Share FAMILY Linked Data Environment

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@Cult - Casalini Libri

Linking entities for connecting content

Facilities of linked open data

Fiesole Retreat 23

WHY & WHAT

Share VDE Virtual Discovery Environment

Find ...

Share-VDE institutions

Share-VDE platform hosts the data of the full member institutions:

- Berkeley Law Library www.law.berkeley.edu/library/
- Duke University www.duke.edu
- Library of Congress www.loc.gov
- National Library of Finland www.kansalliskirjasto.fi/en
- National Library of Norway www.nb.no/en/the-national-library-of-norway/
- New York University www.nyu.edu/
- Smithsonian Institution www.si.edu/
- Stanford University www.stanford.edu
- The British Library www.bl.uk
- University of Alberta / NEOS Library Consortium www.ualberta.ca
- University of Chicago www.uchicago.edu
- University of Michigan Ann Arbor www.umich.edu
- University of Pennsylvania www.upenn.edu
- Vanderbilt University www.vanderbilt.edu/
- Yale University - level 1, former Cohort member, www.yale.edu

https://wiki.share-vde.org/wiki/ShareVDE:Main_Page/SVDE_institutions

Share FAMILY

Knowledge is shared by member libraries

Why Share…

supports libraries, archives and museums in the transition from traditional cataloging environments to innovative models based on entity management

exploits the potential of linked open data to connect and present library information in enriched, integrated and dynamic ways

improves visibility of all resources, including those that may previously have remained hidden in a traditional catalogue

Knowledge is shared by member libraries

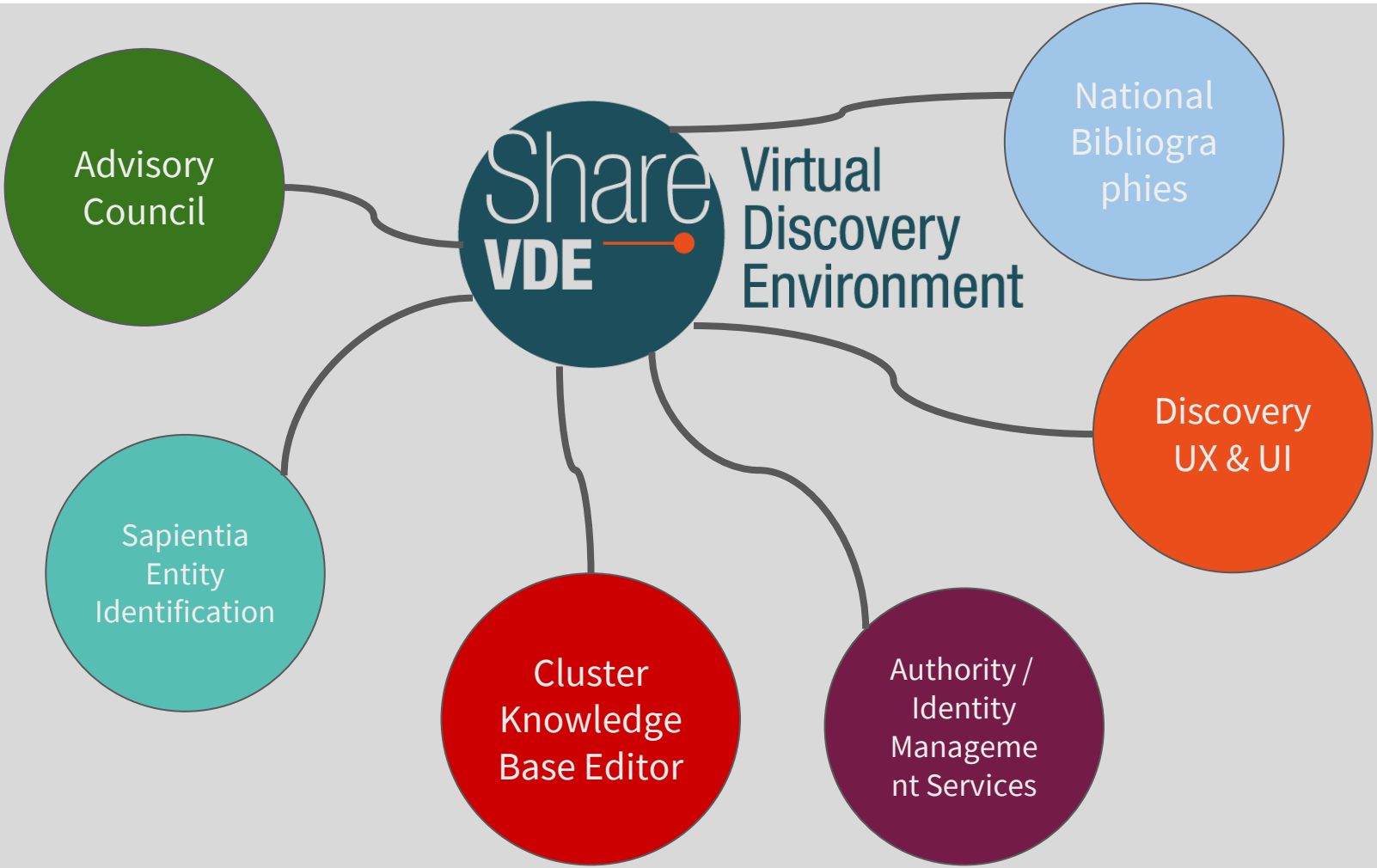
Why Share…

Establishes a library-driven initiative steered by member institutions, to share knowledge, experience and skills

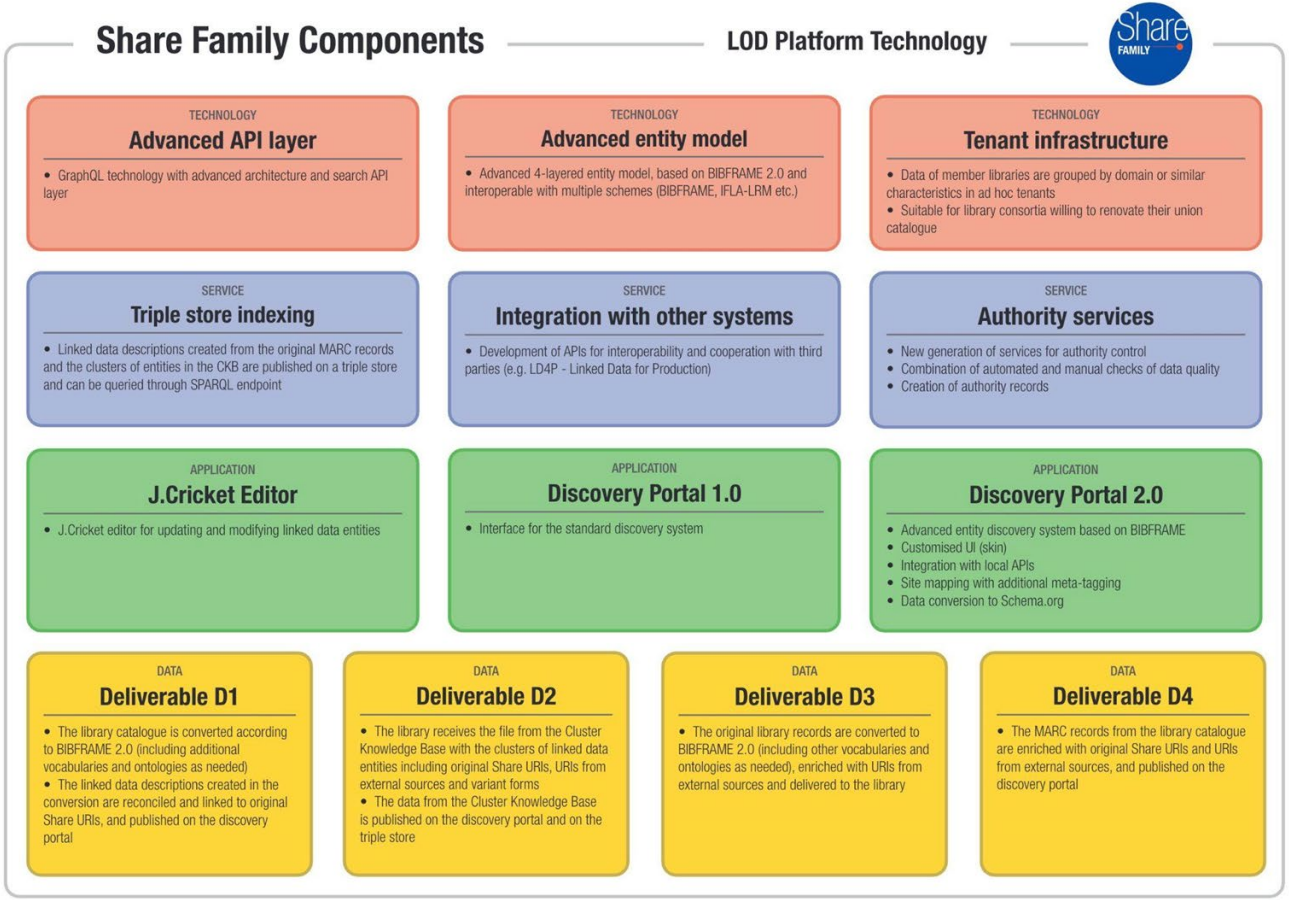
provides librarians and information professionals with advanced tools that allow direct interaction with data, extending and enhancing metadata services, that can be provided locally or in a shared environment

enables libraries, archives and museums to keep pace with web technology as it evolves

