Some ideas on BIBFRAME Model.

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In November 2012 Library of Congress presented a new core document "Bibliographic Framework as a Web of Data: Linked Data Model and Supporting Services". Proposed Linked Data model is intended to be "more than a mere replacement for the library community's current model/format, MARC. It is the foundation for the future of bibliographic description that happens on, in, and as part of the web and the networked world we live in" [for more details see BIBFRAME Primer Document].

Recognizing the importance of that document for the further infusion of bibliographic data into Web-space, we presumed to suggest our constructive, as we believe, feedback, our lepton to the common money-box.

We need first briefly to outline BIBFRAME Model as it is seen from <u>BIBFRAME Primer</u> <u>Document</u>.

BIBFRAMEModel.

The BIBFRAME Model consists of the following main classes:

- Creative Work a resource reflecting a conceptual essence of the cataloging item.
- Instance a resource reflecting an individual, material embodiment of the Work.

• Authority - a resource reflecting key authority concepts that have defined relationshipsreflected in the Work and Instance. Examples of Authority Resources include People,Places, Topics, Organizations, etc.

• Annotation - a resource that decorates other BIBFRAME resources with additionalinformation. Examples of such annotations include Library Holdings information, cover artand reviews.

A graphical representation of this model and relationships among main BIBFRAME classes is illustrated below (Fig. 1):



Figure 1.BIBFRAME Model.

To make these kinds of models suitable for processing by machines, two things are needed:

- a system of machine-processable identifiers for identifying BIBFRAME classes
- a machine-processable presentation of the Model.

The Web provides a general form of identifier for the first purpose, which is called the Uniform Resource Identifier (URI).

To approach the second purpose, BIBFRAME Primer Document proposes following XML serialization of the RDF data model. The example below "is designed to provide a serialized encoding of a particular Work, its corresponding Instances and associated Authority information. The Work in question is the Functional Requirements for Bibliographic Records: Final Report'. Three Instances (one physical, one PDF, and one HTML web site) along with the associated Authority information (subjects, authors, publishers, etc.) are included in this example. (Links in the following examples are included to illustrate the use of using URLs for defining BIBFRAME resources, the URLs themselves are not valid)".

<!-- Work -->

<Report id = "http://bibframe/work/frbr-report"> <title>Functional requirements for bibliographic records :</title> <titleRemainder>final report / IFLA Study Group on the Functional Requirements for Bibliographic Records; approved by the Standing Committee of the IFLA Section on Cataloguing.</titleRemainder> <creator resource = "http://bibframe/auth/org/ifla" /> <subject resource = "http://bibframe/auth/topic/cataloging" /> <subject resource = "http://bibframe/auth/topic/bibliography" /> <subject resource = "http://bibframe/auth/topic/frbr" /> <abstract>The purpose of this study is to delineate in clearly defined terms the functions performed by the bibliographic record with respect to various media, various applications, and various user needs. The study is to cover the full range of functions for the bibliographic record in its widest sense- i.e., a record that encompasses not only descriptive elements, but access points (name, title, subject, etc.), other 'organizing' elements (classification, etc.), and annotations. </abstract>

<language>English</language>

```
<hasInstance resource="http://bibframe/inst/frbr-1997-09-01:0" />
<hasInstance resource="http://bibframe/inst/frbr-1997-09-01:1" />
<hasInstance resource="http://bibframe/inst/frbr-1997-09-01:2" />
</Report>
```

<!-- Instance -->

```
<HardcoverBook id="http://bibframe/inst/frbr-1997-09-01:0">
<date>1998</date>
<place resource="http://bibframe/auth/geo/münchen" />
<publisher resource="http://bibframe/auth/org/k.g.saur" />
<isbn>359811382X</isbn>
```

```
</HardcoverBook>
```

<!-- Instance -->

```
<DigitalResource id="http://bibframe/inst/frbr-1997-09-01:1">
<link>http://www.ifla.org/files/cataloguing/frbr/frbr_2008.pdf</link>
<format>application/pdf</format>
<date>1997-09-01</date>
<publisher resource="http://bibframe/auth/org/ifla" />
</DigitalResource>
```

