BEFORE THE PATENT TRIAL AND APPEAL BOARD

AXIS COMMUNICATIONS AB, CANON INC., and CANON U.S.A., INC., Petitioners,

v.

AVIGILON FORTRESS CORPORATION, Patent Owner.

> Case No.: IPR2018-00138 U.S. Patent No. 8,564,661

> Case No.: IPR2018-00140 U.S. Patent No. 8,564,661

DECLARATION OF DR. ALAN BOVIK, PH.D. IN SUPPORT OF PAT OWNER'S RESPONSES TO *INTER PARTES* REVIEWS OF U.S. PAT NO. 8,564,661

DOCKET

	II.	QUALIFICATIONS AND EXPERIENCE			
	III.	I. MATERIALS CONSIDERED			
	IV.	/. PERSON OF ORDINARY SKILL IN THE ART			
	V. LEGAL STANDARDS			ANDARDS	
		A.	Claim Construction		
		В.	Anticipation		
		C.	Obviousness		
	VI. U.S. PATENT NO. 8,564,661			NT NO. 8,564,661	
		A.	Disclosure of the '661 Patent		
		B.	Re-Exam of U.S. Patent No. 7,868,912		
			1.	Description of Courtney	
			2.	The '912 Patent Overcame Courtney, Brill, and Olson	
			3.	The '912 and '661 Patents Share the Independence-Based Claim Elements	
	VII.	COR	RRECT CLAIM CONSTRUCTION		
		A. The Independence-Based Claim Eleme		ndependence-Based Claim Elements	
		B.	"Useı	r Rule that Defines an Event"	
VIII. DESCRIPTION OF ASSERTED ART			CRIPT	ION OF ASSERTED ART	
		A.	Kellogg		
			1.	Kellogg does not teach object or attribute detection	
			2.	Kellogg does not teach the independence-based claim elements	
		B.	B. Dimitrova		
			1.	Dimitrova does not teach the independence-based claim elements	
			2.	Dimitrova does not teach user rules	
		C. Brill			
		i			
				L	

I. INTRODUCTION

1. I have been retained as an independent expert by Patent 6 Avigilon Fortress Corporation ("Patent Owner" or "Avigilon") for IPR2018-("the 138 IPR") and IPR2018-00140 ("the 140 IPR"), both involving U.S. No. 8,564,661 (the "661 patent"). I have personal knowledge of the fac opinions set forth in this declaration, and, if called upon to do so, I would competently thereto. All of the opinions and conclusions found in this declar are my own.

2. I am being compensated at a rate of \$500 per hour for my servi am being paid regardless of the conclusions or opinions I reach. I have no pe or financial stake or interest in the outcome of the present proceedings, an compensation is not dependent in any way upon the outcome of these proceed

II. QUALIFICATIONS AND EXPERIENCE

3. I expect to testify regarding my background, qualifications experience relevant to the issues in this litigation. I hold a Ph.D. in in Electric Computer Engineering from the University of Illinois, Urbana-Champaign (aw in 1984). I also hold a Master's degree in Electrical and Computer Engineering the University of Illinois, Urbana-Champaign (awarded in 1982).

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Department of Electrical and Computer Engineering, the Department of Con Sciences, and the Department of Biomedical Engineering. I am also the Direc the Laboratory for Image and Video Engineering ("LIVE").

5. My research is in the general area of digital television, digital can image and video processing, computational neuroscience, and modeli biological visual perception. I have published over 800 technical articles in areas and hold seven U.S. patents. I am also the author of The Handbook of and Video Processing, Second Edition (Elsevier Academic Press, 2005); M Image Quality Assessment (Morgan & Claypool, 2006); The Essential Gu Image Processing (Elsevier Academic Press, 2009); and The Essential Gu Video Processing (Elsevier Academic Press, 2009); and numerous publications.

6. I received the 2017 Edwin H. Land Medal from the Optical Soci America in September 2017 with citation: For substantially shaping the dir and advancement of modern perceptual picture quality computation, ar energetically engaging industry to transform his ideas into global practice.

7. I received a Primetime Emmy Award for Outstanding Achieven Engineering Development, for the Academy of Television Arts and Science

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satellite and internet Television industries.

8. Among other awards and honors, I have received the 2013 IEEE Processing Society's "Society Award," which is the highest honor accorded by technical society ("for fundamental contributions to digital image processing t technology, leadership and education"). In 2005, I received the Tec Achievement Award of the IEEE Signal Processing Society, which is the h technical honor given by the Society, for "broad and lasting contributions to th of digital image processing"; and in 2008 I received the Education Award IEEE Signal Processing Society, which is the highest education honor given Society, for "broad and lasting contributions to image processing, including p and important image processing books, innovative on-line courseware, and creation of the leading research and educational journal and conference in the processing field."

9. My technical articles have been widely recognized as well, inc the 2009 IEEE Signal Processing Society Best Journal Paper Award for the "Image quality assessment: From error visibility to structural similarity," pub in IEEE Transactions on Image Processing, volume 13, number 4, April 200 same paper received the 2017 IEEE Signal Processing Society Sustained I

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