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CO., LTD., SAMSUNG ELECTRONICS
14 AMERICA, INC. and SAMSUNG
TELECOMMUNICATIONS AMERICA, LLC
15

16 UNITED STATES DISTRICT COURT

17 NORTHERN DISTRICT OF CALIFORNIA, SAN JOSE DIVISION

18 APPLE INC., a California corporation,

19 Plaintiff,

20 vs.

21 SAMSUNG ELECTRONICS CO., LTD., a
Korean business entity; SAMSUNG
22 ELECTRONICS AMERICA, INC., a New
York corporation; SAMSUNG
23 TELECOMMUNICATIONS AMERICA,
LLC, a Delaware limited liability company,

24 Defendants.
25
26

CASE NO. 11-cv-01846-LHK

**DECLARATION OF ANDRIES VAN
DAM, PH.D. IN SUPPORT OF
SAMSUNG'S OPPOSITION TO APPLE'S
MOTION FOR A PERMANENT
INJUNCTION AND FOR DAMAGES
ENHANCEMENTS REGARDING U.S.
PATENT NO. 7,469,381**

**Date: December 6, 2012
Time: 1:30 p.m.
Place: Courtroom 8, 4th Floor
Judge: Hon. Lucy H. Koh**

1 I, Andries van Dam, declare:

2 1. I am a tenured professor in the Computer Science department of Brown
3 University, where I hold the position of Thomas J. Watson, Jr. University Professor of
4 Technology and Education Chair and am also a Professor of Computer Science. I have been
5 retained by counsel for Samsung Electronics Co., Ltd., Samsung Electronics America, Inc. and
6 Samsung Telecommunications America, LLC (collectively, "Samsung") as an expert in the
7 above-captioned case. As part of that engagement I have been asked to provide analysis and
8 expert opinions on whether the "blue glow" feature implemented by Samsung infringes U.S.
9 Patent No. 7,469,381 (the "'381 patent").

10 2. I submit this declaration in support of Samsung's Opposition to Apple's Motion
11 for a Permanent Injunction and for Damages Enhancements. If asked, I am prepared to testify
12 regarding the matters I discuss in this declaration.

13 3. I reserve the right to supplement or amend this declaration based on any new
14 information that is relevant to my opinions.

15 **I. PROFESSIONAL BACKGROUND**

16 4. I received a B.S. in Engineering Sciences from Swarthmore College in 1960, and
17 an M.S. and Ph.D. in Electrical Engineering from the University of Pennsylvania in 1963 and
18 1966 respectively.

19 5. I have taught at Brown University since 1965, where I started as an Assistant
20 Professor teaching Computer Science in the Division of Applied Mathematics. In 1968, I
21 became a tenured Associate Professor of Applied Mathematics, and in 1972, I was promoted to
22 Full Professor. In 1976, I became a Professor of Computer Science, and have taught Computer
23 Science continuously since 1965. I have held various positions at Brown University, including
24 Chairman of the Computer Science Program (1976-1979), Founding Chairman of the Department
25 of Computer Science (1979-1985), L. Herbert Ballou University Professor Chair (1992-1995),
26 Thomas J. Watson, Jr. University Professor of Technology and Education Chair (1995-present),
27 and Vice President for Research (2002-2006). I have also served as a visiting professor on
28

1 Sabbatical leave to teach and start research groups in Computer Graphics at University of
2 Nijmegen in the Netherlands and University of Geneva in Switzerland.

3 6. I have also served as the Director of the National Science Foundation Science &
4 Technology Center for Computer Graphics and Scientific Visualization (the STC). The STC
5 was physically located across 5 universities, including Brown and ran for its allotted 11 years,
6 with its financial home at the University of Utah. In my role as director, which I filled for three
7 years, I was logistically responsible for the operation and the research programs of the Center.

8 7. While on my year's Sabbatical at the University of Geneva in 1978-79 I was also
9 Visiting Scientific Associate at CERN, the European Nuclear Research Institute in Geneva and
10 was invited back for many visits to consult and lecture. While at CERN as a Visiting Scientific
11 Associate, I co-designed a special-purpose microcomputer specializing in fast event processing
12 for handling data from physics experiments, and its microprogramming, and gave various
13 lectures. My subsequent visits generally involved consultation on a variety of subjects relating
14 to workstations, scientific visualization, and hypermedia.

15 8. I have over forty years of experience in the fields of computer graphics,
16 hypermedia systems, and user interfaces. In my research, I have recently worked on projects
17 relating to pen- and touch-centric computing, educational software, and electronic book authoring
18 and delivery systems. I have authored or co-authored 120 articles, 9 books, and 3 National
19 Research Council Reports. I have presented over 44 invited lectures since 2000. My lectures
20 in the past two decades have been primarily focused on the area of interaction in immersive
21 virtual environments and scientific visualization, with a recent focus on pen- and touch-
22 computing. I have publicly shown work on pen computing on tablet PCs and touch computing
23 on Microsoft Surface devices, using both research-based and commercial devices. I have most
24 recently focused on applications in digital humanities (or, as it has become known,
25 "ehumanities"). For example, I worked on a humanities project called Large Artwork Displayed
26 on the Surface (LADS) for examining large pieces of artwork on any touch-enabled surface
27 supported by Windows 7. I also recently helped design a scholarship tool to allow users to easily
28 create selections of hyperlinked multimedia documents, entitled WorkTop. Before we acquired

1 a Microsoft Surface, my students had built our own “touch table,” a “home brew” prototype
2 touch device, for which we had created multiple applications. My group’s most recent work on
3 touch computing has been sponsored by both Microsoft Research and Sharp. I have shown
4 multiple unpublished projects using touch computing at the annual Microsoft Faculty Summit.
5 My group and I have also produced the Garibaldi Panorama Application, a precursor to LADS,
6 which was shown to thousands of people as a key exhibit in a special exhibit at British Library on
7 the future of digital scholarship.

