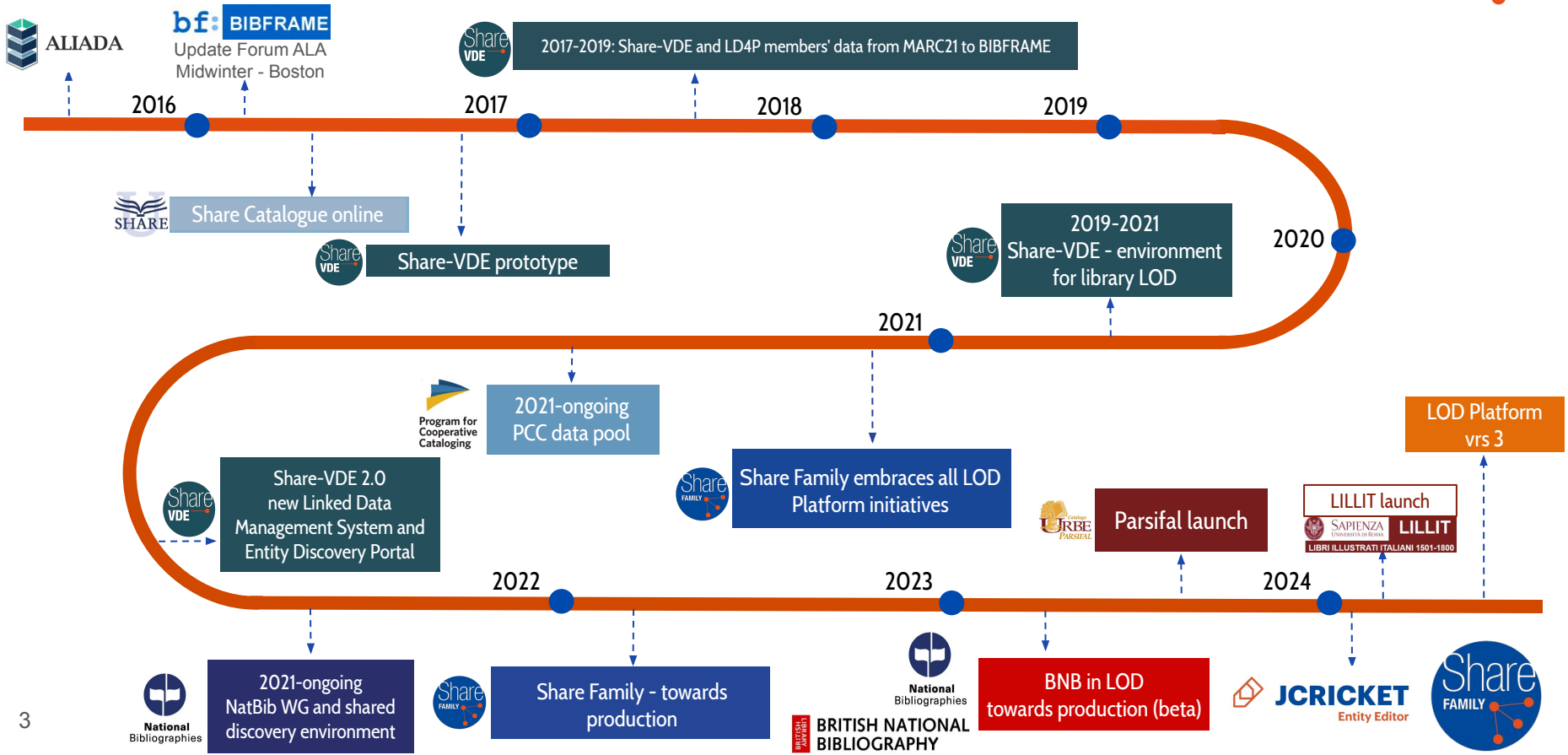
The Share Family initiative: bringing Linked Open Data into practice

info@share-family.org
https://share-family.org
https://wiki.share-family.org
https://svde.org

Share-VDE background and the Share Family

Stepping stones



Share-VDE and Share Family in a nutshell

The ultimate goal is to:

- create a linked data ecosystem where BIBFRAME entities benefit as much as possible from the wealth of data included in the original MARC catalogues;
- act as a linked data node providing authoritative source of data through the CKB;
- reconcile data from different libraries in a Union Catalogue and enrich with information from external sources (e.g. addition of URIs to entities from VIAF, ISNI, Wikidata etc.);
- provide a rich but simple user experience on the discovery portal;
- expose the data on different layers that can serve many purposes (API layer, triple store, discovery portal).

Main references

Resources

- Share Family presentation website https://www.share-family.org/en/home
- Presentation video
- Share Family Bulletin including latest updates
- Press release about Version 3 of the LOD Platform (the technology underlying all Share Family initiatives);
- Share-VDE Open Metadata Policy approved by the Share Family Advisory Council on April 9th 2025;
- Liaison protocol between the Share Family Advisory Council and the RSC - RDA Steering Committee;
- Demo of the Share-VDE portal
- The LOD Platform Technology
- JCricket - LOD Platform Entity Editor
    - Use cases of integration with ILSs (i.e. Alma, FOLIO, Sinopia)
    - Integration with third parties
- Public Documentation, including technical documents and APIs

A cooperative and library-driven initiative

The Share Family is a collaborative initiative based on the needs of libraries, developed and supported by:

the joint effort of the Share Family Advisory Council and of the Working Groups that contribute to its development;

Casalini Libri, provider of bibliographic and authority data as member of the Program for Cooperative Cataloguing;

@Cult, provider of ILS, Discovery tools and Semantic web solutions for the cultural heritage sector;

the vision of Linked Data for Production initiative with special endorsement of Stanford;

with input and active participation from an international group of research libraries.

Common priorities, challenges and concerns

- By adopting BIBFRAME as main ontology, take advantage of the potentials of linked data to facilitate interoperability among data pools, in coexistence with MARC.
- Transform library catalogs in research tools providing structured access and visibility to research in original languages in all disciplines.
- Apply and support open metadata policies.
- Be independent of local practices and of local choices of ILS/LSP.
- Open up a new level of international cooperation to maintain the wealth of information that will continue to grow.
- By serving as an authoritative data source, contribute to a new bibliographic ecosystem where data modeling, data enrichment and data sharing are handled collectively.

The Share Family Linked Data Ecosystem

The Share Family is a global community built on collaboration that brings together libraries, archives, museums, consortia and Library Service Platforms (LSP) and joins their knowledge in an ever-widening network of interconnected bibliographic data.

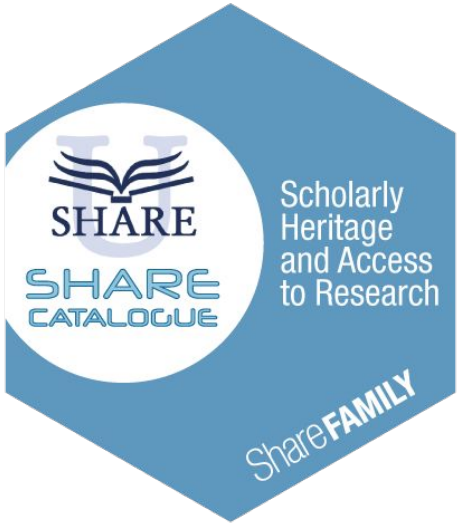
For further details please refer to the following section of the wiki: About the Share Family.

Share-VDE - Virtual Discovery Environment

https://www.svde.org

Berkeley Law Library
Duke University
Library of Congress
National Library of Finland
National Library of Norway
National Taiwan University Library
New York University
Smithsonian Institution
Stanford University
University of Alberta / NEOS Library Consortium
University of Chicago
University of Michigan Ann Arbor
University of Pennsylvania
Yale University

Share Catalogue: Scholarly Heritage and Access to Research



[Share Catalogue discovery portal]

Università degli Studi di Napoli Federico II

Università degli Studi della Basilicata

Università degli Studi del Sannio

Università degli Studi di Salerno

Università degli Studi di Napoli Parthenope

Università degli Studi del Salento

Università degli Studi di Napoli L'Orientale

Università degli studi della Campania Luigi Vanvitelli

Università degli Studi Suor Orsola Benincasa

Università degli Studi di Cassino

SHARE Catalogue - Participating Universities

Università degli Studi di Napoli Federico II (Naples)

Università degli Studi della Basilicata (Potenza)

Università degli Studi del Sannio (Benevento)

Università degli Studi di Cassino

Università degli Studi di Salerno (Salerno)

Università degli Studi di Napoli Parthenope (Naples)

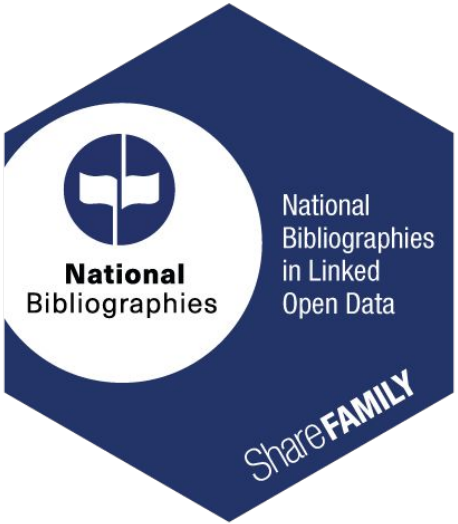
Università degli Studi del Salento (Lecce)

Università degli Studi di Napoli L'Orientale (Naples)

Università degli studi della Campania Luigi Vanvitelli

Università degli Studi Suor Orsola Benincasa (Naples)

National Bibliographies in Linked Open Data



https://natbib-lod.org/

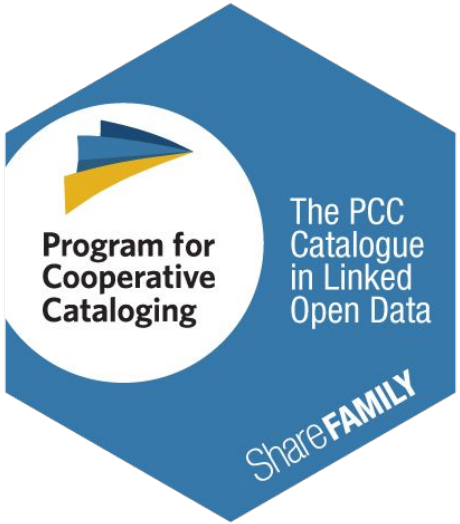
The aggregation of data from National Bibliographies in a shared entity discovery environment; the first of these is the BNB - British National Bibliography, soon to go into production.

BRITISH LIBRARY BRITISH NATIONAL BIBLIOGRAPHY BETA

The preview of the BNB beta website is available at

https://bl.natbib-lod.org/

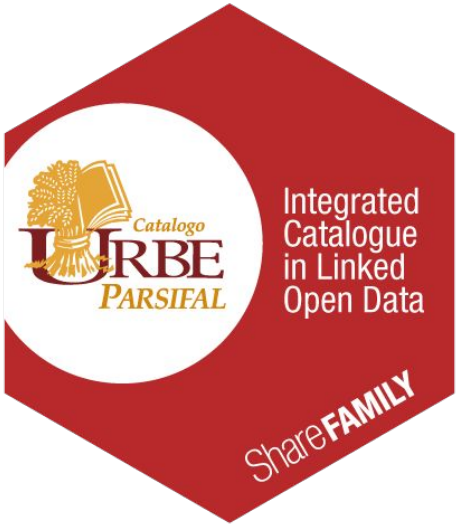
PCC Catalogue in Linked Open Data



The Share Family hosts a dedicated tenant for the data of the PCC - Program for Cooperative Cataloging, to provide PCC-quality BIBFRAME data housed in an ad hoc data pool

https://pcc-lod.org/

Parsifal - Integrated Catalogue in Linked Open Data



https://parsifal.urbe.it/parsifal/?l=en

Accademia Alfonsiana

Centro Pro Unione

Pontificia Facoltà di Scienze dell'Educazione "Auxilium"

Pontificia Facoltà Teologica "Marianum"

Pontificia Università Antonianum

Pontificia Università della Santa Croce

Pontificia Università di San Tommaso d'Aquino (Angelicum)

Pontificia Università Gregoriana

Pontificia Università Lateranense

Pontificia Università Urbaniana

Pontificio Ateneo Sant'Anselmo

Pontificio Istituto Biblico

Pontificio Istituto Orientale

Pontificio Istituto Teologico "Giovanni Paolo II" per le Scienze del Matrimonio e della Famiglia

Pontificium Institutum Patristicum Augustinianum

Università Pontificia Salesiana

Parsifal - Participating libraries (Unione Romana Biblioteche Ecclesiastiche)

Pontificia Università Antonianum

Pontificia Università della Santa Croce

Pontificia Università Gregoriana

Pontificia Università Lateranense

Università Pontificia Salesiana

Pontificia Università S.Tommaso d'Aquino

Pontificia Università Urbaniana

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Pontificio Istituto Orientale

Accademia Alfonsiana

Pontificia Facoltà di Scienze dell'Educazione Auxilium

Pontificia Facoltà Teologica Marianum

Centro Pro Unione

Share Art, Share Music, Share MIA

Three pilot projects for shared Linked Open Data environments in the domains of Art, Music and Manuscripts, Incunabula and Ancient books

Share Family - Linked Data Ecosystem

AUTHORITATIVE PRINCIPLES

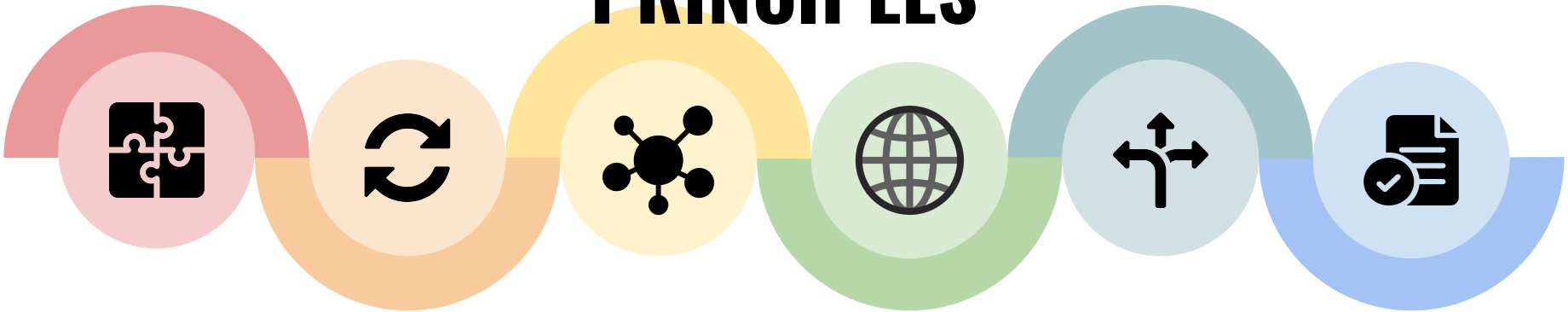
The quality of data is guaranteed both through advanced technical processes and through collaborative data modeling, enrichment and sharing, handled collectively by member organizations.

CO-OPERATIVE

INTEROPERABLE

FLEXIBLE

PRINCIPLES



SUSTAINABLE

OPEN

AUTHORITATIVE

Share Family - Linked Data Ecosystem

PROCESSES

DATA INPUT FROM INSTITUTIONS

- MARC21 bib. and holding
- MARC21 aut.
- UNIMARC
- RDF/BIBFRAME
- Other formats (eg. FOLIO)

×

LOD PLATFORM SERVICES

PROCESSES

- *Mapping*
- *ML Enrichment*
- *Reconciliation*
- *Creation of Linked Data Entities*
- *Conversion to RDF/BIBFRAME*

=

RESULTS

Data Publication

- *End user discovery portals for each initiative of the Share Family*
- *Search APIs for data consumption (GraphQL, REST, SPARQL)*
- *API / protocols for third parties integration (eg. local LSPs and data editor such as Wikidata, Sinopia BIBFRAME editor, FOLIO etc.)*
- *Downloadable datasets (BIBFRAME/RDF, MARC enriched records)*

+

Data Distribution

+

Shared Data Management

- *Editing of Share Family entities with ICricket*
- *Reuse of Share Family BIBFRAME data in local library systems*
- *Authority control in MARC and BIBFRAME-based workflows*
- *Reuse of Share Family MARC representations in local library systems*
- *SFI - Share Family Index: registry of entity URIs*

+

Additional Services

Share Family - Linked Data Ecosystem: Principles

CO-OPERATIVE

Developed and driven by libraries, for libraries, the Share Family is a growing international community built on collaboration. Participating institutions play an active role in defining the vision, aims and progress of the Share Family and its tools.

INTEROPERABLE

By implementing the RDF-based BIBFRAME data model and facilitating interoperability with different data models and data pools, resource description can be transformed into Linked Data, increasing the visibility of research and encouraging greater engagement with library, archive and museum collections.

FLEXIBLE

Enriched and structured data can be re-used in local and external systems, across library types and ILS/LSPs, enabling each institution to maintain control of its own catalogue data.

SUSTAINABLE

The Share Family opens the door to a flexible, sustainable, interoperable and co-operative approach to resource description, with time, expertise and costs shared across the community for the benefit of all members.

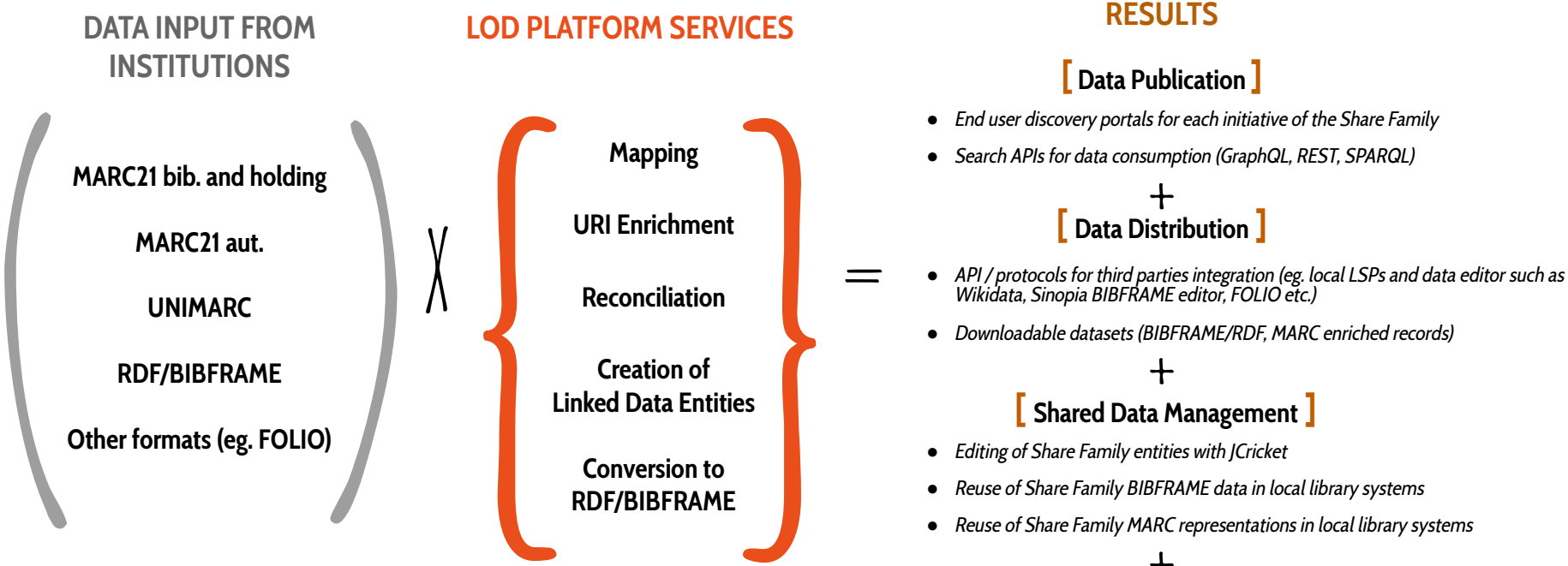
OPEN

We strive to encourage open access to data, and support diversity by freely sharing information. We apply and support open metadata policies as part of our commitment to enhancing the discovery of library and cultural heritage resources.

AUTHORITATIVE

The quality of data is guaranteed both through advanced technical processes and through collaborative data modeling, enrichment and sharing, handled collectively by member organizations.

Share Family processes and output



Openness means...

OPEN

Free Availability

The data is accessible to everyone without any financial, technical, or legal barriers. Open licenses such as Creative Commons or Open Data Commons clearly state permissible uses and encourage unrestricted sharing and innovation.

Interoperability

Published data adheres to widely accepted standards, enabling seamless integration and linking with other datasets. This openness to integration creates a network of data that is more useful and meaningful in a variety of contexts.

Openness means...

OPEN

Transparency and Reusability

Open Linked Data is published in machine-readable formats (e.g., JSON-LD, Turtle) to ensure that both humans and automated systems can use and repurpose it easily.

Discoverability and Accessibility

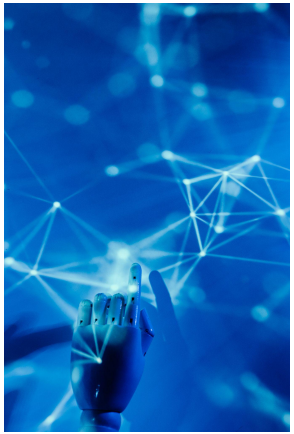
By adhering to Linked Data principles, Open Linked Data ensures that each data point is uniquely identified by a URI and can be accessed directly on the web, enhancing visibility and discoverability.

Openness means...

OPEN

Inclusivity and Innovation

Openness fosters inclusivity by inviting a wide range of users—researchers, developers, businesses, and the public—to utilize the data for diverse purposes. It also encourages innovation by enabling novel applications, data mashups, and the development of new tools and services.



LOD Platform infrastructure components

Cluster Knowledge Base (or Entity Knowledge Base): a collaborative, trustworthy source of quality bibliographic and authority information in linked open data.

Multi-layered entity discovery portal system: it can be configured for individual institutions, for a single consortium / group of institution, for a network of consortia.

JCRICKET Entity Editor

JCricket Entity Editor: tool designed for collaboratively creating and curating linked data entities stored in the Cluster Knowledge Base.

GraphQL { REST }

APIs backbone for seamless interaction with external systems.

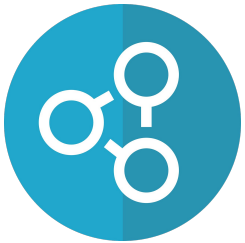
Alma folio future of libraries is open

Integration with third parties: for interoperability with ILS/LSP (eg. FOLIO, Alma), BIBFRAME editors (eg. Sinopia, Marva), authority sources (eg. Wikidata, ISNI, QA).

Share FAMILY

How to achieve these goals

These goals can be achieved applying the the emerging bibliographic ecosystem based on BIBFRAME and on the Linked Open Data principles.



Governance and long-term sustainability are, among others, crucial aspects addressed by the community that since 2016 progressively takes steps into this direction.

Member-driven governance model

Share VDE Virtual Discovery Environment

Share-VDE: supporting the creation, management and discovery of linked open data for libraries

Executive Summary

Approved by the Share-VDE Advisory Council on December 7th 2022

What is Share-VDE?

The Share Virtual Discovery Environment is
driven by libraries, for libraries, in an intern
the discovery of knowledge to increase
collections.

Share-VDE supports members through the
linked open data, leveraging the cooperati
world to offer a flexible, sustainable and
practice.

The Share-VDE partners guide every
implementation. Input from the Advisory
Share-VDE data model and tools stand up t
expertise provides in-depth analysis, studie
throughout its lifecycle.

Innovative framework and authoritative Kn

Committed to open data sharing and reuse
and bibliographic data as linked data, regard

Share FAMILY

Share Family for Consortia

Executive Summary

The Share Family

Share Family is a global initiative developed and driven by libraries, for libraries, in an international collaborative, consortial effort. It enables the discovery of knowledge to increase user engagement with library and cultural heritage collections.

The Share Family offers library consortia the opportunity to enter into the linked open data environment and make available to their members an extensive range of new-generation bibliographic tools and an innovative resource portal.

Vision, governance and values

Vision: Developed and guided by the international library community, the Share Family of initiatives envisions a future where libraries collaboratively define and shape the tools and principles driving bibliographic advancements.

Governance: The direction of Share Family is overseen by the Share Family Advisory Council, comprising representatives from member libraries. Libraries actively participate in policy-making and tool development, sharing expertise, responsibilities, and costs to benefit the entire community and its patrons.

Values: At the core of Share Family's ethos are shared values of cooperation, openness, sustainability, and flexibility. The Share Family commits to developing long-term viability of solutions promoting shared tools and resources. It encourages interaction within an evolving ecosystem of linked data, empowering libraries to adapt and thrive in the digital age.

The direction of Share Family is overseen by the Share Family Advisory Council, comprising representatives from member institutions. Representatives actively participate in policy-making and tool development, sharing expertise, responsibilities, and costs to benefit the entire community and its patrons.

Being a community initiative, the goals and desired outcomes are defined by the participating institutions through active engagement in different Working Groups.

https://bit.ly/SVDE-Open-Metadata-Policy
https://bit.ly/SF-Executive-Summary-Consortia

Governance: open data policies

Share Family Open Metadata Policy

Approved by the Share Family Advisory Council
on March 15th 2023; amended on April 9th 2025

The Share Family strives to support and invest in open data to freely share information. The community is committed, wherever possible, to share data transformed by its series of Linked Open Data (LOD) processes. The Share Family community has invested great effort to ensure its structured data adhere to the accepted community standards and practices for the library and the open data community.

Share Family data may be used under a CC0 license unless expressly stated otherwise.

The Share Family data pool consists of newly created metadata objects derived from existing data provided by member institutions, enriched and published as RDF, as well as entirely new objects manually created within the system. These data are open and interoperable by humans and machines alike. The Share Family highly encourages their use to promote global dissemination, accessibility, reusability, and discoverability of information resources.

This commitment ensures the widest possible distribution and reuse of our metadata. The Open Data Policy does not cover tools and services developed by the Share Family community nor the original data submitted by member institutions.

Some Share Family Ecosystem tenants may adhere to other open data policies. When using data originating from these tenants, attribution of the source of the metadata or other restrictions as outlined in the tenant's appropriate policy may be required. For example, the PCC Data Pool adheres to CC BY-NC 4.0.

For further information on the tenants' policies, refer to the wiki page Share Family Linked Data Ecosystem.

https://bit.ly/ShareFamily-Open-Metadata-Policy

https://share-family.org
info@share-family.org
https://wiki.svde.org
www.svde.org

The communities of institutions that form the Share Family and leverage its LOD Platform technology freely decide how they want to reuse the data output from the LOD Platform.

As an example, SVDE adopted an Open Metadata policy https://bit.ly/ShareFamily-Open-Metadata-Policy.

This topic strongly resonates within Share Family and SVDE communities → ongoing discussion to revise the SVDE Open Metadata Policy and state the option for open data more explicitly.

Outputs for consortia or single libraries

Linked Data Descriptions and Enriched MARC Records

- The Library catalogue is converted in linked data entities according to BIBFRAME 2.0. The entities are then enriched both with native and persistent SVDE URIs and URIs from external sources.
- MARC records from the original library catalogue are enriched both with native SVDE URIs and URIs from external sources.

Discovery Portal

- 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

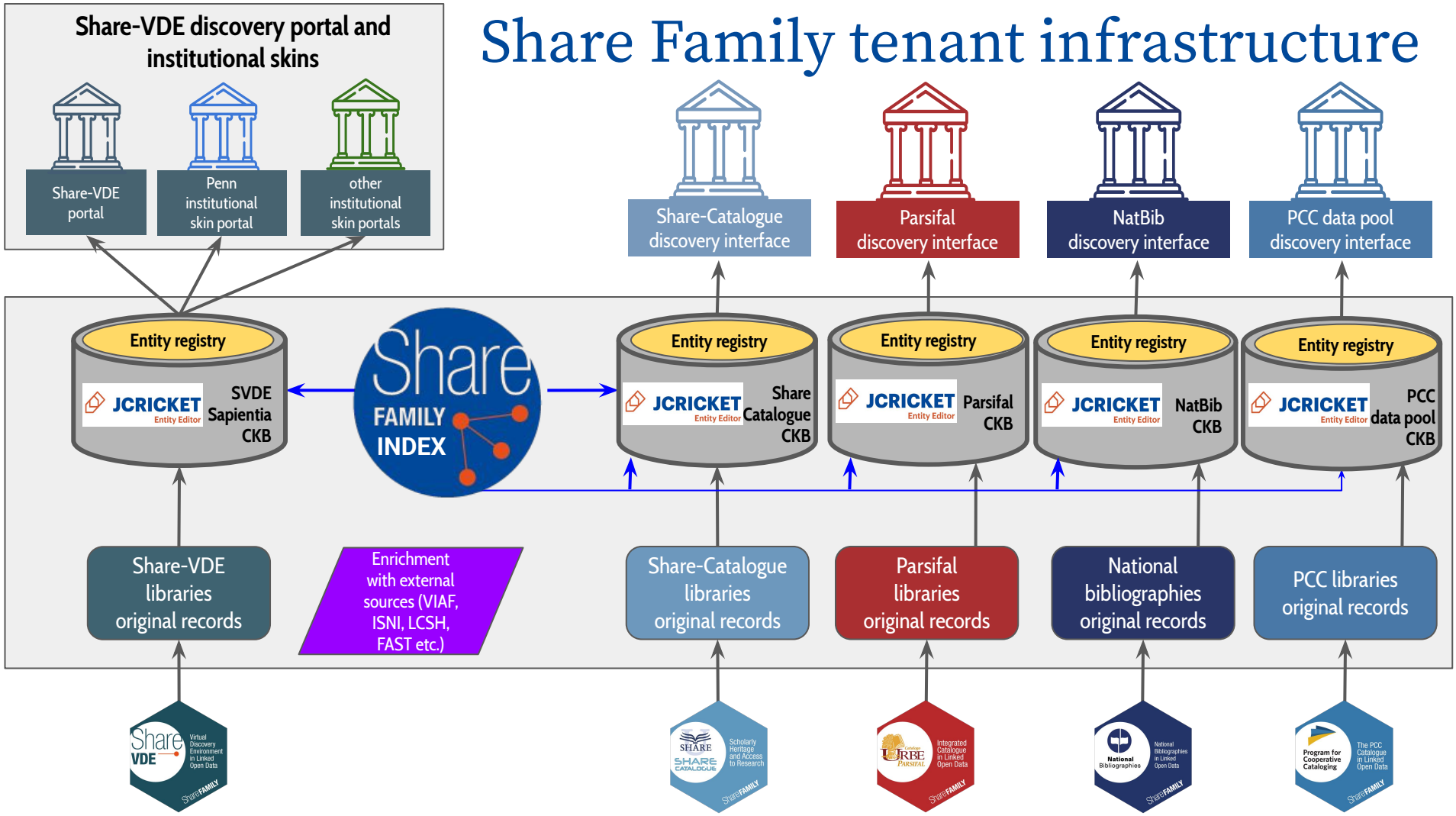
JCricket Entity Editor

- It's a manual collaborative tool designed to manage properties (attributes, relations, and links) of entities in the Cluster Knowledge Base, improving data quality through tasks like creation, merging, and splitting.
- Data can always be traced back to each Institution through the Provenance.
- It can potentially support other workflows and connections with systems external to the Share Family

Authoritative Services

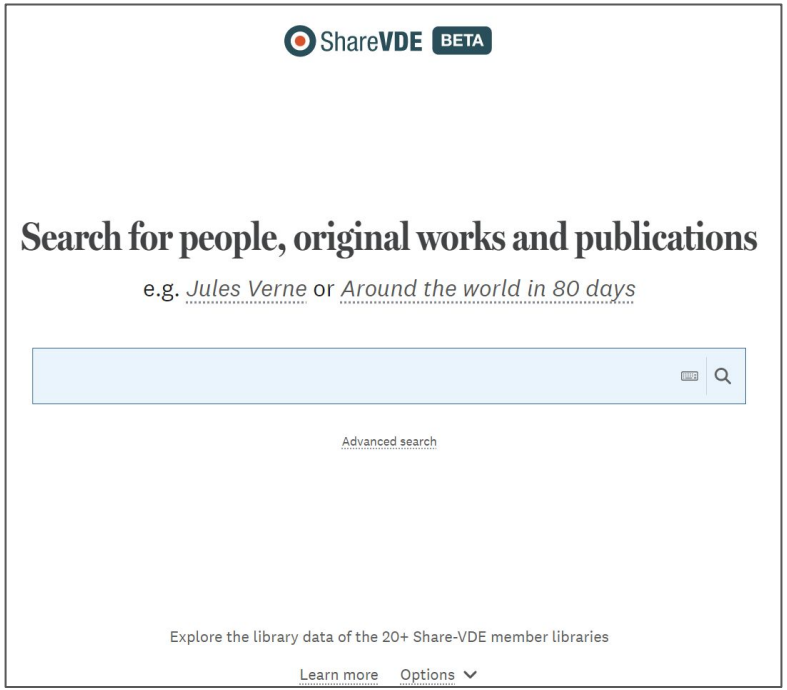
- Innovative solutions that facilitate and improve authority control through automatic and manual procedures.
- Libraries to receive constantly updates on their bibliographic and authority records from authoritative sources.
- Authority Services currently available for MARC-based workflows offer automated URI enrichment, reconciliation and validation of library data.

