

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Cimbria Srl,

Petitioner

v.

3U Vision SRL,

Patent Owner

Patent 11,666,947

Post Grant Review No.

PGR2024- 00018

DECLARATION OF Sylvia D. Hall-Ellis, PH.D.

Exhibit 1010

I. INTRODUCTION

1. My name is Sylvia D. Hall-Ellis. I have been retained as an expert on behalf of Cimbria SRL (“Cimbria” or “Petitioner”).

2. I have written this report on behalf of Petitioner to provide my expert opinion regarding the authenticity and public availability of two publications. My report sets forth my opinions in detail and provides the basis for my opinions regarding the public availability of these publications.

3. I reserve the right to supplement or amend my opinions, and bases for them, in response to any additional evidence, testimony, discovery, argument, and/or other additional information that may be provided to me after the date of this report.

4. I am being compensated for my time spent working on this matter at my normal consulting rate of \$350 per hour, plus reimbursement for any additional reasonable expenses. My compensation is not in any way tied to the content of this report, the substance of my opinions, or the outcome of this proceeding. I have no other interests in this proceeding or with any of the parties.

5. All of the materials that I considered are discussed explicitly in this declaration.

II. QUALIFICATIONS

6. I am currently an Adjunct Professor in the School of Information at San José State University. I obtained a Master of Library Science from the University

of North Texas in 1972 and a Ph.D. in Library and Information Science from the University of Pittsburgh in 1985. Over the last 50-plus years, I have held various positions in the field of library and information resources. I was first employed as a librarian in 1966 and have been involved in the field of library sciences since, holding numerous positions.

7. I am a member of the American Library Association (ALA) and its Association for Library Collections & Technical Services (ALCTS) Division, and I served on the Committee on Cataloging: Resource and Description (which wrote the new cataloging rules) and as the chair of the Committee for Education and Training of Catalogers and the Competencies and Education for a Career in Cataloging Interest Group. I also served as the Chair of the ALCTS Division's Task Force on Competencies and Education for a Career in Cataloging. Additionally, I have served as the Chair for the ALA Office of Diversity's Committee on Diversity, as a member of the REFORMA National Board of Directors, as a member of the Editorial Board for the ALCTS premier cataloging journal, *Library Resources and Technical Services*, as a Co-Chair of the Library Research Round Table (LRRT) for the American Library Association, and as a member of the LRRT Nominating Committee. Currently I serve as a member of the Margaret Mann Citation Committee.

8. I have also given over one hundred presentations in the field, including several on library cataloging systems and Machine-Readable Cataloging (“MARC”) standards. My current research interests include library cataloging systems, metadata, and organization of electronic resources.

9. My full curriculum vitae is attached hereto as Exhibit 1017.

III. PRELIMINARIES

10. *Scope of this declaration.* I am not an attorney and will not offer opinions on the law. I am, however, rendering my expert opinion on the authenticity of the documents referenced herein and on when and how each of these documents was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, could have located the documents before or around the listed dates of their respective publications below.

11. I am informed by counsel that a printed publication qualifies as publicly accessible as of the date it was disseminated or otherwise made available such that a person interested in and ordinarily skilled in the relevant subject matter could locate it through the exercise of ordinary diligence.

12. While I understand that the determination of public accessibility under the foregoing standard rests on a case-by-case analysis of the facts particular to an individual publication, I also understand that a printed publication is rendered

“publicly accessible” if it is cataloged and indexed by a library such that a person interested in the relevant subject matter could locate it (*i.e.*, I understand that cataloging and indexing by a library is sufficient, though there are other ways that a printed publication is sufficient, even if the single library is in a foreign country). I understand that, even if access to a library is restricted, a printed publication that has been cataloged and indexed therein is publicly accessible so long as a presumption is raised that the portion of the public concerned with the relevant subject matter would know of the printed publication. I also understand that the cataloging and indexing of information that would guide a person interested in the relevant subject matter to the printed publication, such as the cataloging and indexing of an abstract for the printed publication, is sufficient to render the printed publication publicly accessible.

13. I understand that routine business practices, such as general library cataloging and indexing practices, can be used to establish an approximate date on which a printed publication became publicly accessible.

14. *Persons of ordinary skill in the art.* I am told by counsel that the subject matter of this proceeding generally relates to automated sorting systems, including multispectral imaging of bulk product, and expulsion of selected portions of the bulk product based on multispectral imaging.

15. I have been informed by counsel that a “person of ordinary skill in the art at the time of the inventions” is a hypothetical person who is presumed to be a person of ordinary creativity, capable of understanding the scientific principles applicable to the pertinent field.

16. I am told by counsel that persons of ordinary skill in this subject matter or art would have held at least a bachelor’s degree in Electrical Engineering, Physics, Chemistry, or an equivalent field, as well as at least 2—3 years of academic or industry experience in engineering related to optical sorting systems, and that additional education could compensate for less practical experience and vice versa.

17. It is my opinion that such a person would have been engaged in research, learning the bibliographic resources relevant to his or her research through study and practice in the field and possibly through formal instruction. In the 2020 timeframe, such a person would have had access to a vast array of long-established print and electronic resources in the area of automated sorting systems, including multispectral imaging of bulk product, and expulsion of selected portions of the bulk product based on multispectral imaging.

IV. LIBRARY CATALOGING PRACTICES

A. MARC RECORDS AND THE ONLINE LIBRARY CATALOG

18. I am fully familiar with the library cataloging standard known as the MARC standard, which is an industry-wide standard method of storing and

organizing library catalog information.¹ MARC was first developed in the 1960s by the Library of Congress. A MARC-compatible library is one that has a catalog consisting of individual MARC records for each of its items. Today, MARC is the primary communications protocol for the transfer and storage of bibliographic metadata in libraries.

19. MARC is a framework into which descriptive bibliographic data are transcribed to interact with the software in online library catalogs to provide access to books, journals, and other resources in the collection. The bibliographic data provide points of access and could have been searched by a person of ordinary skill in the art at the time of the invention (“POSITA,” see paragraphs 14-17 above) to identify and obtain resources in the library collection. An information seeker (or POSITA) can search a local online library catalog or the holdings of a group of libraries in a state or region or in the global catalog WorldCat.

