


Web editor for JSON/Bibframe data in libraries

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SWIB2021

Before

After

Editeur MARC - catalogue RERO			
<input type="checkbox"/>	008		151126s1899 sz  000 fre d
<input type="checkbox"/>	035		\$a R008312610
<input type="checkbox"/>	039		\$a 201807201417 \$b VLOAD \$c 201801041023 \$d AUTHORITY \$c 201706021127 \$d VLOAD \$c 201601011726 \$d VLOAD \$y 201511261111 \$z 4804
<input type="checkbox"/>	040		\$a RERO nepast
<input type="checkbox"/>	044		\$a sz \$c ch-ne
<input type="checkbox"/>	072		\$a s1dr \$2 rero
<input type="checkbox"/>	072		\$a s2pe \$2 rero
<input type="checkbox"/>	245	0 0	\$a Règlement des examens de l'académie de Neuchâtel (du 10 février 1899) / \$c [au nom du Conseil d'Etat: le président, Comtesse, le chancelier, Bonhôte]
<input type="checkbox"/>	264		\$a [Neuchâtel] : \$b [éditeur non identifié], \$c [1899]
<input type="checkbox"/>	300		\$a 23 p.
<input type="checkbox"/>	336		\$b txt \$2 rdacontent
<input type="checkbox"/>	337		\$b n \$2 rdamedia
<input type="checkbox"/>	338		\$b nc \$2 rdacarrier
<input type="checkbox"/>	710	1	\$a Neuchâtel (canton). \$b Conseil d'Etat
<input type="checkbox"/>	900		\$a noselfmerge
<input type="checkbox"/>	962		\$a nebpun
<input type="checkbox"/>	999		\$a VIRTUA50

Before

After

Bibliographic Document

✕ Cancel

Save ▾

Add field

Press space for all.

Contained in (host do...

Illustrative contents

Contents

Genres, forms

Language of represen...

Series statement

Edition statements

Notes

Summaries

Subjects

Original titles

Titles *

Title ▾

Type * title proper ▾

Titles *

Values ▾

Value * Règlement des examens de l'académie de Neuchâtel (du 10 février 1899)

Statements of responsibility 🗑

Responsibility 🗑

Values ▾

Value * [au nom du Conseil d'Etat: le prés

Contribution 🗑

Agents 🗑

Agent *

Link to corporate body entity ▾

Link to corporate body entity

Corporate body * [Neuchâtel \(Suisse, canton \). Conseil d'État](#) IDREF 🗑

Role * contributor ▾

Publication, manufacture, distribution, production *

Publication, manufacture, distribution, production ▾

Jump to

Identifiers

Types

Content, media,
carrier types

Mode of issuance

Titles

Statements of
responsibility

Contribution

Publication,
manufacture,
distribution,
production

Extent

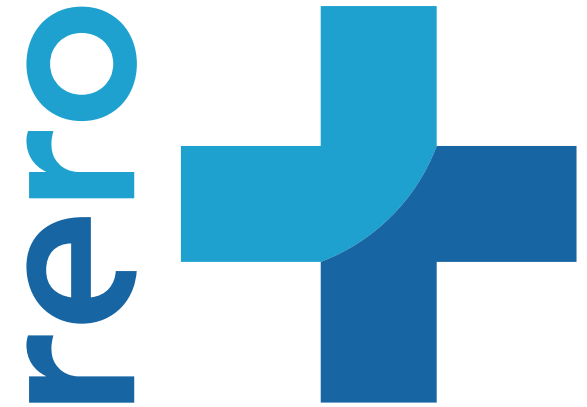
Languages

Administrative
metadata

The RERO+ Foundation

2021: RERO becomes RERO+

- Competence and service centre for libraries in Switzerland
- Non-for-profit
- Open source philosophy
- Hosts and develops IT solutions in Switzerland:
 - SONAR
 - RERO ILS



JSON based editor



- Used in the two solutions (both based on Invenio 3)
- Collaboration with UCLouvain (for RERO ILS)

