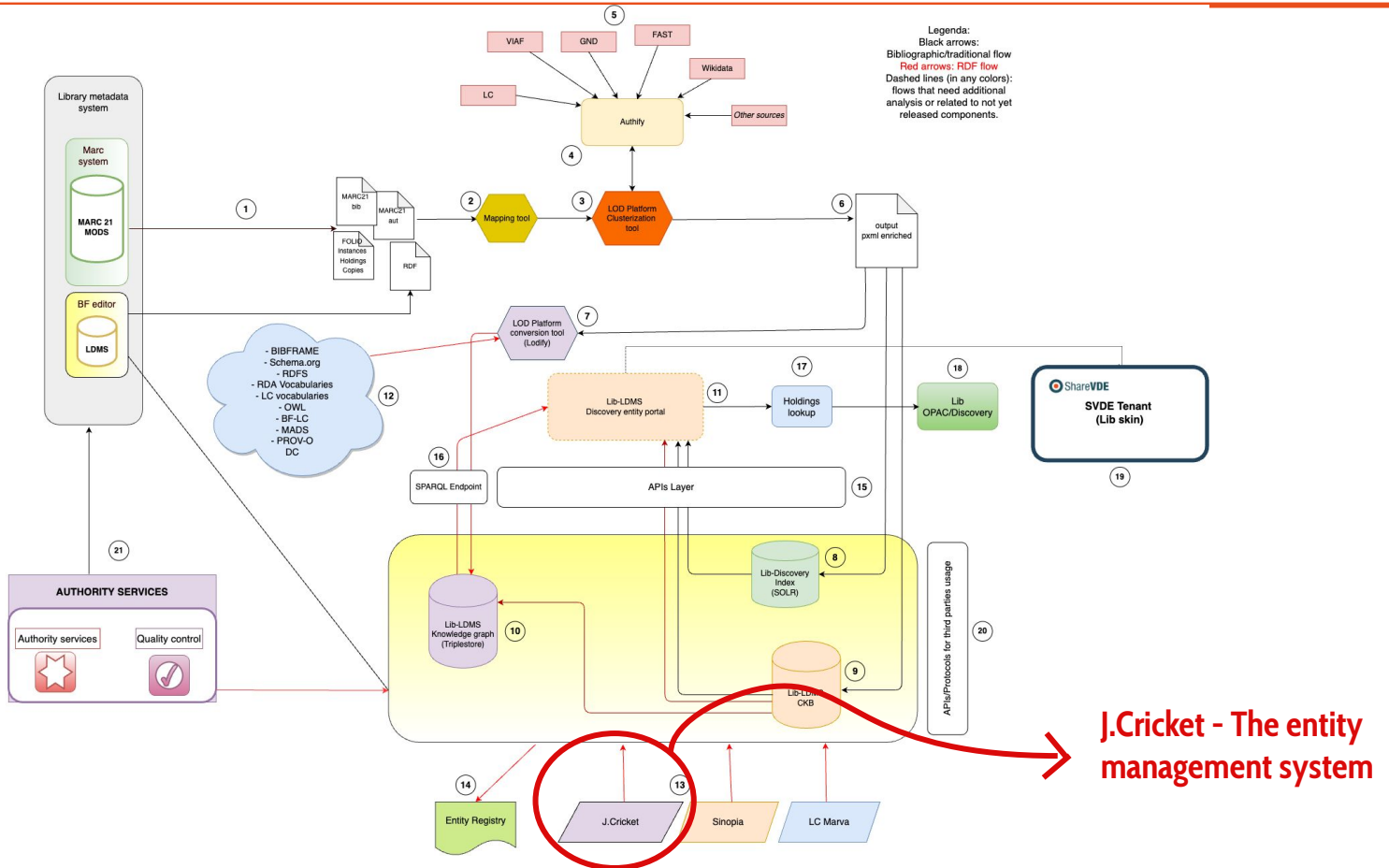
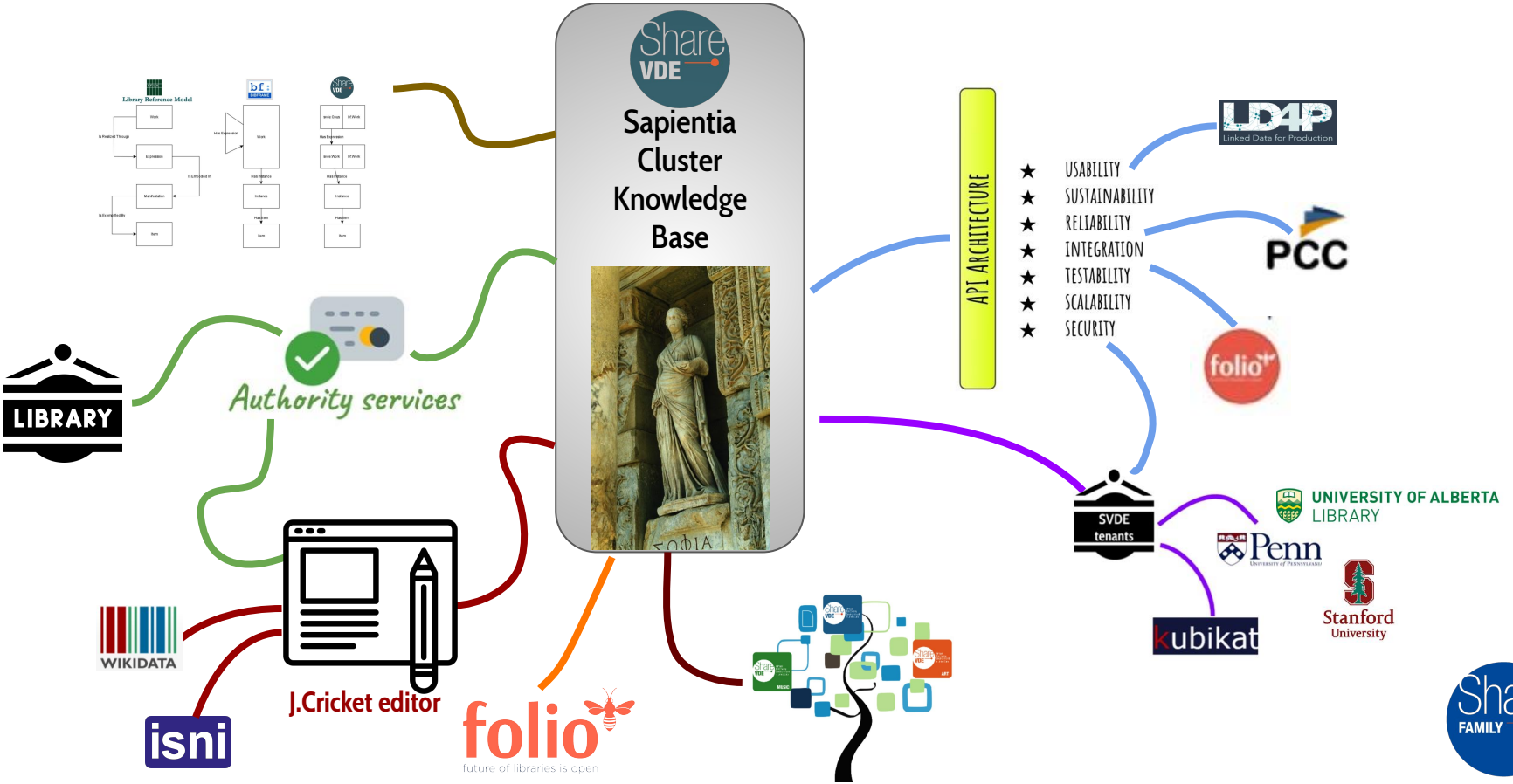
J.Cricket entity editor