Share Family tenant infrastructure



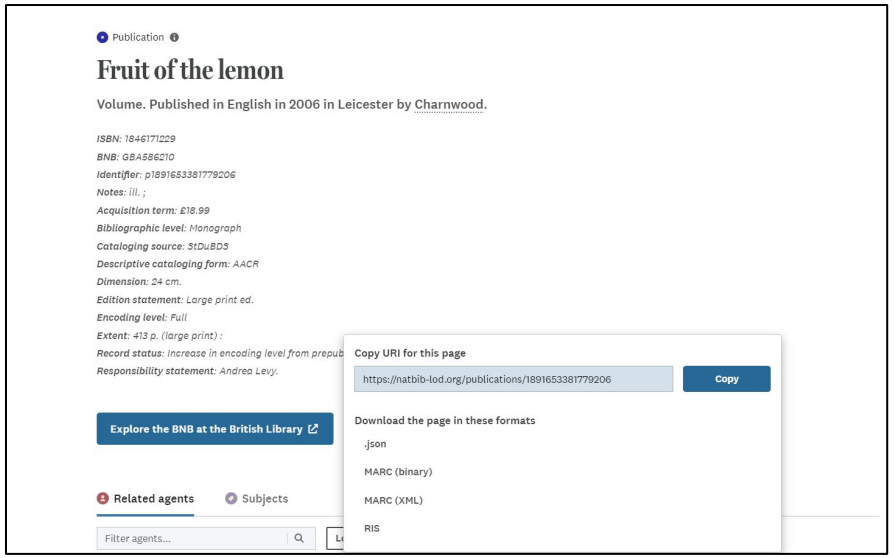
Default configuration: SVDE and PCC data pool

Simple search default configuration on SVDE and PCC data pool portals



Default configuration: British National Bibliography

Simple search default configuration on Natbib tenant and the BNB - British National Bibliography skin*



* the British Library announced the launch of the beta version of the British National Bibliography Linked Open Data Portal

Default simple search configuration: the BNB

Simple search default configuration on Natbib tenant and the BNB - British National Bibliography skin* is set to Publications search, instead of the SVDE default.

This was done to comply with a different requirement whereby for the data stored in this tenant (ie. national bibliographies) it's meaningful to direct users to publications.

Different communities or types of institutions might need customised features

(*) *Note: the skin for the British National Bibliography is a preview of a beta site.*

Share Family tenant infrastructure

- The Share Family of initiatives includes different branches and sister projects, supported by the same LOD Platform technology. Each branch or project is hosted in a specific tenant of the system architecture with a corresponding specific Cluster Knowledge Base and a dedicated web entity discovery portal.
    - For more details on the Share Family tenant infrastructure see the Summary of Share Family tenants.

- In some cases, within a single tenant a customised skin (ie. a sub-portal of the main entity discovery) can be created to address ad hoc needs of an institution, or group of institutions, willing to expose only their own data or to integrate local services in the Share environment.
    - For example, Share-VDE entity discovery portal at svde.org is one of such tenants, including a pool of data from a number of institutions, and the respective skin portals.

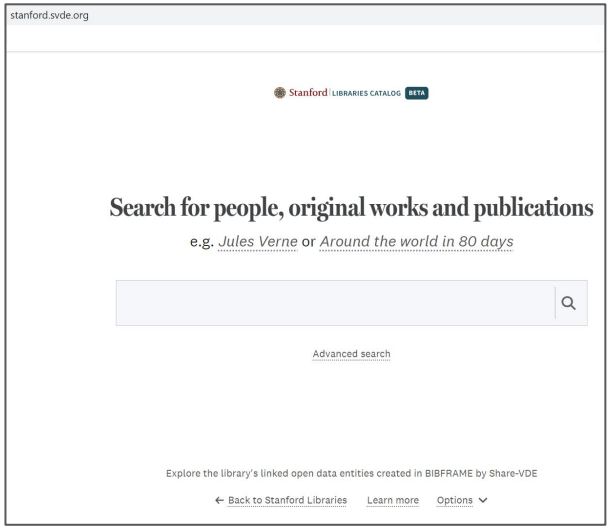
Institutional skin portals within a tenant

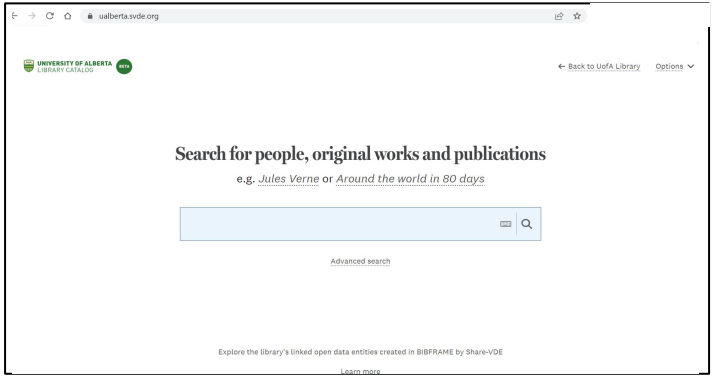
- While the main entity discovery portal of a tenant shows the data of all the institutions feeding the tenant's Cluster Knowledge Base, the skin portal gives the ability to filter only the data of the institution that the skin portal has been designed for.

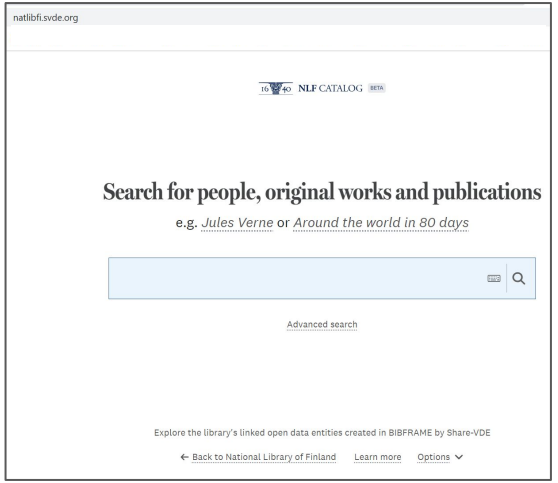
- To this aim, the "held at" filter was added, allowing to filter publications by what is available at the current library. It is enabled on skin portals at Publication (= Instance) level in these cases:
  - in advanced search, see e.g. NYU data pre-filtered here https://nyu.svde.org/advanced-search/publications?q=(title+does_not_contain+xyz)&heldAtLibrary=true (see the toggle on the right of the screen, you can turn it on / off)
  - in the Original work entity page that lists Publications, see e.g. https://nyu.svde.org/suite-de-la-mancha-flute-cello-piano-unknown-author-o781654264663247/library-publications (see the toggle on the right of the screen, you can turn it on / off)
  - in simple search results in cases where the simple search default on the home page is the Publication simple search (e.g. Natbib tenant)

Example: institutional skin portals in SVDE

- **SVDE tenant** - https://svde.org => with LC's authority data and the bibliographic data of member institutions
  - skin portals including: Penn, Smithsonian, Stanford, University of Alberta, New York University, National Library of Norway, National library of Finland (other skin portals will be set up following the load of libraries' catalogues to svde.org)





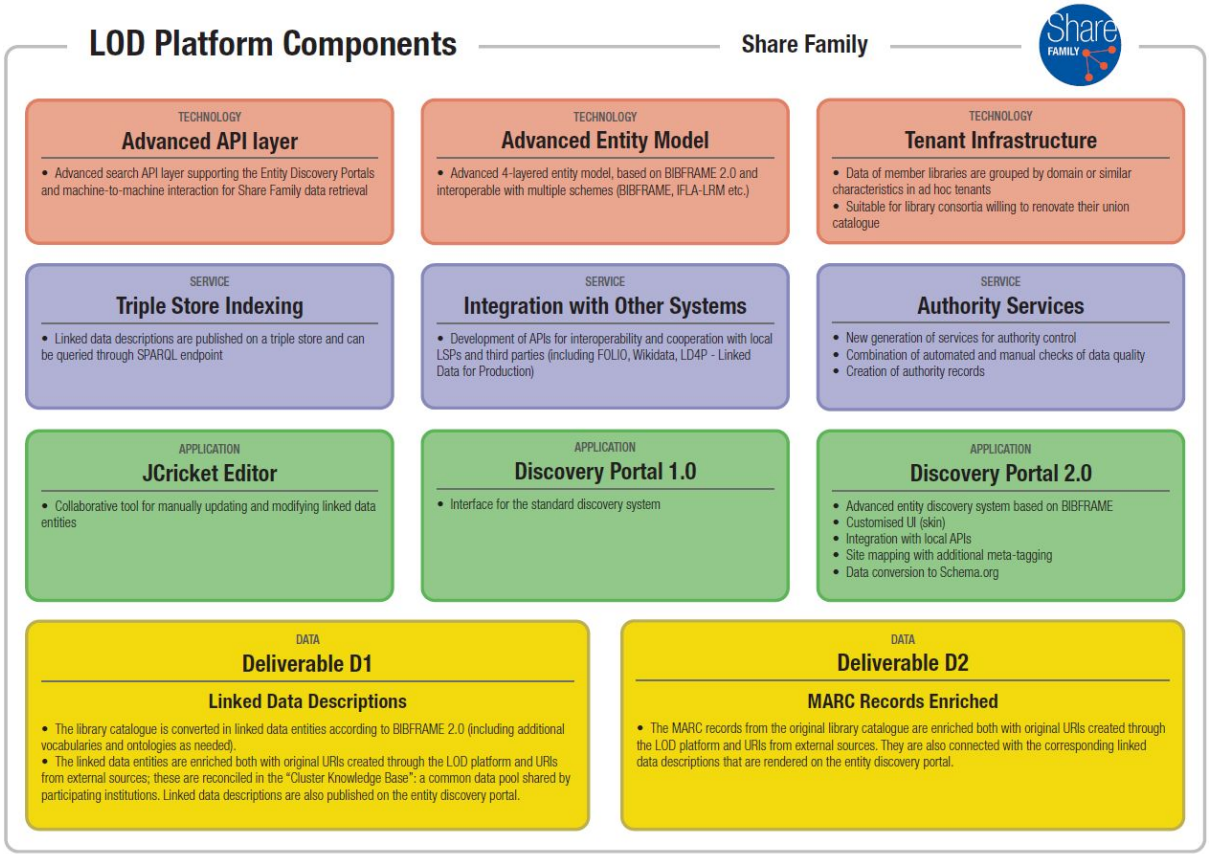


Community work and outcomes

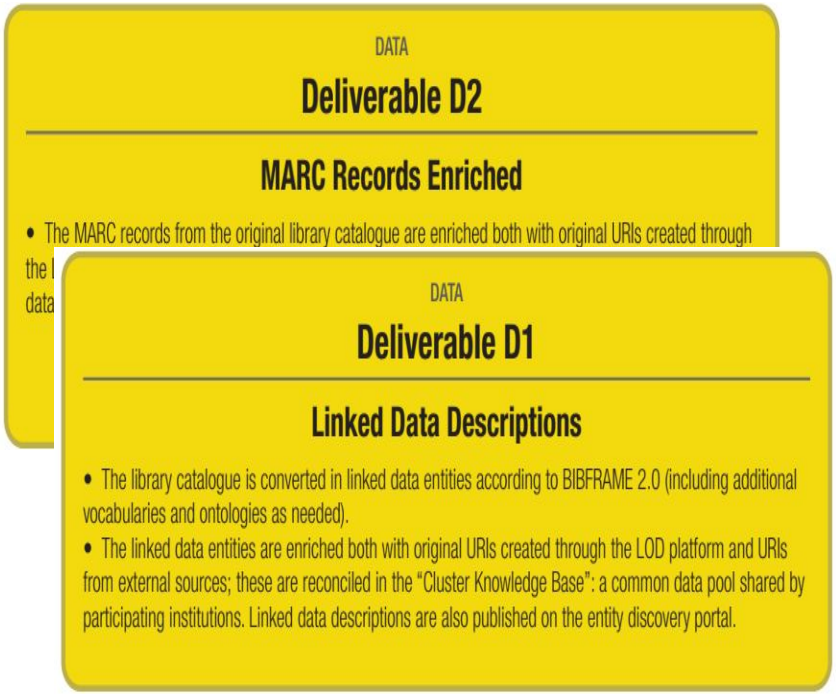
Among the active participant institutions

Libraries members of SVDE and Share Family working groups and parallel projects are constantly contributing with their Subject Matter Experts to requirements gathering, functional analysis and feedback to developments.

The configurable components



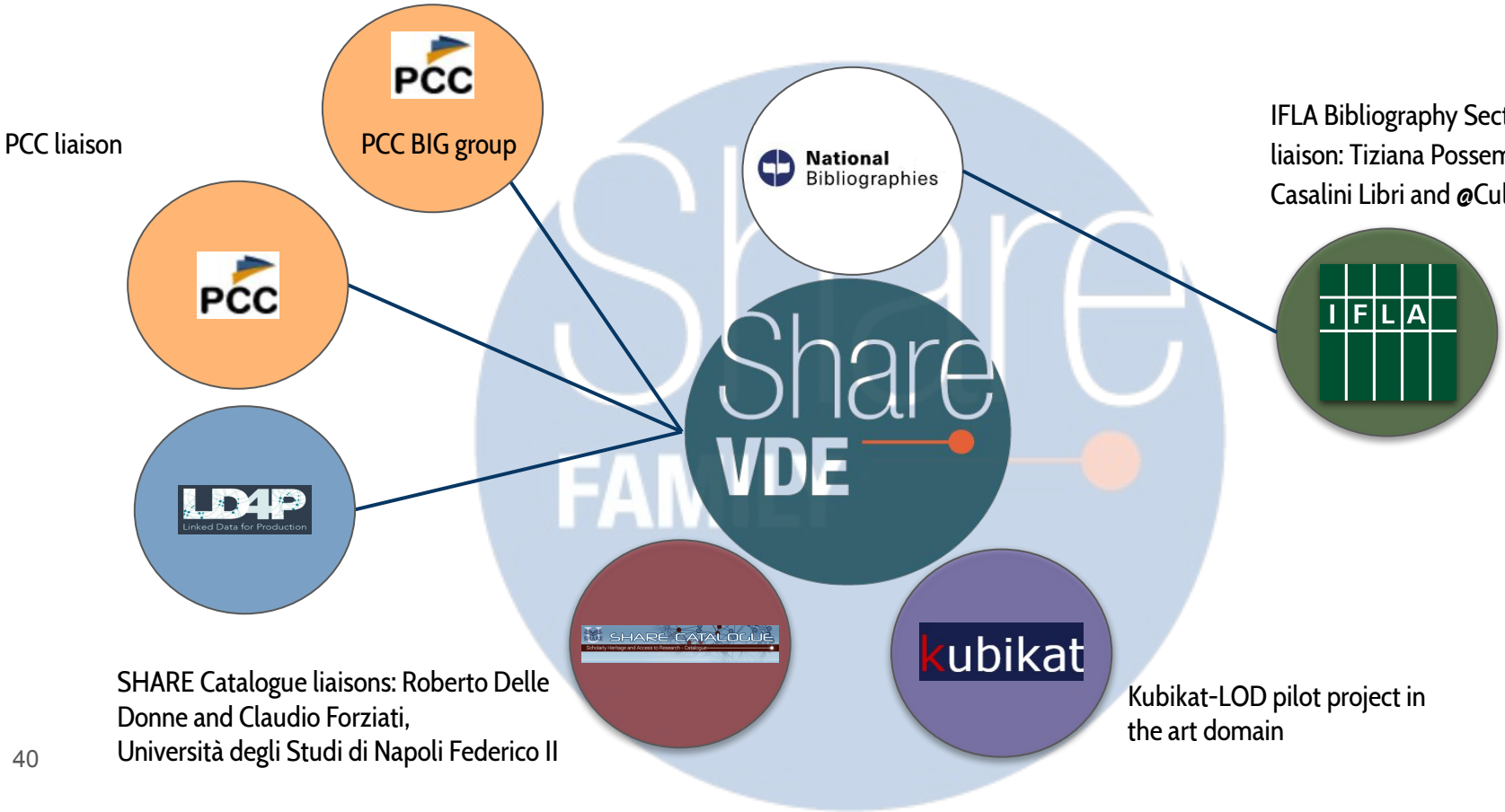
Deliverables



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

Share Family and Share-VDE liaisons



Community engagement: library community

Extended community: collaboration with heterogeneous initiatives and institutions in the library domain

Scientific value: sharing of data and services in different technological environments and diverse bibliographical and cultural context

Community engagement: World Wide Web

Mixed community: cross-domain cooperation across the Web community

Scientific value: same solutions serve scopes of different communities, data reuse

BIBFRAME Interoperability Group - BIG

- Define a standard BIBFRAME “shape” to support data reuse including conversion to and from other formats.
- Explore defining BIBFRAME elements necessary for data exchange.
- Surface issues regarding the use of the Official RDA with BIBFRAME and propose strategies for their resolution.
- Collaborate and communicate with other groups working in the area of BIBFRAME interoperability to ensure the ability to reuse BIBFRAME created in one community in other BIBFRAME stores.
- Examine the work accomplished by the other BIBFRAME working groups and apply to this charge where appropriate.
- Gather use cases as necessary to inform decision making, expanding on the efforts of the Use Case Working Group and others.
- Provide an avenue for other interested parties to contact the BIBFRAME Interoperability Group and/or reach out to other stakeholders.

Share-VDE and Share Family Working Groups

Libraries members of Share-VDE and Share Family Working Groups and parallel projects are constantly contributing with their Subject Matter Experts to requirements gathering, functional analysis and feedback to developments.

Share-VDE Advisory Council and Working Groups:

- Share-VDE Advisory Council
- Sapientia Entity Identification WG
- Authority/Identifier Management Services WG
- Cluster Knowledge Base Editor WG
- User experience/User Interface WG

Share Family Working Groups:

- National bibliographies Working Group involving SVDE members and external institutions
- Italian group for the conversion UNIMARC - BIBFRAME
- discussions in the field of photo libraries and audio-visual collections

Share-VDE Advisory Council

The Share-VDE AC takes an active role in determining future uses and vision for the Share-VDE initiative; Develop future use cases for Share-VDE, and set development priorities as needed; Monitor and lead the work of the various Advisory Council Working Groups; Maintain communication among the Share Family member institutions.

Among the latest outcomes:

- Share Family Executive Summary for Consortia, March 2024, which defines Share Family's role in aiding consortia in adopting linked data methodologies for enhanced collaboration;
- Share-VDE Executive Summary, December 2022, summarising the scope of Share-VDE in the context of Linked Open Data for Libraries;
- Library and community events sub-group, dedicated to monitoring conferences/events/initiatives of interest for the Share community, and to submitting proposals for presentations as appropriate;
  - see the SVDE wiki Resources page for details about SVDE presentations at conferences and events.

Authority/Identifier Management Services WG

The AIMS WG defines guidelines and best practices for Authority/Identifier management; defines scope and data-flow for the creation and implementation of automated services based on preliminary documentation; proposes additional use cases identified as essential for effective knowledge base management.

Among the latest outcomes:

- definition of use cases;
- functional analysis;
- analysis of interaction with Wikidata and ISNI (joint work with CKBE WG to design JCricket functionalities);
- pilot of MARC-based authority services with Stanford University Libraries;
- initial analysis of services for authority control in linked data workflows.

Focus on Authority Services

Services for the authority control that combine automated and manual processes

For record environments:

- validation of MARC bibliographic records (correction of MARC fields and obsolete forms, update of tags and subfields etc.);
- enrichment of MARC fields with SVDE original URIs and URIs from external sources according to ad hoc profiling, including LCNAF, VIAF, ISNI;
    - Casalini Libri is ISNI registration agency creating and assigning ISNI to persons and organisations (e.g. publishers)
- matching processes on external authority files;
- import of authority records;
- reporting features providing complete details of the validation and corrections done to the records.

→ initial release of the authority control features for MARC records released in 2022 Q2.

Next step developments: Authority Services fully integrated in the Linked Open Data environments.

Cluster Knowledge Base Editor WG

The CKBE WG analyses how libraries interact with the *Sapientia* Cluster Knowledge Base (CKB) and their use of the JCricket Editor for modifying (correcting / enriching), deleting, merging and separating clusters.

Among the latest outcomes:

- back-end developments for JCricket entity editor are completed, front-end features in progress;
- definition of use cases;
- design of manual editing features;
- analysis of interaction with Wikidata and ISNI to be incorporated into JCricket and authority dataflows that feed the Cluster Knowledge Base (joint work with AIMS WG to design JCricket functionalities).

Sapientia Entity Identification WG

The SEI WG reviews use of entities, identifiers, and associated modelling in the Sapientia CKB; reviews and refine processes for Sapientia entity clustering in Share-VDE and the creation of associated open and stable URI for use in Share-VDE and the library community; reviews MARC to BIBFRAME and BIBFRAME to MARC conversion; engage with the library community to identify and/or develop best practices for use of Sapientia identifiers in BIBFRAME and MARC data.

Among the latest outcomes:

- 4 layers in SVDE entity model: svde:Opus | svde:Work | svde:Instance | svde:Item;
- svde:Opus and svde:Work are types of bf:Work → this ensures interoperability;
- definition of SVDE ontology;
- review of clustering and conversion rules;
- cooperation in the IFLA context: the mapping UNIMARC-BIBFRAME is being prepared and a formal liaison with SVDE has been approved by the IFLA Bibliography Section Standing Committee.

Focus on entity model

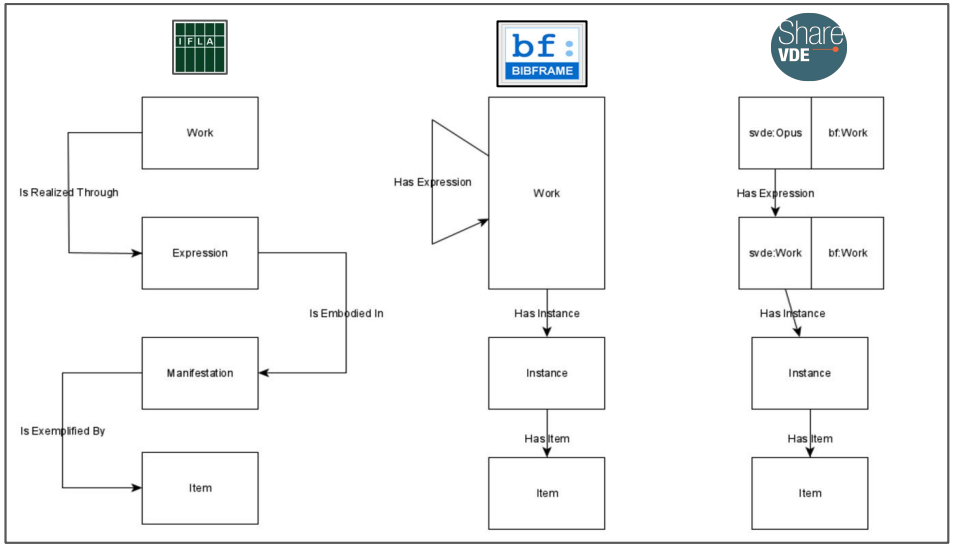
Share-VDE as a BIBFRAME node to put BIBFRAME into practice:

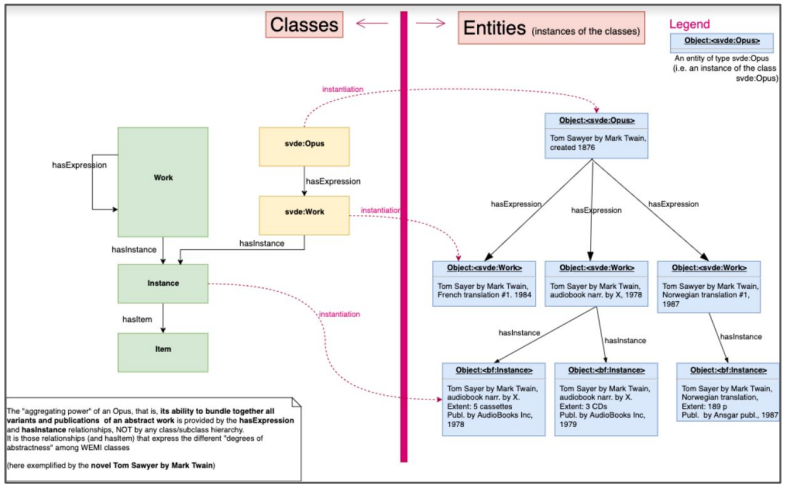
- Share-VDE provides enriched data that is interoperable with other BIBFRAME nodes and with other models;
- the Share-VDE working groups have reviewed algorithms and processed, and expanded the BIBFRAME model to meet real-world needs;
- focus on cooperation also in the IFLA context: the mapping UNIMARC-BIBFRAME is being prepared and a formal liaison with SVDE has been approved by the IFLA Bibliography Section Standing Committee.

The challenge of data models interoperability

Share-VDE Sapientia Entity Identification (SEI) Working Group decision of June 10th 2020

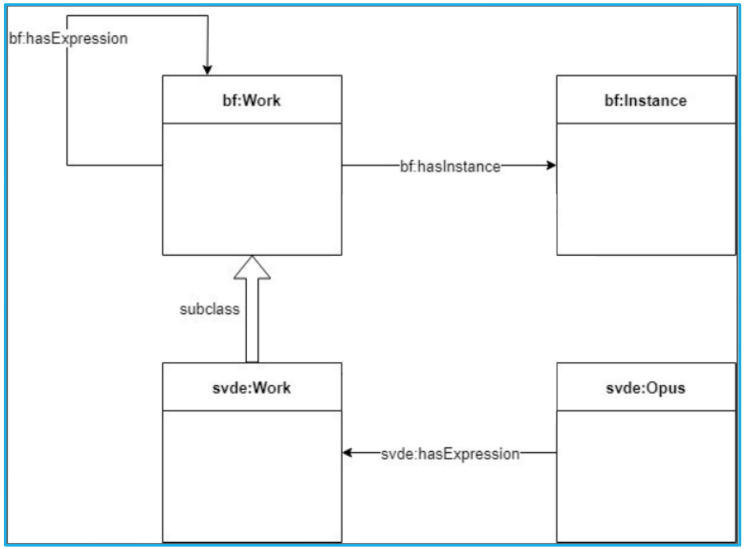
See the SVDE entity model compared to BIBFRAME and IFLA-LRM and an example of application of the model.





Share-VDE Ontology

SVDE Ontology designed in the dedicated Sapientia Entity Identification Working Group as an extension for BIBFRAME.



Core model:

svde:Work

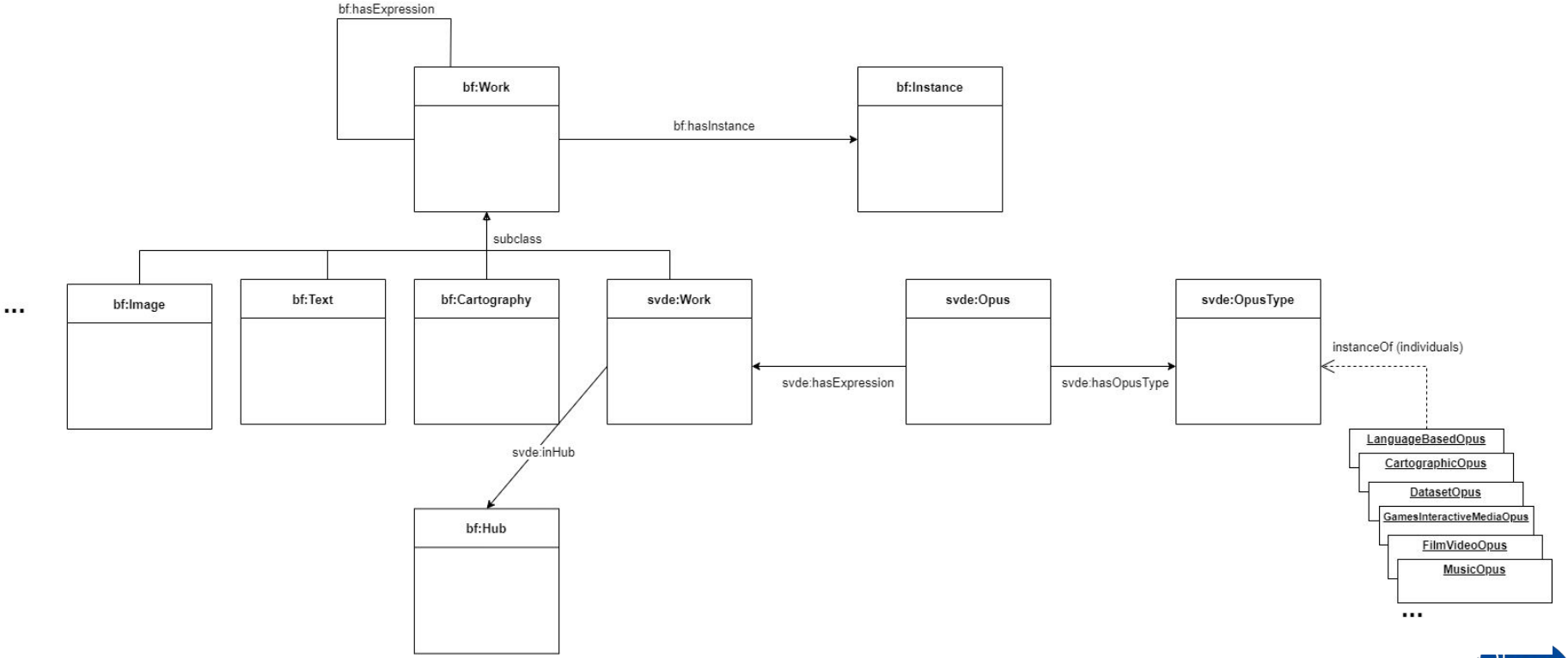
svde:Opus

svde:hasExpression

SVDE ontology preliminary version

The Share-VDE ontology (presentation article): https://doi.org/10.5281/zenodo.8332350

Share-VDE Ontology model



User Experience/User Interface WG

The UX-UI WG has re-designed Share-VDE user interface to respond to both patrons and library staff requirements and expectations. SVDE 2.0 entity discovery interface:

- reflects the components of the Share-VDE data model infrastructure;
- harnesses the potential of linked data and deliver wide-ranging and detailed search results;
- provides an intuitive user experience hiding the complexity of the underlying data model;
- embeds partner APIs for the interoperability with local library services (e.g. lending);
- allows dedicated skins, ie. customised sub-portals dedicated to individual institutions.

