



Linked
Data
Environment



Tiziana Possemato
@Cult - Casalini Libri

Linking entities for connecting content

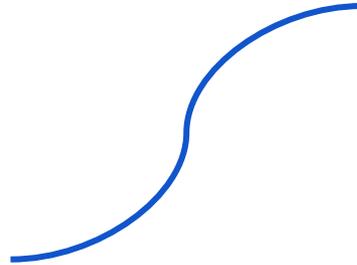
Facilities of linked open data



Fiesole
Retreat 23



Linked
Data
Environment



WHY
&
WHAT



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

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

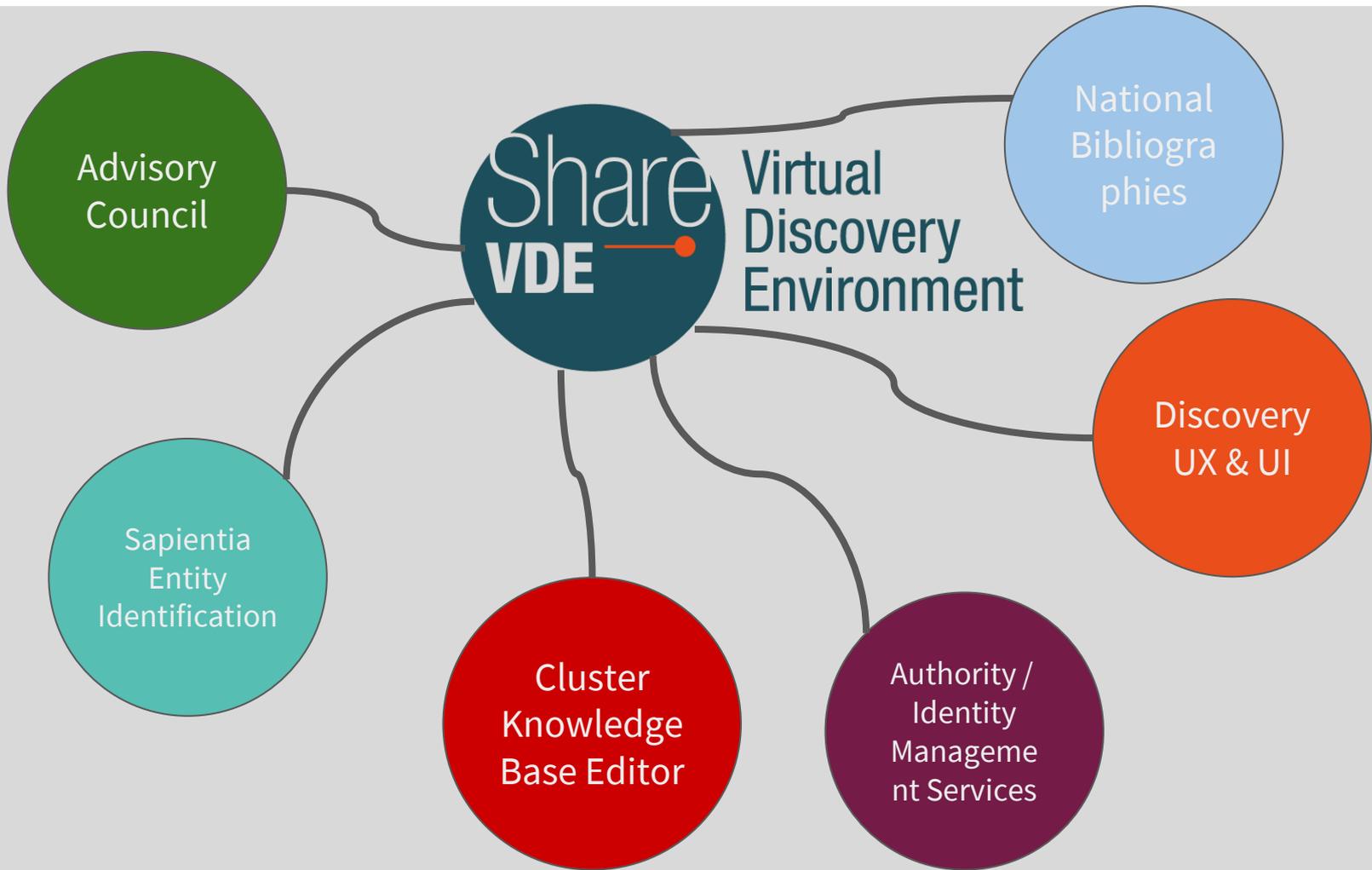


provides librarians and information professionals with advanced tools that allow direct interaction with data, extending and enhancing metadata services, that can be provided locally or in a shared environment

