

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TREND MICRO, INC.

v.

WEBROOT, INC.

Petition for *Inter Partes* Review of

U.S. Patent No. **8,181,244**

DECLARATION OF INGRID HSIEH-YEE, PH.D.

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I. Introduction

I, Ingrid Hsieh-Yee, Ph.D., do hereby declare as follows:

1. I have personal knowledge of all of the matters about which I testify in this declaration.

2. I have been retained as an independent expert witness on behalf of Trend Micro, Inc. (“TREND”) for proceedings before the United States Patent and Trademark Office (“PTO”) regarding the authenticity and public availability of certain prior art references in relation to US Patent No. 8,181,244 (“the ’244 patent”).

3. I am being compensated for my work in this matter at my customary hourly rate. I am also being reimbursed for any reasonable expenses associated with my work and testimony in this investigation. My compensation is not contingent on the results of my study, the substance of my opinions, or the outcome of this matter.

A. Qualifications and Professional Experience

4. My complete qualifications and professional experience are described in my academic curriculum vitae (**Appendix A**). The following is a brief summary of my relevant qualifications and professional experience.

5. I was a professor of the Department of Library and Information Science of the Catholic University of America for 32 years and retired in August 2022. In December 2022 I was conferred the title of Professor Emerita. I have experience working in an academic library, a medical library, and a legislative library. I hold a

Ph.D. in Library and Information Studies from the University of Wisconsin-Madison and a Masters in Library and Information Studies from the University of Wisconsin-Madison.

6. I am an expert on library cataloging and classification and have published two editions on this subject, *Organizing Audiovisual and Electronic Resources for Access: A Cataloging Guide* (2000 and 2006). I taught a variety of courses, including Cataloging and Classification, Advanced Cataloging and Classification, Organization of Internet Resources, Organization of Information, Digital Content Creation and Management, Metadata, Internet Searches and Web Design, Information Literacy Instruction, Advanced Information Retrieval and Analysis Strategies, and The Information Professions in Society. I am familiar with metadata schema design and implementation. In my teaching I covered the design and implementation of metadata in libraries, databases, search engines, digital repositories, digital libraries, and digital archives. I also covered how information organization affects the discovery and access to digital resources on the Internet. My research interests cover cataloging and classification, information organization, metadata, information retrieval, information architecture, digital collections, scholarly communication, social media, user interaction with information systems, and others.

7. I am very familiar with a library cataloging encoding standard known as the “Machine-Readable Cataloging” standard, also known as “MARC,” which became the national standard for sharing bibliographic data in the United States by 1971 and the international standard by 1973. MARC is the primary communications protocol for the transfer and storage of bibliographic metadata in libraries. Experts in my field reasonably rely upon MARC records when forming their opinions.

8. A MARC record consists of 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 follows. **Appendix B** is a true and correct copy of Parts VII to X of “Understanding MARC Bibliographic: Machine-Readable Cataloging” (<http://www.loc.gov/marc/umb/um07to10.html>) from Library of Congress. *Understanding MARC Bibliographic* was originally published by the Follett Software Co. and copyrighted in 1988. Editions in 1989, 1990, 1994, 1998, 2000, 2003 and 2009 include changes. The latest edition was copyrighted in 2009. This document explains commonly-used MARC fields. For example, the personal author of a work is recorded in Field 100, the title is recorded in Field 245, publisher information is recorded in Field 260, the physical volume and characteristics of a publication are recorded in Field 300, and topical subjects are recorded in Fields 650.

9. The Online Computer Library Center (OCLC) is the largest bibliographic network of the world, with more than 548 million records and thousands of member institutions (many of which are libraries of some type) in more than 100 countries. OCLC was founded in 1967 to promote and support library cooperation. According to the “Third Article, Amended Articles of Incorporation of OCLC Online Computer Library Center, Inc.”, 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” (source: <https://www.oclc.org/content/dam/oclc/membership/articles-of-incorporation.pdf>).