20. MARC records are not designed for public viewing. Although a significant number of libraries provide access to the MARC version of a bibliographic record, the public display is designed to show information in a succinct manner that is quickly understood and useful to the information seeker. Libraries determine the default search for the online catalog to make the entry of search terms

¹ The full text of the standard is available from the Library of Congress at <http://www.loc.gov/marc/bibliographic/> (last visited February 20, 2024)

efficient and result in a successful search. Information seekers can enter a keyword, title, author, or standard number for the item. Libraries may also provide a search capability called “Summon” that allows the information seeker to enter known information about the item to conduct a search.

21. Since at least the early 1970s and continuing to the present day, MARC has been the primary communications protocol for the transfer and storage of bibliographic metadata in libraries.² As explained by the Library of Congress:

You could devise your own method of organizing the bibliographic information, but you would be isolating your library, limiting its options, and creating much more work for yourself. Using the MARC standard prevents duplication of work and allows libraries to better share bibliographic resources. Choosing to use MARC enables libraries to acquire cataloging data that is predictable and reliable. If a library were to develop a ‘home-grown’ system that did not use MARC

² A complete history of the development of MARC can be found in *MARC: Its History and Implications* by Henrietta D. Avram (Washington, DC: Library of Congress, 1975) and available online from the Hathi Trust (<https://babel.hathitrust.org/cgi/pt?id=mdp.39015034388556;view=1up;seq=1>; last visited February 20, 2024).

records, it would not be taking advantage of an industry-wide standard whose primary purpose is to foster communication of information.

Using the MARC standard also enable libraries to make use of commercially available library automation systems to manage library operations. Many systems are available for libraries of all sizes and are designed to work with the MARC format. Systems are maintained and improved by the vendor so that libraries can benefit from the latest advances in computer technology. The MARC standard also allows libraries to replace one system with another with the assurance that their data will still be compatible.

Why is a MARC Record Necessary? LIBRARY OF CONGRESS.³

22. Thus, almost every major library in the world is MARC-compatible. See, e.g., *MARC Frequently Asked Questions (FAQ)*, LIBRARY OF CONGRESS.⁴ (“MARC is the acronym for MACHine-Readable Cataloging. It defines a data format that emerged from a Library of Congress-led initiative that began fifty years ago. It provides the mechanism by which computers exchange, use, and interpret bibliographic information, and its data elements make up the foundation of most library catalogs used today.”). MARC is the ANSI/NISO Z39.2-1994 standard

³ <http://www.loc.gov/marc/umb/um01to06.html#part2>

⁴ <http://www.loc.gov/marc/faq.html>

(reaffirmed in 2016) for Information Interchange Format. The full text of the standard is available from the Library of Congress.⁵

23. Examining the MARC records for a specific item reveals the comprehensive data transcribed about a particular item at the time that cataloging and classification occurred. In addition to the creator, title, subjects, and standard numbers, additional information may provide additional and relevant data depending on the type of resource. Understanding the full extent of bibliographic data for an item and the points of access associated with it provides essential information that can be used to determine the indexing and public availability for documents described in this declaration.

B. MARC RECORDS

24. A MARC record comprises several fields, each of which contains specific data about the work. Each field is identified by a standardized, unique, three-digit code corresponding to the type of data that follow. For example, a work's title is recorded in Field 245; the primary author of the work is transcribed in field 100; an item's International Standard Book Number ("ISBN") consisting of ten or thirteen digits is transcribed in field 020; an item's International Standard Serial Number ("ISSN") is transcribed in Field 022; the Library of Congress classification

⁵ <http://www.loc.gov/marc/bibliographic/>

notation is recorded in Field 050; and the publication date is recorded in Field 260 under the subfield “c.” If a work is a periodical, then its publication frequency is recorded in Field 310, and the publication dates (e.g., the first and last publication) are recorded in Field 362, which is also referred to as the enumeration/chronology field.⁶

25. The library that created the record is recorded in Field 040 in subfield “a” with a unique library code. When viewing the MARC record online via Online Computer Library Center’s (“OCLC”) bibliographic database, hovering over this code with the mouse reveals the full name of the library. I used this method of “mousing over” the library codes in the OCLC database to identify the originating library for the MARC records discussed in this Declaration. Where this “mouse over” option was not available, I consulted the Directory of OCLC Libraries to identify the institution that created the MARC record.⁷

26. MARC records also include several fields that include subject matter classification information. An overview of MARC records fields is available through the Library of Congress.⁸ For example, 6XX fields are termed “Subject

⁶ <http://www.loc.gov/marc/bibliographic/bd3xx.html>

⁷ <https://www.oclc.org/en/contacts/libraries.html>

⁸ <http://www.loc.gov/marc/bibliographic>

Access Fields.”⁹ Among these, for example, is the 650 field; this is the “Subject Added Entry – Topical Term” field.¹⁰ The 650 field is a “[s]ubject added entry in which the entry is a topical term.” These entries “are assigned to a bibliographic record to provide access according to generally accepted thesaurus-building rules (e.g., *Library of Congress Subject Headings* (LCSH), *Medical Subject Headings* (MeSH)).” *Id.* Further, MARC records include call numbers, which themselves include a classification number. For example, the 050 field is the “Library of Congress Call Number.”¹¹ A defined portion of the Library of Congress Call (LCC) Number is the classification number, and “source of the classification number is *Library of Congress Classification* and the *LC Classification-Additions and Changes*.” Thus, included in the 050 field is a subject matter classification. Further, the 082 field is the “Dewey Decimal Call Number.”¹² A defined portion of the Dewey Decimal Call (DDC) Number is the classification number, and “source of the classification number is the *Dewey Decimal Classification and Relative Index*.” Thus, included in the 082 field is a subject matter classification. Each item in a library has a single classification number. A library selects a classification scheme

⁹ <http://www.loc.gov/marc/bibliographic/bd6xx.html>

¹⁰ <http://www.loc.gov/marc/bibliographic/bd650.html>

¹¹ <http://www.loc.gov/marc/bibliographic/bd050.html>

¹² <http://www.loc.gov/marc/bibliographic/bd082.html>

(e.g., the Library of Congress classification scheme just described or a similar scheme such as the Dewey Decimal classification scheme) and uses it consistently. When the Library of Congress assigns the LCC classification number, it appears as part of the 050 field. When the Library of Congress assigns the DDC classification number, it appears as part of the 082 field. If a local library assigns the classification number, it appears in a 090 field. In either scenario, the MARC record includes a classification number that represents a subject matter classification.