Share FAMILY

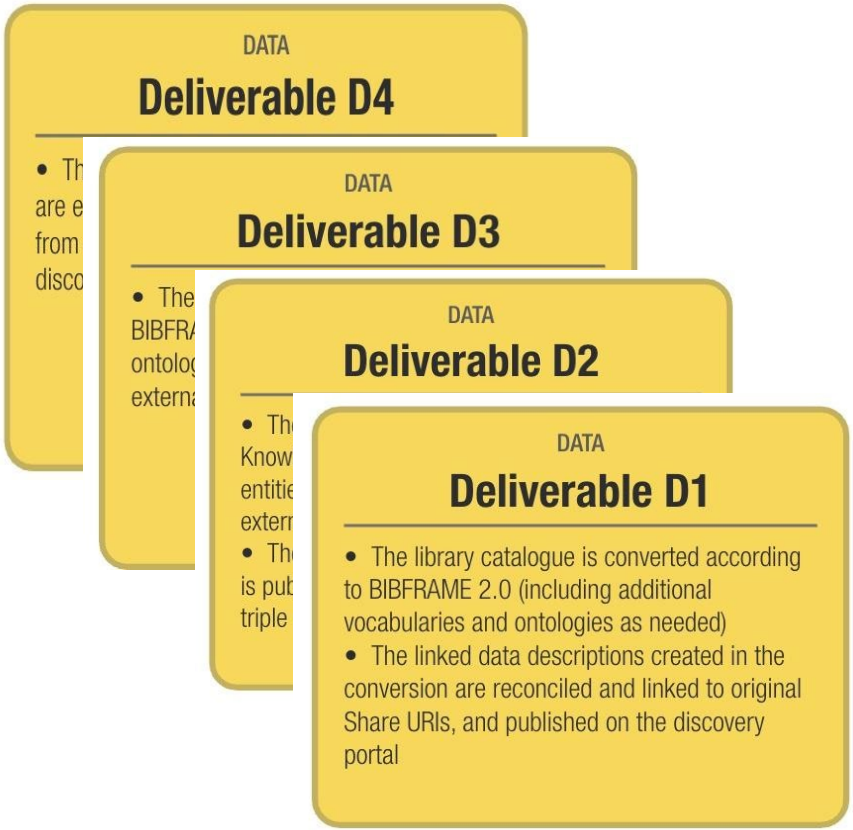

Advisory Council
Share VDE
Virtual Discovery Environment
National Bibliographies
Discovery UX & UI
Sapientia Entity Identification
Cluster Knowledge Base Editor
Authority / Identity Management Services

The options for your library



Share FAMILY

Deliverables

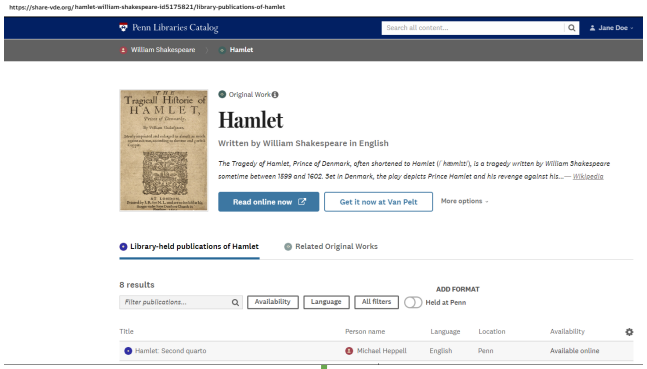


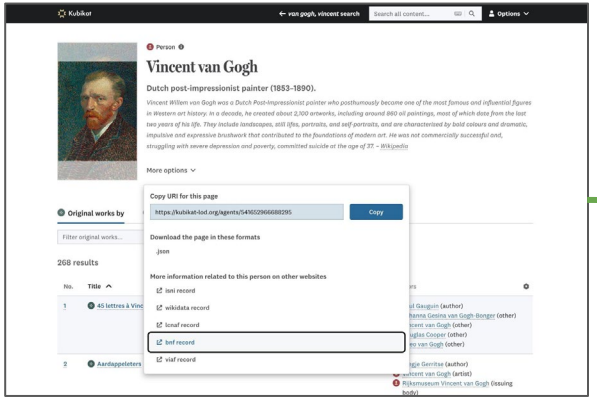
Data, enriched with information (URIs and values) from external authoritative sources and converted following the BIBFRAME data model, are available for the publication on the Share portal and for other library projects, both in Marc 21 enriched and in RDF.

Data can be enriched with specific sources selected by each library, following their special and local needs

Entity Discovery Portal

SVDE 2.0 is supported by entity based presentation layer reflecting BIBFRAME and the ad hoc SVDE extensions. The user experience is highly improved, hiding complexity to the end users





Each library can choose its own skin, to present a personalized image of its profile and its services, extending the functionality of the Portal from the shared environment to the local context

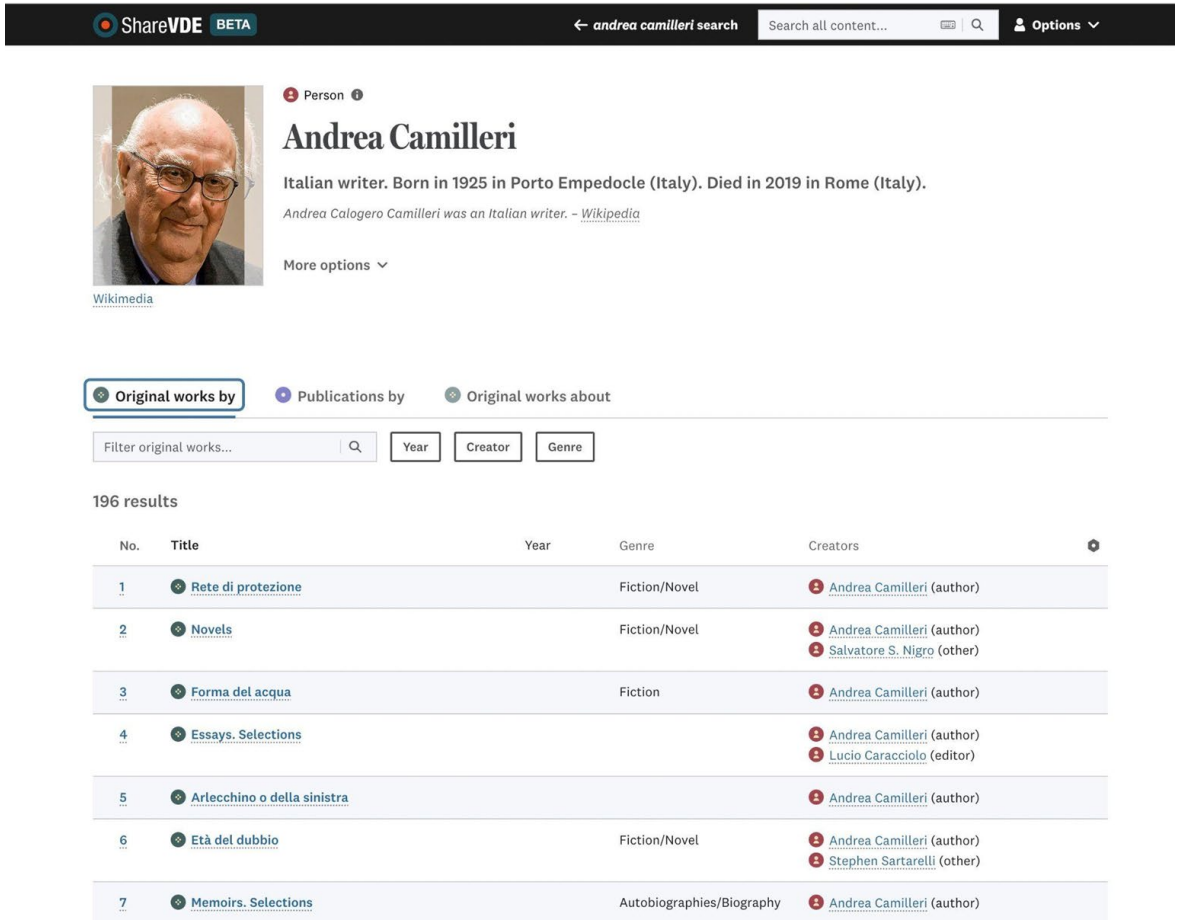
APPLICATION

Discovery Portal 2.0

- Advanced entity discovery system based on BIBFRAME
- Customised UI (skin)
- Integration with local APIs
- Site mapping with additional meta-tagging
- Data conversion to Schema.org