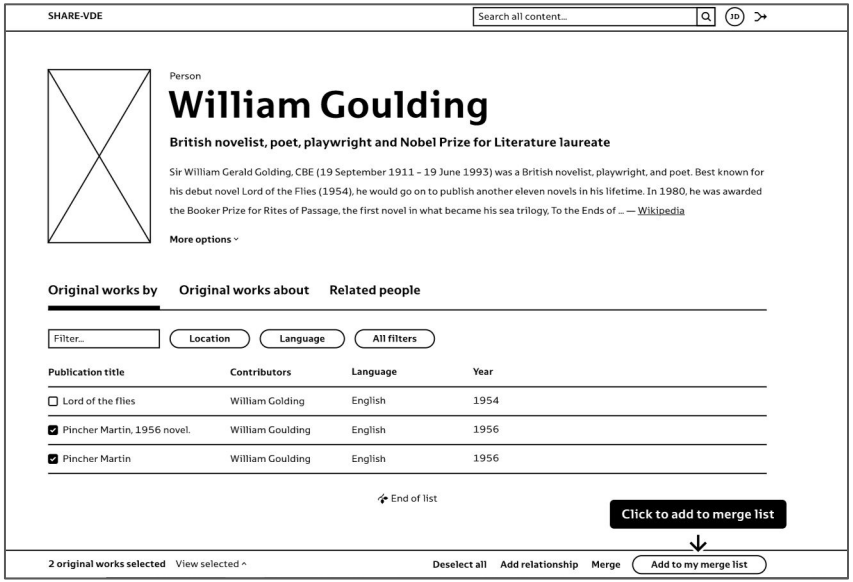
Share-VDE data flow



Towards the Share-VDE Sapientia CKB ecosystem



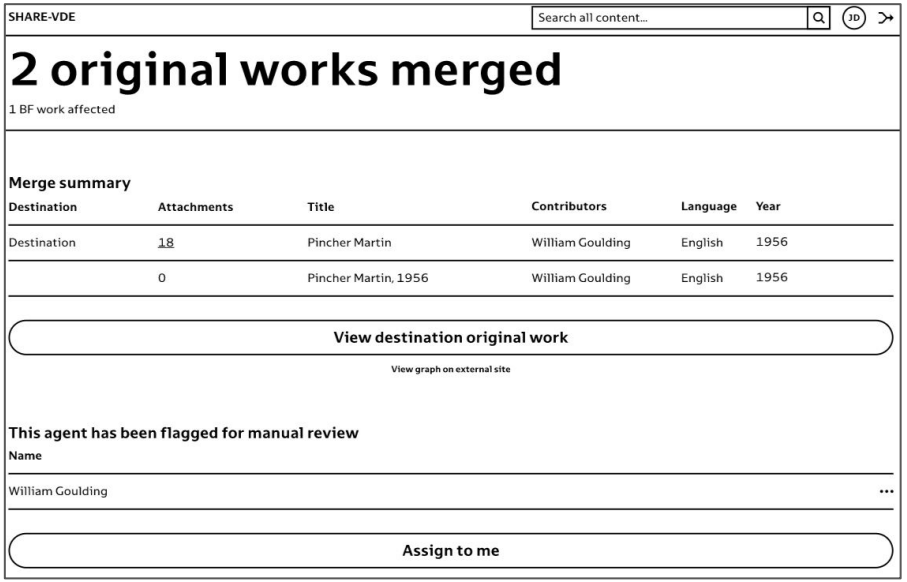
From linked data publication to linked data editing



The Share family platform is evolving from a discovery environment that converts traditional MARC data of libraries in Linked Open Data to an interactive authoritative source providing real services for libraries. This transition is happening through the editor named J.Cricket, that is the new application dedicated to the editing of the clusters of data in a collaborative and integrated environment.

From linked data publication to linked data editing

The editing tool J.Cricket will allow for editing the SVDE Cluster Knowledge Base, Sapientia, enabling several actions on the clusters (entities) saved in the SVDE database, including creation, modification, merge of clusters of works, of agents etc.
J.Cricket will extend authority capabilities through the integration with external data sources such as Wikidata and ISNI.



J.Cricket 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

Edit - Overview

The **Edit Cluster** operation is available for **J.Cricket editors** to add, remove and amend **attributes**, **relationships** and **links** belonging to a single Entity.

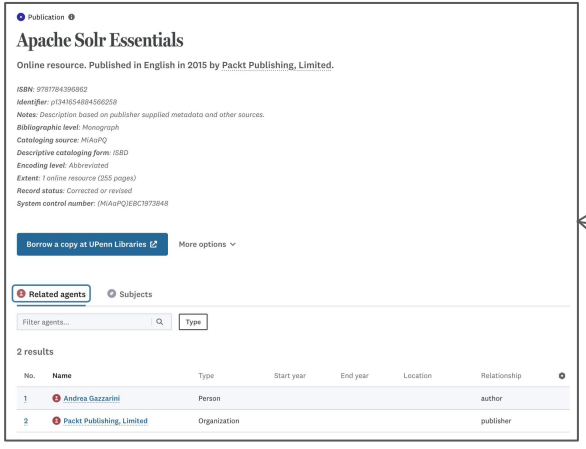
If the user is a **basic editor**, only the properties coming from the **user's provenance** will be **editable.** If the user is an **advanced editor**, the **whole Prism** (meaning all properties) will be **editable.**

We will show the use cases related to this scenario, observing the client interaction with the Share-VDE server in relation to editing **one property at a time** (the recommended way to implement the edit feature).

However, the server supports submitting changes for multiple properties at the same time as well, with some limitations for transient values broadcast.

Edit a cluster: create/edit/delete

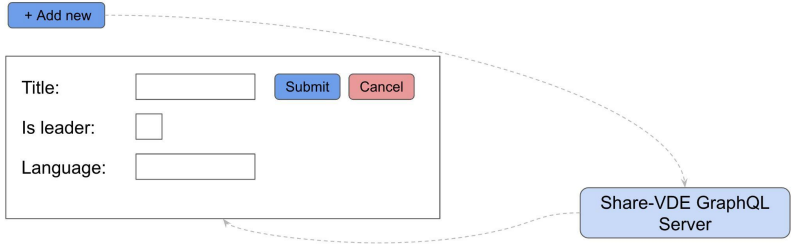
A user with the "**editor**" role enters an entity's page.