The challenge of usability

A. Data structure
and granularity

B. Compactness

C. Visual layout

D. RDA labels
and lists

E. Validation and
feedback during
data input

F. Textual help
elements

A. Data structure and granularity

RERO ILS

MARC

Publication, manufacture, distribution, production *

Publication, manufacture, distribution, production ▾

Type * Publication ▾ Date 1 * 1831 ▾

Places *

Place ▾

Country * Switzerland (sz) ▾ Cantons GE (Geneva) ▾

Statements ▾

Statement ▾

Type * Place ▾

Labels *

Values ▾

Value * Genev*i*

Values ▾

Value * Γενεύη

Language gre-grek ▾

Statement ▾

Type * agent ▾

Labels *

Values ▾

Value * apo to typographeion Petrou Antwniou Bc

Values ▾

Value * από το τυπογραφείον Πέτρου Αντωνίου

Language gre-grek ▾

A. Data structure and granularity

RERO ILS

MARC

Publication, manufacture, distribution, production *

Publication, manufacture, distribution, production ▾

Type * Publication ▾ Date 1 * 1831 ▾

Places *

Place ▾

Country * Switzerland (sz) ▾ Cantons GE (Geneva) ▾

Statements ▾

Statement ▾

Type * Place ▾

Labels *

Values ▾

Value * Genevi ▾

Values ▾

Value * Γενεύη ▾ Language gre-grek ▾

Statement ▾

Type * agent ▾

Labels *

Values ▾

Value * apo to typographeion Petrou Antoniou Bc ▾

Values ▾

Value * από το τυπογραφείον Πέτρου Αντωνίου ▾ Language gre-grek ▾

A. Data structure and granularity

RERO ILS

MARC


Editeur MARC - catalogue RERO

008	110929s	1831	sz		00	gre d
035	\$a	R006302444				
039	\$a	202006182100 \$b VLOAD \$c 202001201444 \$d VLOAD \$c 201906182007 \$d VLOAD \$c 201807101048 \$d VLOAD \$y 201109291458 \$z 6024	9			
040	\$a	SzZuIDS BS/BE A100 \$d RERO gevbge				
041	\$a	gre \$h grc	1			
044	\$a sz \$c	ch-ge				
072	\$a s1th \$2	rero	7			
245	\$6 880-01 \$a	Hē Nea Diathēkē tou kyriou kai sōtēros ēmōn Iēsou Chrēstou / \$c met. eis tēn sēmerinēn tōn hellēnōn dialektōn, dī adeias tēs Anatolikēs Ekklesiās ; metatypotheisa d'aparallaktos apo tēn biblikēn hetaireian tēs Genevis pros charin ton Hellēnon	0	3		
246	\$a	Nea Diathiki tou kyriou kai sotiros imon Iisou Christou / met. eis tin simerinin ton Ellinon dialekton, dī adeias tis Anatolikis Ekklesias ; metatypotheisa d'aparallaktos apo tin vivlikin Etaireian tis Genevis pros charin ton Ellinon	3			
264	\$6 880-02 \$a	Genevi : \$b apo to typografeion Petrou Antoniou Bonnantou, \$c 1831		1		
300	\$a	428 p. ; \$c 23 cm				
336	\$b txt \$2	rdacontent				
337	\$b n \$2	rdamedia				
338	\$b nc \$2	rdacarrier				
500	\$a	Texte disposé sur 2 col.				
710	\$a	Société biblique de Genève	2			
710	\$a	Imprimerie Bonnant (Genève)	2			
730	\$a	Bible. \$n 200. \$p N.T. \$l Grec moderne	0			
880	\$6 245-01/(S \$a	H Nēa diathēkē tou kyriou kai swtēros hmōn Ihsou Christou / \$c met. eis tēn sēmerinēn tōn hellēnōn dialektōn, dī adeias tēs Anatolikēs Ekklesiās ; metatypotheisa d'aparallaktos apo tēn biblikēn hetaireian tēs Genevis pros charin ton Ellēnōn	0	3		
880	\$6 264-02/(S \$a	Genevi : \$b apo to typografeion Petrou Antoniou Bonnantou, \$c 1831		1		

A. Data structure and granularity






Name + simple value

```
"extent": "48 pages"
```

Extent 
48 pages

Name + array of simple values

```
"illustrativeContent": [  
  "illustrations",  
  "maps"  
],
```


Illustrative contents 	
Illustrative content	illustrations  
Illustrative content	maps  



Almost all fields are repetitive in MARC21!


