



Beschreibung – Description – Descrizione – Description MARC – OAI PMH – Harvester

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1 Beschreibung des Formats MARC21

MARC (MACHine Readable Cataloging) ist ein weltweit verbreiteter Standard für die Darstellung und den Austausch von Daten für bibliografische, Autoritäts-, Bestands-, Klassifikations- und Bürgerinformationsdaten in maschinenlesbarer Form. MARC wird von der Library of Congress unterhalten; gegenwärtig wird die 21. Version – MARC21 – angewendet.

Homepage MARC21-Format: <http://www.loc.gov/marc/>

Im folgenden wird das Format für bibliografische Daten erläutert.

Das MARC-Format besteht aus Feldkennungen, Indikatoren, Unterfeldcodes und codierten Werten, welche die Datenelemente in bibliografischen Aufnahmen bezeichnen. Ein bibliografischer Datensatz beinhaltet üblicherweise Titel, Namen, Schlagwörter, Fussnoten, Publikationsdaten und Angaben zur physischen Beschreibung einer Vorlage.

Beispiel des Feldes 245 für die Titelangabe:

- Feldkennung: 245
- Erster Indikator: 1
- Zweiter Indikator: 2
- Unterfelder: a und c

```
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastique: athlétisme /</subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
```

Für die Umsetzung des MARC-Formats in einer XML-Umgebung wurde das MARCXML-Schema entwickelt.

Homepage MARC21 XML-Schema : <http://www.loc.gov/standards/marcxml/>

Beispiel eines Datensatzes in MARCXML, mit Angabe der wichtigsten Felder:

```
<record > Beginn Datensatz
  <leader>01158nam a22003494i 4500</leader>
  <controlfield tag="001">991000012709703976</controlfield>
  <controlfield tag="003">Sz</controlfield>
  <controlfield tag="005">20180920023817.0</controlfield>
  <controlfield tag="008">170705s2015 sz a f00| 0 fre d</controlfield>
  <datafield tag="024" ind2=" " ind1="7">
    <subfield code="a">http://permalink.sn1.ch/bib/sz001878417</subfield>
    <subfield code="2">uri</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)vtls001878417</subfield>
    <subfield code="9">ExL</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)001878417</subfield>
  </datafield>
  <datafield tag="037" ind2=" " ind1=" ">
    <subfield code="a">30.811.540 f</subfield>
    <subfield code="b">0FSP0</subfield>
  </datafield>
  <datafield tag="040" ind2=" " ind1=" ">
    <subfield code="a">Sz</subfield>
    <subfield code="b">fre</subfield>
    <subfield code="e">rda</subfield>
  </datafield>
  <datafield tag="041" ind2=" " ind1="1">
```