10. OCLC members can contribute original cataloging records in MARC to the system or derive cataloging records from existing records, an activity referred to as “copy cataloging.” When an OCLC participating institution acquires a work, it can create an original MARC record for the work in OCLC’s Connexion system (a system for catalogers to create and share MARC records), and the system will automatically generate a code for the date of record creation in the yymmdd format,

and the creating library's OCLC symbol is recorded in subfield "a" of the 040 field. Once the MARC record is in Connexion, it becomes available to other OCLC members for adoption to their local online catalogs (*i.e.*, copy cataloging).

11. After a MARC record is created in Connexion, it also becomes searchable and viewable on WorldCat, which is a free web portal for users to explore more than 10,000 libraries worldwide. Records in WorldCat, however, are not presented in MARC fields. Instead, the data elements are labeled to help users interpret the records. Thus, the information stored in MARC records in Connexion is available to the interested public through the user-friendly WorldCat web portal.

12. WorldCat (<http://www.worldcat.org>) is "the world's largest network of library content and services" and its features are summarized in "What is WorldCat" (<https://www.worldcat.org/about>). WorldCat began operation in January 1998 as a free web portal to more than 10,000 libraries worldwide. Through WorldCat, users can search for information resources in their local libraries and libraries around the world. WorldCat allows users to search for books, CDs, videos, and many new types of digital content, such as audiobooks, in many languages. Users can also retrieve research materials and article citations with links to their full text. After an item is retrieved, WorldCat helps users identify a library nearby that holds the item or all the libraries that hold the item. WorldCat is an efficient way to explore the content

held by more than 10,000 libraries around the world. WorldCat is publicly accessible, and there is no fee to perform a search on WorldCat.

13. Library online catalogs gained acceptance in the early 1980s and many libraries migrated their systems to the World Wide Web in the mid-1990s. Library online catalogs are based on MARC records that represent their collections in order to help the public understand what materials are publicly accessible in those libraries. Most libraries with online catalogs have made their catalogs freely available on the Web. These online catalogs offer user-friendly search interfaces. Strong user interest in keyword searches and the popularity of Google have led to the “googlization” of library search systems. As a result, many library catalogs now provide a single search box for users to conduct keyword searches, with additional support for searches by author, title, subject terms, and other data elements such as ISBN (International Standard Book Number). Library catalogs these days also offer features for users to narrow their search results by language, year, format, and other elements. Many libraries display MARC records on their online catalogs with labels for the data elements to help the public interpret MARC records. Many libraries also offer the option to display MARC records in MARC fields.

14. Libraries create MARC records for works they acquire, including books, serials, motion pictures, and publications in other formats. Monograph cataloging is fairly common in libraries, and most libraries make a newly cataloged

monograph available to the public soon after the cataloging work is completed, usually within a week. Libraries can create original cataloging records or use an existing record in OCLC to create a copy cataloging record. As soon as the cataloging record is completed, it is added to the library's online catalog for users. If the record is an original record, it is also entered into the OCLC system. If it is a copy cataloging record, the library's holding symbol is attached to the existing original record in the OCLC system to facilitate searching and interlibrary loan.

15. I am personally familiar with many online catalogs, databases, and search engines. In preparing for this declaration, I used the following authoritative information systems to search for records:

- Google Scholar (<https://scholar.google.com>)
- Internet Archive (<https://archive.org/>)
- Online catalog of the Federal Science Library Network of Canada (<https://science-libraries.canada.ca/eng/home/>)
- Online catalog of the German National Library of Science and Technology (TIB) (https://opac.tib.eu/DB=1/FKT=1016/FRM=0971625352/IMPLAND=Y/LNG=EN/LRSET=1/SET=1/SID=1b1934a9-b/SRT=YOP/TTL=1/START_WELCOME)
- WorldCat, a free web portal (<https://www.worldcat.org>)