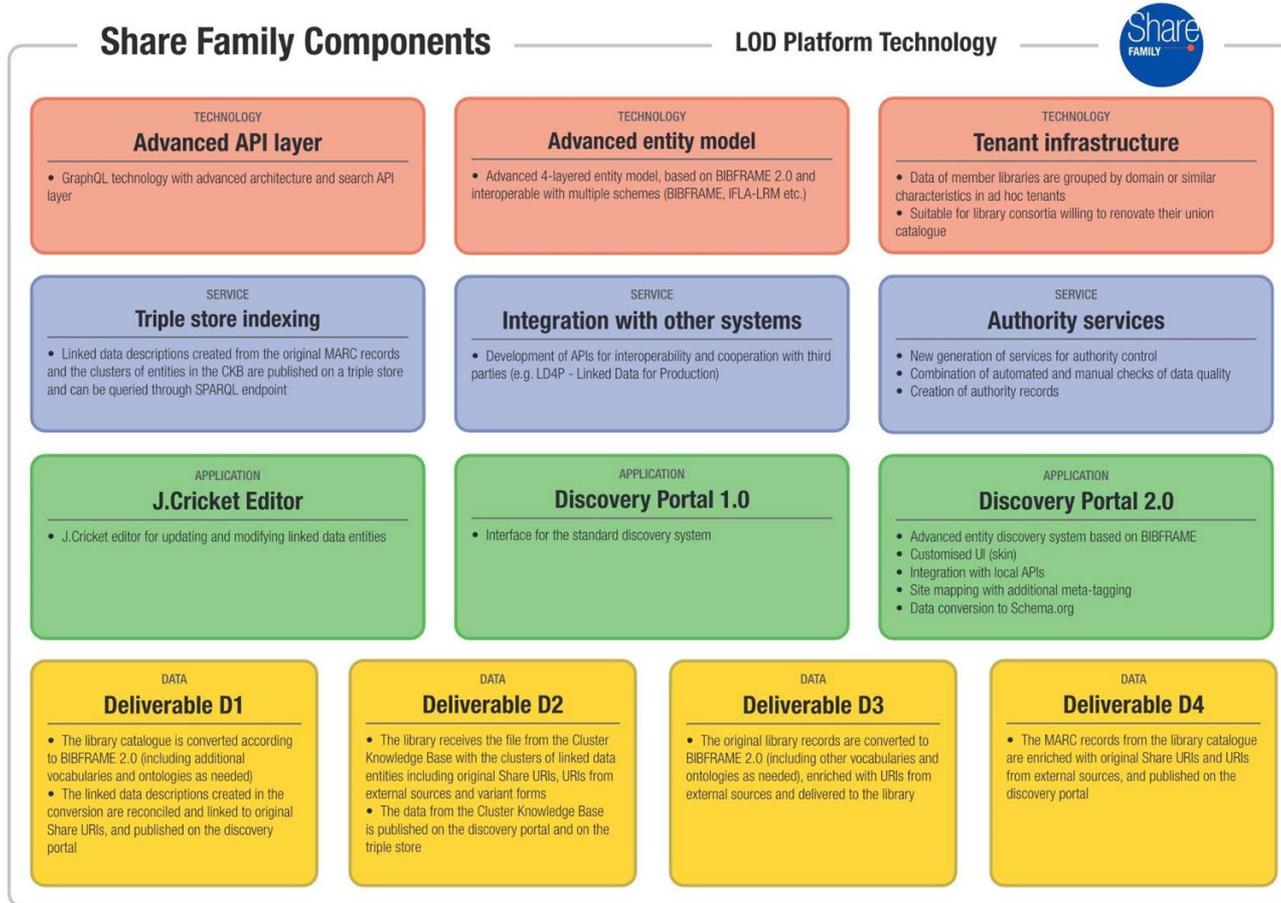


enables libraries, archives and museums to keep pace with web technology as it evolves





The options for your library



Deliverables

DATA

Deliverable D4

• The
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DATA

Deliverable D3

• The
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DATA

Deliverable D2

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DATA

Deliverable D1

- The library catalogue is converted according to BIBFRAME 2.0 (including additional vocabularies and ontologies as needed)
- The linked data descriptions created in the conversion are reconciled and linked to original Share URIs, and published on the discovery portal

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.

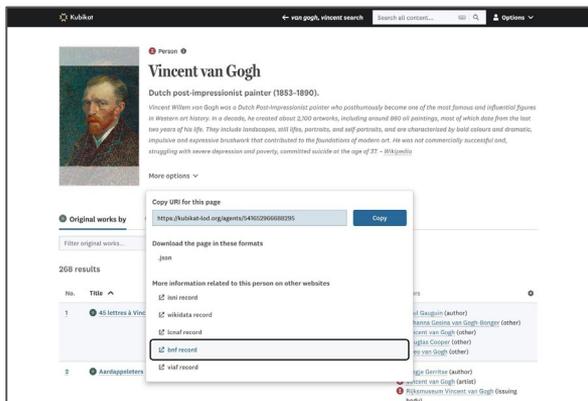
Data can be enriched with specific sources selected by each library, following their special and local needs

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 portal - The entity based portal to consume linked data



Wikimedia

Person

Andrea Camilleri

Italian writer. Born in 1925 in Porto Empedocle (Italy). Died in 2019 in Rome (Italy).

Andrea Calogero Camilleri was an Italian writer. - Wikipedia

More options

Original works by

Publications by

Original works about

Filter original works...



Year

Creator

Genre

196 results

No.	Title	Year	Genre	Creators
1	Rete di protezione		Fiction/Novel	Andrea Camilleri (author)
2	Novels		Fiction/Novel	Andrea Camilleri (author) Salvatore S. Nigro (other)
3	Forma del acqua		Fiction	Andrea Camilleri (author)
4	Essays. Selections			Andrea Camilleri (author) Lucio Caracciolo (editor)
5	Arlecchino o della sinistra			Andrea Camilleri (author)
6	Età del dubbio		Fiction/Novel	Andrea Camilleri (author) Stephen Sartarelli (other)
7	Memoirs. Selections		Autobiographies/Biography	Andrea Camilleri (author)

<https://www.svde.org/andrea-camilleri-a891654264096406/original-works-by>

Entity Discovery: the value of external sources to enrich data

Kubikat

← van gogh, vincent search Search all content... Options ▾

Person ⓘ

Vincent van Gogh

Dutch post-impressionist painter (1853-1890).

Vincent Willem van Gogh was a Dutch Post-Impressionist painter who posthumously became one of the most famous and influential figures in Western art history. In a decade, he created about 2,100 artworks, including around 860 oil paintings, most of which date from the last two years of his life. They include landscapes, still lifes, portraits, and self-portraits, and are characterised by bold colours and dramatic, impulsive and expressive brushwork that contributed to the foundations of modern art. He was not commercially successful and, struggling with severe depression and poverty, committed suicide at the age of 37. - Wikipedia

More options ▾

Original works by

Filter original works...

268 results

No.	Title
1	45 lettres à Vinc...
2	Aardappeleters

Copy URI for this page

<https://kubikat-lod.org/agents/54165296688295> Copy

Download the page in these formats

- .json

More information related to this person on other websites

- Isni record
- wikidata record
- Icnaf record
- bnf record**
- viaf record

ors

- Gauguin (author)
- hanna Gesina van Gogh-Bonger (other)
- ncent van Gogh (other)
- uglas Cooper (other)
- eo van Gogh (other)

egje Gerritse (author)

vincent van Gogh (artist)

Rijksmuseum Vincent van Gogh (issuing body)

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



Person ⓘ

Ian McEwan

British author. Born in 1948 in Aldershot (England).

Ian Russell McEwan, is an English novelist and screenwriter. In 2008, The Times featured him on its list of "The 50 greatest British writers since 1945" and The Daily Telegraph ranked him number 19 in its list of the "100 most powerful people in British culture". - Wikipedia

More options ▾

Wikimedia

<https://bl.natbibod.org/ian-mcewan-a771652950542530/original-works-by>

Original works by **Publications by** Original works about

Filter original works...