Among the latest outcomes:

- Share-VDE 2.0 Entity Discovery https://svde.org
- new Entity Discovery Portal and new back-end infrastructure for the Linked Data Management;
- other Share Family discovery portals supported by the same technology;
- review and enhancements of portal features, in conjunction with the National Bibliographies Working Group.

National bibliographies WG

The National bibliographies WG is dedicated to the practical cooperation among the National Bibliographies, to address the needs of National Libraries and institutions that hold National Bibliographies in the framework of a shared entity discovery environment such as the Share Family of initiatives.

Among the latest outcomes:

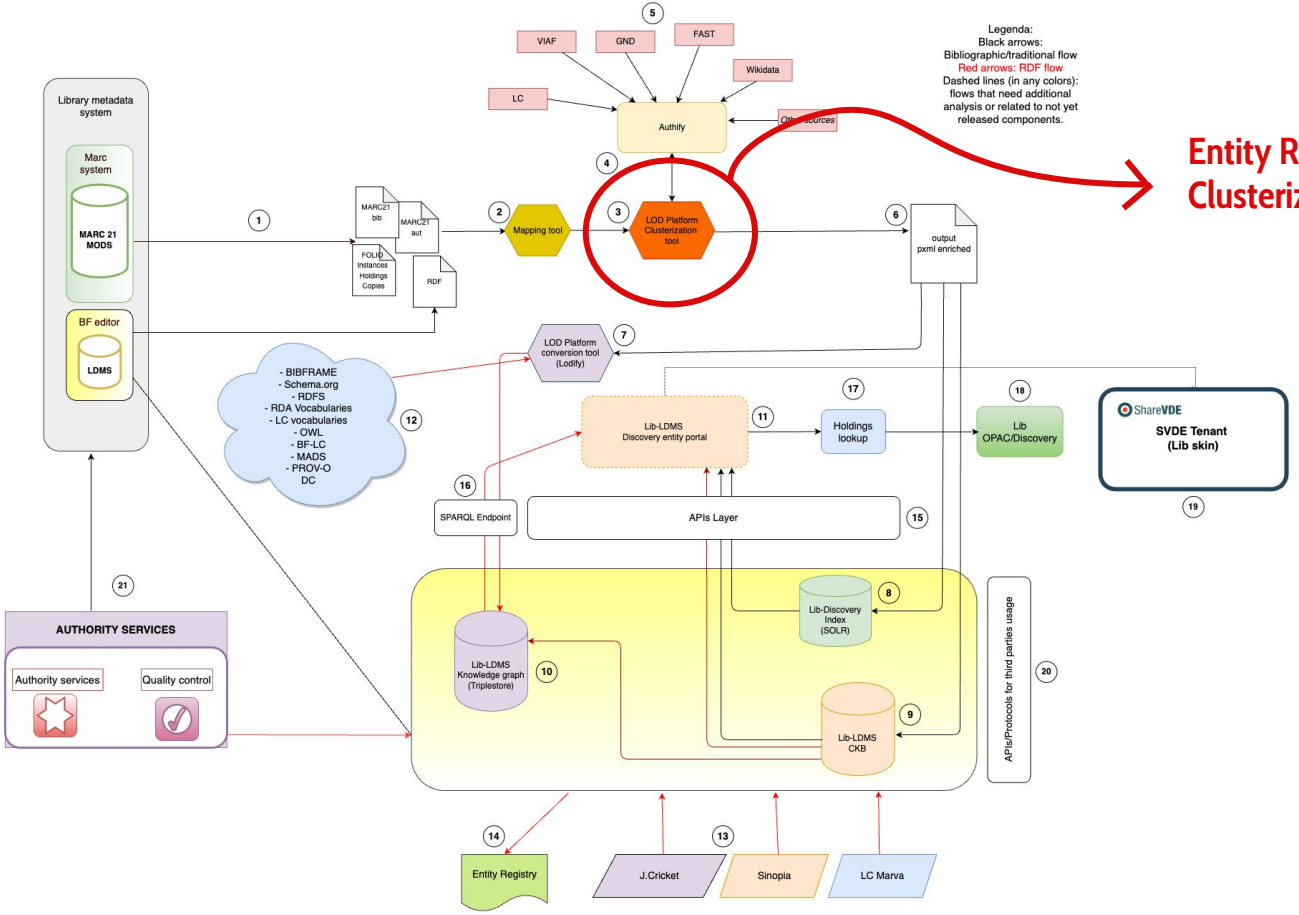
- overview document National_Bibliographies_Share_Family_initiative_2022-June.pdf
- involvement of SVDE / Share Family members and external institutions;
- IFLA Bibliographic Section liaison (Tiziana Possemato - @Cult and Casalini Libri);
- discussion around topics of interest for an ad hoc tenant hosting national bibliographies;
- main tenant of the shared discovery environment for national bibliographies: https://natbib-lod.org/; implementation of the institutional portal for the BNB - British National Bibliography https://bl.natbib-lod.org (beta site);
- joint work with the SVDE UX-UI working group to design end user services and user interface/discovery features.

National bibliographies WG - latest outcomes

- Study and address the needs of institutions that hold National Bibliographies in linked data platforms;
- goal: build a shared discovery environment hosting LOD National bibliographies dataset;
- the British National Bibliography is the first national bibliography of this new tenant:
  - **National Bibliographies tenant** - https://natbib-lod.org
  - with the skin for the British National Bibliography https://bl.natbib-lod.org (*Note: the skin for the British National Bibliography is a preview of a beta site*)
- the Working Group is currently analysing use cases for ad hoc features of the shared National Bibliographies portal;
- review and enhancements of portal features, in conjunction with the SVDE UX-UI Working Group, are on going.

Technical overview

Share-VDE data flow - ER and Clusterization tool



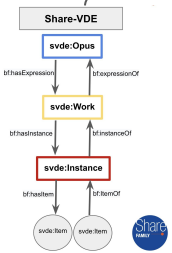
Conversion pipeline: from records to entity

Share-VDE members

Enrichment from external sources

Auth/Bib records

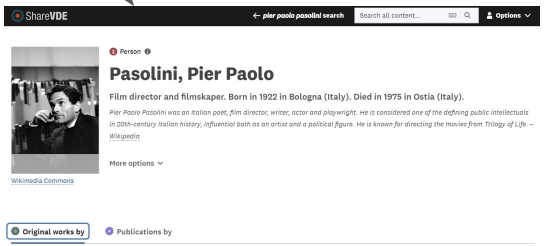
Entity Resolution / Clusterization tool



BF/Share Entity Model

The RDF entity, eg. an agent

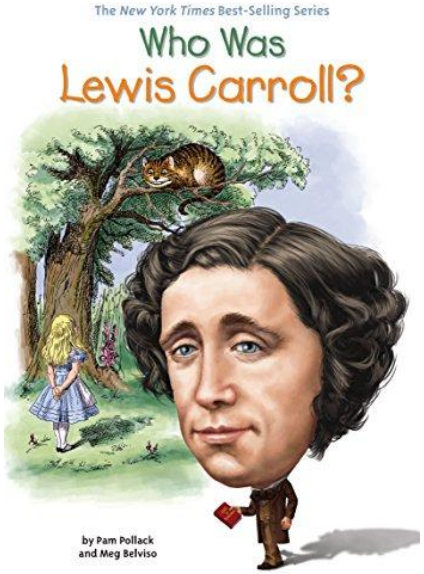
Entity discovery portal



Auth/Bib records

Retro-conversion from entity to MARC (enriched) and BF dumps

Entity Resolution (ER) and Entity modeling (1)



?

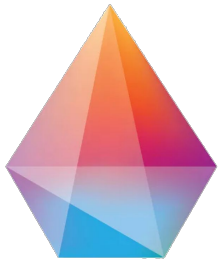
Lewis Carroll => *Alice's Adventures in Wonderland*

Charles Lutwidge Dodgson => *The game of logic*

Entity Resolution (ER) and Entity modeling (2)

Profile: the information unit that expresses the identity of a particular and unique entity

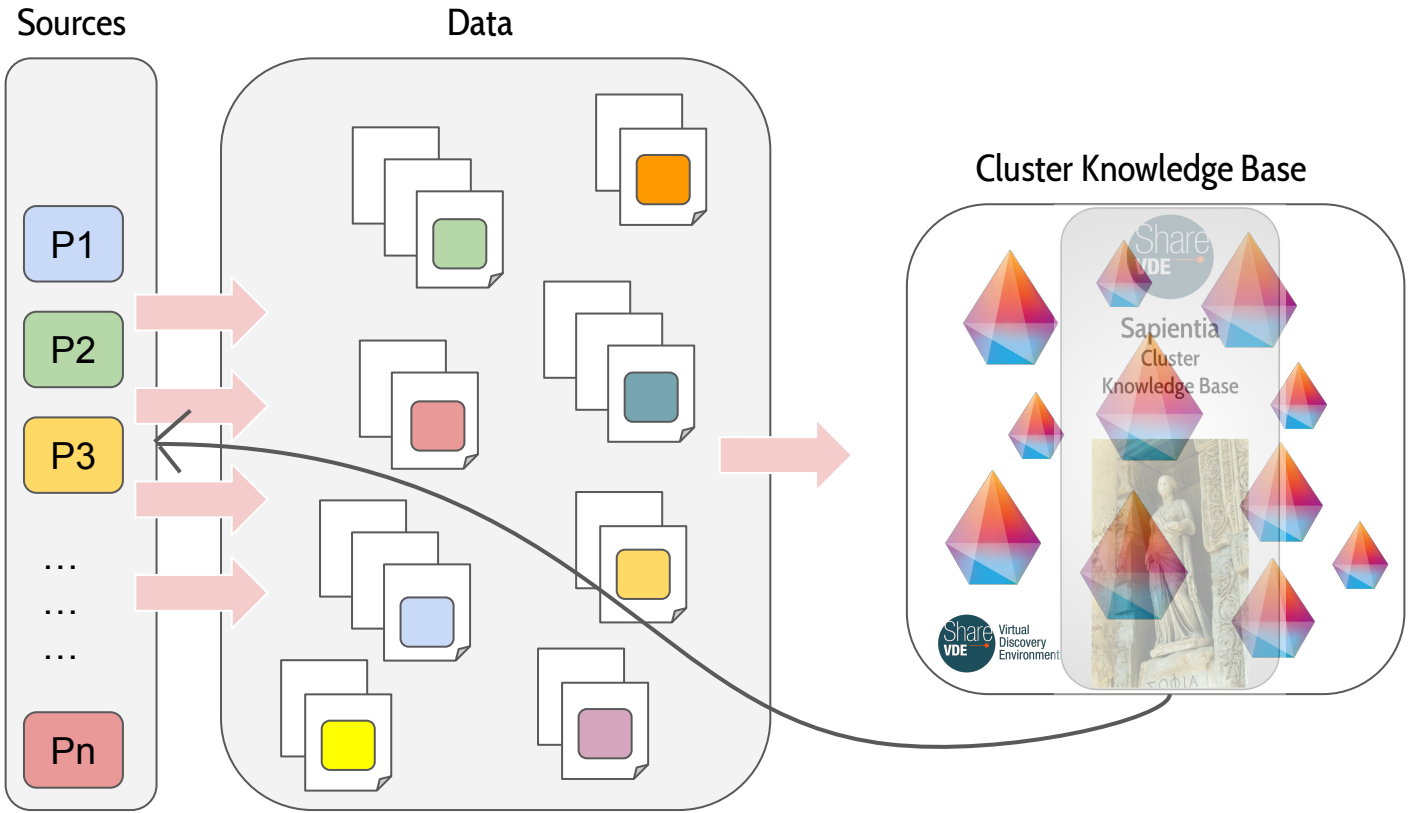
Pasolini director



Pier Paolo Pasolini

Pasolini writer

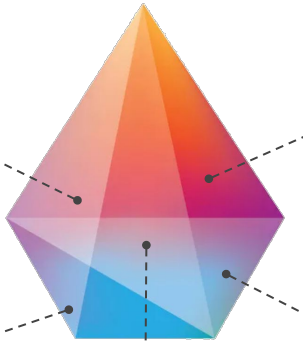
Library cooperation: the cluster as the set of many faces



a cluster = an entity = a prism

P1 — VIAF Virtual International Authority File

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



P2 — WIKIDATA

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

P4 — BnF Data

title	Alice in wonderland

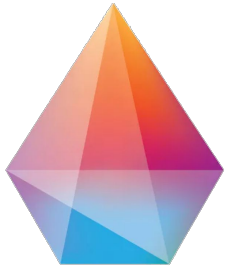
P3 — Share VDE

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/cb35850038 5#about	bnf

P5 — WorldCat Entities

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

Properties: Attributes, Relationships, Links



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

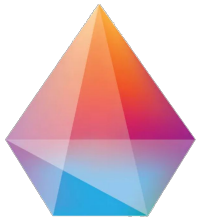
An attribute is a data property, having a literal as value

Share VDE		
sameAs	http://dbpedia.org/resource/Alice'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 Share-VDE Prism and an external reference

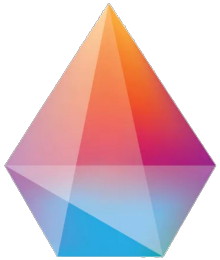
Name	Provenance
author	LIBRARY Stanford

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



A relationship is a connection between two Share-VDE Prisms

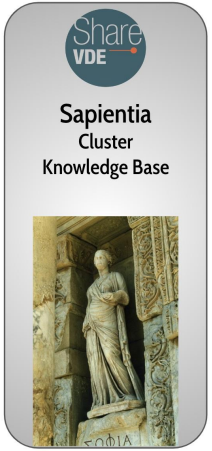
The prism: attributes & relationships

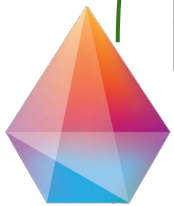


Name	Value	Provenance
title	Alice in wonderland	P1 P2 P3
titleAlternative	Alice's adventures under ground	P1 P2
titleAlternative	Journeys in Wonderland	P4

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

Name	Provenance
author	P1 P2 P4





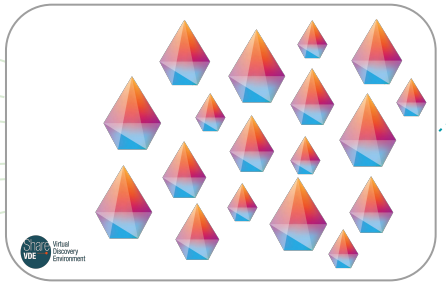
Name	Value	Provenance
name	Carroll, Lewis	P1 P2
nameAlternative	Dodgson, Charles Lutwidge	P1 P2
nameAlternative	Karol, Luis	P5 P3

Tenants and Provenances

Share-VDE manages a **Knowledge Base** which consists of **clustered, integrated** and **enriched** entities

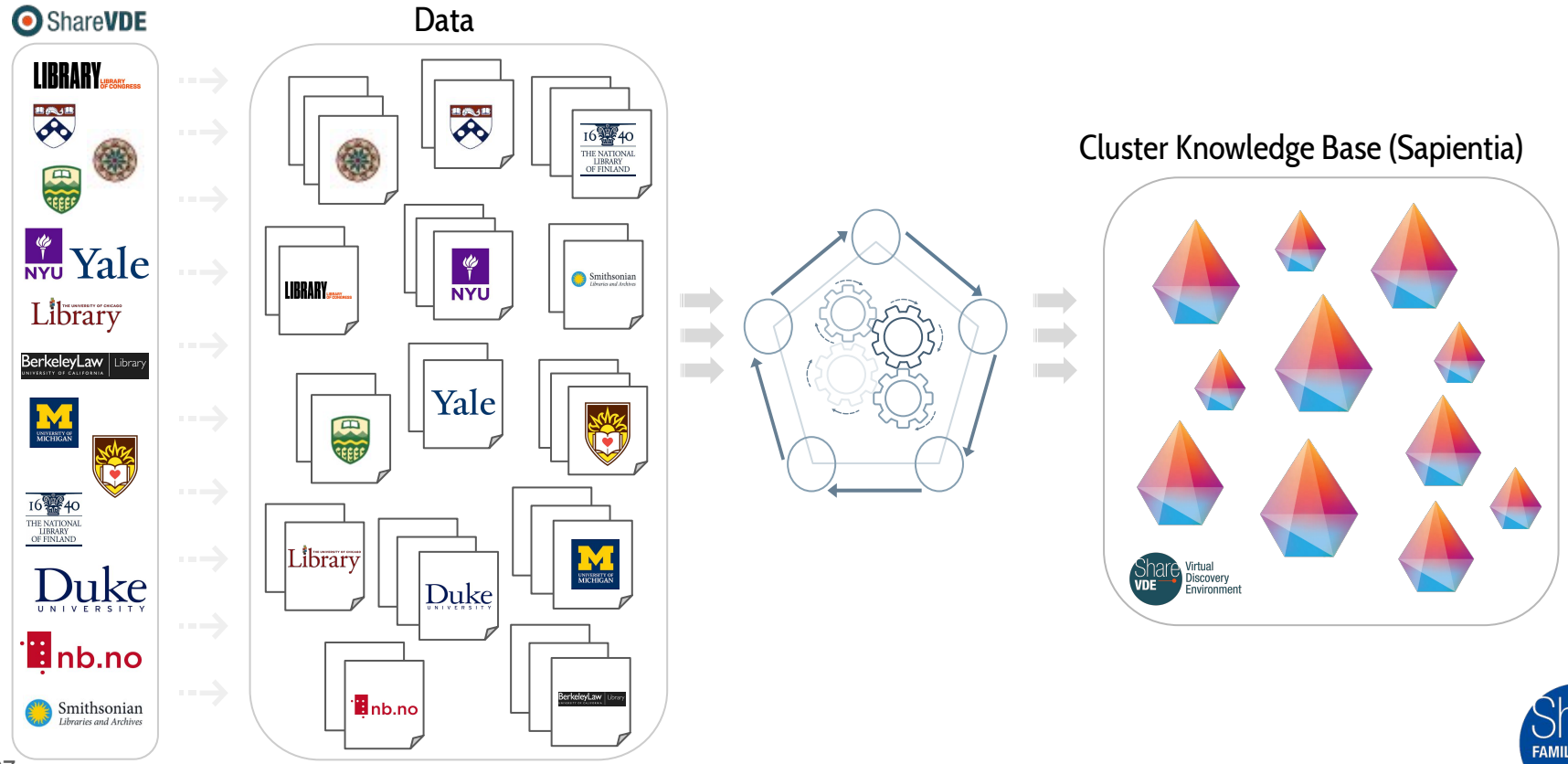
In Share-VDE, a **tenant** is represented by a **set of institutions** contributing to the **same Knowledge base**

Share-VDE Knowledge Base (**Sapientia**)

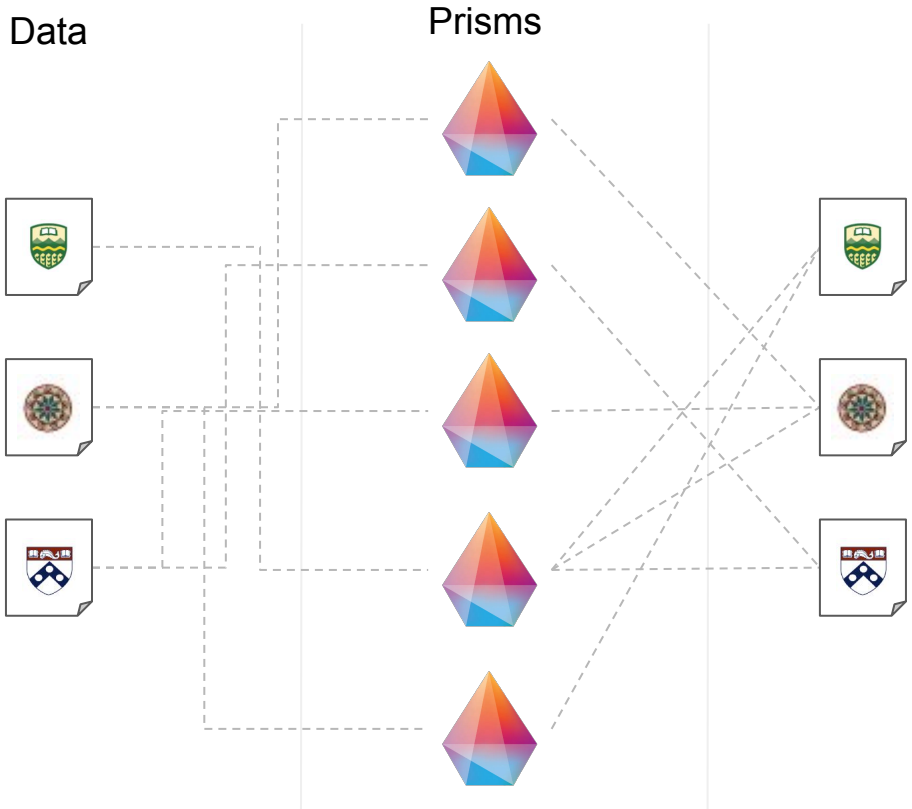


An **institution** within a tenant is called **provenance**.
We use that term because we want to **retain** the relationship between **Share-VDE entities** and data that originally **contributed** to them.

Sapientia: Genesis



Record-Level Provenance

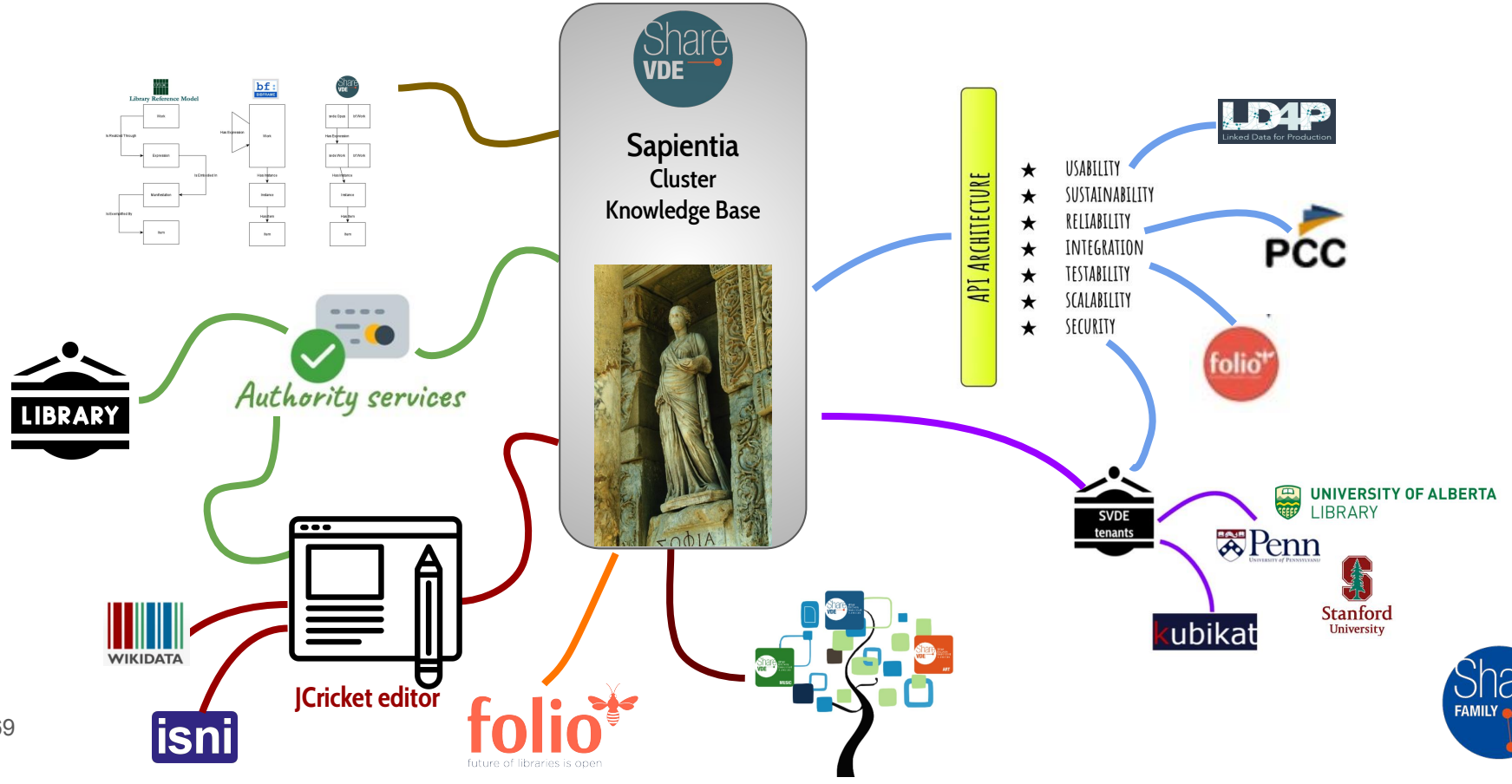


Each record coming from a **provenance** **contributes** in **building/enriching** one or more **Share-VDE entities**.

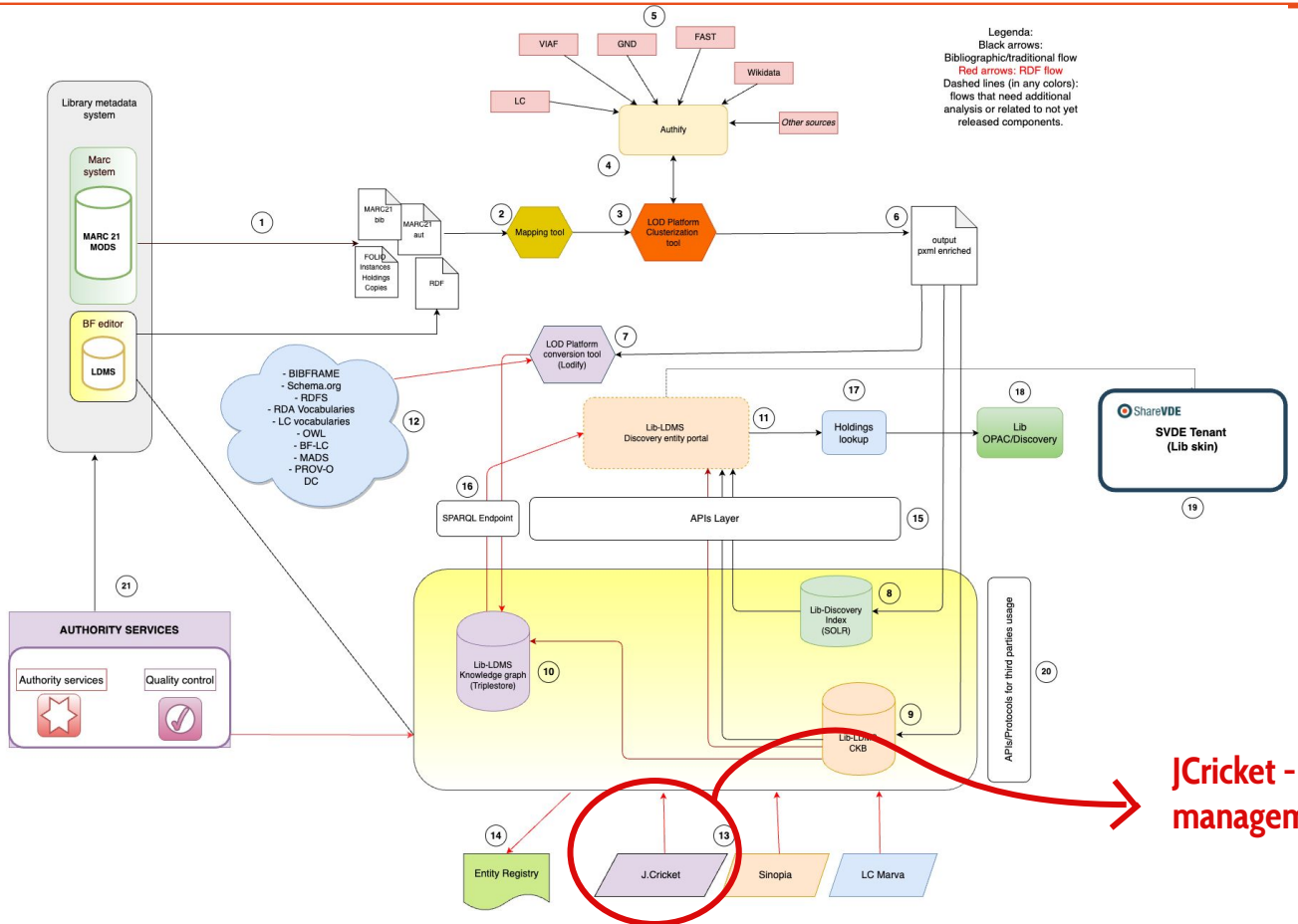
A Share-VDE entity can be seen as a **prism** where each **face** represents **data** coming from a given **provenance**

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

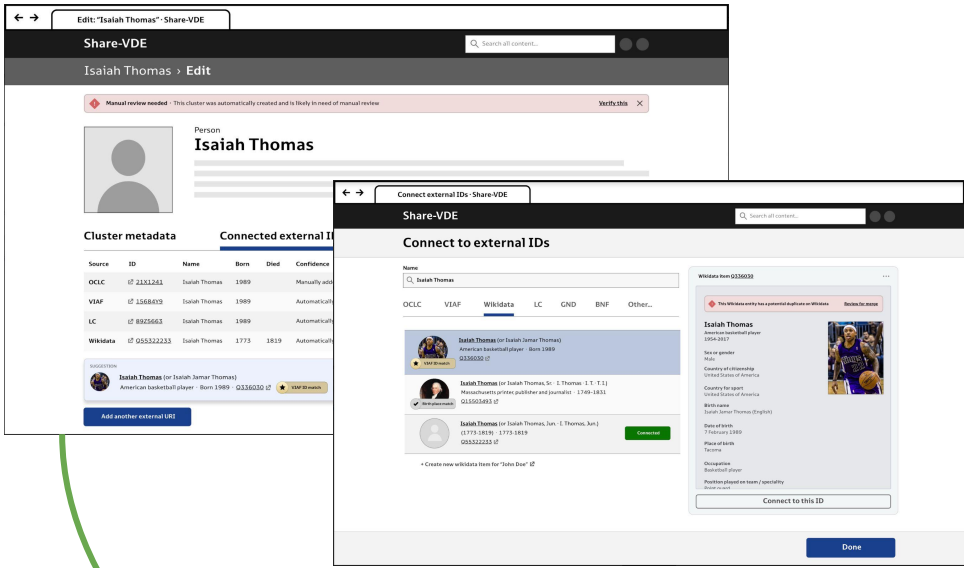
Towards the Share-VDE Sapientia CKB ecosystem



The data flow - The entity management system



JCricket Editor - The Entity Management System



APPLICATION

JCricket Editor

- Collaborative tool for manually updating and modifying linked data entities

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*" it's a perfect vision in a collaborative community. But each library has also local needs: the architecture of JCricket allows to operate locally or centrally, creating a collaborative group that does not forget local specificities.