C. OCLC

27. The OCLC was created “to establish, maintain and operate a computerized library network and to promote the evolution of library use, of libraries themselves, and of librarianship, and to provide processes and products for the benefit of library users and libraries, including such objectives as increasing availability of library resources to individual library patrons and reducing the rate of rise of library per-unit costs, all for the fundamental public purpose of furthering ease of access to and use of the ever-expanding body of worldwide scientific, literary and educational knowledge and information.”¹³ Among other services, OCLC and its members are responsible for maintaining the WorldCat database

¹³ Third Article, Amended Articles of Incorporation of OCLC Online Computer Library Center, Incorporated (available at <https://www.oclc.org/content/dam/oclc/membership/articles-of-incorporation.pdf>).

(<http://www.worldcat.org/>), used by independent and institutional libraries throughout the world.

28. OCLC also provides its members online access to MARC records through its OCLC bibliographic database. When an OCLC member institution acquires a work, it creates a MARC record for this work in its computer catalog system in the ordinary course of its business. MARC records created at the Library of Congress are tape-loaded into the OCLC database through a subscription to MARC Distribution Services daily or weekly. Once the MARC record is created by a cataloger at an OCLC member institution or is tape-loaded from the Library of Congress, the MARC record is then made available to any other OCLC members online, and therefore made available to the public. Accordingly, once the MARC record is created by a cataloger at an OCLC member institution or is tape-loaded from the Library of Congress or another library anywhere in the world, any publication corresponding to the MARC record has been cataloged and indexed according to its subject matter such that a person interested in that subject matter could, with reasonable diligence, locate and access the publication through any library with access to the OCLC bibliographic database or through the Library of Congress.

29. When an OCLC member institution creates a new MARC record, OCLC automatically supplies the date of creation for that record. The date of

creation for the MARC record appears in the fixed Field (008), characters 00 through 05. The MARC record creation date reflects the date on which, or shortly after which, the item was first acquired or cataloged. Initially, Field 005 of the MARC record is automatically populated with the date the MARC record was created in year, month, day format (YYYYMMDD) (some of the newer library catalog systems also include hour, minute, second (HHMMSS)). Thereafter, the library's computer system may automatically update the date in Field 005 every time the library updates the MARC record (*e.g.*, to reflect that an item has been moved to a different shelving location within the library). Field 005 is visible when viewing a MARC record via an appropriate computerized interface, but when a MARC record is printed to hardcopy, no "005" label appears. The initial Field 005 date (*i.e.*, the date the MARC record was created) does appear, however, next to the label "Entered."¹⁴ The date upon which the most recent update to Field 005 occurred also appears, next to the label "Replaced." Thus, when an item's MARC record has been printed to hardcopy—as is the case with the MARC attachments to this Declaration—the date

¹⁴ Field 005 is visible when viewing a MARC record via an appropriate computerized interface. But when a MARC record is printed directly to hardcopy from the OCLC database, the "005" label is not shown. The date in the 005 field instead appears next to the label "Replaced."

reflected next to the label “Entered” is necessarily on or after the date the library first cataloged and indexed the underlying item.

30. Once one library has cataloged and indexed a publication by creating a MARC record for that publication, other libraries that receive the publication do not create additional MARC records—the other libraries instead rely on the original MARC record. They may update or revise the MARC record to ensure accuracy, but they do not replace or duplicate it. This practice does more than save libraries from duplicating labor. It also enhances the accuracy of MARC records. Further, it allows librarians around the world to know that a particular MARC record is authoritative (in contrast, a hypothetical system wherein duplicative records were created would result in confusion as to which record is authoritative).

31. Catalogers can create MARC records for all types of print, online, and digital resources. The date of creation of the MARC record by a cataloger at an OCLC member institution reflects when the underlying item is accessible to the public. Upwards of two-thirds to three-quarters of book sales and magazine subscriptions to libraries come from a jobber or wholesaler for online and print resources. These resellers make it their business to provide items to their customers as fast as possible, often providing turnaround times of only a single day after publication. Libraries purchase a significant portion of the balance of their books and journals directly from publishers themselves, which provide delivery on a

similarly expedited schedule. In general, libraries make these purchases throughout the year and shelve the newly received items as soon thereafter as possible to make them available to their patrons.

D. JOURNALS

32. Catalogers can create MARC records for all types of print, online, and digital resources. For example, MARC records cover serial publications, including both serially-published monographs and journals. OCLC hosts MARC records for more than 320 million serial publications. Serial publications are those publications that have the same collective title but are intended to be continued indefinitely with enumeration such as a volume or issue number (*e.g.*, magazines, journals, etc.). In the OCLC bibliographic database, the first issue of the serial publication is typically cataloged (*i.e.*, a corresponding MARC record is created), but the date is left open-ended with the use of a punctuation mark such as a dash. OCLC serial publication MARC records represent the entire run of the serial title. With knowledge of the first issue published, future issues can be predicted based on the information provided in the MARC record, for example in field 362. In my extensive professional experience, it is highly unusual for a library to stop collecting and shelving a serial publication prior to the end of its publication run. If a subscription to a serial publication ends its run or is cancelled before the end of its run, the library

will denote that it has stopped receiving new volumes by filling in the end date in the MARC record.

33. The handling of printed journal subscriptions is shown on the cover or the first few pages of individual issues. As was the best practice among libraries, issues arrived at a central facility and were immediately received, verified as part of a subscription, checked in, and stamped or labeled with the institution's name and date. Determining that the issue was part of the library subscription ensured that the entire set of publications for the year had been received so that they could be professionally bound and retained. This process also verified that all of the published issues arrived so that the library staff did not have to request or claim an issue that did not arrive as expected. In large public libraries with branches and multi-campus libraries within academic institutions, the journals were sorted and delivered to the subscribing unit. The new issue was placed in the public area; the older issue was stored so that it remained available.

34. The foregoing process has been standard library practice longer than I have been working in the profession. I first learned the steps in the process in the late 1970s and later supervised it. Although the checking in process has become automated and now links electronically to holdings records for the MARC record for each serial title, the manual placement of a stamp or label and placing the issue in a public area has not changed for 50 years. Unless I note otherwise below in

reference to a specific serial publication, it is my expert opinion that this standard protocol was followed for all of the serial publications discussed below.

35. In preparing this report, I used authoritative databases, such as the OCLC bibliographic database and the Library of Congress Online Catalog, to confirm citation details of the various publications discussed.