33 results

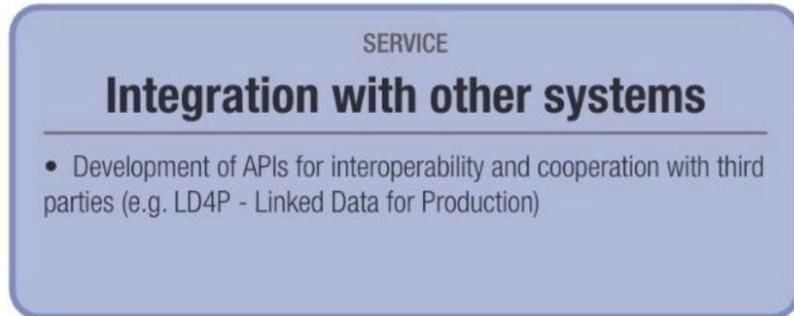
No.	Title	Year	Genre	Creators
1	Essays, Selections		Fiction/Novel	Ian McEwan (author)
2	First love, last rites		Fiction/Short stories	Ian McEwan (author)
3	Amsterdam		Fiction/Novel	Ian McEwan (author)
4	Child in time		Fiction/Novel	Ian McEwan (author)
5	Other minds		Fiction	Ian McEwan (author)
6	Soursweet		Drama	Ian McEwan (author)