Next generation cataloguing

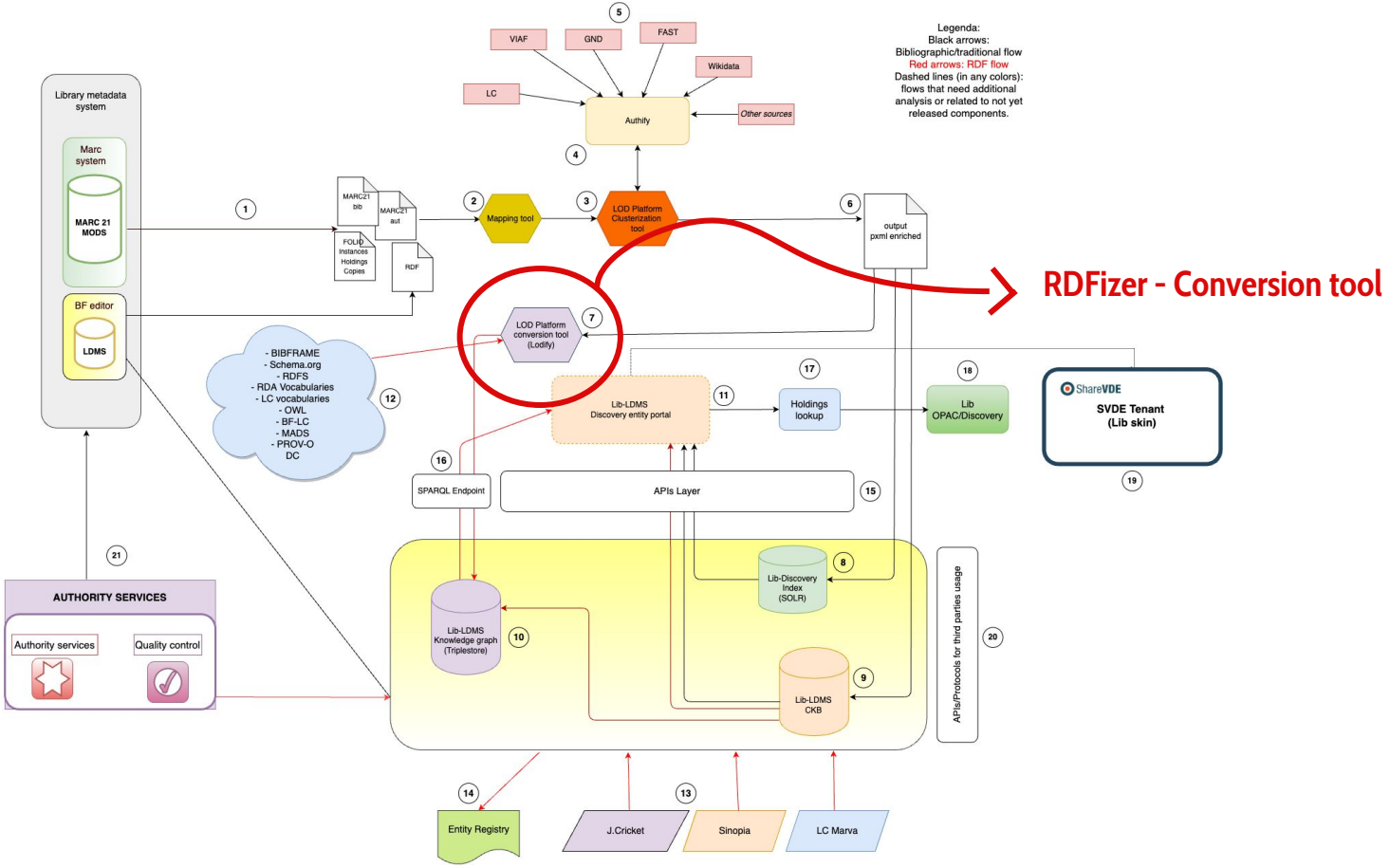
The JCricket editor is an example of how the Share family of initiatives is pursuing a new way of managing library cataloguing in a cooperative way:

- aggregation of data from multiple sources
- managed through standard protocols (linked data)
- in a collaborative and integrated environment
- that makes available open data and resources
- to end users and professionals (researchers, scholars etc.)
- for reuse in the library community and beyond

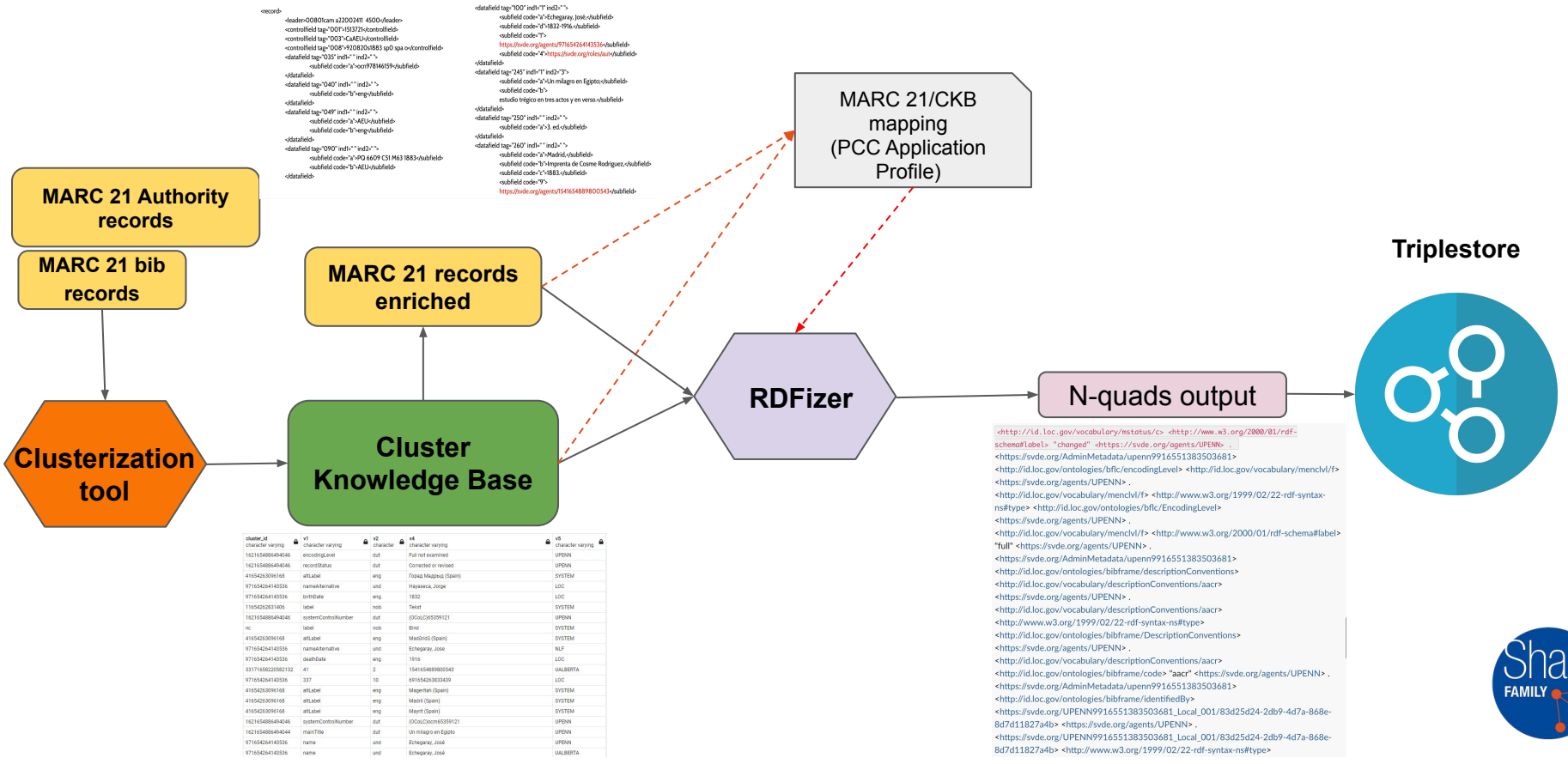
JCricket 1.1.0: Features Recap

- **AAA:** Authentication + Authorization + Auditing
- **Cluster Status API**
- **Edit Cluster**
  - real time notifications (through GraphQL subscriptions) about cluster property changes
- **Merge:** C1, C2, C3 => ~~C1, C2,~~ C3
  - Multiple phases: create the merge list, edit the merge list, edit clusters, request for review, approve (or deny the merge)
- **Split (Cluster):** C1 => C1, C2
  - C2 could even be a new cluster
  - Multiple phases: create the split-set, edit the split-set, edit clusters, request for review, approve (or deny the merge)
- **Dictionary API**: What are the available cluster types? Which attributes belong to a cluster type? Which relationships? Given an attribute, which is its cardinality? Is it mandatory or not?
- **Data changes synchronization across Share-VDE storages (e.g. RDF Store, Search Engine, RDBMS)**
- **Entity Event Log (aka cluster changes)**: give me the history of changes of a given cluster
- **User notifications**: for managing the merge/split review lifecycle

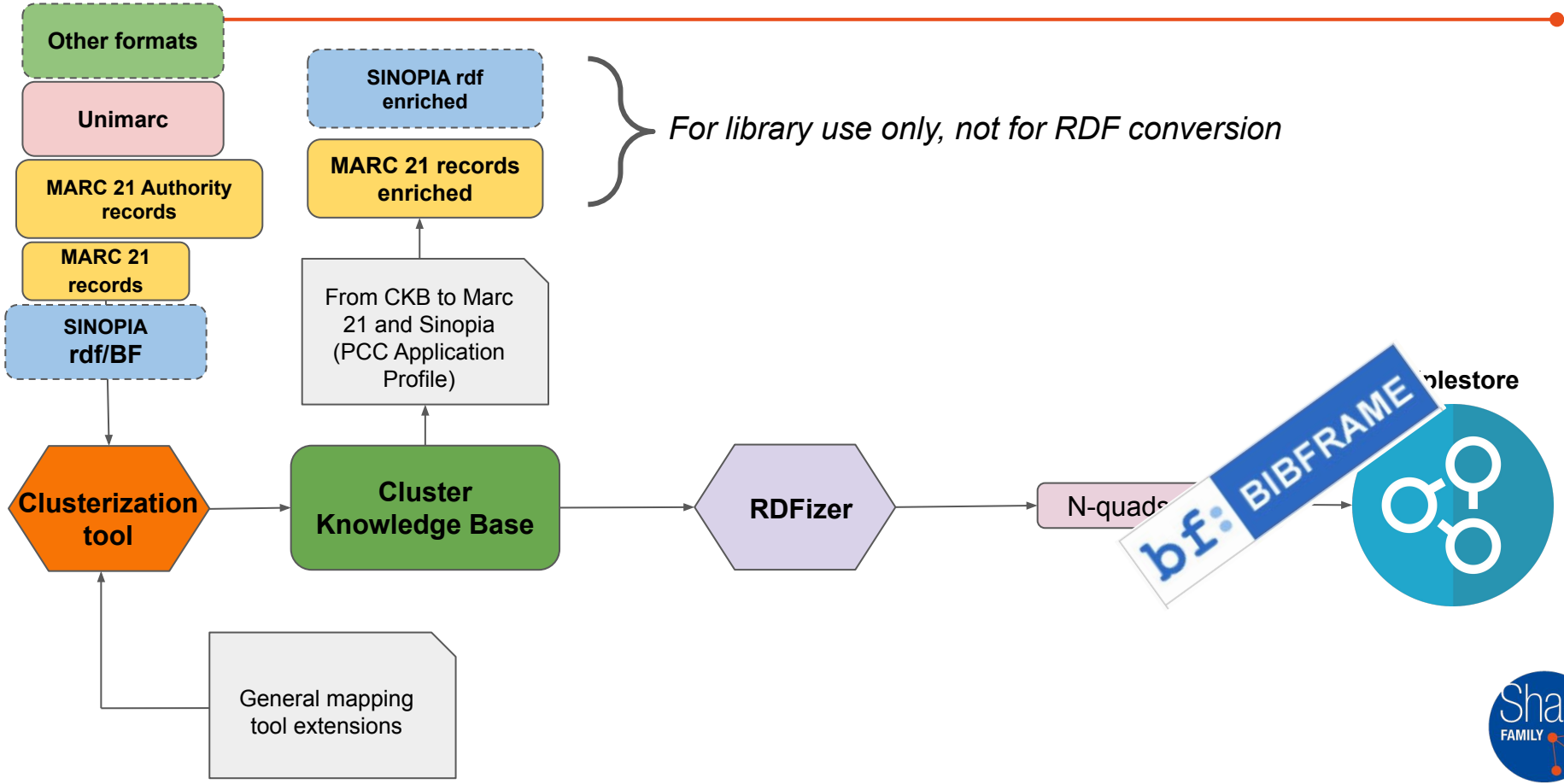
The data flow - From record to entity: the RDFizer



Conversion pipeline - Today



Conversion pipeline - Tomorrow



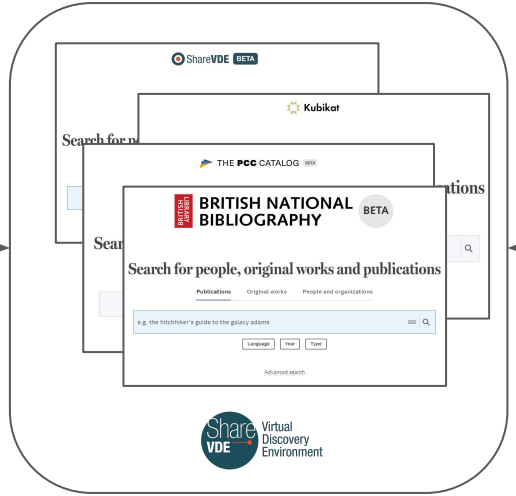
The Technology Stack (back-end)

The Technology Stack (front-end)

Component library

React

Sass



Front-end application

React

Vercel

NEXT.JS

GraphQL

TypeScript

Flagsmith

Share FAMILY

Share-VDE: Infrastructure

Share VDE Virtual Discovery Environment

powered by aws

Amazon EC2

Amazon Relational Database Service (Amazon RDS)

AWS Lambda

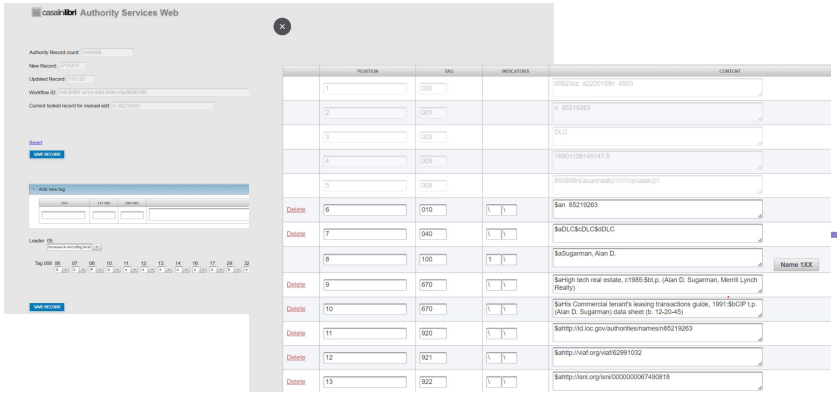
Amazon Simple Queue Service (Amazon SQS)

Amazon EMR

Amazon Keyspaces (for Apache Cassandra)

Share FAMILY

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.

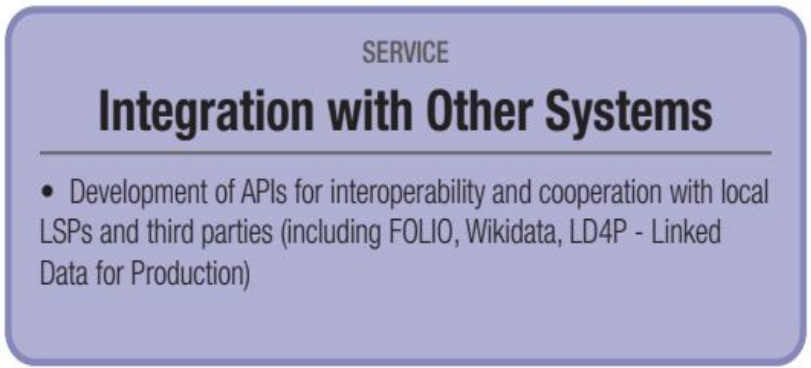
SERVICE

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



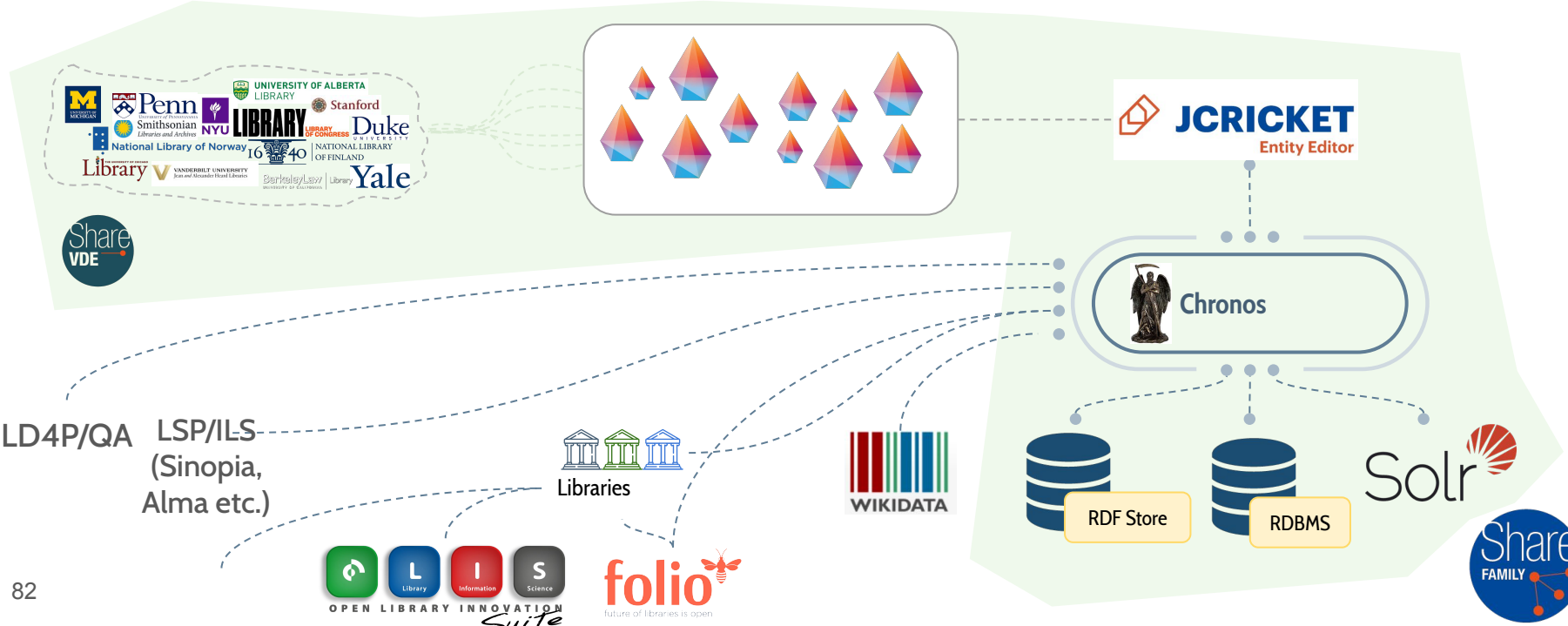
Tools and protocols are being set-up for third parties' usage and data harvesting, including OAI-PMH, Atom feeds and Activity stream

Third party integration - Outbound Connectors Architecture

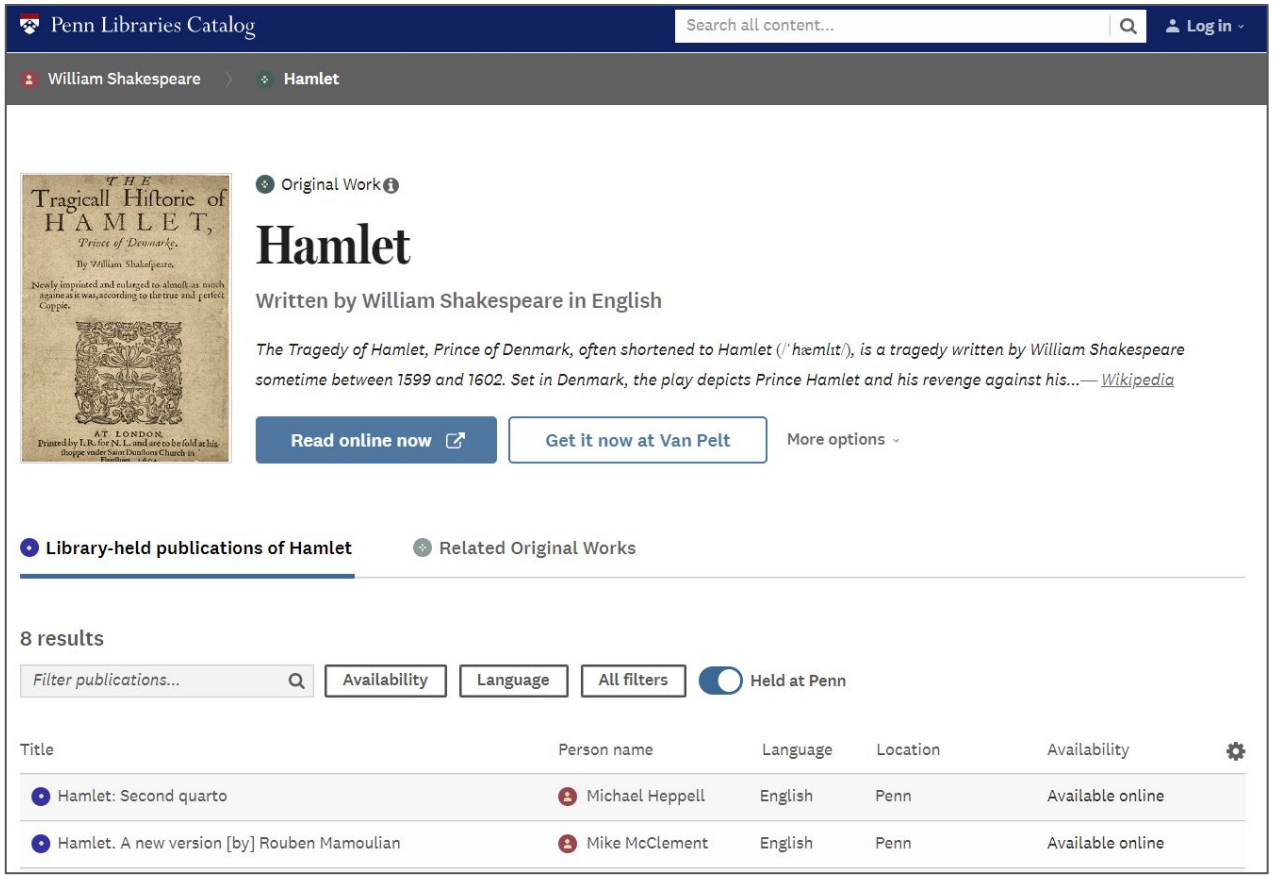
Data flows into Share-VDE from libraries, institutions and third-party sources (e.g. VIAF, ISNI, FAST)

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

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

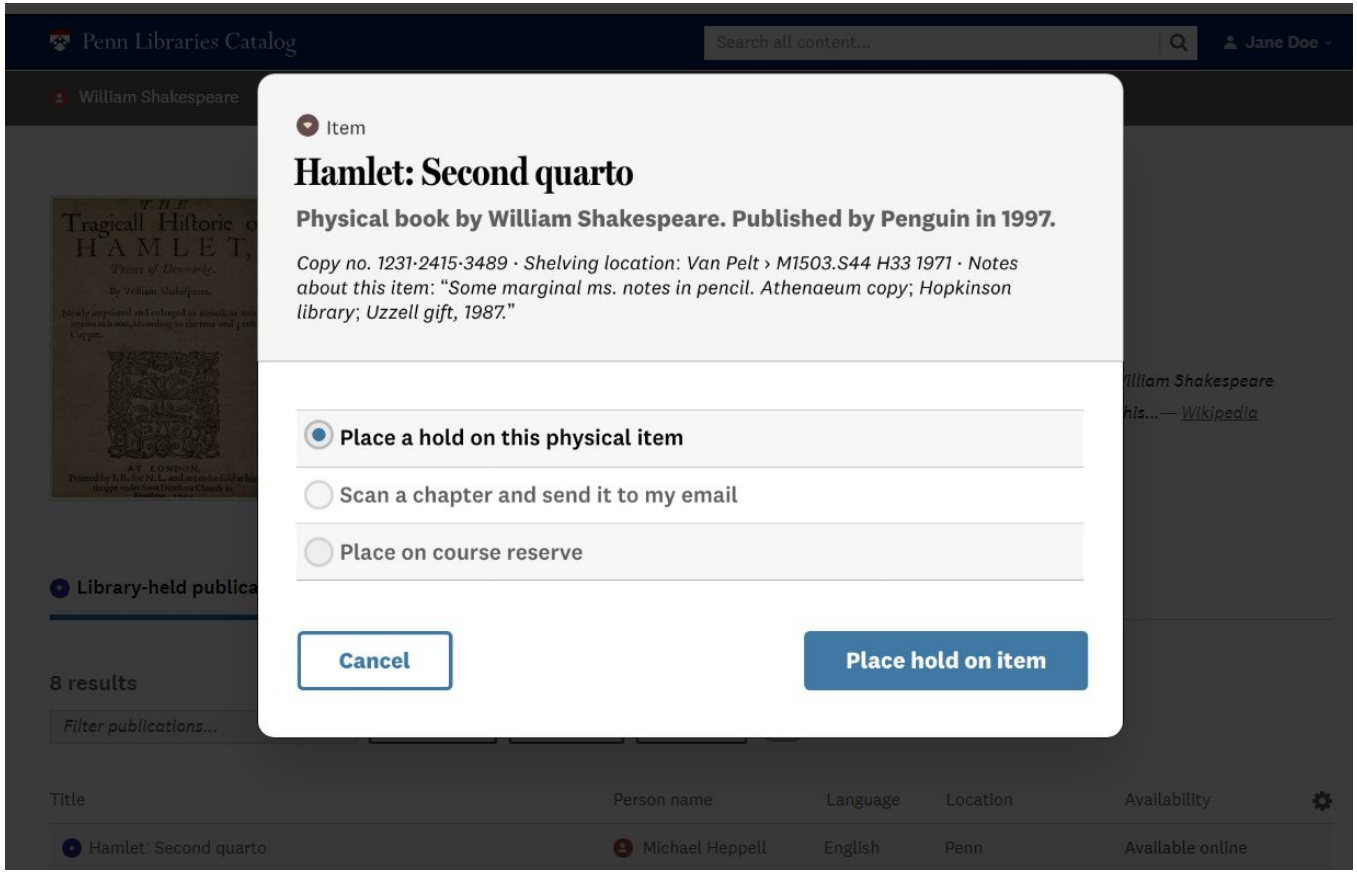


Integration with local services - circulation info



Integration with local services, e.g. connection to Alma APIs for [University of Pennsylvania circulation services]

Integration with local services - lending



SINOPIA integration: high-level milestones

✅ set-up the connector to fetch data from Sinopia

✅ ingested subset of Sinopia data from Stanford

✅ created the parser so that RDF data coming from Sinopia can be clustered by Share-VDE processes

🚧 begin testing phase

🎯 at the end of this process, Sinopia data will be included in the Share-VDE CKB - Cluster Knowledge Base and edited through JCricket

folio integration: high-level milestones

[See a possible model for ILS/LSP interaction through FOLIO]

Level 1: Instance correlation

- Folio inventory instances are retained in dedicated faces of Share-VDE prisms
- The inbound connector receives FOLIO data (instances) and feeds the Cluster Knowledge Base (CKB)
- The outbound connector communicates back data changes to FOLIO

Level 2a: Agents (and works) correlation

- Same interaction as above, but using authority records (agents, works), instead.

Level 2b: JCricket UI App in FOLIO

- Using the FOLIO built-in “pluggable” nature, the FOLIO UI SDK and the Share-VDE (GraphQL) API

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 are published on a triple store and can be queried through SPARQL endpoint

```
<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>
<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>
```

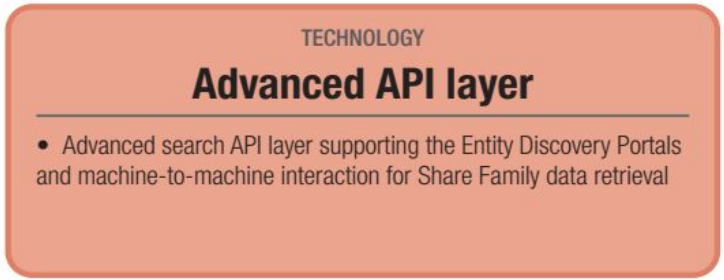
The core of SVDE integrated catalogue, ie. the Cluster Knowledge Base of linked data entities created from SVDE institutions' data, is published on a public query interface

Advanced API layer - Easily use our data!

SVDE 2.0 back-end 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

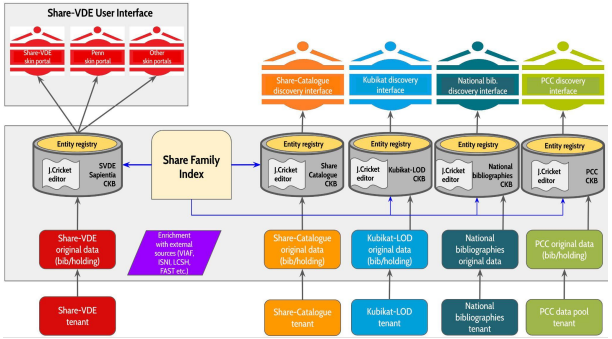
TECHNOLOGY

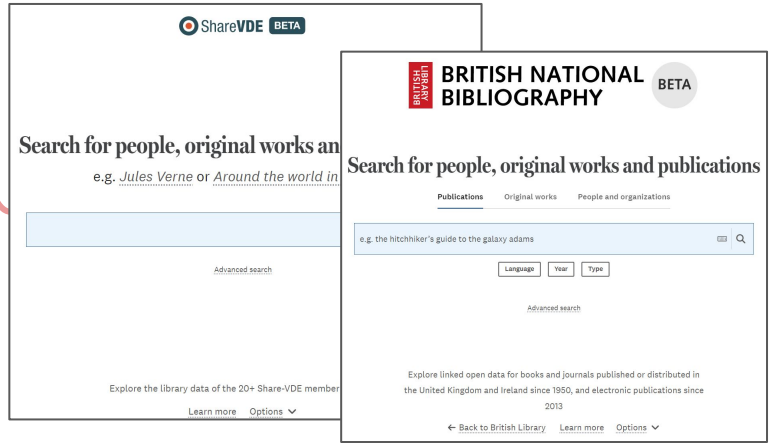
Tenant infrastructure

- 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 sister 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.