<!-- Instance -->

<DigitalResource id="http://bibframe/inst/frbr-1997-09-01:2"> <link>http://archive.ifla.org/VII/s13/frbr/frbr_current_toc.htm</link> <format>text/html</format> <date>2007-12-26</date> <publisher resource="http://bibframe/auth/org/ifla" /> </DigitalResource>

<!-- BIBFRAME Topic --> <Topic id="http://bibframe/auth/topic/frbr"> <label>FRBR (Conceptual model)</label> <hasIDLink resource="http://id.loc.gov/authorities/subjects/sh2007002541" /> </Topic>

<!-- BIBFRAME Topic -->

<Topic id="http://bibframe/auth/topic/bibliography"> <label>Bibliography</label> <generalSubdivision>Methodology</generalSubdivision> <hasIDLink resource="http://id.loc.gov/authorities/subjects/sh85013838" /> </Topic>

<!-- BIBFRAME Topic --> <Topic id="http://bibframe/auth/topic/cataloging"> <label>Cataloging</label> <hasIDLink resource="http://id.loc.gov/authorities/subjects/sh85020816" /> </Topic>

<!-- BIBFRAME Organization -->
<Organization id="http://bibframe/auth/org/ifla">
<label>IFLA Study Group on the Functional Requirements for Bibliographic
Records</label>
link>http://www.ifla.org/</link>
<hasIDLink resource="http://id.loc.gov/authorities/names/nr98013265" />
</Organization>

<!-- BIBFRAME Organization --> <Organization id="http://bibframe/auth/org/k.g.saur"> <label>K.G. Saur</label> <link>http://www.degruyter.com/</link> <hasIDLink resource="http://id.loc.gov/authorities/names/nr91037301" /> </Organization>

<!-- BIBFRAME Place --> <Place id="http://bibframe/auth/geo/münchen"> <label>Munich (Germany)</label> <hasIDLink resource="http://id.loc.gov/authorities/names/n79059670" /> </Place>

A high level RDF model reflecting the relationship between the Work and the corresponding Instances as defined by this XML serialization is shown below (Fig.2).



Figure 2. A high level RDF model associated with the XML serialization. The FRBR Report has 3 instances that are associated with 2 different publishers.

Issues around BIBFRAME Model.

BIBFRAME Model is an important attempt to present bibliographic entities as Linked Data at high level. Its importance is conditioned at least by the following.

- BIBFRAME Model provides tangible tool for bibliographic community to participate in a process of shared creation of new web-space, Semantic Web.
- Being constructed at high level, BIBFRAME Model could serve as a basement for development of new cataloguing rules intended for presentation of bibliographic data as a part of Semantic Web.
- BIBFRAME Model makes it possible to link up existing bibliographic models, such as FRBR, to Semantic Web.
- New model supposes more perfect organization and new quality of Authority Data:
 First, Authority Data here could control not only Cataloguing records, but library data on the whole (see example for Holdings Data in <u>BIBFRAME Primer Document</u>).
 Secondly, Authority Data could be easily organized into shared Authority Data by

linking Authority records of one institution to corresponding Authority records of other ones. Looking ahead say that, for example, having declared namespace xmlns:owl=<u>http://www.w3.org/2002/07/owl#</u> and using the predicate owl:sameAs, one can easily link controlled access points of one Authority file to Authority file of another institution, including Authority files in other countries. It gives for instance an easy mechanism to create International Authority Files – the old dream and area of focus of librarians from different countries.

• And finally, Library of Congress provided concrete subject for further discussion - BIBFRAME Primer Document. It is necessary and responsible act, because it is really much harder to give birth to own idea than to criticize someone else's one.

On the other hand, some solutions given by BIBFRAME Model, could cause problems. For instance predicate "hasInstanse" gives downward link, while upward links are more preferable. Having downward links only, to create record at Instance level one should change record at Work level, meanwhile these operations may request employees of different qualification. In addition, once being created and verified record at Work level will be afterward changed oftentimes.

And finally, record at Work level will swell out dangerously, if this Work has a lot of Instances. All listed problems disappear if downward link "hasInstance" changes to link from Instance to Work.