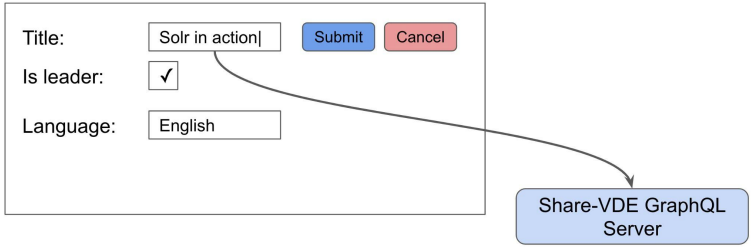


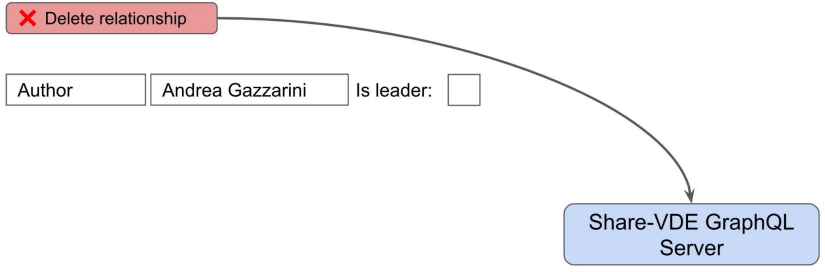
Create new attribute/relationship

Edit an attribute/relationship

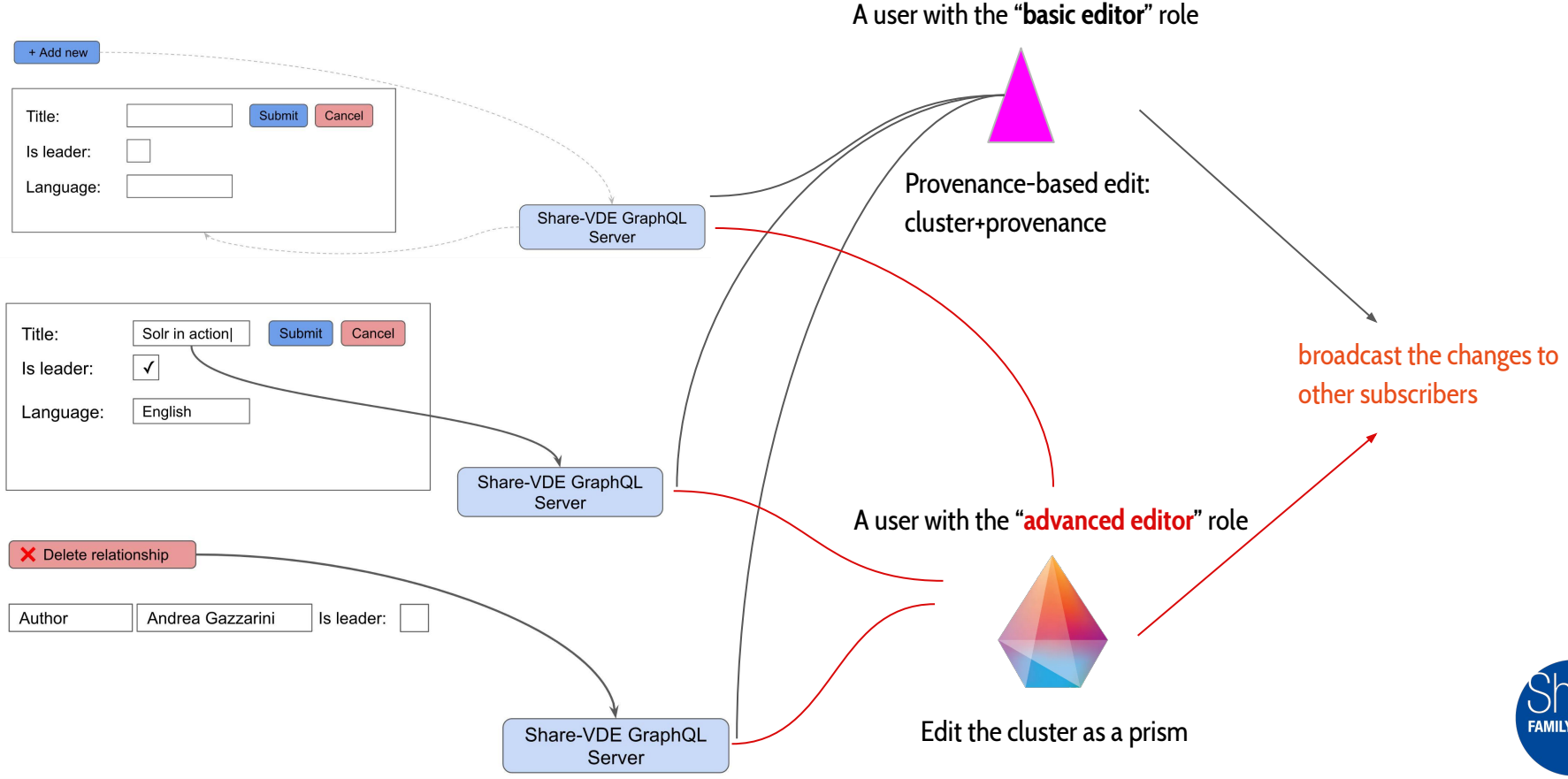
Delete an attribute/relationship





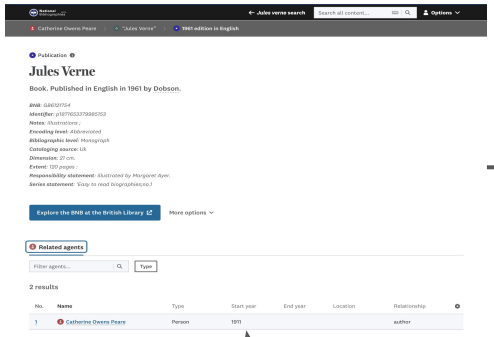


Edit a cluster: create/edit/delete



Edit - An editor enters an Entity's page

A user with the "editor" role enters an entity's page.

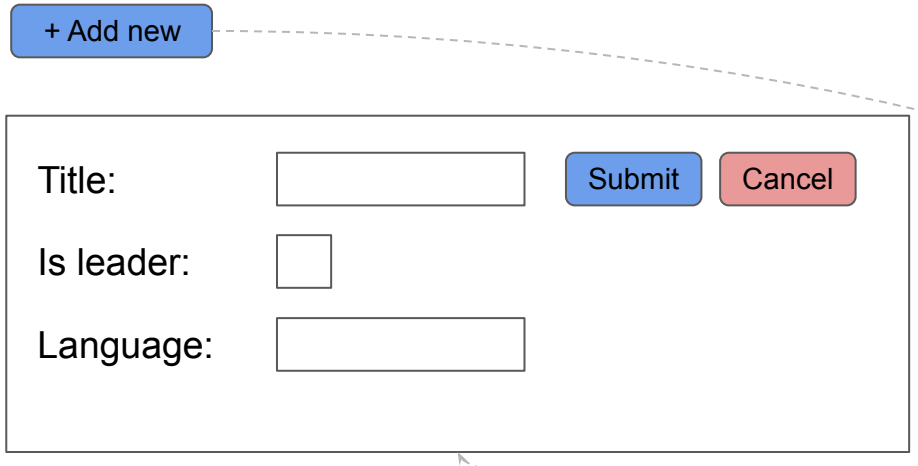


The application establishes a GraphQL subscription to Share-VDE to keep the page updated on Entity's changes (status, attributes, relationships, links).

When the Entity changes due to someone else modifying it, the change is notified to our user's browser as well, and the application updates the related field.

Edit - An editor adds a new property (1 / 4)

The user adds a new attribute (attribute, relationship or link)



Initially, the client application uses the Dictionary API to request the Entity's Dictionary description, so to know what the Entity does support in terms of properties (attributes, relationships, links). This will guide the client in building a consistent UI.

1. The application sends a mutation to the GraphQL server notifying a new (still transient) property has been added.

Share-VDE GraphQL Server

2. No persistence is made by the server, as the change is still transient, but it responds with the empty attribute containing the server-assigned identifier.

3. The client must not let the user enter values in the new field before getting that response from the server.

Edit - An editor adds a new property (2 / 4)

The user starts making changes to the new attribute.

The mechanics, despite some intrinsic differences between the property types, are the same for relationships and links as well.