E. INDEXING

36. A researcher may discover material relevant to his or her topic in a variety of ways. One common means of discovery is to search for relevant information in an index of periodical and other publications. Having found relevant material, the researcher will then normally obtain it online, look for it in libraries, or purchase it from a publisher, a bookstore, a document delivery service, or other provider. Sometimes, the date of a document's public accessibility will involve both indexing and library date information. However, date information for indexing entries is often unavailable. This is especially true for online indices.

37. Indexing services use a wide variety of controlled vocabularies to provide subject access and other means of discovering the content of documents. The formats in which these access terms are presented vary from service to service.

38. Online indexing services commonly provide bibliographic information, abstracts, and full-text copies of the indexed publications, along with a list of the documents cited in the indexed publication. These services also often provide lists

of publications that cite a given document. A citation of a document is evidence that the document was publicly available and in use by researches no later than the publication date of the citing document.

39. Before the widespread development of online databases to index articles in journals, magazines, conference papers, and technical reports, libraries purchased printed volumes of indices. Graduate library school education mandated that students learn about the bibliographic control of disciplines, the prominent indexing volumes, and searching strategies required to use them effectively and efficiently. Half of the courses that I studied in library school were focused on the bibliography and resources in academic disciplines.

40. Librarians consulted with information seekers to verify citations, check availability in union catalogs, printed books catalogs, the OCLC database, and make formal requests for materials (e.g., books, conference proceedings, journal articles). Requests were transmitted using Telex machines, rudimentary email systems, and the United States Postal Service. During my career, I have performed and supervised staff who handled these resource sharing tasks.

41. A major firm known for the breadth of subjects and comprehensive treatment in the preparation of index volumes, the H. W. Wilson Company offered these reference resources since the firm was founded in 1898. The *Reader's Guide to Periodical Literature* is one of the best-known titles available from H. W. Wilson.

Each volume includes a comprehensive index for 300 of the most popular and important periodicals published in the United States and Canada. Information seekers have subject access expressed in plain language terminology, author access, and cross reference to find the desired results from their searches. The family of index titles included *Science & Technology Index*, *Business Periodicals*, *Applied Science & Terminology Index*, *Humanities Index*, *Biological & Agricultural Index*, and *Industrial Arts Index*. These printed indices have been superseded by digital database offerings available to information seekers through Ebsco.

42. Online indexing services such as *Google Scholar*¹⁵ or *Science Direct*¹⁶ commonly provide bibliographic information, abstracts, and full-text copies of the indexed publications, along with a list of the documents cited in the indexed publication. These services also often provide lists of publications that cite a given document.

43. A citation of a document by another is evidence that the document was publicly available and in use no later than the publication date of the citing document.

V. DOCUMENT 1: EXHIBIT 1002 (“ELMASRY”)

¹⁵ <https://scholar.google.com/>

¹⁶ <https://www.sciencedirect.com/>

44. Exhibit 1002 is a copy of the journal article titled “Recent Applications of Multispectral Imaging in Seed Phenotyping and Quality Monitoring—An Overview” by Gamal ElMasry, Nasser Mandour, Salim Al-Rejaie, Etienne Belin, and David Rousseau (hereafter “ElMasry”). The ElMasry article was published in Volume 19 of the open access journal *Sensors* and was found in the National Library of Medicine (Bethesda, Maryland). The ElMasry article is article number 5 (from the first issue of 2016, this journal uses article numbers instead of page numbers) of this issue dated March 2019. Exhibit 1002 is a true and correct copy of the ElMasry article (pages 1-32) that I downloaded from the National Library of Medicine¹⁷ and that I understand is being submitted as an exhibit in this proceeding. Exhibit 1002 is a true and correct copy in a condition that creates no suspicion about its authenticity. Specifically, the text of the article is complete; no pages are missing, and the text on each page appears to flow seamlessly from one page to the next; further, there are no visible alterations to the document.

¹⁷ <https://pubmed.ncbi.nlm.nih.gov/30836613/>

45. The ElMasry article is available from the publisher, MDPI,¹⁸ and through the digital repositories *ResearchGate*¹⁹ and *Semantic Scholar*.²⁰ The publisher lists an online publication date of March 4, 2019.

46. Attached hereto as Attachment 1A is a true and correct copy of the MARC record for the open access journal *Sensors* from the National Library of Medicine online catalog. Library ownership is indicated by the presence of the library's code ("NLM") in field 040. The library continues to update and enhance this MARC record to meet current cataloging rules. The last revision to Attachment 1A occurred on February 16, 2024, as shown in field 005 ("20240216"). I personally identified and retrieved the MARC record that is Attachment 1A.

47. Based on finding a copy of Exhibit 1002 in the National Library of Medicine and MARC record in its online library catalog attached as Attachment 1A,

¹⁸ <https://www.mdpi.com/1424-8220/19/5/1090#:~:text=With%20the%20advantage%20of%20acquiring,control%20purposes%2C%20but%20also%20in>

¹⁹ https://www.researchgate.net/publication/331499562_Recent_Applications_of_Multispectral_Imaging_in_Seed_PhenoTyping_and_Quality_Monitoring-An_Overview

²⁰ <https://www.semanticscholar.org/paper/Recent-Applications-of-Multispectral-Imaging-in-and-Elmasry-Mandour/24029683600238e055e309378ca33d6f2c1adefe>

it is my opinion that the ElMasry article published in the open access journal *Sensors* was publicly available on or shortly after March 4, 2019, as indicated on the publisher's website.

48. As noted in the holdings information (362 field), the National Library of Medicine has received the open access journal *Sensors* since June 2001 and continues to receive the publication. In view of the MARC record for Exhibit 1002, the ElMasry article was publicly available on or shortly after March 4, 2019, because the serial title had been received, cataloged, and indexed at the National Library of Medicine and made part of its online catalog database. Attachment 1A also shows that Exhibit 1002 was catalogued with a descriptor term reading "Biosensing Techniques \$v periodicals" (see Attachment 1B, Library of Medicine subject heading D015374) in the 650 field.

