

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

3SHAPE A/S and 3SHAPE INC.
Petitioners

v.

DENTAL IMAGING TECHNOLOGIES CORPORATION
Patent Owner

Case No. IPR2024-00548
Patent 10,076,391

DECLARATION OF SYLVIA D. HALL-ELLIS, PH.D.

3SHAPE EXHIBIT 1011
3Shape v. DITC
IPR2024-00548

I. INTRODUCTION

1. My name is Sylvia D. Hall-Ellis. I have been retained as an expert by 3Shape A/S and 3Shape Inc. (referred to herein as “3Shape”).

2. I have written this declaration at the request of 3Shape to provide my expert opinion regarding the authenticity and public availability of several publications. My declaration sets forth my opinions in detail and provides the bases 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 any additional evidence, testimony, discovery, argument, and/or other additional information that may be provided to me after the date of this declaration.

4. I am being compensated for my time spent working on this matter at my normal consulting rate of \$300 per hour, plus reimbursement for any additional reasonable expenses. My compensation is not in any way tied to the content of this declaration, 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 Science from the University of Pittsburgh in 1985. Over the last fifty 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 served as the Chair for the ALA Office of Diversity’s Committee on Diversity, as a member of the REFORMA National Board of Directors, and as a member of the Editorial Board for the ALCTS premier cataloging journal, *Library Resources and Technical Services*, as a Co-Chair of the Membership Committee

for the Library Research Round Table (LRRT) of the American Library Association, and as a member of the LRRT Nominating 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. I have been deposed thirty-three times: (1) *Symantec Corp. vs. Finjan, Inc.*, Petition for *Inter Partes Review* of U.S. Patent No. 7,613,926, May 26, 2016, on behalf of Symantec Corp.; (2) *Symantec Corp. vs. Finjan, Inc.*, Northern District of California, 14-cv-299-HSG, on behalf of Symantec Corp., September 14, 2017; (3) one deposition for ten matters: *Intellectual Ventures I LLC vs. AT&T Mobility LLC*; AT&T Mobility II LLC, New Cingular Wireless Services, Inc., SBC Internet Services, Inc., Wayport, Inc., and Cricket Wireless LLC, C.A. No. 12-193 (LPS); *Intellectual Ventures II LLC vs. AT&T Mobility LLC*; AT&T Mobility II LLC, New Cingular Wireless Services, Inc., SBC Internet Services, Inc., Wayport, Inc., and Cricket Wireless LLC, C.A. No. 13-1631 (LPS); *Intellectual Ventures I LLC vs. T-Mobile USA, Inc. and T-Mobile US, Inc.*, C.A. No. 13-1632 (LPS); *Intellectual Ventures II LLC vs. T-Mobile USA, Inc. and T-Mobile US, Inc.*, C.A. No. 13-1633 (LPS); *Intellectual Ventures I LLC, vs. Nextel Operations, Inc., Sprint Spectrum L.P., Boost Mobile, LLC and Virgin Mobile USA, L.P.*, C.A. No. 13-1634

(LPS); *Intellectual Ventures II LLC vs. Nextel Operations, Inc., Sprint Spectrum L.P., Boost Mobile, LLC and Virgin Mobile USA, L.P.*, C.A. No. 13-1635 (LPS); *Intellectual Ventures I LLC, vs. United States Cellular Corporation*, C.A. No. 13-1636 (LPS); *Intellectual Ventures I LLC vs. United States Cellular Corporation*, C.A. No. 13-1637 (LPS); *Intellectual Ventures II LLC vs. AT&T Mobility LLC, AT&T Mobility II LLC, New Cingular Wireless Services, Inc.*, C.A. No. 15-799 (LPS); *Intellectual Ventures I LLC vs. T-Mobile USA, Inc. and T-Mobile US, Inc.*, C.A. No. 15-800 (LPS), on behalf of AT&T Mobility LLC; AT&T Mobility II LLC, Boost Mobile, LLC Cricket Wireless LLC, Nextel Operations, Inc., New Cingular Wireless Services, Inc., SBC Internet Services, Inc., Sprint Spectrum L.P., T-Mobile USA, Inc., T-Mobile US, Inc., United States Cellular Corporation Virgin Mobile USA, L.P., and Wayport, Inc., November 15, 2016; (4) *Hitachi Maxell, LTD., v. Top Victory Electronics (Taiwan) Co. Ltd., et al.*, Eastern District of Texas, 2:14-cv-1121 JRG-RSP (E.D. Texas), on behalf of Top Victory Electronics (Taiwan) Co. LTD, *et. al.*, January 20, 2016; (5) *Sprint Spectrum, L.P. vs. General Access Solutions, Ltd.*, Petition for *Inter Partes* Review of U.S. Patent No. 7,173,916, on behalf of Sprint Spectrum L.P., July 13, 2018; (6) *Nichia Corporation vs. Vizio, Inc.*, Central District of California, 8:16-cv-00545; on behalf of Vizio, Inc., October 12, 2018; (7) *Intellectual Ventures I LLC, vs. T-Mobile USA, Inc., T-Mobile US, Inc., Ericsson Inc., and Telefonaktiebolaget LM Ericsson*,

Middle District of Florida, 2:17-cv-00557 (JRG), on behalf of T-Mobile USA, Inc., T-Mobile US, Inc., Ericsson Inc., and Telefonaktiebolaget LM Ericsson, October 19, 2018; (8) Pfizer, Inc. vs. Biogen, Inc., Petition for *Inter Partes Review* of U.S. Patent No. 8,821,873, on behalf of Pfizer, November 3, 2018; (9) *Finjan, Inc. vs. ESET, LLC and ESET SPOL. S.R.O.*, Southern District of California, 3:17-cv-00183-CAB-BGS, on behalf of ESET, January 15, 2019; (10) *Finjan, Inc. vs. Cisco Systems, Inc.*, Northern District of California, 5:17-cv-00072-BLF-SVK, on behalf of Cisco Systems, Inc., September 6, 2019; (11) *Facebook, Inc., Instagram, LLC and Whatsapp Inc. vs. Blackberry Limited*, Petition for *Inter Partes Review* of U.S. Patent No. 9,349,120 B2, on behalf of Facebook, Inc., Instagram, LLC and Whatsapp Inc. December 20, 2019; (12) *3Shape A/S and 3Shape Inc. v. Align Technology, Inc.*, Petition for *Inter Partes Review* of U.S. Patent No. 7,156,661, IPR2020-00222 and IPR2020-00223, August 10, 2020, on behalf of 3Shape A/S and 3Shape Inc.; (13) *Finjan Inc. v. Rapid7, Inc. and Rapid7 LLC*, District of Delaware, 1:18-cv-01519-MN, September 15, 2020; (14) *VLSI Technology LLC v. Intel Corporation*, Western District of Texas, 6:19-cv-00254, 6:19-cv-00255, 6:19-cv-00256, on behalf of Intel Corporation, September 23, 2020; (15) *Finjan Inc. v. Sonicwall, Inc.*, Northern District of California, 5:17-cv-04467-BLF-HRL, on behalf of Sonicwall, Inc., October 27, 2020; (16) *VLSI Technology, LLC v. Intel Corporation*, District of Delaware, 1:18-cv-00966-CFC-CJB, February 5, 2021, on

