

MARC Workshop
*MARC 21 and related
developments*

Sally McCallum
Library of Congress
smcc@loc.gov

Overview

- ❖ **This morning**
 - **General introduction and Bibliographic format**
- ❖ **This afternoon**
 - **MARC and FRBR**
 - **Holdings format**
- ❖ **Tuesday morning**
 - **Authority Format**
- ❖ **Tuesday afternoon**
 - **MARCXML and MODS**

Record components

❖ Distinguish:

- **Content – the descriptive information**
 - title, subject, coded description, etc.
- **Markup – data tagging**
 - MARC 21 tags and subfield codes
- **Structure – record syntax**
 - MARC leader, directory, indicators, variable fields, etc.

Content

❖ Rules

- IFLA conferences on International Cataloging Rules – 2003-2007
- ISBD consolidation/revision
- FRBR conceptual model
- Finnish rules
- AACR, Finnish rules, etc.
- RDA (Resource Description and Access)
 - First complete draft expected fall 2008
 - Release 2009

❖ Element sets

- Dublin Core elements, other element sets

❖ Other than descriptive?

- technical, administrative, structural, rights

Markup and Structure

- ❖ **Markup -- Data tagging**
 - MARC 21 tags, MODS tags, MARCXML tags
 - HTML, DC tags, ONIX tags, local conventions

- ❖ **Structure -- Record syntax**
 - ISO 2709 (used for MARC)
 - XML schema or DTD
 - Microsoft Access
 - ?ML structure family

Record components

MARC 21

❖ Content

- AACR2 cataloging data
 - 100 1#\$a**Kent, Neil**

❖ Markup

- MARC 21 tags and subfield codes
 - **100 1# \$a**Kent, Neil

❖ Structure

- MARC leader, directory, control fields, variable fields with indicators and subfields

Problems MARC confronted

- ❖ **Variable length data and records**
- ❖ **Frequent updates**
- ❖ **Very large files**
- ❖ **Data retrieval and subset needs**
- ❖ **Extensive character sets needs**
- ❖ **Individual record and file applications**

Record parts

❖ ISO 2709

- **Leader – first 24 character positions**
- **Directory - 12-character entries, 1 per field**
- **Variable fields - “any” number or length**
 - **Variable control fields (tags 001-009)**
 - **Variable data fields (tags 010-999)**
 - **Subfields**
 - **Indicators**

Enabling MARC Features

Record Leader

- ❖ Structural data
 - Record length
 - Indicator length
 - Subfield identifier length
 - Base address of data
 - Directory layout
- ❖ **Enables** use of records individually by making the structure self-defining
- ❖ Record Content
 - Record status
 - Type of record
 - Bibliographic level
 - Type of control
 - Character set used
 - Encoding level
 - Descriptive cataloging form
 - Multipart resource record level
- ❖ **Enables** whole record update and high level record sorting

MARC record with Leader highlighted

00802cam##2200241#a#4500001001300000003000400013
005001700017008004100034020001800075040001800093
043001200111050002600123082001500149100001800164
245004200182260003500224300002100259650002400280
650002600304650003300330856010600363856009100469
###2006040204@DLC@20060918142242.0@060210s2006##
##nyu#####000#1#eng##@##\$a9780385336642@##
\$aDLC\$cDLC\$dDLC@##\$as-pe--00\$aPS3601.R345\$bC46#2
006#00\$a813/.6#222#1@\$aArana,#Marie.@10\$aCelloph
ane#:\$ba#novel#/\$cMarie#Arana.###\$aNew#York#:\$bD
ial#Press,\$c2006.###\$a367#p.#;\$c25#cm.@#0\$aEngin
eers\$vFiction.@#0\$aPapermakers\$vFiction.@#0\$aRai
n#forests\$zPeru\$vFiction.@42\$3Publisher#descript
ion\$uhttp://www.loc.gov/catdir/enhancements/fy06
33/2006040204-d.html@%

Enabling MARC Features

Record Directory

❖ Enables

- variable length fields
- data retrieval and efficient extraction of subsets
- easy record update

1-3	4-7	8-12
tag	field length	starting character position in record

Example:

