

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Inventor: Hair	§	Attorney Docket No.:
United States Patent No.: 5,191,573	§	104677-5005-802
Formerly Application No.: 586,391	§	Customer No. 28120
Issue Date: March 2, 1993	§	
Filing Date: September 18, 1990	§	Petitioner: Apple Inc.
Former Group Art Unit: 339	§	
Former Examiner: Hoa T. Nguyen	§	

For: Method for Transmitting a Desired Digital Video or Audio Signal

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**DECLARATION OF DR. JOHN P. J. KELLY IN SUPPORT OF APPLE  
INC.'S PETITION FOR COVERED BUSINESS METHOD PATENT  
REVIEW OF UNITED STATES PATENT NO. 5,191,573 PURSUANT TO 35  
U.S.C. § 321, 37 C.F.R. § 42.304**

I, John Kelly, hereby declare as follows:

## I. INTRODUCTION

1. I have been retained to provide assistance regarding U.S. Patent No. 5,191,573 (“573 patent”). Attached hereto as Appendix A is a true and correct copy of my *Curriculum Vitae* describing my background and experience. I have personal knowledge of the facts and opinions set forth in this declaration, and, if called upon to do so, I would testify competently thereto.

2. I hold Bachelor of Arts and Master of Arts degrees with Honors in Mathematics from the University of Cambridge, England. I hold a Ph.D. in Computer Science from U.C.L.A. From 1982 through 1986, I was a professor in the Computer Science Department at U.C.L.A. From 1986 through 1997, I was a professor in the Electrical and Computer Engineering Department of the University of California, Santa Barbara, where I held tenure.

3. I am the principal of Kelly Computing, Inc. I teach and consult in many different aspects of computer science and engineering, including computer hardware and software architecture and design, software engineering and fault tolerance. My particular areas of expertise include computer architecture, software engineering and “clean-room” development and evaluation, reverse engineering, operating systems (including real-time and embedded), network computing

(including Internet computing), storage systems, fault tolerance, parallel and distributed computing systems, transaction processing systems, database systems, and program management.

4. As a result of my education and professional experience, I have extensive development experience and knowledge of computer operating systems including access control concepts, data encryption/decryption techniques, networking technologies, database systems, communication protocols including network communication protocols, user interfaces including graphical user interfaces and computer hardware design, and software analysis, design, and development. I have developed computer software and hardware for many different computer systems and applications including programming microprocessors. I have also analyzed several software products related to access control, audio and video playback, network transmission of audio and video, storage of audio and video in multimedia databases, and content delivery networks and distribution systems. For example, I have analyzed databases and repositories used to store and access audio file repositories, network based distribution of electronic media, set top boxes, and content delivery network architecture of leading content delivery network providers. I have also analyzed the source code for computer operating systems such as Apple's Mac OS X, Microsoft Windows,

Linux, etc. I have also testified in Court on several occasions as a computer science expert to report my analysis and opinions.

5. I have worked in the area of computer software, hardware and system design and development for over thirty-five years. I have extensive experience in the design and development of small and large scale software systems. I have been involved in the specification, development, integration, and testing of computer systems with a wide range of requirements, sizes and types. These have included, by way of example, custom hardware and software for a US Air Force fighter plane, a distributed real-time system for US FAA air traffic control, and a distributed geographical information system for the US Department of Energy.

6. From 1978 to 1995, I specified, designed and implemented distributed database architectures, systems and applications for Los Alamos National Laboratory and NASA's Jet Propulsion Laboratory and database machine design and implementation at Transaction Technology Incorporated, Ordain, Inc. and Teradata.

7. From 1985 to 1998, I consulted for AT&T GIS, NCR, Symbios Logic, and LSI Logic, including working as a member of the AT&T GIS Science Advisory Committee ("SAC"). The SAC evaluated AT&T's organization, technical direction and product strategy and made recommendations to the Vice President of Technology and Development.

8. A listing of testimony that I have provided in the last four years and my compensation is attached hereto as Appendix B. I am being compensated for my time spent in connection with this case. I have no financial interest in the outcome of this case.

9. In preparing my opinions, I have considered the following materials:

- '573 patent [Ex. 1101],
- '573 patent file history [Ex. 1102],
- '573 patent reexamination [Ex. 1103],
- Arthur Hair Dec. 11, 2012 Dep. Tr. [Ex. 1104],
- Scott Sander Dec. 18-19, 2012 Dep. Tr. [Ex. 1105],
- Steven Dupler, *Joint Telerecording Push: CompuSonics, AT&T Link*, Billboard, vol. 97, no. 40, Oct. 5, 1985 (“Dupler article”) [Ex. 1106],
- David Needle, *From the News Desk: Audio/digital interface for the IBM PC?*, InfoWorld, vol. 6, no. 23, p. 9, June 4, 1984 (“Needle article”) [Ex. 1107],
- Larry Israelite, *Home Computing: Scenarios for Success*, Billboard, Dec. 15, 1984 (“Israelite article”) [Ex. 1108],
- “Digital Audio Telecommunication System” diagram, ©1985 [Ex. 1112],
- David Schwartz, July 16, 1984 Letter to CompuSonics’ Shareholders, July

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