Linking entities for connecting content
Facilities of linked open data
WHY & WHAT
Knowledge is shared by member libraries

Why Share…

- supports libraries, archives and museums in the transition from traditional cataloging environments to innovative models based on entity management
- exploits the potential of linked open data to connect and present library information in enriched, integrated and dynamic ways
- improves visibility of all resources, including those that may previously have remained hidden in a traditional catalogue
Knowledge is shared by member libraries

Why Share...

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

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

Enables libraries, archives and museums to keep pace with web technology as it evolves.
The options for your library

### Share Family Components

<table>
<thead>
<tr>
<th>Technology</th>
<th>LOD Platform Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advanced API layer</strong></td>
<td><strong>Advanced entity model</strong></td>
</tr>
<tr>
<td>- GraphQL technology with advanced architecture and search API layer</td>
<td>- Advanced 4-layered entity model, based on BIBFRAME 2.0 and interoperable with multiple schemes (BIBFRAME, ILA-URN etc.)</td>
</tr>
<tr>
<td><strong>Triple store indexing</strong></td>
<td><strong>Integration with other systems</strong></td>
</tr>
<tr>
<td>- Linked data descriptions created from the original MARC records and the clusters of entities in the CKB are published on a triple store and can be queried through SPARQL endpoint</td>
<td>- Development of APIs for interoperability and cooperation with third parties (e.g., LDAP - Linked Data for Production)</td>
</tr>
<tr>
<td><strong>J.Cricket Editor</strong></td>
<td><strong>Discovery Portal 1.0</strong></td>
</tr>
<tr>
<td>- J.Cricket editor for updating and modifying linked data entities</td>
<td>- Interface for the standard discovery system</td>
</tr>
</tbody>
</table>

### Applications

<table>
<thead>
<tr>
<th>Application 1</th>
<th>Application 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discovery Portal 1.0</strong></td>
<td><strong>Discovery Portal 2.0</strong></td>
</tr>
<tr>
<td>- Advanced entity discovery system based on BIBFRAME</td>
<td>- Customised UI (skin)</td>
</tr>
<tr>
<td>- Integration with local APIs</td>
<td>- Site mapping with additional meta-tagging</td>
</tr>
<tr>
<td>- Data conversion to Schola.org</td>
<td>- Deliverable D1</td>
</tr>
<tr>
<td>- Deliverable D2</td>
<td>- Deliverable D3</td>
</tr>
<tr>
<td>- Deliverable D3</td>
<td>- Deliverable D4</td>
</tr>
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</table>

### Deliverables

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>The library catalogue is converted according to BIBFRAME 2.0 (including additional vocabularies and ontologies as needed)</td>
</tr>
<tr>
<td>D2</td>
<td>The library receives the file from the Cluster Knowledge Base with the clusters of linked data entities including original Share URIs, URIs from external sources and variant forms</td>
</tr>
<tr>
<td>D3</td>
<td>The original library records are converted to BIBFRAME 2.0 (including other vocabularies and ontologies as needed), enriched with URIs from external sources and delivered to the library</td>
</tr>
<tr>
<td>D4</td>
<td>The MARC records from the library catalogue are enriched with original Share URIs and URIs from external sources, and published on the discovery portal</td>
</tr>
</tbody>
</table>
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.
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

Entity Discovery Portal
Share portal - The entity based portal to consume linked data

Andrea Camilleri


Andrea Camilleri was an Italian writer. - Wikipedia

More options

196 results

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Year</th>
<th>Genre</th>
<th>Creators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rete di protezione</td>
<td></td>
<td>Fiction/Novel</td>
<td>Andrea Camilleri (author)</td>
</tr>
<tr>
<td>2</td>
<td>Novels</td>
<td></td>
<td>Fiction/Novel</td>
<td>Andrea Camilleri (author)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Salvatore S. Nigro (other)</td>
</tr>
<tr>
<td>3</td>
<td>Forma del acqua</td>
<td></td>
<td>Fiction</td>
<td>Andrea Camilleri (author)</td>
</tr>
<tr>
<td>4</td>
<td>Essays, Selections</td>
<td></td>
<td></td>
<td>Andrea Camilleri (author)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lucio Caracciolo (editor)</td>
</tr>
<tr>
<td>5</td>
<td>Arlecchino e della sienitra</td>
<td></td>
<td>Fiction</td>
<td>Andrea Camilleri (author)</td>
</tr>
<tr>
<td>6</td>
<td>Età del dubbio</td>
<td></td>
<td>Fiction/Novel</td>
<td>Andrea Camilleri (author)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stephen Sartarelli (other)</td>
</tr>
<tr>
<td>7</td>
<td>Memoirs, Selections</td>
<td></td>
<td>Autobiographies/Biography</td>
<td>Andrea Camilleri (author)</td>
</tr>
</tbody>
</table>
Entity Discovery: the value of external sources to enrich data
Share portal - The skin to enhance the identity of the single library

https://bl.natbib-lod.org/ian-mcewan-a771652950542530/original-works-by
Enhanced Authority Services

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

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

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

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

**Integration with other systems**

- Development of APIs for interoperability and cooperation with third parties (e.g. LD4P - Linked Data for Production)
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.