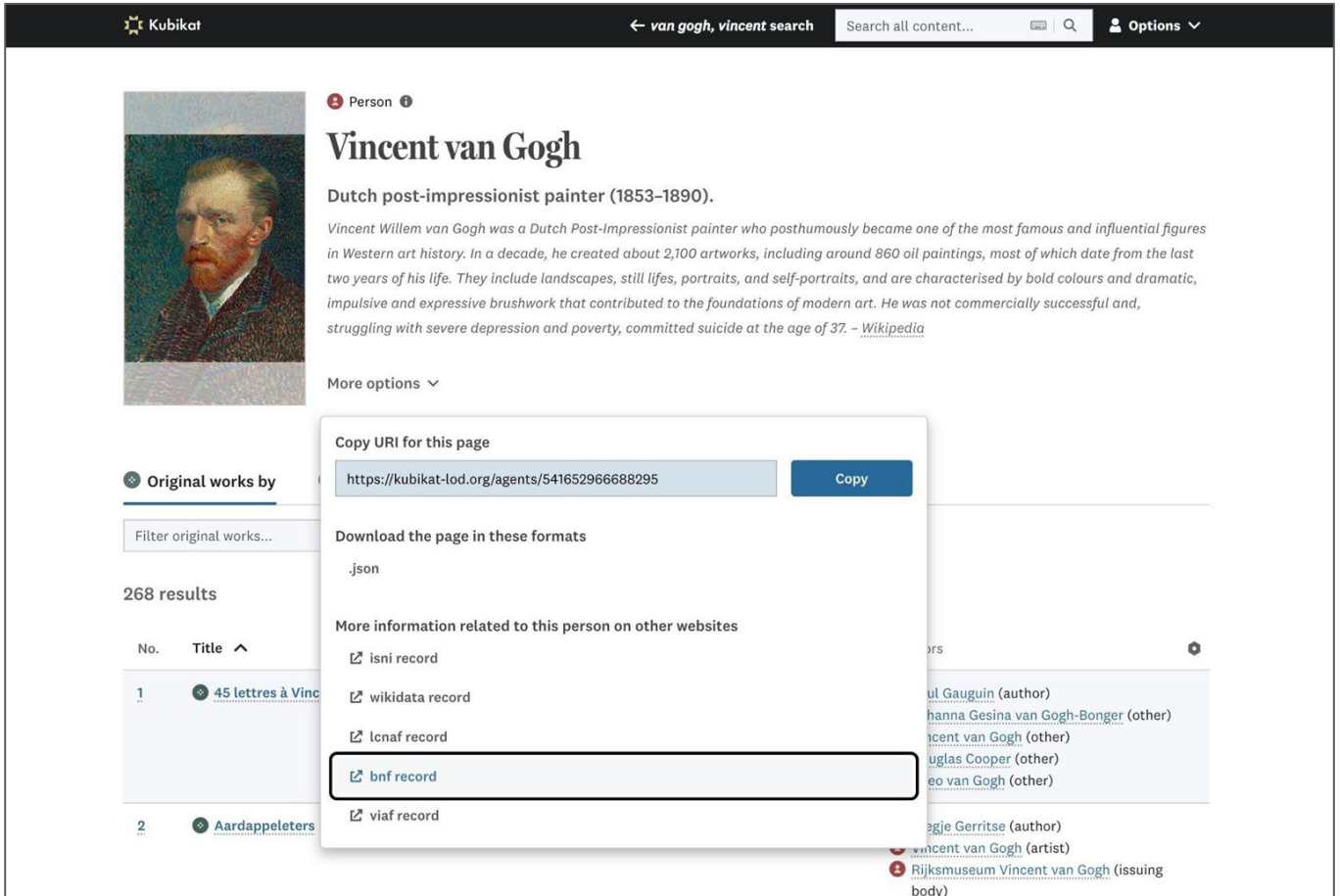
Share FAMILY

Share portal - The entity based portal to consume linked data

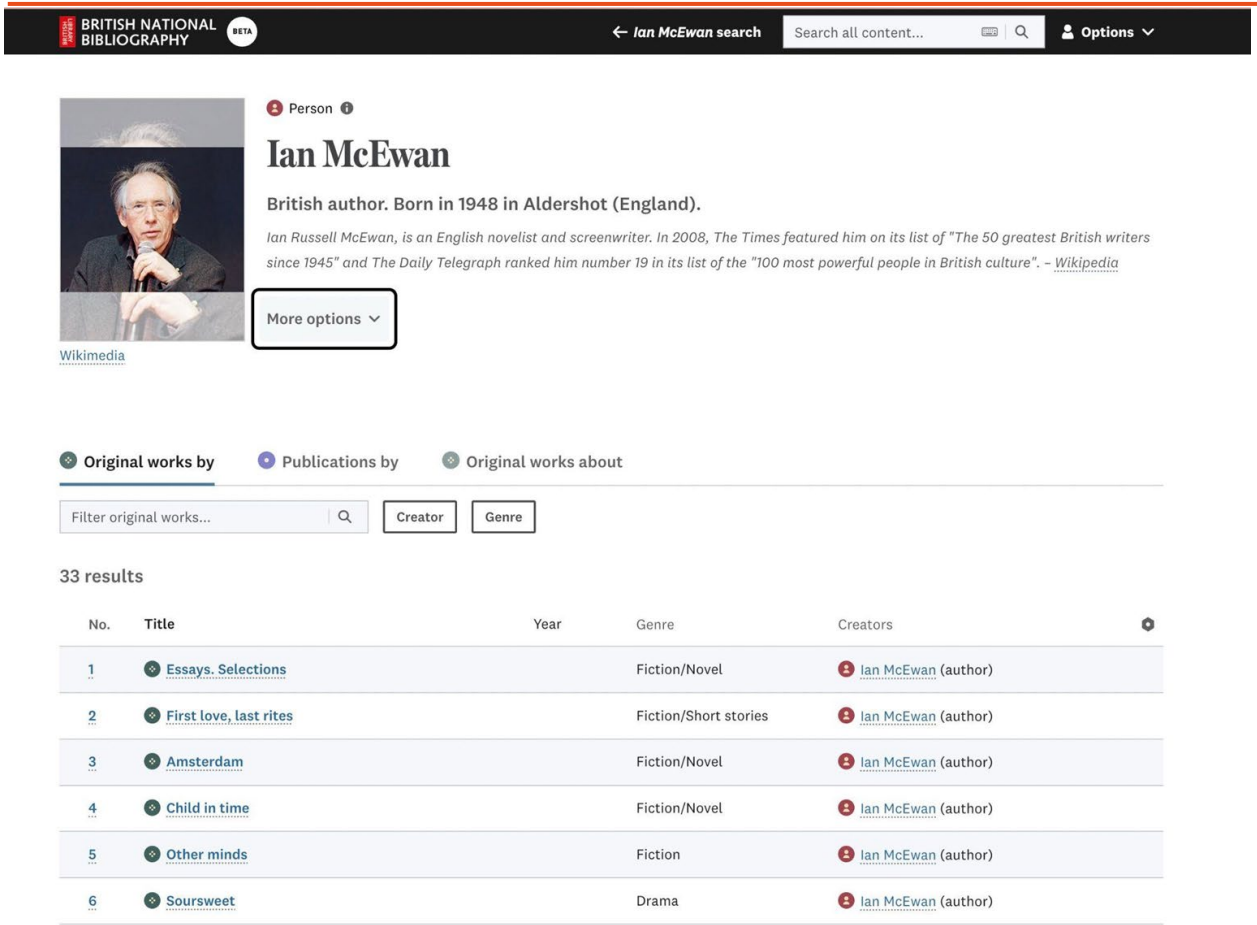


https://www.svde.org/andrea-camilleri-a8916542640 9640 6/original-works-by

Entity Discovery: the value of external sources to enrich data

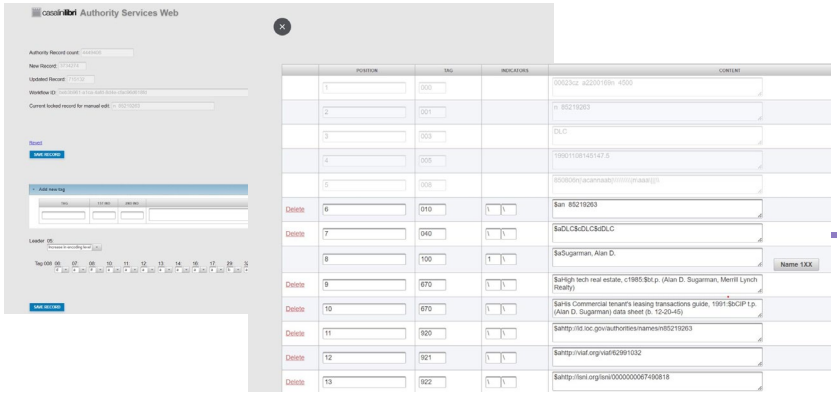


Share portal - The *skin* to enhance the *identity* of the single library



https://bl.natbibbod.org/ian-mcewan-a771652950 542530/original-works-by

Enhanced Authority Services



The next step is to make Authority Services available also for linked data-based workflows - a truly new generation of features for the authority control

Innovative solutions that facilitate and improve authority control through automatic and manual procedures.