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

```
<http://id.loc.gov/vocabulary/mstatus/> <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/menclv/f>
<https://svde.org/agents/UPENN> .
<http://id.loc.gov/vocabulary/menclv/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/menclv/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>
<http://id.loc.gov/ontologies/bibframe/code> "aacr" <https://svde.org/agents/UPENN> .
<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

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

- 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



Tenant infrastructure - Community and autonomy

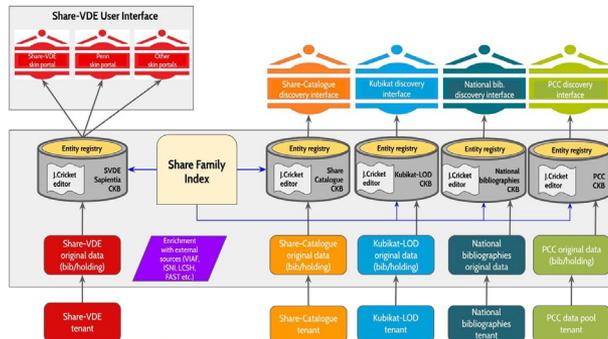
TECHNOLOGY

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.



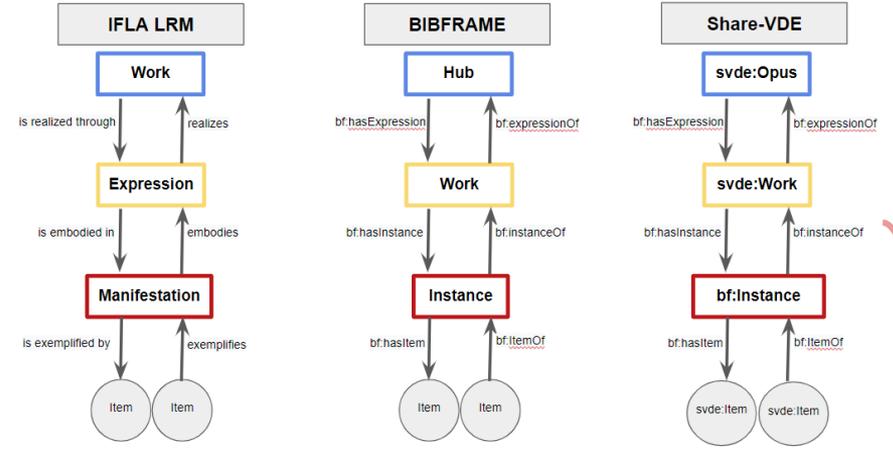
The screenshot shows the ShareVDE BETA search interface. The header includes the ShareVDE BETA logo and the British National Bibliography logo. The main heading is "Search for people, original works and publications" with an example search: "e.g. Jules Verne or Around the world in". Below this is a search bar with the text "e.g. the hitchhiker's guide to the galaxy adams" and a search icon. The interface also features tabs for "Publications", "Original works", and "People and organizations", and buttons for "Language", "Year", and "Type". At the bottom, there is a footer with the text "Explore the library data of the 20+ Share-VDE member" and a "Learn more" link.



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.

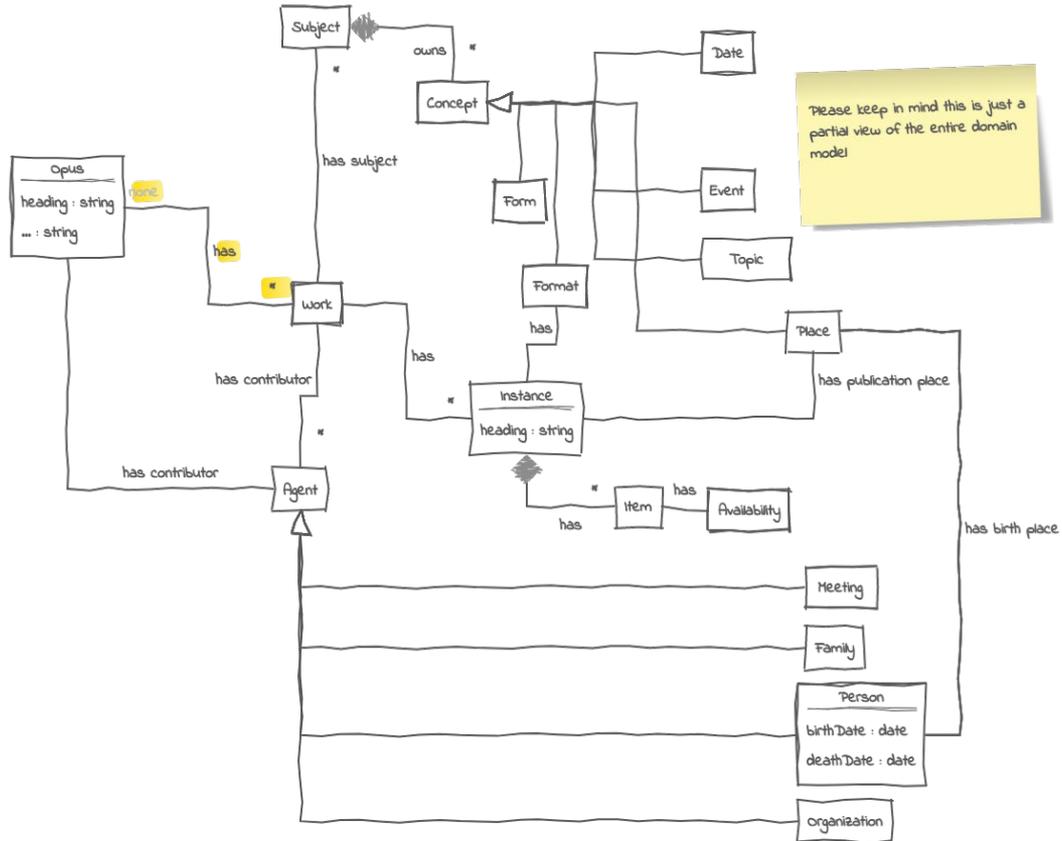


TECHNOLOGY

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