008 = Datenelemente fixer Länge:
Erscheinungsjahr: Positionen 07-10 (2015)
Ländercode: Positionen 15-17 (sz)
Sprachcode: Positionen 35-37 (fre)

```

<subfield code="a">fre</subfield>
<subfield code="h">ger</subfield>
</datafield>
<datafield tag="082" ind2="4" ind1="7">
  <subfield code="a">796</subfield>
  <subfield code="2">23sdb</subfield>
</datafield>
<datafield tag="100" ind2=" " ind1="1">
  <subfield code="0">(DE-588)141147962</subfield>
  <subfield code="a">Gentsch, Nicola</subfield>
  <subfield code="e">Verfasser</subfield>
  <subfield code="4">aut</subfield>
</datafield>
<datafield tag="240" ind2="0" ind1="1">
  <subfield code="a">Turnen: Leichtathletik</subfield>
</datafield>
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastique: athlétisme /</subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
<datafield tag="246" ind2="0" ind1="3">
  <subfield code="a">Athlétisme</subfield>
</datafield>
<datafield tag="264" ind2="1" ind1=" " >
  <subfield code="a">Macolin :</subfield>
  <subfield code="b">Office fédéral du sport OFSP, </subfield>
  <subfield code="c">2015</subfield>
</datafield>
<datafield tag="300" ind2=" " ind1=" " >
  <subfield code="a">80 pages :</subfield>
  <subfield code="b">illustrations ;</subfield>
  <subfield code="c">30 cm</subfield>
</datafield>
<datafield tag="336" ind2=" " ind1=" " >
  <subfield code="b">txt</subfield>
  <subfield code="2">rdacontent</subfield>
</datafield>
<datafield tag="337" ind2=" " ind1=" " >
  <subfield code="b">n</subfield>
  <subfield code="2">rdamedia</subfield>
</datafield>
<datafield tag="338" ind2=" " ind1=" " >
  <subfield code="b">nc</subfield>
  <subfield code="2">rdacarrier</subfield>
</datafield>
<datafield tag="500" ind2=" " ind1=" " >
  <subfield code="a">Ausführliche Bibliographie und Kommentare</subfield>
</datafield>
<datafield tag="650" ind2="7" ind1=" " >
  <subfield code="0">(DE-588)4035163-4</subfield>
  <subfield code="a">Leichtathletik</subfield>
  <subfield code="2">gnd</subfield>
</datafield>
<datafield tag="710" ind2=" " ind1="1" >
  <subfield code="0">(DE-588)2182120-3</subfield>
  <subfield code="a">Schweiz</subfield>
  <subfield code="b">Bundesamt für Sport</subfield>
  <subfield code="e">Herausgebendes Organ</subfield>
  <subfield code="4">isb</subfield>
</datafield>

```

100 = Hauptautor (normierte Form)

245 = Titel und Urheber (gemäss Vorlageform)

264 = Erscheinungsort, Verlag und Erscheinungsjahr (gemäss Vorlageform)

300 = Physische Beschreibung

500 = Fussnoten

650 = Thema (normierte Form)

710 = Nebenantor (normierte Form)

```
<datafield tag="856" ind2="1" ind1="4">
  <subfield code="u">http://opac.admin.ch/gw/toc/pdf/toc001878417.pdf</subfield>
  <subfield code="y">Table des matières</subfield>
</datafield>
<datafield tag="993" ind2=" " ind1=" ">
  <subfield code="a">sb</subfield>
  <subfield code="b">2017/04</subfield>
  <subfield code="c">796</subfield>
  <subfield code="k">be</subfield>
</datafield>
<datafield tag="949" ind2=" " ind1=" ">
  <subfield code="b">10010</subfield>
  <subfield code="c">0bq 11442</subfield>
  <subfield code="a">1901887895</subfield>
  <subfield code="g">PUBLIC_NOTE: 0";"URL: 0</subfield>
</datafield>
</record>
```

Ende Datensatz

2 Description du format MARC21

MARC (MACHine Readable Cataloging) est une norme largement utilisée pour la représentation et l'échange de données lisibles par machine de renseignements bibliographiques, d'autorité, de fonds, de classification et de données sur les renseignements communautaires. Le format MARC, dont la 21^{ème} version porte le nom de MARC21, est géré par la Library of Congress.

Page web du format MARC21: <http://www.loc.gov/marc/>

L'explication qui suit concerne le format pour les données bibliographiques.

Le format MARC se compose de champs, d'indicateurs, de codes de sous-champ et de valeurs codées qui désignent des éléments de données dans les notices bibliographiques. Une notice bibliographique contient habituellement le titre, le(s) nom(s), des mots-matières, des notes, les dates de publication et des indications sur la description physique d'un document.

Exemple du champ 245 pour l'indication du titre:

- champ: 245
- premier indicateur: 1
- deuxième Indicateur: 0
- sous-champs: a et c

```
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastique: athlétisme </subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
```

Le schéma MARCXML a été développé pour utiliser le format MARC dans un environnement XML.

