

UNITED STATES PATENT AND TRADEMARK OFFICE

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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APPLE INC.,  
Petitioner

v.

OPENTV, INC.,  
Patent Owner.

Case No. \_\_\_\_\_

**DECLARATION OF CHARLES D. KNUTSON, Ph.D.  
IN SUPPORT OF APPLE INC.'S PETITION FOR *INTER PARTES*  
REVIEW OF U.S. PATENT NO. 7,900,229**

I, Charles D. Knutson, hereby declare as follows:

## I. INTRODUCTION

1. I am presently an Emeritus Professor of Computer Science at Brigham Young University in Provo, Utah.

2. I have prepared this Declaration in connection with Apple Inc.'s ("Apple") Petition for *Inter Partes* Review of U.S. Patent No. 7,900,229 ("the '229 Patent"), which is to be filed concurrently with this Declaration.

3. In the course of preparing this Declaration, I reviewed the '229 Patent (Apple 1001) and its prosecution file history (Excerpts included in Apple 1002). I have also reviewed the prior art references and other documents relevant to the state of the art discussed in this Declaration, including:

- European Patent Application No. 00124464.9, Publication No. EP 11 00268 A2 to Tomioka ("Tomioka") (Apple 1003),
- Jochen Schiller, Mobile Communications (2000) ("Schiller") (Excerpts included in Apple 1004),
- Certified English Translation of Japanese Unexamined Patent Application Publication H11-7453 to Kotani ("Kotani") (Apple 1005),
- U.S. Patent No. 7,305,691 ("Cristofalo") (Apple 1006),
- U.S. Patent Application Publication No. 2002/0111154 ("Eldering") (Apple 1007),

- U.S. Patent Application Publication No. 2002/0111172 (“DeWolf”) (Apple 1008),
  - U.S. Patent No. 5,861,881 (“Freeman”) (Apple 1009),
  - Gerard O’Driscoll, *The Essential Guide to Set-Top Boxes and Interactive TV* (2000) (“O’Driscoll”) (Excerpts included in Apple 1010),
  - Andrew Tokmakoff and Harry van Vliet, “Home Media Server Content Management,” *Internet Multimedia Management Systems II, Proceedings of SPIE Vol. 4519* (July 2001) (“Tokmakoff”) (Apple 1011),
  - Matt Carmichael, “This Ad’s for You,” *Advertising Age* (April 17, 2000) (“Carmichael”) (Apple 1012),
  - “Introduction to MPEG-7 (v3.0)” (Neil Day and José Martinez eds.), *ISO/IEC JTC1/SC29/ WG11, Singapore* (March 2001) (Apple 1013),
  - Introduction to MPEG-7 Multimedia Content Descriptoin Interface (B.S. Manjunath, Philippe Salembier and Thomas Sikora eds.) (2002, reprinted 2003) (Apple 1014), and
  - Tomasz Imielinski and Julio C. Navas, “GPS-Based Geographic Addressing, Routing, and Resource Discovery,” *Communications of the ACM* (April 1999) (Apple 1015).
4. I have been retained by Apple Inc. (“Apple” or “Petitioner”) as an expert in the field of computer science, network engineering and architectures, and related

technologies, including network security. I am being compensated at my normal consulting rate of \$450 per hour for my time. My compensation does not depend in any way on the substance of my conclusions and is not affected by the outcome of this proceeding.

5. I have no financial interest in Apple. I similarly have no financial interest in the '229 Patent or the owner of the '229 Patent, and I have had no contact with the named inventor of the '229 Patent.

## **II. EXPERIENCE AND QUALIFICATIONS**

6. I received a Bachelor of Science degree in computer science from Brigham Young University in 1988 and a Master of Science degree in computer science from Brigham Young University in 1994. I received a doctoral degree in Computer Science from Oregon State University in 1998.

7. I have been engaged in the software development industry since 1986 in engineering, management, research, and instructional positions.

8. I was employed as a development engineer, test engineer, and manager at Novell, Inc. between March 1989 and September 1994. During that time, I became very familiar with the theory and operation of data communication systems.

9. I was Vice President of Research and Development for Counterpoint Systems Foundry, Inc. (acquired in 1997 by Extended Systems, Inc., currently a division of OpenSynergy GmbH) from September 1996 to September 1999. My development

group created the infrared beaming capability that 3Com Corporation employed in their PalmOS handheld devices. My development group also created infrared and Bluetooth development platforms that have become de facto standards in the embedded/handheld device market worldwide.

10. I was chair of the Test and Interoperability Committee of the Infrared Data Association (IrDA) from February 1998 to October 1999, and served as a member of the IrDA Architecture Council from February 1998 to April 2008. I was also a member of the Infrared Object Exchange (IrOBEX) Working Group from January 2002 to December 2005, helping to define standards for data object exchange in IrDA and Bluetooth.

11. I created industrial coursework on IrDA and Bluetooth technologies for companies engaged in the business of designing and manufacturing short-range wireless protocol products for the embedded device market.

12. I created and presented short courses on wireless data communications at the Embedded Systems Conference, Portable by Design Conference, Wind River Developers Conference, and other industry venues over a nine-year period from 1997 to 2005.

13. I have authored or co-authored two books on networking and data communications, 34 academic articles (18 of which involve data communications), six

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