Another problem could arise from such statements as:

<DigitalResource id="http://bibframe/inst/frbr-1997-09-01:1"> <link>http://www.ifla.org/files/cataloguing/frbr/frbr_2008.pdf</link>

In first statement, URI "http://bibframe/inst/frbr-1997-09-01:1" is assigned to digital resource, which already has URL http://www.ifla.org/files/cataloguing/frbr/frbr_2008.pdf. It looks like the same resource has now two unique identifiers. Second statement defines that resource http://bibframe/inst/frbr-1997-09-01:1 has value of property "link" equal to http://www.ifla.org/files/cataloguing/frbr/frbr_2008.pdf. That is, the same resource is a subject and an object of one property. This obviously contradicts to RDF model.

We could suppose that URI is assigned to the metadata record and the resource as such has the above URL. This probably also contradicts to RDF model, but even if not, idea to separate description from resource (that corresponds to traditional view) may cause inconsistency in further processing. For instance, if ID means identifier of metadata record, then resource identifier has been lost in the following record:

```
<!-- Instance -->
<HardcoverBook id="http://bibframe/inst/frbr-1997-09-01:0">
<date>1998</date>
<place resource="http://bibframe/auth/geo/münchen" />
<publisher resource="http://bibframe/auth/org/k.g.saur" />
<isbn>359811382X</isbn>
```

</HardcoverBook>?

Besides, examples in BIBFRAME Primer Document are not presented in standard RDF/XML, but it seems not to be a problem, because the aim of the document is to demonstrate the Model, and from this point of view examples are OK.

Variation of BIBFRAME Model.

To avoid above problems we would like to propose following Model, which is based on the main ideas of BIBFRAME Model and which does not have own name yet.

<!-- Work -->

<?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:lcterms="http://loc.gov/bibframe/vocab/"> <rdf:Description rdf:about="http://bibframe/work/frbr-report"> <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/> <dc:title>Functional requirements for bibliographic records</dc:title> Requirements for Bibliographic Records ; approved by the Standing Committee of the IFLA Section on Cataloguing.</ lcterms:titleRemainder> <dc:creator rdf:resource="http://bibframe/auth/org/ifla"/> <dc:subject rdf:resource="http://bibframe/auth/topic/cataloging"/> <dc:subject rdf:resource="http://bibframe/auth/topic/bibliography"/> <dc:subject rdf:resource="http://bibframe/auth/topic/frbr"/> terms the functions performed by the bibliographic record with respect to various media, various applications, and various user needs. The study is to cover the full range of functions for the bibliographic record in its widest sense- i.e., a record that encompasses not only descriptive elements, but access points (name, title, subject, etc.), 16 other 'organizing' elements (classification, etc.), and annotations. </lcterms:abstract> <dc:language>en</dc:language> </rdf:Description> </rdf:RDF> <!-- Instance 1 HardcoverBook -->

<?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:lcterms="http://loc.gov/bibframe/vocab/"> <rdf:Description rdf:about="http://bibframe/inst/frbr-1997-09-01:0"> <rdf:type rdf:resource="http://bibframe/work/frbr-report"/> <lcterms:date>1998</lcterms:date> <lcterms:place resource="http://bibframe/auth/geo/münchen"/> <dc:publisher resource="http://bibframe/auth/org/k.g.saur"/> <lcterms:isbn>359811382X</lcterms:isbn> </rdf:Description> </rdf:RDF>

<!-- Instance 2 DigitalResource -->

```
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:dc="http://purl.org/dc/elements/1.1/"
<rdf:Description rdf:about="http://www.ifla.org/files/cataloguing/frbr/frbr_2008.pdf">
<rdf:Description rdf:about="http://www.ifla.org/files/cataloguing/frbr/frbr_2008.pdf">
<rdf:type rdf:resource="http://bibframe/work/frbr-report"/>
<dc:format>application/pdf</dc:format>
<dc:date>1997-09-01</dc:date>
<dc:publisher resource="http://bibframe/auth/org/ifla"/>
</rdf:Description>
</rdf:RDF>
```

<!-- Instance 3 DigitalResource -->

```
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:dc="http://purl.org/dc/elements/1.1/"
rdf:Description rdf:about="http://archive.ifla.org/VII/s13/frbr/frbr_current_toc.htm">
<rdf:type rdf:about="http://archive.ifla.org/VII/s13/frbr/frbr_current_toc.htm">
<rdf:type rdf:resource="http://bibframe/work/frbr-report"/>
<dc:format>text/html</dc:format>
<dc:date>2007-12-26</dc:date>
<dc:publisher resource="http://bibframe/auth/org/ifla"/>
</rdf:Description>
</rdf:RDF>
```

Examples above are presented in standard RDF/XML, links Instance-Work are organized by the RDF-property rdf:type and they are upward links. Besides, we use, where it is possible, standard RDF and DC properties and namespaces not to answer the question here: in what cases is it really appropriate to use self-defined properties and namespaces.