49. Attached hereto as Attachment 1C is a true and correct copy of the MARC record for the open access journal *Sensors* obtained from the OCLC bibliographic database. As previously noted, the library that created the record is recorded in field 040 with a unique library code. For Attachment 1C, that library code is "CUS," which means that the MARC record for this serial was cataloged at the University of California – San Diego Libraries. As can be seen in the "Entered" field in the MARC record for this exhibit, a cataloger at the University of California – San Diego Libraries created OCLC record number 47250782 on July 6, 2001, as

shown in the “Entered” field (“20010706”). The library community continues to update and enhance the MARC record to meet current cataloging rules. The most recent enhancement to Attachment 1C occurred on February 3, 2024, as shown in the “Replaced” field (“20240203”). I personally identified and retrieved the MARC record that is Attachment 1C. The “BLv1” entry in Attachment 1C is “s,” which indicates that the open access journal is a serial. Field 310 of Attachment 1C reads “Monthly.” Accordingly, the MARC record for Exhibit 1002 corresponds to the open access journal *Sensors* from the time the serial title began publication and includes the date of the ElMasry article.

50. Attachment 1C includes an entry in field 050 (“TA165”)—as described above, a subject matter classification number consistent with the Library of Congress classification system (analogous to the Dewey Decimal classification system). Attachment 1C includes three descriptor terms reading “Detectors \$v Periodicals” (see Attachment 1D, Library of Congress subject heading sh85037291 and Attachment 1E, Library of Congress subject heading sh85099890), “Biosensors \$v Periodicals” (see Attachment 1F, Library of Congress subject heading sh85014260 and Attachment 1E, Library of Congress subject heading sh85099890), and “Chemical detectors \$v Periodicals” (see Attachment 1G, Library of Congress subject heading sh85022895 and Attachment 1E, Library of Congress subject heading sh85099890) in the 650 fields. Thus, as of its cataloging, the publication

corresponding to the MARC record attached hereto as Attachment 1C was indexed according to its subject matter by virtue of at least two independently sufficient classifications: the field 050 entry and the field 650 entries. As of July 6, 2001, the MARC record attached hereto as Attachment 1C was accessible through any library with access to the OCLC bibliographic database or the online catalog at a library that subscribed to the open access serial, which means that the corresponding publication was publicly available on or before that same date through any library with access to the OCLC bibliographic database or through an individual library.

51. Attachment 1C indicates that the open access journal *Sensors* as cataloged at the University of California – San Diego Libraries is currently available from 1,187 libraries. In view of the above, this issue of the open access journal *Sensors* was publicly available on or shortly after March 4, 2019, because by that date it had been cataloged and indexed at University of California – San Diego Libraries, made part of the OCLC bibliographic database, and received at the National Library of Medicine. For these reasons, it is my opinion that Exhibit 1002 was published and accessible to the public on or shortly after March 4, 2019.

VI. DOCUMENT 2: EXHIBIT 1013 (“PEARSON”)

52. Exhibit 1013 is a copy of the journal article titled “A Multispectral Sorting Device for Wheat Kernels” by Tom Pearson, Elizabeth Maghirang, and Floyd Dowell (hereafter “Pearson”). The Pearson article was published in Volume

2 of the open access publication *American Journal of Agricultural Science and Technology* and was found in the Library of Congress. The Pearson article appears on pages 45-60 in an issue dated March 2013. Exhibit 1013 is a true and correct copy of the Pearson article that I downloaded from the Agricultural Research Services (ARS) website of the U. S. Department of Agriculture²¹ and that I understand is being submitted as an exhibit in this proceeding. Exhibit 1013 is a true and correct copy in a condition that creates no suspicion about its authenticity. Specifically, the text of the article is complete; no pages are missing, and the text on each page appears to flow seamlessly from one page to the next; further, there are no visible alterations to the document.

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<https://www.ars.usda.gov/ARSTUserFiles/30200525/467%20A%20multispectral%20sorting%20device%20for%20wheat%20kernels.pdf>

53. The Pearson article is available through the digital repositories *ResearchGate*²² and *Semantic Scholar*.²³ The ARS website lists a publication date of March 18, 2013.

54. Attached hereto as Attachment 2A is a true and correct copy of the MARC record for the open access publication *American Journal of Agricultural Science and Technology* from the Library of Congress online catalog. Library ownership is indicated by the presence of the library's name at the top of each page. The library continues to update and enhance this MARC record to meet current cataloging rules. The last revision to Attachment 2A occurred on August 22, 2014, as shown in field 005 ("20140822"). I personally identified and retrieved the MARC record that is Attachment 2A.

55. Based on finding a copy of Exhibit 1013 in the Library of Congress and MARC record in its online library catalog attached as Attachment 2A, it is my opinion that the Pearson article published in the open access publication *American*

²²

https://www.researchgate.net/publication/290521364_A_Multispectral_Sorting_Device_for_Wheat_Kernels

²³ <https://www.semanticscholar.org/paper/A-Multispectral-Sorting-Device-for-Wheat-Kernels-Pearson-Maghirang/4ee97cfb960cdded58b209138e5a880b66407b29>

Journal of Agricultural Science and Technology was publicly available on or shortly after March 18, 2013, as indicated on the ARS website.

56. As noted in the holdings information (362 field), the Library of Congress has received the open access publication *American Journal of Agricultural Science and Technology* since 2013 and continues to receive the publication. In view of the MARC record for Exhibit 1013, the Pearson article was publicly available on or shortly after March 18, 2013, because the serial title had been received, cataloged, and indexed at the Library of Congress and made part of its online catalog database. Attachment 2A also shows that Exhibit 1013 was catalogued with a descriptor term reading “Agriculture \$v Periodicals” (see Attachment 2B, Library of Congress subject heading sh2007100898) in the 650 field.

57. Attached hereto as Attachment 2C is a true and correct copy of the MARC record for the open access publication *American Journal of Agricultural Science and Technology* obtained from the OCLC bibliographic database. As previously noted, the library that created the record is recorded in field 040 with a unique library code. For Attachment 2C, that library code is “DLC,” which means that the MARC record for this serial was cataloged at the Library of Congress. As can be seen in the “Entered” field in the MARC record for this exhibit, a cataloger at the Library of Congress created OCLC record number 747034248 on August 17,

2011, as shown in the “Entered” field (“20110817”). The library community continues to update and enhance the MARC record to meet current cataloging rules. The most recent enhancement to Attachment 2C occurred on January 22, 2015, as shown in the “Replaced” field (“20150122”). I personally identified and retrieved the MARC record that is Attachment 2C. The “BLv1” entry in Attachment 2C is “s,” which indicates that the open access journal is a serial. Field 310 of Attachment 2C reads “Three issues per year.” Accordingly, the MARC record for Exhibit 1013 corresponds to the open access publication *American Journal of Agricultural Science and Technology* from the time the serial title began publication and includes the date of the Pearson article.