behalf of the Intel Corporation; (17) *Unified Patents, LLC v. Good Kaisha IP Bridge 1*, Petition for *Inter Partes* Review of U. S. Patent 7,817,868, February 11, 2021, on behalf of Unified Patents; (18) *Finjan, Inc. v. Qualsys, Inc.*, Northern District of California, 4:18-cv-07229-YGR, March 1, 2021, on behalf of Qualsys, Inc.; (19) *Qualcomm, Inc. v. Monterey Research LLC*, Petition for *Inter Partes* Review of U. S. Patent 6,534,805, May 6, 2021, on behalf of Qualcomm, Inc.; (20) *Hulu, LLC v. Sound View Innovations, LLC*, Petition for *Inter Partes* Review of U. S. Patent 5,806,062, May 14, 2021, on behalf of Hulu, LLC; (21) *VLSI Technology LLC v. Intel Corporation*, Western District of Texas, 6:19-cv-00254, 6:19-cv-00255 and 6:19-cv-00256, August 3, 2021, on behalf of Intel Corporation; (22) *Liquidia Technologies, Inc. v. United Therapeutics Corporation*, Petition for *Inter Partes* Review of U. S. Patent 10,716,793 B2, October 20, 2021, on behalf of Liquidia Technologies, Inc.; (23) *EcoFactor, Inc. v. Google, Inc.*, Western District of Texas, 6:20-cv-00075 (ADA), 6:20-0078-ADA, and 6:20-cv-00080 ADA, October 27, 2021, on behalf of Google, Inc.; (24) *Liquidia Technologies, Inc. v. United Therapeutics Corporation*, Petition for *Inter Partes* Review of U. S. Patent 10,716,793 B2, March 11, 2022, on behalf of Liquidia Technologies, Inc.; (25) *Juniper Networks, Inc. v. Swarm Technology LLC*, Petition for *Inter Partes* Review of U. S. Patent 9,852,004, May 5, 2022, on behalf of Juniper Networks, Inc.; (26) *ParkerVision, Inc. v. Intel Corporation*, Western District of Texas, 6:20-cv-108

(ADA), October 26, 2022, on behalf of the Intel Corporation; (27) *CommScope v. TQ Delta*, Petition for *Inter Partes Review* of U. S. Patents 9,094,348 and 10,833,809, February 16, 2023, on behalf of CommScope; (28) *WSOU Investments d/b/a Brazos v. Salesforce.com, Inc.* for Western District of Texas, 6:20-cv-01164-ADA and 6:20-cv-01170-ADA, April 18, 2023, on behalf of Salesforce; (29) *Regents of the University of Minnesota v. AT&T Mobility LLC*, District of Minnesota, 14:cv-4999-JRT-TNL & 14-cv-4669-JRT-TNL, May 18, 2023, on behalf of AT & T Mobility LLC; (30) *VLSI Technology LLC v. Intel Corporation*, Northern District of California, 5:17-cv-0571-BLF-NC, July 11, 2023, on behalf of Intel Corporation; (31) *Trustees of Purdue University v. ST Microelectronics*, Western District of Texas, 6:21-cv-00727-ADA, July 27, 2023, on behalf of ST Microelectronics; (32) *Advanced Micro Devices, Inc. v. Realtek Semiconductor Corp.*, Petition for *Inter Partes Review* of U. S. Patents 7,936,245 & 9,590,582, August 10, 2023, on behalf of Advanced Micro Devices, Inc.; and, (33) *Motif Foodworks, Inc. v. Impossible Foods, Inc.*, Petition for *Inter Partes Review* of U. S. Patent 9,943,096, August 24, 2023, on behalf of Motif Foodworks, Inc. I have testified at trial twice: (1) *Advanced Micro Devices, Inc. v. Realtek Semiconductor Corp.*, U. S. Patents 7,936,245 & 9,590,582, October 20, 2023, International Trade Commission, Washington, DC, on behalf of Advanced Micro Devices, Inc.; and, (2) *Trustees of Purdue University v. ST Microelectronics*, Western District of

Texas, 6:21-cv-00727-ADA, November 29, 2023, on behalf of ST Microelectronics.

10. My full *curriculum vitae* is submitted herewith as Exhibit 1012.

III. PRELIMINARIES

11. *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.

12. 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, contents, substance, internal patterns, or other distinctive characteristics of the item, taken together with all of the circumstances. I am further informed that an item is considered authentic if it is at least 20 years old, in a condition that creates no suspicion of its authenticity, and in a place where, if authentic, it would likely be. Lastly, I have been informed that a document's authenticity can be established by comparison with an authentic specimen.

13. 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.

14. 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 may qualify as publicly accessible). One manner of sufficient indexing is indexing according to subject matter category. I understand that the cataloging and indexing by a single library of a single instance of a particular 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.

15. 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.

16. *Indexing.* 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 the 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.

17. 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.

18. 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.

19. Librarians consulted with information seekers to verify citations, check availability in union catalogs, printed books catalogs, and 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.

20. 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 references to find the desired results from their searches. The family of index titles included *Science & Technology Index*, *Business Periodicals*,

Applied Science & Technology 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.

21. 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 no later than the publication date of the citing document.

22. *ResearchGate*.¹ A social networking site designed for scientists and researchers to share papers, ask and answer questions, and find collaborators, *ResearchGate* is the largest academic social network in terms of active users. As of September 2023, ResearchGate had more than 25 million users, with its largest user-bases coming from Europe and North America.²

23. Features available to *ResearchGate* members include following a research interest and the work of other individual participants, a blogging feature for users to write short reviews on peer-reviewed articles, private chat rooms for sharing data, editing documents, or discussing confidential topics, and a research-

¹ www.researchgate.net

² <https://en.wikipedia.org/wiki/ResearchGate>

focused job board. *ResearchGate* indexes self-published information on user profiles and suggests members connect with others who have similar interests. Member questions are fielded to others who have identified relevant expertise on their profiles.

24. *ResearchGate* restricts its user accounts to people at recognized institutions and published researchers. Most of *ResearchGate's* users are involved in medicine, biology, engineering, computer science, agricultural sciences, and psychology. *ResearchGate* publishes a citation impact measurement in the form of an “RG Score,” which is reported to be correlated with existing citation impact measures. *ResearchGate* does not charge fees for putting content on the site and does not require peer review.

25. *Semantic Scholar*.³ A project developed at the Allen Institute for Artificial Intelligence and publicly released in November 2015, *Semantic Scholar* is designed to be an AI-backed search engine for scientific journal articles which uses a combination of machine learning, natural language processing, and machine vision to add a layer of semantic analysis to the traditional methods of citation analysis, and to extract relevant figures, entities, and venues from papers. *Semantic Scholar* is designed to highlight important, influential papers, and to identify the connections between them.

³ <https://www.semanticscholar.org>

26. As of January 2018, following a 2017 project that added biomedical papers and topic summaries, the *Semantic Scholar* corpus included more than 40 million papers from computer science and biomedicine. In March 2018, Doug Raymond, who developed machine learning initiatives for the Amazon Alexa platform, was hired to lead the *Semantic Scholar* project. As of August 2019, the number of included papers had grown to more than 173 million after the addition of the Microsoft Academic Graph records, already used by Lens.org.