- WorldCat on OCLC FirstSearch (the WorldCat database on an OCLC search platform, subscription required for access) (<https://firstsearch.oclc.org/>)

B. Scope of This Declaration

16. I have been asked to offer opinions on the authenticity and public availability date of the following documents:

- Chen, K., Clark, A., De Vel, Ol., & Mohan, G., (2003, November), “ECF – Event correlation for forensics,” in *First Australian Computer, Network & Information Forensics Conference 2003*, 25 November 2003, Perth, Western Australia, **Ex. 1006** (“Chen”);
- Li, Z., Taylor, J., Partridge, E., Zhou, Y., Yurcik, W., Abad, C., ... & Rosendale, J., (2004), “UCLog: A unified, correlated logging architecture for intrusion detection,” in *Proceedings of the Twelfth International Conference on Telecommunication Systems: Modeling and Analysis*, pp. 329-343, **Ex. 1008** (“Li”).

17. I am rendering my expert opinion on the authenticity of the documents referenced herein and on whether they were published. I will provide my opinion on when and how these documents were publicly disseminated or otherwise made publicly available to the extent that persons interested and ordinarily skilled in the

subject matter or art, exercising reasonable diligence, could have located and retrieved these documents.

18. I am informed by counsel that an item is considered authentic if there is sufficient evidence to support a finding that the item is what it is claimed to be. I am also informed that authenticity can be established based on the contents of the documents themselves, such as the appearance, content, substance, internal patterns, protocols followed or other distinctive characteristics of the item.

19. I am informed by counsel that a given reference is “published” if it is publicly accessible upon a satisfactory showing that such a document has been disseminated or otherwise made publicly available to the extent that persons interested and ordinarily skilled in the subject matter or art could locate it exercising reasonable diligence and obtain the document. I have also been informed by counsel that materials available in a library constitute “printed publications” if they are cataloged and indexed according to general library practices and protocols that make the references available and accessible to members of the interested public.

20. I have been informed by counsel that the '244 patent was filed in the United States on April 20, 2006. I have assessed public accessibility of the documents referenced below as of this claimed priority date.

C. Person of Ordinary Skills in the Art

21. I am told by counsel that the subject matter of this article relates to computer security.

22. I have been informed by counsel that a “person having ordinary skill in the art at the time of the inventions” (PHOSITA) is a hypothetical person who is presumed to be familiar with the relevant field and its literature at the time of the inventions. This hypothetical person is also a person of ordinary creativity, capable of understanding the scientific principles and literature applicable to the pertinent field.

23. I am told by counsel that persons of ordinary skill in this subject matter or art would have had a bachelor’s degree in computer science, computer engineering or a related field, or an equivalent technical degree or equivalent work experience, and an additional one to two years of education or experience in the field of network communications. More education can supplement practical experience and vice versa.

24. It is my opinion that such a person would have been actively engaged in learning about the field, possibly through formal instruction through the bibliographic resources. By at least April 20, 2006, such a person would have had access to a vast array of print and electronic resources, including at least the documents referenced below.

D. Evidence Considered in Forming My Opinions

25. In the preparation of this declaration, I have reviewed the documents referenced below and any other documents I reference herein, and each of these is a type of material that experts in my field would reasonably rely upon when forming their opinions:

- (1) The document referenced above in Section I.B;
- (2) Archived copy of *Chen*, archived by the Internet Archive on June 23, 2005, available at https://web.archive.org/web/20050623153844/http://scissec.scis.ecu.edu.au/publications/forensics03/pdf/11_final.pdf, accessed and obtained on August 23, 2023, **Appendix 1006A**;
- (3) Archived copy of “Conference Papers @ Forensics, 2003”, archived by the Internet Archive on June 19, 2005, available at <https://web.archive.org/web/20050619110718/http://scissec.scis.ecu.edu.au/publications/forensics03/>, accessed and obtained on August 23, 2023, **Appendix 1006B**;
- (4) Archived copy of the conference website for the 1st Australian Computer, Network & Information Forensics Conference 2003, archived by the Internet Archive on May 29, 2004, available at https://web.archive.org/web/20040529224753/http://bizbytes.bpm.ecu.edu.au/mismedia/pdf/2003_forensics.pdf, accessed and obtained on August 17, 2023, **Appendix 1006C**;
- (5) A 2004 citation to *Chen*, obtained from Google Scholar, **Appendix 1006D**;

