More than you want to know about standards

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Agenda

- Changing environment
- Types of standards
- Standards process
- Some recent examples
- Role of OCLC in standards
Changing Environment

- Users coming to the library indirectly
  - Via University portals, e-learning systems
  - Via web pages, search engines, worldcat.org
- Library not first port of call for information
  - Google & Yahoo
- Custodial role – Institutional repository
- Increasing inter-dependence of dissimilar systems
  - Discovery widespread; delivery not so
Institution

Authors

Virtual Learning Environment

Authentication

Reading lists

Google, Yahoo, Amazon etc.

Changing Environment

Repository

ILMS

Portal

Contribution

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Contribution
Industry Standards as the Base

- http & ldap protocol
- URL (http GET)
- Web services (http POST)
- XML data format with customised schemas

- Protocols with their own TCP/IP port
- Stateful protocols
- EDIFACT & BER encoding, ISO 2709
Levels of Inter-operability

• Full system inter-operability
  – Inter-operability of a whole process
    • e.g. Self checking loans (NCIP)
  – Process can extend over > one session
    • e.g. ILL (ISO 10161), acquisitions (EDIFACT)
  – Maintenance of state
  – Symbiosis
Levels of Inter-operability

- Medium level
  - Z39.50 – session based – multiple tasks
  - Maintenance of state
  - Like systems Bibliographic system to Bibliographic system
  - Emergence of multi-protocol portals
Levels of Inter-operability

- Partial inter-operability
  - Single task only rather than session
    - One message; one response
    - SRW/SRU for enquiry
    - NCIP or LDAP for authentication
- Referral, linking to another system
  - openURL
Types of standards

- Models
- Data structures
  - Schemas
    - Data elements
    - Mandatory / optional, repeatable / not repeatable, data type, values
  - Syntaxes
    - ISO 2709, XML, ANSI/BER, EDIFACT, Key/Value pairs
- Messages
  - Data elements
  - Referenced Schemas
  - Syntaxes
- Profiles
  - Agreed subsets = interoperability
Models

• Purpose
  – for database development
  – For development of other standards

• Examples
  – CRM (ISO 21127)
  – FRBR (IFLA)
  – Data elements (ISO 8459)
  – Library Registries (ISO 2146)
  – Open Archives Model
Data Structures

Examples
- MARC21, UNIMARC, xxMARC (ISO 2709 or XML)
- ONIX (XML)
- Dublin Core (XML)
- EDIFACT EDItEUR (EDI, XML)

For exchanging data
Messages

• Enquiry
  – Z39.50 (search, response, scan, ++)
  – SRU
  – OpenSearch

• Circulation
  – NCIP
  – SIP2

• Acquisitions
  – EDItEUR

• Update
  – Z39.50 UCP
  – SRU update
  – OAI PMH

• Delivery request
  – ISO ILL
  – OpenURL to resolver
  – OpenURL Request Transfer Message

• Authentication
  – LDAP, Shibboleth

Types of Standards
Process

- ISO
  - [WD], CD (3), DIS (5), [FDIS], IS
  - Voting & observer members
  - Working group
  - Maintenance agencies
    - Easy & fast way to implement add ons
    - Register schemas, code lists, etc.
Incentives?

- Inter-operability
  - Permits mix and match
- Easier development
  - Checklist
  - Avoids starting from scratch
  - Takes risk out of development
- Means of comparison of systems

- Differentiation reduced
- Opens playing field to competitors
- Interoperability testing
Standards bodies

International
- ISO /IEC
- IFLA
- W3C
- IETF
- OASIS

National & Other
- NISO
- ALA – MARBI
- Digital Library Federation (DLF)
- Ad Hoc

etc
OCLC PICA
Standards Process
Bringing Standards up to Date

• Don’t throw the baby out with the bath water
• Examples:
  – SRW / SRU
  – Update
- Started in 2001; Version 1.1 November 2003