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.

SERVICE

Triple store indexing

- Linked data descriptions created from the original MARC records and the clusters of entities in the CKB are published on a triple store and can be queried through SPARQL endpoint
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.
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, i.e., 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.
Share-VDE: the Domain Model
The Entity as a “Prism”
Share-VDE Cluster: the Prism
## Properties: Attributes, Relationships, Links

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
<th>Provenance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>title</strong></td>
<td>Alice in wonderland</td>
<td><strong>Library Stanford</strong></td>
</tr>
<tr>
<td><strong>titleAlternative</strong></td>
<td>Alice's adventures under ground</td>
<td><strong>Library Stanford</strong></td>
</tr>
<tr>
<td><strong>titleAlternative</strong></td>
<td>Journeys in Wonderland</td>
<td><strong>National Library of Norway</strong></td>
</tr>
<tr>
<td><strong>sameAs</strong></td>
<td><a href="http://dbpedia.org/resource/Alice%27s_Adventures_in_Wonderland">http://dbpedia.org/resource/Alice%27s_Adventures_in_Wonderland</a></td>
<td><strong>Dbpedia</strong></td>
</tr>
<tr>
<td><strong>sameAs</strong></td>
<td><a href="https://www.wikidata.org/wiki/Q189875">https://www.wikidata.org/wiki/Q189875</a></td>
<td><strong>Wikidata</strong></td>
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<tr>
<td><strong>sameAs</strong></td>
<td><a href="https://data.bnf.fr/ark:/12148/cb358500385#about">https://data.bnf.fr/ark:/12148/cb358500385#about</a></td>
<td><strong>bnf</strong></td>
</tr>
</tbody>
</table>

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

**A link** is a connection between a Share-VDE Prism and an external reference.

**A relationship** is a connection between two Share-VDE Prisms.
Prism: Record-Level Provenance

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

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

Each Share-VDE cluster maintains a link to the records it originated from.
Sapientia Edit API: JCricket
JCricket 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 J.Cricket allows to operate locally or centrally, creating a collaborative group that does not forget local specificities.
In a Nutshell

Share-Virtual Discovery Environment is a library-driven initiative which brings together, in a shared discovery environment, the bibliographic catalogues and authority files of a growing number of leading academic and national libraries from across North America and Europe.
The Big Picture: from Genesis to Edit

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

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

Data is mainly searchable through the entity discovery portal.

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

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

Third-party Applications

Edit API

Search API
JCricket: Edit Scenarios

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

Lewis Carroll

is author of

[https://svde.org/opuses/1827349](https://svde.org/opuses/1827349)

[https://svde.org/opuses/920302](https://svde.org/opuses/920302)

**Merge**: multiple prisms are merged into one

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

**Split**: a prism is split into multiple prisms

Several entities have been (wrongly) clustered into one.

Properties can be:
- attributes
- relationships
- links

- attributes
- relationships
- links
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.
Share Family and Share-VDE liaisons

PCC liaison: Nancy Fallgren, NLM-NIH

PCC BIG group

IFLA Bibliography Section liaison: Maud Henry, KBR - Royal Library of Belgium

National Bibliographies

SHARE Catalogue liaisons: Roberto Delle Donne and Claudio Forziati, Università degli Studi di Napoli Federico II

Kubikat-LOD liaison: Cora Molloy, Max-Planck-Institute
BIBFRAME communities engagement - Various BF flavors
Get involved!

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

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

Get in touch with us to find out more about how the Share family can help your library:
- info@svde.org
- https://wiki.svde.org/
- https://www.svde.org/about/about-share-vde
"When someone asks: what is Share-VDE? The answer that comes to mind is: Share-VDE is many things together" [*]

[*] Cit. Beth Picknally Camden (University of Pennsylvania Libraries)
Share Family news and updates

Last edited 22 days ago by Anna Lionetti

Find out the latest news about the Share Family of initiatives and the most relevant updates on the developments going on within the various branches of the family.

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2 Share-VDE and Share Family periodic update (May 2022)
3 Share-VDE and Share Family New Year update (January 2022)
4 Share-VDE and Share Family periodic update (October 2021)
5 Share-VDE periodic update (November 2020)
6 Share-VDE achievements in 2019

Share-VDE and Share Family Summer and Autumn 2022 events (September 2022)

September and the coming autumn are continuing a rich set of conferences where Share-VDE and the wider Share Family community will contribute with presentations and speeches. As you might already know, on September 20th – 21st the BIBFRAME Workshop in Europe will take place in Budapest, with a pre-meeting on Monday 19th specific to SVDE.

After visiting Frankfurt, Florence and Stockholm, and two online editions, the 2022 workshop will be a free hybrid event, hosted by the National Széchényi Library. This year’s focus will be on BIBFRAME in operation, new developments and interoperability.

The aim of the BIBFRAME Workshop in Europe is to be a forum for sharing knowledge about planning, practice and production relating to BIBFRAME implementation. The intention is to bring together the community working or interested in the transition from MARC to Linked Data.
Thank you

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