- (6) Library copy of *Li*, obtained from the German National Library of Science and Technology (Technische Informationsbibliothek, abbreviated *TIB*), **Appendix 1008A**;
- (7) TIB library record for the conference proceedings containing *Li*, available at <https://opac.tib.eu/DB=1/LNG=EN/SID=1b1934a9-b/CMD?ACT=SRCHA&IKT=1016&SRT=YOP&TRM=0971625352> from the online catalog of TIB, and a copy of their record in the WorldCat database, available from the OCLC FirstSearch system (subscription required for access), accessed and obtained on July 29, 2023, **Appendix 1008B**;
- (8) Bibliographic and MARC records for the conference proceedings containing *Li*, available at <https://science-catalogue.canada.ca/record=2056213~S6> from the online catalog of the Federal Science Library Network of Canada, accessed and obtained on July 29, 2023, **Appendix 1008C**;
- (9) Citations to *Li*, obtained from Google Scholar, **Appendix 1008D**.

These records are identified and discussed in this declaration. Experts in the field would reasonably rely on the data described herein to form their opinions.

II. Authenticity and Public Availability of *Chen* (Ex. 1006)

A. Authentication

26. **Ex. 1006** is a true and correct copy of “ECF – Event correlation for forensics,” (“*Chen*”), by Chen et al., in *First Australian Computer, Network & Information Forensics Conference 2003, 25 November 2003, Perth, Western*

Australia, that I obtained from counsel. I understand from counsel that this document was previously submitted as “Trend Micro, Inc. EX1006.” Page 1 shows the title, authors, abstract and keywords (“Event correlation, computer forensics, logs, events, heterogeneous event logs”) of this article. The footer identifies this article as “Paper #11” that is part of the “1st Australian Computer, Network & Information Forensics Conference 2003, 25 November 2003, Perth, Western Australia.” **Ex. 1006** shows this article has a total of 10 pages, including four figures and 16 references. The Copyright section on page 10 shows this article has a 2003 copyright date, and the authors hold the copyright. It also states that the authors “grant a non-exclusive license” to the We-B Centre & Edith Cowan University to “publish this document in full in the Conference Proceedings. Such documents may be published on the World Wide Web, CD-ROM, in printed form, and on mirror sites on the World Wide Web.”

27. To authenticate **Ex. 1006**, I searched the Internet Archive for records. **Appendix 1006A** is a true and correct copy of *Chen*, archived by the Internet Archive on June 23, 2005. I personally located, identified, and obtained this copy. This is the type of material experts in my field would reasonably rely upon when forming their opinions.

28. Page 1 is a screen capture of a Wayback Machine calendar that shows the original URL of this document was

http://scissec.scis.ecu.edu.au/publications/forensics03/pdf/11_final.pdf and the document was saved twice by the Internet Archive on June 23, 2005 and March 24, 2006. The calendar also shows this particular copy was archived on June 23, 2005, and is available at https://web.archive.org/web/20050623153844/http://scissec.scis.ecu.edu.au/publications/forensics03/pdf/11_final.pdf. From my review of records on the Internet Archive I learned that “http://scissec.scis.ecu.edu.au/publications/forensics03” is the URL for the conference website that lists publications presented at the conference, and that means the copy in **Appendix 1006A** was archived from the official conference website for conference papers.