245	0055	00298
-----	------	-------

MARC record with Directory highlighted

00802cam##2200241#a#4500001001300000003000400013
005001700017008004100034020001800075040001800093
043001200111050002600123082001500149100001800164
245004200182260003500224300002100259650002400280
650002600304650003300330856010600363856009100469
@##2006040204@DLC@20060918142242.0@060210s2006##
##nyu#####000#1#eng##@##\$a9780385336642@##
\$aDLC\$cDLC\$dDLC@##\$as-pe-@00\$aPS3601.R345\$bC46#2
006#00\$a813/.6#222#1@\$aArana,#Marie.@10\$aCelloph
ane#:\$ba#novel#/\$cMarie#Arana.###\$aNew#York#:\$bD
ial#Press,\$c2006.###\$a367#p.#;\$c25#cm.@#0\$aEngin
eers\$vFiction.@#0\$aPapermakers\$vFiction.@#0\$aRai
n#forests\$zPeru\$vFiction.@42\$3Publisher#descript
ion\$uhttp://www.loc.gov/catdir/enhancements/fy06
33/2006040204-d.html@%

Coded Data control fields

❖ **Enable**

- efficient indexing
- qualification of searches

▪ Example

- [008] 060210s2006#####nyu 000 1 eng
- Date record created – type of resource – date of publication –
place of publication -- ... -- language of publication

MARC record with coded data fields highlighted

00802cam##2200241#a#4500001001300000003000400013
005001700017008004100034020001800075040001800093
043001200111050002600123082001500149100001800164
245004200182260003500224300002100259650002400280
650002600304650003300330856010600363856009100469
@##2006040204@DLC@20060918142242.0@060210s2006##
##nyu#####000#1#eng##@##\$a9780385336642@##
\$aDLC\$cDLC\$dDLC@##\$as-pe-@00\$aPS3601.R345\$bC46#2
006#00\$a813/.6#222#1@\$aArana,#Marie.@10\$aCelloph
ane#:\$ba#novel#/\$cMarie#Arana.@##\$aNew#York#:\$bD
ial#Press,\$c2006.@##\$a367#p.#;\$c25#cm.@#0\$aEngin
eers\$vFiction.@#0\$aPapermakers\$vFiction.@#0\$aRai
n#forests\$zPeru\$vFiction.@42\$3Publisher#descript
ion\$uhttp://www.loc.gov/catdir/enhancements/fy06
33/2006040204-d.html@%

Variable data fields

❖ Enable

- variable length data without padding
- parsing of data

- Examples
 - 1#\$aArana, Marie
 - 1#\$aJotuni, Portti,\$d1931-
 - 1#\$aEnock, C. Reginald\$q(Charles Reginald),\$d1868-1970

MARC record with variable length fields highlighted

```
00802cam##2200241#a#4500001001300000003000400013
005001700017008004100034020001800075040001800093
043001200111050002600123082001500149100001800164
245004200182260003500224300002100259650002400280
650002600304650003300330856010600363856009100469
@##2006040204@DLC@20060918142242.0@060210s2006##
##nyu#####000#1#eng##@##$a9780385336642@##
$aDLC$cDLC$dDLC@##$as-pe-@00$aPS3601.R345$bC46#2
006#00$a813/.6#222#1@$aArana,#Marie.@10$aCelloph
ane#:$ba#novel#/$cMarie#Arana.@##$aNew#York#:$bD
ial#Press,$c2006.@##$a367#p.#;$c25#cm.@#0$aEngin
eers$vFiction.@#0$aPapermakers$vFiction.@#0$aRai
n#forests$zPeru$vFiction.@42$3Publisher#descript
ion$uhttp://www.loc.gov/catdir/enhancements/fy06
33/2006040204-d.html@%
```

Character sets development

- ❖ **Enables** vernacular records
- ❖ Initial set (~100 characters)
 - ASCII + (Latin and extended Latin)
 - Included many diacritics
- ❖ Added later (~16,000 characters)
 - Chinese, Japanese, and Korean
 - Cyrillic
 - Greek
 - Hebrew
 - Arabic
- ❖ **And now Unicode (~100,000 characters)**

Flexibility of features

❖ Flexibility of MARC 21

- Brief record or detailed record – your choice
- Accommodates many different content rules
- Use of either conventional character sets or Unicode

❖ Cost of flexibility

- More format detail
- Need for profiles

Convergence to MARC 21

❖ MARC 21 Users

- **USA, Canada** (from CAN/MARC), **Mexico, Latin America, South Africa** (from Unimarc), etc.
- **UK** (from UKMARC), **Norway, Poland, Switzerland, Sweden** (from SWEMARC), **Czech Republic** (from Unimarc), **Croatia** (from Unimarc), and others
- **Australia** (from AusMARC), **New Zealand, Hong Kong, China, Philippines, Thailand, Viet Nam**, and others
- Currently: **Germany** from MAB, **Spain** from IberMARC

Convergence to MARC 21

Encourages system vendors and tool creators

❖ **System vendors (MARC 21) - all sizes:**

- **Large:** ExLibris/Endeavor, Innovative, VTLS, SirsiDynix, Talis, etc.
- **Smaller:** Follett (Athena), Mitinet/MARC, Evergreen, Minaret, SIRS Mandarin, CDS/ISIS, Koha, etc.