8 9. I have worked as an expert in several legal matters as a consulting expert and an
9 expert witness. I have written expert reports and have had my deposition taken.

10 10. I attach as Exhibit 1 my curriculum vitae, which includes a more detailed list of
11 my qualifications.

12 **II. LEGAL STANDARDS**

13 11. In this section I describe my understanding of certain legal standards. I have
14 been informed of these legal standards by Samsung’s attorneys. I am not an attorney and I am
15 relying only on instructions from Samsung’s attorneys for these legal standards. In conducting
16 my analysis of the '381 patent claims, I have applied the legal understandings set out in this
17 declaration.

18 12. I understand that assessment of infringement is a two step process. First, the
19 language of the patent claims must be construed by the Court. Second, the claims as construed
20 are applied to the accused product or process to determine whether the accused product or
21 process meets each and every limitation of the claim as construed by the Court. To establish
22 infringement of a patent, I understand that it is the patentee ’s burden to show that each accused
23 product practices every limitation of at least one asserted claim in that patent.

24 13. I understand that the patentee has the burden of proving infringement by the
25 preponderance of the evidence. I understand that this standard requires that the patentee present
26 evidence that as a whole shows that the fact sought to be proved is more probable than not.
27
28

1 14. I understand that there are two types of infringement: literal infringement and
2 infringement under the doctrine of equivalents. I understand that to literally infringe a claim, an
3 accused product or process must literally meet every limitation of the claim.

4 15. I understand that even if all limitations of a claim are not literally met, an accused
5 product or process may still infringe under the doctrine of equivalents. I understand that to
6 establish infringement under the doctrine of equivalents, the accused product or process must, for
7 each element of the claim not literally present, contain a structure or perform a step that is
8 substantially equivalent to the element in the claim. I am informed by counsel that one common
9 way of determining substantial equivalence is to examine whether the accused structure or step
10 performs substantially the same function, in substantially the same way, to achieve substantially
11 the same result as the corresponding limitation of the claim.

12 16. I also understand that there are several restrictions on the application of the
13 doctrine of equivalents. First, if an accused product or process wholly lacks even a single
14 limitation of a claim, it cannot infringe the claim under the doctrine of equivalents. Second, the
15 range of equivalents cannot be so broad as to encompass that which was already known in the
16 prior art. Third, the doctrine of prosecution history estoppel precludes a patentee from
17 reclaiming through equivalents subject matter that was relinquished based on statements or
18 amendments during prosecution.

19 17. I understand that every claim limitation is essential in proving infringement, and
20 that the absence of even one limitation in an accused product or process avoids infringement.

21 **III. CLAIM CONSTRUCTION**

22 18. I understand that the Court has construed the term "edge of the electronic
23 document" for the '381 patent to have its plain and ordinary meaning. In doing so, the Court
24 emphasized that the "edge of the electronic document" is not limited to an external edge, but may
25 include an internal edge. (Order Construing Disputed Claim Terms of U.S. Patent Nos.
26 7,698,711; 6,493,002; 7,469,381; 7,663,607; 7,812,828; 7,844,915; and 7,853,891 (Dkt No. 849)
27 at 23.)
28

1 19. I understand the Court has construed the term "electronic document" for the '381
2 patent to mean "a document stored in a digital format. An 'electronic document' includes, but is
3 not limited to, a web page; a digital image; a word processing, spreadsheet or presentation
4 document; or a list of items in a digital format." (Order Construing Disputed Claim Terms of
5 U.S. Patent Nos. 7,469,381 and 7,864,163. (Dkt. No. 1266) at 6.) I understand further that an
6 electronic document need not be stored in a single file. *Id.*

7 20. In conducting my analysis of the '381 patent claims, I have applied the Court's
8 constructions of these terms.

9 **IV. OVERVIEW OF THE '381 PATENT**

10 21. The '381 patent, titled "List Scrolling and Document Translation, Scaling, and
11 Rotation on a Touch-Screen Display," was filed on December 14, 2007 and issued on December
12 23, 2008. The patent has one named inventor, Bas Ording.

13 22. The '381 patent generally relates to correcting the display of an electronic
14 document when a user has translated or scrolled past the edge of the document, i.e. "overscroll
15 correction." Independent claim 19 of the '381 patent discloses translating an electronic
16 document displayed on a touch screen display in response to detecting movement of an object on
17 or near the touch screen. The '381 patent claims a snap-back functionality where, if the user
18 translates an electronic document beyond the edge of that document, an area beyond that edge
19 will be displayed. When the user lifts her finger from the touch screen, the document will snap
20 back, such that no area beyond the edge of the document remains in view.