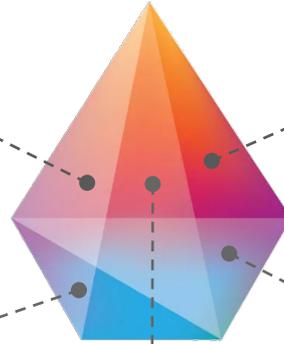
The Entity as a “Prism”



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

 (links)		
sameAs	http://dbpedia.org/resource/Alice&#39;s_Adventures_in_Wonderland	Dbpedia
sameAs	https://www.wikidata.org/wiki/Q189875	Wikidata
sameAs	https://data.bnf.fr/ark:/12148/cb358500385#about	bnf

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

Share VDE		
sameAs	http://dbpedia.org/resource/Alice&#39;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 URI and an external reference

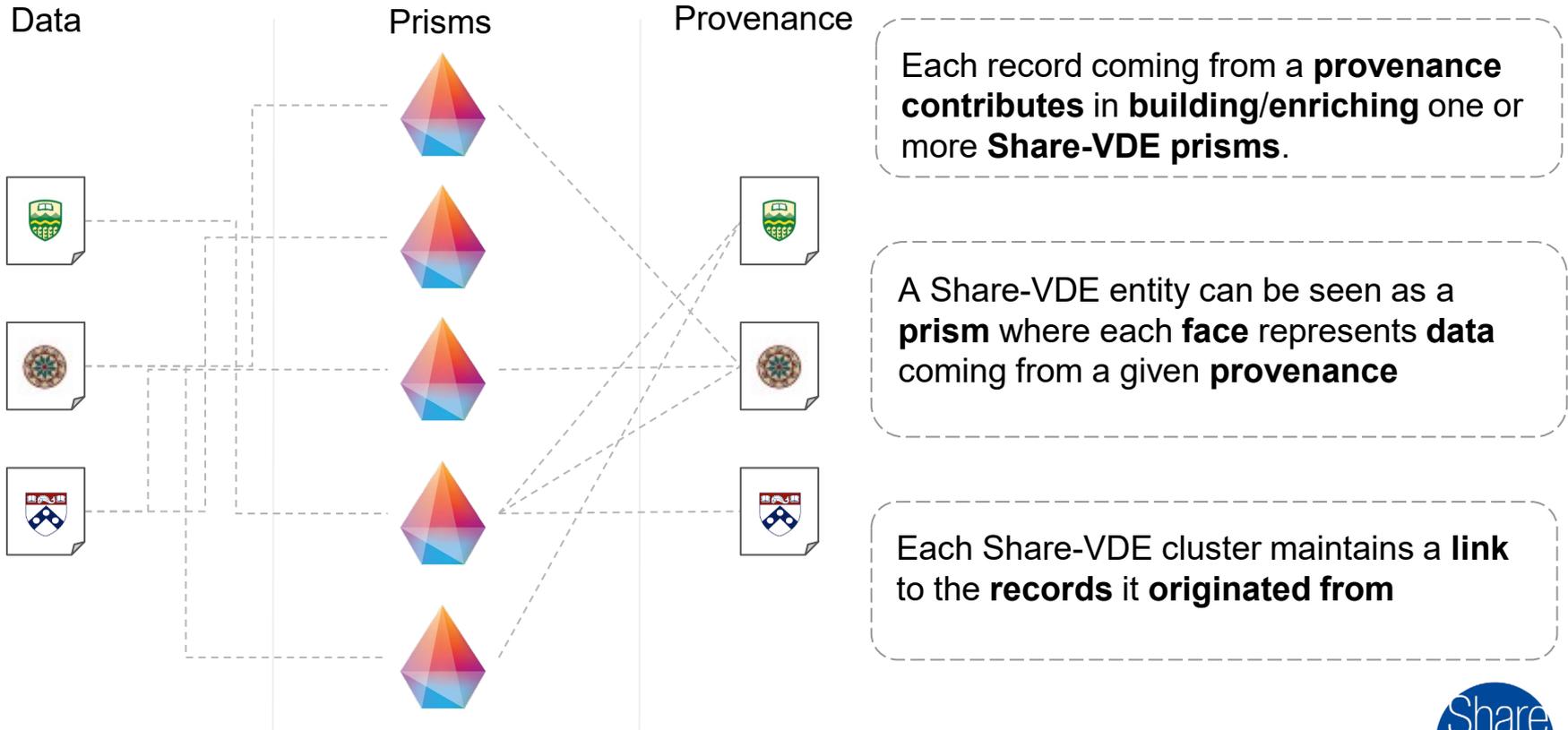
Name	Provenance
author	 LIBRARY LIBRARY OF CONGRESS  Stanford

A relationship is a connection between two URIs

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



Sapientia Edit API: JCricket



JCricket Editor - The Entity Management System

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

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

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

The screenshot displays the JCricket Editor interface. The top window, titled 'Edit: "Isaiah Thomas" - Share-VDE', shows a profile for 'Isaiah Thomas' with a 'Manual review needed' warning. Below this is a 'Cluster metadata' table and a 'Connected external IDs' section. The 'Connected external IDs' section is expanded to show a 'Connect to external IDs' dialog. This dialog lists various sources (OCLC, VIAF, Wikidata, LC, CND, BNF, Other...) and displays search results for 'Isaiah Thomas'. The results include an OCLC entry (ID: 21312261), a VIAF entry (ID: 1568409), a Wikidata entry (ID: 8925663), and a Wikidata entry (ID: 05522213). A 'Wikidata from Q136630' panel is also visible, showing a detailed view of the Wikidata entry for 'Isaiah Thomas' with fields for name, sex, date of birth, country of citizenship, and place of birth. A 'Connect to this ID' button is at the bottom of the Wikidata panel.

