

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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SAMSUNG ELECTRONICS CO., LTD. and  
SAMSUNG ELECTRONICS AMERICA, INC.,  
Petitioner,

v.

IMAGE PROCESSING TECHNOLOGIES LLC,  
Patent Owner.

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Case IPR2017-00336  
Patent 6,959,293 B2

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Before JONI Y. CHANG, MICHAEL R. ZECHER, and  
JESSICA C. KAISER, *Administrative Patent Judges*.

CHANG, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318 (a) and 37 C.F.R. § 42.73

## I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1, 18, 19, 22, and 29 (“the challenged claims”) of U.S. Patent No. 6,959,293 B2 (Ex. 1001, “the ’293 patent”) and a Declaration of John Hart, Ph.D. (Ex. 1002). Paper 2 (“Pet.”). Image Processing Technologies LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Upon consideration of the Petition and Preliminary Response, we determined that the information presented in the Petition established that there was a reasonable likelihood that Petitioner would prevail with respect to challenging claim 22, but not with respect to challenging claims 1, 18, 19, and 29, and for only the sole ground that claim 22 is unpatentable under § 103(a) as obvious over Pirim, but not for any other grounds asserted by Petitioner. Paper 15 (“Dec. on Inst.”). Consequently, on May 25, 2017, we entered an Institution Decision, instituting an *inter partes* review only as to claim 22, but not with respect to claims 1, 18, 19, and 29. *Id.* at 53.

Subsequent to institution, Patent Owner filed a Response (Paper 21, “PO Resp.”) and a Declaration of Peggy Agouris, Ph.D. (Ex. 2009), and Petitioner filed a Reply, all directed only to claim 22 and the instituted ground. Paper 24 (“Pet. Reply”). A transcript of the oral hearing held on February 21, 2018, has been entered into the record as Paper 34 (“Tr.”).

On April 24, 2018, the Supreme Court of the United States held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. *SAS Institute Inc. v. Iancu*, 2018 WL 1914661, at \*10 (U.S. Apr. 24, 2018). In light of the Guidance on the

Impact of SAS on AIA Trial Proceedings<sup>1</sup> posted on April 26, 2018, we modified our Institution Decision to institute on *all of the challenged claims*, including claims 1, 18, 19, and 29, and *all of the grounds* presented in the Petition. Paper 37. Both parties affirmatively waived additional briefing, relying on the arguments and evidence already of record, for the newly instituted challenged claims and grounds. *Id.* at 3.

This Final Written Decision addresses all of the challenged claims and all of the grounds presented in the Petition. For the reasons that follow, Petitioner has demonstrated by a preponderance of the evidence that claim 22 of the '293 patent is unpatentable. However, Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 18, 19, and 29 of the '293 patent are unpatentable.

#### *A. Related Matters*

The parties indicate that the '293 patent is involved in *Image Processing Technologies., LLC v. Samsung Electronics Co.*, Case No. 2:16-cv-00505-JRG (E.D. Tex.) and other proceedings. Pet. 2; Paper 4, 2.

