in the bottom center, and a small one in the bottom right.

Where are we now?

Digital Heritage Reference Architecture (DERA)



DERA Encyclopedie

- Concretisering doelstellingen
- Doelen
- Principes
- Requirements
- Bedrijfsarchitectuur
- Applicatiearchitectuur
- Begrippenlijst



Werken met DERA

- Architectuurscans
- Architectuurpatronen



Samenwerken aan DERA

- DERA Backlog



Over DERA

- TOGAF
- ArchiMate
- Nationale Strategie Digitaal Erfgoed
- Relaties met andere referentiearchitecturen
- Colofon

<https://dera.netwerkdigitaalerfgoed.nl/>



Implementing Linked Data standards

Collection management systems with support for :

- Working with persistent identifiers systems (Handle, ARK,...)
- Publication of Linked Data
- Support for IIF Image API and Presentation API
- Connection to the Network of Terms service
- Registration in the Datasetregister

Status December 2025: implemented in 100+ institutions



Network of Terms

The screenshot shows a web browser window with the URL `termennetwerk.netwerkdigitaalergoed.nl/en`. The page title is "Searching shared thesauri, classification systems, and reference lists". Below the title are four navigation links: "for managers of heritage collections", "for administrators of terminology sources", "for terminology source providers", and "for heritage software developers".

The main content area shows a search interface. The search term "sculpture" is entered in the "Search words" field. The "Terminology sources" dropdown is set to "Art & Architecture Thesaurus (AAT)". A list of search results is displayed, including:

- Adamlink: historical addresses in Amsterdam ATM
- Adamlink: streets in Amsterdam ATM
- Archaeological Basic Register (ABR) RCE
- Art & Architecture Thesaurus (AAT) Getty ✓
- Art & Architecture Thesaurus - materials (AAT - materials) Getty
- Art & Architecture Thesaurus - processes and techniques (AAT - processes and techniques) Getty
- Art & Architecture Thesaurus - styles and periods (AAT - styles and periods) Getty
- Brabant buildings Erfgoed Brabant
- Brinkman subjects (Brinkman) KB
- Colonial Past RCE
- Cultural-historical Thesaurus (CHT) RCE
- Cultural-historical Thesaurus - Materials (CHT - materials) RCE
- Cultural-historical Thesaurus - Styles and periods (CHT - styles and periods) RCE
- Dutch East Indies Heritage Thesaurus IHC
- Dutch National Thesaurus for Author Names KB
- EuroVoc - thesaurus of the European Union European Union
- GeoNames: geographical names in The Netherlands, Belgium and Germany GeoNames

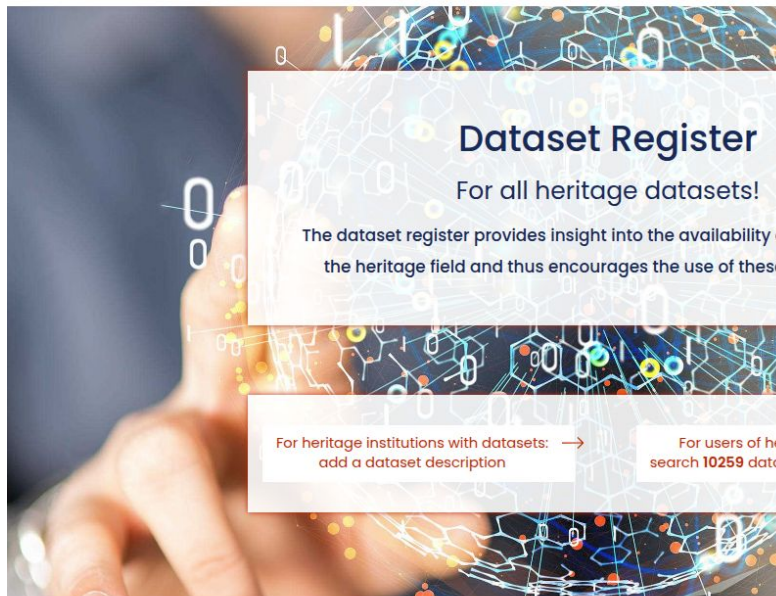
On the left side, there are two panels. The top panel is titled "Aegean sculpture style" and shows "Alternative labels: Aegean sculpture style • styles, Aegean" and "Broader term: Aegean styles". The bottom panel is titled "African sculpture style" and shows "Alternative labels: African sculpture style • styles, African".

- 49 terminology sources available
- GraphQL API implemented in 100+ systems
- realtime federated queries over SPARQL endpoints
- harmonised to a unified SKOS model

Demonstrator: <https://termennetwerk.nl>
Code: [network-digitaal-ergoed on Github](#)



Datasetregister.nl



Are you active with datasets at a heritage

Are you looking for heritage datasets?