21 23. The complete text of claim 19 of the '381 patent is shown below:

22 **19.** A device, comprising:

23 a touch screen display;

24 one or more processors;

25 memory; and

26 one or more programs, wherein the one or more programs are stored in the
27 memory and configured to be executed by the one or more processors, the
28 programs including:

1 instructions for displaying a first portion of an electronic document;

2 instructions for detecting a movement of an object on or near the touch
3 screen display;

4 instructions for translating the electronic document displayed on the touch
5 screen display in a first direction to display a second portion of the
6 electronic document, wherein the second portion is different from the first
7 portion, in response to detecting the movement;

8 instructions for displaying an area beyond an edge of the electronic
9 document and displaying a third portion of the electronic document, wherein
10 the third portion is smaller than the first portion, in response to the edge of
11 the electronic document being reached while translating the electronic
12 document in the first direction while the object is still detected on or near
13 the touch screen display; and

14 instructions for translating the electronic document in a second direction
15 until the area beyond the edge of the electronic document is no longer
16 displayed to display a fourth portion of the electronic document, wherein the
17 fourth portion is different from the first portion, in response to detecting that
18 the object is no longer on or near the touch screen display.

14 **V. SAMSUNG'S "BLUE GLOW" FEATURE DOES NOT INFRINGE THE '381**
15 **PATENT**

16 24. I understand that Apple has accused the "snap back" or "bounce back" feature in
17 the Web Browser, Contacts and Gallery applications on certain Samsung products of infringing
18 the '381 patent.

19 25. I understand that Samsung developed new software for the Web Browser,
20 Contacts and Gallery applications that removes the "snap back" feature and replaces it with a
21 "blue glow" feature. In my opinion, the blue glow feature does not infringe the '381 patent,
22 literally or under the doctrine of equivalents. The basis for my opinion is set forth in detail
23 below.

24 26. In an application that utilizes the blue glow feature, an electronic document
25 performs a "hard stop" – i.e., prevents overscrolling – when the user attempts to scroll beyond the
26 edge of the document. Thus an area beyond the edge of the document is not shown. To
27 indicate that the edge of the electronic document has been reached, a blue glow animation
28

1 appears near the edge of the electronic document. This behavior is shown in a video of the Web
2 Browser, Contacts and Gallery applications which are attached in Exhibit 2 to this declaration.

3 27. Claim 19 of the '381 patent requires "instructions for displaying an area beyond
4 and edge of the electronic document and displaying a third portion of the electronic document,
5 wherein the third portion is smaller than the first portion, in response to the edge of the electronic
6 document being reached while translating the electronic document in the first direction while the
7 object is still detected on or near the touch screen display." The blue glow feature does not
8 literally infringe this claim because it does not permit a user to continue scrolling in order to
9 display an area beyond the edge of the electronic document. It also does not display a third
10 portion of the electronic document that is smaller than the first portion. Instead, upon reaching
11 the edge of the electronic document, the document comes to a stop and a blue glow appears.

12 28. Furthermore, the blue glow feature does not infringe this claim limitation under
13 the doctrine of equivalents, as blue glow is substantially different from the claimed behavior.
14 The blue glow feature is substantially different from the claimed behavior because it utilizes the
15 "hard stop" behavior alleged by Apple to be different from the method of the '381 patent and part
16 of the prior art.

17 29. Claim 19 of the '381 patent also requires "instructions for translating the
18 electronic document in a second direction until the area beyond the edge of the electronic
19 document is no longer displayed to display a fourth portion of the electronic document, wherein
20 the fourth portion is different from the first portion, in response to detecting that the object is no
21 longer on or near the touch screen display." The blue glow feature fails to literally infringe this
22 claim because it does not translate the electronic document in a second direction until the area
23 beyond the edge of the electronic document is no longer displayed. No translation of the
24 electronic document occurs, and furthermore, no area beyond the edge of the document was
25 displayed in the first instance, rendering the claim language inapplicable to applications utilizing
26 the blue glow feature.

27 30. Furthermore, the blue glow feature does not infringe this claim limitation under
28 the doctrine of equivalents, as blue glow is substantially different from the claimed behavior.

1 The blue glow feature is substantially different from the claimed behavior because it utilizes the
2 "hard stop" behavior alleged by Apple to be different from the method of the '381 patent and part
3 of the prior art.

4 31. I have also reviewed source code relating to scrolling in the Gallery, Contacts and
5 Web Browser applications. In particular, I have reviewed the source code that I understand was
6 used to create the following software: Android version 4.0.4, Baseband version T989UVL11,
7 Kernel version 3.0.8, and Build number IMM76D.UVL11.¹ Based on that inspection, I have
8 confirmed that the source code does not include instructions for performing claim 19 of the '381
9 patent. Instead, the source code includes instructions that relate to the blue glow feature.

10 **VI. PRODUCTS USING THE "BLUE GLOW" FEATURE DO NOT INFRINGE THE**
11 **'381 PATENT**

12 32. I have personally examined the Gallery, Contacts and Web Browser applications
13 that utilize the blue glow feature on two Samsung Galaxy S II (T-Mobile) products. I inspected
14 a Galaxy S II (T-Mobile) that I understand from counsel was examined by Apple's expert, Dr.
15 Ravin Balakrishnan, and attached as Exhibit 6 to the April 20, 2012 Deposition of Dr. Ravin
16 Balakrishnan. I also inspected a Galaxy S II (T-Mobile) product running the following
17 software: Android version 4.0.4, Baseband version T989UVL11, Kernel version 3.0.8, and
18 Build number IMM76D.UVL11. For the reasons stated above, it is my opinion that these
19 products and any other products that utilize the blue glow feature do not infringe the '381 patent.

20 **VII. APPLE'S EXPERT AGREES THAT THE "BLUE GLOW" FEATURE DOES NOT**
21 **INFRINGE THE '381 PATENT**

22 33. I have reviewed expert reports and deposition testimony of Apple's expert, Dr.
23 Ravin Balakrishnan, regarding the blue glow feature. Dr. Balakrishnan inspected a Galaxy S II
24 (T-Mobile) and concluded that the blue glow feature was present on that device. April 20, 2012
25 Dep. of Dr. Ravin Balakrishnan, at 80:15-17.