27. *Google Scholar*.⁴ Released in beta in November 2004, Google Scholar includes a significant number of peer-reviewed online academic journals, books, conference papers, selected theses and dissertations, preprints, abstracts, technical reports, and other scholarly literature. Google Scholar is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines. While Google does not publish the size of Google Scholar's database, scientometric researchers estimated it to contain roughly 389 million documents including articles, citations and patents making it the world's largest academic search engine in January 2018.

28. Because many of *Google Scholar*'s search results link to commercial journal articles, searchers will be able to access only an abstract and the citation details of an article and may have to pay a fee to access the entire article. The most

⁴ <https://scholar.google.com>

relevant results for the searched keywords will be listed first, in order of the author's ranking, the number of references that are linked to it and their relevance to other scholarly literature, and the ranking of the publication that the journal appears in. Through its "cited by" feature, *Google Scholar* provides access to abstracts of articles that have cited the article being viewed. Through its "Related articles" feature, *Google Scholar* presents a list of closely related articles, ranked primarily by how similar these articles are to the original result, but also taking into account the relevance of each paper.

29. *Scopus*.⁵ Researchers trust the information and data they discover with *Scopus* because the content comes from over 5,000 publishers that must be reviewed and selected by an independent Content Selection and Advisory Board (CSAB) to be, and continue to be, indexed on *Scopus*.

30. *Scopus* is the largest abstract and citation database of peer-reviewed literature: scientific journals, books, and conference proceedings. Delivering a comprehensive overview of the world's research output (more than 69 million items) in the fields of science, technology, medicine, social sciences, and arts and humanities, *Scopus* features smart tools to track, analyze and visualize research.

31. *Scopus* offers free features to non-subscribed users and is available through Scopus Preview. Researchers may use *Scopus* to assist with their research,

⁵ <https://www.elsevier.com/solutions/scopus>

such as searching authors, and learning more about content coverage and source metrics.

IV. LIBRARY CATALOGING PRACTICES

A. MARC RECORDS AND THE ONLINE LIBRARY CATALOG

32. 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.⁶ 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.⁷

⁶ The full text of the standard is available from the Library of Congress at <http://www.loc.gov/marc/bibliographic/>.

⁷ Almost every major library in the world is MARC-compatible. *See, e.g., MARC Frequently Asked Questions (FAQ)*, Library of Congress, <https://www.loc.gov/marc/faq.html> (last visited January 10, 2024) (“MARC is the acronym for MACHine-Readable Cataloging. It defines a data format that emerged from a Library of Congress-led initiative that began nearly forty 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 (reaffirmed 2016) standard for Information Interchange Format.

33. 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 can be searched by a person of ordinary skill in the art (“POSITA”) 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.

34. 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 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.

35. 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.⁸ 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 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 enables 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

⁸ 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 January 10, 2024).

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, <http://www.loc.gov/marc/umb/um01to06.html#part2> (last visited January 10, 2024).

36. 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

37. 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 or creator of the work is recorded in field 100, an item's International Standard Book Number ("ISBN") is recorded in field 020, an item's International Standard Serial Number ("ISSN") is

recorded in field 022, an item's Library of Congress call number is recorded in field 050, and the publication date is recorded in field 260 under the subfield "c." *Id.*⁹ If a work is a periodical, then its publication frequency is recorded in field 310, alternate publication frequency is recorded in field 321, 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. *See* <http://www.loc.gov/marc/bibliographic/bd3xx.html> (last visited January 10, 2024).

38. 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

⁹ In some MARC records, field 264 is used rather than field 260 to record publication information. *See* <http://www.loc.gov/marc/bibliographic/bd264.html> (last visited January 10, 2024) ("Information in field 264 is similar to information in field 260 (Publication, Distribution, etc. (Imprint)). Field 264 is useful for cases where the content standard or institutional policies make a distinction between functions").

identify the institution that created the MARC record.¹⁰

39. MARC records also include several fields that include subject matter classification information. An overview of MARC record fields is available through the Library of Congress at <http://www.loc.gov/marc/bibliographic/>. For example, 6XX fields are termed “Subject Access Fields.” See <http://www.loc.gov/marc/bibliographic/bd6xx.html>. Among these, for example, is the 650 field; this is the “Subject Added Entry – Topical Term” field. See <http://www.loc.gov/marc/bibliographic/bd650.html>. The 650 field is a “[s]ubject added entry in which the entry element is a topical term.” *Id.* These authenticated subject 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.*

40. Further, MARC records include call numbers, which themselves indicate a subject and physical location within the library collections. For example, the 050 field is the “Library of Congress Call Number.” See <http://www.loc.gov/marc/bibliographic/bd050.html> (last visited November 21, 2023). A defined portion of the Library of Congress Call Number is the classification number, and “source of the classification number is *Library of Congress Classification* and the *LC Classification-Additions and Changes*.” *Id.*

¹⁰ <https://www.oclc.org/en/contacts/libraries.html>

Thus, included in the 050 field is a subject matter classification. Each item in a library has a single classification number. A library selects a classification scheme (*e.g.*, the Library of Congress Classification scheme just described or a similar scheme such as the Dewey Decimal Classification scheme or the National Library of Medicine Classification scheme) and uses it consistently. When the Library of Congress assigns the classification number, it appears as part of the 050 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.

41. Each item in a library has a single classification number. A library selects a classification scheme (*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 classification number, it appears as part of the 050 field, as discussed above. For MARC records created by libraries other than the Library of Congress (*e.g.*, a university library or a local public library), the classification number may appear in a 09X (*e.g.*, 090) field. See <http://www.loc.gov/marc/bibliographic/bd09x.html> (last visited January 10, 2024).

C. OCLC

42. 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.”¹¹ Among other services, OCLC and its members are responsible for maintaining the WorldCat database (<http://www.worldcat.org/>), used by independent and institutional libraries throughout the world.

43. 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 were initially tape-loaded into the OCLC database through a

¹¹ 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>).

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.

44. 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, 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.”¹² 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 exhibits to this report—the date reflected next to the label “Entered” is necessarily on or after the date the library first cataloged and indexed the underlying item.

45. 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. It also allows librarians around the world to know that a particular MARC record is

¹² In this report, I sometimes refer to the “Entered” entry as field 008, characters 00-05.

authoritative. In contrast, a hypothetical system wherein duplicative records were created would result in confusion as to which record is authoritative.

46. 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 to libraries come from a jobber or wholesaler for online and print resources. These resellers make it their business to provide books 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 directly from publishers themselves, which provide delivery on a similarly expedited schedule. In general, libraries make these purchases throughout the year as the books are published and shelve the books as soon thereafter as possible in order to make the books available to their patrons. Thus, books are generally available at libraries across the country within just a few days of publication.

D. JOURNALS

47. 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 and journals. In the OCLC bibliographic database, the first issue of the serial publication is typically cataloged, but the date is left open-ended with the use of a punctuation mark such as a dash. Individual issues are not cataloged according to the current national cataloging rules outlined in *RDA: Resource and Access*. Instead, MARC records for serial publication in OCLC represent the entire run of the serial title. With knowledge of the first issue published, future issues can be predicted. In my extensive professional experience, is it 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 local MARC record.