Dataset description

<https://lod.uba.uva.nl/CREATE/ONSTAGE>

URI	https://lod.uba.uva.nl/CREATE/ONSTAGE
Identifier	https://lod.uba.uva.nl/CREATE/ONSTAGE
Language	iso639-1:en
Title	ONSTAGE
Description	ONSTAGE is the data repository for Amsterdam's first and most prominent public theatre venue: the Schouwburg. In theatre history, the Amsterdam Schouwburg has a fairly unique place due to its rich body of extant account books, programs and administrative records of annual play lists, and registers of expenses and revenues. These sources, as a most sensitive finger on the theatre's pulse, can be used as analytical tools that provide access to the theatre's artistic business, from its foundation in 1638 until today. For more information, see: https://www.vondel.humanities.uva.nl/onstage/
License	https://creativecommons.org/licenses/by/4.0/
Distribution	https://lod.uba.uva.nl/CREATE/ONSTAGE/services/ONSTAGE
Media Type	application/sparql-results+json
Title	ONSTAGE
Description	SPARQL endpoint
Access URL	https://api.lod.uba.uva.nl/datasets/CREATE/ONSTAGE/services/ONSTAGE/sparql
Conforms To	https://www.w3.org/TR/sparql11-protocol/

software for heritage



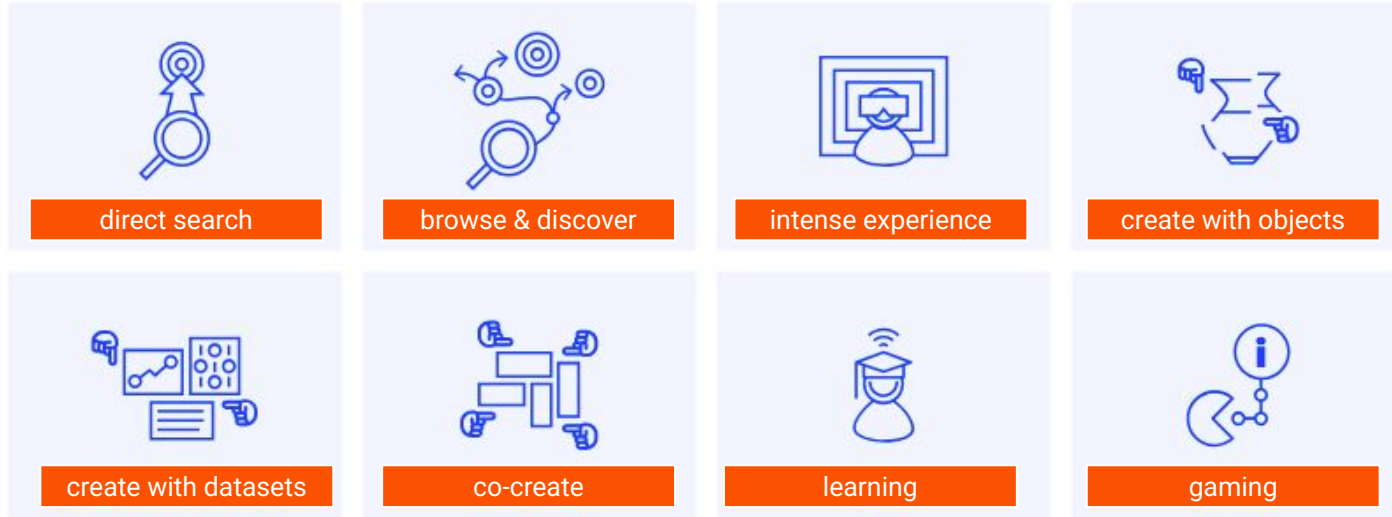
Data models for Linked Data publication

- Schema.org NDE-application profile (required)
- Domain model and application profiles (optional)
 - CIDOC-CRM => large scale implementations of Linked Art
 - IFLA/LRM => work on RDA profiles for [library](#) and [music](#) collections
 - [Records-in-Contexts Ontology](#) => work on NL application profile
 - [Linked Places format](#) => work on NL application profile
 - **!** [Person in Context](#) : NL model for historical person observations and reconstructions
- DCAT-AP 3.0(-NL) for describing datasets
- SKOS - harmonised searches in terminology sources

More info: <https://docs.nde.nl>



User perspective – behavior profiles



We are developing requirements for functionality & (meta)data based on these profiles

For more info: <https://zenodo.org/records/14938780>



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What will we do next?

Implementation & data quality

- Support program for migrating to the new (version of) collection management systems
- Support for improving data quality
 - standardisation in data entry
 - alignment to shared terminology (manual/bulk)
 - implement of application models
- Support communities to work on domain models
- Work with vendors on out-of-the-box compliant and usable systems



