reported are actually false reports of broken links (when the link is still active).

Before cataloging a resource, GPO asks 19 questions. Downing reviewed some of these. Does the Internet resource meet the traditional definition of a government publication? Is it a serial (according to current definition)? Does it need to be archived? Is the document published by an agency or an intermediary? Are there licensing restrictions or proprietary software needed to view the resource?

Downing concluded with information on issues now being considered by GPO Cataloging Branch. First, he talked about the problem of "best link." GPO uses links found at time of cataloging; afterwards, better links may be created by an agency. Users of GPO records are welcome to report problems and suggestions for better links to Theodore DeFosse at tdefosse@gpo.gov.

Next, GPO is re-organizing its Web pages. The "Browse Electronic Titles" page will be re-named to "New Electronic Titles" and will only include resources identified during that latest month. Thereafter, users should consult the Catalog of U.S. Government Publications for resources.

Third, in terms of cataloging, Downing predicted an increasing use of the "separate record" approach, as agencies discontinue distribution of print documents. In many instances, where the agency itself is unclear about whether the print version has ceased, GPO is using a special note to the effect that the serial is no longer distributed to depository libraries in print. Downing asked how people would feel about GPO using the separate record approach in this case. A lively discussion ensued.

8. *DEVELOPMENTS AND USES OF THE DOI AND OTHER IDENTIFIERS IN REFERENCE LINKING AND ACCESS/RIGHTS MANAGEMENT*
Simon Inger, Managing Director/President, CatchWord
Reported by Valerie Bross

Simon Inger provided a non-technical introduction to the Digital Object Identifier (DOI) and a summary of current developments. Inger introduced each segment of his presentation with a question posed to the audience.

How do users get e-journal content? Inger estimated that currently 75-80% of the traffic to articles comes through library Web pages and OPACs. This may change with reference linking, since users could move from a single article through links in the "References" list to other articles without going through the library Web pages.

What are the components that make access possible? Three components are needed. First, someone must host the journal (the publisher or service provider). Second, someone must know how to find it (abstracting & indexing agency, publisher). Finally, someone must know who has the right to use the journal.

What methods can be used to link from a citation to content? Two methods currently in use are URL and DOI. URLs are cheap to implement, and may be meaningful. However, URLs are vulnerable to change. DOIs are arbitrary and depend on a metadata database. But they remove changes from inside articles and other resources to a lookup table. So, the text of articles is stable; maintenance is done separately, through the DOI table.

Is the DOI completely stable? This is a hard question to answer. One problem is that maintenance of the DOI depends on the original copyright owner. In cases of change of ownership, the new owner has the current issues of the journal—but who owns the back-issues? And how is the DOI table updated?

Permissions are another area of concern. Universities need to move beyond IP address as a means of limiting access. Users affiliated with an organization may or may not work or study on-site. But how to move beyond IP addresses? In the UK, the university community has developed Athens, which provides a unique ID for every researcher. Another method of determining who has permission to use a resource is "digital certificates." For $20.00, users may establish a digital certificate.

Appropriate copy is yet another area of concern. Originally termed the "Harvard problem" (since librarians at Harvard first identified this problem), the Appropriate Copy Problem asks, "How can we link users from a general citation to the appropriate link—to the link subscribed by the library?"

For further information: http://www.catchword.com (search NASIG).

9. *USING METADATA WITHIN THE LIBRARY: RELEVANCY AND PRACTICAL APPLICATION*
Yumin Jiang, Catalog Librarian for Serials and Electronic Resources, Cornell University; Margi Mann, Customer Services Librarian, OCLC
Reported by Allan Scherlen

Yumin Jiang began with a brief outline of the basic definitions and workings of metadata. She extrapolated on a number of types and functions for metadata, ranging from administrative functions and use in descriptive

cataloging to the importance of metadata in preservation and digitization of information. Metadata may describe a range of information resources such as digital data images, databases, and printed materials such as books, or geographical information. Jiang went on to describe organizations, such as W3C and the ISO, working to develop consistency in the standards for creating metadata—what she humorously referred to as meta-metadata.

