

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.

COREPHOTONICS, LTD.,  
Patent Owner

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Case IPR2018-01133  
U.S. Patent No. 9,538,152

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**DECLARATION OF JAMES KOSMACH, PH.D.**

Apple v. Corephotonics

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I, James Kosmach, do hereby declare as follows:

## **I. Introduction**

1. I have been retained as an independent expert witness on behalf of Corephotonics Ltd. (“Patent Owner” or “Corephotonics”) for the above-captioned *Inter Partes* Review of U.S. Patent No. 9,538,152. I am being compensated at my usual and customary rate for the time I spent in connection with this IPR. My compensation is not affected by the outcome of this IPR.

2. I have been asked to provide my opinions regarding whether claims 1–4 (“Challenged Claims”) are invalid as they would have been obvious to a person having ordinary skill in the part (“POSITA”) as of the earliest claimed priority date, specifically with reference to the arguments made by Apple Inc. in its Petition for *Inter Partes* Review (“Petition”) regarding U.S. Patent Application Pub. No. 2008/0030592 A1 (Ex. 1006, “Border”) and U.S. Patent No. 7,859,588 B2 (Ex. 1007, “Parulski”).

3. In preparing this Declaration, I have reviewed:

- a. Apple’s Petition for *Inter Partes* Review Under 35 U.S.C. § 312 and 37 C.F.R. § 42.104, in IPR2018-01133;
- b. Ex. 1001, the ’152 Patent;
- c. Ex. 1002, the prosecution file history of the ’152 Patent;

- d. Ex. 1003, the prosecution file history of U.S. Provisional App. No. 61/730/570;
- e. Ex. 1004, the Declaration of Dr. Oliver Cossairt;
- f. Ex. 1006, U.S. Patent Application Pub. No. 2008/00;30592 A1 (“Border”);
- g. Ex. 1007, U.S. Patent No. 7,859,588 B2 (“Parulski”);
- h. Ex. 1008, Excerpts of Jacobson, The Manual of Photography (“Jacobson”);
- i. Ex. 1010, Excerpts of Szeliski, Computer Vision (“Szeliski”);
- j. Ex. 2002, transcript of the Deposition of Oliver Cossairt;
- k. Ex. 2007, U.S. Patent No. 9,185,291, “Dual Aperture Zoom Digital Camera” (“the ’291 Patent”).

## **II. Background and Qualifications**

4. My qualifications are set forth in my curriculum vitae, a copy of which is attached as Exhibit 2004. As set forth in my curriculum vitae:

5. I am clinical associate professor in the department of electrical and computer engineering at the University of Illinois Chicago (UIC). I teach undergraduate and graduate courses such as computer vision, signals and systems, and probability and random processes for engineers.

6. I am also employed by Personify, Inc. and hold the position of Vice President of Engineering, a company focused on developing artificial intelligence and machine learning technology for use in imaging and video applications. Prior to my faculty appointment at UIC, I was employed fulltime at Personify, Inc as the Vice President of Engineering, where I led a team of more than 20 engineers in the development of computer vision algorithms specifically for use on video and image data. Our technology has been licensed to, among others, Intel, Inc.

7. Prior to my work at Personify, I was Senior Director of Engineering for PacketVideo, a multimedia technology company in San Diego, California. There, I led a team of 15 multimedia codec engineers to develop technology that was adopted by, among others, Google, Verizon, and NTT Docomo.

8. Prior to my work at Personify, I started my career in corporate R&D group of Motorola, working on video signal processing where I was involved in the research and development of video compression algorithms.

### **III. The '152 Patent**

9. The '152 Patent is directed to a “multi-aperture imaging system comprising a first camera with a first sensor that captures a first image and a second camera with a second sensor that captures a second image.” Ex. 1001, at Abstract. It was issued on January 3, 2017, and claims priority to a provisional patent application filed on November 28, 2012. The face of the '152 Patent lists Gal

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