26 _____
27 ¹ Declaration of Hee-chan Choi In Support Of Samsung's Opposition To Apple's Motion
28 For A Permanent Injunction And Damages Enhancement.

EXHIBIT 1

Andries van Dam

Curriculum Vitae

**Thomas J. Watson, Jr. University Professor of Technology and Education
and
Professor of Computer Science**

Brown University, Providence, RI 02912

phone: (401) 863-7640 , fax: (401) 863-7657

email: avd@cs.brown.edu

Education

B.S. Engineering Sciences (with Honors), Swarthmore College, 1960

M.S. Electrical Engineering, Moore School of Electrical Engineering,
University of Pennsylvania, 1963

Ph.D. Electrical Engineering, Moore School of Electrical Engineering,
University of Pennsylvania, 1966

Dissertation topic: A Study of Digital Processing of Pictorial Data

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Research Interests

My research has concerned computer graphics, hypermedia systems, post-WIMP user interfaces, including pen-centric computing, and educational software. I have been working for four decades on systems for creating and reading electronic books with interactive illustrations for use in teaching and research.

Professional Appointments

- 2002-2006** Vice President for Research, Brown University
- 1995-** Thomas J. Watson, Jr. University Professor of Technology and Education Chair
- 1995-1998** Director, National Science Foundation Science & Technology Center for Computer Graphics and Scientific Visualization
- 1992-1995** L. Herbert Ballou University Professor Chair
- 1980-1986** Visiting Scientific Associate, CERN, Geneva, Switzerland
- 1979-** Professor of Computer Science, Brown University
- 1979-1985** Chairman, Department of Computer Science, Brown University
- 1978-1979** Sabbatical Leave, Visiting Professor, University of Geneva, and Scientific Associate, CERN, Geneva, Switzerland
- 1976-1979** Professor of Computer Science and Applied Mathematics, Brown University
Chairman, Program in Computer Science, Brown University
- 1975-1977** Adjunct Visiting Professor, University of Rhode Island (to teach in-house courses on Computer Graphics at Naval Underwater Systems Center, New London and Newport, Rhode Island)
- 1972-1976** Professor of Applied Mathematics, Brown University
- 1971-1972** Sabbatical Leave, Visiting Professor, University of Nijmegen, Nijmegen, Netherlands
- 1968-1972** Associate Professor of Applied Mathematics, Brown University
- 1965-1968** Assistant Professor of Applied Mathematics, Brown University

Consultancies

- 2008 -** Director, Board of Directors, GyPSii
- 2007-** Consulting scientist, Microsoft Research

- 2007** Member, Technical Advisory Board, GyPSii
- 2005** Vincent and Elkins, Kenyon and Kenyon, expert consulting for Tecmo
- 2000-2001** Chairman, Technical Advisory Board, E-Quill
Member, Board of Directors, Synomics
Chairman, Technical Advisory Board, ThinkShare
- 1999-2005** Member, Board of Directors, ContextMedia, Providence, RI
- 1998-** Technical advising, Phoam
- 1996-1999** Chairman, Numinous Technologies Incorporated, Seattle, WA
- 1995** Technical Advisory Board, Peer Group Systems, Inc. (*PGSI*), Seattle, Washington.
- 1994** Brown and Baine, expert witness for Autodesk in a trade secret litigation
- 1993-2003** Member, Technical Advisory Board, Fraunhofer Center for Research in Computer Graphics, Inc., Providence, RI and Darmstadt, Germany
- 1992-1994** Member, Technical Advisory Board, Ithaca Software, Alameda, CA
- 1992-2007** Member, Technical Advisory Board, and consultant, Microsoft Corporation, Redmond, WA
- 1990-1993** Chairman, Technical Advisory Board, ShoGraphics, Mountain View, CA
Member, College of Computing National Advisory Board, Georgia Institute of Technology, Atlanta, GA
- 1990-1991** Chairman, Technical Advisory Board, Prime Computer, Inc., CAD Division, Bedford, MA
- 1990** Co-founder, Chief Scientist, and Chairman of Technical Advisory Board Electronic Book Technologies, Providence, RI
- 1988-1992** Chief Scientist, BLOC Development, Coral Gables, FL
- 1987-1988** Cravath, Swaine and Moore, expert witness for IBM in a patent litigation
- 1986-1988** Member, Technical Advisory Board, Context Corp., Beaverton, OR

1985-1988 Senior Scientist and Chairman of Technical Advisory Board, Stardent Computer, Newton, MA

1985-1987 Consulting Scientist, CADRE Technology, Providence, RI

1984-1986 Member, Scientific Advisory Board, Metagraphics, Woburn, MA

1983-1985 IBM World Trade Americas/Far East Corporation, North Tarrytown, NY

1982-1986 Member, Electronic Systems Board, Gould, Rolling Meadows, IL

1981-1983 CIT ALCATEL, Paris, France

1980-1988 President, van Dam, Inc.

