

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

QUALCOMM INCORPORATED,
Petitioner,

v.

NETWORK SYSTEM TECHNOLOGIES, LLC,
Patent Owner.

Case IPR2024-00343

U.S. PATENT NO. 7,594,052

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

I. INTRODUCTION

1. My name is Sylvia D. Hall-Ellis. I have been retained as an expert on behalf of Qualcomm Incorporated (“Petitioner”). I incorporate by reference my prior declaration in this proceeding (Ex. 1014).

2. I reserve the right to supplement or amend my opinions, and basis for them, in response to any additional evidence, testimony, discovery, argument, and/or other additional information that may be provided to me after the date of this declaration. If called to testify in the above-captioned matter, I will testify with regard to the opinions and bases set forth below.

3. I am being compensated for my time spent working on this matter at my normal consulting rate of \$400 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.

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

II. QUALIFICATIONS

5. I incorporate by reference paragraphs 6-9 and Ex. 1 (my CV) of Ex. 1014.

III. PERSON OF ORDINARY SKILL IN THE ART

6. I am told by counsel that the subject matter of this proceeding relates generally to a system-on-chip (SoC), interconnect, or networking technologies.

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

8. As defined by the Patent Trial and Appeal Board in this proceeding, a POSITA at the time of the alleged invention would have had at least either a Master’s degree in Electrical Engineering or a related field (such as computer science or computer engineering), as well as at least three years of work experience in the field of SoC (systems on chip) design, or a Bachelor’s degree in Electrical Engineering or a related field, as well as at least five years of work experience in the field of SoC. A POSITA also would have had an understanding of SoC interconnects, as well as the concepts of large-scale networks.

9. I was told by counsel that a POSITA in this subject matter or art would be familiar with the relevant technology in the early 2000s.

10. It is my opinion that such a person would have been engaged in research, learning through study, and practice in the field and possibly through

formal instruction the bibliographic resources relevant to his or her research. By no later than the early 2000s (and more specifically, before October 2002), such a person would have had access to a vast array of long-established print resources in the field, as well as to a rich set of online resources providing indexing information, abstracts, and full text services for publications relevant to the field of this dispute, including at least *IEEE Xplore*.

IV. IEEE XPLORE

11. *The Institute of Electrical and Electronics Engineers (IEEE)*. IEEE claims to produce over 30% of the world's literature in the electrical, electronics, and computer engineering fields, publishing approximately 200 peer-reviewed journals and magazines in addition to more than 1,700 conference proceedings every year.¹ IEEE is a well-known publisher and would have been used by POSITAs, as defined in this proceeding. Published content in the journals, magazines, and IEEE sponsored conference proceedings are available in the IEEE Electronic Library (IEL)². These documents are available through *IEEE Xplore* by subscription-based access and individual publication purchases.

12. *IEEE Xplore database*. Librarians in academic, special, and large public libraries are familiar with the *IEEE Xplore* database. In working with

¹ <https://www.ieee.org/about/at-a-glance.html>

² <https://ieeexplore.ieee.org/Xplorehelp/overview-of-ieee-xplore/about-ieee-xplore>

undergraduate and graduate students, researchers, scientists, and the public, librarians are intimately familiar with the *IEEE Xplore* database and rely on its content for access to reliable, accurate publications.

13. Established in May 2000,³ *IEEE Xplore* is a commonly used source of publications, which include conference proceedings, ebooks, standards, technical reports, and journal articles, and related documents dating from 1988 to the present. *IEEE Xplore* is a scholarly research database that includes 6.5 million documents which is known for its reputable curation and maintenance of documents and publication information.⁴ I and professionals like myself view the *IEEE Xplore* database as a reliable source that accurately reports dates of publications and events and accurately reports locations of events in accordance with standard practices for major industry journals.

14. I have used IEEE publications in print and online for nearly 50 years. Currently I have access to IEEE documents as part of the resources for faculty through the King Library at San José State University.

15. Based on my professional experience, *IEEE Xplore* is an electronic resource that most major research universities subscribed to by at least early 2002.

³ https://en.wikipedia.org/wiki/IEEE_Xplore

⁴ <https://ieeexplore.ieee.org/Xplore/home.jsp>

Therefore, professors, students, and faculty at such institutions would have had access to and used *IEEE Xplore* by early 2002.

16. For example, during my tenure as a faculty member at the University of Denver (2000 to 2014), I had access to IEEE documents since March 2000 and *IEEE Xplore* since May 2000. In my personal experience, professors, students, and faculty at the University of Denver would have been able to electronically search, access, and download anything available on *IEEE Xplore* as of May 2000, and after.

17. Based on my personal knowledge, *IEEE Xplore* would have had conference proceedings indexed (at least by conference title) and available by 2002. *See also* Ex. 1035, 1-2 (indicating conference titles were keyword searchable).