29. Pages 2 to 10 of **Appendix 1006A** are the full text of *Chen*. I have closely compared this archived copy with the counsel copy (**Ex. 1006**) and concluded that they have the same content. The differences are that Figures 2 to 4 in the archived copy are in color, and the reference links are live in the archived copy.

30. **Ex. 1006** is in a condition that creates no suspicion about its authenticity. Specifically, this copy is not missing any intermediate pages, the text on each page appears to flow seamlessly from one page to the next, and there are no visible alterations to the document. Moreover, **Ex. 1006** was found to be the same as the copy on the conference website, a place where, if authentic, it would likely be

found. I therefore see no reason to question the authenticity of this copy of *Chen* from counsel (**Ex. 1006**).

B. Internet Archive Records

31. To determine if *Chen* was publicly accessible on the Internet, I searched the Internet Archive for records. **Appendix 1006A, Appendix 1006B, and Appendix 1006C** provide evidence of public availability as early as May 2004 and no later than June 23, 2005. These records are discussed below. I personally located, identified, and obtained these records. They are the type of record experts in my field would reasonably rely upon when forming their opinions.

32. Internet Archive is a digital library that archives scholarly materials, cultural artifacts, and other web resources on the Internet and provides the public with free access to its collections. I have used the Internet Archive in the past and am familiar with their practice of assigning an extended URL to an archived resource in the format of `http://www.archive.org/web/[Year in yyyy][Month in mm][Day in dd][Time code in hh:mm:ss]/[Archived URL]` to show the point of time the archived file was captured. Internet Archive usually does not archive web resources as soon as they appear on the Internet, so the archive date is usually not the first public availability date of an archived resource. Furthermore, a web resource needs to be available on the Internet before it can be archived. For these reasons, the archive date in the extended URL means that a web resource was publicly available before,

and definitely no later than, the archive date.

33. **Appendix 1006A** is a true and correct copy of *Chen* archived from the conference website by the Internet Archive. The Wayback Machine calendar of **Appendix 1006A** shows *Chen* was first archived by the Internet Archive on June 23, 2005, meaning the archived copy would have been publicly accessible on the Internet no later than June 23, 2005.

34. Two other Internet Archive records show that *Chen* was publicly accessible even earlier than June 23, 2005. **Appendix 1006B** is a true and correct copy of the “Conference Papers @ Forensics, 2003-“ website. Page 1 is a screen capture of a Wayback Machine calendar that shows the original URL of the archived resource was <http://scissec.scis.ecu.edu.au/publications/forensics03> and the website was archived twice on “19 Jun 2005.” The calendar also shows that this particular copy was archived on June 19, 2005, and is available at <https://web.archive.org/web/20050619110718/http://scissec.scis.ecu.edu.au/publications/forensics03/>. The archive date of “20050619110718” indicates this website was archived on June 19, 2005, at 11 a.m., 7 minutes, 18 seconds, meaning this website would have been publicly accessible on the Internet no later than June 19, 2005.

35. Pages 2 and 3 of **Appendix 1006B** are the PDF version of this website. The banner of this website shows it is related to the “1st Australian computer,

network & information forensics conference” that took place on “25 November 2003” at Perth, Western Australia, and the School of Computer and Information Science, the We-B Center and the ECU University are related to this conference. Page 2 shows the title of this website is “Conference Papers @ Forensics, 2003- “ and each paper entry includes the title, authors, and a link to view the full paper. The link for the *Chen* article led to the archived copy at https://web.archive.org/web/20050623153844/http://scisec.scis.ecu.edu.au/publications/forensics03/pdf/11_final.pdf (**Appendix 1006A**). The archived conference paper website (**Appendix 1006B**) informs my opinion that by June 19, 2005, interested users would have been able to discover this website and follow the links to view the conference papers listed.

36. **Appendix 1006C** provides further evidence of public access to *Chen*. It is a true and correct copy of the conference website that I personally located, identified, and obtained from the Internet Archive. This is the type of material experts in my field would reasonably rely upon when forming their opinions.