1980-1985 Exxon Research and Engineering Division, Florham Park, NJ

1980-1981 Summagraphics, Bridgeport, CT

1978-1979 Prime Computer, Inc., Framingham, MA

Bobst Graphic, Lausanne, and Hermes Precisa, Yverdon, Switzerland

1977-1978 Department of the Army

1975-1979 Software Laboratory, Raytheon Submarine Signal Division, Portsmouth, RI

1975-1977 Naval Research Laboratory, Washington, DC

1971-1977 Information Systems and Automation Division, Phillips Corp., Eindhoven, Netherlands

1970-1988 President, Text Systems, Inc., Barrington, RI

1970-1975 General Motors Research Center, Warren, MI

1970-1972 Government Intelligence Community, Washington, D

1970 Director, NCSS Providence Research Center

1965-1966 Leeds and Northrup, PA

1961-1962 RCA, Cherry Hill, NJ

Publications

Books and NRC Reports

2005

- **[Sanders & van Dam 2005]** Kathryn E. Sanders and Andries van Dam. Object-Oriented Programming in Java: A Graphical Approach, Addison-Wesley, 2005.

2001

- **[Earnshaw et al. 2001]** Rae Earnshaw, Richard Guedj, Andries van Dam, and John Vince (Eds.). Frontiers of Human-Centered Computing, OnLine Communities and Virtual Environments. Springer Verlag, London, 2001.

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- **[Snyder et al. 1999]** Lawrence Snyder, Alfred V. Aho, Marcia C. Linn, Arnold H. Packer, Allen B. Tucker Jr., Jeffrey D. Ullman, and Andries van Dam. "Being Fluent with Information Technology", Report of the Committee on Information Technology Literacy, Computer Science and Telecommunication Board of the National Research Council, National Academy Press, 1999.

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- **[Durlach et al. 1995]** Nathaniel Durlach, Steve Bryson, Norman Hackerman, John N. Hollerbach, James R Lackner, J. Michael Moshell, Randy Pausch, Richard W. Pew, Warren Robinett, Joseph Rosen, Mandayam A. Srinivasan, James J. Thomas, Andries van Dam, Elizabeth Wenzel, Andrew Witkin, Eugene Wong, and Michael Zyda. Virtual Reality: Scientific and Technological Challenges. National Research Council Report, National Academy Press, 1995.
- **[Foley et al. 1995]** James D. Foley, Andries van Dam, Steven K. Feiner, and John F. Hughes. Computer Graphics: Principles and Practice, Second Edition in C. Addison-Wesley, 1995.

1993

- **[Foley et al. 1993]** James D. Foley, Andries van Dam, Steven K. Feiner, John F. Hughes, and Richard L. Phillips. Introduction to Computer Graphics. Addison-Wesley, 1993.

1992

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1990

- **[Foley et al. 1990]** James D. Foley and Andries van Dam and Steven K. Feiner and John F. Hughes. Computer Graphics: Principles and Practice. Addison-Wesley, 1990.

1987

- **[Niguidula & van Dam 1987]** David A. Niguidula and Andries van Dam. Pascal on the Macintosh: A Graphical Approach. Addison-Wesley, 1987.

1984

- **[Foley & van Dam 1984]** James D. Foley and Andries van Dam. Fundamentals of Interactive Computer Graphics. Addison-Wesley (The Systems Programming Series), 1984.

1984

- **[van Dam et al. 1968]** Andries van Dam, D. Huffman, E. E. David, and J. Ullman. The Man-Made World. McGraw-Hill Book Company, 1968.

Articles

2008

- **[Zeleznik et al. 2008]** Robert Zeleznik, Timothy Miller, Andries van Dam, Joseph J. LaViola, Jr., Chuanjun Li, Dana Tenneson, and Christopher Maloney. "Applications and Issues in Pen-Centric Computing" in IEEE Multimedia October-December 2008.
- **[LaViola et al. 2008]** Joseph LaViola, Prabhat, Andrew Forsberg, David H. Laidlaw, and Andries van Dam. "Virtual Reality-Based Interactive Scientific Visualization Environments" in Interactive Visualization: A State-of-the-Art Survey. Springer Verlag, 2008.

2005

- **[Head et al. 2005]** James W. Head, Andries van Dam, Samuel Fulcomer, Andrew Forsberg, Prabhat, George Rosser, and Sarah M. Milkovich. "ADVISER: Immersive Scientific Visualization Applied to Mars Research and Exploration" in *Photogrammetric Engineering and Remote Sensing*, 71(10), pp. 1219-1225, October 2005.
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- **[van Dam et. al. 2005]** Andries van Dam, Sascha Becker, and Rosemary Michelle Simpson. "Next-Generation Educational Software: Why We Need It and a Research Agenda for Getting It" in *Educause Review*, March/April 2005, 40(2), pp. 26-43, 2005.
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2004

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2003

- **[Spalter & van Dam, 2003]** Anne Morgan Spalter and Andries van Dam. "Problems with using components in educational software" in *Computers & Graphics* 27(3), pp. 329-337, 2003.
- **[van Dam 2003]** Andries van Dam. "Grand Challenge 3. Provide a Teacher for Every Learner" in *Grand Research Challenges in Information Systems*. Anita Jones and William Wulf, editors, pp. 17-22, Computing Research Association, 2003. URL: www.cra.org/reports/gc.systems.pdf

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- **[van Dam et al. 2002a]** Andries van Dam, David H. Laidlaw, and Rosemary Michelle Simpson. "Experiments in Immersive Virtual Reality for Scientific Visualization" in *Computers & Graphics* 26(4), pp. 535-555, 2002.
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1965

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1964

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Invited Lectures since 2000

2008

Invited Speaker, "A Conversation with Joel Orr with Andries van Dam and Alan Kay", Program for the Future, Collective Intelligence (December)

Invited Speaker, "Panel of 1968 [Mother of All] Demo Participants", Engelbart & the Dawn of Interactive Computing, SRI (December)