Libraries to receive constantly updates on their bibliographic and authority records from authoritative sources.

Authority Services currently available for MARC-based workflows offer automated URI enrichment, reconciliation and validation of library data.

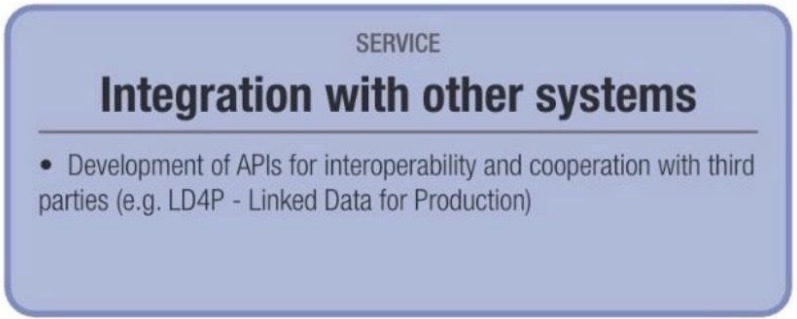
SERVICE

Authority services

- New generation of services for authority control
- Combination of automated and manual checks of data quality
- Creation of authority records

Cooperation & Interoperability

Cooperation and interoperability are key to Share technology: the use and the reuse of data, tools, ideas maximizes results and minimizes efforts



Tools and protocols are being set-up for third parties' usage and data harvesting, including OAI-PMH, Atom feeds and Activity stream

Triple store publication - an open query endpoint

SVDE data are open, and usable through an open endpoint to retrieve them in RDF format through SPARQL queries

SERVICE

Triple store indexing

- Linked data descriptions created from the original MARC records and the clusters of entities in the CKB are published on a triple store and can be queried through SPARQL endpoint