37. Page 1 is a screen capture of a Wayback Machine calendar that shows the original URL of this website was http://bizbytes.bpm.ecu.edu.au/mismedia/odf/2003_forensics.pdf and it was archived once on May 29, 2004. Pages 2 to 14 are the website saved in PDF and Page 2 explains the “1st Australian Computer, Network & information Forensics

Conference 2003 will be held on November 25th” in Western Australia. The “Further Details” area on page 7 explains that “[a]ccepted papers will appear in the conference CD of proceedings provided that at least one author registers and attends the conference.” The “Registration Details” on page 11 states that “Early Bird, Full Registration and Student Registration will entitle the delegate to ... Conference satchel, CD-ROM of Proceedings and printed copy of Abstracts.” **Appendix 1006C** informs my opinion that by May 29, 2004, interested users would have learned that the CD-ROM conference proceedings was made available to conference registrants at the conference. The language in the registration area suggests the benefits of registration were provided to encourage registration, so it is my opinion that the conference website would have been set up before the conference date of November 2003 to inform interested participants of the conference program and the registration benefits.

38. Taken together, the conference website (**Appendix 1006C**), the conference paper website (**Appendix 1006B**), and the archived copy of *Chen* (**Appendix 1006A**) inform my opinion that *Chen* would have been publicly accessible at the conference in November 2003, and definitely no later than June 23, 2005, when the article was archived by the Internet Archive.

C. Usage Record

39. Actual usage of a publication is reflected by other publications that

make reference to it. My research on Google Scholar has identified the earliest citation to *Chen* as: Carrier, B. D., & Spafford, E. H. (2004, November). Defining event reconstruction of digital crime scenes. *Journal of forensic sciences*, 49(6), JFS2004127 (available at <https://www.cerias.purdue.edu/bookshelf/archive/2004-37.pdf>).

D. Summary of My Opinion on *Chen*

40. The copy of *Chen* from counsel (**Ex. 1006**) is authentic because it has the same content as the copy archived from the conference website (**Appendix 1006A**). The conference website archived by the Internet Archive shows all registrants would receive the CD-ROM Proceedings and a print copy of abstracts at the conference (**Appendix 1006C**). The conference paper website archived on June 19, 2005 included links to accepted papers (including *Chen*), making those papers publicly accessible by June 19, 2005 (**Appendix 1006B**). The archived copy of *Chen* shows it would have been publicly accessible by June 23, 2005. In short, the documents and records I have reviewed inform my opinion that *Chen* would have been publicly accessible as early as November 2003 when the conference took place, and no later than June 2005, when the article itself was archived by the Internet Archive. The earliest citation to *Chen* was published in November 2004.

III. Authenticity and Public Availability of *Li* (Ex. 1008)

A. Authentication

41. **Ex. 1008** is a true and correct copy of “UCLog: A unified, correlated logging architecture for intrusion detection,” (“*Li*”), by Li et al., in *Proceedings of the Twelfth International Conference on Telecommunication Systems: Modeling and Analysis*, pp. 329-343, that I obtained from counsel. I understand from counsel that this document was filed as “Trend Micro, Inc. EX1008.” Page 1 shows the title, authors, abstract, and keywords (“intrusion detection, auditing, logging, file I/O monitoring”) of the *Li* article. **Ex. 1008** shows *Li* has a total of 15 pages (two columns per page), including one table, five figures (some in color), and 42 references.

42. To authenticate **Ex. 1008**, I searched WorldCat for libraries that hold the conference proceedings containing *Li*, and located a record that shows the German National Library of Science and Technology (Technische Informationsbibliothek (TIB) holds this work. I then obtained a copy of *Li* via a document delivery service. This TIB copy is presented as **Appendix 1008A**.