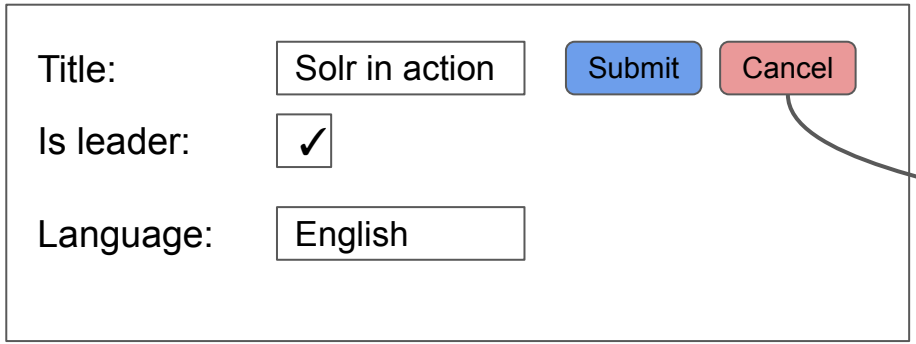
At a certain time interval (e.g. 1s), a mutation is sent to the GraphQL server to let it broadcast the changes to other subscribers. On the first mutation sent, the server switches the cluster+provenance binomial status to “EDIT”.

Share-VDE GraphQL Server

No persistence is made by the server, as the change is still transient.

Edit - An editor adds a new property (3 / 4)

The user may now hit the field's **Cancel** button



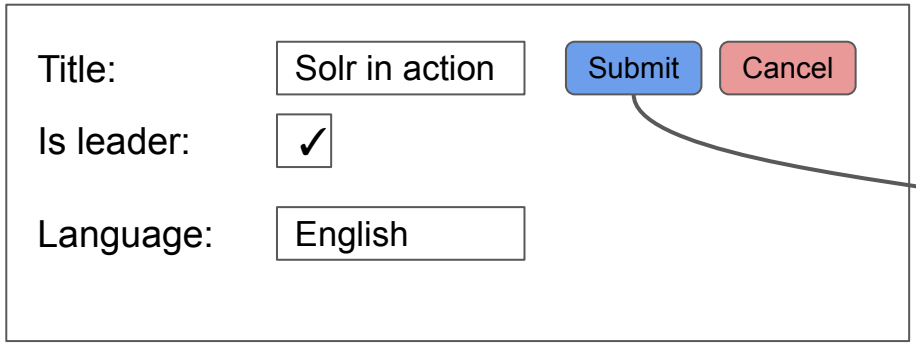
A mutation is sent to the GraphQL server to set the previous value back and broadcast the reset to subscribers.

Share-VDE GraphQL Server

If no other user with an overlapping provenance is editing the Prism (a.k.a. Cluster), the Prism' status shifts back to "SAVED"

Edit - An editor adds a new property (4 / 4)

The user can now hit the field's **Submit** button



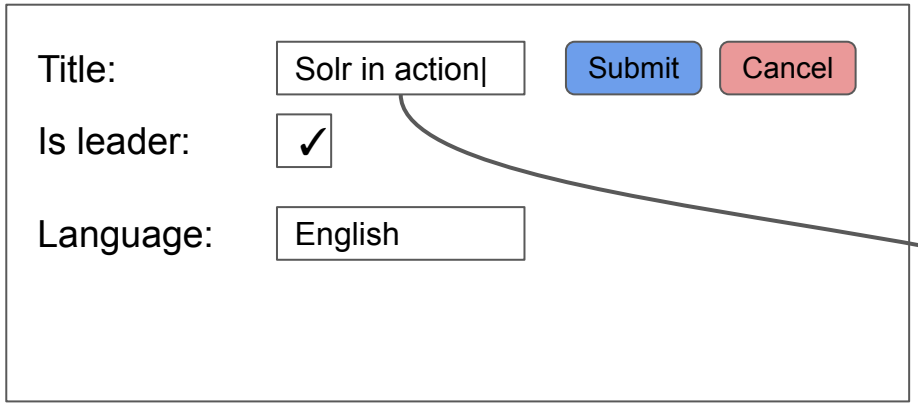
The client sends a mutation to make the server persist the change.

Share-VDE GraphQL Server

If no other user with an overlapping provenance is editing the Prism (a.k.a. Cluster), the Prism' status is updated to "SAVED"

Edit - A user edits an existing property (1 / 3)

The user edits a property.



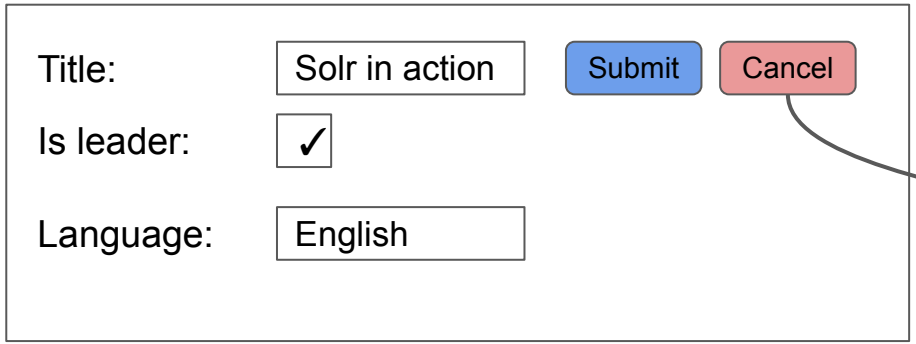
At a certain time interval (e.g. 1s), a mutation is sent to the GraphQL server to let it broadcast the change to other subscribers. On the first mutation sent, the server switches the cluster+provenance binomial status to “EDIT”.

Share-VDE GraphQL Server

No persistence is made by the server, as the change is still transient.

Edit - A user edits an existing property (2 / 3)

The user may now hit the field's **Cancel** button



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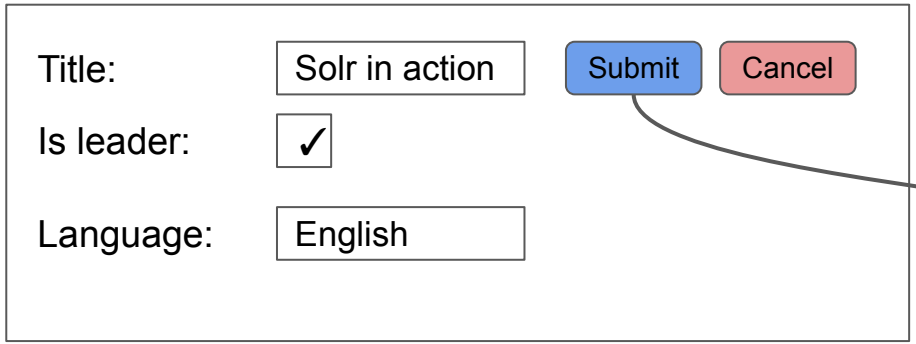
Share-VDE GraphQL Server

If no other user with an overlapping provenance is editing the Prism (a.k.a. Cluster), the Prism' status shifts back to "SAVED"

Edit - A user edits an existing property (3 / 3)

