Handles at LC as of July 1999

for

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Summary of Handle use at LC

• Supporting direct, persistent links to materials from multiple sources
  – using today, as a resolution server
• Applying only to content LC creates
• Running a handle administration server
  – LC’s server is part of a global resolution system
  – Handle example: urn:hdl:loc.gmd/g3824p.pm008321
• Considering additional uses
  – Copyright Office - general ideas, no firm plans - expect to take advantage of DOIs and other managed namespaces to facilitate registration and deposit
  – LCCN namespace? CDNL cooperation?
• Using handles despite lack of URN deployment
LC’s Implementation of Handles

• Running two servers:
  – handle server - used as a resolution server (like a Purl server)
  – “proxy handle server” as gateway for regular web browsers and URN to URL resolution
    • urn:hdl:loc.gmd/g3824p.pm008321
    • http://hdl.loc.gov/loc.gmd/g3824p.pm008321

• Any application that can “talk” to handle system can use these handles
  – URLs through any proxy server, such as:
    • http://dx.doi.org/loc.gmd/g3824p.pm008321
  – CNRI browser extension or handle client library
  – LC’s new “integrated library system”

• Handles added to MARC records and EAD finding aids
  – 856 $g and $u, SGML/XML external link/references
LC Handle Administration Server

- Part of global system
- Independent of other applications or systems
- Almost no constraints on handle syntax beyond URN compatibility
- No associated metadata in handle system
- Minimal services -- registration and resolution
  - registration
    - need more administrative tools
    - need integration into workflow
  - resolution
    - get resource identified (in URN jargon, N2R)
- Challenges are not technical, but organizational and economic
LC Applying Handles to content LC creates

- Handle example:
  - urn:hdl:loc.gmd/g3824p.pm008321

- Naming consists of:
  - name for custodial divisions or other units: loc.gmd
  - two-part logical name: g3824p.pm008321
    - semantics not required for resolution
    - but proves convenient for production tracking, storage management, and human use

- Resolves to presentation of resource - digital reproduction, finding aid, etc.
  - “target” is known item query (e.g., in American Memory)
  - granularity varies with level/type of bibliographic description

- Proxy form usable anywhere a URL can be used
  - in MARC record, in EAD finding aid
  - in citations
User

Access paths

Search
- American Memory: MARC record for item
- LC Catalog: MARC record for item
- OCLC: MARC record for item
- LC archive of finding aids EAD instance
- RLG archive of finding aids EAD instance

Browse
- Finding aid or archival register
- Special presentation or exhibit

Reference
- Link from online work
- Citation in print work
- Personal recommendation or school reading list

Identifiers
- Name persistent external logical

Digital reproductions
- Presentation of digital reproduction
User

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Identifiers

Handle

URL

Digital reproductions

Presentation of digital reproduction
Other uses for Handles under consideration by LC

• Under serious consideration
  – use of **handles** within complex objects in repositories
    • for ID and resolution
      – for different digital manifestations
      – for individual components, granularity may be as fine as individual page-image
      – supports content management **and** citation (reference-linking)
  – use of **IDs structured like handles** within complex objects in repositories
    • for system IDs but not for resolution
Presentation of digital reproductions

User

Web browser or other interface client

Access paths

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Browse
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Reference
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Identifiers

Name persistent external logical

Digital reproductions

Presentation of digital reproduction

Meta-object

Sub-object

Sub-object

Sub-object

Sub-object
Ideas floated recently

- **LCCN namespace**
  - identifies catalog or authority record
  - “target” for handle can be known-item Z39.50 search
  - no additional content management needed
  - responsibility for policies on scope, practice guidelines, etc. already in place
  - consistent with LC’s mission and current practices
  - do benefits outweigh costs?

- **CDNL proposals**
  - Separate persistent identifiers for bibliographic descriptions and content
  - monitoring NBN namespace

- **LC hopes to take advantage of DOI** - e.g., for journal citation linking
CDNL Task Force

• Conference of Directors of National Libraries (CDNL)
  – Task Force on Persistent Identifiers
  – US (chair), Australia, Finland, Canada, Netherlands, Germany

• Variety in National Library roles
  – Mandate to collect, provide access to, and preserve their country’s “literature”
    • maintain a national bibliography
    • deposit library
    • union catalog
  – Digitizer of content
  – Agency for ISBN, ISSN, ISMN
  – Publisher of content
Characteristics of Identifiers and Resolvers

• **Persistent**
  – 1 identifier to 1 entity
  – identifiers never reassigned
  – link between identifier and “URL” kept up-to-date

• **Universal**
  – universally recognizable
  – incorporate authority under which assigned
  – unique within universe of identifiers
  – structure established for identifier scalable

• **Resolution**
  – transparent linking to resource
  – may link to proxy
NBN Namespace

• Registered by National Library of Finland

• Syntax of Identifier
  – URN:NBN:<ISO country code>-<assigned string>
  – URN:NBN:<registered string>-<assigned string>

• Example:
  – URN:NBN:fi-fe19981001

• LC registrar of “registered string”
Results

- **Endorsed principles:**
  - ID architecture to be persistent, sustainable, extensible, effective
  - PIDs need support of international community of information providers
  - PID architecture based on open international standards available without prejudice and at reasonable cost
  - ID scheme in public domain
  - use of resolution service for IDs universally accessible (although resources resolved to may have associated charges)
  - charges for assignment, if any, on not-for-profit basis
Next Steps

• Explore whether technical schema and common rules for PIDs can be developed for use of National Libraries
  – technical working group
  – liaison with others working on the issues

• Use existing implementations as testbeds