The Share Family initiative
Cooperation and interconnection
for a sustainable Linked Open Data ecosystem

DGBSDI-UNAM Forum Conectando conocimiento: datos vinculados en bibliotecas universitarias
30 de mayo de 2024

https://www.share-family.org/
https://wiki.svde.org
info@svde.org
Share Family background
Stepping stones

- **2016**: Share Catalogue online
- **2017**: Share-VDE prototype
- **2017-2019**: Share-VDE members' and LD4P members' data from MARC21 to BIBFRAME
- **2017-ongoing**: PCC data pool
- **2018**: Share Family embraces all LOD Platform initiatives
- **2019**: Share-VDE environment for library LOD
- **2019-2021**: Parsifal launch
- **2020**: LILLIT launch
- **2021**: Share-VDE 2.0 new Linked Data Management System and Entity Discovery Portal
- **2021-ongoing**: NatBib WG and shared discovery environment
- **2022**: Share Family - towards production
- **2023**: BNB in LOD progresses towards production (beta)
Developed and driven by 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.

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.

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.

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.

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.

The quality of data is guaranteed both through advanced technical processes and through collaborative data modeling, enrichment and sharing, handled collectively by member organizations.
The Share Family is a global community built on collaboration that brings together libraries, archives, museums, consortia and Library Service Platforms (LSPs) to join their knowledge in an ever-widening network of interconnected bibliographic data.

For further details please refer to https://www.share-family.org and the dedicated Share-VDE wiki section.
Share-VDE - Virtual Discovery Environment

https://www.svde.org
97,1 million bib. records
13 million aut. records

Berkeley Law Library - 600,000 bib.
Duke University - 5,5 million bib.
Library of Congress - 12 million bib. + 11 million aut.
National Library of Finland - 16 million bib. + 220,000 aut.
National Library of Norway - 2,3 million bib. + 2,3 million aut.
National Taiwan University Library - 6 million bib. + 300,000 aut.
New York University - 6 million bib.
Smithsonian Libraries and Archives - 900,000 bib.
Stanford University - 9 million bib.
University of Alberta / NEOS Library Consortium - 6,3 million bib.
University of Chicago - 12 million bib.
University of Michigan Ann Arbor - 1 million bib.
University of Pennsylvania - 6,5 million bib.
Yale University - 13 million bib.
Share Catalogue: Scholarly Heritage and Access to Research

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

Share Catalogue discovery portal
5 million records
National Bibliographies in Linked Open Data

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.

The linked open data BNB beta website is available at

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

5 million records
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/
5 million records
Parsifal - The URBE Integrated Catalogue in Linked Open Data

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

https://parsifal.urbe.it/parsifal/?l=en
3 million records
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-VDE and Share Family Working Groups**

Member institutions 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 Family Advisory Council and Working Groups:**

- Share Family Advisory Council
- SVDE Sapientia Entity Identification WG
- SVDE Authority/Identifier Management Services WG (currently on hold)
- SVDE Cluster Knowledge Base Editor WG (currently on hold)
- SVDE User experience/User Interface WG
- 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
Metadata management and output

- Original library metadata
  - entity resolution and clusterization
  - data enrichment and RDF conversion
    - POSTgres RDBMS
    - Solr index
    - Triple store
      - Entity discovery portal
      - API layer
      - Deliverables
Share Family – processes and output

DATA INPUT FROM INSTITUTIONS

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

LOD PLATFORM SERVICES

- Mapping
- URI 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)

+ [ Data Distribution ]
- 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)

+ [ Shared Data Management ]
- Editing of Share Family entities with JCricket
- Reuse of Share Family BIBFRAME data in local library systems
- Reuse of Share Family MARC representations in local library systems

+ [ Additional Services ]
- Authority control in MARC and BIBFRAME-based workflows
- SFI - Share Family Index registry of entity URIs
Entity discovery portal

Herman Melville in Share-VDE, with works by him, publications, works about him
Entity discovery portal

Moby Dick

1851 novel by Herman Melville. Academic theses/biography/fiction/novel.

Moby Dick, or The Whale is an 1851 novel by American writer Herman Melville. The book is the sailor Ishmael's narrative of the unfulfilled quest of Ahab, captain of the whaling ship Pequod, for vengeance against Moby Dick, the giant white sperm whale that hit off his leg on the ship's previous voyage. A contribution to the literature of the American Renaissance, Moby Dick was published in three versions, was a commercial failure, and was out of print at the time of the author's death in 1891. Its resolution as a Great American Novel was established only in the 20th century, after the 1919 centennial of its author's birth. William Faulkner said he wished he had written the book himself, and D.H. Lawrence called it "one of the strongest and most wonderful books in the world" and "the greatest book of the sea ever written". Its opening sentence, "Call me Ishmael", is among world literature's most famous - Wikipedia