Invited Speaker, "When is the Pen Mightier Than the Keyboard", ETH Zurich (November)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", Datalogisk Institut, Aarhus Universitet (May)

Invited Speaker, "As We May Work", Enterprise 2.0 (April)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", SCI University of Utah (March)

Invited Speaker, "When is the Pen Mightier Than the Keyboard", Sun Microsystems (January)

Invited Speaker, "When is the Pen Mightier Than the Keyboard", Google (January)

2007

Keynote, "When is the Pen Mightier Than the Keyboard", Georgia Tech GVU 15th Anniversary, 2007 (October)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", Wheaton College, 2007 (September)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", Purdue University, 2007 (August)

Invited Speaker, "When is the Pen Mightier Than the Keyboard", MS Faculty Summit, 2007 (July)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", MSR China, 2007 (May)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", Amsterdam CWI, 2007 (April)

Invited Speaker, "A Radical Approach to Teaching Object-Oriented Programming", CCSCNE, 2007 (April)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", UCLA, 2007 (March)

2006

Invited Speaker, "When is the Pen Mightier Than the Keyboard ", TTI Vanguard, The Advanced Technology Forum for Senior Executives, 2006 (December)

Distinguished Lecturer, "When is the Pen Mightier Than the Keyboard", Adobe, 2006 (December)

Invited Speaker, "The Microsoft Center for Research on Pen-Centric Computing", Microsoft Faculty Summit, 2006 (July)

Distinguished Lecturer, "Immersive Virtual Reality in Scientific Visualization", Waterloo University, 2006 (April)

Distinguished Lecturer, "Immersive Virtual Reality in Scientific Visualization", Simon Fraser University, 2006 (March)

2005

Distinguished Lecturer, "Immersive Virtual Reality in Scientific Visualization", The College of William and Mary, 2005 (December)

Distinguished Lecturer, "Immersive Virtual Reality in Scientific Visualization", University of Texas, Dallas, 2005 (November)

Invited Speaker, "Scientific Visualization Research at Brown University", PNNL Fellow Lecture Series, 2005 (July)

Invited Speaker, "Next Generation Educational Software: Why We Need It and a Research Agenda for Getting It", Sun Microsystems, 2005 (May)

Invited Speaker, "Visualization at Brown: Scientific and Education Research", CIO, 2005 (April)

Invited Speaker, "Immersive Virtual Reality for Scientific Visualization", NYU, 2005 (February)

2004

Invited Speaker, "Immersive Virtual Reality for Scientific Visualization", Department of Energy, 2004 (December)

Invited Speaker, "Next Generation Educational Software: Why We Need It & A Research Agenda for Getting It", Foundation for the Future of Higher Education Aspen Symposium, 2004 (September)

Invited Speaker, "Interaction as Human-centered Computing: Problems, Progress, and Prospects", Digication 2004 (May)

Keynote Speaker, "Distributed Computing for Graphics: Then and Now", ICDCS 2004 (March)

2003

Distinguished Lecturer, "Visualization: New Dimensions, New Domains, Old Questions", Brown University, TCASCV (Technology Center for Advanced Scientific Computing and Visualization) (November)

Keynote Speaker, with Anne Morgan Spalter, "Modeling and Visualization: The Role of Computer Graphics", IVLA (International Visual Literacy Association), (October)

Distinguished Lecturer, "User Interfaces: Disappearing, Dissolving, and Evolving", UCSB (June)

Plenary Speaker, "Beyond Today's Web-based Educational Content", HICSS-36 2003 (January)

2002

Invited Speaker, "Immersive Electronic Books for Teaching Surgical Procedures", CREST Symposium on Telecommunication, Teleimmersion, and Telexistence 2002 (December)

Distinguished Lecturer, "Immersive Virtual Reality for Scientific Visualization", University of Maryland, (November)

Keynote Speaker, "Next Generation Educational Software", EdMedia 2002 (June)

Distinguished Lecturer, "Immersive VR for Scientific Visualization: A Progress Report", ETH Zurich, Switzerland (February)

Invited Speaker, "Immersive VR for Scientific Visualization: A Progress Report", University of Michigan, (January)

2001

Keynote Speaker, "User Interfaces: Disappearing, Dissolving, and Evolving", Celebration of Professor Jose Encarnacao's 60th Birthday, Darmstadt, Germany (May)

Invited Speaker, "Immersive VR for Scientific Visualization: A Progress Report", MIT Media Lab, Cambridge, MA (March)

2000

Keynote Speaker, "Immersive Virtual Reality for Scientific Visualization: A Progress Report", VR2000, New Brunswick, NJ (March)

Keynote Speaker, " Exploratories: Web-based Interactive Environments for Teaching and Learning", SigCSE2000, Austin, Texas (March)

Service to the Profession

2009 Panelist, NSF Science and Technology Center, Pre-Proposal Panel (January)

2008 - Chair, Computing Research Association Education (CRA-E) committee

2008 - Member, Advisory Board, Marian Koshland Science Museum

2008 - Member, Board of Advisors, WGBH/ACM New Image of Computing (NIC) initiative