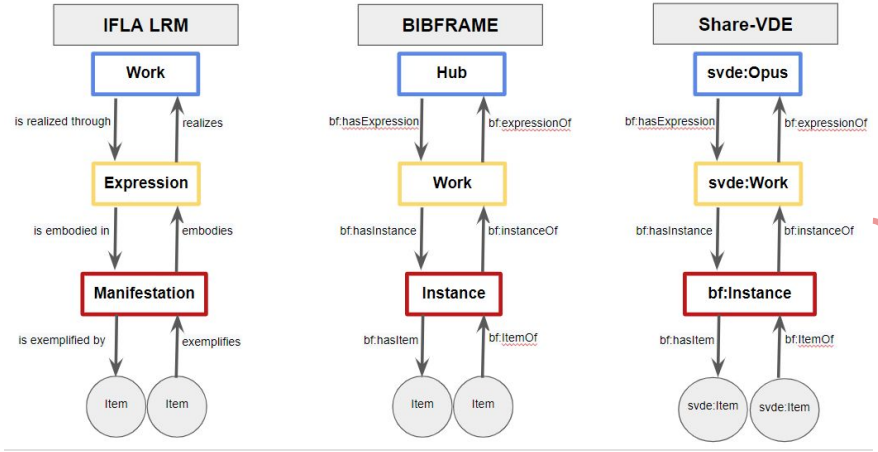




Interoperable entity model

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

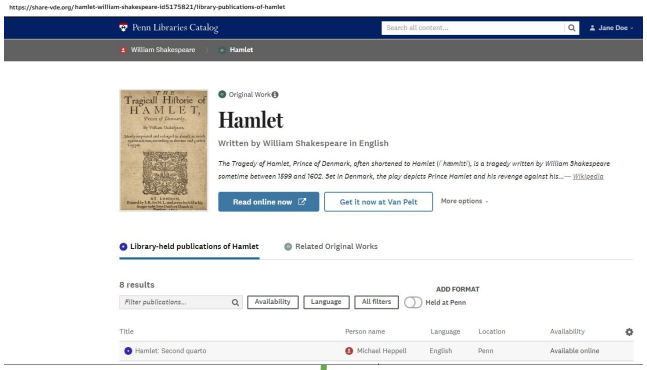
Advanced entity model

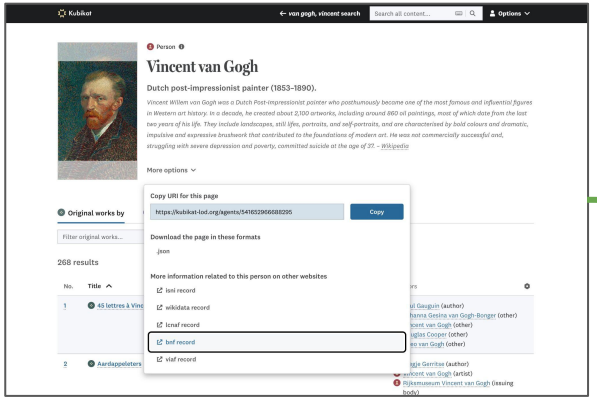
- Advanced 4-layered entity model, based on BIBFRAME 2.0 and interoperable with multiple schemes (BIBFRAME, IFLA-LRM etc.)

Share Family entity discovery environments

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





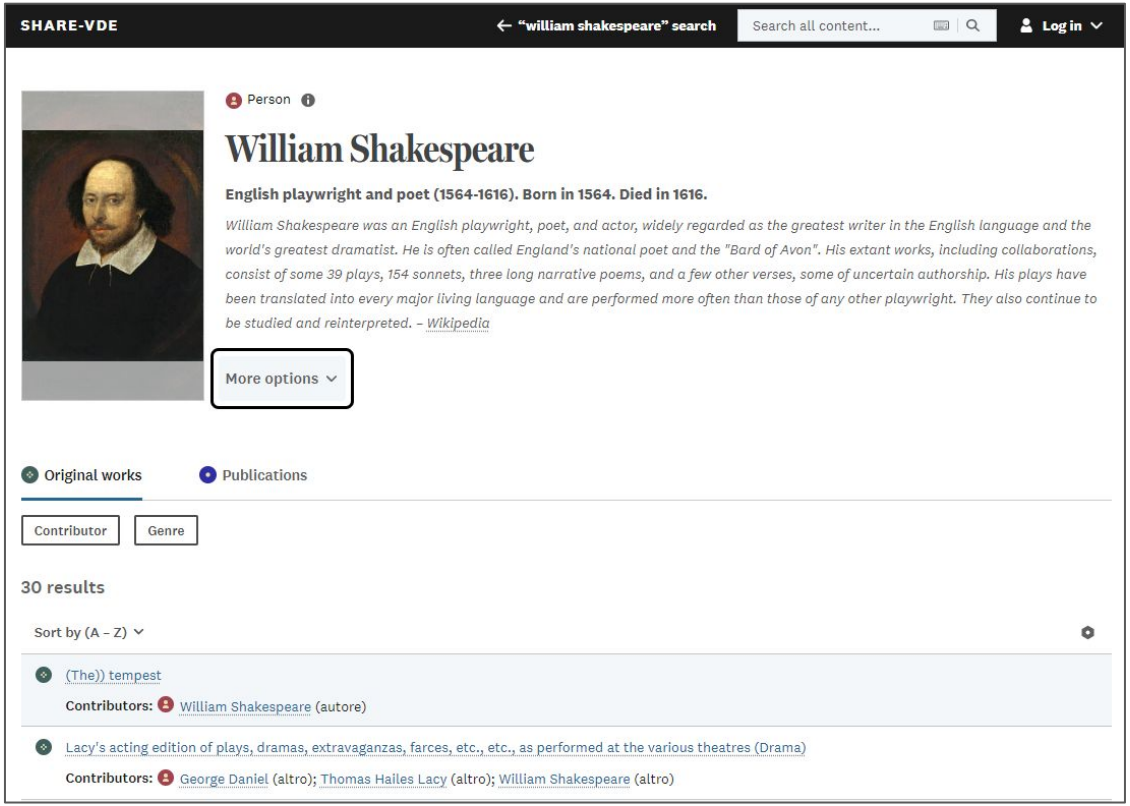
Each library can choose its own skin, to present a personalized image of its profile and its services, extending the functionality of the Portal from the shared environment to the local context

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-VDE 2.0 Entity Discovery



Launched in September 2021 (beta version)

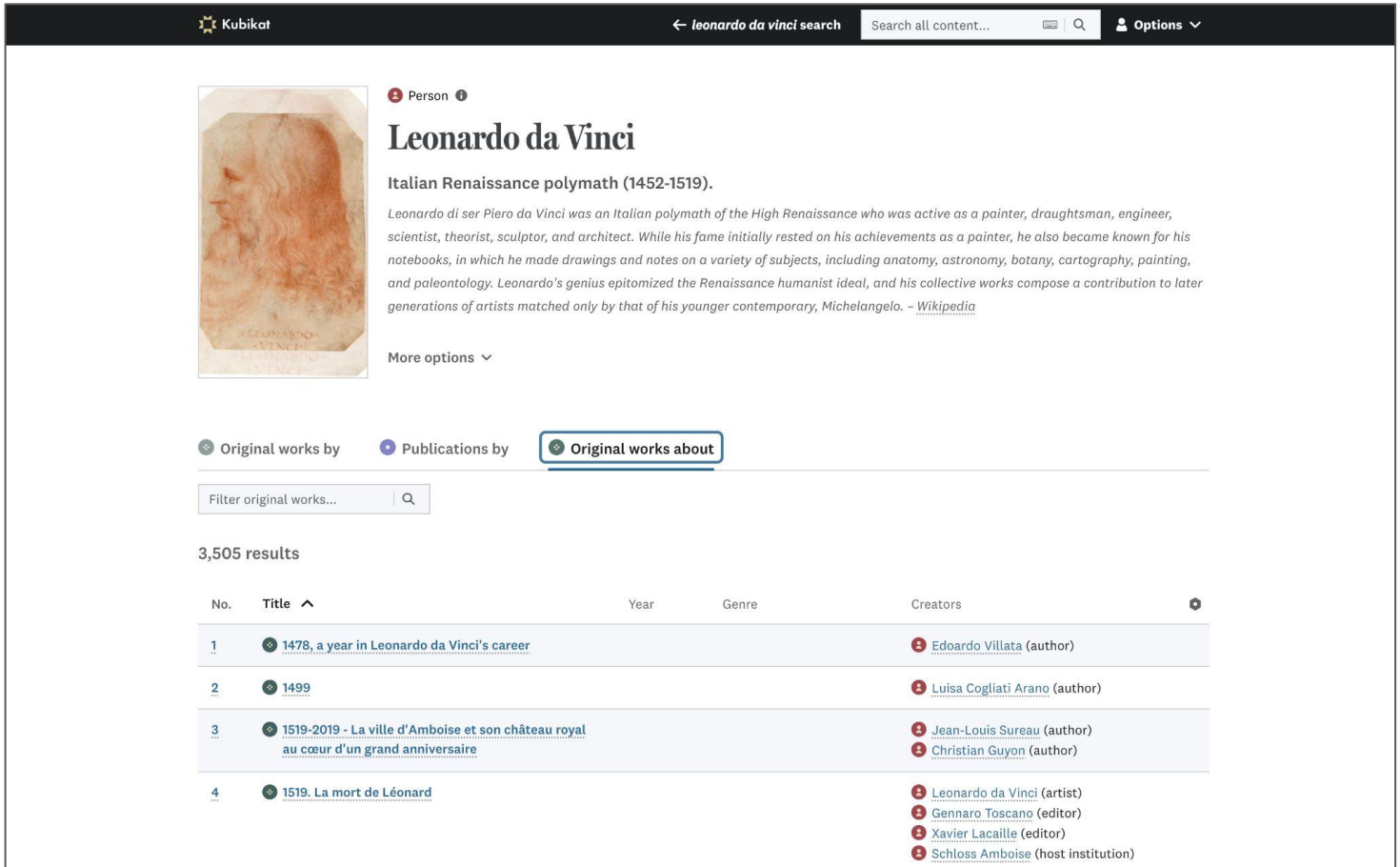
A complex system with entity-based presentation layer, reflecting BIBFRAME and the ad hoc SVDE extensions

Improved user experience

Back-end infrastructure based on APIs

Initial list of the main features (we are going to see them live)
https://www.svde.org/about/release-log

Entity Discovery: data enrichment from external sources



Entity Discovery: data enrichment from external sources

Volume

Inferno

First part of Dante's Divine Comedy. 1314 fiction.

Inferno is the first part of Italian writer Dante Alighieri's 14th-century epic poem Divine Comedy. It is followed by Purgatorio and Paradiso. The Inferno describes Dante's journey through Hell, guided by the ancient Roman poet Virgil. In the poem, Hell is depicted as nine concentric circles of torment located within the Earth; it is the "realm ... of those who have rejected spiritual values by yielding to bestial appetites or violence, or by perverting their human intellect to fraud or malice against their fellowmen". – Wikipedia

This is part of the series Penguin epics, Norton critical edition, Penguin classics, and Hesperus poetry.

More options

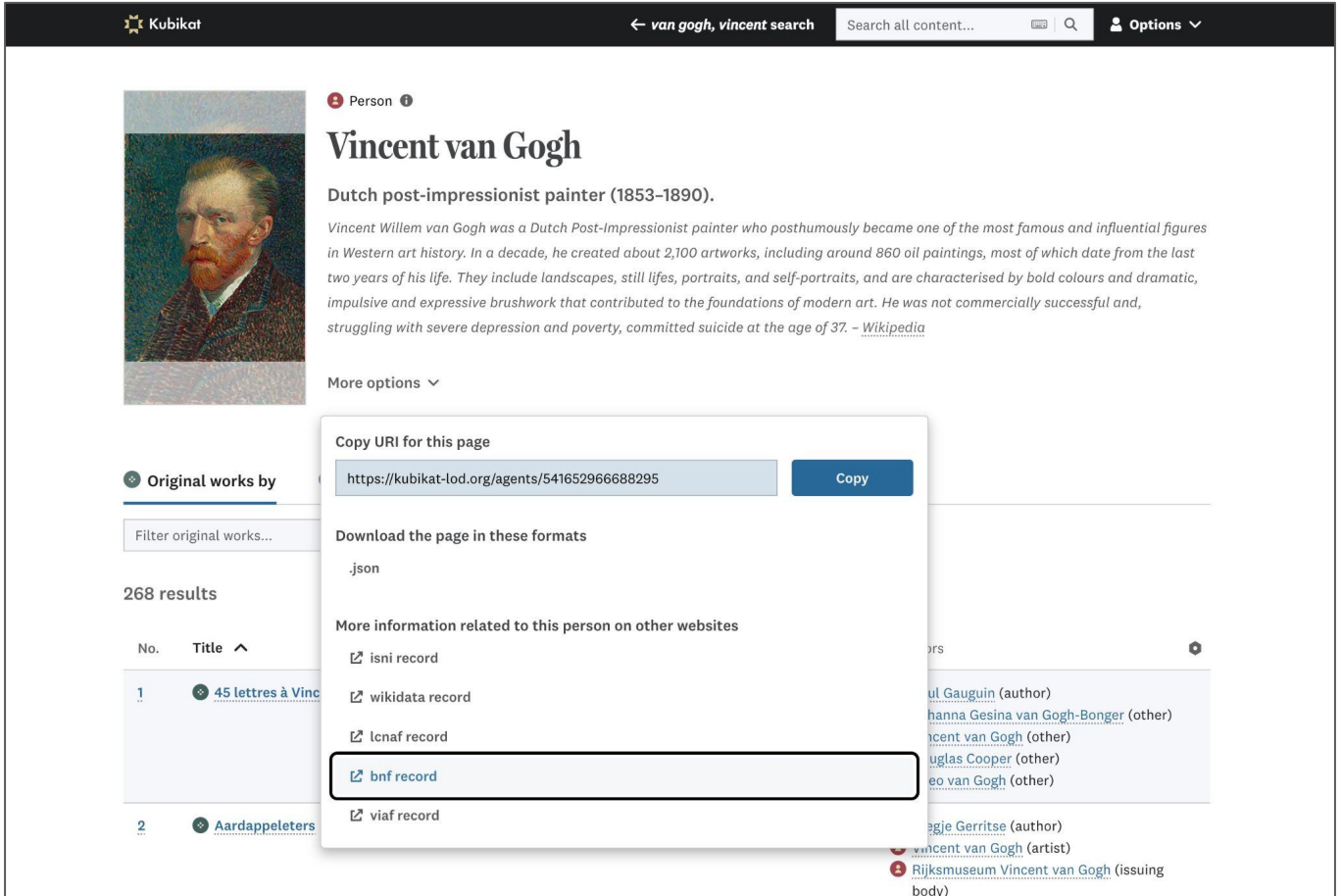
Library-held publications of this | Related agents

Filter publications... | Publication year | Publication place

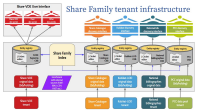
49 results

Title	Language	Publication year	Format	Contributors
The inferno	English	2015		Stefano Albertini (editor)

Entity Discovery: data enrichment from external sources



Some of the main features



[LOD Platform Entity Discovery portal overview]

ShareVDE BETA

Instance as entity (aggregation of SVDE institutions' data in a shared Instance, with link to resource in the local OPACs)

Default simple search configuration (plain simple search vs. "OPAC like" search on publications)

Skin portals supporting features specific to the individual skin (e.g. the British National Bibliography skin within the Natbib-LOD tenant)

Penn Libraries Catalog BETA

Initial version of **Subject management**, including various subject schemes (e.g. National Library of Finland subjects) linked subject strings and the display of concepts

Share FAMILY

Guiding principles

- Present complex data aggregated from different sources and translated into linked data in a simple way (e.g. Google-like search);
- design focus: provide intuitive access to complex data and make BIBFRAME easy to benefit from;
- the actual use of the discovery unveils issues that cannot be predicted in advance → (a lot of) practice should be combined with theoretical models;
- mutual input among SVDE working groups: e.g. SEI group defining the treatment of data impacts the presentation layer of the data on the web discovery portal.

Some of the challenges

Ensure smooth user experience AND model interoperability

- svde:Opus was chosen as highest level of abstraction
- end users should understand easily what content and data are represented by an Opus and the resources that embody it

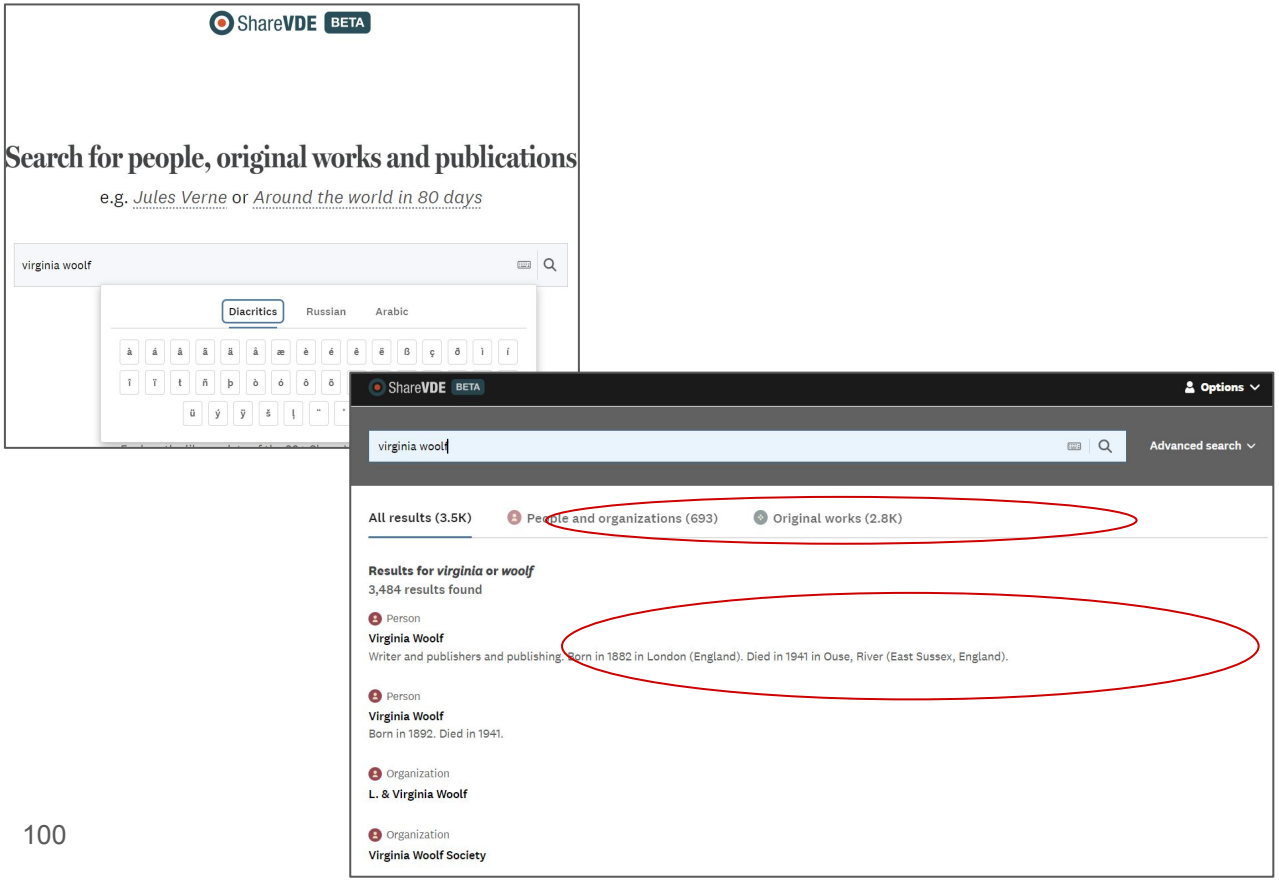
Strive to present data typically used by machines in a way that benefits also humans

- the SVDE UX group opted not to render the expression layer on the discovery interface
- so, this data are presented in the Publication layer of the discovery

Find a compromise to satisfy professional and generic users

- language and labels of the discovery portal are not pure “library language”: Original Work = svde:Opus which is equivalent to the RDA Work (mostly). Publication is equivalent to the bf:Instance (RDA manifestation) and may list multiple expressions of the work. You can filter by various expression aspects in the filters
- this stems from the analysis by SVDE members and UX designers: we wanted to use labels that can be understood by non-expert users

Simple search #1



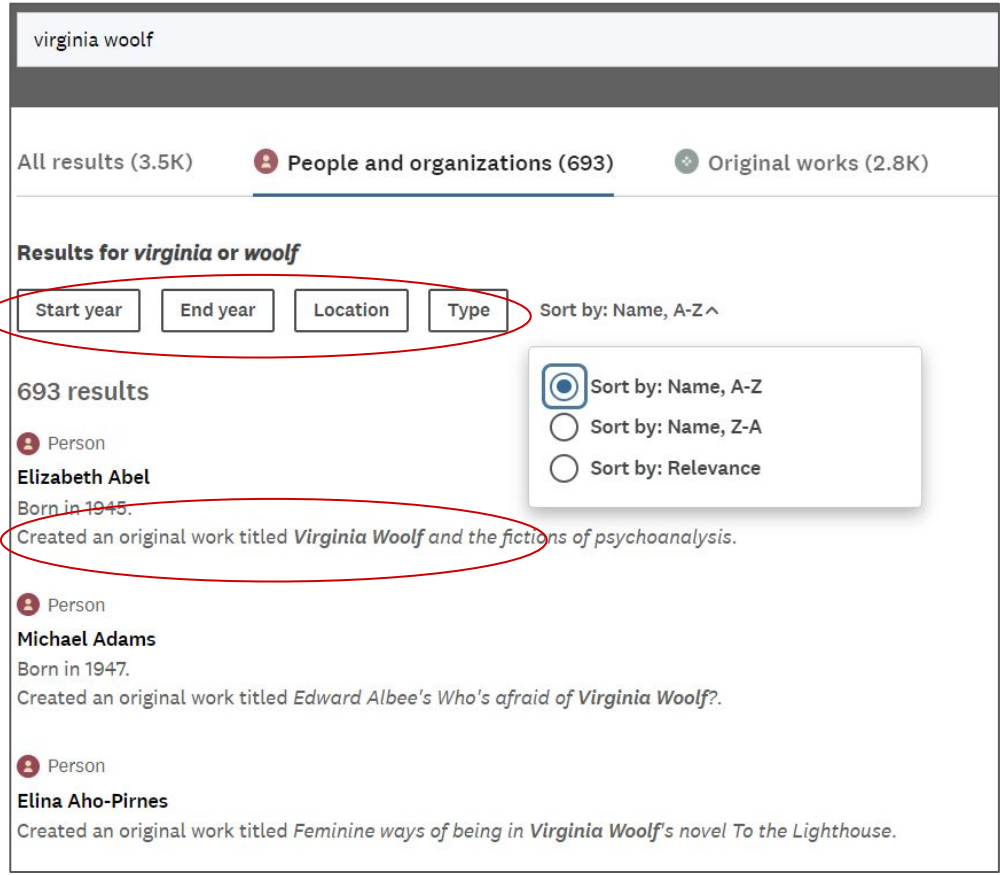
Simple search for Virginia Woolf:

- the system displays all results list

- user can select the view on People and organisations only or on Original works only

- headline under the Person name providing summary info

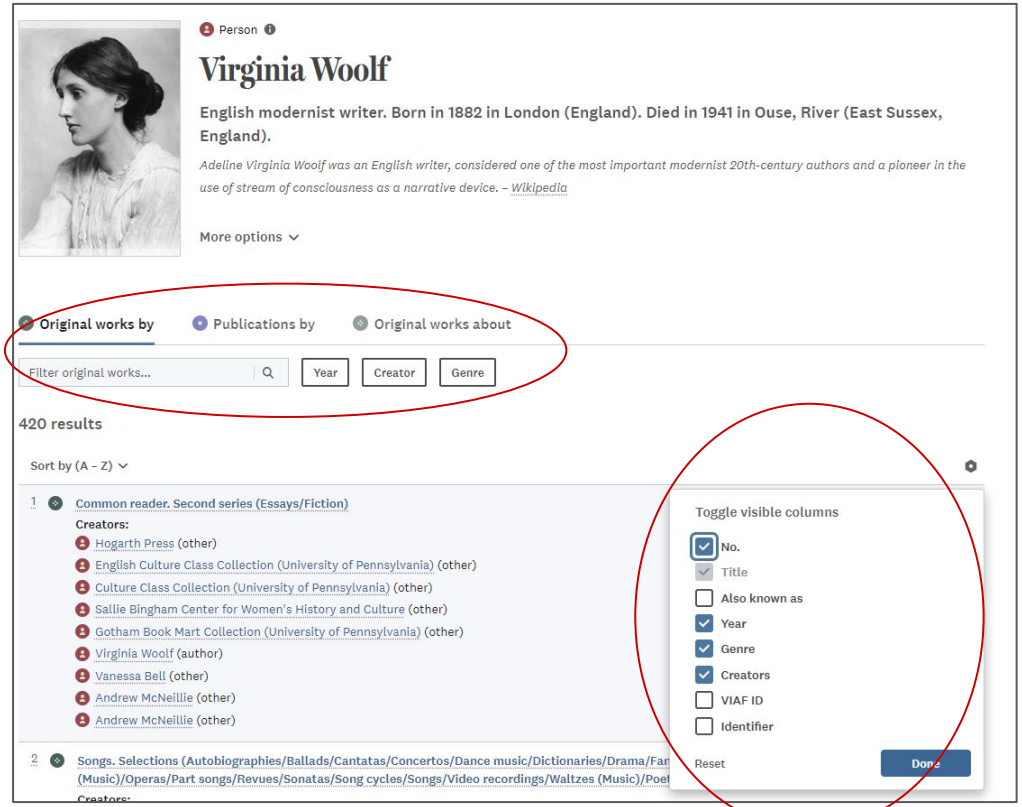
Simple search #2



- filters available on both People and organisations and Original works tabs

- sorting People and organisations tab by alphabetical order we see other results that apparently are not related with the search → explanation of results under the headline

Entity page - Agent



Agent page for Virginia Woolf

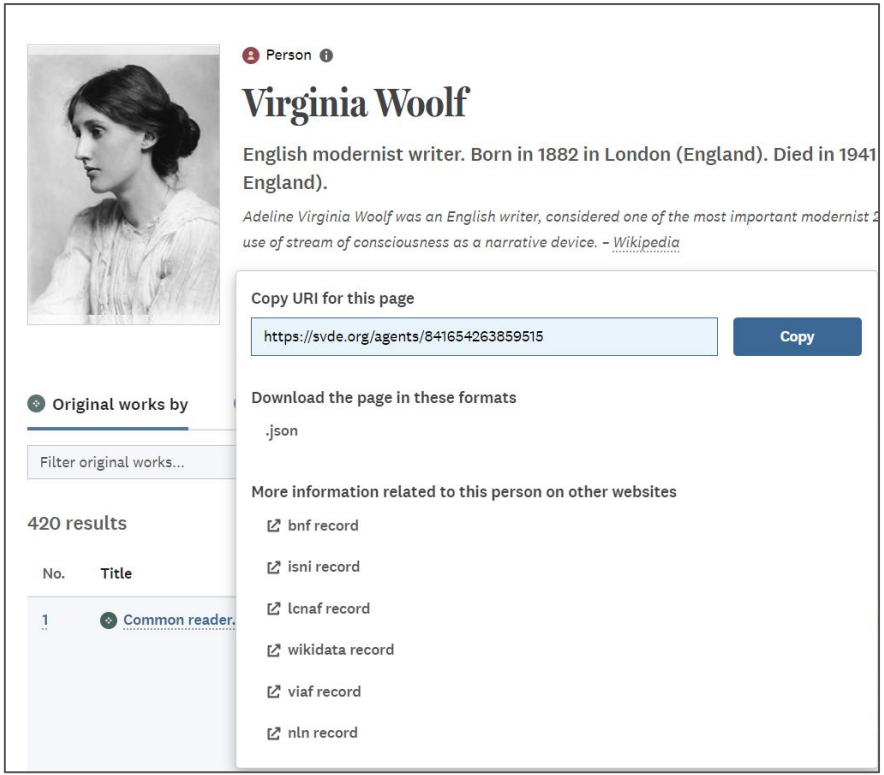
- aggregation of all the info about the author: her works, publications derived from those works, works about the author

- the system pulls in author data from Wikipedia, localised in the language selected for the interface

- additional info can be toggled and record descriptions change dynamically

https://www.svde.org/virginia-woolf-a841654263859515/original-works-by

Entity page - Agent



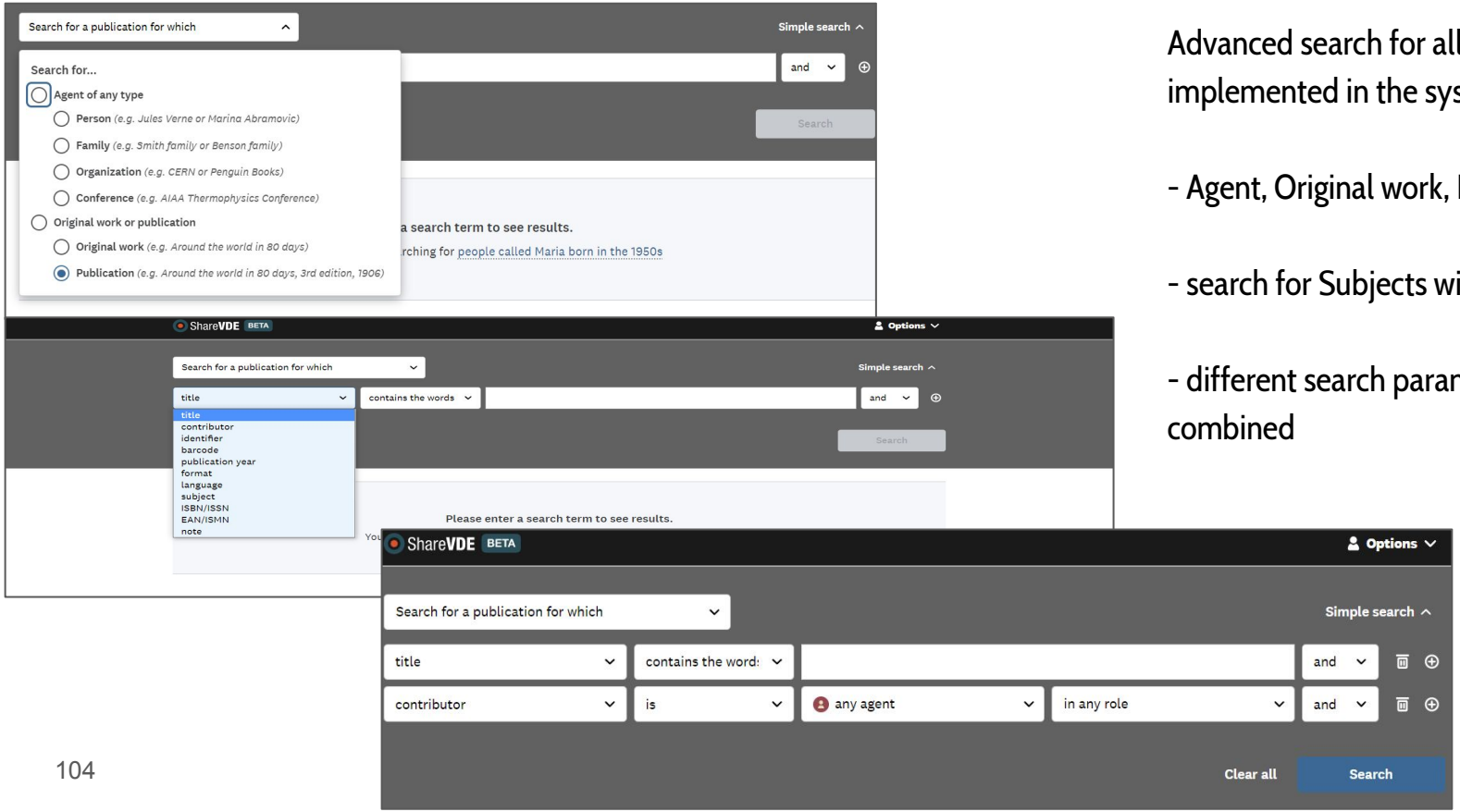
More options button:

