

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HTC Corporation,
HTC America, Inc.,
LG Electronics, Inc.,
Samsung Electronics Co., Ltd., and
Samsung Electronics America, Inc.
Petitioners

v.

Parthenon Unified Memory Architecture LLC
Patent Owner

DECLARATION OF SANTHANA CHARI, PH.D.

I, Santhana Chari, declare as follows:

1. I have been retained by Petitioners as an independent consultant. I have been asked to provide an opinion regarding the public accessibility of International Organization for Standardization, "ISO/IEC 11172-2: Information technology—Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s—Part2: Video," (1st ed. Aug. 1, 1993) ("*MPEG Standard*"). I have been provided a copy of the *MPEG Standard*, which I understand is Exhibit 1004 in this proceeding.

2. I earned a Bachelor's degree in Electronics and Communications from the College of Engineering, Madras, India, in 1989, a Master's Degree in Electrical Engineering from the University of Maryland, College Park, in 1994, and a Doctorate in Electrical Engineering from the University of Maryland, College Park, in 1995. While pursuing my Master's and Doctorate degrees, I was active in the field of video and image processing, was aware of developments in MPEG technology, and read about the MPEG standards as they became available to the public.

3. I have been centrally involved in the development of MPEG technology since the mid 1990's. For example, from 1995 to 1997, I worked as a Senior Member of the technical staff as COMSAT Laboratories, developing MPEG-2 based real-time hardware video codecs and multiplexers for satellite TV

applications. From 1997 to 2002, while working at Philips Electronics, N.V. as a Project Lead and Senior Researcher, I developed algorithmic techniques to prioritize MPEG compressed video and adaptive error control strategies for video transport over 802.11a wireless LANs. During this period, I also played a leading role in Philips' contribution to the MPEG-7 standardization. In 2002, I joined EG Technology, Inc., as the Chief Architect of video compression product. As of 2009, I have been a Senior Director of Digital Video Systems at ARRIS Group, currently responsible for a multi-site team working on various products addressing the delivery of video over IP networks, and high quality compression of HD and 4K of digital video. My curriculum vitae is attached as Appendix A.

4. As shown in my qualifications above, I was significantly involved in the image/video coding field in the mid 1990's, and was aware of the standardization process used by the International Organization for Standardization ("ISO") for image/video-coding related standards such as MPEG-1 and MPEG-2.

5. The *MPEG Standard* is the first formal edition of the 11172-2 standard (commonly referred to as MPEG-1), dealing with coding of moving pictures and associated audio for digital storage media.

6. The *MPEG Standard* lists a date of August 1, 1993 on its cover page, and a copyright date of 1993 on page ii. Ex. 1004 at 1-2. Moreover, the website for the ISO indicates that the *MPEG Standard* was "published on: 1993-08-12".

Ex. 1009 at 1. Exhibit 1009 is a true and correct copy of the ISO's website for the *MPEG Standard* (available at http://www.iso.org/iso/catalogue_detail.htm?csnumber=22411).


7. In my experience, *MPEG Standard* would have been publicly available as of August 1993, so that interested members of the public could have obtained *MPEG Standard* with reasonable diligence if they so desired.

8. As a published standard, those in the field of image/video coding, including those outside of the International Standards Organization that developed the *MPEG Standard*, would have known about, sought out, and had access to the *MPEG Standard*, at least as of August 1993. For example, those in the image/video coding field at the time would have regularly checked the status of standards relating to image/video coding, and with reasonable diligence would have known when the *MPEG Standard* was formalized and published as a standard. Moreover, those in the image/video coding field would have had access to the *MPEG Standard* via the ISO's online presence and/or by ordering a copy of the *MPEG Standard*.

9. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and 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.

Dated: June 24, 2015

By: 
Santhana Chari, Ph.D.

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