48. The handling of printed journal subscriptions is shown on the covers 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 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 issues were frequently stamped again to acknowledge receipt. The new issue was placed in the public area; the older issue was stored so that it remained available.

49. 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 stamping 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 each of the publications discussed below.

V. PUBLICATIONS

A. Veröffentlicht durch SOMMER IP Office. “Correlation Between Upper and Lower Jaw of Digital Impressions” (5 pages) (August 2010) (“Sommer”) [Exhibit 1005]

50. Attached hereto as Exhibit 1005 is a technical document titled “Correlation Between Upper and Lower Jaw of Digital Impressions” prepared as part of the Research and Development work at the Sommer IP Office (Mannheim, Germany). I downloaded Exhibit 1005 from the Sommer Publikationen aus

Forschung & Entwicklung website.¹³ Exhibit 1005 is a true and accurate copy of the technical report, “Correlation Between Upper and Lower Jaw of Digital Impressions” and issued as a public, unclassified document by the Sommer IP Office. The technical report is dated August 24, 2010, and was posted on the firm’s website on that date as indicated by the WayBack Machine screen captures.¹⁴ *See also* Attachment 1A. Specifically, the text of the technical report “Correlation Between Upper and Lower Jaw of Digital Impressions” 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. Exhibit 1005 was found within the custody of the issuing organization – a place where, if authentic, a copy of this document would likely be.

51. Exhibit 1005 is a true and correct copy in a condition that creates no suspicion about its authenticity. Based on the date recorded on the document, it is my opinion that the technical report “Correlation Between Upper and Lower Jaw of Digital Impressions” was publicly available on August 24, 2010, or shortly thereafter.

¹³ <http://www.fepub.de/>

¹⁴

<https://web.archive.org/web/20130827090118/https://fepub.de/Dateien/Publikationen/Buccal%20Registration%2010-08-24.pdf>

B. “Robust Generalized Total Least Squares Iterative Closest Point Registration” by Raúl San José Estépar, Anders Brun, and Carl-Fredrik Westin. (2004) [Exhibit 1007]

52. Attached hereto as Exhibit 1007 is a copy of a conference paper published in the two-volume conference proceedings set titled *Medical Image Computing and Computer-Assisted Intervention* found in the University of Wisconsin – Madison Libraries. The conference paper titled “Robust Generalized Total Least Squares Iterative Closest Point Registration” by Raúl San José Estépar, Anders Brun, and Carl-Fredrik Westin (hereafter “Estépar”) appears beginning on page 234 in volume 1. The two-volume conference proceedings set is volume 3216 (Part I and Part II) of the Lecture Notes in Computer Science series published by SpringerNature. The Medical Image Computing and Computer-Assisted Intervention conference (also called MICCAI 2004) was held as the 7th International Conference on September 26-29, 2004, in Saint-Malo, France. Exhibit 1007 is a true and correct copy of the Estépar conference paper (volume 1, pages 234-241). I obtained this copy of the conference paper from the University of Wisconsin – Madison Libraries. Specifically, the text of the Estépar conference paper 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. Exhibit 1007 was found within the custody of a library – a place where, if authentic, a copy of this two-volume conference proceedings set would likely be.

Exhibit 1007 is a true and correct copy in a condition that creates no suspicion about authenticity.

53. The Estépar conference paper is also available from the publisher, SpringerNature,¹⁵ and the digital repositories *ResearchGate*¹⁶ and *Semantic Scholar*.¹⁷

54. Attached hereto as Attachment 2A is a true and correct copy of the MARC record for this two-volume conference proceedings set from the University of Wisconsin – Madison Libraries online catalog. Library ownership is indicated by the presence of the library’s code (“GZM”) in the 049 field. The library continues to update this MARC record and enhanced the MARC record to meet current cataloging rules. The most recent enhancement to the MARC record occurred on November 3, 2016, as shown in field 005 (“20161103”). I personally identified and retrieved the library catalog record which is Attachment 2A.

55. Based on finding a print copy of Exhibit 1007 in the University of

¹⁵ https://link.springer.com/chapter/10.1007/978-3-540-30135-6_29

¹⁶

https://www.researchgate.net/publication/221401138_Robust_Generalized_Total_Least_Squares_Iterative_Closest_Point_Registration

¹⁷ <https://www.semanticscholar.org/paper/Robust-Generalized-Total-Least-Squares-Iterative-Est%C3%A9par-Brun/c989752366a72120d782501288e179943fdb0673>

Wisconsin – Madison Libraries and MARC record in its online library catalog attached as Attachment 2A, it is my opinion that the two-volume conference proceedings set titled *Medical Image Computing and Computer-Assisted Intervention* was publicly available at the University of Wisconsin – Madison Libraries as of October 1, 2004, as shown in field 008 (“041001”).

56. Attached hereto as Attachment 2B is a true and correct copy of the MARC record for the two-volume conference proceeding set titled *Medical Image Computing and Computer-Assisted Intervention* obtained from the OCLC bibliographic database. I personally identified and retrieved the MARC record that is Attachment 2B. As previously noted, the library that created the record is recorded in field 040 with a unique library code. For Attachment 2B, that library code is “NLM,” which means that the MARC record for this two-volume conference proceedings set was cataloged at the National Library of Medicine (Bethesda, Maryland). As can be seen in the “Entered” field in the MARC record for this exhibit, a cataloger at the National Library of Medicine created OCLC record number 56617014 on October 1, 2004, as shown in the “Entered” field (“20041001”). The library continues to update this MARC record the MARC record to meet current cataloging rules. The most recent enhancement to the MARC record occurred on September 21, 2023, as shown in the “Replaced” field (“20230921”).

57. Attachment 2B further includes an entry in field 050 (“R858.A2 \$b .I575 2004”)—as described above, a subject matter classification number consistent with the Library of Congress classification system (analogous to the Dewey Decimal classification system), an entry in field 060 (“WB 141 \$b I605m 2004”)—as described above, a subject matter classification number consistent with the National Library of Medicine classification system (analogous to the Dewey Decimal classification system)., and an entry in field 082 (“610/.28”)—as described above, a subject matter classification number consistent with the Dewey Decimal classification system. Attachment 2B also shows that Exhibit 1007 was catalogued with six descriptor terms reading “Medicine \$x Data processing \$v Congresses” (see Attachment 2C, Library of Congress subject heading sh2008107638), “Diagnostic imaging \$x Data processing \$v Congresses” (Attachment 2D, Library of Congress subject heading sh2009123311), “Diagnosis \$x Data processing” (see Attachment 2E, Library of Congress subject heading sh85037490), “Diagnostic imaging” (Attachment 2F, Library of Congress subject heading sh85037507), “Robotics” (see Attachment 2G, Library of Congress subject heading sh85114628), and “Computer-assisted surgery” (Attachment 2H, Library of Congress subject heading sh2006007439) in the 650 fields. Thus, as of its cataloging, the publication corresponding to the MARC record attached hereto as Attachment 2B was indexed according to its subject matter by virtue of at least

four independently sufficient classifications: the field 050 entry, the field 060 entry, the field 082 entry, and the field 650 entries. Further, as of October 1, 2004, the MARC record attached hereto as Attachment 2B was accessible through any library with access to the OCLC bibliographic database or the online catalog at a library that acquired the two-volume conference proceedings set, 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.