- SVDE URI for the entity

- Agent data representation in JSON

- link to IDs from external sources

Advanced search #1



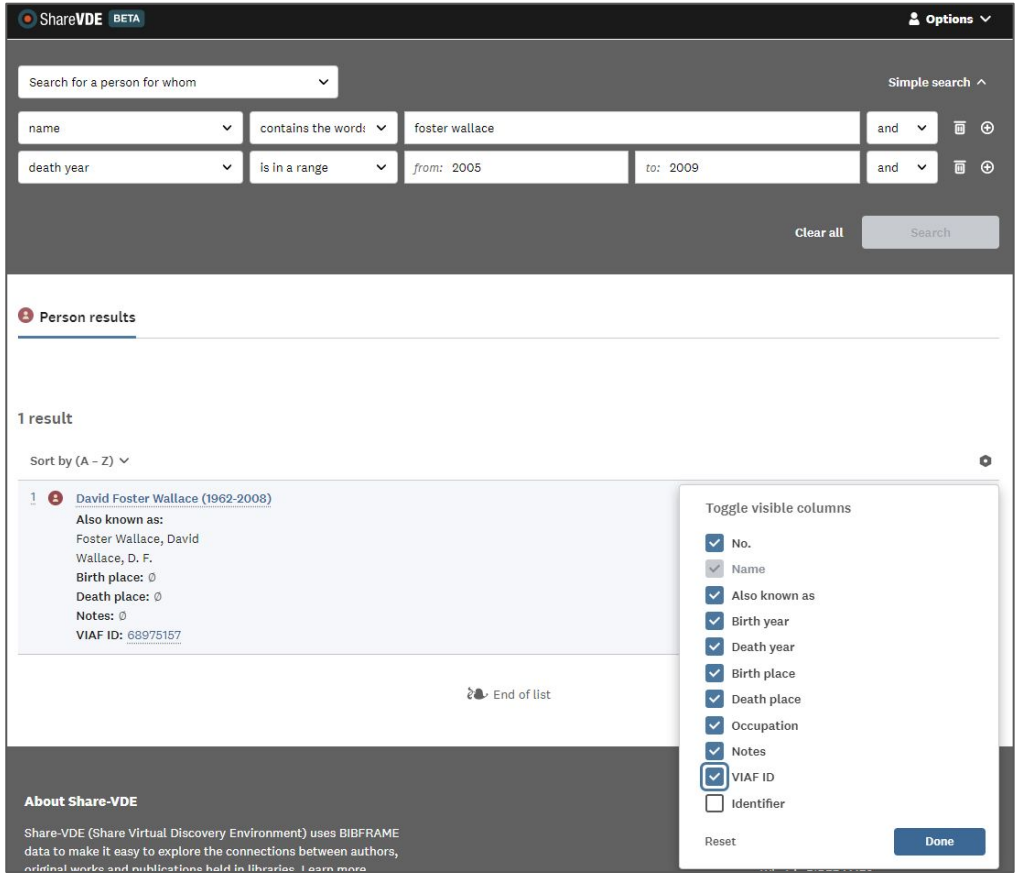
Advanced search for all the entities fully implemented in the system:

- Agent, Original work, Publication

- search for Subjects will be added

- different search parameters can be combined

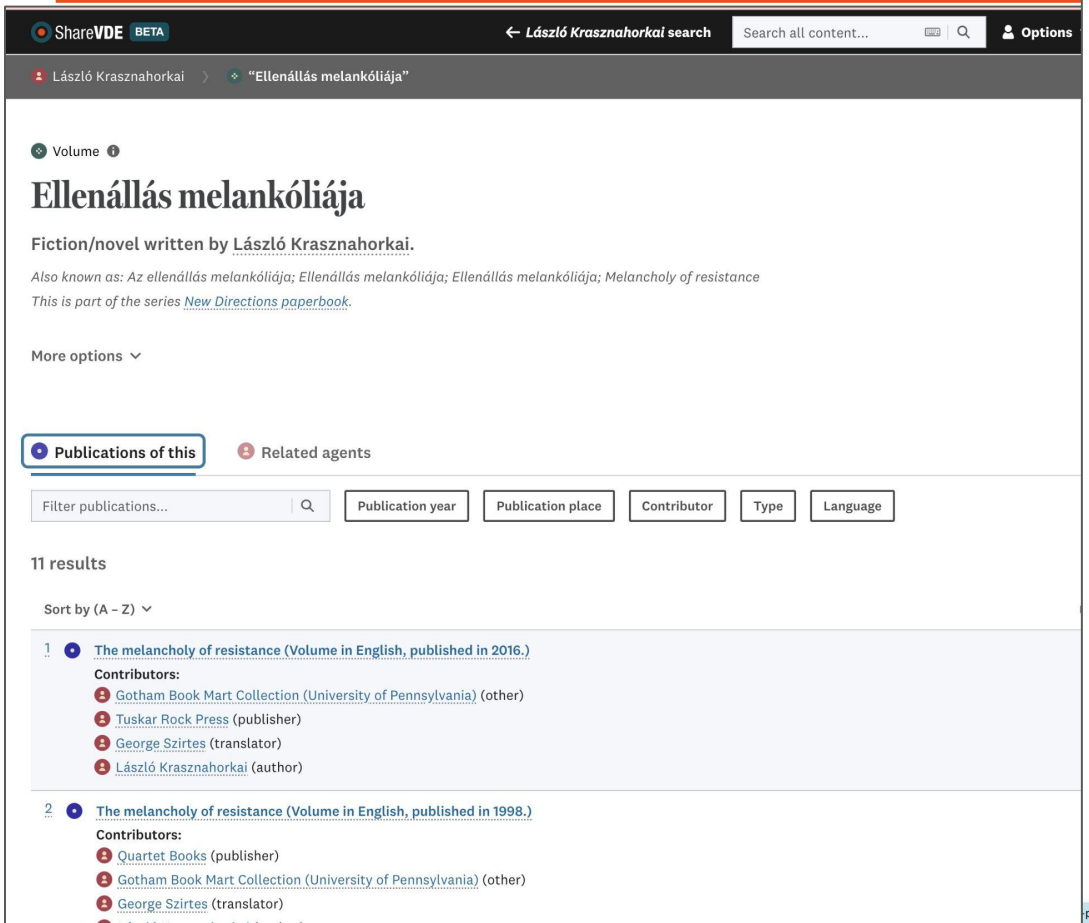
Advanced search #2

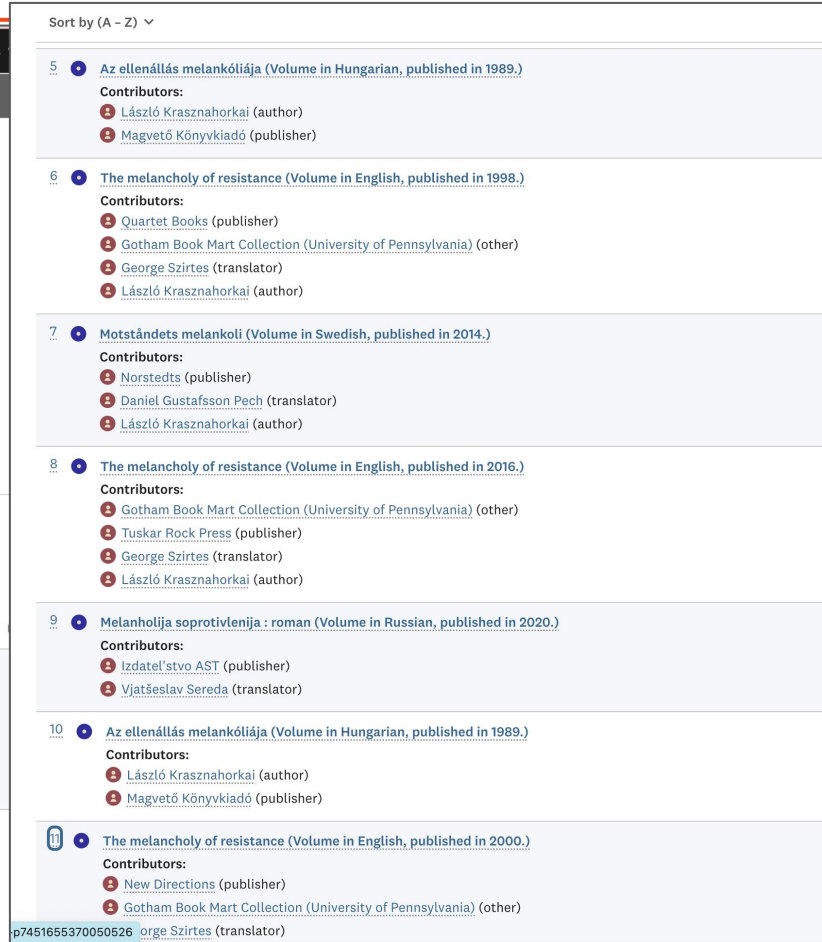


Advanced search for https://www.svde.org/advanced-search/agents?q=(name+contains+foster+wallace)+and+(date_end+is_in_a_range+2007-2008)

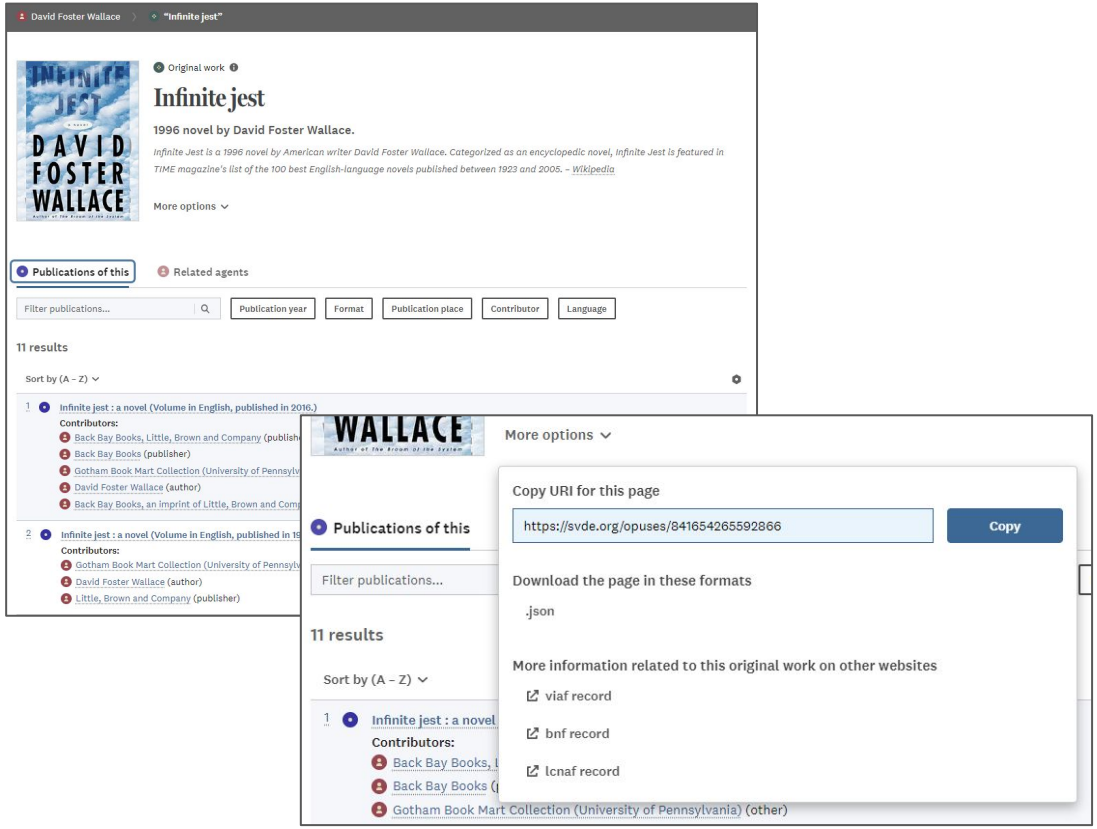
- toggle extra info e.g. VIAF ID, Also known as

Entity page - Original work (= svde:Opus)





Entity page - Original work (= svde:Opus)



Filter for connected Publication data

Related agents

More options button:

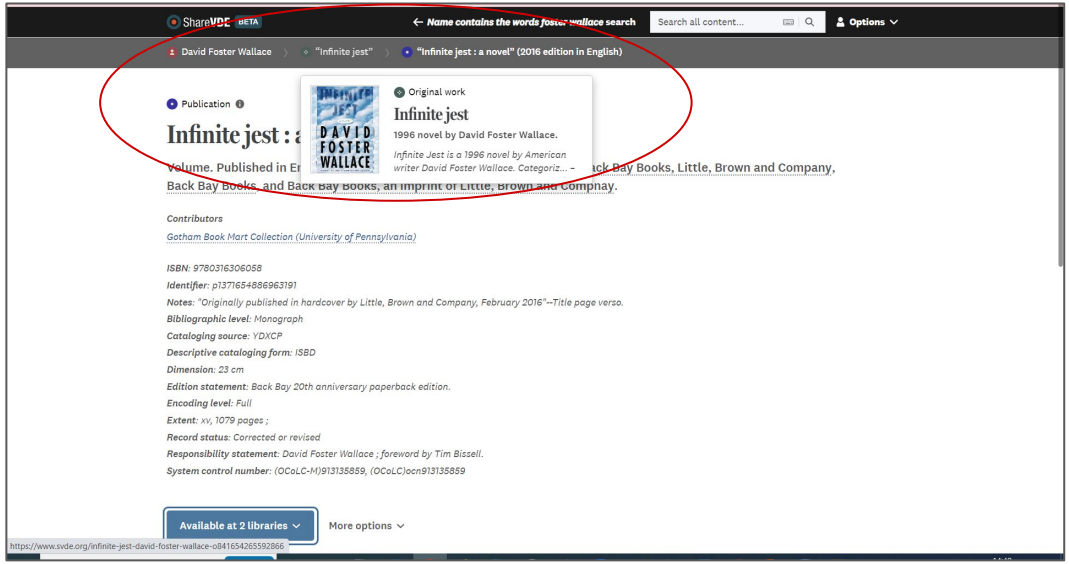
- SVDE URI for the entity

- Original work data representation in JSON

- link to records from external sources

https://www.svde.org/infinite-jest-david-foster-wallace-o841654265592866/library-publications

Entity page - Publication (~ bf:Instance)



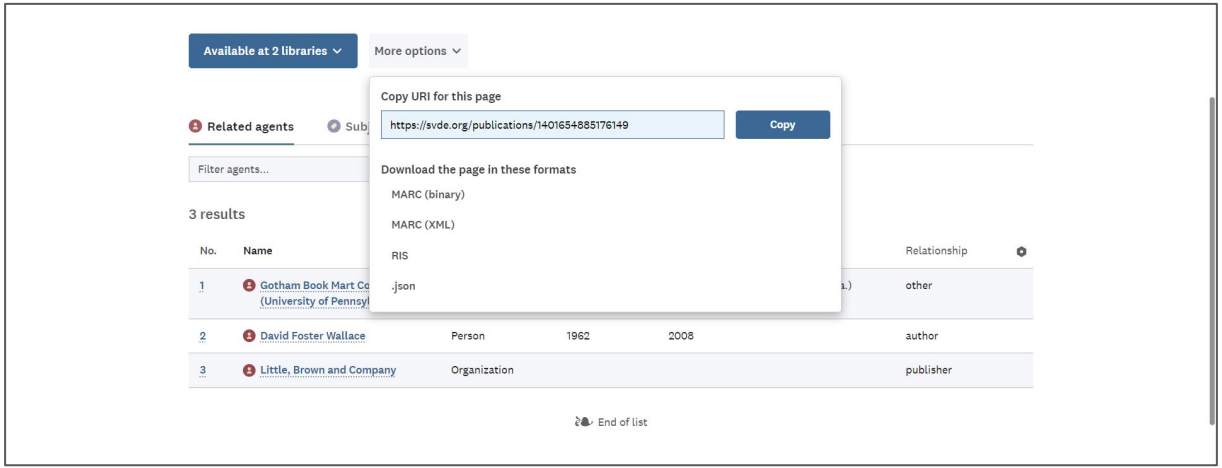
Instance cluster:

- created with data contributed by all SVDE libraries. The description refers to the common Instance cluster

- breadcrumb retains relationship and shows snippet / preview of the content of connected entities on mouse over

- “Available at” function that enable connections with local library environments or connected services, including the link to the local OPACs and optionally interactive features like circulation request buttons

Entity page - Publication (~ bf:Instance)



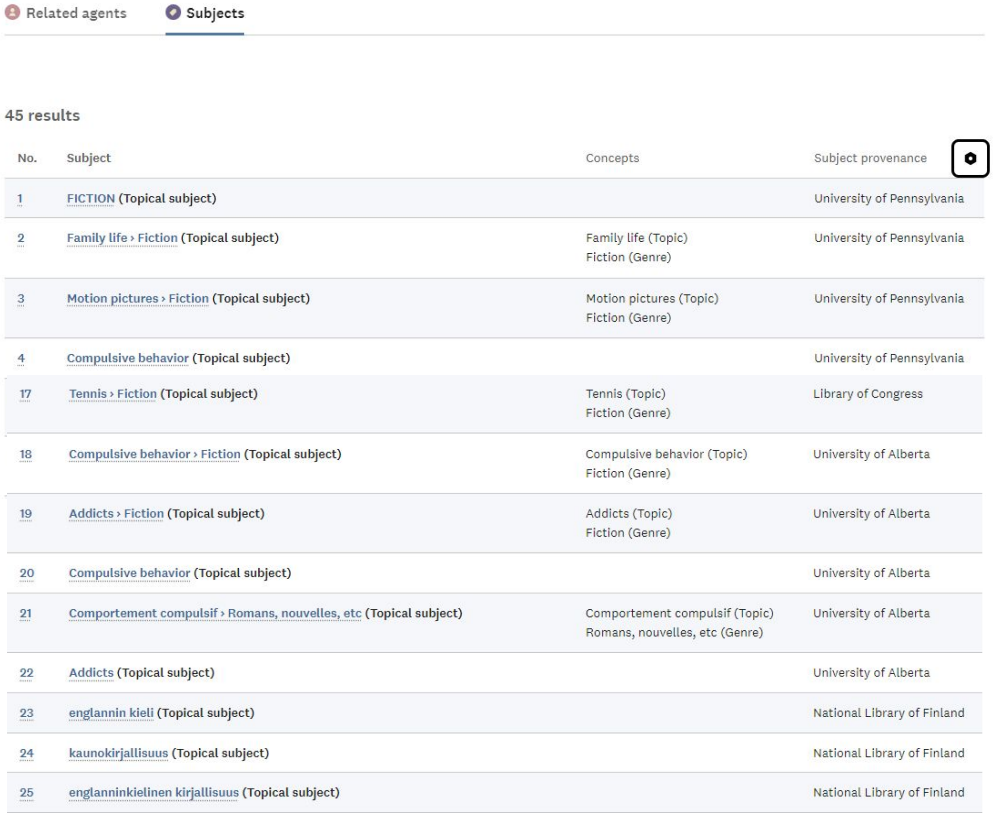
More options button:

- SVDE entity URI

- data representation in different formats including JSON, MARC, MARCXML, RIS (other linked-data based representation formats are in progress, including JSON-LD, RDF XML, N-triples, N3, Turtle, N-Quads, TriX, TriG).

https://www.svde.org/infinite-jest-a-novel-p1401654885176149/subjects

Subjects and Concepts



Subject entity - initial version:

- aggregates all subjects pertaining to the resource

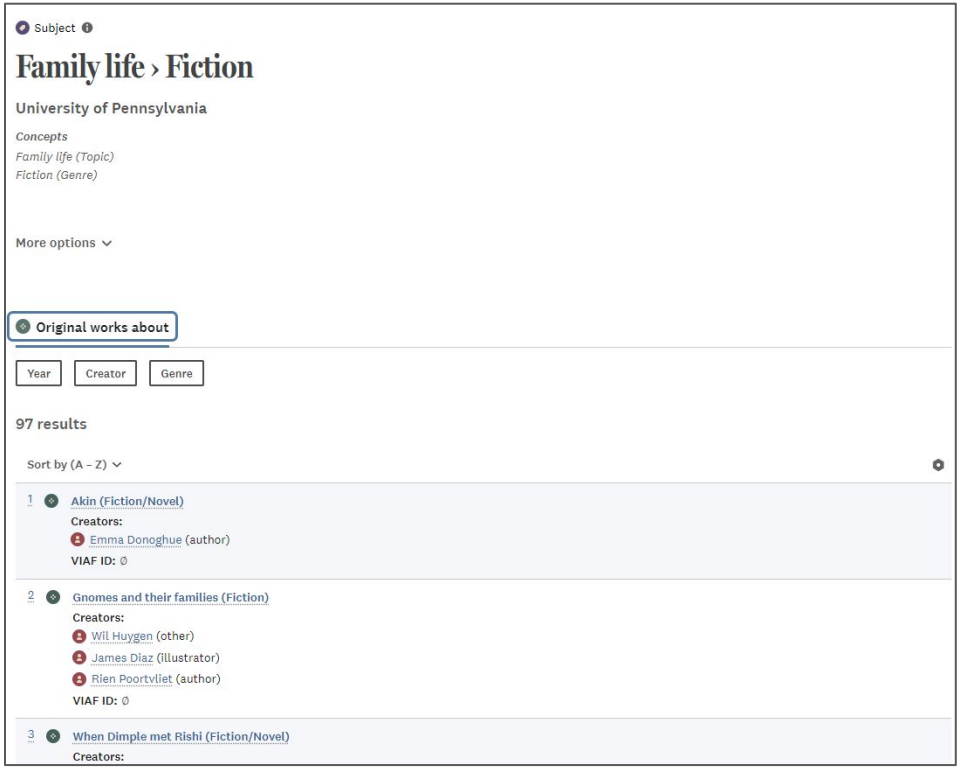
- Concepts are the pieces that form a subject string and in SVDE they are entities of their own (initial version of Concepts that we will expand further)

- clicking on a Subject, the user is redirected to the resources attached to that Subject

Tracking of Provenance:
- the system can be queried via API to return the bibliographic records of a given Provenance (= institution) connected to an Instance
- On the interface it shows which institutions have contributed to a linked data cluster, or to subjects
- Provenance is key to support the editing of linked data entities with JCricket, to track updates and collaborative services

https://www.svde.org/infinite-jest-a-novel-p1401654885176149/subjects

Subjects and Concepts

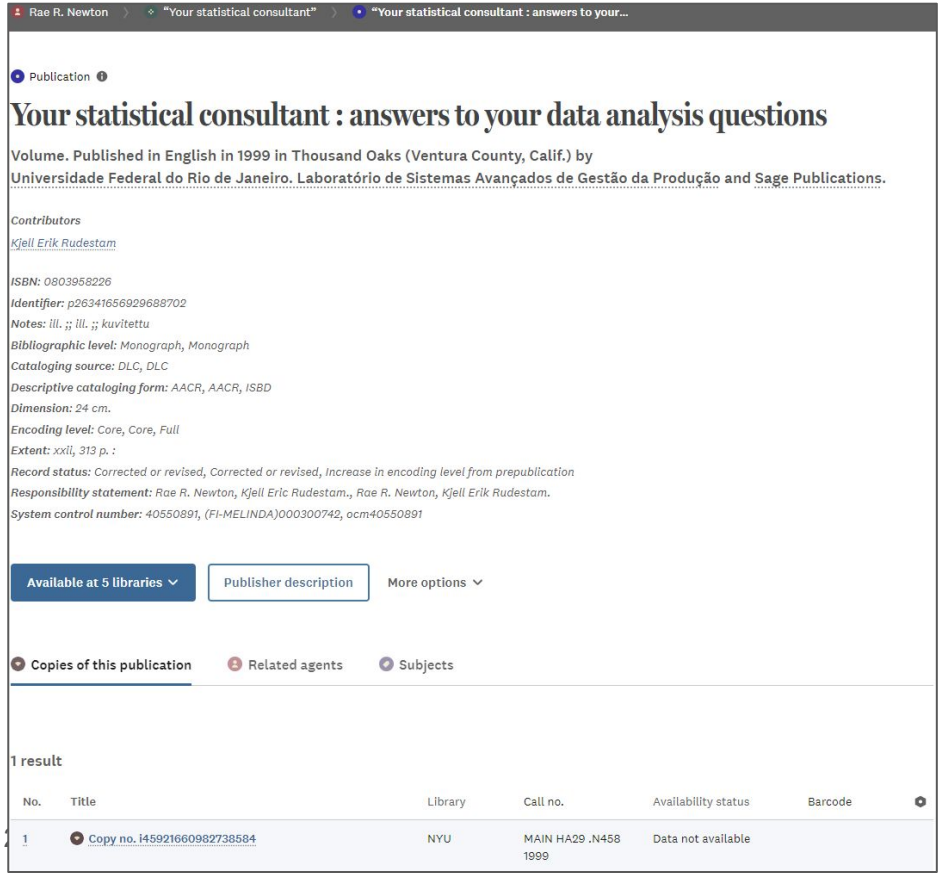


- Initial version of Subject entity page, including subject strings linked in the Subject tab of the Publication page and the display of concepts

- Concepts are the pieces that form a subject string and in SVDE they are entities of their own (initial version of Concepts that we will expand further)

https://www.svde.org/family-life-fiction-s10316548736872 44/original-works-about

Interesting Instance entity example



https://www.svde.org/your-statistical-consultant-answers-to-your-data-analysis-questions-p26341656929688702/subjects

- many libraries contributed to this cluster
- subjects have different provenances
- initial rough display of item data
- additional resources extracted from the resource information, e.g.ToC, Publisher description etc.
- known issues: duplicated fields
- Provenance is retained in the system back-end along with original library records → key to support the editing of linked data entities with JCricket, to track updates and collaborative services

Default simple search configuration: the BNB

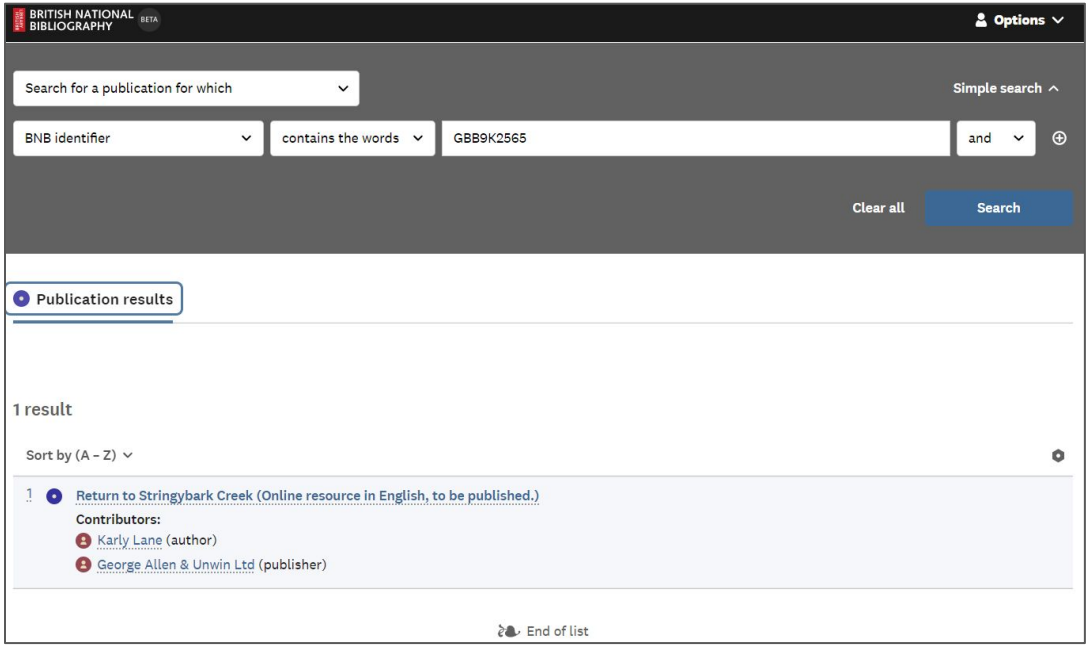
Simple search default configuration on Natbib tenant and the BNB - British National Bibliography skin* is set to Publications search, instead of the SVDE default.

This was done to comply with a different requirement whereby for the data stored in this tenant (ie. national bibliographies) it's meaningful to direct users to publications.