58. Attachment 2C includes an entry in field 050 (“S1”)—as described above, a subject matter classification number consistent with the Library of Congress classification system (analogous to the Dewey Decimal classification system). Attachment 2C includes three descriptor terms reading “Agriculture \$v Periodicals” (see Attachment 2B, Library of Congress subject heading sh2007100898) in the 650 field. Thus, as of its cataloging, the publication corresponding to the MARC record attached hereto as Attachment 2C was indexed according to its subject matter by virtue of at least two independently sufficient classifications: the field 050 entry and the field 650 entry. As of August 17, 2011, the MARC record attached hereto as Attachment 2C was accessible through any library with access to the OCLC

bibliographic database or the online catalog at a library that subscribed to the open access serial, which means that the corresponding publication was publicly available on or before that same date through any library with access to the OCLC bibliographic database or through an individual library.

59. Attachment 2C indicates that the open access publication *American Journal of Agricultural Science and Technology* as cataloged at the Library of Congress is currently available from that institution. In view of the above, this issue of the open access publication *American Journal of Agricultural Science and Technology* was publicly available on or shortly after March 18, 2013, because by that date it had been received, cataloged, and indexed at Library of Congress and made part of the OCLC bibliographic database. For these reasons, it is my opinion that Exhibit 1013 was published and accessible to the public on or shortly after March 18, 2013.

VII. SUMMARY OF OPINIONS

60. In view of the foregoing, it is my opinion that the publications described above were publicly available no later than the corresponding date listed in the table below:

Exhibit	Publication	Publicly Available No Later Than
1002	ElMasry, Gamal, Nasser Mandour, Salim Al-Rejaie, Etienne Belin, and David Rousseau. “Recent Applications of Multispectral Imaging	March 4, 2019

	in Seed Phenotyping and Quality Monitoring—An Overview.” <i>Sensors</i> , vol. 19 (March 2019): article 5.	
1013	Pearson, Tom, Elizabeth Maghirang, and Floyd Dowell. “A Multispectral Sorting Device for Wheat Kernels.” <i>American Journal of Agricultural Science and Technology</i> , vol. 2 (2013): 45-60.	March 18, 2013

61. In signing this Declaration, I recognize that the Declaration will be filed as evidence in a case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

62. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1034 of Title 18 of the United States Code.

DATED: February 24, 2024

By: 
Sylvia D. Hall-Ellis, Ph.D.

ATTACHMENT 1A

```

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007    cr|||||||
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022    ##$a1424-8220 $11424-8220
030    ##$aSENSC9
035    ##$9101204366
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$dOCLCQ $dHEBIS
041    0#$aeng
042    ##$apcc $anlmcopypc
044    ##$9Switzerland
050    14$aTA165
060    10$aW1
130    0#$aSensors (Basel, Switzerland)
210    00$aSensors
210    10$aSensors (Basel) $2DNLM
245    10$aSensors.
246    1#iHTML title bar title: $aSensor
260    ##$aBasel, Switzerland : $bMDPI, $cc2000-
310    ##$aMonthly
336    ##$atext $btxt $2rdacontent
337    ##$acomputer $bc $2rdamedia
338    ##$aonline resource $bcr $2rdacarrier
362    0#$aVol. 1, issue 1 (June 2001)-
500    ##$aTitle from tables of contents page (viewed Aug. 14,
2002).
510    2#$91 $aMEDLINE $bv10n1, June 2010-
510    0#$91 $aPubMed $bv10n1, June 2010-
510    0#$aPMC
538    ##$aMode of access: World Wide Web.
588    ##$aLatest issue consulted: Vol. 11, issue 9 (Sept. 2011)
(viewed Sept. 16, 2011).
650    12$aBiosensing Techniques
655    #2$aPeriodical
710    2#$aMolecular Diversity Preservation International.
856    4#uhttps://www.ncbi.nlm.nih.gov/pmc/journals/1660/
856    40uhttp://www.mdpi.com/journal/sensors
911    ##$aElectronic only
913    ##$aCLOCKSS $bCurrent to 2024 as of 20240212
935    ##$a(DNLM)1204366-nlmbd
992    ##$pP2 $eEF $a20110623
993    ##$aYMG $b20110808
994    ##$aCDN $b20110916
995    ##$aAUTH $b20110916 $cREV $d20240216
996    ##$aCONSER $b20000101

```

998	##\$aFER \$b20130712
999	##\$aAUTH
035	##\$a (OCoLC) 47250782

ATTACHMENT 1B

Biosensing Techniques MeSH Descriptor Data 2024

[Details](#)[Qualifiers](#)[MeSH Tree Structures](#)[Concepts](#)**MeSH Heading**

Biosensing Techniques

Tree Number(s)

E05.601.043

Unique ID

D015374

RDF Unique Identifier

<http://id.nlm.nih.gov/mesh/D015374>

Scope Note

Any of a variety of procedures which use biomolecular probes to measure the presence or concentration of biological molecules, biological structures, microorganisms, etc., by translating a biochemical interaction at the probe surface into a quantifiable physical signal.

Entry Term(s)

Bioprobes

Biosensing Technics

Biosensors

Electrodes, Enzyme

NLM Classification #

QT 36.4

Previous Indexing

Biosensors (1989-1998)

Biotechnology (1986-1988)

Electrodes (1980-1988)

Monitoring, Physiologic/instrumentation (1980-1988)

See Also

Microchemistry

Public MeSH Note

99; see BIOSENSORS 1989-98

History Note

99(89)

Date Established

1989/01/01

Date of Entry

1988/06/03

Revision Date

2015/06/22

Connect with NLM



NLM Support Center
Accessibility
Careers

National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20894

Web Policies
FOIA
HHS Vulnerability Disclosure

NLM | NIH | HHS | USA.gov

ATTACHMENT 1C

OCLC 47250782 No holdings in XXX - 1187 other holdings

Re		En 200		Re 2024020	
c		tere 107		place 3194412	
Stat		d 06		d .6	
Type a		ELvl		Lang eng	
BLvl s		Form o		Ctry sz	
S/L 0		Orig s		Alph a	
Desc a		SrTp p		Dates 2001, 9999	
Srcce c		GPub		Ctrl	
Conf 0		Freq m		MRec	
EntW		Reql r		Reql	
Cont		DtSt c		DtSt	

007 c \$b r \$d c \$e n

010 2002242115

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HEBIS \$d NLM \$d IUL \$d OCLCQ \$d OCLCF \$d OCLCQ \$d AU@ \$d OCLCO \$d OCLCA \$d IUL \$d OCLCQ \$d
U3W \$d OCLCQ

016 7 2052857-7 \$2 DE-600

016 7 101204366 \$2 DNLM

019 243561369 \$a 652357640 \$a 1004554018 \$a 1057999717 \$a 1130895925 \$a 1156750209

022 1424-8220 \$l 1424-8220 \$2 40

030 SENC9

042 pcc

050 14 TA165

060 10 W1

090 \$b

130 0 Sensors (Basel, Switzerland)

210 00 Sensors

222 0 Sensors \$b (Basel)

245 10 Sensors.