This is part of the series Wright American Fiction, Wright American Fiction, 1851-1876, Digitized e-books collection, Writings of Herman Melville, American Fiction, 1774-1920, Collectors' library, Wright American fiction, 1861-1876; V. 2, First Avenue Classics (first Series). Modern library, Verdisches Bibliothek, Künstlergeschichte illustrierte Malerei, Kommedien, Klasyka, które klasyczne dzieła, Exlibris, Poręcz podać o druku, y zmiany w nim, kłopot, Aventijskklassiks, Verdensy skvvlavna pynestav, Storie di mond, Shijie wen xue ming zhu zhe cang ben, Great books of the Western world, First Avenue classics, Colecção Folio clasique, Rivelatore editio, Atticus classics, Arno Press classic, Verdisches bibliothek, Bannan & Noble classics, Oxford world's classics (Oxford University Press), Project Gutenberg, Complete works, classics critical edition, Library of America paperback classics, Grandes escritores del siglo XIX, Ramon Llull, Rielhalden, Oskar Fischota, Oxford University Press, New edition.


More options...

Moby Dick work in Share-VDE
Entity discovery portal

API layer

This section provides a comprehensive collection of documents detailing the various APIs integral to the Share Family ecosystem. These APIs serve platform, facilitating seamless integration, data retrieval, and interaction with Share Family services and resources.

Please contact info@svde.org for any additional information.

Contents [hide]

1. General
2. REST
3. GraphQL
4. SPARQL
Deliverables

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.

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.
Metadata policies

Share-VDE Open Metadata Policy

Approved by the Share-VDE Advisory Council on March 15th, 2023

Share-VDE strives to encourage open access to data, and support diversity by freely sharing information. We are committed to making our metadata as open as possible to enhance the discovery of library and cultural heritage resources and allow users to repurpose metadata with clearly defined license conditions.

- Share-VDE data, including participant data hosted by Share-VDE may be used under an CCO license unless expressly stated otherwise.

- Listed below are tenants adhering to other open data policies:
  - PCC Data Pool: CC BY-NC 4.0

If using data from one of these tenants, one must attribute the source of the metadata as outlined in the appropriate policy.

Share-VDE data are hosted and maintained by supported systems, which also benefit from the network effects of a data quality community. The Share-VDE Open Metadata Policy ensures access to Share-VDE data to the wider community. The Share-VDE Open Metadata Policy does not give access to tools and services developed by the Share-VDE membership.

For further information on Share-VDE please see our Executive Summary.

Sapientia Entity Identification WG

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

Among the latest outcomes:

- definition of the SVDE Ontology; see also Jim Hahn’s presentation at the BFWE 2023;
- svde:Work is subclass of bf:Work → this ensures interoperability;
- 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.
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](https://doi.org/10.5281/zenodo.8332350)
Share-VDE Ontology model
Share-VDE Ontology re-use

While the ontology supports the discovery functionality of Share-VDE and the Share family search systems, it may be re-used in any system requiring a bridge among BIBFRAME, IFLA LRM and RDA.
The Share-VDE ontology achieves interoperability among the major bibliographic models by asserting that bibliographic entities are described by attribute sets.

The **attribute set modeling** approach is a departure from the conceptual modeling that has informed the development of nearly all modern linked data models.
Attribute set modeling

The **svde:Opus** is a parallel class to the IFLA LRM Work and the RDA Work. The set of attributes which comprise svde:Opus parallel those attributes in the IFLA LRM Work and the RDA Work.

The **svde:Work** is a subclass of the BIBFRAME Work. The set of attributes which comprise the svde:Work parallel those attributes in the ILFA-LRM Expression and the RDA Expression.
Share-VDE Ontology takeaways

Direct entity mapping of the familiar and ubiquitous conceptual approach was not utilized to achieve Share-VDE ontology concordances – rather, minimal ontological commitment is made by observing the set attributes that define an entity.

Each linked data model, be it RDA, BIBFRAME or IFLA LRM, has a useful perspective, and each of these contribute to the task of bibliographic description.
Data retention policies and item data treatment

https://id.loc.gov/vocabulary/preservation.html
The Entity Management System
The data lake as a source of **living data**

ongoing automatic metadata updates

Sapientia Cluster Knowledge Base

manual data curation
The editor: collaboratively manage entity metadata

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
Work together to curate your data

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
Facing the future together

Facilitate information exchange and collaboration with other communities, cross-reference between resources

Transform catalogs in research tools providing structured access and visibility to research in original languages in all disciplines

Improve data publication, data analysis and reuse in other projects

Open up a new level of international cooperation to maintain the growing wealth of information, while preserving local practices

Serve as an authoritative data source, contribute to an ecosystem where data modeling, enrichment and sharing are handled collectively
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://share-family.org  
https://wiki.svde.org/
Thank you!

Tiziana Possemato tiziana.possemato@atcult.it
Anna Lionetti anna.lionetti@casalini.it

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