The user can now hit the field's **Submit** button



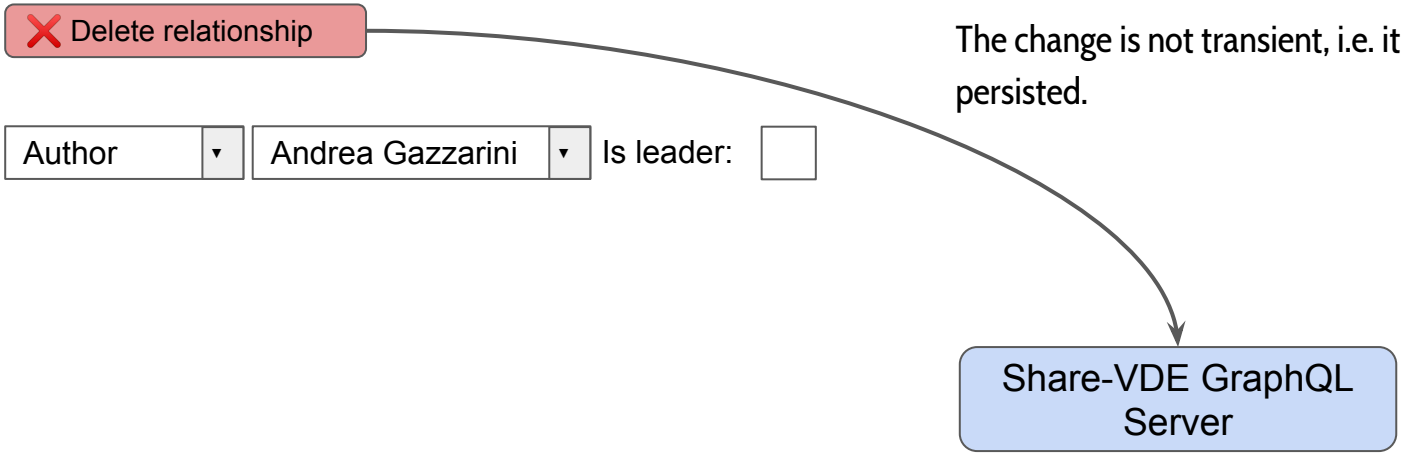
The client sends a mutation to make the server persist the change.

Share-VDE GraphQL Server

If no other user with an overlapping provenance is editing the Prism (a.k.a. Cluster), the Prism' status is updated to "SAVED"

Edit - An editor deletes a property

The user deletes a property.



The GraphQL server persists the change, the mutation triggers the change broadcast to other subscribers.

The Prism status is brought back to "SAVED".

Merge - Overview (1 / 2)

The **Merge** Clusters operation is available for users with the "**advanced editor**" role to convey **one or more** source **Entities into one**, picking the source Cluster(s) properties that must be ported.

The user picks **two or more Clusters** to merge, then designates the **destination** one. The remaining Clusters are automatically marked as "**source**". Such **destination** or **source** traits are sealed by dedicated statuses "MD" (Merge Destination) and "MS" (Merge Source).

After that, the user can choose which properties to copy to the destination Entity.

Merge - Overview (2 / 2)

After picking all the properties to put in the destination Cluster, the user **confirms the merge** and contextually **requests a review action** by **designating** a **reviewer.** The destination Cluster shifts its status to “RN” (Review Needed).

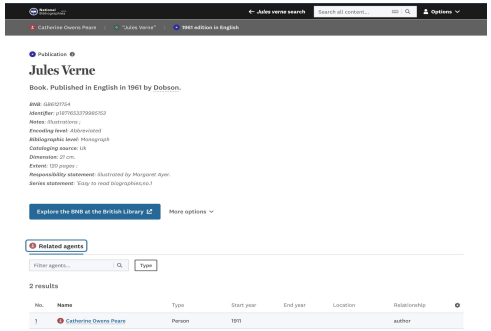
The reviewer may **approve** the merge; at that point the destination Cluster shifts its status to “SV” (**Saved**), while source Clusters acquire the status “IN” (**Invalidated**).

Invalidated Clusters will remain in the system, but they won’t be indexed anymore, i.e. they will not appear in search results.

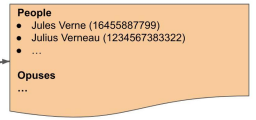
The reviewer may even **reject** the merge; in that case the destination cluster shifts back to the “MD” status; the reviewer provides some **rejection notes** to guide the editor.

Merge one or more clusters

A user with the “**advanced editor**” role enters an entity’s page.

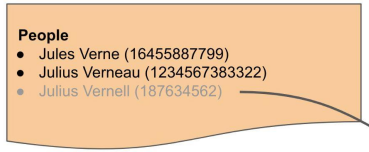


Add entity to Merge list



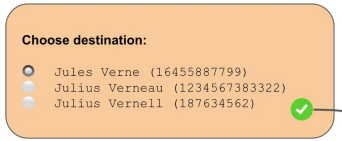
Share-VDE GraphQL Server

Remove an entity to Merge list



Share-VDE GraphQL Server

Designates the destination Entity and **confirms** the Merge List



Share-VDE GraphQL Server

Approve/Reject the Merge

The designated **Reviewer** is notified about the assignment.

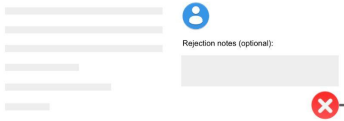
The designated **Reviewer** analyzes the merge result and decides to **approve** or **rejects** it

Share-VDE GraphQL Server

The **Reviewer** analyzes the merge result and decides to **approve** it

Share-VDE GraphQL Server

The **Reviewer** analyzes the merge result and decides to **reject** it

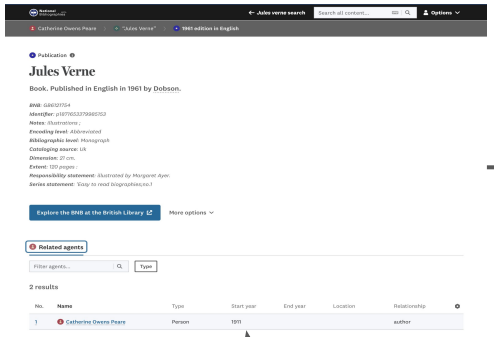


Share-VDE GraphQL Server

The Editor gets **notified** about the rejection

Merge - An editor enters an Entity's page

A user with the "advanced editor" role enters an entity's page.



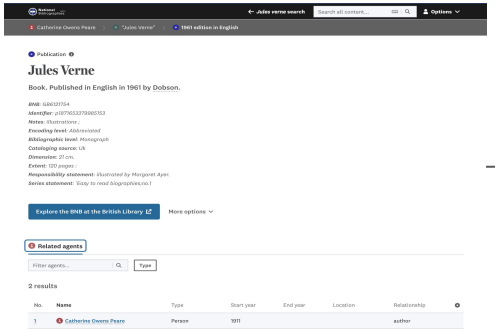
The application establishes a GraphQL subscription to Share-VDE to keep the page updated on Entity's changes (status, attributes, relationships, links).

Share-VDE GraphQL Server

When the Entity changes due to someone else modifying the same Entity, the change is notified to our user's browser as well, and the application updates the related field.

Merge - An Entity is added to the Merge List

While **browsing** entities, the user **adds them** to the **Merge List**



People
- Jules Verne (16455887799)
- Julius Verneau (1234567383322)
- …

Opuses
…

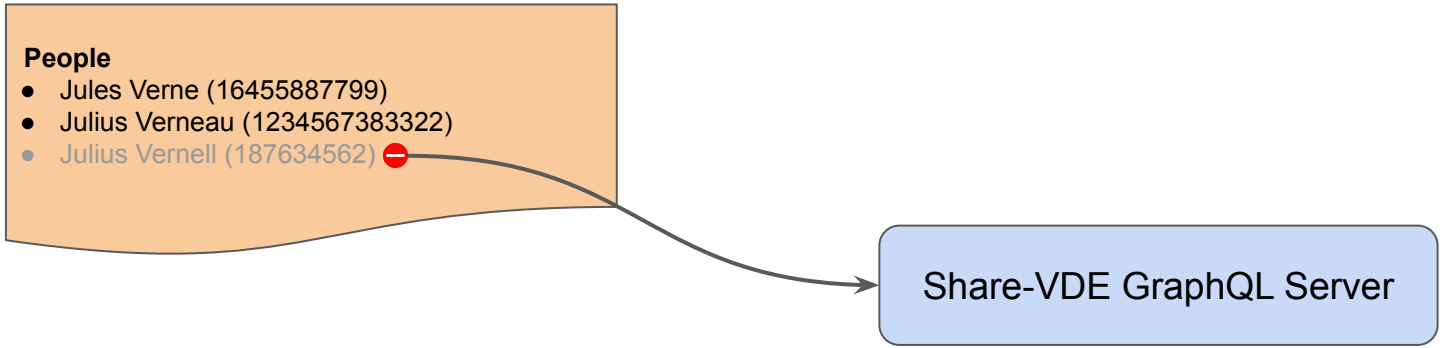
The Merge List is **subdivided** by **Entity** type.
It works just like a shopping cart.