58. Attachment 2B indicates that the two-volume conference proceedings set titled *Medical Image Computing and Computer-Assisted Intervention* as cataloged at the National Library of Medicine is currently available from 116 libraries. In view of the above, the two-volume conference proceedings set titled *Medical Image Computing and Computer-Assisted Intervention* was publicly available on or shortly after October 1, 2004, because by that date it had been received, cataloged, and indexed at the National Library of Medicine and made part of the OCLC bibliographic database. For these reasons, it is my opinion that Exhibit 1007 was published and publicly accessible on or shortly after October 1, 2004.

C. “Application of Intra-Oral Dental Scanners in the Digital Workflow of Implantology” by Wicher J. van der Meer, Frank S. Andriessen, Daniel Wismeijer, and Yijin Ren. [Exhibit 1013]

59. Attached hereto as Exhibit 1013 is a copy of the journal article titled “Application of Intra-Oral Dental Scanners in the Digital Workflow of Implantology” by Wicher J. van der Meer, Frank S. Andriessen, Daniel Wismeijer, and Yijin Ren (hereafter “van der Meer”). The van der Meer article was published in Volume 7, Number 8 of the open access journal *PLoS One* and was found in the National Library of Medicine (Bethesda, Maryland). The van der Meer article appears on page e43312 (6 pages) of this issue dated August 2012. Exhibit 1013 is a true and correct copy of the van der Meer article. 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. The van der Meer article is also available from the publisher.¹⁸ Exhibit 1013 was found within the custody of a library – a place where an authentic copy of this open access journal would likely be. Exhibit 1013 is a true and correct copy in a condition that creates no suspicion about its authenticity.

60. Attached hereto as Attachment 3A is a true and correct copy of the MARC record for the open access journal *PLoS One* at the National Library of Medicine. Library ownership is indicated by the presence of the library’s code

¹⁸ <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0043312>

(“DNLM”) in field 935. The library continues to update this MARC record and enhanced the MARC record to meet current cataloging rules. The most recent enhancement to Attachment 3A occurred on December 3, 2021, as shown in field 005 (“20211203”). I personally identified and retrieved the MARC record that is Attachment 3A.

61. Based on finding a copy of Exhibit 1013 in the National Library of Medicine and MARC record in its online library catalog attached as Attachment 3A, it is my opinion that the van der Meer article published in the journal *PLoS One* was publicly available on or shortly after August 22, 2012, as shown on the publisher’s website. Attachment 3A also shows that Exhibit 1013 was catalogued with two descriptor terms reading “Medicine \$v periodicals” (see Attachment 3B, National Library of Medicine subject heading D008511) and “Science \$v periodicals” (see Attachment 3C, National Library of Medicine subject heading D012586) in the 650 fields.

62. As noted in the holdings information in Attachment 3A (362 field), the National Library of Medicine has received the open access journal *PLoS One* since 2006 and continues to receive the publication. In view of the MARC record for Exhibit 1013, the van der Meer article was publicly on or shortly after August 22, 2012, because the serial title had been received, cataloged, and indexed at the National Library of Medicine and made part of its online catalog database.

63. Attached hereto as Attachment 3D is a true and correct copy of the MARC record for the open access journal *PLoS One* 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 3D, that library code is “NSD,” which means that the MARC record for this serial was cataloged as part of the National Serials Data Program 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 70662135 on July 20, 2006, as shown in the “Entered” field (“20060720”). The library continues to update this MARC record and enhanced the MARC record to meet current cataloging rules. The most recent enhancement to Attachment 3D occurred on April 6, 2023, as shown in the “Replaced” field (“20230406”). I personally identified and retrieved the MARC record that is Attachment 3D. The “BLvl” entry in Attachment 3D is “s,” which indicates that the open access journal *PLoS One* is a serial publication. Field 310 of Attachment 3D reads “Monthly.” Accordingly, the MARC record for Exhibit 1013 corresponds to the open access journal *PLoS One* from the time the serial title began publication and includes the date of the van der Meer article.

64. Attachment 3D includes an entry in field 050 (“Q179.9”)—as described above, a subject matter classification number consistent with the Library of Congress classification system (analogous to the Dewey Decimal classification

system) and an entry in field 082 (“500”), a subject matter consistent with the Dewey Decimal classification system. Attachment 3D further includes two descriptor terms reading “Research \$v Periodicals” (see Attachment 3E, Library of Congress subject heading sh2008110741) and “Science \$v Periodicals” (see Attachment 3F, Library of Congress subject heading sh85118580) in the 650 fields. Thus, as of its cataloging, the publication corresponding to the MARC record attached hereto as Attachment 3D was indexed according to its subject matter by virtue of at least three independently sufficient classifications: the field 050 entry, the field 082 entry, and the field 650 entries. As of July 20, 2006, the MARC record attached hereto as Attachment 2D 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.

65. Attachment 3D indicates that the open access journal *PLoS One* as cataloged at the Library of Congress is currently available from 1,484 libraries. In view of the above, this issue of the open access journal *PLoS One* was publicly available on or shortly after August 22, 2012, because by that date it had been cataloged and indexed at the Library of Congress, made part of the OCLC

bibliographic database, and received at the National Library of Medicine. For these reasons, it is my opinion that Exhibit 1013 was published and accessible to the public on or shortly after August 22, 2012.

VI. SUMMARY OF OPINIONS

66. 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 On or After
1005	Veröffentlicht durch SOMMER IP Office. “Correlation between upper and lower jaw of digital impressions.” (5 pages) (August 2010) Mannheim, Germany: Sommer, 2010.	August 24, 2010
1007	Estépar, Raúl San José, Anders Brun & Carl- Fredrik Westin. “Robust Generalized Total Least Squares Iterative Closest Point Registration.” <i>Medical Image Computing and Computer- Assisted Intervention</i> (pp. 234-241). MICCAI 2004. Lecture Notes in Computer Science, vol 3216. Berlin, Germany: Springer, 2004.	October 1, 2004
1013	van der Meer, Wicher J., Frank S. Andriessen, Daniel Wismeijer, and Yijin Ren. “Application of Intra-Oral Dental Scanners in the Digital Workflow of Implantology.” <i>PLoS One</i> , vol. 7, no. 8 (August 2012): (6 pages)	August 22, 2012

67. 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.

68. 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 1001 of Title 18 of the United States Code.