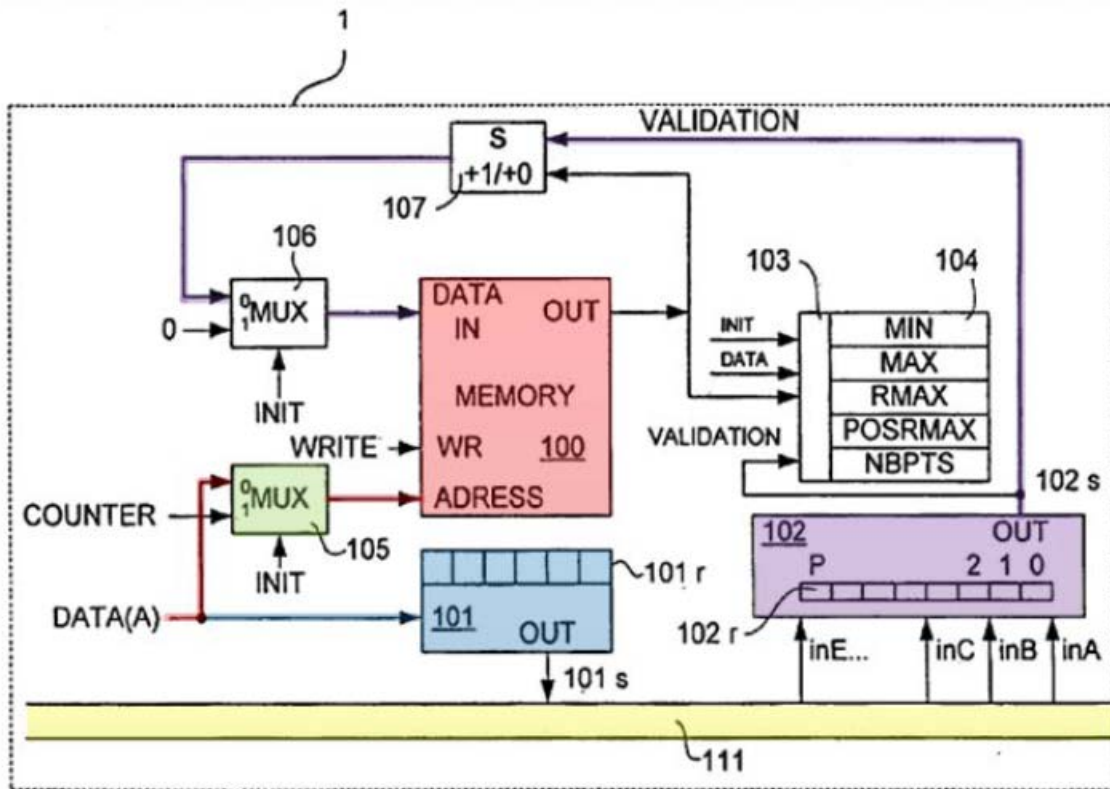
#### *B. The '293 Patent*

The '293 patent describes a visual perception device, including a device for processing image signals using histogram calculation units. Ex. 1001, 1:6–10. Figure 3 of the '293 patent illustrates a histogram

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<sup>1</sup> See <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial>.

calculation unit, and is reproduced below with highlighting added by Petitioner (Pet. 5).

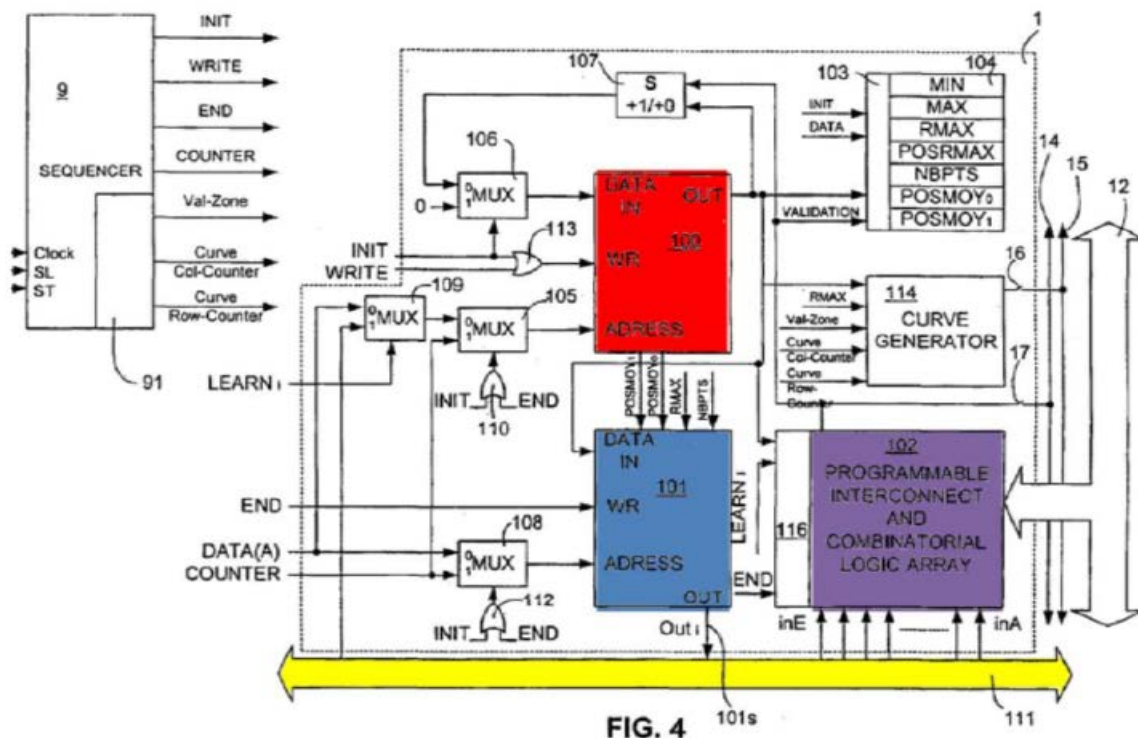


As shown in highlighted Figure 3 above, histogram calculation unit 1 includes analysis memory 100 (in red), address multiplexer 105 (in green), data input multiplexer 106, incrementation unit 107, classifier 101 (in blue), time coincidences unit 102 (in purple), and test unit 103, which is connected to analysis output registers 104. Ex. 1001, 8:37–43, 9:51–54. Output of classifier 101 (in blue) is connected to bus 111 (in yellow). *Id.* at 9:36.

Analysis output registers 104 receive and store statistical information prepared on the basis of the values of parameter A of signal DATA(A) for each frame. *Id.* at 9:51–57. In particular, after processing a complete frame, statistical information representative of this frame is produced and stored in

analysis output registers 104. *Id.* at 10:1–14. This statistical information includes minimum values (MIN) and maximum values (MAX) of the histogram, the number of points (NBPTS) of the histogram, the position (POSRMAX) of the maximum of the histogram, and the number of points (RMAX) at the maximum of the histogram. *Id.* These features are determined in parallel with the formation of the histogram by test unit 103.

Figure 4 of the '293 patent illustrates a self-adapting histogram calculation unit with anticipation and learning functionalities, and is reproduced below with highlighting added by Patent Owner (Prelim. Resp. 7).



According to the '293 patent, in the self-adapting embodiment illustrated in Figure 4, the content of the memory of classifier 101 (in blue) is updated automatically. Ex. 1001, 11:14–29. To implement the

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