A. Data structure and granularity

Name + array of objects (name + simple values)



```
"identifiedBy": [  
  {"qualifier": "volume 3",  
   "status": "invalid or cancelled",  
   "type": "bf:Isbn",  
   "value": "9782012100190"}  
]
```


Identifiers 

Identifier  

Type * ISBN 

Identifier value * 9782012100190

Status invalid or cancelled  

Qualification volume 3 

A. Data structure and granularity

Name + array of arrays of objects (name + simple values)

```
"responsibilityStatement": [  
  [  
    {"value": "illustrations Albert Uderzo",  
     {"language": "rus-cyrl",  
      "value": "иллюстрации Альберта Удерцо"}  
    ],  
    [  
      {"value": "textes René Goscinny",  
       {"language": "rus-cyrl",  
        "value": "тексты Рене Госинни"}  
    }  
  ]  
]
```

Statements of responsibility

Responsibility

Values

Value * illustrations Albert Uderzo

Values

Value * иллюстрации Альберта Удерцо

Language rus-cyrl

Responsibility

Values

Value * textes René Goscinny

Values

Value * тексты Рене Госинни

Language rus-cyrl

B. Compactness

Bibliographic Document

Add field

Press space for all.

Contained in (host docu...

Contents

Edition statements

Genres, forms

Illustrative contents

Original titles

Series statement

Subjects

Summaries

Subtype

Material unit

Titles *

Title

Type

Titles *

Value *

Values

Value *

Language

Title

Type *

Titles *

Values

Value *

Statements of responsibility

Responsibility

- fields displayed by default.
- fields hidden by default.

"Jump to" section.