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<http://id.loc.gov/vocabulary/mstatus/c> <http://www.w3.org/2000/01/rdf-schema#label> "changed" <https://svde.org/agents/UPENN> .
<https://svde.org/AdminMetadata/upenn9916551383503681>
<http://id.loc.gov/ontologies/bflc/encodingLevel> <http://id.loc.gov/vocabulary/menclvl/f>
<https://svde.org/agents/UPENN> .
<http://id.loc.gov/vocabulary/menclvl/f> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://id.loc.gov/ontologies/bflc/EncodingLevel>
<https://svde.org/agents/UPENN> .
<http://id.loc.gov/vocabulary/menclvl/f> <http://www.w3.org/2000/01/rdf-schema#label>
"full" <https://svde.org/agents/UPENN> .
<https://svde.org/AdminMetadata/upenn9916551383503681>
<http://id.loc.gov/ontologies/bibframe/descriptionConventions>
<http://id.loc.gov/vocabulary/descriptionConventions/aacr>
<https://svde.org/agents/UPENN> .
<http://id.loc.gov/vocabulary/descriptionConventions/aacr>
<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>
<http://id.loc.gov/ontologies/bibframe/DescriptionConventions>
<https://svde.org/agents/UPENN> .
<http://id.loc.gov/vocabulary/descriptionConventions/aacr>
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<https://svde.org/AdminMetadata/upenn9916551383503681>
<http://id.loc.gov/ontologies/bibframe/identifiedBy>
<https://svde.org/UPENN9916551383503681_Local_001/83d25d24-2db9-4d7a-868e-8d7d11827a4b> <https://svde.org/agents/UPENN> .
<https://svde.org/UPENN9916551383503681_Local_001/83d25d24-2db9-4d7a-868e-8d7d11827a4b> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>
```

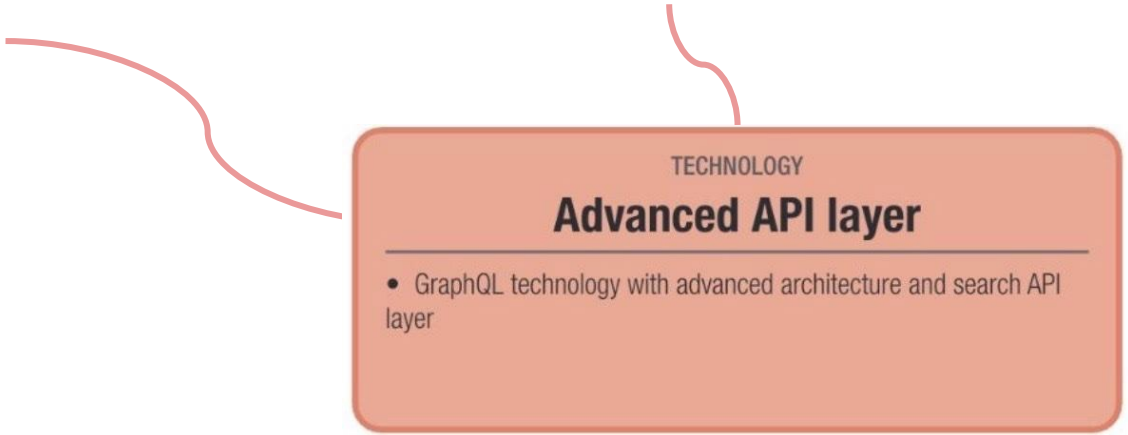
The core of SVDE integrated catalogue, ie. the Cluster Knowledge Base of linked data entities created from SVDE institutions' data, is published on a public query interface

Advanced API layer - Easily use our data!

SVDE 2.0 backend infrastructure leverages an advanced API layer orchestrating queries to SVDE data from the web discovery portal and from machine to machine applications

- Two API protocols: GraphQL API and REST API
- All Share-VDE entities are exposed through (read-only) API
- Search API provide several shapes / context behaviour (e.g. simple, advanced search, partial or full match, exact matches suggestions, terms modifiers, results explanation)
- Three query languages: TermsQL, SVDEQL, StructQL