Different communities or types of institutions might need customised features

(*) *Note: the skin for the British National Bibliography is a preview of a beta site.*

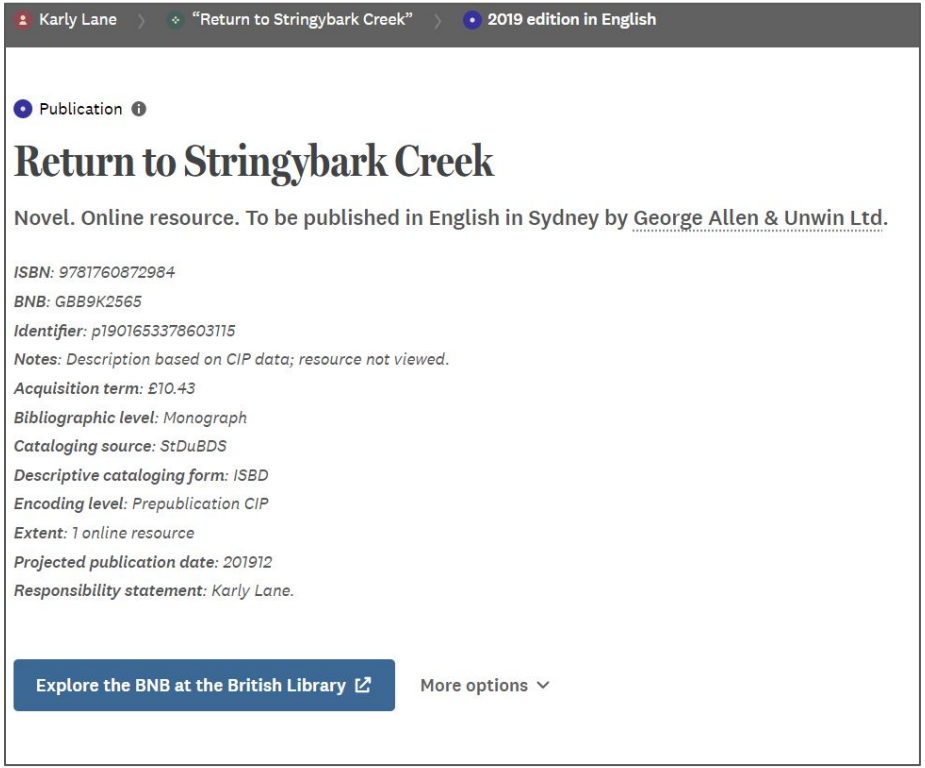
Support for ad hoc use cases



Implemented search for local ID (BNB number identifying all resources stored in this tenant)

https://bl.natbib-lod.org/advanced-search/publications?q=(nbn+contains+GBB9K2565)

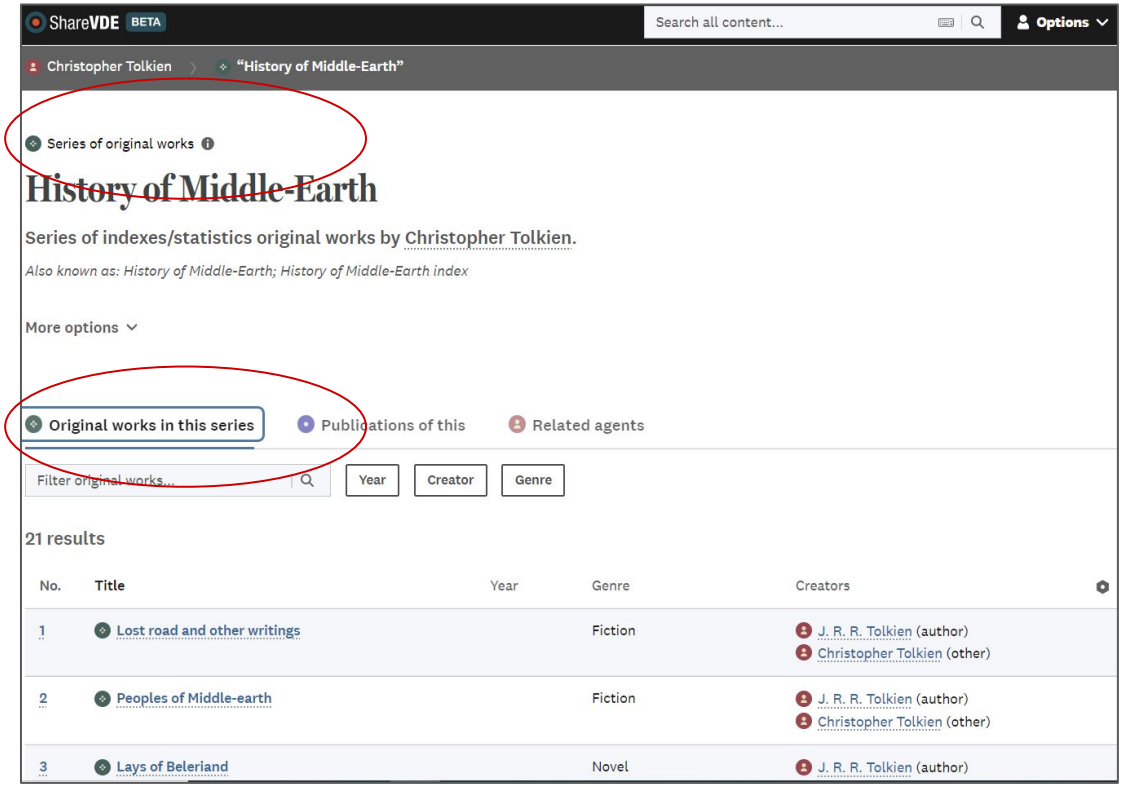
Support for ad hoc use cases



Display the information that the resource is a CiP record (Catalogue in Publication), ie. it has not been published yet (ad hoc data treatment was done to cover this case)

https://bl.natbib-lod.org/return-to-stringybark-creek-p1901653378603115/related-agents

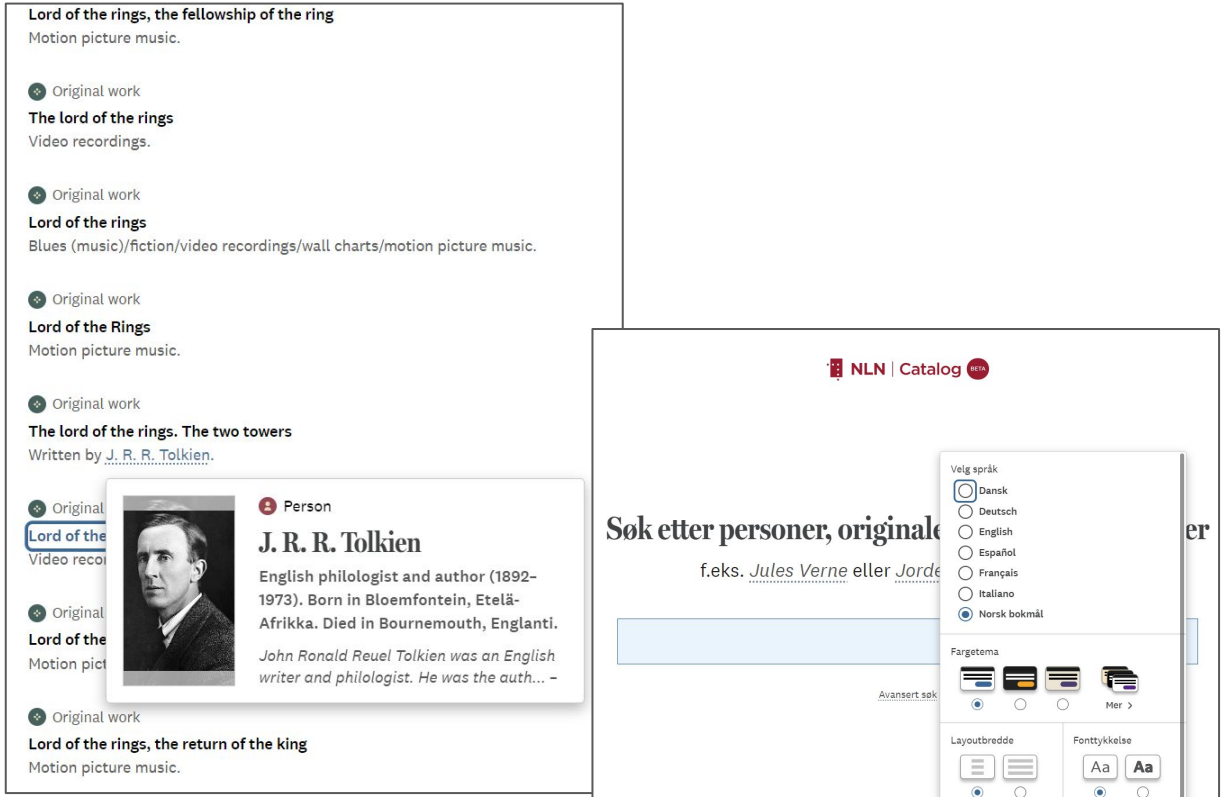
Other entities



Original work of type Series connected to all the Original works of the series volumes

https://svde.org/opuses/961654264848228

Other discovery features and front-end design



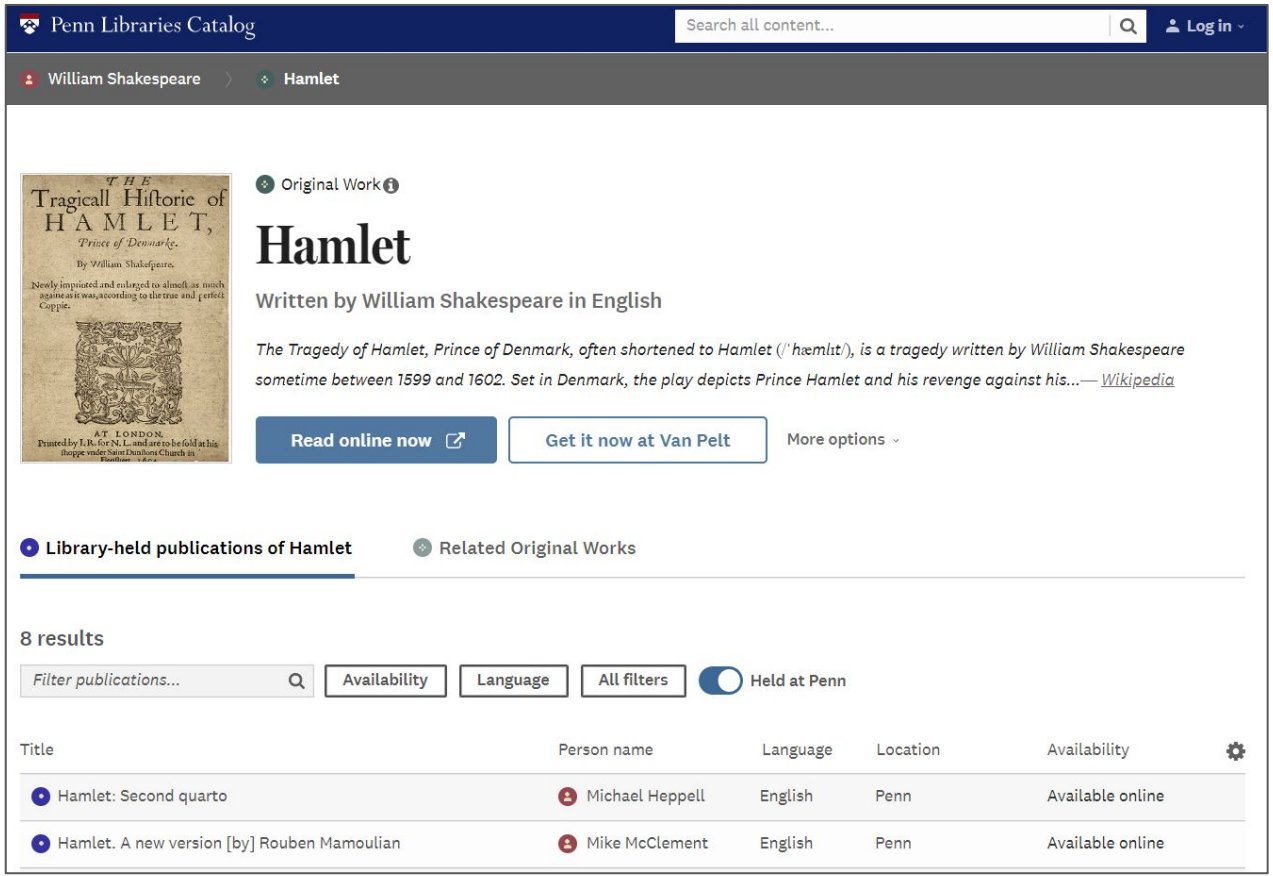
Hover over linked information and the system loads info, snippet or even photo from Wikipedia extracted by matching the Wikipedia ID

Localisation: discovery portal available in multiple languages

Accessibility features (color themes, layout, font)

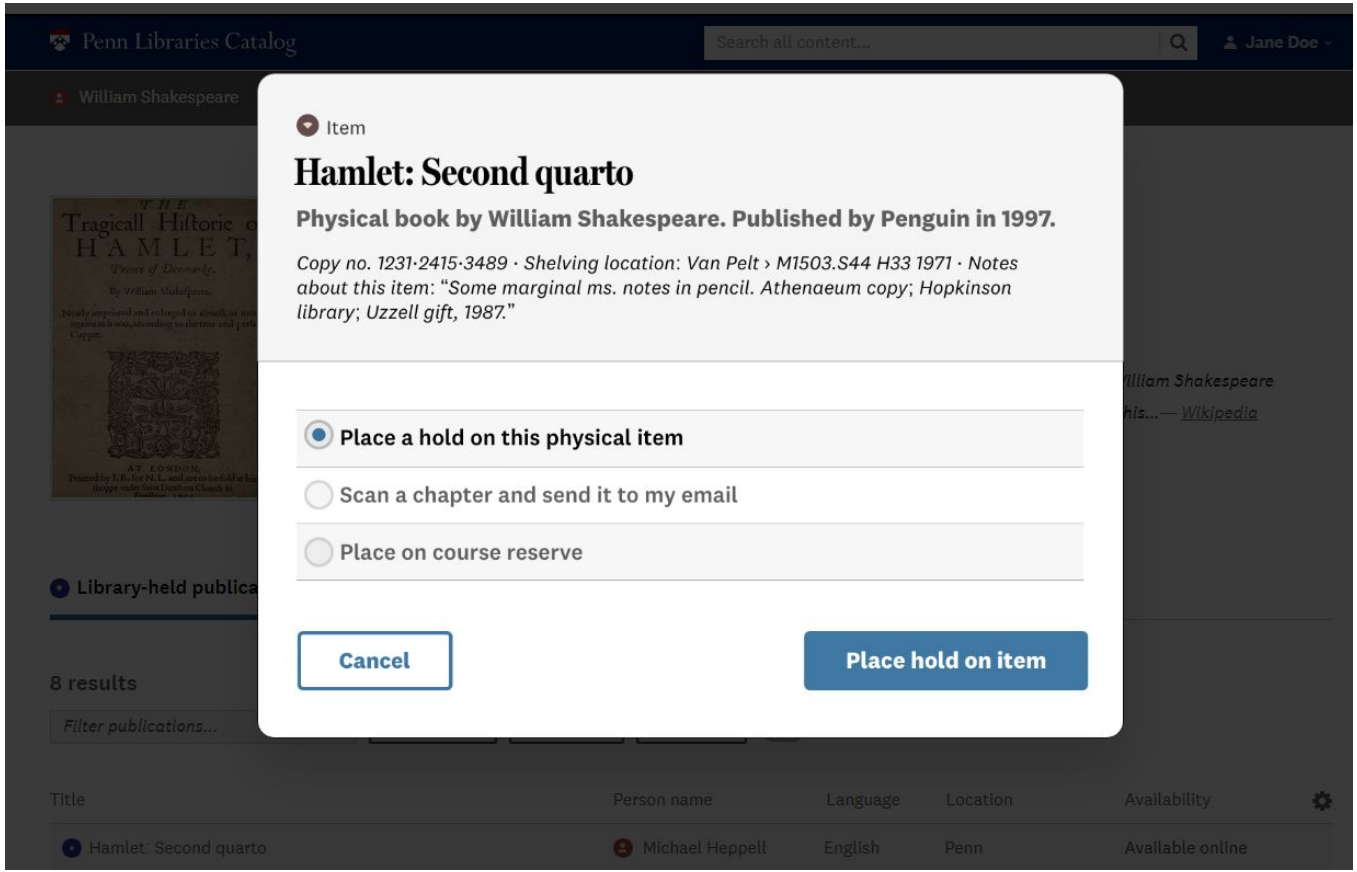
Layout can change dynamically depending on what data the user wants to see: from table list layout to card list layout

Local services: University of Pennsylvania



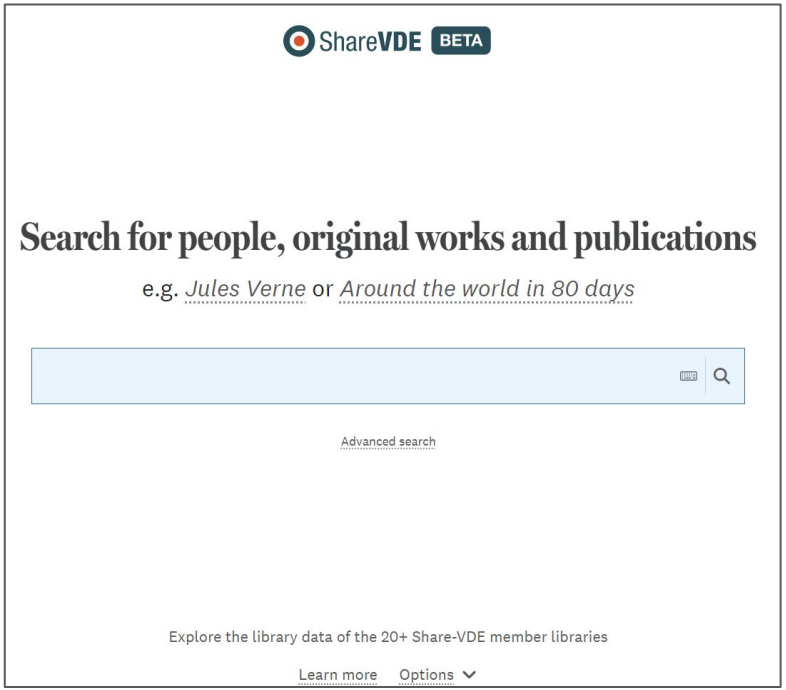
Integration with local services, e.g. connection to Alma APIs for Penn circulation services

Penn integration with local services - lending

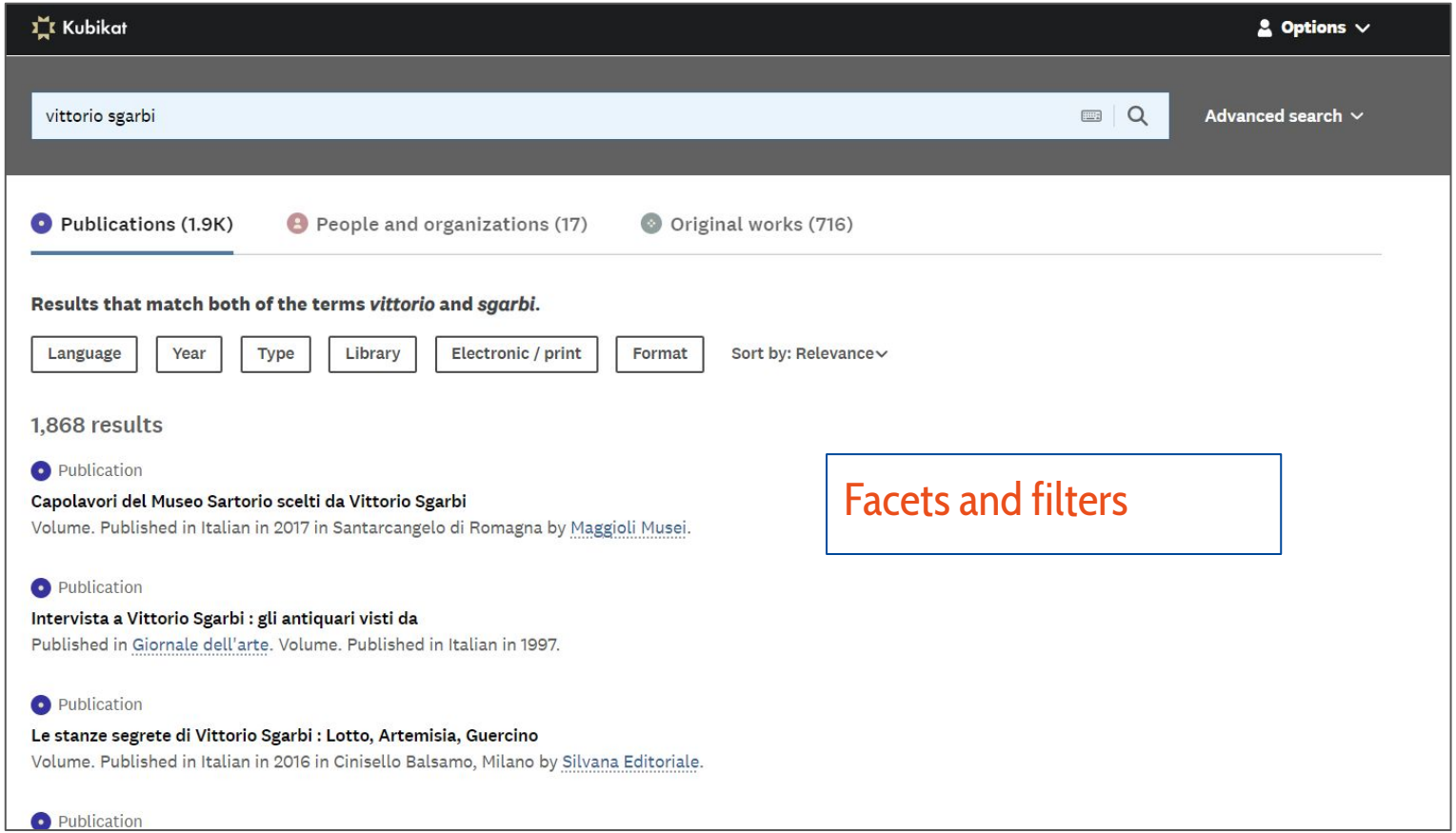


Default configuration: SVDE and PCC data pool

Simple search default configuration on SVDE and PCC data pool portals



On/Off mechanism example



Maximise efforts - Promote autonomy

The main purpose of this centralized architecture is to ensure **long-term sustainability** while promoting the **autonomy** of each tenant.

To foster this vision, it is essential to avoid ad hoc developments while ensuring the ability of local customizations. This flexibility is achieved through mechanisms that allow each tenant to selectively enable functions according to the purpose:

- on/off mechanism

- optional default configurations

- local features/services

JCRICKET

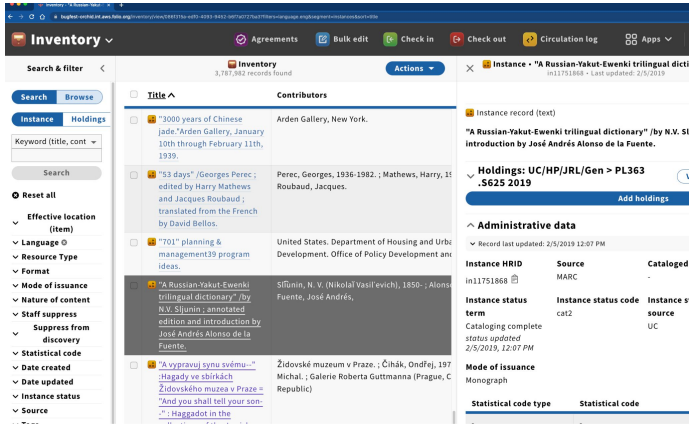
Entity Editor

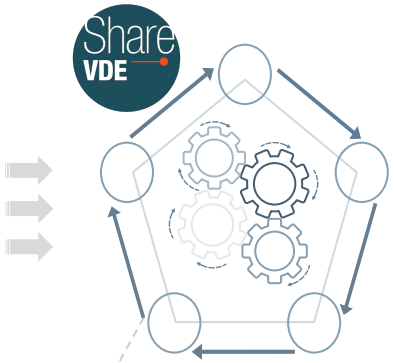
The Entity Management System

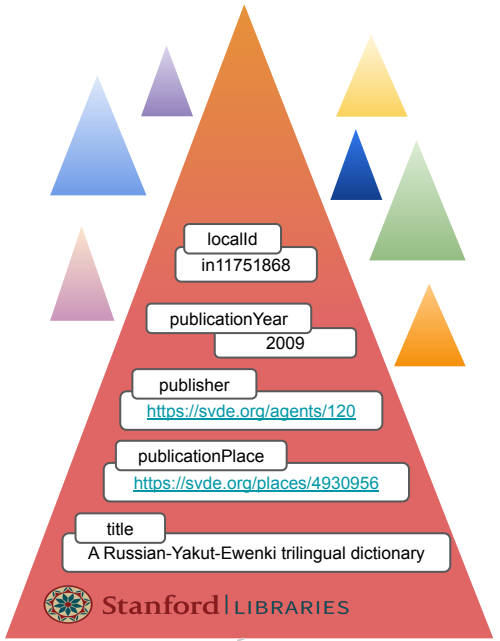
From Library Data to Share-VDE

A Share-VDE member (Stanford, in the example) uses FOLIO for managing its data.

Stanford | LIBRARIES





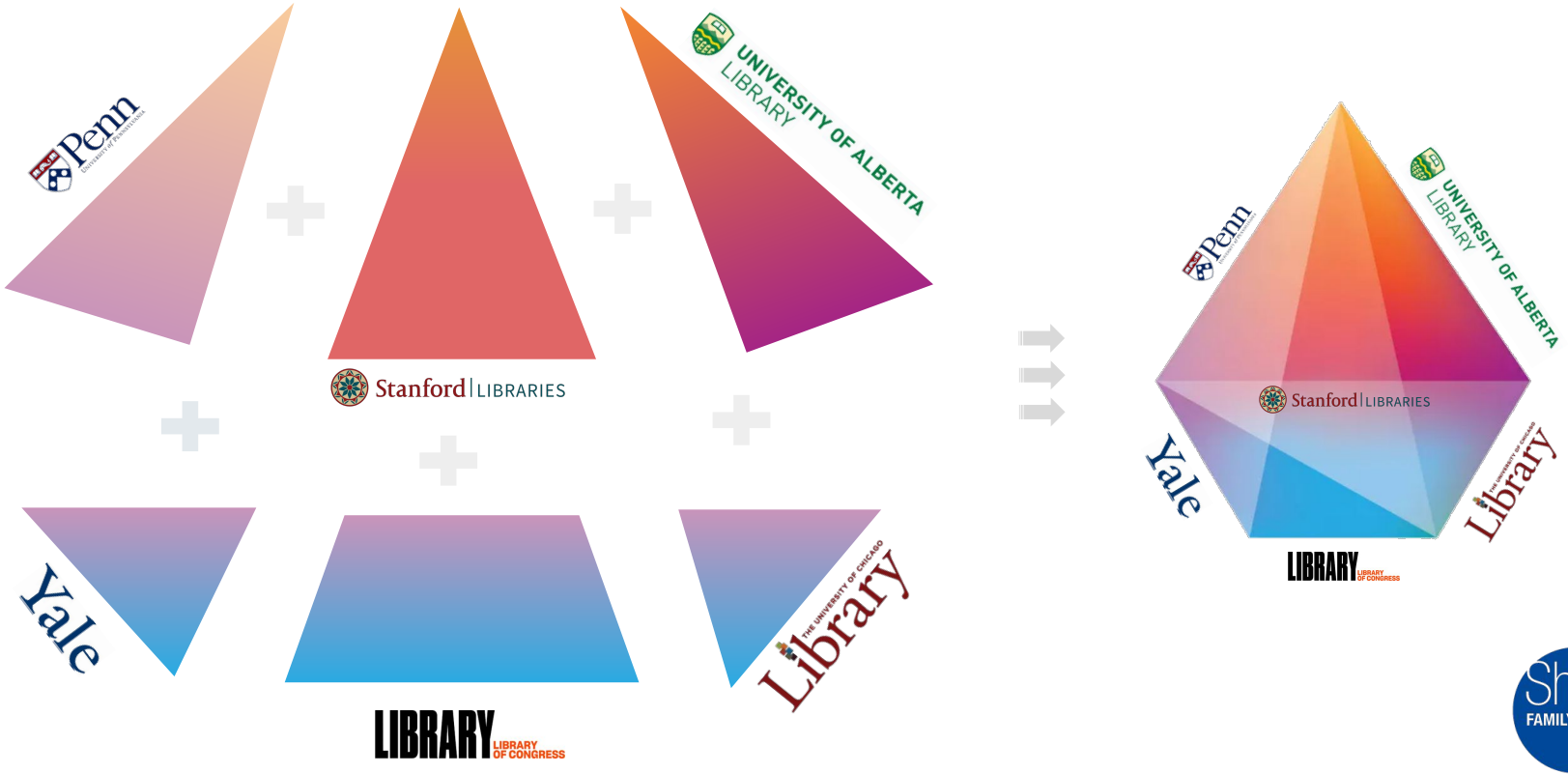


FOLIO instance (or instances in case of massive export) is sent to Share-VDE

FOLIO instance data is split across the entities that form the Share-VDE domain model. In this example we focus on the properties that are assigned to a Share-VDE instance (red triangle above)

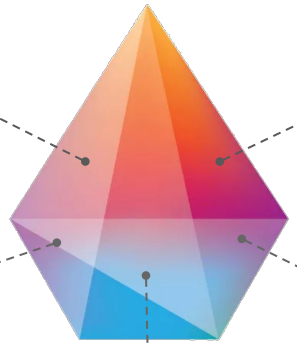
Share FAMILY

Prism, faces: the Share-VDE Entity



Share FAMILY

Faces (aka Contributions & Provenances)



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 OF CONGRESS

title	Alice in wonderland

National Library of Norway

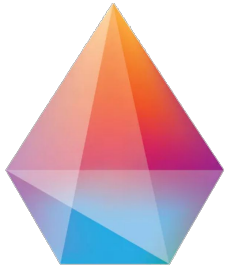
title	Alice's adventures under ground
titleAlternative	Journeys in Wonderland
author	https://svde.org/people/201

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 Stanford
titleAlternative	Alice's adventures under ground	LIBRARY
titleAlternative	Journeys in Wonderland	National Library of Norway

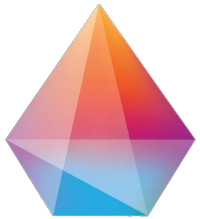
An attribute is a data property, having a literal as value

Share VDE		
sameAs	http://dbpedia.org/resource/Alice'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 Share-VDE Prism and an external reference

Name	Provenance
author	LIBRARY Stanford

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



A relationship is a connection between two Share-VDE Prisms

The Big Picture: Genesis, Search, 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.

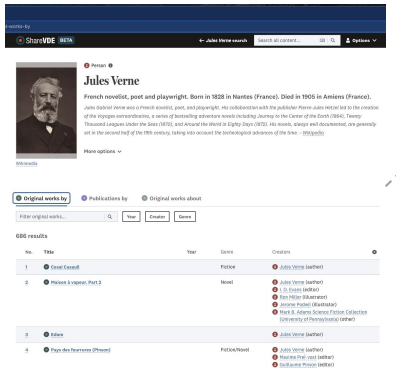
Edit API (GraphQL)

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

JCRICKET
Entity Editor

but...

Search API (GraphQL / REST)



Third-party Applications

Any third-party, authorized application can be a Share-VDE client

but...

Data is searchable through the entity discovery portal.

JCricket: Available Operations

Edit: a property is added/updated/deleted

~~Lewisss Carroll~~ → Lewiss Carroll

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

Invalidate

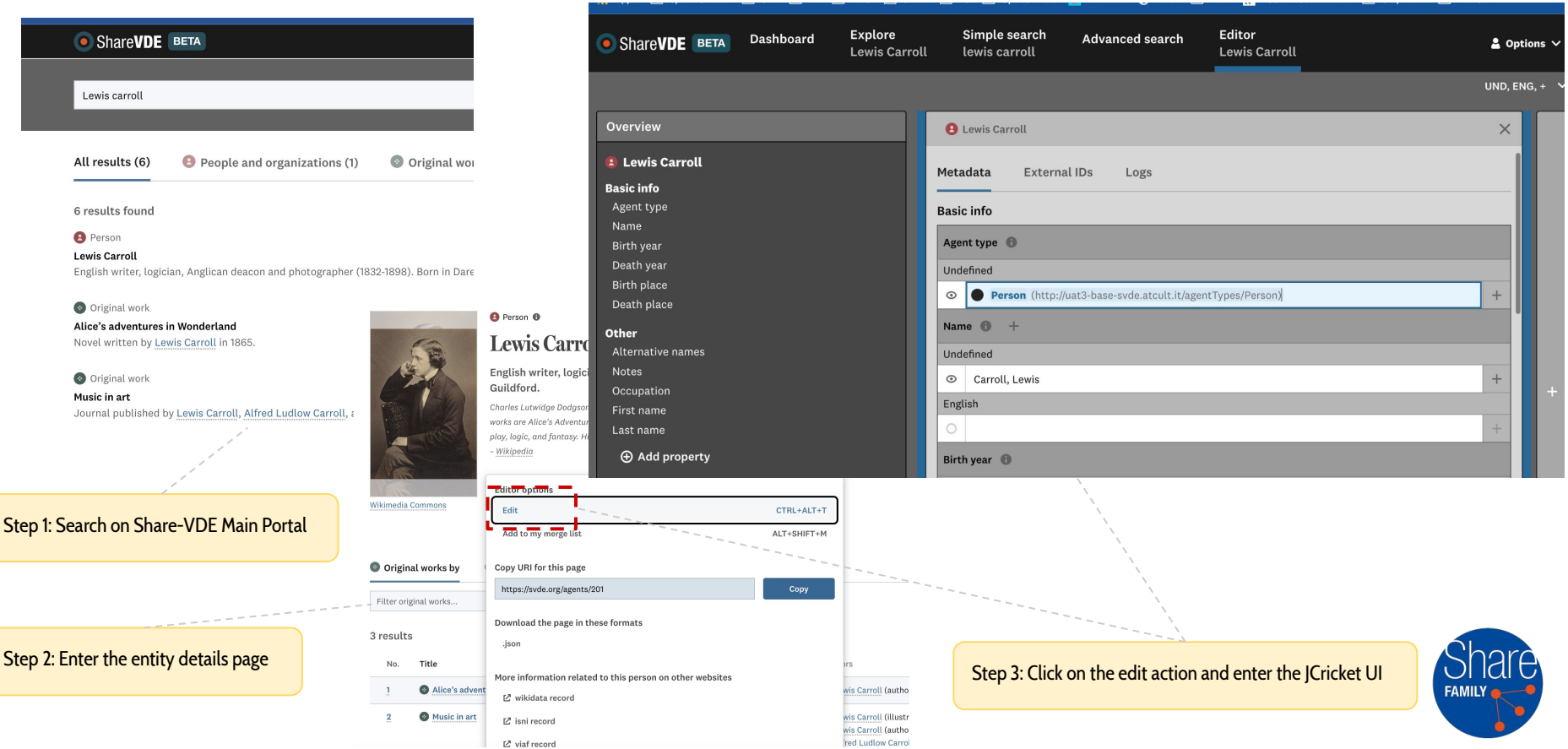
Merge: multiple prisms are merged into one

For example, two prisms, "*Mark Twain"* and "*Samuel Clemens",* should be actually part of the same entity.