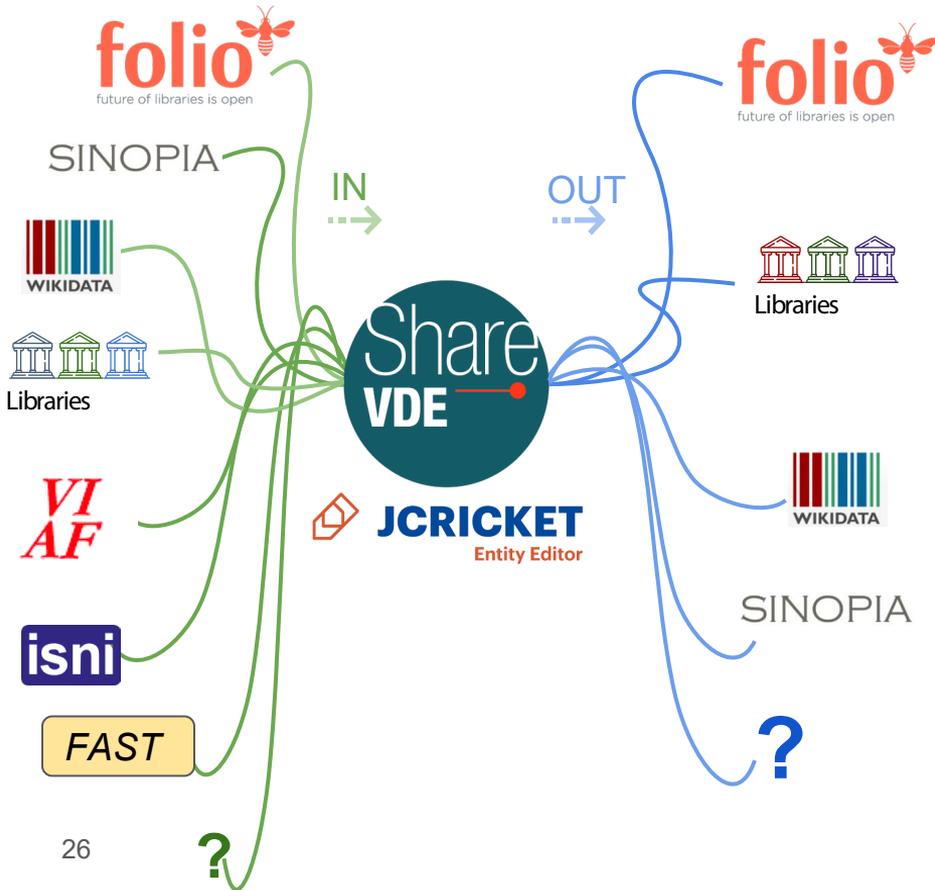
Source	ID	Name	Born	Died	Confidence
OCLC	ID 21312261	Isaiah Thomas	1989		Manually added
VIAF	ID 1568409	Isaiah Thomas	1989		Automatic
LC	ID 8925663	Isaiah Thomas	1989		Automatic
Wikidata	ID 05522213	Isaiah Thomas	1989	1819	Automatic

APPLICATION

J.Cricket Editor

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

Share-VDE: Share Virtual Discovery Environment



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.

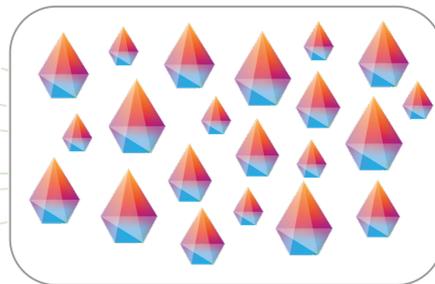


The Big Picture: from Genesis to Edit

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



The Share-VDE knowledge base **Sapientia** contains the integrated/clustered/enriched entities.



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

Edit API



Search API



but...



Thirdparty Applications



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

Jules Verne
French novelist, poet and playwright. Born in 1828 in Nantes (France). Died in 1905 in Amiens (France).

Original works by | Publications by | Original works about

EEE results

No.	Title	Year	Genre	Creators
1	Cinq Cents		Fiction	Jules Verne (author)
2	Maison à vapeur, Part 1		Novel	Jules Verne (author) U. G. Lévy (editor) G. L. Lévy (illustrator) Victor Hugel (illustrator) G. L. Lévy (author) (University of Pennsylvania) (author)
3	Eden			Jules Verne (author)
4	Paix de Rome (Pisa)		Fiction/Novel	Jules Verne (author) Bernard Petit (author) Gilles-Benoist (author)