Page web du schéma MARC21 XML: <http://www.loc.gov/standards/marcxml/>

Exemple d'une notice en MARCXML avec indication des champs les plus importants:

```
<record >
  <leader>01158nam a22003494i 4500</leader>
  <controlfield tag="001">991000012709703976</controlfield>
  <controlfield tag="003">Sz</controlfield>
  <controlfield tag="005">20180920023817.0</controlfield>
  <controlfield tag="008">170705s2015 sz a f00| 0 fre d</controlfield>
  <datafield tag="024" ind2=" " ind1="7">
    <subfield code="a">http://permalink.sn1.ch/bib/sz001878417</subfield>
    <subfield code="2">uri</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)vtls001878417</subfield>
    <subfield code="9">ExL</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)001878417</subfield>
  </datafield>
  <datafield tag="037" ind2=" " ind1=" ">
    <subfield code="a">30.811.540 f</subfield>
    <subfield code="b">OFSP0</subfield>
  </datafield>
  <datafield tag="040" ind2=" " ind1=" ">
    <subfield code="a">Sz</subfield>
    <subfield code="b">fre</subfield>
    <subfield code="e">rda</subfield>
  </datafield>
  <datafield tag="041" ind2=" " ind1="1">
    <subfield code="a">fre</subfield>
```

début de la notice

008 = éléments de données de longueur fixe:
Année de parution: positions 07-10 (2015)
Code du pays: positions 15-17 (sz)
Code de langue: positions 35-37 (fre)

```

<subfield code="h">ger</subfield>
</datafield>
<datafield tag="082" ind2="4" ind1="7">
  <subfield code="a">796</subfield>
  <subfield code="2">23sdb</subfield>
</datafield>
<datafield tag="100" ind2=" " ind1="1">
  <subfield code="0">(DE-588)141147962</subfield>
  <subfield code="a">Gentsch, Nicola</subfield>
  <subfield code="e">Verfasser</subfield>
  <subfield code="4">aut</subfield>
</datafield>
<datafield tag="240" ind2="0" ind1="1">
  <subfield code="a">Turnen: Leichtathletik</subfield>
</datafield>
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastik: athlétisme /</subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
<datafield tag="246" ind2="0" ind1="3">
  <subfield code="a">Athlétisme</subfield>
</datafield>
<datafield tag="264" ind2="1" ind1=" " >
  <subfield code="a">Macolin :</subfield>
  <subfield code="b">Office fédéral du sport OFSP, </su
  <subfield code="c">2015</subfield>
</datafield>
<datafield tag="300" ind2=" " ind1=" " >
  <subfield code="a">80 pages :</subfield>
  <subfield code="b">illustrations ;</subfield>
  <subfield code="c">30 cm</subfield>
</datafield>
<datafield tag="336" ind2=" " ind1=" " >
  <subfield code="b">txt</subfield>
  <subfield code="2">rdacontent</subfield>
</datafield>
<datafield tag="337" ind2=" " ind1=" " >
  <subfield code="b">n</subfield>
  <subfield code="2">rdamedia</subfield>
</datafield>
<datafield tag="338" ind2=" " ind1=" " >
  <subfield code="b">nc</subfield>
  <subfield code="2">rdacarrier</subfield>
</datafield>
<datafield tag="500" ind2=" " ind1=" " >
  <subfield code="a">Ausführliche Bibliographie und Kommentare</subfield>
</datafield>
<datafield tag="650" ind2="7" ind1=" " >
  <subfield code="0">(DE-588)4035163-4</subfield>
  <subfield code="a">Leichtathletik</subfield>
  <subfield code="2">gnd</subfield>
</datafield>
<datafield tag="710" ind2=" " ind1="1">
  <subfield code="0">(DE-588)2182120-3</subfield>
  <subfield code="a">Schweiz</subfield>
  <subfield code="b">Bundesamt für Sport</subfield>
  <subfield code="e">Herausgebendes Organ</subfield>
  <subfield code="4">isb</subfield>
</datafield>
<datafield tag="856" ind2="1" ind1="4">

```

100 = auteur principal
(forme standardisée)

245 = titre et auteur(s) (dans la
forme du document)

264 = lieu de publication, éditeur et
année de publication (dans la forme
du document)

300 = description physique

500 = notes

650 = sujet
(forme standardisée)