Date: January 31, 2024

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

ATTACHMENT 1A

Document properties

File name: Buccal Registration 10-08-24.pdf
File size: 1,373 KB

Title: Buccal-Registration 10-08-24
Author: Sommer
Subject: -
Keywords: -
Created: 8/24/10, 2:29:21 AM
Modified: 8/24/10, 2:29:21 AM
Application: FreePDF 4.02 - <http://shbox.de>

PDF producer: GPL Ghostscript 8.71
PDF version: 1.3
Page count: 5
Page size: 8.26 × 11.69 in (portrait)

Fast web view: No

Close

ATTACHMENT 2A

MARC Bibliographic Record

LEADER 02083cam a2200481Ia 4500
001 9967246823602122
005 20161103092826.0
006 m d
007 cr un-----
008 041001s2004 gw a b 101 0 eng d
010 \$a 2004111954
016 7_ \$a972104933\$2GyFmDB
020 \$a3540229760 (v. 1 : pbk.)
020 \$a3540229779 (v. 2 : pbk.)
035 \$a(OCOLC)ocm56617014
035 \$a(WU)6724682-uwmadisondb
035 \$a(EXLNZ-01UWI_NETWORK)999994237802121
040 \$aOHX\$beng\$cOHX\$dKKS\$dCUS\$dC\$dOCLCQ\$dIXA
049 \$aGZMA
072 _7 \$aQ\$2lcco
072 _7 \$aR\$2lcco
090 \$aR858.A2\$bI575 2004

- 111 2_ \$aInternational Conference on Medical Image Computing and Computer-Assisted Intervention\$n(7th :\$d2004 :\$cSaint-Malo, France)
- 245 10 \$aMedical image computing and computer-assisted intervention :\$bMICCAI 2004, 7th international conference, Saint-Malo, France, September 26-29, 2004 : proceedings /\$cChristian Barillot, David R. Haynor, Pierre Hellier (eds.).
- 246 30 \$aMICCAI 2004
- 264 _1 \$aBerlin ;\$aNew York, N.Y. :\$bSpringer,\$c2004.
- 300 \$a2 volumes :\$billustrations (some color) ;\$c24 cm.
- 336 \$atext\$btxt\$2rdacontent
- 337 \$aunmediated\$bnc\$2rdamedia
- 338 \$avolume\$bnc\$2rdacarrier
- 490 1_ \$aLecture notes in computer science ;\$v3216-3217
- 504 \$aIncludes bibliographical references and indexes.
- 530 \$aAlso issued online.
- 650 _0 \$aMedicine\$xData processing\$vCongresses.
- 650 _0 \$aDiagnostic imaging\$xData processing\$vCongresses.
- 700 1_ \$aBarillot, Christian.
- 700 1_ \$aHaynor, David R.
- 700 1_ \$aHellier, Pierre.
- 830 _0 \$aLecture notes in computer science ;\$v3216-3217.

- 856 41 \$3Part I.\$uhttp://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3216\$zRestricted to Springer LINK subscribers
- 856 41 \$3Part II.\$uhttp://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3217\$zRestricted to Springer LINK subscribers
- 938 \$aOtto Harrassowitz\$bHARR\$nhar045021684\$c105.93 EUR
- 994 \$aC0\$bGZM
- 997 \$aMARCIVE

MMS IDs

Document ID:

999994237802121

Network Electronic IDs:

999994237802121

Network Physical IDs:

999994237802121

mms_mad_ids:

9967246823602122

ATTACHMENT 2B

OCLC 56617014 No holdings in XXX - 116 other holdings

Re		En 200		Re 2023092	
c		tere 410		place 1143021	
Stat		d 01		d .0	
Type	a	ELvl		Srce	
BLvl	m	Form		Conf	1
		Cont	b	GPub	
Desc	a	Ills	a	Fest	0
				Audn	
				Bioq	
				LitF	0
				DtSt	s
				Ctrl	
				MRec	
				Indx	1
				Dates	2004
				Lang	eng
				Ctry	gw

010 2004111954

040 NLM \$b eng \$c NLM \$d OHX \$d KKS \$d CUS \$d C\$SQ \$d IXA \$d BAKER \$d DLC \$d MUQ \$d YDXCP
\$d CGC \$d BTCTA \$d GW5XE \$d OCLCF \$d OCLCO \$d OCLCQ \$d OCLCO \$d QE2 \$d OCL \$d OCLCO \$d ORU
\$d OCLCQ \$d OCLCO \$d CAUOI \$d NJR \$d RCE \$d OCLCA \$d CAI \$d OCLCA \$d UWO \$d CEF \$d OCLCQ \$d
OCLCO \$d LUU \$d OCL \$d OCLCO

016 7 972104933 \$2 DE-101

016 7 972103406 \$2 DE-101

016 7 101232701 \$2 DNLM

019 456715356 \$a 960135608 \$a 1011870894 \$a 1013451039 \$a 1044075877 \$a 1049055623 \$a
1049835468 \$a 1053066069 \$a 1056317028 \$a 1061005906 \$a 1071059713 \$a 1084835168 \$a
1114539895

020 9783540229766 \$q (v. 1 ; \$q pbk. ; \$q alk. paper)

020 3540229760 \$q (v. 1 ; \$q pbk. ; \$q alk. paper)

020 9783540229773 \$q (v. 2 ; \$q pbk. ; \$q alk. paper)

020 3540229779 \$q (v. 2 ; \$q pbk. ; \$q alk. paper)

042 nlmcopyc

050 00 R858.A2 \$b I575 2004

055 3 QA75 \$b .L38

060 00 2004 L-816

060 10 WB 141 \$b I605m 2004

072 7 Q \$2 lcco

072 7 R \$2 lcco

082 00 610/.28 \$2 22

088 LNCS 3216

088 LNCS 3217

090 \$b

111 2 International Conference on Medical Image Computing and Computer-Assisted Intervention \$n
(7th : \$d 2004 : \$c Saint-Malo, France)

245 10 Medical image computing and computer-assisted intervention : \$b MICCAI 2004, 7th
international conference, Saint-Malo, France, September 26-29, 2004 : proceedings / \$c Christian
Barillot, David R. Haynor, Pierre Hellier (eds.).