Data is mainly searchable through the entity discovery portal.

but...



JCricket: Edit Scenarios

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



Lewisss-Carroll!



Lewis Carrol

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



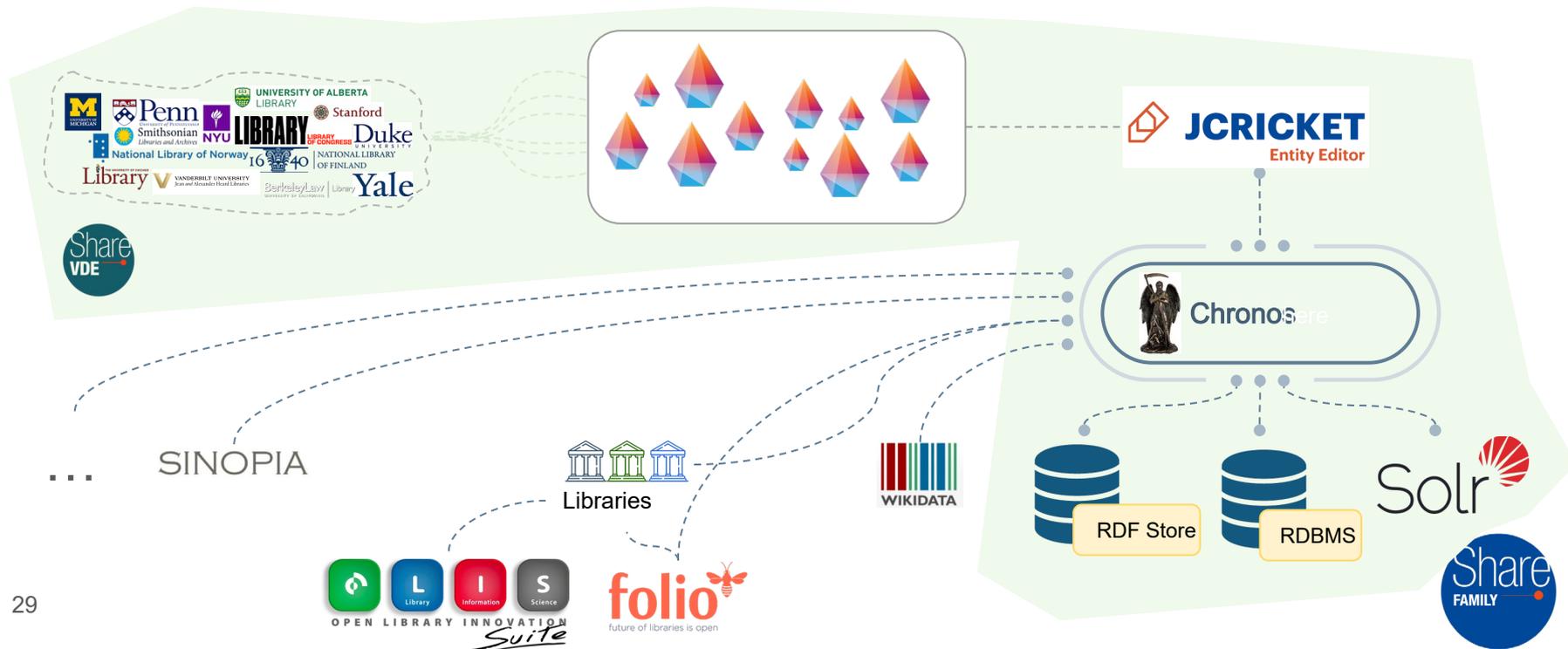
Several entities have been (wrongly) clustered into one.

Outbound Connectors Architecture

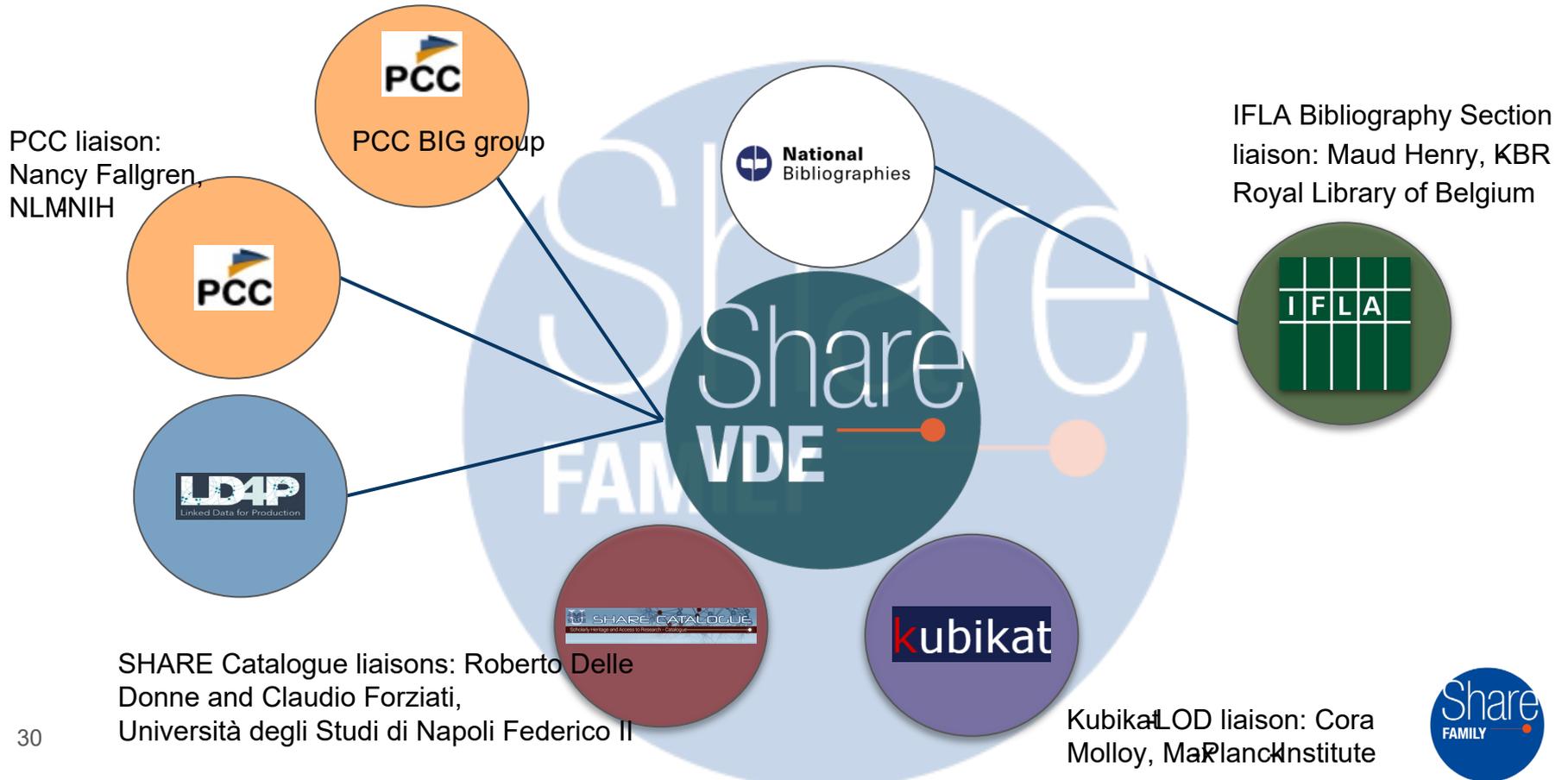
Data flows into ShareVDE from libraries, institutions and third party sources (e.g. VIAF, ISNI, FAST)

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

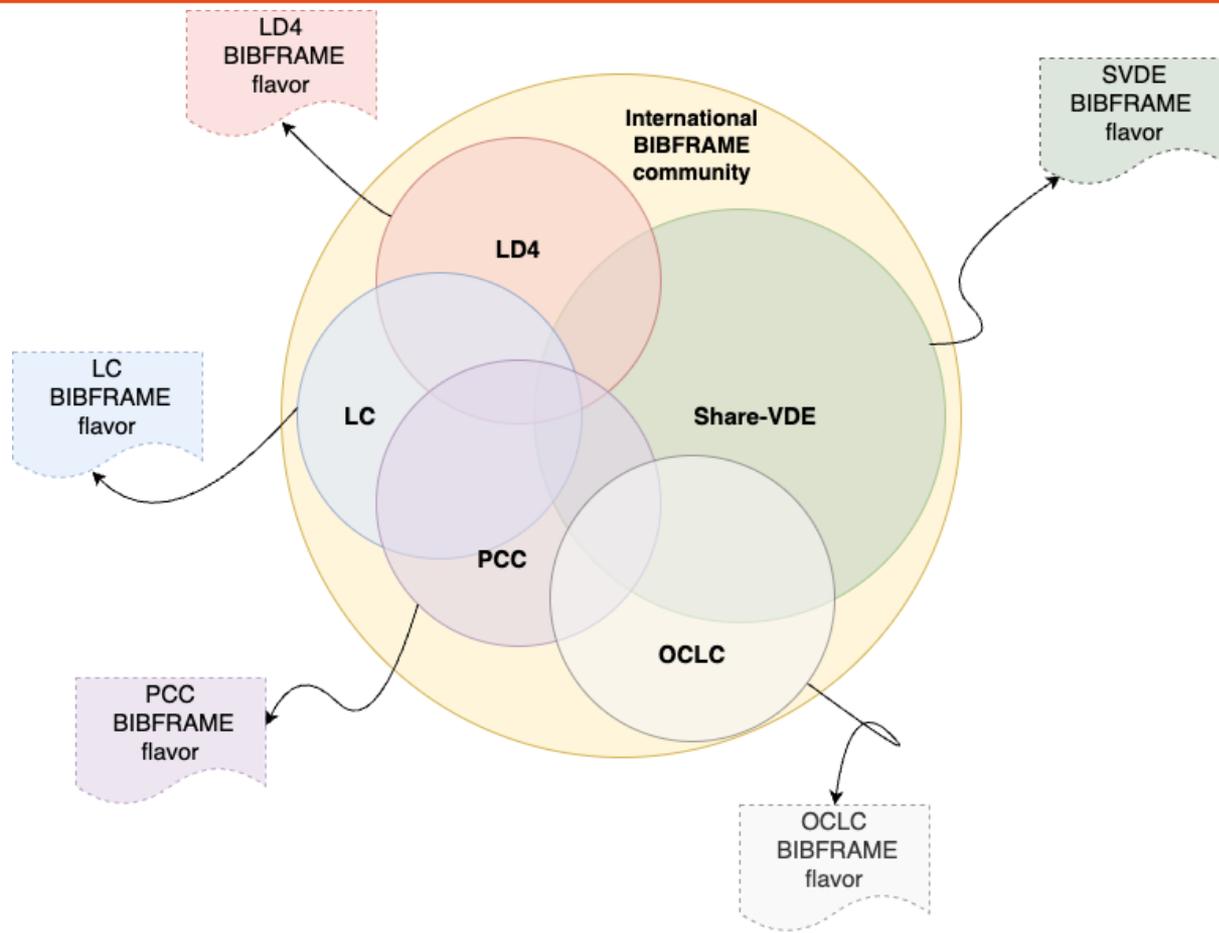
Data is mainly edited through JCricket, the ShareVDE entity editor.



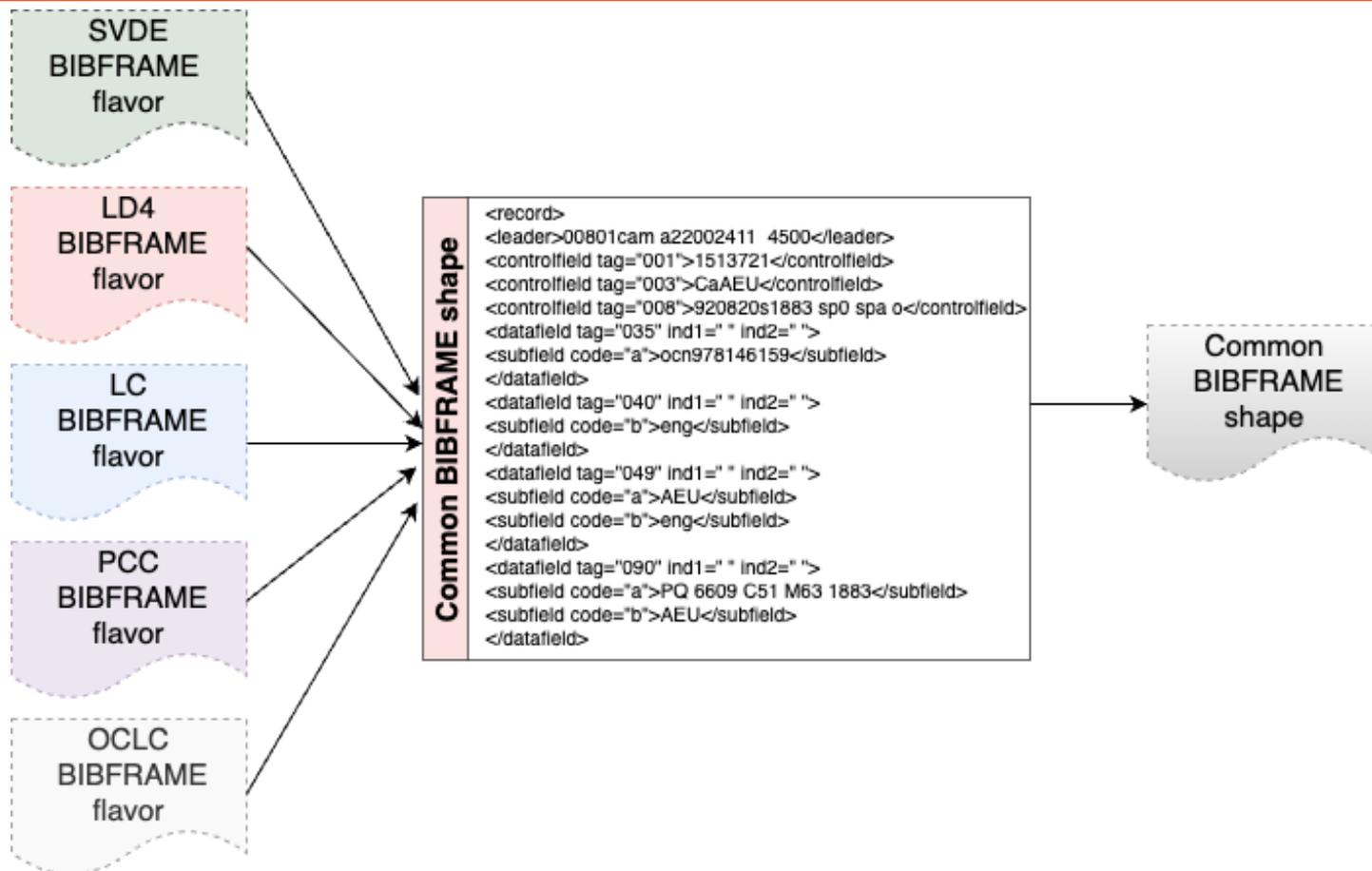
Share Family and Share-VDE liaisons



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>

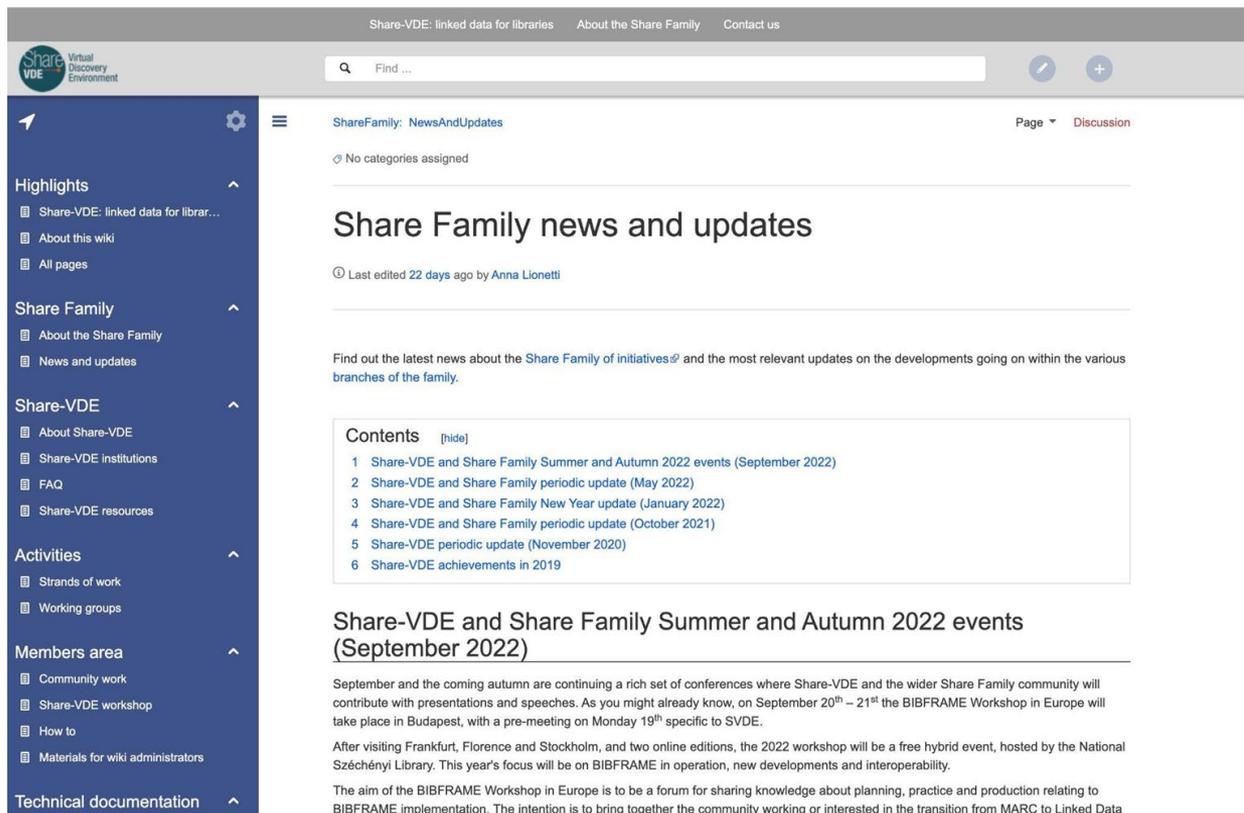




Linked
Data
Environment

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

Share - News & Updates on Wiki



The screenshot shows the Share Family Wiki page. At the top, there is a navigation bar with links for 'Share-VDE: linked data for libraries', 'About the Share Family', and 'Contact us'. Below this is a search bar with the text 'Find ...'. The main content area is titled 'ShareFamily: NewsAndUpdates' and includes a 'Page' dropdown menu and a 'Discussion' link. The page content starts with 'No categories assigned' and a heading 'Share Family news and updates'. Below the heading, it states 'Last edited 22 days ago by Anna Lionetti'. The main text reads: 'Find out the latest news about the Share Family of