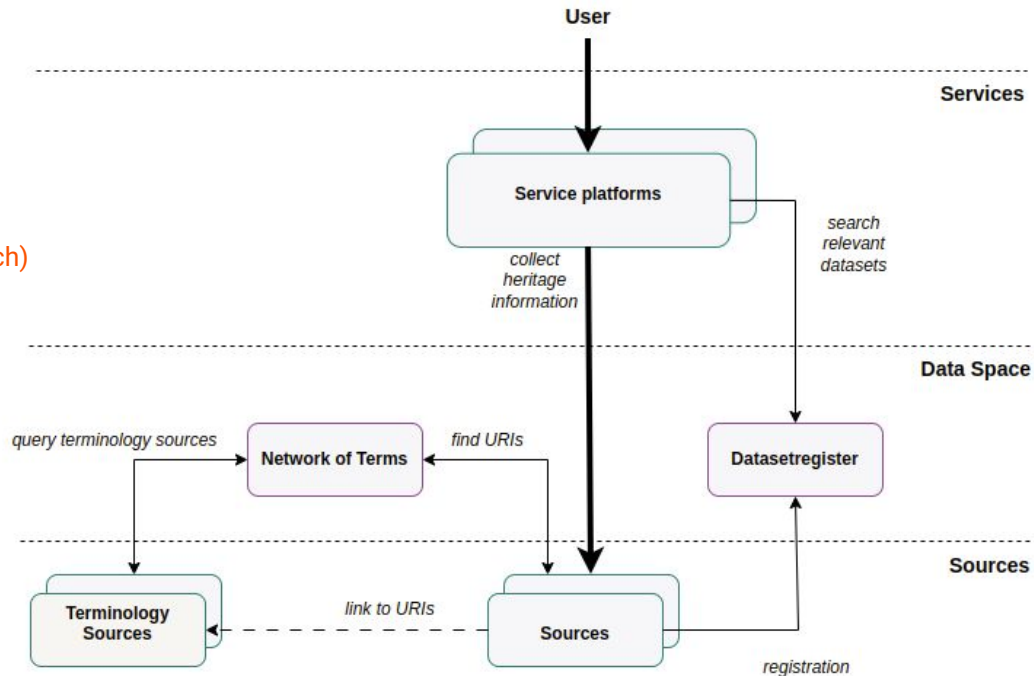
Standardisation & implementation

Requirements engineering,
standardization and development

See recent [report on service platforms](#) (in Dutch)

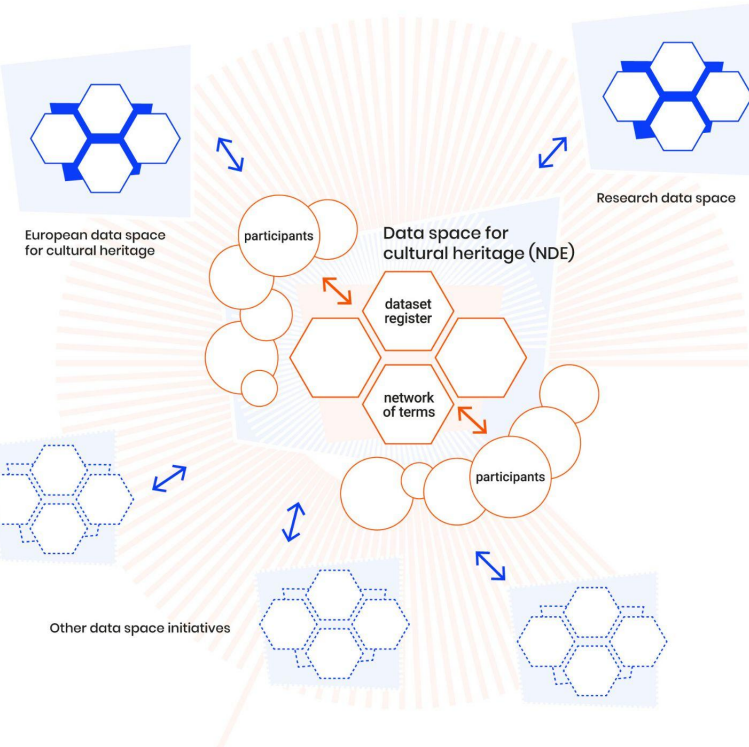
Implementation and
development of
additional KG &
transformation services

Implementation
and data quality



NL Data Space for Cultural Heritage

Europeana



CLARIAH-NL
SSHOC-NL
(EOSC)
(ECCCH)





What have we learned?

Building the network is about people

- People drive technology adoption
- Decentralized approach: provincial & large organisations organisations supporting smaller ones
- Network of professionals: digital heritage coaches, datacleaners, working groups, skilled contractors
- Guiding materials on different levels - step by step approach
- Manifest, events, working groups, newsletter, podcasts, cake(!)
- Vendors are strategic partners, create movement in the market



Innovation in CH domain is tough

- (Small) institutions:
 - have no budgets for innovation
 - have many priorities and often no digital strategy
 - many other challenges
- We offer additional support for:
 - migration to new (versions of) the collection information system
 - improving quality of metadata
 - dealing with copyrighted or GDPR sensitive material
 - education programs for cultural heritage professionals



Doing Linked Data is not easy

- Niche area, not many skilled professionals
- Tools are maturing slowly
- Linked Data creates extra dependencies
- Publishing Linked Data requires permanent attention
- Legacy software and technologies tend to stick around for a long time



Start with the brave ones

- Create a coalition of the willing
- Work on examples and learn from them
- Be open and listen
- Don't forget the fun...





Thank you!

Enno Meijers - enno.meijers at kb.nl

<https://mastodon.social/@ennomeijers>

<https://forum.swib.org/u/enno>

<https://www.linkedin.com/in/ennomeijers/>



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