710 = auteur secondaire
(forme standardisée)

```
<subfield code="u">http://opac.admin.ch/gw/toc/pdf/toc001878417.pdf</subfield>
<subfield code="y">Table des matières</subfield>
</datafield>
<datafield tag="993" ind2=" " ind1=" ">
  <subfield code="a">sb</subfield>
  <subfield code="b">2017/04</subfield>
  <subfield code="c">796</subfield>
  <subfield code="k">be</subfield>
</datafield>
<datafield tag="949" ind2=" " ind1=" ">
  <subfield code="b">10010</subfield>
  <subfield code="c">0bq 11442</subfield>
  <subfield code="a">1901887895</subfield>
  <subfield code="g">PUBLIC_NOTE: 0";"URL: 0</subfield>
</datafield>
</record>
```

fin de la notice

3 Descrizione del formato MARC21

Il MARC (acronimo di Machine Readable Cataloging ovvero catalogazione leggibile da una macchina) è uno standard utilizzato a livello mondiale per la rappresentazione e lo scambio, in forma leggibile da una macchina, di dati bibliografici, di autorità, di fondi, di classificazioni e concernenti informazioni sui cittadini. MARC è stato messo a punto dalla Library of Congress. La versione attualmente in uso è MARC21.

Pagina internet del formato MARC21: <http://www.loc.gov/marc/>

Le informazioni riportate qui di seguito si riferiscono al formato per dati bibliografici.

Il formato MARC è composto da campi dati, indicatori, sottocampi e valori codificati che definiscono gli elementi di dati in registrazioni bibliografiche. Un record di dati bibliografici contiene generalmente titolo, nomi, parole chiave, note, data di pubblicazione e informazioni sulla descrizione fisica di un'opera.

Esempio del campo 245 del titolo:

- Campo dati: 245
- Indicatore primo: 1
- Indicatore secondo: 0
- Sottocampi: a, c

```
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastique: athlétisme </subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
```

Per applicare il formato MARC in ambiente XML è stato sviluppato lo schema MARCXML.

Pagina internet dello schema MARC21 XML: <http://www.loc.gov/standards/marcxml/>

Esempio di record di dati in MARCXML con indicazione dei campi principali:

```
<record > Inizio record di dati
  <leader>01158nam a22003494i 4500</leader>
  <controlfield tag="001">991000012709703976</controlfield>
  <controlfield tag="003">Sz</controlfield>
  <controlfield tag="005">20180920023817.0</controlfield>
  <controlfield tag="008">170705s2015 sz a f00| 0 fre d</controlfield>
  <datafield tag="024" ind2=" " ind1="7">
    <subfield code="a">http://permalink.sn1.ch/bib/sz001878417</subfield>
    <subfield code="2">uri</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)vtls001878417</subfield>
    <subfield code="9">ExL</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)001878417</subfield>
  </datafield>
  <datafield tag="037" ind2=" " ind1=" ">
    <subfield code="a">30.811.540 f</subfield>
    <subfield code="b">0FSP0</subfield>
  </datafield>
  <datafield tag="040" ind2=" " ind1=" ">
    <subfield code="a">Sz</subfield>
    <subfield code="b">fre</subfield>
    <subfield code="e">rda</subfield>
  </datafield>
  <datafield tag="041" ind2=" " ind1="1">
```