The API layer is designed to respond to the increasingly complex search logic, the update to the entity model and the enhancement to the Cluster Knowledge Base

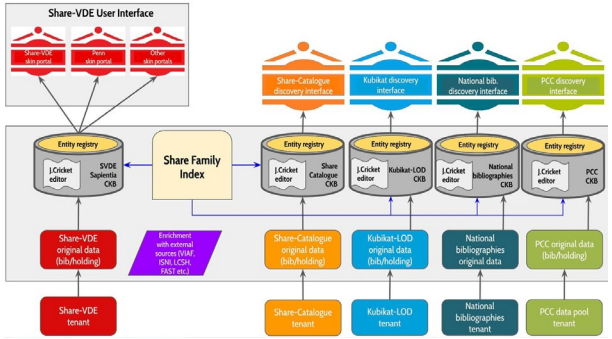


Tenant infrastructure - Community and autonomy

TECHNOLOGY

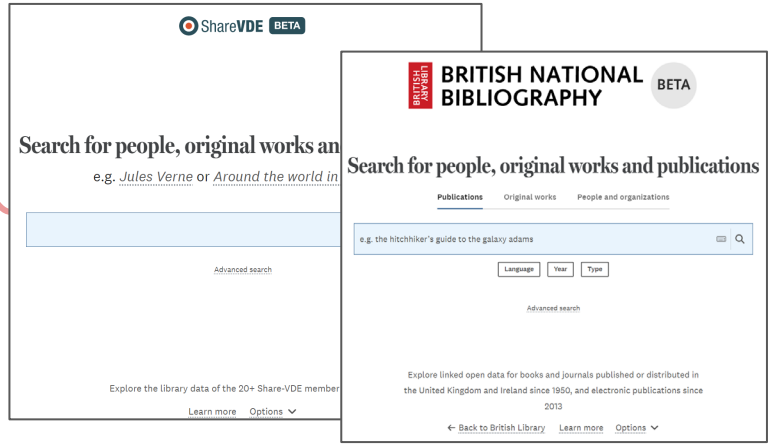
Tenant infrastructure

- Data of member libraries are grouped by domain or similar characteristics in ad hoc tenants
- Suitable for library consortia willing to renovate their union catalogue



The Share Family community includes different branches and projects, supported by the same technology. Each branch is hosted in a specific tenant of the system, ie. a group of institutions contributing to the same data pool.

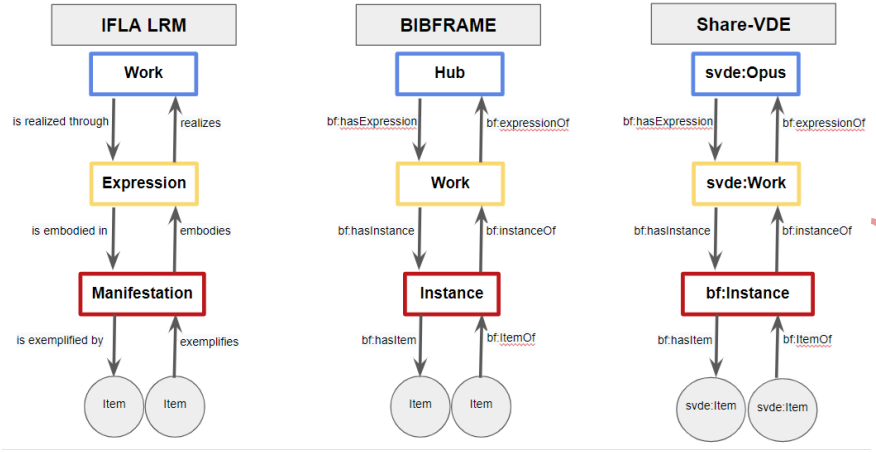
This structure ensures autonomy of approach to data management for each tenant, but also cooperation, because all tenants are connected as part of the same "family", and long term sustainability.



Interoperable entity model

The approach to the SVDE entity model is to make it as much interoperable as possible, to facilitate data exchange with other systems.

It is based on BIBFRAME ontology, with ad hoc extensions to support interaction with IFLA LRM-based models.

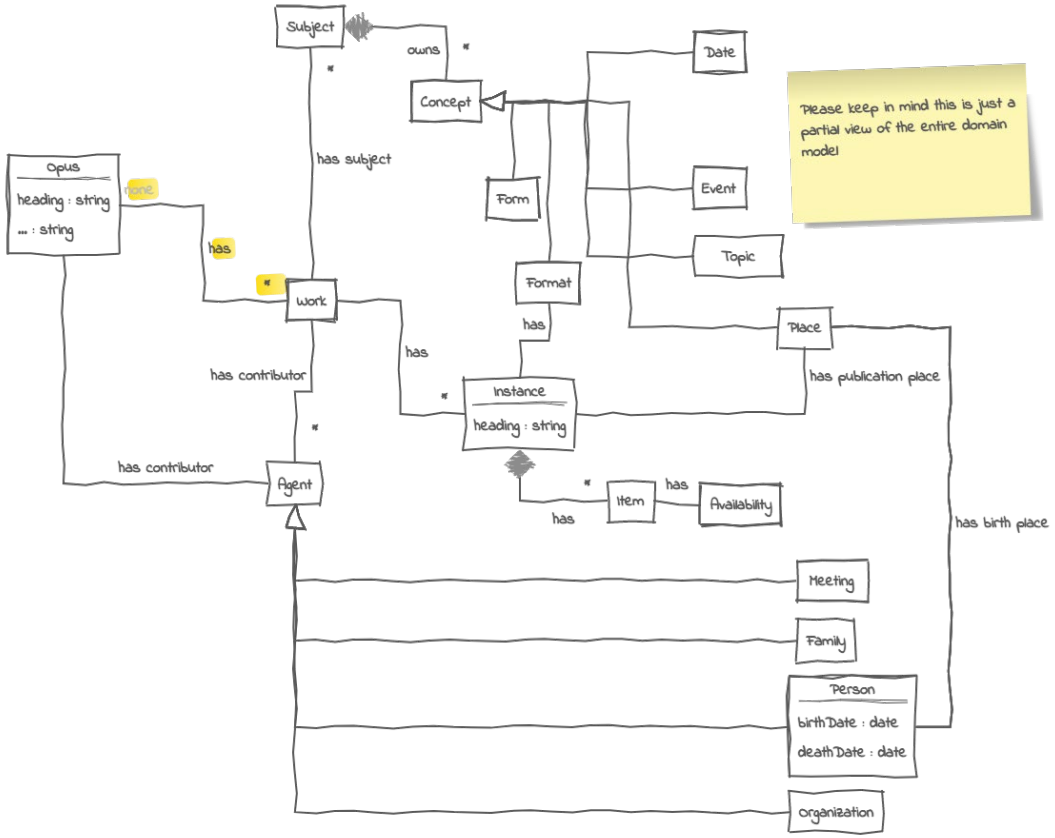


TECHNOLOGY

Advanced entity model

- Advanced 4-layered entity model, based on BIBFRAME 2.0 and interoperable with multiple schemes (BIBFRAME, IFLA-LRM etc.)

Share-VDE: the Domain Model



The Entity as a “Prism”

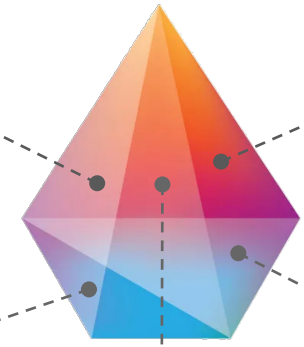
Share-VDE Cluster: the Prism

UNIVERSITY OF ALBERTA LIBRARY

title	Alice in wonderland
titleAlternative	Alice's adventures under ground
author	https://svde.org/people/201

Stanford

title	Alice in wonderland
titleAlternative	Alice's adventures under ground
author	https://svde.org/people/201



LIBRARY LIBRARY OF CONGRESS

title	Alice in wonderland

National Library of Norway

title	Alice's adventures under ground
titleAlternative	Journeys in Wonderland
author	https://svde.org/people/201

Share VDE (links)

sameAs	http://dbpedia.org/resource/Alice's_Adventures_in_Wonderland	Dbpedia
sameAs	https://www.wikidata.org/wiki/Q189875	Wikidata
sameAs	https://data.bnf.fr/ark:/12148/cb358500385#about	bnf

Share FAMILY

Properties: Attributes, Relationships, Links

Name	Value	Provenance
title	Alice in wonderland	LIBRARY LIBRARY OF CONGRESS Stanford
titleAlternative	Alice's adventures under ground	LIBRARY LIBRARY OF CONGRESS