❖ **Tools:**

- MARCEdit, Validator, MARCMaker, etc.

❖ **www.loc.gov/marc/marcservice.html**

Convergence to MARC 21

Enables savings through copy cataloging

❖ MARC 21 record suppliers

- **Network utilities**
- **Book vendors**
 - records with books
- **Record vendors – online, hard media**
- **Library systems**
 - Library of Congress Z39.50 and SRU access
 - many Z39.50 accessible sites, some SRU

Convergence to MARC 21

Enables cooperative programs

- ❖ **Library of Congress partner programs**
 - **Name authority cooperation (NACO)**
 - over 500 libraries cooperating with LC
 - **Subject headings (SACO)**
 - over 100 regular participants with LC
 - **Bibliographic records (including CONSER)**
 - over 90 members

Format maintenance

MARC 21 maintenance

❖ Key factors

- Internationally open participation and change process - Web postings, listservs
- Broad expert input
- Library of Congress commitment to support staff and documentation

Format maintenance

International participation

- ❖ **Listserv: MARC Forum to exchange experience and ask questions**
- ❖ **All change proposals announced on MARC Forum**
- ❖ **Over 1200 subscribers from 50 countries**
- ❖ **To subscribe, go to www.loc.gov/marc and look under MARC Forum**

MARC 21 documentation

❖ MARC 21 Full

- Detailed explanations, examples, usage guidelines
- Available on Web and in print

❖ MARC 21 Concise

- Brief explanations, many examples
- Available on Web and in print
- Most widely translated

❖ MARC 21 LITE

- Subset of MARC 21 Full
- Core data elements covering all forms of material
- Available on Web only

Format maintenance

MARC 21 web site

- ❖ **www.loc.gov/marc**
- ❖ **News and announcements**
- ❖ **Documentation on web site**
 - Full, Concise, and Lite formats
 - HTML, updates in pdf
 - All code lists: language, country, relators, etc.
 - HTML, pdf, and downloadable XML
 - Character sets specifications – mappings to Unicode in html and downloadable XML
 - Tutorials
 - *Understanding MARC Bibliographic*
 - *Understanding MARC Authorities Format*

Format maintenance

MARC 21 web site

❖ MARC development information

- User guidelines
- MARC change proposals, discussion papers, minutes of meetings, etc.
- MARC in XML information
- MARC and FRBR

❖ Listing of systems, record sources, and tools

- Open Source - free
- Priced services and software
- Includes record conversion or manipulation services and record sources

An aside

Important related standards

❖ Z39.50 Information Retrieval Protocol

- supports both copy cataloging and reference
- software and hardware independent searching (across different systems)
- search multiple sites as once (virtual union)
- Use local interface for external searching and result displays (user friendly)

❖ SRU (Search and Retrieval via URL)

Summing Up

Summing up

Strengths of MARC

- ❖ High level of conformance
- ❖ Foundation for library networks
- ❖ Helps unify the bibliographic control arena
- ❖ Flexible and accommodating
- ❖ Enormous library savings from data interchange/copy cataloging
- ❖ Supported in many service environments --networks, vendors, and services
- ❖ Supported in many tools – some open source
- ❖ Shared training opportunities
- ❖ Lots of users

Summing up

Convergence on MARC 21

- ❖ Data exchange no longer has national boundaries
- ❖ System vendor industry
 - Off-the-shelf often MARC 21
 - Customization to another format costs extra
- ❖ Global record sharing systems
- ❖ Communications and protocols
 - Success of Z39.50 is MARC 21-based

Summing up

Lots of users

❖ MARC 21 widely implemented in libraries and archives

- Over 1,000,000,000 MARC 21 records in local and network systems - worldwide
- Installed base of 1000s of MARC 21 systems
- Accessible by 1000s of Z39.50 information retrieval clients that retrieve MARC 21
- Thousands of staff “speak” MARC 21