008 = Elementi di dati a lunghezza fissa:
Data pubblicazione: pos. 07-10 (2015)
Codice paese: pos. 15-17 (sz)
Codice lingua: pos. 35-37 (fre)


```

<subfield code="a">fre</subfield>
<subfield code="h">ger</subfield>
</datafield>
<datafield tag="082" ind2="4" ind1="7">
  <subfield code="a">796</subfield>
  <subfield code="2">23sdb</subfield>
</datafield>
<datafield tag="100" ind2=" " ind1="1">
  <subfield code="0">(DE-588)141147962</subfield>
  <subfield code="a">Gentsch, Nicola</subfield>
  <subfield code="e">Verfasser</subfield>
  <subfield code="4">aut</subfield>
</datafield>
<datafield tag="240" ind2="0" ind1="1">
  <subfield code="a">Turnen: Leichtathletik</subfield>
</datafield>
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastique: athlétisme /</subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
<datafield tag="246" ind2="0" ind1="3">
  <subfield code="a">Athlétisme</subfield>
</datafield>
<datafield tag="264" ind2="1" ind1=" " >
  <subfield code="a">Macolin :</subfield>
  <subfield code="b">Office fédéral du sport OFSP, </subfield>
  <subfield code="c">2015</subfield>
</datafield>
<datafield tag="300" ind2=" " ind1=" " >
  <subfield code="a">80 pages :</subfield>
  <subfield code="b">illustrations ;</subfield>
  <subfield code="c">30 cm</subfield>
</datafield>
<datafield tag="336" ind2=" " ind1=" " >
  <subfield code="b">txt</subfield>
  <subfield code="2">rdacontent</subfield>
</datafield>
<datafield tag="337" ind2=" " ind1=" " >
  <subfield code="b">n</subfield>
  <subfield code="2">rdamedia</subfield>
</datafield>
<datafield tag="338" ind2=" " ind1=" " >
  <subfield code="b">nc</subfield>
  <subfield code="2">rdacarrier</subfield>
</datafield>
<datafield tag="500" ind2=" " ind1=" " >
  <subfield code="a">Ausführliche Bibliographie und Kommentare</subfield>
</datafield>
<datafield tag="650" ind2="7" ind1=" " >
  <subfield code="0">(DE-588)4035163-4</subfield>
  <subfield code="a">Leichtathletik</subfield>
  <subfield code="2">gnd</subfield>
</datafield>
<datafield tag="710" ind2=" " ind1="1">
  <subfield code="0">(DE-588)2182120-3</subfield>
  <subfield code="a">Schweiz</subfield>
  <subfield code="b">Bundesamt für Sport</subfield>
  <subfield code="e">Herausgebendes Organ</subfield>
  <subfield code="4">isb</subfield>
</datafield>

```

100 = Autore principale
(forma normata)

245 = Titolo, paternità dell'opera
(come da modello)

264 = Luogo di pubblicazione, editore e data di pubblicazione (come da modello)

300 = Descrizione fisica

500 = Note

650 = Soggetto
(forma normata)

710 = Autore secondario
(forma normata)

```
<datafield tag="856" ind2="1" ind1="4">
  <subfield code="u">http://opac.admin.ch/gw/toc/pdf/toc001878417.pdf</subfield>
  <subfield code="y">Table des matières</subfield>
</datafield>
<datafield tag="993" ind2=" " ind1=" ">
  <subfield code="a">sb</subfield>
  <subfield code="b">2017/04</subfield>
  <subfield code="c">796</subfield>
  <subfield code="k">be</subfield>
</datafield>
<datafield tag="949" ind2=" " ind1=" ">
  <subfield code="b">10010</subfield>
  <subfield code="c">0bq 11442</subfield>
  <subfield code="a">1901887895</subfield>
  <subfield code="g">PUBLIC_NOTE: 0";"URL: 0</subfield>
</datafield>
</record>
```

Fine record di dati

4 Description of the MARC 21 format

MARC (MACHine Readable Cataloging) is a widely used global standard for representing and exchanging bibliographic, authority, holdings, classification and community information data in machine-readable form. MARC is maintained by the Library of Congress; the current version is the 21st, MARC 21.

MARC 21 format homepage: <http://www.loc.gov/marc/>

The following is an explanation of the format for bibliographic data.

The MARC format consists of tags, indicators, subfield codes and coded values that identify the data elements in bibliographic records. A bibliographic data record commonly includes titles, names, subjects, notes, publication data and information about the physical description of an item.