titleAlternative	Journeys in Wonderland	National Library of Norway

An attribute is a data property, having a literal as value

sameAs	http://dbpedia.org/resource/Alice's_Adventures_in_Wonderland	Dbpedia
sameAs	https://www.wikidata.org/wiki/Q189875	Wikidata
sameAs	https://data.bnf.fr/ark:/12148/cb358500385#about	bnf

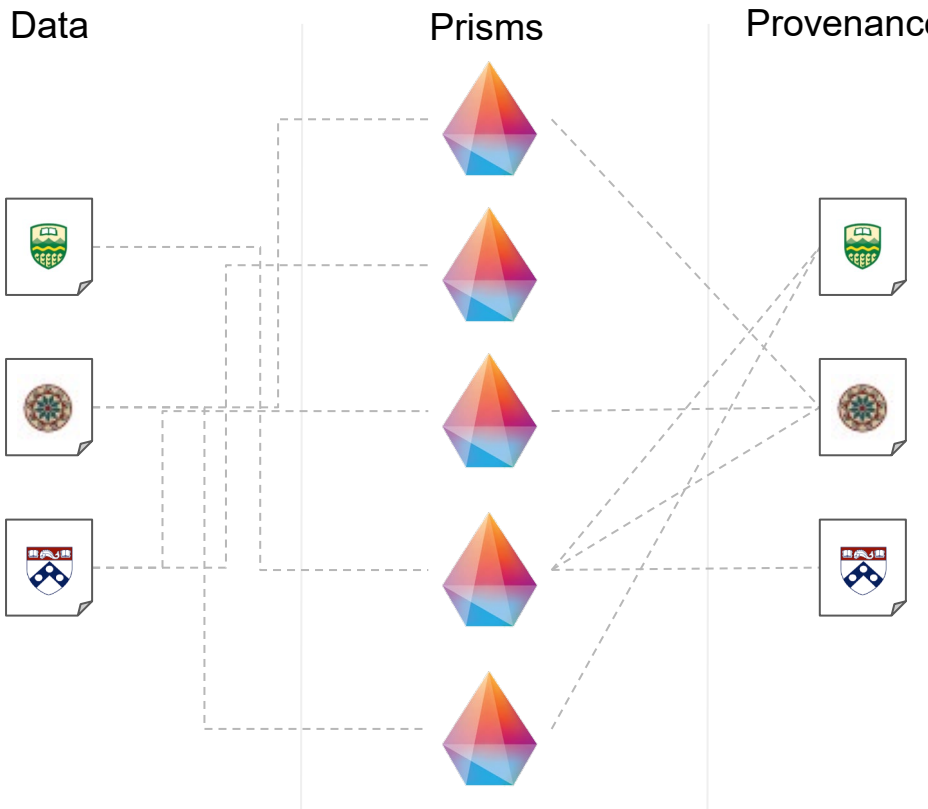
A link is a connection between a VDE Prism and an external reference

Name	Provenance
author	LIBRARY LIBRARY OF CONGRESS Stanford

A relationship is a connection between two VDE Prisms

Name	Value	Provenance
name	Carroll, Lewis	LIBRARY LIBRARY OF CONGRESS Stanford
nameAlternative	Dodgson, Charles Lutwidge	LIBRARY LIBRARY OF CONGRESS Stanford
nameAlternative	Karol, Luis	National Library of Norway

Prism: Record-Level Provenance



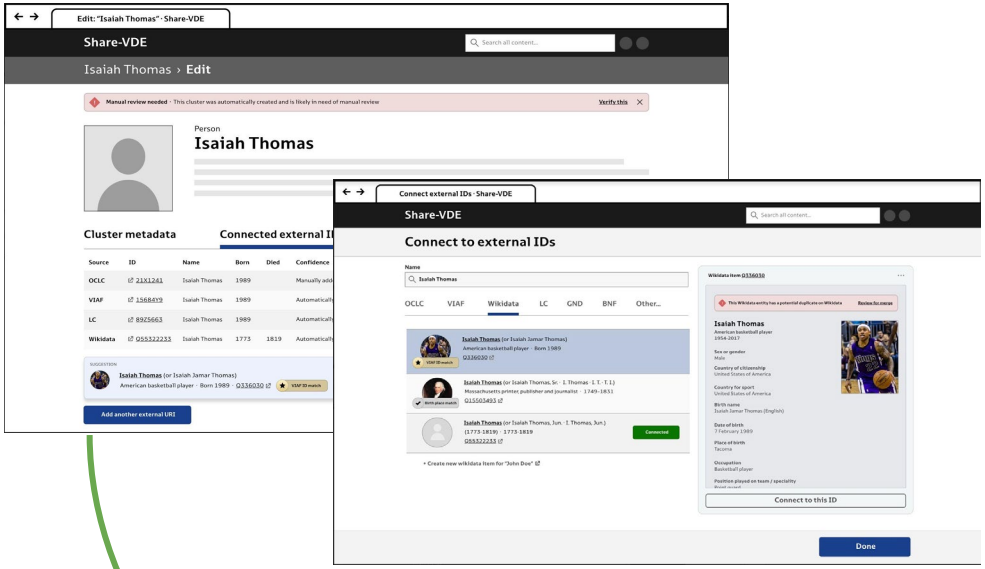
Each record coming from a **provenance contributes** in **building/enriching** one or more **Share-VDE prisms**.

A Share-VDE entity can be seen as a **prism** where each **face** represents **data** coming from a given **provenance**

Each Share-VDE cluster maintains a **link** to the **records** it **originated from**

Sapientia Edit API: JCricket

JCricket Editor - The Entity Management System



APPLICATION

J.Cricket Editor

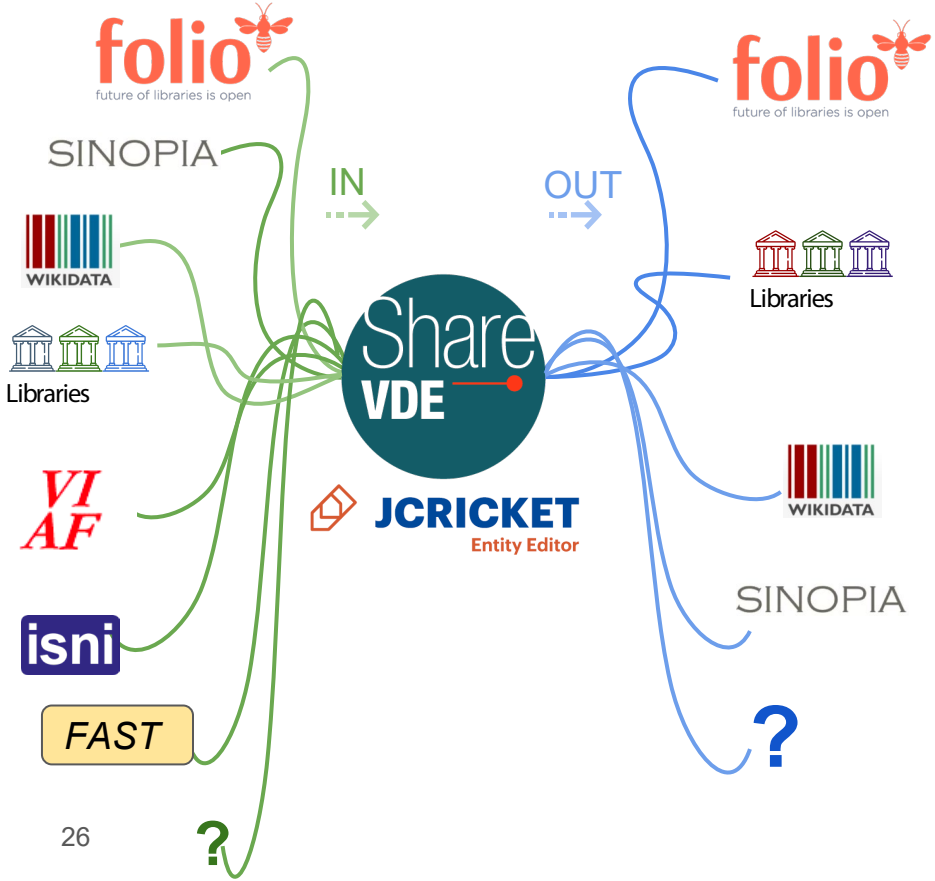
- J.Cricket editor for updating and modifying linked data entities

JCricket is an entity editor that car
out the transition from Marc to a real
Entity Management System.

JCricket acts on the entity database
(CKB) created through Entity Resolutio
and clustering processes

"*The more the merrier*" is a perfect
vision in a collaborative community
But each library has also local need
the architecture of J.Cricket allows
operate locally or centrally, creating
collaborative group that does not
forget local specificities.

Share-VDE: **S**hare **V**irtual **D**iscovery **E**nvironment



In a Nutshell

Share Virtual Discovery Environment is a **library-driven** initiative which brings together a shared discovery environment, the **bibliographic catalogues** and **authority files** of a growing number of leading **academic** and **national libraries** from across **North America** and **Europe**

The Big Picture: from Genesis to Edit

Data flows into Share-VDE from libraries, institutions and third-party sources (e.g. VIAF, ISNI, FAST)