Example of RDF/XML for a complex bibliographic case.

To demonstrate possibilities of the proposed Model we consider following example. Let Work is published in several issues of Serial which, in turn, includes several Series.

First of all, note the following difference between Book and Serial: A Book could not be described apart from its content, because Book is a particular embodiment of that content,

meanwhile Serial is independent entity, and its existence does not depend on whether a particular Work is published in it or not. It means at least that Work and Serial are different entities, probably linked, and should be described apart from each other. It brings us to following scheme (Fig. 3):



Figure 3. Work published in several issues of Serial.

In this scheme #i #j and #k issues are subclasses of Work (subclasses of content) and subclasses of Serial (subclasses of structure) at the same time, that absolutely corresponds to real situation. However specificity of links is obviously lost in this scheme, and software, intended to process it, will not be able to distinguish between a content link and a structure one. Two possible solutions could be proposed here.

First one is to define specific properties as it was done in BIBFRAME Model or in Dublin Core (BIBFRAME's hasInstance for content link or Dublin Core's dcterms:isPartOf for structure one). However it essentially contradicts to RDF model, because such properties do not only define links between entities, but also assign some attributes to the entities as such. That is, content link will say that subject and object are elements of content, and structure link will say that subject are elements of a structure.

Second way is to formalize what is really meant, namely to provide formal XML presentation for definitions we use. (See Fig. 4,5 and 6).



Figure 6. Materialization

Obviously such definitions should be a stable and strongly limited set of records, like a special type of Authority records.

Thus we achieve two goals. First, we find place for definitions in general scheme, and, second, no extrinsic functions are assigned to predicates in this case. Besides, it makes our schemes more obvious and natural as far as they become parts of one hypothetic Global scheme.

Examples below demonstrate RDF/XML as if Creative Work "New Bibliographic Environment and MARC formats" by Vladimir Skvortsov is published in 2013 #i, 2013 #j and 2013 #k issues of "Linked Data" Series (do not really exist), which is supposed to be a part of "Publications" Serial (does not exist either) by National RUSMARC Service.

<!-- Content (definition) -->
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:dc="http://purl.org/dc/elements/1.1/"
<rdf:Description rdf:about="http://www.rusmarc.ru/concepts#Content">
<rdf:Description rdf:about="http://www.w3.org/2000/01/rdf-schema#Class"/>
<rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/>
<dc:language>en</dc:language>
<</rdf:Description rdf:resource="http://dictionary.reference.com/browse/content"/>
</rdf:Description>
</rdf:RDF>

<!-- Work (definition) -->

<?xml version="1.0"?>

<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"

xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"

xmlns:dc="http://purl.org/dc/elements/1.1/"

<rdf:Description rdf:about="http://www.rusmarc.ru/concepts#Work">

<rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/>

```
<rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/concepts#Content"/>
```

<dc:language>en</dc:language>

<dc:description>A BIBFRAME Creative Work, abbreviated simply as Work, reflects a conceptual cataloging item. A Work is an abstract entity as there is no single material object one can point to. The Work exists as a Web based control point that reflects both commonality of content between and among the various Instances associated with the Work as well as a reference point for other Works. Common properties of Works include contextual relationships to BIBFRAME Authorities related to the "subjectness" (Topic, Person, Place, Geographical, etc.)of the resource as well as the entities (Person, Organization, Meeting, etc.) associated with its creation. Works can relate to other Works reflecting, for example, part / whole relationships.

