UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.; and
SAMSUNG ELECTRONICS AMERICA, INC.
Petitioners

v.

IMAGE PROCESSING TECHNOLOGIES, LLC
Patent Owner

Patent No. 6,959,293

DECLARATION OF DR. JOHN C. HART
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 6,959,293

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VIII. THE PRIOR ART TEACHES OR SUGGESTS EVERY FEATURE OF THE CHALLENGED CLAIMS OF THE '293 PATENT 17

A. Overview of the Prior Art References 17

1. International Patent Publication WO 99/36893 ("Pirim") 17

2. U.S. Patent No. 5,546,125 to Tomitaka et al. ("Tomitaka") 21

3. Robert B. Rogers, "Real-Time Video Filtering With Bit-Slice Microprogrammable Processors," Ph.D. Dissertation, New Mexico State University (1978) ("Rogers") 24

4. Alton L. Gilbert et al., "A Real-Time Video Tracking System," IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. PAMI-2, No. 2, January 1980 ("Gilbert") 31

B. Ground 1: the combination of Pirim and Tomitaka teaches, suggests, or discloses every element of Claims 1, 18, 19, 22, and 29 34

1. Reasons to combine Pirim and Tomitaka 34

2. Claim 1 36

3. Claim 18 44

4. Claim 19 52

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5. Claim 22 53

6. Claim 29 55

C. Ground 2: the combination of Rogers and Gilbert teaches, suggests, or discloses every limitation of Claims 1, 18, 19, 22, and 29. 57

1. Reasons to Combine Rogers and Gilbert 57

2. Claim 1 58

3. Claim 18 62

4. Claim 19 66

5. Claim 22 67

6. Claim 29 71

D. Ground 3: the combination of Tomitaka and Rogers teaches, suggests, or discloses every element of Claims 1, 18, 19, 22, and 29 72

1. Reasons to Combine Tomitaka and Rogers 72

2. Claim 1 76

3. Claim 18 81

4. Claim 19 84

5. Claim 22 84

6. Claim 29 87

IX. CONCLUSION 89

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I, John C. Hart, declare as follows:

I. INTRODUCTION

1. I have been retained by Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Petitioner") as an independent expert consultant in this proceeding before the United States Patent and Trademark Office ("PTO").

2. I have been asked to consider whether certain references teach or suggest the features recited in Claims 1, 18, 19, 22, and 29 of U.S. Patent No. 6,959,293 ("the '293 Patent") (Ex. 1001), which I understand is allegedly owned by Image Processing Technologies, LLC ("Patent Owner"). My opinions and the bases for my opinions are set forth below.

3. I am being compensated at my ordinary and customary consulting rate for my work.

4. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of this or any other proceeding. I have no other interest in this proceeding.

II. BACKGROUND AND EXPERIENCE

A. Qualifications

5. I have more than 25 years of experience in computer graphics and image processing technologies. In particular, I have devoted much of my career to

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researching and designing graphics hardware and systems for a wide range of applications.

6. My research has resulted in the publication of more than 80 peer-reviewed scientific articles, and more than 50 invited papers and talks in the area of computer graphics and image processing.

7. I have authored or co-authored several publications that are directly related to target identification and tracking in image processing systems. Some recent publications include:

- P.R. Khorrami, V.V. Le, J.C. Hart, T.S. Huang, "A System for Monitoring the Engagement of Remote Online Students using Eye Gaze Estimation," Proc. IEEE ICME Workshop on Emerging Multimedia Systems and Applications, July 2014.
- V. Lu, I. Endres, M. Stroila, and J.C. Hart, "Accelerating Arrays of Linear Classifiers Using Approximate Range Queries," Proc. Winter Conference on Applications of Computer Vision, Mar. 2014.
- M. Kamali, E. Ofek, F. Iandola, I. Omer, J.C. Hart, "Linear Clutter Removal from Urban Panoramas," Proc. International Symposium on Visual Computing. Sep. 2011.

8. From 2008-2012, as a Co-PI of the $18M Intel/Microsoft Universal Parallelism Computing Research Center at the University of Illinois, I led the

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