43. Page 1 of **Appendix 1008A** is the title page that shows this work is the proceedings of “the Twelfth International Conference on Telecommunication Systems: Modeling and Analysis” that took place on July 22-25, 2004, in Monterey, California, and the conference was sponsored by seven groups. The cover shows a

TIB library stamp and a library barcode. Pages 2 to 4 are the table of contents and page 4 shows *Li* begins on page 329. Pages 5 to 19 (internal pages 329 to 343) are the full text of *Li* presented on two columns per page. This TIB copy shows *Li* has a total of 15 pages, including one table, five figures, and 42 references. I have closely compared the counsel copy of *Li* (**Ex. 1008**) with the TIB copy (**Appendix 1008A**), and found them to have the same content. The differences are that the TIB copy is a print copy that carries page numbers, and figures are black and white because the library provided a black and white copy to me.

44. **Ex. 1008** is in a condition that creates no suspicion about its authenticity. Specifically, this copy is not missing any intermediate pages, the text on each page appears to flow seamlessly from one page to the next, and there are no visible alterations to the document. Moreover, **Ex. 1008** was found to have the same content as the copy held by the German National Library of Science and Technology. I therefore see no reason to question the authenticity of this copy of *Li* from counsel (**Ex. 1008**).

B. Library Records

45. To determine when the conference proceedings containing *Li* became publicly discoverable, I searched the online catalog of TIB to locate their library record, then searched the WorldCat database on OCLC FirstSearch for the TIB record to determine the record entry date. **Appendix 1008B** is a true and correct

copy of the TIB library record and the corresponding record in OCLC FirstSearch. I personally located, identified, and obtained these records. They are the type of record experts in my field would reasonably rely upon when forming their opinions.

46. Page 1 of **Appendix 1008B** is the library record obtained from the online catalog of TIB. It shows the title, corporate bodies involved, name of the conference, language, publication place and date, extent, ISBN, subject (based on the German classification system), and shelf mark. The “Request info” field shows this work is “not for loan” (meaning it cannot be checked out of the library), but it is “presently available” and users can request access and use it at the library. Pages 2 and 3 are the TIB record on OCLC FirstSearch. My reason for obtaining the TIB record on OCLC FirstSearch is that records on OCLC FirstSearch contain more technical details, such as the record entry date, than records from WorldCat, the free web portal. The Location area on page 2 of **Appendix 1008B** shows the German National Library of Science and Technology at the University of Hannover holds this work. The title, corporate authors, conference name, publication place and year of publication, physical description, language, and the 10-digit ISBN are the same as the details in the TIB record on page 1. The “Entry” field on page 3 shows this record was entered into OCLC on “20050531” (*i.e.*, May 31, 2005), making it available to OCLC members for copy cataloging and interlibrary loan purposes from that date on. The “Database” field shows this record is included in the WorldCat

database. The “Accession No” field shows the record’s OCLC number is “254719202,” which is the same as the WorldCat record number of <https://www.worldcat.org/title/254719202> on the free web portal.

47. **Appendix 1008B** informs my opinion that TIB cataloged the conference proceedings containing *Li* and their record was entered into the WorldCat database on OCLC on May 31, 2005, meaning the TIB record became discoverable by that date in the OCLC system and also on WorldCat the free web portal. Interested users would have been able to discover this work on WorldCat (the free web portal) by the title, conference name, the first conference sponsor. After they have located the TIB record, they would have been able to request access to the content of this work, as I did.

48. The National Science Library of Canada is another library that cataloged this conference proceedings containing *Li*. **Appendix 1008C** is a true and correct copy of the bibliographic and MARC records for this work. I personally located, identified and obtained these records. They are the type of record experts in my field would reasonably rely upon when forming their opinions.

49. Pages 1 and 2 of **Appendix 1008C** are the bibliographic record for the conference proceedings containing *Li*. The record shows the title, physical description, bibliography, corporate name, subjects and the 10-digit ISBN. The record also shows this work is held by NRC Ottawa, its call number is “TK5101.A1

I619 2004,” and this work is for “In library use only.”