Cancel

Save

Jump to

Identifiers

Types

Content, media,
carrier types

Mode of issuance

Titles

Statements of
responsibility

Contribution

Publication,
manufacture,
distribution,
production

Extent

Dimensions

Notes

Languages

Language of
representative
expression

Classifications

Administrative
metadata

C. Visual layout

1. Repetition of labels

Statements of responsibility

Responsibility

Values

Value * illustrations Albert Uderzo

Values

Value * иллюстрации Альберта Удерцо

Responsibility

Values

Value * textes René Goscinny

Values

Value * тексты Рене Госинни

Statements of responsibility

Value * illustrations Albert Uderzo

Value * иллюстрации Альберта Удерцо

Language rus-cyrl

Value * textes René Goscinny

Value * тексты Рене Госинни

Language rus-cyrl

with

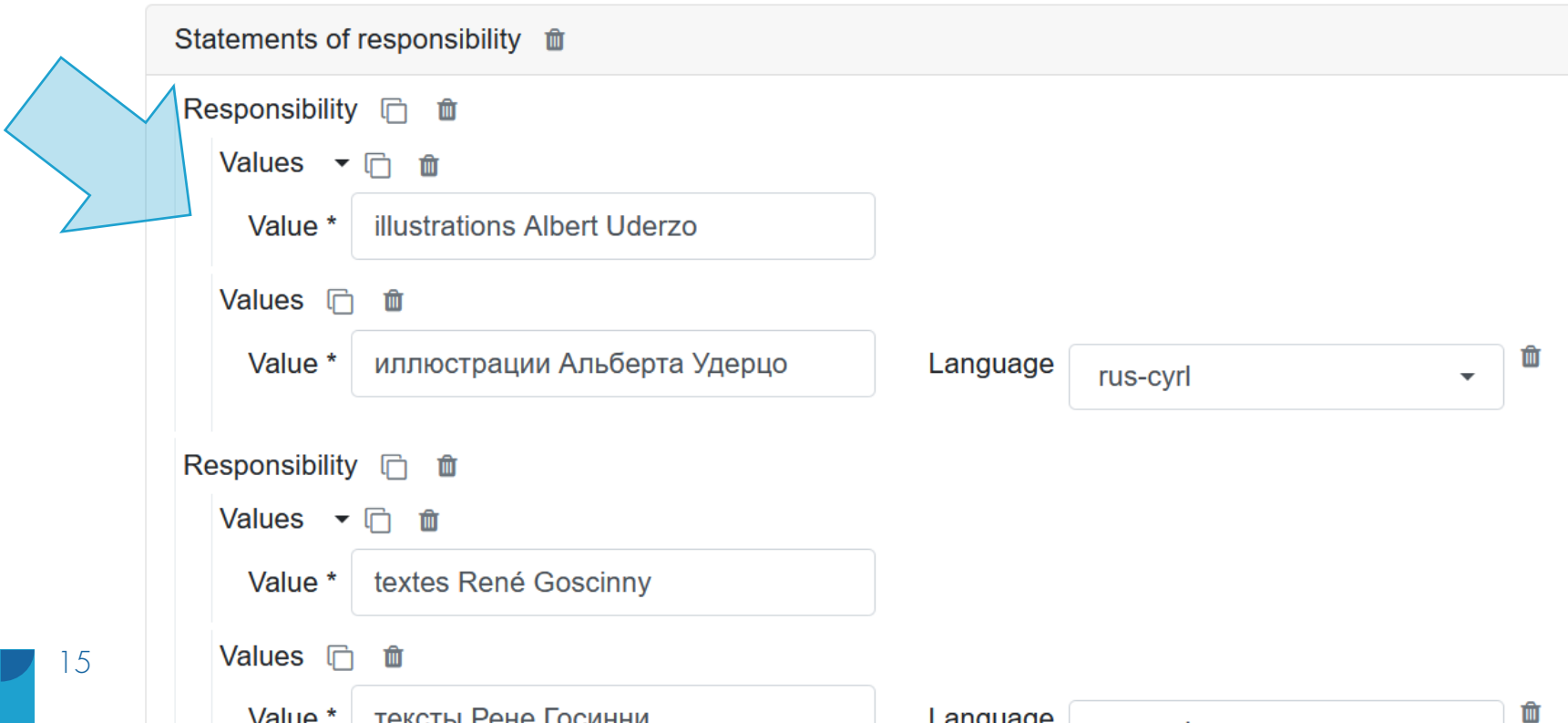
without


14



C. Visual layout




2. Visual helps for the structure: line and indentation

3. (Try to keep a) clean design






Statements of responsibility 



Responsibility  




Values   

Value * illustrations Albert Uderzo



Values  


Value * иллюстрации Альберта Удерцо Language rus-cyrl 

Responsibility  

Values   


Value * textes René Goscinny


Values  


Value * тексты Рене Госинни Language 


C. Visual layout


4. Responsiveness, size and alignment of the input fields

Contribution 



Agents 


Agent * 


Collectivité 


Collectivité 


Nom * Carambolage


Unités subordonnées  


Lieu du congrès Baden-Baden 


Numéro du congrès 1 


Date du congrès 1992 


 Congrès


Rôle * auteur 

Contribution 



Agents 


Agent * 


Collectivité 


Collectivité 


Nom * Carambolage


Unités subordonnées  

Lieu du congrès Baden-Baden 

Date du congrès 1992 

Numéro du congrès 1 

 Congrès

Rôle * auteur 

D. RDA labels and lists

- Multilingual
- Vocabulary reuse
- Some not user-friendly labels... but no MARC codes

The screenshot shows a portion of an RDA (Resource Description and Access) form. It includes fields for 'Content, media, carrier types', 'Content, media, carrier type', 'unmediated', 'Content type *', 'Carrier type', 'Mode of issuance *', 'multipart monograph', 'multipart monograph', and 'Subtype *'. A dropdown menu is open for the 'Mode of issuance *' field, displaying a list of options: 'text', 'three-dimensional form', 'three-dimensional moving image', and 'two-dimensional moving image'. The 'text' option is highlighted in blue.

Field	Value
Content, media, carrier types	Content, media, carrier type
Content, media, carrier type	unmediated
unmediated	
Content type *	text
Carrier type	
Mode of issuance *	text
multipart monograph	
multipart monograph	
Subtype *	Comp


E. Validation and feedback during data input


- Required or not, lists, integers, regular expressions, field length
- ISBN special validation

Date 1 * 45646  
should be <= 2050


Identifier value * 9783893222582
A document already exists under this reference: [Show](#)


Identifier value * 9783893222583
This ISBN is not valid.