Share-VDE GraphQL Server

A **mutation** is sent to inform the server about the action, so to let it set the entities status to “ML” (**Merge List**).

Merge - Entity is removed from the Merge List

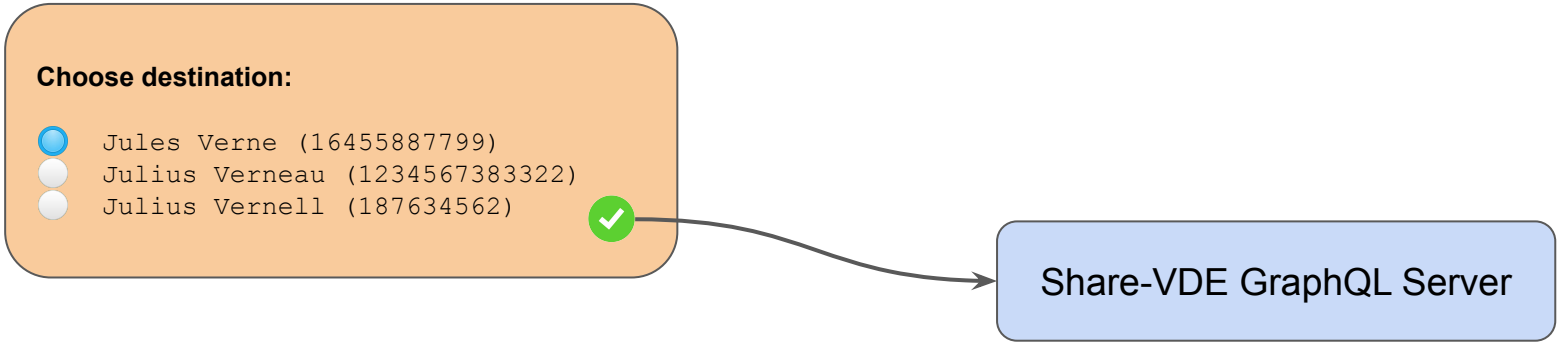
While looking at the Merge List, the user decides to **remove** an Entity from it.



A **mutation** is sent to inform the server about the action, so to bring back the Entity's status to "SV" (Saved).

Merge - The user confirms the Merge List

When all of the Entities of interest are in the Merge List, the user **designates the destination** Entity and **confirms** the Merge List

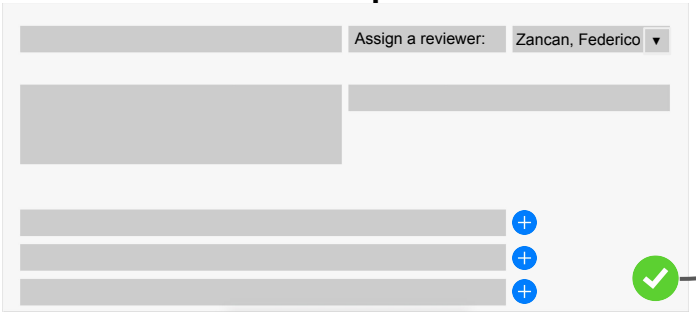


A **mutation** is sent to inform the server about the action.

All the **non-destination** Entities are given the "MS" (**Merge Source**) status.
The **destination** Entity acquires the "MD" (**Merge Destination**) status.

Merge - Properties are added to the destination

The user chooses what properties coming from source Entities must be **added** to the **destination**, **designates** a **reviewer**, and then **confirms** the **operation**



Share-VDE GraphQL Server

A **mutation** is sent to the server, containing all the new properties for the destination Cluster.

The destination Cluster is given the "RN" status (**Review Needed**).

The designated reviewer is notified about the assignment.

NOTE: While adding "foreign" properties to the destination entity, the user has the option to mark them as the leader form.

This operation will override any previous leader form for the same property already present in the destination.

Merge - The Reviewer approves the Merge

The designated **Reviewer** analyzes the merge result and decides to **approve** it

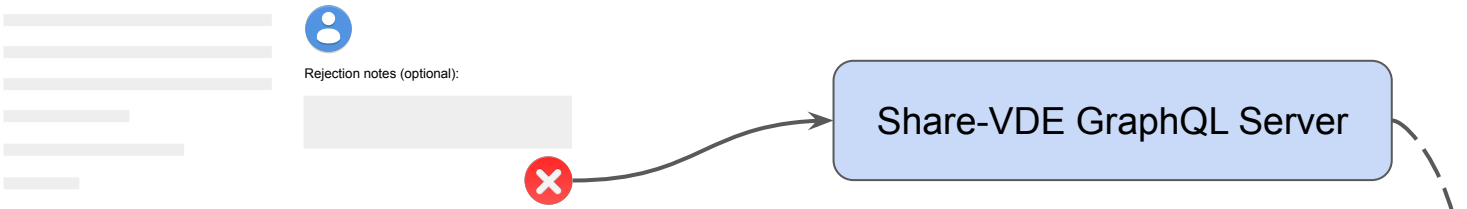
A mutation is sent to the server, changing the destination Entity's status to "SV" (**Saved**)

Source Entities pass from the "MS" (**Merge Source**) to the "IN" (**Invalidated**) status. Although they **remain** in the system, and their **URIs** are still **valid**, they are **not** part of **search results** anymore.

If visited, their pages show off in a greyed-out fashion.

Merge - The Reviewer rejects the Merge

The designated **Reviewer** analyzes the merge result and decides to reject it



A **mutation** is sent to the server, changing the destination Entity's status to "MD" (**Merge Destination**) and registering the **rejection notes** the Reviewer wanted to provide as additional information or guidelines for the editor.

The Editor gets **notified** about the rejection.

He/she goes back to adding/removing new properties to the destination Entity, amends what's needed and resubmits the review request.

Split - Overview (1 / 2)

The **Split** Cluster operation is available for users with the "**advanced editor**" role to let them **move** one or more **properties** between two clusters.

The user picks the "**Giver**" and "**Receiver**" Clusters. The giver Cluster takes the "SG" (**Split Giver**) status, while the receiver takes the "SR" (**Split Receiver**) status.

The user can then **choose** the **giver's properties** to be moved to the **receiver**.

When satisfied with the choice, the user **confirms** the **split** and contextually **requests** a **review** action by **designating** a **reviewer**. The receiver Cluster shifts its status to "RN" (**Review Needed**).