246 1 \$i HTML title bar title: \$a Sensor

260 Basel, Switzerland : \$b Molecular Diversity Preservation International (MDPI), \$c ©2000-

300 1 online resource

310 Monthly

336 text \$b txt \$2 rdacontent

337 computer \$b c \$2 rdamedia

338 online resource \$b cr \$2 rdacarrier

362 0 Vol. 1, issue 1 (June 2001)-

500 Title from tables of contents page (viewed August 14, 2002).

510 0 Chemical abstracts \$x 0009-2258

530 Also issued on CD-ROM yearly.

538 Mode of access: World Wide Web.

588 1 Volume 19, issue 2 (January (II). 2019) (MDPI, viewed February 4, 2019).

650 0 Detectors \$v Periodicals.

650 0 Biosensors \$v Periodicals.

650 0 Chemical detectors \$v Periodicals.

650 12 Biosensing Techniques. \$0 (DNLM)D015374

650 7 Biosensors. \$2 fast \$0 (OCoLC)fst00832703

650 7 Chemical detectors. \$2 fast \$0 (OCoLC)fst00852873

650 7 Detectors. \$2 fast \$0 (OCoLC)fst00891594
655 2 Periodical. \$0 (DNLM)D020492
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655 7 Periodicals. \$2 lcgft
710 2 Molecular Diversity Preservation International.
856 40 \$u <http://bibpurl.oclc.org/web/7717> \$u <http://www.mdpi.net/sensors/> \$7 0

ATTACHMENT 1D

[The Library of Congress](#)>> [Go to Library of Congress Online Catalog](#)

LIBRARY OF CONGRESS AUTHORITIES

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LC control no.: sh 85037291

LCCN Permalink: <https://lcn.loc.gov/sh85037291>

HEADING: Detectors

000 00584cz a2200217n 450

001 4689339

005 20190825061654.0

008 860211i| anannbabn |b ana

010 __ |a sh 85037291

035 __ |a (DLC)sh 85037291

035 __ |a (DLC)36024

040 __ |a DLC |c DLC |d DLC

053 _0 |a TK7872.D48

150 __ |a Detectors

450 __ |a Sensors

550 __ |w g |a Engineering instruments

550 __ |w g |a Physical instruments

906 __ |t 7810 |u fk07 |v 0

910 __ |a Record saved by td04 on 01/09/2019 at 11:49:00

910 __ |a Record saved by td04 on 07/13/2016 at 14:04:49

953 __ |a xx00

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URL: <http://authorities.loc.gov/>

Library of Congress Online Catalog

URL: <https://catalog.loc.gov/>

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Search History

Headings List

Start Over

< Previous

Next >

MARC Display

Labelled Display

LC control no.: sh 85099890

LCCN Permalink: <https://lccn.loc.gov/sh85099890>

HEADING: Periodicals

000 01324cz a2200337n 450

001 4749694

005 20120717060125.0

008 860211 | anannbabn |b ana

010 __ |a sh 85099890

035 __ |a (DLC)sh 85099890

035 __ |a (DLC)6226910

035 __ |a (DLC)sp 85099890

035 __ |a (DLC)314952

040 __ |a DLC |c DLC |d DLC

053 _0 |a AP |c General periodicals

053 _0 |a PN4700 |b PN5650 |c History

150 __ |a Periodicals

360 __ |i subdivision |a Periodicals |i under specific subjects, e.g. |a Engineering--Periodicals; United States--History--Periodicals

450 __ |a Journals (Periodicals)

450 __ |a Magazines

550 __ |w g |a Library materials

550 __ |w g |a Mass media

550 __ |w g |a Serial publications

550 __ |a Newspapers

550 __ |a Press

670 __ |a UMI business vocab. |b (Journals)

680 __ |i Here are entered works on the periodicals of the world and, with appropriate subdivisions, works on special aspects or sections of periodicals. Works on periodicals in a specific language, or in a specific country or larger area, are entered under the adjectival form of the language or area, e.g. |a Arabic periodicals; Canadian periodicals.

906 __ |t 0420 |u te03 |v 0

910 __ |a Proposal saved by tc03 on 05/14/2012 at 17:15:30

953 __ |a xx00 |b td14

906 __ |t 1206 |v 0

◀ Previous Next ▶

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Select Download Format:	<input type="text" value="Text (Labelled Display)"/> ▼ <input type="button" value="Press to SAVE or PRINT"/>
Email Text (Labelled Display) to:	<input type="text"/> <input type="button" value="Press to SEND EMAIL"/>

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Washington, DC 20540**Library of Congress Authorities**URL: <http://authorities.loc.gov/>**Library of Congress Online Catalog**URL: <https://catalog.loc.gov/>**Questions, comments, error reports:** [Contact Us](#)

ATTACHMENT 1F

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LIBRARY OF CONGRESS AUTHORITIES

[Help](#)[New Search](#)[Search History](#)[Headings List](#)[Start Over](#)[◀ Previous](#)[Next ▶](#)[MARC Display](#)[Labelled Display](#)**LC control no.:** sh 85014260**LCCN Permalink:** <https://lcn.loc.gov/sh85014260>**HEADING:** Biosensors

000 01079cz a2200313n 450

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005 20120321074722.0

008 860211i| anannbabn |b ana

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035 __ |a (DLC)sp 85014260

035 __ |a (DLC)325110

040 __ |a DLC |c DLC |d DLC |d WaU

053 _0 |a R857.B54

150 __ |a Biosensors

450 __ |a Biodetectors

450 __ |a Biological detectors

450 __ |a Biological sensors

450 __ |a Biomedical detectors

450 __ |a Biomedical sensors

550 __ |w g |a Detectors

550 __ |w g |a Medical instruments and apparatus

550 __ |w g |a Physiological apparatus

670 __ |a Work cat.: Symposium on Biosensors (1984 : Los Angeles, Calif.). Proceedings of the symposium ... 1984.