18. In view of the foregoing, it is my opinion that the IEEE Xplore database was a well-known, commonly used, and accessible source of conference papers for POSITAs exercising reasonable diligence prior to October 2002.

V. OTHER RECORDS

19. Attached hereto as Exhibit 1066 is an excerpt from the volume titled *Design, Automation & Test in Europe Conference and Exhibition 2004: Proceedings Volume II* found in the Library of Congress. The Design, Automation & Test in Europe Conference & Exhibition 2004 (DATE 2004) was held on February 16-20, 2004, in Paris, France, as stated on the cover (Exhibit 1066, page 1). The conference proceedings volume was published by the IEEE Computer Society (Los Alamitos,

California), as seen in Exhibit 1066 on page 3.

20. Exhibit 1066 document bears a receipt stamp affixed in the U. S. Copyright Office at the Library of Congress as “FEB 26 2004” (page 2). The text of the excerpts in the document 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 page numbers of the article by Radulescu et al. (Exhibit 1066, 15-20, showing printed pages 878-883) are consecutive and match the page numbers for the same article shown in the table of contents (Exhibit 1066, page 6). I also note that a person in my field would understand the handwritten Library of Congress classification notation appearing in Exhibit 1066 at page 4 (“TK7810 D467 2004 vol 2 copy”). This handwritten number matches what is shown for this volume by the Library of Congress catalog record (Exhibit 1070). The Library of Congress record provides a “LC classification” of “TK7870 .D467 2004” (Exhibit 1070, page 1). A person in my field would ordinarily rely on a book such as what is shown in Exhibit 1066 as providing an accurate representation of both the date the conference occurred and the contents of the book (for example, that the Radulescu article show in the Table of Contents was actually included in the Proceedings as shown).

21. The copyright page (Exhibit 1066, page 4) indicates that the Institute of Electrical and Electronics Engineers, Inc. holds the copyright (“Copyright © 2004”)

and includes the ISSN number (“1530-1591”) and the ISBN (“0-765-2085-5”). ISBN and ISSN numbers are indications to persons in my field that a document has been published and contains the same content in each copy.

22. The ISSN for the DATE 2004 conference proceedings matches that shown on page 4 of Exhibit 1066 (“1530-1591”), on page 4 of Exhibit 1018 (“1530-1591”), on page 1 of Exhibit 1005 (“1530-1591”), and on page 1 of Exhibit 1067 (“1530-1591”). The ISBN listed on page 4 of Exhibit 1066 matches that of the Library of Congress online catalog record (Exhibit 1070, page 1), which shows the ISBN (“0769520855”), the IEEE record (Exhibit 1018, page 4) shown as “0-7695-2085-5”) and the *IEEE Computer Society Digital Library* website (Exhibit 1067, page 1) displaying “0-7695-2085-5.”

23. Exhibit 1070 is a true and correct copy of the United States Library of Congress (“LOC”) online catalog record for the volume titled *Design, Automation & Test in Europe Conference and Exhibition 2004: Proceedings Volume II, Paris, France, February 16-20, 2004* (Exhibit 1070, page 1). The catalog record also indicates that the document identified was “Published/Created” by the “IEEE Computer Society, 2004” in “Los Alamitos, Calif.” The online catalog record from the Library of Congress and the information contained in it is the sort of information that would ordinarily be relied upon by persons in my profession as being accurate and reliable.

24. Exhibit 1067 is a true and correct copy of a digital library record from the IEEE Computer Society Digital Library for the volume titled *Design, Automation & Test in Europe Conference & Exhibition, Feb. 16 2004 to Feb. 20 2004 [in] Paris, France* (Exhibit 1067, page 1). It also provides a table of contents, that I note lists the same title and authors as the article provided at Exhibits 1005 and 1018, which is “An Efficient On-Chip Network Interface Offering Guaranteed Services, Shared-Memory Abstraction, and Flexible Network Configuration” by Andrei Rădulescu, John Dielissen, Kees Goossens, Edwin Rijpkema, and Paul Wielage Radulescu (Exhibit 1067, page 3). This document, and the information contained in it is the sort of information that would ordinarily be relied upon by persons in my profession as containing accurate and reliable information, including a reliable indication of the date of such a conference and the contents of the conference proceedings.

25. Further supporting my opinions is the fact that the book titled *Design, Automation & Test in Europe Conference & Exhibition, Feb. 16 2004 to Feb. 20 2004 [in] Paris, France* was registered with the U. S. Copyright Office as item TX0006111441 on January 4, 2005, and indicated a publication date of February 16, 2004 (“2004-02-16”). This United States Copyright Office registration record, and the information contained in it, is the sort of information that would ordinarily be relied upon by persons in my profession as containing accurate and reliable

information, including a reliable indication of the date of publication provided to U.S. Copyright Office by the publisher.

26. 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.

27. 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.

January 17, 2025


Sylvia D. Hall-Ellis, Ph.D.