Language value * 



language of representation 

Select an option

Contents 

Content Example: 


Summaries 


Summary  

German
Ganda
Gayo
Gbaya
Georgian
German
German, Middle High (ca.
German, Old High (ca. 75
Germanic (Other)
Gilbertese


E. Validation and feedback during data input

- Autocomplete (for links to other resources)


Contribution 

Agents 

Agent *


Link to corporate body entity 

Link to corporate body entity

Corporate body * conseil fédéral suisse 

Role * author

link to authority idref


Suisse. Conseil fédéral 

Publication, manufacture, Suisse. Conseil national

Publication, manufacture Suisse. Conseil des États

Type * Publication

Places *

Place 

Country * No p


Place

link to authority gnd

Schweiz. Bundesrat

Schweiz. Bundesversammlung. Nationalrat

Schweiz. Bundesversammlung. Ständerat

Schweiz. Bundesversammlung. Nationalrat. Geschäftsprüfungskommission 

F. Textual help elements

- Placeholders: examples of data
- Tooltips: definition of the fields and some input rules

Record every different illustrative content in a new field. Use one or more RDA recommended terms, in the singular or plural (MARC 300\$b)

Illustrative content

RDA recommended terms: illustrations, maps, photographs, portraits, ...

Dimensions

Example: 22 cm

Illustrative content

RDA recommended terms: illustrations, maps, photographs, portraits, ...

What's behind it?

A data model defined in JSON schema
<https://ils.test.rero.ch/schemas/documents>


54 first-level bibliographic properties

- The editor is generic: it works for all kinds of JSON data.
- Javascript library based on Angular 12
 - ng-core by RERO+ ([Github](#))
 - based on ngx-formly ([Github](#))

What's behind it?

JSON syntax.

Bibframe
structure (keys of
the fields).



```
"credits": {  
  "title": "Notes on statement of responsibility",  
  "description": "Note used for agents [...]",  
  "type": "array",  
  "minItems": 1,  
  "items": {  
    "title": "Note on statement of responsibility",  
    "type": "string",  
    "form": {  
      "placeholder": "Example: Additional  
collaborators: Bernard Levrat, Eric Wehrli"  
    }  
  },  
  "form": {  
    "hide": true  
  }  
}
```



RDA labels (titles of
the fields).

What's behind it?

Form options (JSON
schema custom fields):
placeholder, size of the
input field, etc.



```
"extent": {  
  "title": "Extent",  
  "description": "Record the number of units and the type of  
unit. For the type of unit, use RDA recommended terms.",  
  "type": "string",  
  "minLength": 1,  
  "form": {  
    "placeholder": "Example: 355 pages",  
    "navigation": {  
      "essential": true  
    },  
    "hide": true,  
    "templateOptions": {  
      "cssClass": "w-md-50"  
    }  
  }  
}
```

Editing JSON versus MARC

Positive

- Better data quality (data validation)
- Better UX: better learning curve than MARC, responsiveness
- A generic editor for all kinds of JSON data
- JSON and JSON schema are machine and human readable

Negative

- UX disadvantages for power users
- Difficulty to abandon MARC
 - Big mapping effort for import/export
 - Changing standards (Bibframe)
 - Resistance to change in the libraries

A step towards semantic data

- A way to enter high structured bibliographic data
- Some values stored directly in LD format (bf:Place, bf:Agent, rdaco:1020, ...)
- Add a `@context` to provide JSON-LD
- Dynamic integration of IdRef and GND data
 - Pre-requisite: a mapping
 - Integrate external data sources is always an important effort

Merci

Any questions?

rero.ch



info@rero.ch



rero



@reroplus



company/rero



Test it!

ils.test.rero.ch



Abstract

This presentation shows a cataloguing form created to edit data stored in a Bibframe/JSON format. It points out the specificities, obstacles, advantages and difficulties of this implementation in comparison to a raw MARC editor. On the one hand, the interface must be really user-friendly, as it is targeted at public, school and special libraries. On the other hand, it must enable to receive granular bibliographic records from MARC and to edit JSON data that is hierarchically structured and deeply nested, composed of a multitude of fields with different conditionalities and validation rules.

The context of this project is the transition by RERO+, a Swiss competence and service centre for libraries, to a fully open source and in house library system called RERO ILS in 2021. For this new system, it was decided to abandon the MARC format and to work directly in JSON instead, using the Bibframe model as far as possible. RERO ILS is based on the Invenio 3 framework proposed by CERN, which heavily relies on JSON and JSON schema for resource management. About 60 libraries in Switzerland are using RERO ILS since July 2021. The editor is also implemented within SONAR, another RERO+ software made to manage institutional repositories.

RERO ILS source code : <https://github.com/rero/rero-ils/>