The Share-VDE knowledge base (Sapienta) contains the integrated/clustered/enriched entities.

Edit API

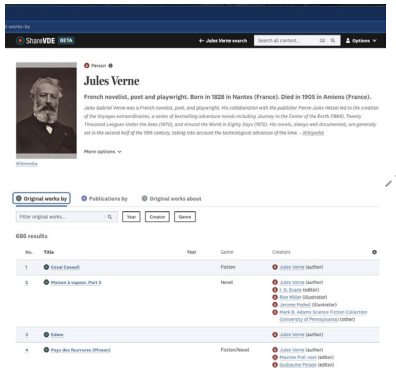
Data is mainly edited through JCricket, the Share-VDE entity editor.

JCRICKET
Entity Editor

but…

Search API

Third-party Applications



Any third-party, authorized application can be a Share-VDE editor or reader

but…

Data is mainly searchable through the entity discovery portal.

JCricket: Edit Scenarios

Edit a property* of a prism is added/updated/deleted

~~Lewisss Carroll~~ → Lewiss Carroll

is author of ~~https://svde.org/opuses/1827349~~ → https://svde.org/opuses/920302

properties can be
- attributes
- relationships
- links

Merge multiple prisms are merged into one

For example, the editor detects multiple prisms that belong to the same entity.

Split a prism is split into multiple prisms

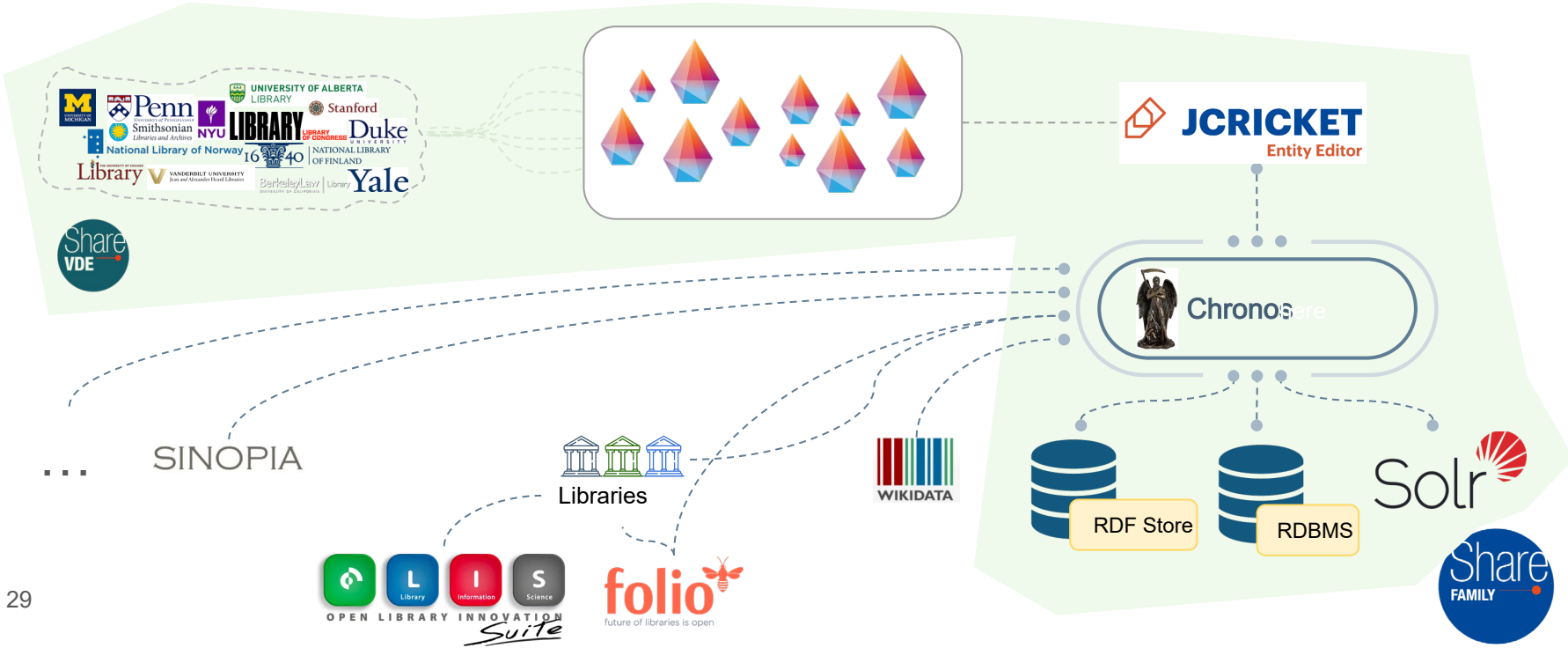
Several entities have been (wrongly) clustered into one.

Outbound Connectors Architecture

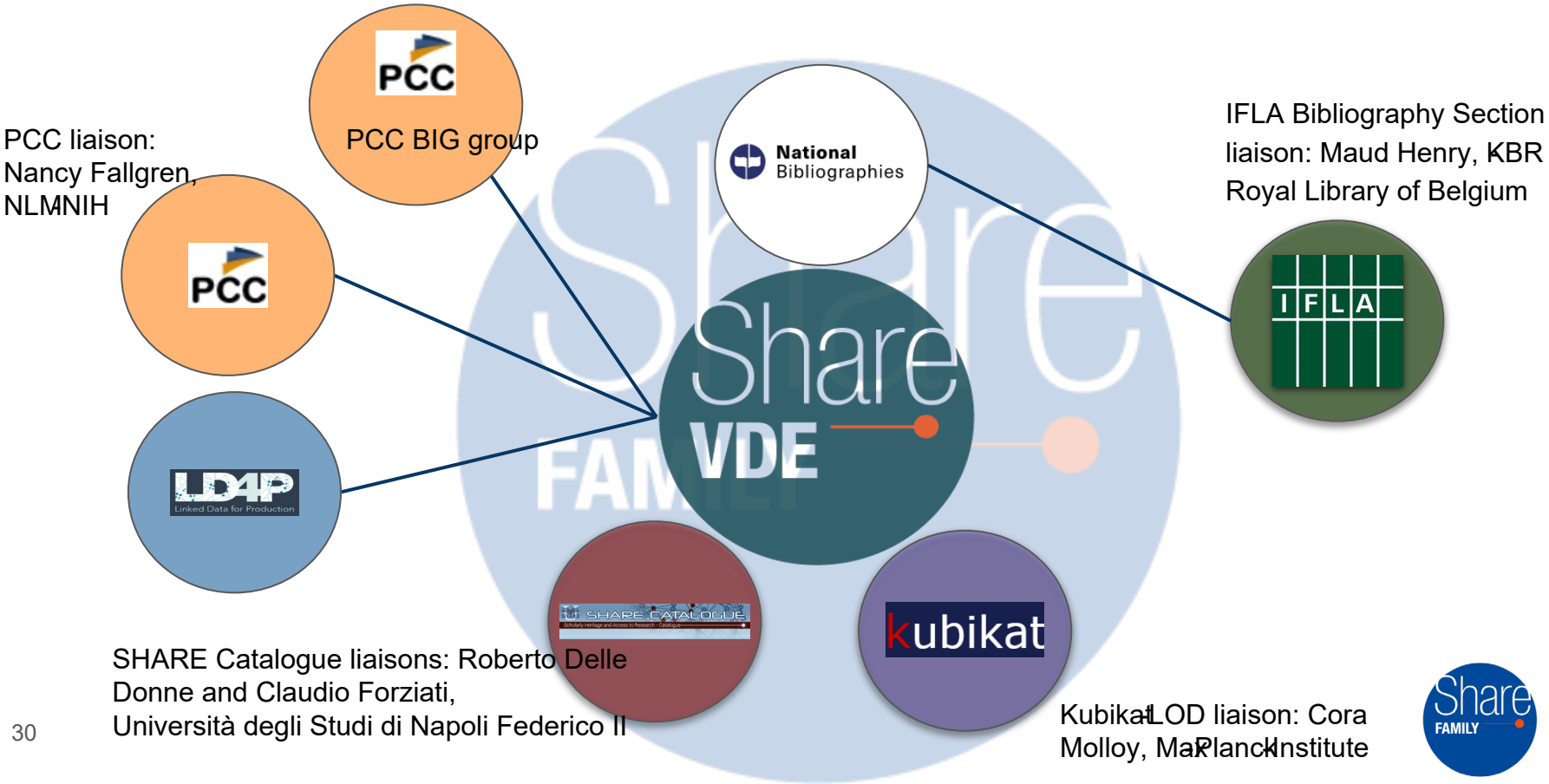
Data flows into ShareVDE from libraries, institutions and third-party sources (e.g. VIAF, ISNI, FAST)

The ShareVDE knowledge base (Sapientia) contains the integrated/clustered/enriched entities.

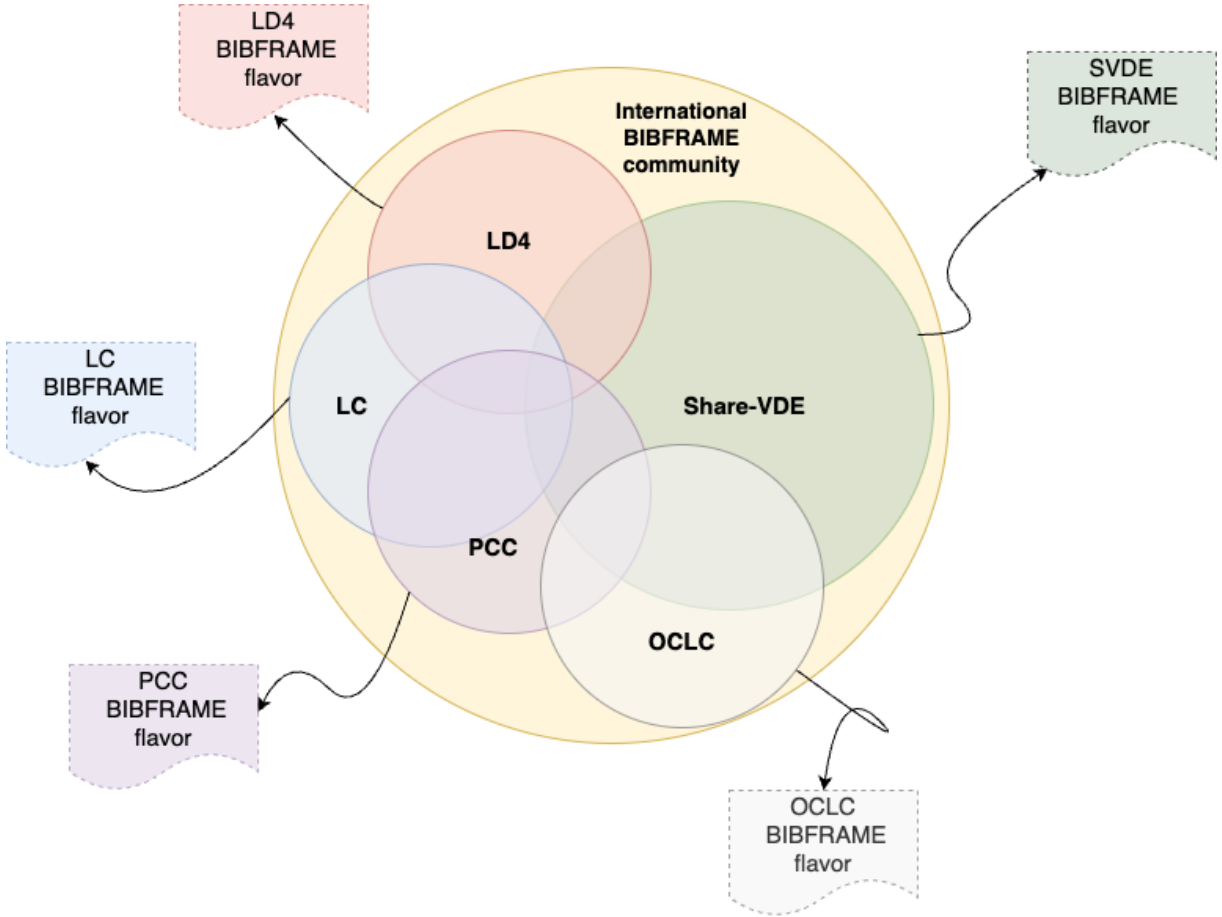
Data is mainly edited through JCricket, the ShareVDE entity editor.



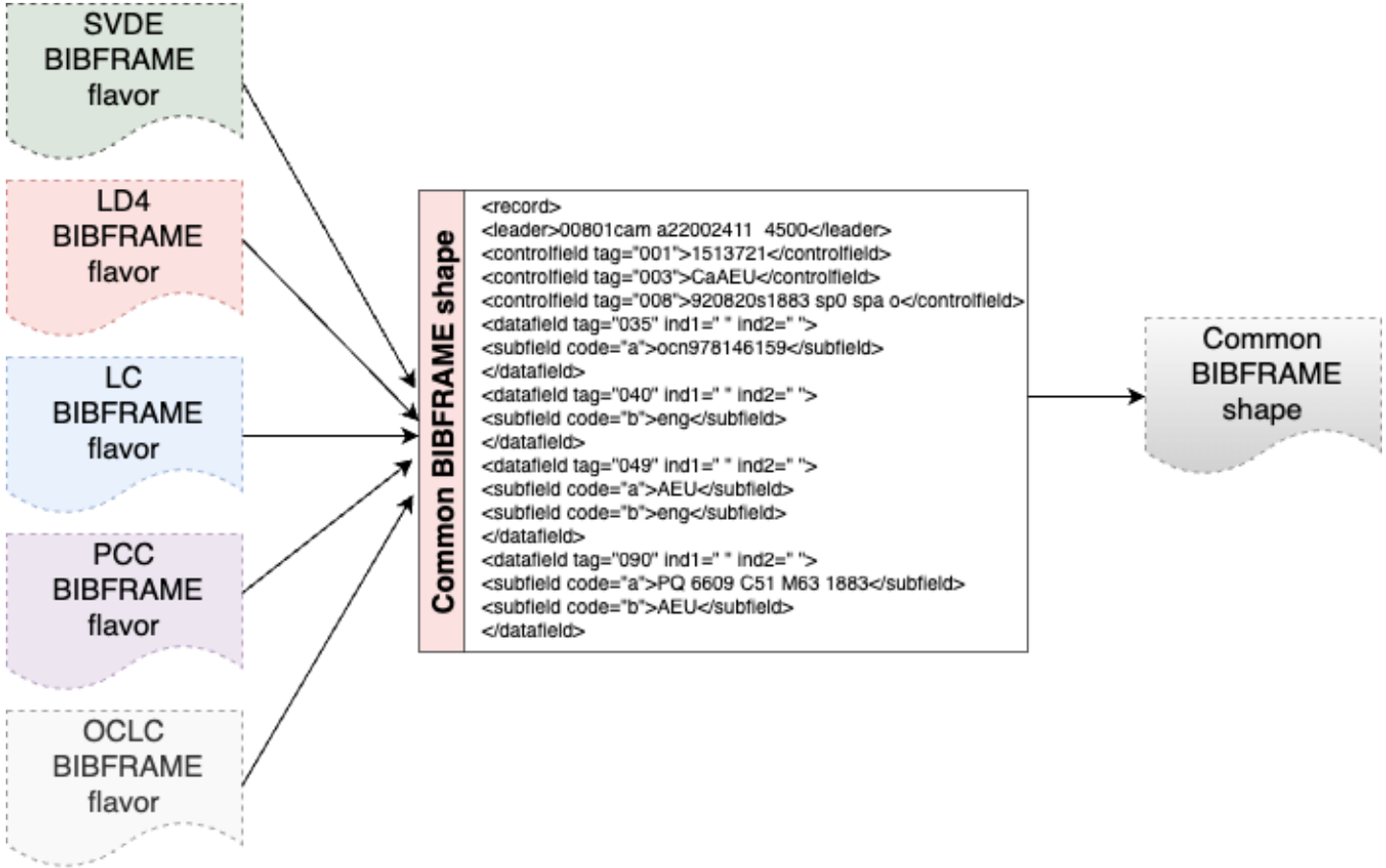
Share Family and Share-VDE liaisons



BIBFRAME communities engagement - Various BF flavors



BIBFRAME communities engagement - Various BF flavors



Get involved!

Becoming part of the global Share Family means sharing data and co operating with the greater international library community

The family continues to expand as more and more libraries worldwide embrace the opportunity to be involved in an international network of information, creating dialogue, participation and partnership

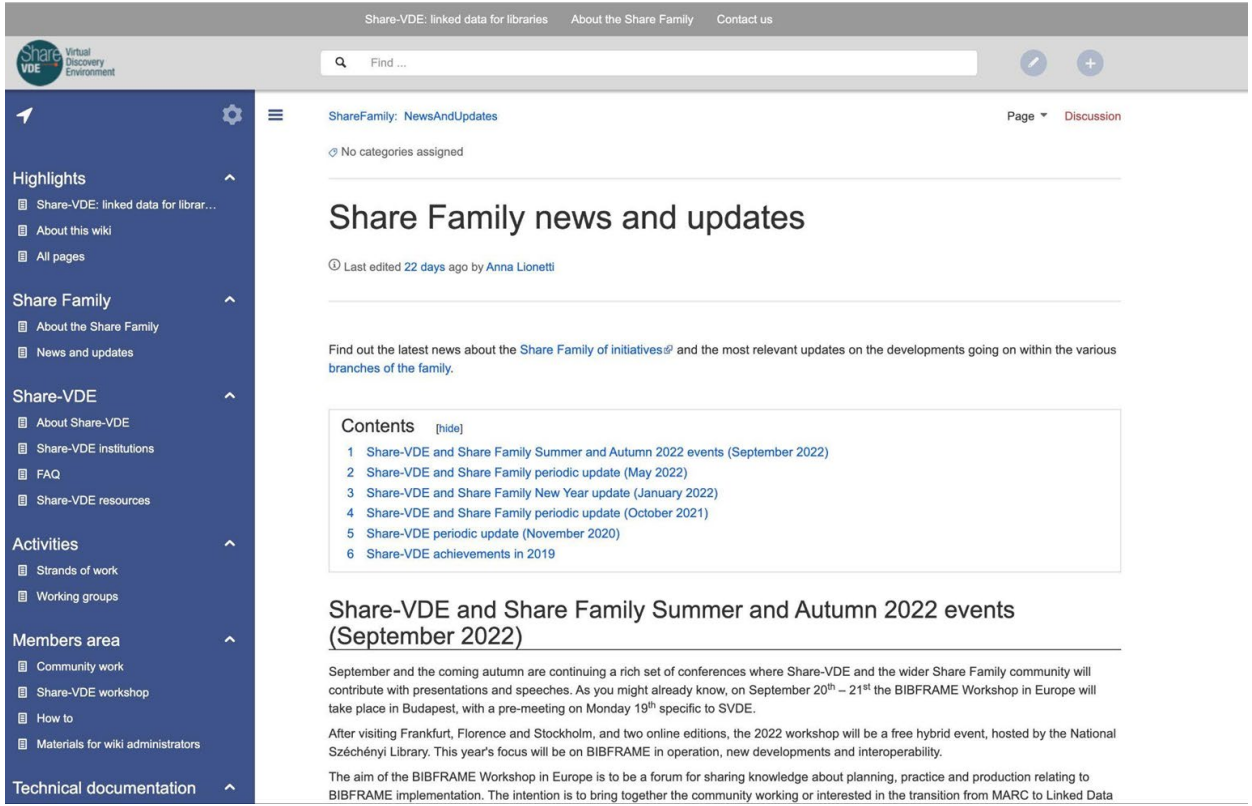
Get in touch with us to find out more about how the Share family can help your library:
info@svde.org
https://wiki.svde.org/
https://www.svde.org/about/about-svde

Linked
Data
Environment

"When someone asks: what is Share-VDE? The answer that comes to mind is: Share-VDE is many things together" [*]

[*] Cit. Beth Picknally Camden (University of Pennsylvania Libraries)

Share - News & Updates on Wiki



https://wiki.share-vde.org/wiki/ShareFamily:NewsAndUpdates

Thank you

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