246 30 MICCAI 2004

260 Berlin ; \$a New York, N.Y. : \$b Springer, \$c 2004.

300 2 volumes : \$b illustrations (some color) ; \$c 24 cm

336 text \$b txt \$2 rdacontent

337 unmediated \$b n \$2 rdamedia

338 volume \$b nc \$2 rdacarrier

490 1 Lecture notes in computer science ; \$v 3216-3217
 504 Includes bibliographical references and indexes.
 530 Also issued online.
 505 0 Pt. I -- Pt. 2.
 650 0 Medicine \$x Data processing \$v Congresses.
 650 0 Diagnostic imaging \$x Data processing \$v Congresses.
 650 0 Diagnosis \$x Data processing.
 650 0 Diagnostic imaging.
 650 0 Robotics.
 650 0 Computer-assisted surgery.
 650 12 Diagnosis, Computer-Assisted \$0 (DNLM)D003936
 650 22 Diagnostic Imaging \$0 (DNLM)D003952
 650 22 Image Processing, Computer-Assisted \$0 (DNLM)D007091
 650 22 Robotics \$0 (DNLM)D012371
 650 22 Surgery, Computer-Assisted \$0 (DNLM)D025321
 650 22 Therapy, Computer-Assisted \$0 (DNLM)D013813
 650 6 Médecine \$0 (CaQQLa)201-0103112 \$x Informatique \$0 (CaQQLa)201-0103112 \$v Congrès. \$0 (CaQQLa)201-0378219
 650 6 Imagerie pour le diagnostic \$0 (CaQQLa)201-0146124 \$x Informatique \$0 (CaQQLa)201-0380011 \$v Congrès. \$0 (CaQQLa)201-0378219
 650 6 Diagnostics \$x Informatique. \$0 (CaQQLa)201-0098465
 650 6 Imagerie pour le diagnostic. \$0 (CaQQLa)201-0146124
 650 6 Robotique. \$0 (CaQQLa)201-0110752
 650 6 Chirurgie assistée par ordinateur. \$0 (CaQQLa)201-0329080
 650 7 Robotics \$2 fast \$0 (OCoLC)fst01098997
 650 7 Diagnostic imaging \$2 fast \$0 (OCoLC)fst00892354
 650 7 Diagnosis \$x Data processing \$2 fast \$0 (OCoLC)fst00892279
 650 7 Computer-assisted surgery \$2 fast \$0 (OCoLC)fst01741507
 650 7 Diagnostic imaging \$x Data processing \$2 fast \$0 (OCoLC)fst00892357
 650 7 Medicine \$x Data processing \$2 fast \$0 (OCoLC)fst01014924
 655 2 Congress \$0 (DNLM)D016423
 655 7 proceedings (reports) \$2 aat \$0 (CStmoGRI)aatgf300027316
 655 7 Conference papers and proceedings \$2 fast \$0 (OCoLC)fst01423772
 655 7 Conference papers and proceedings. \$2 lcgft
 655 7 Actes de congrès. \$2 rvmgf \$0 (CaQQLa)RVMGF-000001049
 700 1 Barillot, Christian.
 700 1 Haynor, David R.
 700 1 Hellier, Pierre.
 830 0 Lecture notes in computer science ; \$v 3216-3217.
 856 41 \$3 SpringerLink, Part I. \$u <http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3216>
 856 41 \$3 SpringerLink, Part II. \$u <http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3217>
 856 41 \$3 SpringerLink \$u <https://doi.org/10.1007/b100265>
 856 41 \$u <http://link.springer-ny.com/link/service/series/0558/tocs/t3216.htm>
 856 41 \$u <http://link.springer-ny.com/link/service/series/0558/tocs/t3217.htm>
 856 41 \$u <http://link.springer.com/10.1007/b100265> \$z eBook available for UOIT via SpringerLink. Click link to access

856 4 \$u <http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3216> \$z
Connect to Internet resource for pt. 1

856 4 \$u <http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3217> \$z
Connect to Internet resource for pt. 2

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LC control no.: sh2008107638

LCCN Permalink: <https://lcn.loc.gov/sh2008107638>

HEADING: Medicine Data processing Congresses

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035 __ |a (DLC)sh2008107638

040 __ |a DLC |b eng |c DLC

150 __ |a Medicine |x Data processing |v Congresses

667 __ |a Record generated for validation purposes.

670 __ |a Work cat.: Biocomputing, 2002

906 __ |t 8888 |u te00 |v 0

953 __ |a te00

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005 20110729162534.0

008 090908|| anannbabn |n ana

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035 __ |a (DLC)437867

035 __ |a (DLC)sh2009123311

040 __ |a DLC |b eng |c DLC

150 __ |a Diagnostic imaging |x Data processing |v Congresses

667 __ |a Record generated for validation purposes.

670 __ |a Work cat.: Medical imaging 1998, c1998

906 __ |t 8888 |u tc00 |v 0

953 __ |a tc00

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000 00336cz a2200145n 450

001 4689530

005 20110729104442.0

008 860211|| anannbabn |n ana

010 __ |a sh 85037490

035 __ |a (DLC)sh 85037490

035 __ |a (DLC)36215

040 __ |a DLC |c DLC

150 __ |a Diagnosis |x Data processing

906 __ |t 8044 |u ---- |v 0

953 __ |a xx00

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000 00863cz a2200265n 450

001 4689547

005 20120323072147.0

008 860211i| anannbabn |a ana

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035 __ |a (DLC)sh 85037507

035 __ |a (DLC)36232

040 __ |a DLC |c DLC |d DLC

053 _0 |a RC78.7.D53

150 __ |a Diagnostic imaging

360 __ |i subdivision |a Imaging |i under individual diseases and types of diseases and organs and regions of the body, e.g. |a Cancer--Imaging; Heart--Imaging

450 __ |a Clinical imaging

450 __ |a Imaging, Diagnostic

450 __ |a Medical diagnostic imaging

450 __ |a Medical imaging

450 __ |a Noninvasive medical imaging

550 __ |w g |a Diagnosis, Noninvasive

550 __ |w g |a Imaging systems in medicine

670 __ |a A short textbook of clinical imaging, 1990.

906 __ |t 9011 |u fk04 |v 1

953 __ |a xx00 |b ta25

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LC control no.: sh 85114628

LCCN Permalink: <https://lcn.loc.gov/sh85114628>

HEADING: Robotics

000 00607cz a2200205n 450

001 4764007

005 20120328074930.0

008 860211i| anannbabn |b ana

010 __ |a sh 85114628

035 __ |a (DLC)sh 85114628

035 __ |a (DLC)110692

040 __ |a DLC |c DLC |d DLC

053 _0 |a S678.65 |c Agriculture

053 _0 |a TJ210.2 |b TJ211.45 |c Mechanical engineering

150 __ |a Robotics

550 __ |a Automation

550 __ |a Machine theory

680 __ |i Here are entered general works on the field concerned with the design, construction, application, etc. of robots.

906 __ |t 8325 |u fk05 |v 0

953 __ |a xx00

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LC control no.: sh2006007439

LCCN Permalink: <https://lcn.loc.gov/sh2006007439>

HEADING: Computer-assisted surgery

000 01124cz a2200253n 450

001 6988026

005 20120403073150.0

008 061011i| anannbabn |a ana c

010 __ |a sh2006007439

035 __ |a (DLC)6988026

035 __ |a (DLC)sh2006007439

035 __ |a (DLC)350221

040 __ |a TNJ |b eng |c DLC

150 __ |a Computer-assisted surgery

450 __ |a Computer-aided surgery

450 __ |a Image-guided surgery

550 __ |w g |a Surgery

670 __ |a Work cat.: Atuegwu, N.C. Multiple image displays using a single image to physical space registration in image guided surgery, 2005.

670 __ |a MeSH, Oct. 9, 2006 |b (MeSH hdg.: Surgery, Computer-Assisted; Entry terms: Image-Guided Surgery, Computer-Aided Surgery; Scope note: Surgical procedures conducted with the aid of computers ... Image-guided surgery interactively combines prior CT scans or MRI images with real-time video)

670 __ |a The International Society for Computer Aided Surgery WWW site, Oct. 10, 2006.