initiatives^o and the most relevant updates on the developments going on within the various branches of the family.' A 'Contents' section is visible, listing six items: 1. Share-VDE and Share Family Summer and Autumn 2022 events (September 2022), 2. Share-VDE and Share Family periodic update (May 2022), 3. Share-VDE and Share Family New Year update (January 2022), 4. Share-VDE and Share Family periodic update (October 2021), 5. Share-VDE periodic update (November 2020), and 6. Share-VDE achievements in 2019. The selected item is 'Share-VDE and Share Family Summer and Autumn 2022 events (September 2022)'. The page content for this item begins with: 'September and the coming autumn are continuing a rich set of conferences where Share-VDE and the wider Share Family community will contribute with presentations and speeches. As you might already know, on September 20th – 21st the BIBFRAME Workshop in Europe will take place in Budapest, with a pre-meeting on Monday 19th specific to SVDE. After visiting Frankfurt, Florence and Stockholm, and two online editions, the 2022 workshop will be a free hybrid event, hosted by the National Széchényi Library. This year's focus will be on BIBFRAME in operation, new developments and interoperability. The aim of the BIBFRAME Workshop in Europe is to be a forum for sharing knowledge about planning, practice and production relating to BIBFRAME implementation. The intention is to bring together the community working or interested in the transition from MARC to Linked Data'.

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





Thank you



<https://wiki.svde.org/>
<https://svde.org>
info@svde.org