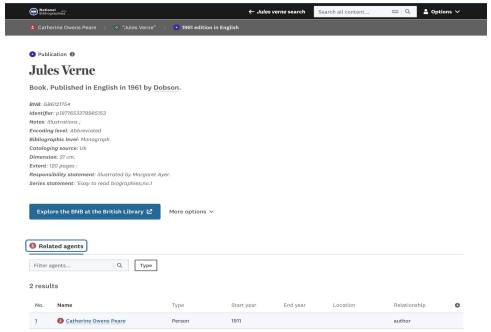
Split - Overview (2 / 2)

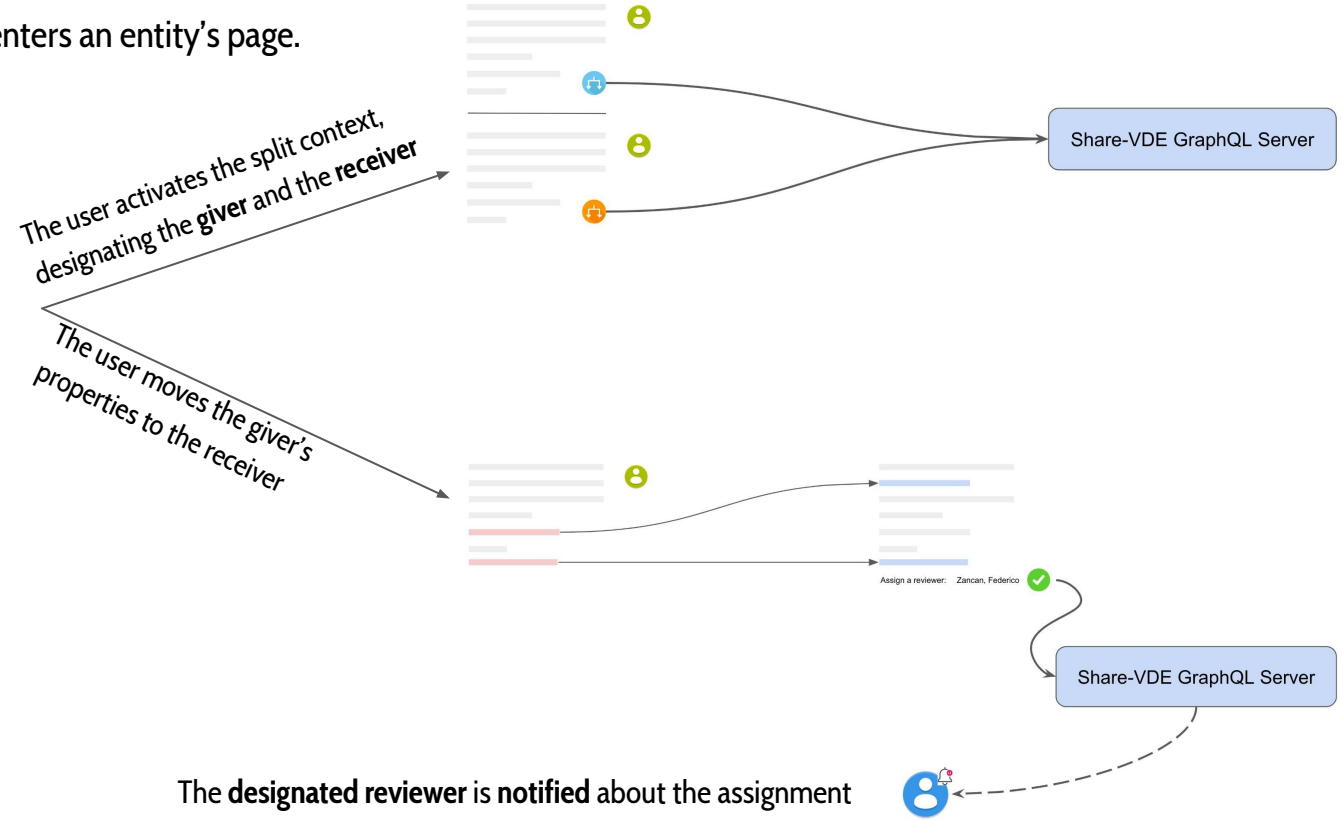
The reviewer may **approve** the **split**; at that point the giver and receiver Clusters shift their status to “SV” (**Saved**).

The reviewer may even **reject** the **split**; in that case the receiver cluster shifts back to the “SR” (**Split Receiver**) status; the reviewer provides some **rejection notes** to guide the editor.

Split clusters

A user with the “**advanced editor**” role enters an entity’s page.

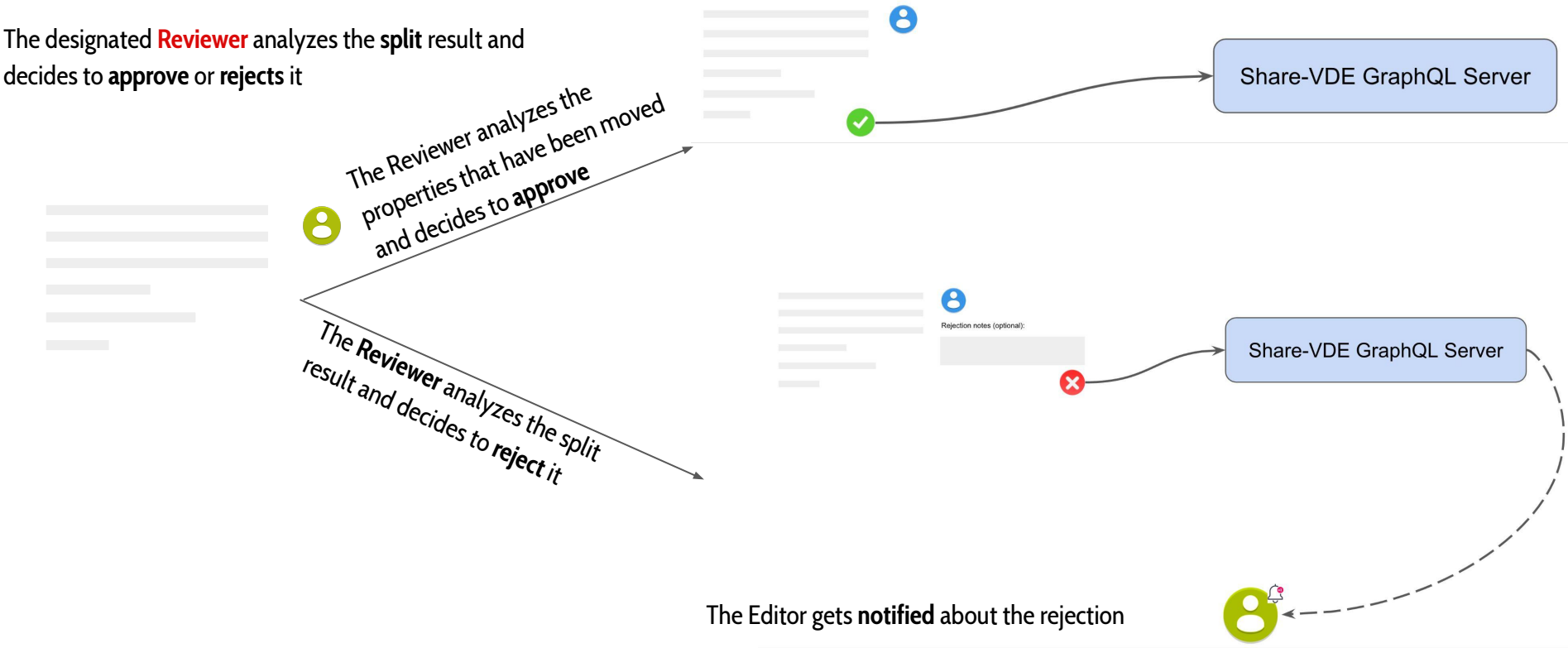




Approve/Reject the Split

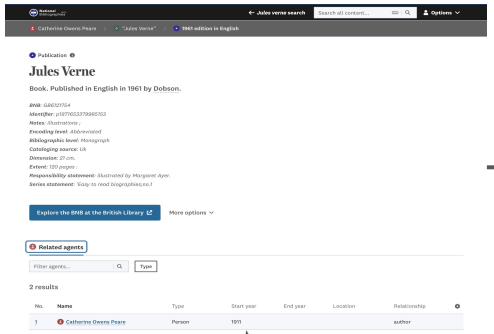
The designated **Reviewer** is notified about the assignment.