906 __ |t 0648 |u te04 |v 0

952 __ |a 3 bib. record(s) to be changed

952 __ |a LC pattern: Computer-assisted neurosurgery

953 __ |a yz00

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NLM MMS_ID 9912850813406676

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LDR	01941cas a2200613 a 4500
001	9912850813406676
005	20211203233857.0
006	m d
007	cr cnu
008	060720c20069999caumr pss 0 a0eng c
010	__ \$a 2006214532
022	0_ \$a 1932-6203:1 1932-6203:2 1
035	__ \$9 101285081
040	__ \$a NSD\$c NSD\$d OCLCS\$d CLU\$d CUS\$d DLC\$d CIT
041	0_ \$a eng
042	__ \$a lcd\$a nsdp\$a nlmcopyc
044	__ \$9 United States
050	00 \$a Q179.9
060	10 \$a W1
082	10 \$a 500:2 14
210	10 \$a PLoS One:2 DNLM
222	_0 \$a PloS one
245	00 \$a PloS one.
246	13 \$a Public Library of Science one
246	3_ \$a PLoS 1
260	__ \$a San Francisco, CA :\$b Public Library of Science
310	__ \$a Monthly
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 vol. 1(1) (2006).
500	__ \$a Description based on vol. 1(1) (2006); title from journal home page (publisher's Web site, viewed Apr. 8, 2008).
500	__ \$a Latest issue consulted: 4(6) (2009) (viewed June 12, 2009).
510	1_ \$9 1\$a MEDLINE\$b v1n1, 2006-
510	0_ \$9 1\$a PubMed\$b v1n1, 2006-
510	0_ \$a PMC
515	__ \$a Articles added consecutively to current issue.
650	12 \$a Medicine
650	22 \$a Science
655	_2 \$a Periodical

710 2_ | \$a Public Library of Science.
787 08 | \$i Content on clinical trials included also in: \$t PLoS hub for clinical trials \$w (DLC) 2008222319 \$w (OCoLC)228234657
856 40 | \$u http://www.plosone.org/
856 40 | \$u https://www.ncbi.nlm.nih.gov/pmc/journals/440/
911 _ | \$a Electronic only
935 _ | \$a (DNLN)1285081-nlmdb
992 _ | \$p P1 \$e EF \$a 20071108
993 _ | \$a YMG \$b 20090609
994 _ | \$a CDN \$b 20090618
995 _ | \$a AUTH \$b 20090618 \$c REV \$d 20200924
996 _ | \$a CONSER \$b 20000101
998 _ | \$a FER \$b 20130712
999 _ | \$a AUTH
035 _ | \$a (OCoLC)70662135

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ATTACHMENT 3B

Medicine MeSH Descriptor Data 2024

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

Medicine

Tree Number(s)

H02.403

Unique ID

D008511

RDF Unique Identifier

<http://id.nlm.nih.gov/mesh/D008511>

Annotation

medicine only as a field, profession or discipline: differentiate from DELIVERY OF HEALTH CARE where the patient is emphasized; very general; it is divided broadly into experimental medicine (= BIOMEDICAL RESEARCH) & CLINICAL MEDICINE, a specialty devoted to the diagnosis & management of human patients; / legislation & jurisprudence = LEGISLATION, MEDICAL or JURISPRUDENCE or FORENSIC MEDICINE; LEGAL MEDICINE see FORENSIC MEDICINE is also available

Scope Note

The art and science of studying, performing research on, preventing, diagnosing, and treating disease, as well as the maintenance of health.

Entry Term(s)

Insurance Medicine
Medical Specialities
Medical Specialties
Medical Specialty
Specialities, Medical
Specialties, Medical
Specialty, Medical

See Also

Economics, Medical
Education, Medical
History of Medicine
Insurance, Health
Legislation, Medical

Public MeSH Note

1963; for SPECIALTIES, MEDICAL see SPECIALTIES, MEDICAL 1968-2009

History Note

1963

Entry Combination

economics:Economics, Medical
education:Education, Medical
ethics:Ethics, Medical
history:History of Medicine
legislation & jurisprudence:Legislation, Medical

Date Established

1963/01/01

Date of Entry

1999/01/01

Revision Date

2021/07/06

page delivered in 0.164s

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ATTACHMENT 3C

Science MeSH Descriptor Data 2024

Details	Qualifiers	MeSH Tree Structures	Concepts
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MeSH Heading

Science

Tree Number(s)

H01.770

Unique ID

D012586

RDF Unique Identifier

<http://id.nlm.nih.gov/mesh/D012586>

Annotation

use for the discipline (education, history, etc) only

Scope Note

The study of natural phenomena by observation, measurement, and experimentation.

See Also

Religion and Science

Date Established

1966/01/01

Date of Entry

1999/01/01

Revision Date

2015/06/16

page delivered in 0.156s

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\$d DLC \$d OCLCA \$d UAB \$d OCLCQ \$d RDF \$d OCLCQ \$d SRU \$d OCLCQ

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016 7 2267670-3 \$2 DE-600

016 7 101285081 \$2 DNLM

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1374864709

022 0 1932-6203 \$1 1932-6203 \$2 1

024 8 eb55566669

037 \$b Public Library of Science, 185 Berry Street, Ste. 3100, San Francisco, CA 94107

042 pcc \$a nsdp

050 00 Q179.9

060 10 W1

082 10 500 \$2 14

090 \$b

210 10 PLoS ONE \$2 dnIm

222 0 PloS one

245 00 PloS one.

246 13 Public Library of Science one

2463 PLoS 1

260 San Francisco, CA : \$b Public Library of Science

310 Monthly

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336 text $b txt $2 rdacontent
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337 computer \$b c \$2 rdamedia

338 online resource \$b cr \$2 rdacarrier

362 1 Began with vol. 1(1) (2006).

515 Articles added consecutively to current issue.

588 0 Vol. 1(1) (2006); title from journal home page (publisher's Web site, viewed Apr. 8, 2008).

588 1 4(6) (2009) (viewed June 12, 2009).

650 0 Research \$v Periodicals.
 650 0 Science \$v Periodicals.
 650 7 Science (General). \$2 ebps
 650 7 Research. \$2 fast \$0 (OCoLC)fst01095153
 650 7 Science. \$2 fast \$0 (OCoLC)fst01108176
 650 12 Medicine. \$0 (DNLM)D008511
 650 22 Science. \$0 (DNLM)D012586
 655 0 Electronic journals.
 655 4 Fulltext.
 655 4 Internet Resources.
 655 4 Periodicals. \$0 (DNLM)D020492
 655 7 Periodicals. \$2 fast \$0 (OCoLC)fst01411641
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 780 05 \$t PLoS clinical trials \$g 2007 \$x 1555-5887 \$w (DLC) 2005212258 \$w (OCoLC)58994937
 780 05 \$t Journal of rehabilitation research and development \$x 0748-7711 \$w (DLC) 84646003 \$w (OCoLC)10988482
 787 08 \$i Content on clinical trials included also in: \$t PLoS hub for clinical trials \$w (DLC) 2008222319 \$w (OCoLC)228234657
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 856 40 \$u <http://www.plosone.org/> \$x OA-J
 856 40 \$u <http://bibpurl.oclc.org/web/24215> \$u <https://www.ncbi.nlm.nih.gov/pmc/journals/440/> \$7 0
 856 4 \$u <http://www.pubmedcentral.gov/tocrender.fcgi?action=archive&journal=440> \$z Link no longer valid as of January 25, 2017

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000 00449cz a2200169n 450

001 7464537

005 20110729160732.0

008 080306|| anannbabn |n ana

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040 __ |a DLC |b eng |c DLC

150 __ |a Research |v Periodicals

667 __ |a Record generated for validation purposes.

670 __ |a Work cat.: Ke xue fa zhan bao gao =,

906 __ |t 8888 |u te00 |v 0

953 __ |a te00

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008 860211|| anannbabn |n ana

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035 __ |a (DLC)sh 85118580

035 __ |a (DLC)114458

040 __ |a DLC |c DLC |d DLC

053 _0 |a Q1 |b Q9

150 __ |a Science |v Periodicals

906 __ |t 7647 |u ---- |v 0

953 __ |a xx00 |b ta25

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