670 __ |a McGrawHill dict. sci. tech.: |b p. 184 ("sensor used to provide information about a life process")

670 __ |a Chemical sensors VI, c2004: |b t.p. (biological sensors) table of contents (biosensors; biodetection methods)

906 __ |t 0511 |u te04 |v 0

953 __ |a ff02 |b yz00

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Email Text (Labelled Display) to:	
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LC control no.: sh 85022895

LCCN Permalink: <https://lcn.loc.gov/sh85022895>

HEADING: Chemical detectors

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005 20120322080756.0

008 860211i| anannbabn |a ana

010 __ |a sh 85022895

035 __ |a (DLC)sh 85022895

035 __ |a (DLC)22075

040 __ |a DLC |c DLC |d DLC

053 _0 |a TP159.C46

150 __ |a Chemical detectors

450 __ |a Chemical sensors

550 __ |w g |a Chemical apparatus

550 __ |w g |a Detectors

680 __ |i Here are entered works on apparatus used to detect the presence or absence of chemicals on a relatively gross scale in industrial processes, environmental protection, etc.

906 __ |t 9623 |u te07 |v 0

953 __ |a xx00 |b ta27

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Email Text (Labelled Display) to:

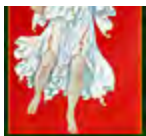
[Press to SEND EMAIL](#)[Help](#) - [Search](#) - [Search History](#) - [Headings List](#) - [Start Over](#)

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URL: <http://authorities.loc.gov/>
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URL: <https://catalog.loc.gov/>

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ATTACHMENT 2A

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CATALOG

← 1 of 1 →

PERIODICAL OR NEWSPAPER

American journal of agricultural science and technology

[Full Record](#)[MARC Tags](#)

000	01758cas a2200421 i 4500
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010	— a 2011203174
012	— a -3-7-1408210196-p----
022	0_ a 2162-9676 2 1
035	— a (OCoLC)ocn747034248
037	— b Columbia International Publishing, LLC, 3610 Buttonwood Dr., Suite 200, Columbia, MO 65201
040	— a DLC b eng c DLC d DLC d OCoLC d DLC e rda
042	— a pcc a nsdp
050	00 a S1
082	10 a 630 2 15
210	0_ a Am. j. agric. sci. technol. b (Online)
222	_0 a American journal of agricultural science and technology b (Online)
245	00 a American journal of agricultural science and technology.
264	_1 a Columbia, MO : b Columbia International Publishing, LLC, c 2013-
310	— a Three issues per year

336	—	a text b txt 2 rdacontent
337	—	a computer b c 2 rdamedia
338	—	a online resource b cr 2 rdacarrier
362	1_	a Began with Volume 1, Number 1 (2013).
588	—	a Description based on: Volume 1, Number 1 (2013); title from journal home page (publisher's website viewed Aug. 21, 2014).
588	—	a Latest issue consulted: Volume 2, Number 2 (2014).
650	_0	a Agriculture v Periodicals.
776	08	i Print version: t American journal of agricultural science and technology x 2162-9668 w (DLC) 2011203173 w (OCoLC)747034240
850	—	a DLC
859	40	u http://ajast.uscip.us/
906	—	a 7 b ibc c serials d u e ncip f 20 g n-oclcserc
925	0_	a Acquire x policy default, kg 2014-03-28
955	—	b xf15 2011-08-17 j xf15 2011-08-17 a xf00 2014-02-07 a xf00 2014-02-07 to ISSN Follow-Up Shelf i xf02 2014-08-21
963	—	a uscip@uscip.org

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035 __ |a (DLC)369263

035 __ |a (DLC)sh2007100898

040 __ |a DLC |b eng |c DLC |d DLC

150 __ |a Agriculture |v Periodicals

667 __ |a Record generated for validation purposes.

670 __ |a Work cat.: Journal of agrarian change, c2001-

906 __ |t 8888 |u te00 |v 0

953 __ |a te00 |b tc01

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ATTACHMENT 2C

OCLC 747034248 No holdings in XXX - 1 other holding									
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					c	tere	108	place	2015238
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Continuing Resources					Type	a	ELvl		
					BLvl	s	Form	o	
					S/L	0	Orig		
					Desc	i	SrTp	p	
					Srce		GPub		
					Conf	0	Freq	t	
					EntW		Regl	r	
					Cont		DtSt	c	
					Ctrl		MRec		
					Lang			eng	
					Ctry			mou	
					Alph	a	Dates	2013	9999

007 c \$b r
010 2011203174
040 DLC \$b eng \$c DLC \$d DLC \$d OCLCQ \$e rda \$d DLC \$d OCLCF
012 \$l 1 \$k 1
022 0 2162-9676 \$2 1
037 \$b Columbia International Publishing, LLC, 3610 Buttonwood Dr., Suite 200, Columbia, MO 65201
042 pcc \$a nsdp
050 00 S1
082 10 630 \$2 15
090 \$b
210 0 Am. j. agric. sci. technol. \$b (Online)
222 0 American journal of agricultural science and technology \$b (Online)
245 00 American journal of agricultural science and technology.
264 1 Columbia, MO : \$b Columbia International Publishing, LLC, \$c 2013-
310 Three issues per year
336 text \$b txt \$2 rdacontent
337 computer \$b c \$2 rdamedia
338 online resource \$b cr \$2 rdacarrier
362 1 Began with Volume 1, Number 1 (2013).
588 Description based on: Volume 1, Number 1 (2013); title from journal home page (publisher's website viewed Aug. 21, 2014).
588 Latest issue consulted: Volume 2, Number 2 (2014).
650 0 Agriculture \$v Periodicals.
650 7 Agriculture. \$2 fast \$0 (OCoLC)fst00801355
655 7 Periodicals. \$2 fast \$0 (OCoLC)fst01411641
776 08 \$i Print version: \$t American journal of agricultural science and technology \$x 2162-9668 \$w (DLC) 2011203173 \$w (OCoLC)747034240
850 DLC
856 40 \$u <http://ajast.uscip.us/>