Example of field 245 for the title:

- Tag: 245
- First indicator: 1
- Second indicator: 0
- Subfields: a and c

```
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastique: athlétisme </subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
```

The MARCXML Schema has been developed to implement the MARC format in an XML environment. MARC 21 XML Schema homepage: <http://www.loc.gov/standards/marcxml/>

Example of a data record in MARCXML, indicating the most important fields:

```
<record >
  <leader>01158nam a22003494i 4500</leader>
  <controlfield tag="001">991000012709703976</controlfield>
  <controlfield tag="003">Sz</controlfield>
  <controlfield tag="005">20180920023817.0</controlfield>
  <controlfield tag="008">170705s2015 sz a f00| 0 fre d</controlfield>
  <datafield tag="024" ind2=" " ind1="7">
    <subfield code="a">http://permalink.sn1.ch/bib/sz001878417</subfield>
    <subfield code="2">uri</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)vtls001878417</subfield>
    <subfield code="9">ExL</subfield>
  </datafield>
  <datafield tag="035" ind2=" " ind1=" ">
    <subfield code="a">(Sz)001878417</subfield>
  </datafield>
  <datafield tag="037" ind2=" " ind1=" ">
    <subfield code="a">30.811.540 f</subfield>
    <subfield code="b">OFSP0</subfield>
  </datafield>
  <datafield tag="040" ind2=" " ind1=" ">
    <subfield code="a">Sz</subfield>
    <subfield code="b">fre</subfield>
    <subfield code="e">rda</subfield>
  </datafield>
  <datafield tag="041" ind2=" " ind1="1">
    <subfield code="a">fre</subfield>
```

Start of data record

008 = Data elements of fixed length:
Year of publication: positions 07-10 (2015)
Country code: positions 15-17 (sz)
Language code: positions 35-37 (fre)

```

    <subfield code="h">ger</subfield>
  </datafield>
<datafield tag="082" ind2="4" ind1="7">
  <subfield code="a">796</subfield>
  <subfield code="2">23sdb</subfield>
</datafield>
<datafield tag="100" ind2=" " ind1="1">
  <subfield code="0">(DE-588)141147962</subfield>
  <subfield code="a">Gentsch, Nicola</subfield>
  <subfield code="e">Verfasser</subfield>
  <subfield code="4">aut</subfield>
</datafield>
<datafield tag="240" ind2="0" ind1="1">
  <subfield code="a">Turnen: Leichtathletik</subfield>
</datafield>
<datafield tag="245" ind2="0" ind1="1">
  <subfield code="a">Gymnastique: athlétisme /</subfield>
  <subfield code="c">auteur: Nicola Gentsch</subfield>
</datafield>
<datafield tag="246" ind2="0" ind1="3">
  <subfield code="a">Athlétisme</subfield>
</datafield>
<datafield tag="264" ind2="1" ind1=" " >
  <subfield code="a">Macolin :</subfield>
  <subfield code="b">Office fédéral du sport OFSP, </subfield>
  <subfield code="c">2015</subfield>
</datafield>
<datafield tag="300" ind2=" " ind1=" " >
  <subfield code="a">80 pages :</subfield>
  <subfield code="b">illustrations ;</subfield>
  <subfield code="c">30 cm</subfield>
</datafield>
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  <subfield code="b">txt</subfield>
  <subfield code="2">rdacontent</subfield>
</datafield>
<datafield tag="337" ind2=" " ind1=" " >
  <subfield code="b">n</subfield>
  <subfield code="2">rdamedia</subfield>
</datafield>
<datafield tag="338" ind2=" " ind1=" " >
  <subfield code="b">nc</subfield>
  <subfield code="2">rdacarrier</subfield>
</datafield>
<datafield tag="500" ind2=" " ind1=" " >
  <subfield code="a">Ausführliche Bibliographie und Kommentare</subfield>
</datafield>
<datafield tag="650" ind2="7" ind1=" " >
  <subfield code="0">(DE-588)4035163-4</subfield>
  <subfield code="a">Leichtathletik</subfield>
  <subfield code="2">gnd</subfield>
</datafield>
<datafield tag="710" ind2=" " ind1="1">
  <subfield code="0">(DE-588)2182120-3</subfield>
  <subfield code="a">Schweiz</subfield>
  <subfield code="b">Bundesamt für Sport</subfield>
  <subfield code="e">Herausgebendes Organ</subfield>
  <subfield code="4">isb</subfield>
</datafield>
<datafield tag="856" ind2="1" ind1="4">