Split: a prism is split into multiple prisms

A prism (wrongly) contains information belonging to multiple entities (e.g., *"Wallace David"* and *"David Wallace"*)

JCricket user interface

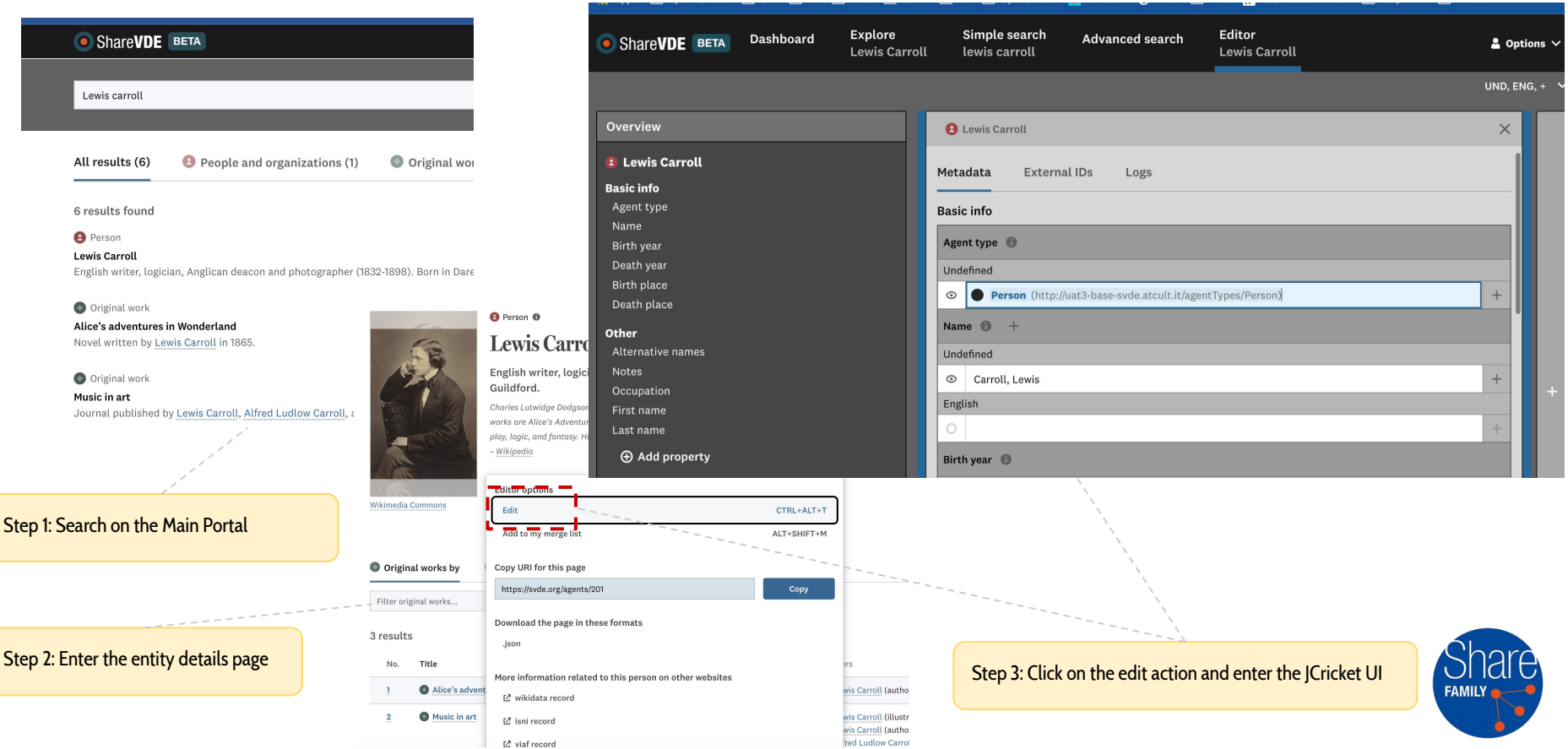


Step 1: Search on Share-VDE Main Portal

Step 2: Enter the entity details page

Step 3: Click on the edit action and enter the JCricket UI

JCricket user interface



Step 1: Search on the Main Portal

Step 2: Enter the entity details page

Step 3: Click on the edit action and enter the JCricket UI

What JCricket *is*

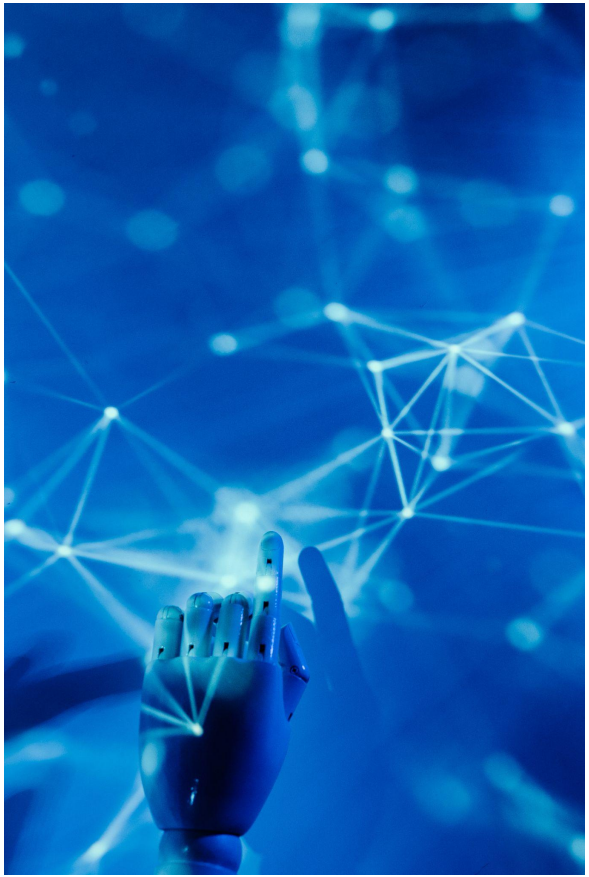
JCRICKET
Entity Editor

- ✅ it's a BIBFRAME entities editor
- ✅ it applies to linked data entities created within all tenants of the Share Family (svde.org, pcc-lod.org, natbib-lod.org...)
- ✅ it's a manual application that manages properties (attributes, relations and links) of entities in the CKB - Cluster Knowledge Base
- ✅ it's a collaborative tool shared across member institutions
- ✅ it can be used as an original cataloguing tool
- ✅ it can be a new tool for entity cataloging/sharing in LOD

What JCricket ***is not***

- ✗ not a traditional bibliographic data editor
- ✗ not in contrast with Sinopia or Marva
- ✗ not impacting original data that reside in member libraries' systems (unless libraries want to use ad hoc APIs for entity updates both in SVDE and in their systems)

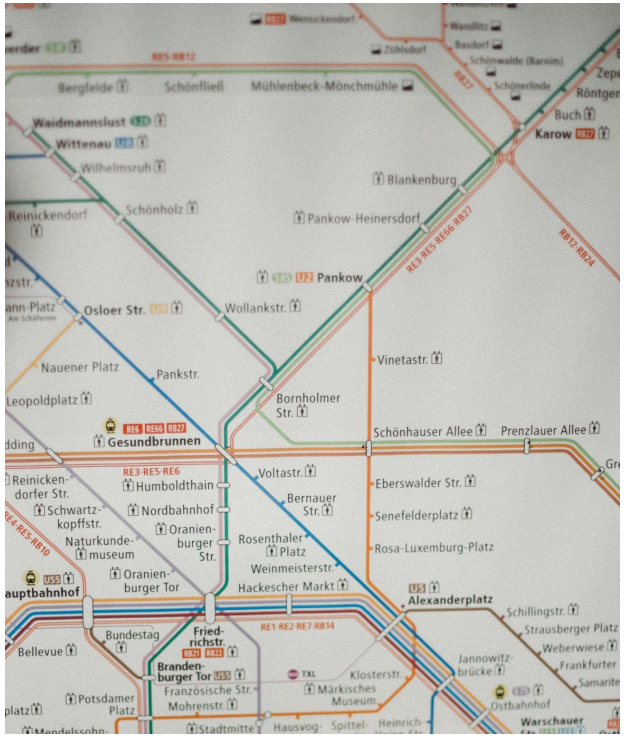
Next generation cataloguing



The JCricket editor is an example of how the LOD Platform technology, within the Share Family Linked Data Ecosystem, is pursuing a new way of managing library cataloguing in a cooperative way:

- ★ aggregation of data from multiple sources
- ★ managed through standard protocols (linked data)
- ★ in a collaborative and integrated environment
- ★ that makes available open data and resources
- ★ to end users and professionals (researchers, scholars etc.)
- ★ for reuse in the library community and beyond

Where we are now



- ★ LOD Platform version 3.0.0 including JCricket has been released in test environment ✅
- ★ Major release that introduces many changes in the software and in data processing algorithms
- ★ A selected group of members will conduct the initial testing, initially focussing on JCricket Entity Editor

JCricket references

Useful references:

- JCricket overview https://wiki.share-vde.org/wiki/ShareDoc:PublicDocumentation/LODPlatform/EntityEditor
- general JCricket presentation
- https://wiki.share-vde.org/w/images/7/74/JCricket_overview_-_2023-Jan-26.pdf
- for more technical details on JCricket https://wiki.share-vde.org/w/images/e/e8/JCricket_entity_editor_presentation.pdf
- on how JCricket has been conceived https://wiki.share-vde.org/w/images/b/b3/Share-VDE_perspective_on_Cluster_Knowledge_Base_and_Provenance.pdf

See the live demos!

JCricket premiered its demo at the ALA Conference 2023, during the Share-VDE Workshop:

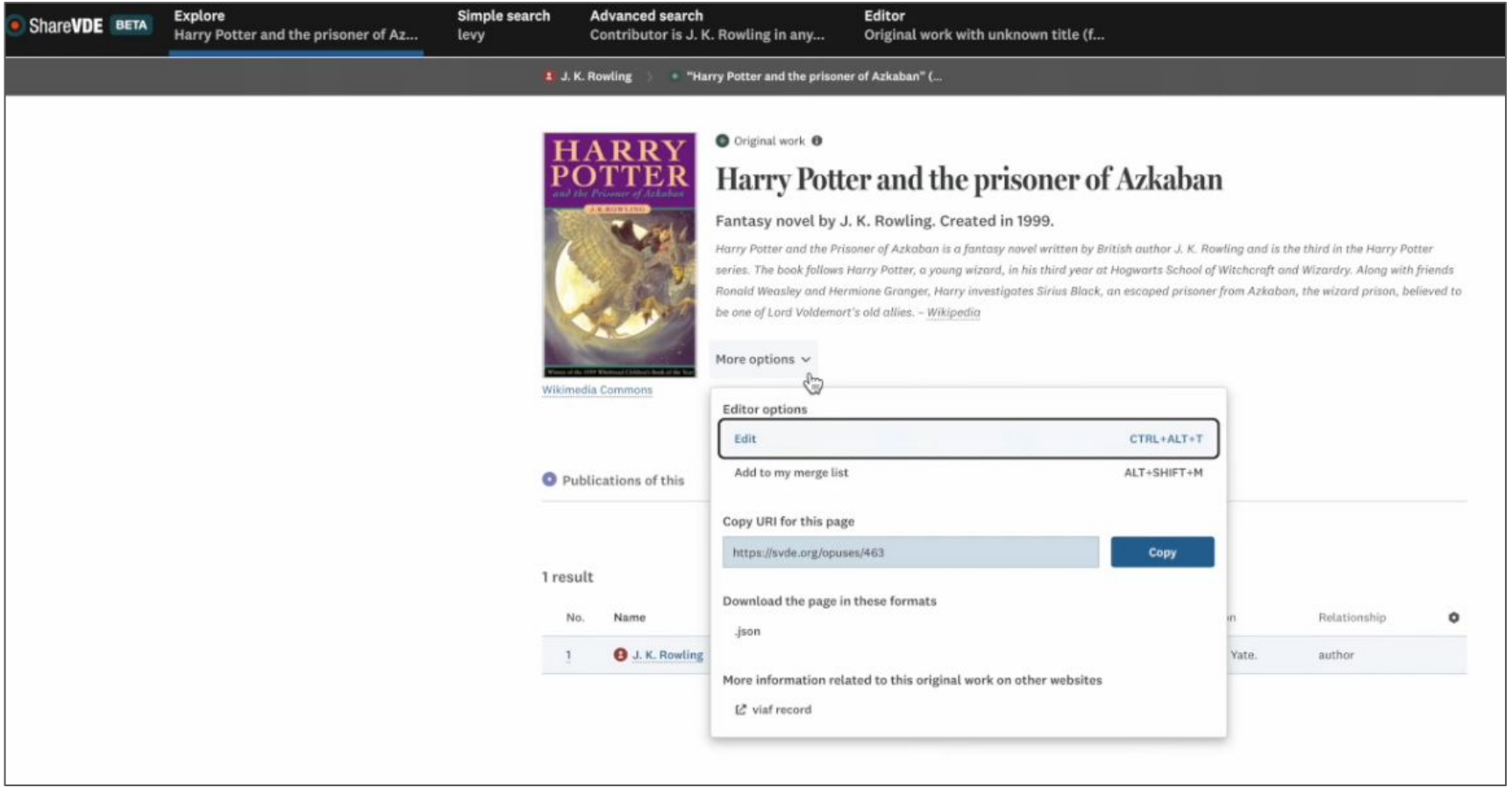
https://bit.ly/SVDE_Workshop2023_recording

JCricket demo at the LD4 Conference 2023:
https://www.youtube.com/watch?v=wbrqvWGnvfI

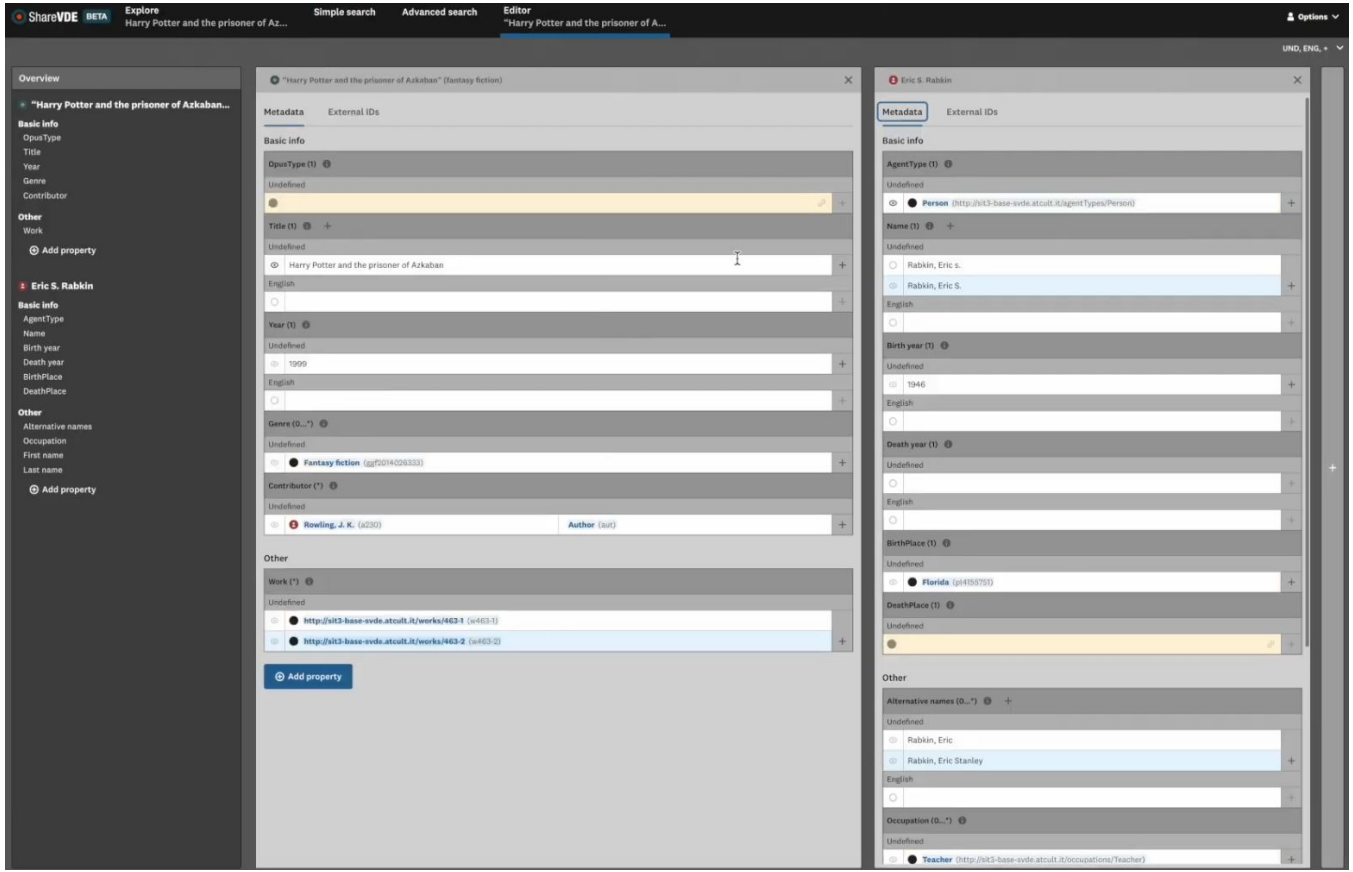
Share-VDE discovery portal general demo: https://bit.ly/SVDE-discovery-live-demo

JCricket Editor - examples from the user interface

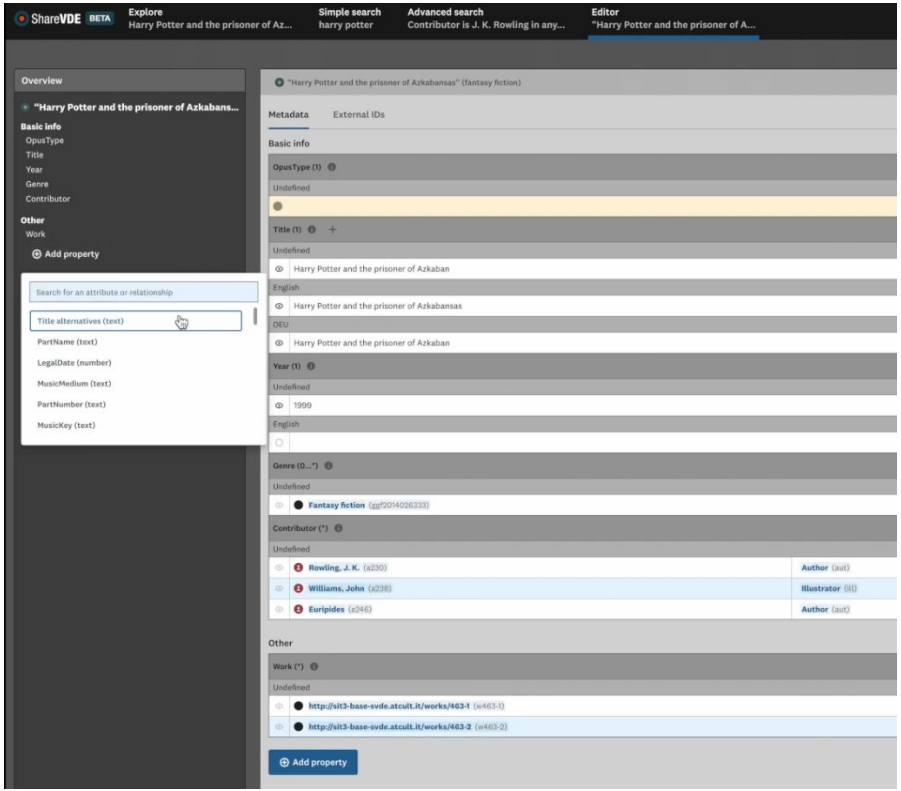
JCricket feature selection

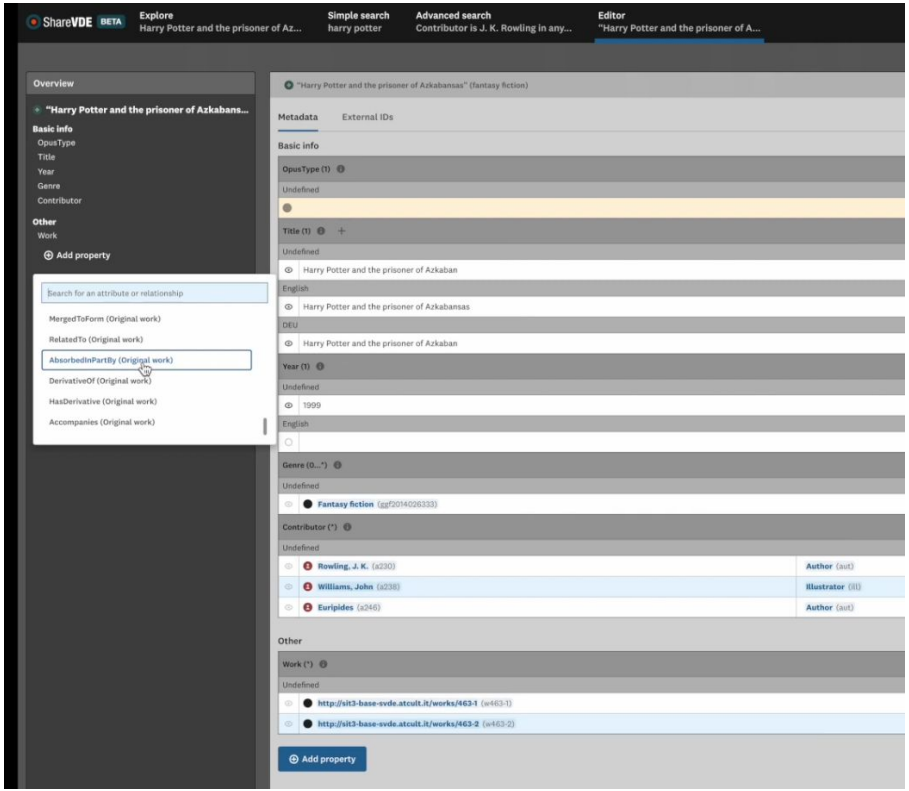


JCricket edit - Multiple entities in one screen

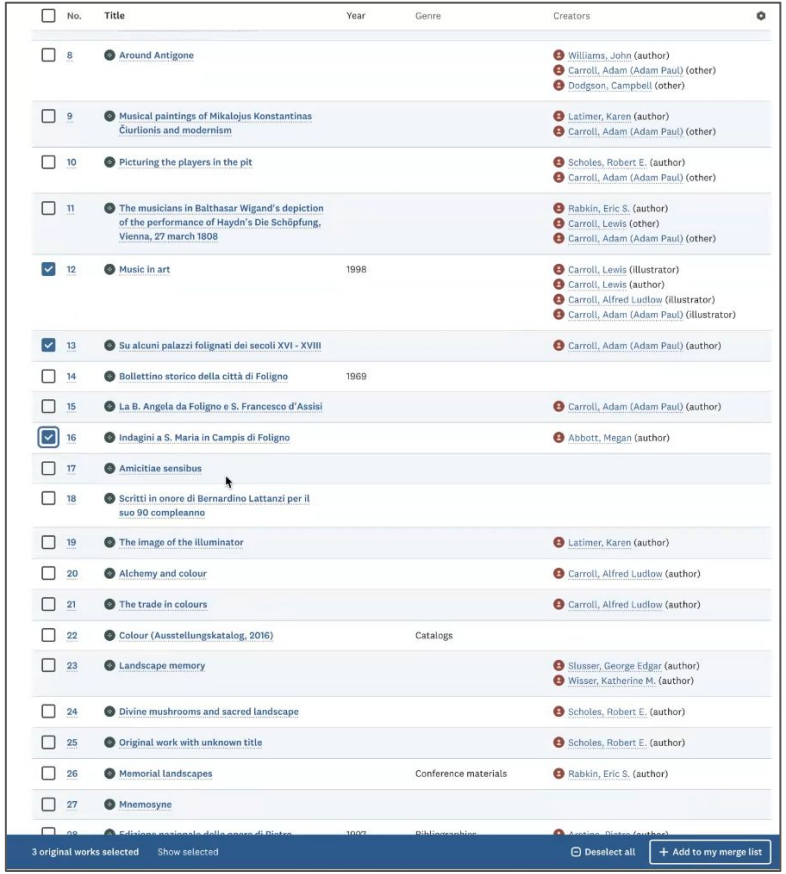


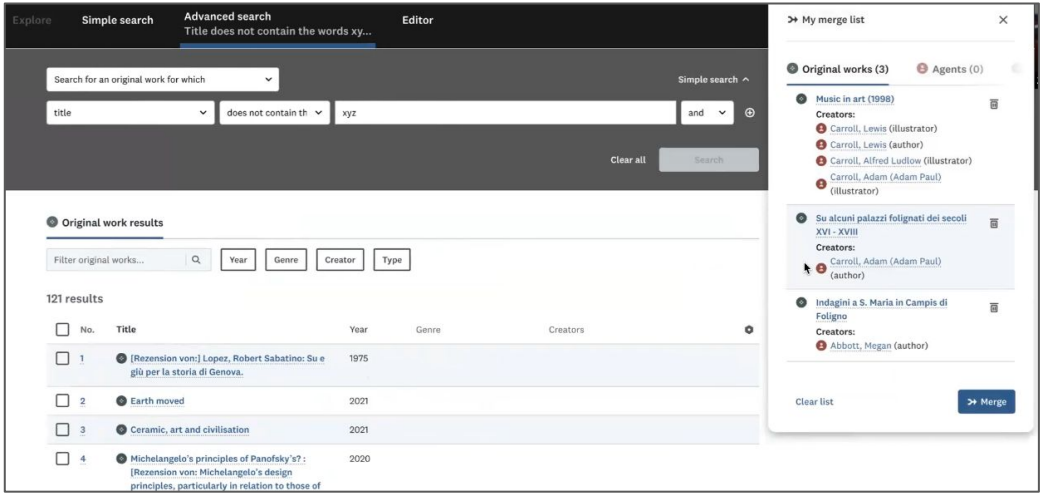
JCricket edit - add attribute



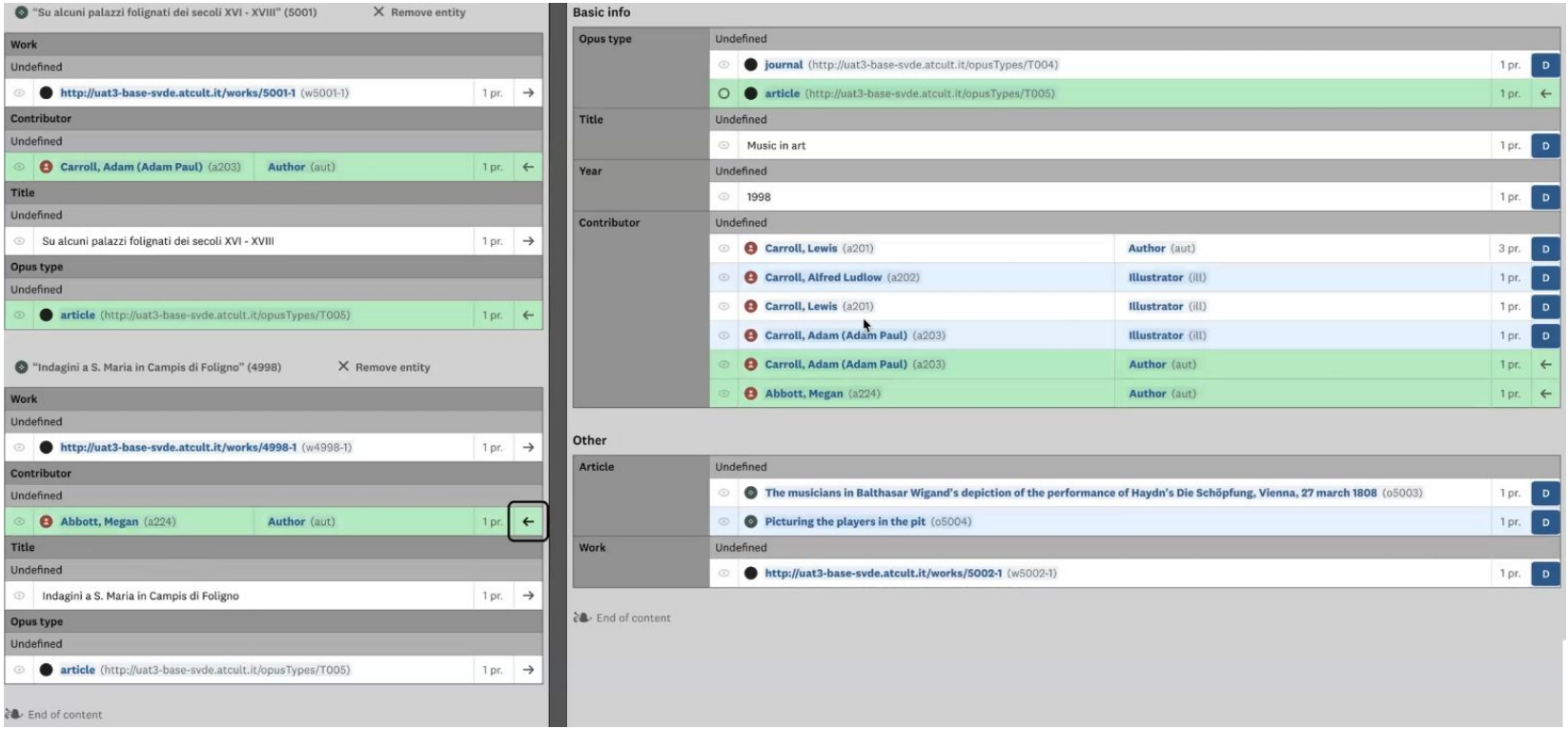


JCricket merge - select merged entities





JCricket merge - select properties



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://share-family.org
https://www.svde.org/about/about-share-vde

Thank you - please reach out for any question.

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https://svde.org