Margi Mann emphasized that developing a metadata cataloging system, such as that exemplified by Dublin Core is about expanding access, especially to electronic resources. She noted that Dublin Core provides a common core of semantics for resource description and that professional librarians are coming together with non-librarian information professionals to form an "information commons" to develop a simple system that has both semantic interoperability and international consensus. Mann described the basic elements used to create a metadata record and suggested the metadata fields could be thought of as simplified MARC tags.

Jiang returned to the podium to introduce two other well-developed metadata initiatives: Text Coding Initiative (TEI) and Encoded Archival Description (EAD). She illustrated these using Web pages from the Electronic Text Center at the University of Virginia. She then demonstrated the importance of metadata in describing geospatial data. She showed Web pages from the Federal Geographic Data Committee (FGDC) clearinghouse and a sample FGDC geospatial record. Jiang went on to show how metadata is used to describe social and behavior science data sets. She referred to examples from the Data Documentation Initiative (DDI), showing an example of code from a piece of census data.

The second half of the workshop was devoted to describing OCLC's library metadata application CORC (Cooperative Online Resource Catalog) in general and the Cornell CORC project team's experience with CORC in particular. Mann emphasized that CORC is more than a bibliographic description compatible with the MARC system. CORC is a central link to data related to the bibliographic record—data such as reviews, table of contents, publisher and author data, or the object itself.

CORC has a number of automated features that many librarians will find both intriguing and potentially troublesome. One of these is the CORC's ability to automate the assignment of Dewey Decimal Classification numbers and associated Library of Congress Subject Headings. Mann, anticipating the anxiety of librarians hesitant to place such complex judgement on an automated system, conceded that the system makes a "good faith effort" to approximate these cataloging functions. A human librarian is still required to correct or finalize the details of the classification and subject headings in the CORC record.

Mann described and gave examples of the pathfinder creation feature of CORC. Pathfinders can be easily created in CORC and then accessed by other libraries. Links are automatically and regularly checked and either updated or reported. Content of the record is also periodically checked to assure that CORC records for Web pages that change content can be corrected.

Mann alerted the audience to the immediacy of CORC developments. Librarians can begin contributing records for electronic materials to the CORC database as of July 2000. Bibliographic records for non-electronic materials will be accepted into CORC July 2001. CORC will continue to improve over time with the long-term plan to have CORC evolve into OCLC's next generation cataloging system.

Jiang finished out the workshop by recounting of the experience of the Cornell CORC Project Team. She described how librarians in all library divisions at Cornell cooperated in planning local guidelines for how they would apply and manage CORC. Theses various librarians also participated in the various phases of using CORC from selection of materials to cataloging.

Jiang and Mann concluded the workshop with a brief demo using the "practice area" of the CORC Web site (http://purl.oclc.org/CORC/).

10. *FORMATTING HOLDINGS STATEMENTS ACCORDING TO THE NISO STANDARD Z39.71-1999*
Marjorie Bloss, Vice President for Library Operations, Center for Research Libraries; Helen E. Gbala, Senior Library Consultant, Ex Libris (U.S.A.) Inc.
Reported by Janet Essency

Marjorie Bloss began the workshop with a history of standards for holdings up to the current time. The first standard for serial holdings was created by ANSI in 1980. The standard was updated in 1986 to include detailed as well as summary holdings. Libraries could decide which level suited them the best. In 1989 a holdings standard was created for non-serial items. A recommendation was made to ANSI/NISO, however, that these standards be merged. An attempt was made in 1991 without success. Another attempt was made in 1995. The standard was completed in 1999.

The new standard (NISO Z39.71-1999) is influenced strongly by the USMARC Format for Holdings (MFHD) as well the ISO standard. International Standards Organization (ISO) was also working on standards for