2007 Chair, ACM Karl V. Karlstrom Outstanding Educator Award committee

2007 Chair, Brandeis University External Review Committee

2007 Member, Editorial Board of Computers and Graphics, Pergamon Press

2007 - Member, National Research Council CSTB Healthcare Informatics committee

2005- Member, ACM Karl V. Karlstrom Outstanding Educator Award committee

2002-2005 IEEE James H. Mulligan, Jr. Education Medal committee

1998-2002 Member, NSF CISE advisory committee

1998 Member, DOE ASCII Data and Visualization Corridors initiative advisory committee

Member, National Research Council CSTB Information Technology literacy committee

1997 ACM97 Chairman, 1997 Symposium on Interactive 3D Graphics, Providence, RI (April)

- 1994-1998** Member, Editorial Board, IEEE Transactions on Visualization and Computer Graphics (TVCG), (August)
- 1994** Member, Editorial Board, SIGGRAPH Books Series with ACM Press Books, and Addison-Wesley Publishing Company (January)
- Co-founder, NSF Science and Technology Center for Computer Graphics and Scientific Visualization, Summer Workshop on Geometric Modeling and Computer Graphics, Brown University, Providence, RI (June/July)
- Course Panelist, Developing Advanced Virtual Reality Applications, SIGGRAPH '94, Orlando, FL (July)
- Course Panelist, Research Frontiers in Virtual Reality, SIGGRAPH '94, Orlando, FL (July)
- Course Panelist, Why is 3D Interaction So Hard, and What Can we Really Do About it?, SIGGRAPH '94, Orlando, FL (July)
- Program Committee Member, 1995 Symposium on Interactive 3D Graphics, Monterey, CA (November)
- 1993** Member, National Research Council, Committee on Virtual Reality Research and Development
- Program Committee, Senior Reviewer SIGGRAPH '93, Anaheim, California (August)
- Course Panelist, Implementing Virtual Reality, SIGGRAPH '93, Anaheim, California (August)
- Co-founder, A New Seminar for Secondary Mathematics Teachers The Mathematics of Computer Graphics, Brown University, Providence, RI (April/May)
- Co-founder, NSF Science and Technology Center for Computer Graphics and Scientific Visualization, Summer Workshop on Geometric Modeling and Computer Graphics, Brown University, Providence, RI (June/July)
- Panelist, The Role of New Information Technology in a Modern Curriculum, University of California at Irvine, Irvine, CA (July)
- 1992** Program Committee, Senior Reviewer SIGGRAPH '92, Chicago, IL (July)

- Program Committee, Third Eurographics Workshop on Object-Oriented Graphics, Champéry, Switzerland (October)
- 1991** National Science Foundation, Chairman, Workshop on Research Infrastructure (July)
- 1990-1992** Member of Study Committee to Assess the Scope and Direction for Computer Science and Technology, Computer Science and Telecommunications Board, National Research Council Commission on Physical Sciences, Mathematics, and Applications
- 1990** Chairman, Ad Hoc working group on Graphics Application Frameworks
- 1989-1991** Member, Nominating Committee, ACM
- 1989** Advisory Editor, Journal of Visual Languages and Computing, Academic Press
- 1987-1988** Member, Advisory Board, SIGGRAPH
- 1987** Program Committee, 1988 CERN Summer School
- 1985-1986** Chairman, Software Systems Award Committee, ACM
- 1986-1988** Member, Computer Science and Technology Board, National Research Council, National Academy of Sciences
- 1986** Invited Lecturer, Asia Regional College on Microprocessors, Hefei, PRC
- 1985-1987** Chairman, Computing Research Board, (renamed Computing Research Association)
- Chairman, PHIGS+ Computer Graphics Working Group
- 1985** Chairman, Visiting Committee to evaluate computer science concentration and computing services, Swarthmore College, Swarthmore, PA (April)
- 1983-1984** Member, CSNet Executive Board
- 1983-1985** Member of review board for Foxboro's Bristol Fellowship program
- 1983-1991** Member, Computer Science Board (renamed Computing Research Association)
- 1983** Co-director and lecturer, School on Microprocessors, Institute for Theoretical Physics, Trieste (April)

- Organizer of research symposium to mark the retirement of Marvin Denicoff of ONR (December)
- Member, Editorial Board of Computers and Graphics, Pergamon Press
- 1982** Invited lecturer, CERN Summer School in Computing, Zinal, Switzerland (August)
- 1981-1986** Associate Editor, ACM Transactions on Graphics
- 1981** Co-director and lecturer, School on Microprocessors, Institute for Theoretical Physics, Trieste (September)
- 1980-1986** Visiting Scientific Associate, CERN, Geneva, Switzerland
- 1980** Invited lecturer, CERN Summer School in Computing, Athens, Greece (September)
- 1979** Program Organizer and Chairman of SEAS Spring Technical Meeting on Graphic Man-Machine Interaction Methodology (May)
- Invited participant in IFIP WG5.2 Seillac Workshop on Interaction Methodology (May)
- 1978** Guest editor of IEEE Computer, Special Issue on Distributed Processing (January)
- Guest editor of ACM Computing Surveys, Special Issue on Computer Graphics Standards (December)
- 1977** Panel Chairman, "Computer Graphics," IFIP Congress 77, Toronto
- 1976, 1977** Organizer and chairperson, Distributed Processing Workshops I and II, Brown University
- 1976-1978** Member of ACM SIGGRAPH Graphics Standard Planning Committee and co-designer of the proposed "Core" Graphics Standard
- 1976** Invited participant to IFIP WG5.2 Seillac Workshop on Graphics Standards
- Session Chairman, ACM SIGGRAPH 3rd Annual Conference on Computer Graphics, Interactive Techniques and Image Processing
- 1974** Session Chairman, ACM SIGGRAPH NBS Workshop on Machine-Independent Graphics

Member of Editorial Board and Contributor, The Encyclopedia of Computer Science

Session Chairman, ACM SIGGRAPH Conference on Computer Graphics and Interactive Techniques