50. Pages 3 and 4 are the MARC record. The first six digits of Field 008 show the record was created on “050422” (*i.e.*, April 22, 2005), and Field 040 shows “CaOON” created this record. According to the *Canadian Library Directory* (<https://sigles-symbols.bac-lac.gc.ca/eng/Search>), “OON” is the library symbol for the National Science Library (NRC). Data from Fields 008 and 040 inform my opinion that the National Science Library of Canada created a MARC record on April 22, 2005, for the conference proceedings containing *Li*, making this work discoverable in their online catalog from that date on.

51. Field 020 shows the 10-digit ISBN, Field 111 shows the conference name is used as the author, Field 245 shows the title and the first sponsor, and Field 260 shows the publisher information in brackets because the information was obtained from an outside source. Field 300 shows this work has 352 pages, and Fields 710 show the publisher and the first sponsor are included to help users discover this work.

52. Subject of this work is represented in Field 090 by a Library of Congress Classification (LCC) number of “TK5101.A1 I619 2004” that represents periodicals on telecommunication (source: Library of Congress Classification Schedule T,

https://www.loc.gov/aba/publications/FreeLCC/LCC_T2023TEXT.pdf). It is also

represented by four Library of Congress subject headings, with “Telecommunication systems,” “Telecommunication |x Technological innovations” (“|x” indicating a topical subheading), “Data transmission systems,” and “Computer networks” as the main topics, each followed by “Congresses” as a form subheading encoded in subfield v (“|v”) to indicate the main topics are treated at a conference. These subject representations enable users to conduct subject searches to discover this conference proceedings containing *Li*.

53. This MARC record was created by the National Science Library of Canada on April 22, 2005, and it has made the conference proceedings containing *Li* discoverable from that date on. Interested users would have been able to discover this work by the ISBN, conference name, title, publisher, and sponsor. They would also have been able to search for this work by the LCC number and the subject headings.

C. Usage Record

54. Actual usage of a publication is reflected by other publications that make reference to it. **Appendix 1008D** is a list of citations from 2004 and 2005 that I identified from Google Scholar. The earliest citation is a technical report of the University of Michigan, and I used Internet Archive records to learn that the publication date was August 2004. The second publication appeared in April of 2005.

D. Summary of My Opinion on *Li*

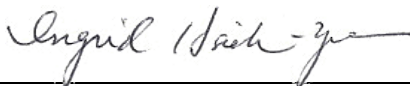
55. The counsel copy of *Li* (**Ex. 1008**) is authentic because it is the same as the TIB copy (**Appendix 1008A**). OCLC FirstSearch record shows the TIB record was entered into the WorldCat database on OCLC on May 31, 2005 (**Appendix 1008B**), making it discoverable from that date on for OCLC members and also on WorldCat, which is a web portal the general public can freely access. The bibliographic and MARC records from the National Science Library of Canada (**Appendix 1008C**) shows their record was created on April 22, 2005, making the conference proceedings containing *Li* discoverable in their online catalog from that date on. In short, the documents and records I have reviewed inform my opinion that *Li* would have been publicly accessible as early as April 2005 and no later than May 2005. The two earliest citations to *Li* that I have identified were published in August 2004 and April 2005, further supporting my opinion that *Li* would have been publicly accessible no later than May 2005.

IV. Conclusion

56. In signing this declaration I recognize that the declaration will be filed as evidence in a Petition for *Inter Partes* Review before the Patent Trial and Appeal Board of the United States Patent and Trade Mark Office. I also recognize that I may be subject to deposition in the case. If deposition is required of me, I will appear at a reasonable time and place to be agreed upon.

57. I hereby declare that all statements made herein on 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 1001 of Title 18 of the United States Code.

Date: Sept. 7, 2023

Executed: 
Ingrid Hsieh-Yee, Ph.D.