<!-- Work --> <?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:dc="http://purl.org/dc/elements/1.1/" <rdf:Description rdf:about="http://www.rusmarc.ru/publish/newbiblenvir"> <rdf:typ erdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/concepts#Work"/> <dc:title>New Bibliographic Environment and MARC formats</dc:title> <dc:creator rdf:resource="http://www.nlr.ru/stuff/80001"/><!--Vladimir Skvortsov --> </rdf:Description> </rdf:RDF>

<!---Structure (definition) --> <?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:dc="http://purl.org/dc/elements/1.1/" <rdf:Description rdf:about=""http://www.rusmarc.ru/concepts#Structure"> <rdf:Description rdf:about=""http://www.rusmarc.ru/concepts#Structure"> <rdf:Description rdf:about=""http://www.rusmarc.ru/concepts#Structure"> <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/> <dc:language>en</dc:language> <dc:description rdf:resource="http://dictionary.reference.com/browse/structure"/> </rdf:Description> </rdf:RDF>

<!-- Serial (definition) --> <?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:dc="http://purl.org/dc/elements/1.1/" <rdf:Description rdf:about="http://www.rusmarc.ru/concepts#Serial"> <rdf:Description rdf:about="http://www.rusmarc.ru/concepts#Serial"> <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/concepts#Structure"/> <dc:language>en</dc:language> <dc:description rdf:resource="http://www.thefreedictionary.com/serial/> </rdf:Description> </rdf:RDF>

```
<!-- Serial -->
```

<?xml version="1.0"?>

<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"

```
xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
```

xmlns:dc="http://purl.org/dc/elements/1.1/"

<rdf:Description rdf:about="http://www.rusmarc.ru/publish">

<rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/>

<rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/concepts#Serial"/>

<dc:language>ru</dc:language>

```
<dc:creator rdf:resource="http://www.rusmarc.ru/Org/1730"/><!--National RUSMARC Service-
```

->

<dc:title>Publications</dc:title>

</rdf:Description>

</rdf:RDF>

<!--Series 1 -->

<!-- "LinkedData"Series as a part of "Publications" Serial by National RUSMARC Service--> <?xml version="1.0"?>

<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"

xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"

xmlns:dc="http://purl.org/dc/elements/1.1/"

<rdf:Description rdf:about="http://www.rusmarc.ru/publish/Linked Data">

<rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/>

<rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/publish"/> <!-- Publications -->

<dc:language>ru</dc:language>

<dc:title>Linked Data</dc:title>

</rdf:Description>

</rdf:RDF>

.

<!--Nº i --> <?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:rusmarc="http://www.rusmarc.ru/vocabulary/" <rdf:Description rdf:about="http://www.rusmarc.ru/publish/2013 № i"> <rdf:typerdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/publish/newbiblenvir"/><!---Work--> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/publish/Linked Data"/><!-- Series --> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/concepts#Paper/><!-- Carrier --> <dc:language>ru</dc:language> <dc:title>2013 No i</dc:title><!--Title of structure element --> <rusmarc:pages>15-20</rusmarc:pages> </rdf:Description> </rdf:RDF> <!--No j --> <?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:rusmarc="http://www.rusmarc.ru/vocabulary/" <rdf:Description rdf:about="http://www.rusmarc.ru/publish/2013 № j"> <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/publish/newbiblenvir"/><!--Work --> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/publish/Linked Data"/><!-- Series --> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/concepts#Paper/><!-- Carrier -->

<dc:language>ru</dc:language> <dc:title>2013 No j</dc:title><!-- Title of structure element --> <rusmarc:pages>31-35</rusmarc:pages> </rdf:Description> </rdf:RDF>

<!--Nº k --> <?xml version="1.0"?> <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:rusmarc="http://www.rusmarc.ru/vocabulary/" <rdf:Description rdf:about="http://www.rusmarc.ru/publish/2013 No k"> <rdf:type rdf:resource="http://www.w3.org/2000/01/rdf-schema#Class"/> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/publish/newbiblenvir"/><!--Work --> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/publish/Linked Data"/><!-- Seria--> <rdfs:subClassOf rdf:resource="http://www.rusmarc.ru/concepts#Paper/><!-- Carrier --> <dc:language>ru</dc:language> <dc:title>2013 No k</dc:title><!-- Title of structure element --> <rusmarc:pages>31-33</rusmarc:pages> </rdf:Description> </rdf:RDF>

The above records, although correct as far we can judge, are presented only to illustrate the Model. Not all URLs and URIs are valid.

Of course, the case considered does not cover all cataloguing tasks, and especially general tasks of library's data creating, but on the other hand it does not exhaust possibilities given by suggested Model. It seems cases of any complexity could be described with its help.

Bibliography

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