1973-1977 Member of Editorial Advisory Board, Computers and Graphics

1972 Conference organizer, IFIP Working Conference on Graphic Languages, Vancouver, B.C.

1971-1981 Editor, Computer Graphics and Image Processing

1971 Session Chairman, "Computer-Aided Design," IFIP Congress 71, Ljubljana, Yugoslavia

1969-1970 Consulting editor for Auerbach Corporation's Graphics Data Processing Reports

1968-1970 Co-founder, board member and lecturer, ACM SIGGRAPH, Special Interest Group on Computer Graphics

1968 Session Chairman, "Data Structures for Computer Graphics," FJCC, San Francisco

1967-1978 Consulting editor in Computer Science, Holt, Rinehart and Winston

1967-1970 Co-founder, Board member and lecturer, ACM Professional Development Seminar Series

1967-1969 Contributor, Engineering Concepts Curriculum Project of the ACM Commission on Engineering Education (principal author of five chapters in The Man-Made World)

1967 Co-founder of ACM SIGGRAPH

Academic Honors, Research Grants, Fellowships and Honorary Societies Honors

2008 Honorary Ph.D. from the Department of Computer Science at ETH Zurich

2007 Honorary Ph.D. from the Faculty of Mathematics, University of Waterloo.

2005 Co-Chairman of the Rhode Island Governor's Science and Technology Advisory Council (STAC)

2004 American Association for the Advancement of Science Fellow Award

- 2003** Honorary General Chair of IEEE ICDCS 2003
Chairman of the Rhode Island Governor's Science and Technology Council
Board Member of the Mayor's Providence Economic Development Partnership Council
- 2002** CRA (Computing Research Association) Distinguished Service Award
Brown University Sheridan Award for Teaching
- 2000** ACM SIGCSE Award for Outstanding Contribution to Computer Science Education
American Academy of Arts & Sciences Fellow Award
- 1999** IEEE James H. Mulligan, Jr. Education Medal
- 1998-2004** Trustee of RISD (Rhode Island School of Design)
- 1996** Elected to the National Academy of Engineering
Honorary Ph.D. from Swarthmore College
- 1995** Named to the Thomas J. Watson, Jr. University Professor of Technology and Education Chair
Honorary Ph.D. from Darmstadt Technical University in Germany
- 1994** IEEE Fellow Award
ACM Fellow Award
- 1993** ACM Karl V. Karlstrom Outstanding Educator Award
- 1992-1995** Named to the L. Herbert Ballou University Professor Chair
- 1991** SIGGRAPH Steven A. Coons Award for Outstanding Creative Contributions to Computer Graphics
- 1990** 1990 NCGA Academic Award
- 1988** State of Rhode Island Governor's Science and Technology Award
- 1984** IEEE Centennial Medal

- 1974** Society for Information Display's "Special Recognition Award"
- 1971-1972** Fulbright Fellowship
- 1966** Ph.D. Degree, Electrical Engineering, Moore School of Electrical Engineering, University of Pennsylvania.
- 1963** M.S. Degree, Electrical Engineering, Moore School of Electrical Engineering, University of Pennsylvania.
- 1960** IEEE (IRE) Delaware Valley Section "Student of the Year" Award; Sigma Tau, Sigma Xi
- B.S. Degree with Honors, Swarthmore College

Updated 1/14/09

EXHIBIT 2

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13 Attorneys for SAMSUNG ELECTRONICS CO.,
LTD., SAMSUNG ELECTRONICS AMERICA,
14 INC. and SAMSUNG
TELECOMMUNICATIONS AMERICA, LLC
15

16 UNITED STATES DISTRICT COURT
17 NORTHERN DISTRICT OF CALIFORNIA, SAN JOSE DIVISION
18

19 APPLE INC., a California corporation,

20 Plaintiff,

21 vs.

22 SAMSUNG ELECTRONICS CO., LTD., a
Korean business entity; SAMSUNG
23 ELECTRONICS AMERICA, INC., a New
York corporation; SAMSUNG
24 TELECOMMUNICATIONS AMERICA,
LLC, a Delaware limited liability company,

25 Defendant.
26
27
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CASE NO. 11-cv-01846-LHK

**MANUAL FILING NOTIFICATION FOR
EXHIBIT 2 TO THE DECLARATION OF
ANDRIES VAN DAM, PH.D. IN SUPPORT
OF SAMSUNG'S OPPOSITION TO
APPLE'S MOTION FOR A PERMANENT
INJUNCTION AND FOR DAMAGES
ENHANCEMENTS REGARDING U.S.
PATENT NO. 7,469,381**

MANUAL FILING NOTIFICATION

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Regarding: Exhibit 2 to the Declaration of Andries van Dam, Ph.D. in Support of Samsung’s
Opposition to Apple’s Motion for a Permanent Injunction and for Damages
Enhancements Regarding U.S. Patent No. 7,469,381

This filing is in paper or physical form only, and is being maintained in the case file in the Clerk’s
office. The exhibits were previously served on all parties.

For information on retrieving this filing directly from the court, please see the court’s main web
site at <http://www.cand.uscourts.gov> under Frequently Asked Questions (FAQ).

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Conformance with the Judicial Conference Privacy Policy (General Order 53)

Other (description): _____

DATED: October 19, 2012

Respectfully submitted,

QUINN EMANUEL URQUHART &
SULLIVAN, LLP

By Victoria F. Maroulis
Victoria F. Maroulis
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LTD., SAMSUNG ELECTRONICS AMERICA,
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