The designated **Reviewer** analyzes the **split** result and decides to **approve** or **reject** it



Split - An editor enters an Entity's page

A user with the "advanced editor" role enters an entity's page.



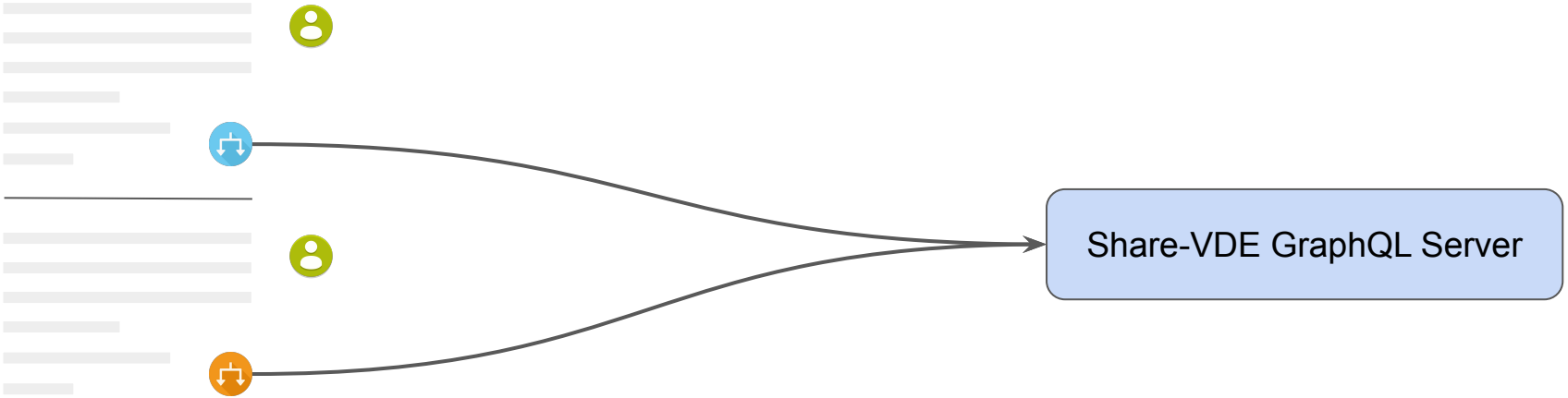
The application establishes a GraphQL subscription to Share-VDE to keep the page updated on Entity's changes (status, attributes, relationships, links).

Share-VDE GraphQL Server

When the Entity changes due to someone else modifying the same Entity, the change is notified to our user's browser as well, and the application updates the related field.

Split - The user activates the Split

The user activates the split context, designating the **giver** and the **receiver**.

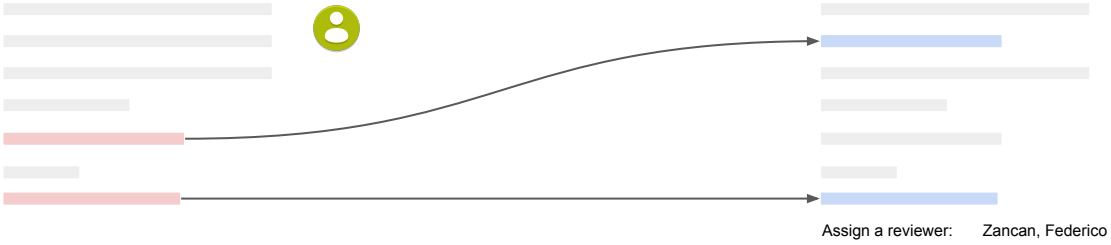


A **mutation** is sent to the server, changing the giver Entity's status to "SG" (**Split Giver**). A second mutation is sent to let the server mark the receiver Entity with the status SR (**Split Receiver**).

It is important to state that both the operations can even be contextual other than separate. The important thing is: the split operation starts when the split context is confirmed.

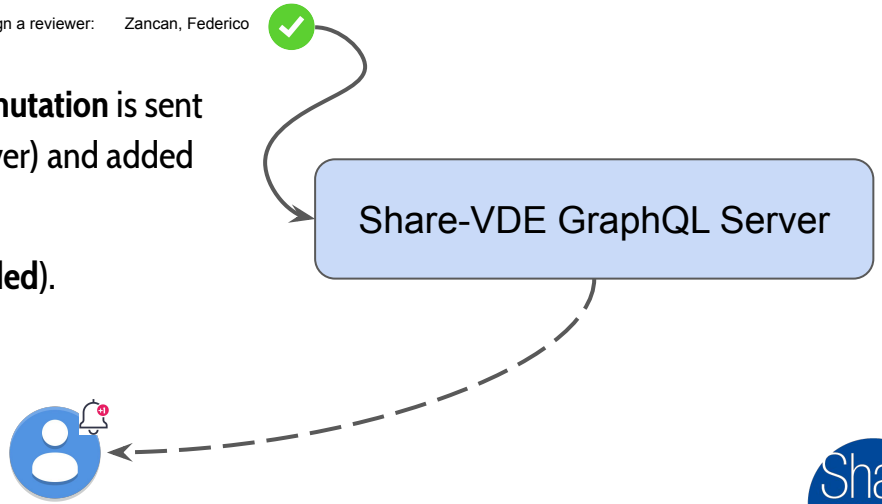
Split - The user moves the properties

The user moves the giver's properties to the receiver.



When confirming the **move** and the **reviewer designation**, a **mutation** is sent to the server, containing the properties removed (from the giver) and added (to the receiver).

The destination Cluster is given the "RN" status (**Review Needed**).



The **designated reviewer** is **notified** about the assignment.

Split - The Reviewer approves the Split

The designated Reviewer analyzes the properties that have been moved and decides to give the **approval**

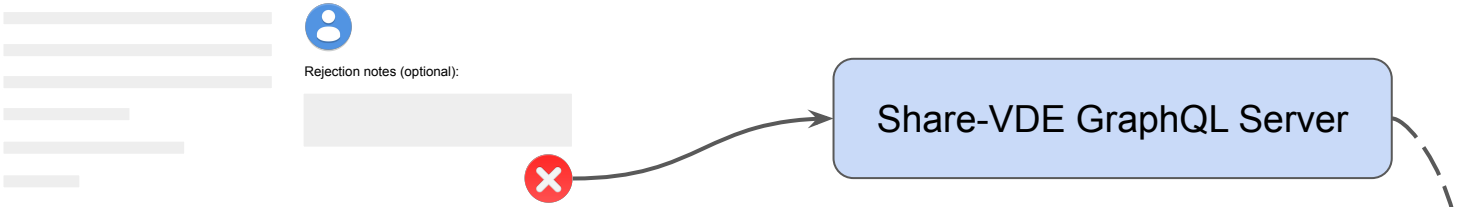
A **mutation** is sent to the server, changing the giver's and the receiver's statuses to "SV" (**Saved**).

The **giver** is now available to the world, **deprived** of the yielded properties.

The **receiver** is now available to the world, **enriched** of the given properties.

Split - The Reviewer rejects the Split

The designated Reviewer analyzes the split result and decides to **reject** it



A **mutation** is sent to the server, changing the receiver Entity's status to "SR" (**Split Receiver**) and registering the **rejection notes** the Reviewer wanted to provide as additional information or guidelines for the editor.

The editor gets **notified** about the rejection.

He/she goes back to adding/removing new properties to the destination Entity, amends what's needed and resubmits the review request.

J.Cricket - Postponed Features

- Create new Cluster
- Split cluster outputs n clusters (n >= 2)
- Unauthorized users should be able to request changes to entities
- Ad-hoc alert system for misaligned clusters with respect to bibliographic records

Next generation cataloguing

The J.Cricket 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