- Simplified, modernized protocol, grown up Z39.50
  - Generic platform

- [http://lcweb.loc.gov/z3950/agency/zing/srw/specifications.html](http://lcweb.loc.gov/z3950/agency/zing/srw/specifications.html)
- Evolution of Z39.50; Inherits best bits
- More extensible than Z39.50
  - Access points, data schemas, extra data
  - Extendable operations
- Industry standard platform – HTTP; web services
  - Easier fit with other developments
  - Easier to find developers
  - Less to maintain and optimize
  - Fewer firewall problems
- Simplicity
  - People don’t need a diploma to start
- Performance
  - SRU re-uses data in cache – less load on server
- Cross Domain interoperability
  - Easier to promote
Keeps best bits of Z39.50

- Abstract indexes
  - DC
  - Bath profile mapped
- Precise searching
- Result set concept
- Improves Explain – machine configurable
  - really
- Extensibility
  - better: other info at message & record level
Zed’s best bits continued

- Multi-target searching
  - One user interface; one search
  - different platforms (UNIX, NT, IBM etc.)
  - different database systems (relational, network)
  - different database models
- Searching based on abstract concepts
  - “Title”, i.e. not database columns
- Can combine results from diverse databases
  - Common record syntax (XML; in Z39.50 is ISO 2709)
- Reuse of results
- Facilitates follow on delivery – electronic & physical

Some Recent Examples
Main Differences from Z39.50

- “Stateless” and “connection-less”, with continuity maintained by:
  - result set (server named)
  - Authentication token
- Only one database
- Only one record syntax & encoding – XML (not ASN.1)
- CQL (CCL inspired) not RPN
- Explain – XML document (eye & machine readable)
More Differences

- Search & present use same request mechanism
- Services:
  - Search
  - Sort (part of search request)
  - Scan (v. 1.1)
  - Explain
When to stay with Zed

- No problems with firewall
- System needs zero maintenance / enhancements / optimization
- System needs no new targets or clients
- System needs no external interoperation with dissimilar systems and portals
**SRW**

**SRW - Search/Retrieve Web Service**

Z39.50 International: Next Generation

- **SRW** WEB service
  - HTTP POST, SOAP wrapper, XML encoding, WSDL
  - Client / server (machine to machine)
  - For long query strings, complex queries
  - For protected servers

- **SRU** Complementary
  - HTTP GET (URL) with XSLT
  - thin client – (browser to machine) - Stylesheets
  - Full function but simple implementation & take up
    Simple
  - URLs for documents, browser bookmarks
    - Mozilla: saved URL, multiple search, tab presentations
      from multiple servers

Some Recent Examples
SRU Update

NCC

WorldCat

Record & work identifiers

SRU UPDATE M21

PUSH

LOG

GGC
ISO Holdings Schema ISO 20775

- Holdings
  - Resource
    - Institution Identifier
    - Physical Location
  - Holding
    - Holding Simple
    - Holding Structured
    - Summary
      - Summary Policy
    - Summary History

* Combines stable & dynamic info
* Principally for Queries
* Possible Supplier Component in OpenURL Request Transfer Message

Some Recent Examples
Some Recent Examples

Union Catalogue

Discovery Universe
Portals
OPACs

Union Catalogues

Request Transfer Msg
OpenURL

Union Catalogue RDS

RDS

Delivery Universe
WorldCat RS

national / regional services

Subito
CISTI
BLDSC

Doc Del
Some Recent Examples
Role of OCLC

- Leader
  - Dublin Core – Stu Weibel
  - OpenURL maintenance agency
  - NISO Board – Lorcan Dempsey & Robin Murray
  - SRU – Ralph LeVan
  - SRU update - Janifer Gatenby
  - ISO 8459, Bath Profile, Z39.50
  - ISO holdings, Request Transfer
  - NCIP – John Bodfish, Tony O’Brien, Pat Stevens
  - DLF
  - + + +

- Test Bed
- Promotional role
Thank you.