```

100 = Main author
(standardised form)

245 = Title and author statement

264 = Place of publication, publisher and year of publication

300 = Physical description

500 = Notes

650 = Subject
(standardised form)

710 = Additional author
(standardised form)

```
<subfield code="u">http://opac.admin.ch/gw/toc/pdf/toc001878417.pdf</subfield>
<subfield code="y">Table des matières</subfield>
</datafield>
<datafield tag="993" ind2=" " ind1=" ">
  <subfield code="a">sb</subfield>
  <subfield code="b">2017/04</subfield>
  <subfield code="c">796</subfield>
  <subfield code="k">be</subfield>
</datafield>
<datafield tag="949" ind2=" " ind1=" ">
  <subfield code="b">10010</subfield>
  <subfield code="c">0bq 11442</subfield>
  <subfield code="a">1901887895</subfield>
  <subfield code="g">PUBLIC_NOTE: 0";"URL: 0</subfield>
</datafield>
</record>
```

End of data record

5 Description of the download interface

5.1 OAI-PMH

The data of the Swiss National Library (NL) is available via OAI-PMH. OAI-PMH consists of three elements:

1. a protocol to download bibliographic metadata
2. a server to deliver this data
3. a harvester to get this data.

To download the NL's metadata you need:

1. to know how the protocol works
2. to have a harvester client to conveniently access the NL's OAI server

For a complete description of how to use OAI-PMH please consult:

<http://www.openarchives.org/OAI/openarchivesprotocol.html>

For a detailed description of how Alma implements OAI-PMH please consult:

<https://developers.exlibrisgroup.com/alma/integrations/oai>

An OAI-PMH request for the NL's bibliographic metadata consists of the following parts:

Description	Example
Base URL*	<code>https://nb-helveticaat.userservices.exlibrisgroup.com/view/oai/41SNL_51_INST/request</code>
Verb* (to define the harvesting request)	<code>verb=ListRecords</code>
Set* (to define the content to deliver)	<code>set=helveticaat</code>
Metadata prefix* (to define the format in which the metadata is delivered)	<code>metadataPrefix=marc21</code>
From date (to define the starting date of your request with a date stamp)	<code>from=2018-07-23T11:56:07Z</code>
Until date (to define the ending date of your request with a date stamp)	<code>until=2018-09-24T00:00:00Z</code>

* mandatory elements

The different parts are put together by standard URL syntax with “?” and “&”.

Be aware that all arguments following the base URL are case sensitive.

https://nb-helveticaat.userservices.exlibrisgroup.com/view/oai/41SNL_51_INST/request?verb=ListRecords&metadataPrefix=marc21&set=helveticaat&from=2018-08-23T11:56:07Z&until=2018-09-24T00:00:00Z

As a set can contain more than a million records, the metadata is delivered in chunks of 100 records each. The chunks 2 to n-1 contain a **resumption token** that allows you to load the next chunk.

5.2 Harvester Clients

To harvest large collections manually is very cumbersome. In order to get the NL's bibliographic metadata you have to use a harvester client. There are many open source implementations written in different programming languages (C, C#, Perl, PHP, Python, Ruby), some are rather simple and others are very powerful.

However there are not so many standalone clients that are easy to use. If you're currently not using a harvester of your own choice we recommend one of the following:

1. The OAI-harvester-tool provided by the APEX project is a java client with a command line interface. In order to use it you need to know all the mandatory elements of your OAI-URL:
<http://apex-project.eu/index.php/en/outcomes/tools-and-manuals#OAItool>
2. The OAI-harvester of the MarcEdit suite written in C# and available for Windows, Mac and Linux. MarcEdit is a versatile tool that allows you amongst others to transform MARCXML in different formats:
<http://marcedit.reeset.net/>