

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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INTEL CORPORATION,

Petitioner

v.

FG SRC LLC,

Patent Owner

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CASE NO.: UNASSIGNED  
PATENT NO. 7,149,867

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**DECLARATION OF STANLEY SHANFIELD, PH.D.,  
IN SUPPORT OF PETITIONER'S OPPOSITION TO PATENT OWNER'S  
MOTION TO AMEND**

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## I. INTRODUCTION

1. My name is Stanley Shanfield Ph.D., and I am a Technical Director at Draper Laboratory in Cambridge, Massachusetts. I have been retained to prepare this declaration as an expert witness on behalf of Petitioner Intel Corporation ("Intel" or "Petitioner"). In this report, I provide my opinions concerning the scope and patentability of the amended claims submitted in the Patent Owner's motion to amend the claims of U.S. Patent No. 7,155,867 ("867 patent"). I also provide herein the technical bases for these opinions, as appropriate. This declaration contains statements of my opinions formed to date, and the bases and rationale for these opinions. I may offer additional opinions based on further review of materials presented throughout the course of this proceeding, including any additional opinions and/or testimony of Patent Owner's expert witnesses.

2. For my efforts in connection with the preparation of this declaration, I have been compensated at my usual and customary rate for this type of consulting activity. My compensation is in no way contingent on the substance of my opinions or the results of this or any other proceedings relating to the '867 patent.

### A. Educational and Work Background

3. My educational background and qualifications are set forth generally in my prior declaration supporting Intel's Petition for IPR (*see* EX1006 ¶¶ 3-16) and in my *curriculum vitae* which was submitted as **Attachment A** thereto.

## Declaration in Support of Intel's Response to Patent Owner's Motion to Amend

### **B. Materials Considered**

4. I have considered information from various sources in forming my opinions. The following is a listing of the materials that I considered in forming the opinions in this declaration:

- The '867 patent and its prosecution file history (EX1001, EX1002);
- Intel's Petition for IPR (Paper No. 1);
- X. Zhang et al., Architectural Adaptation of Application-Specific Locality Optimizations, IEEE (1997) (EX1003);
- R. Gupta, Architectural Adaptation in AMRM Machines, IEEE (2000) (EX1004);
- Chien and R. Gupta, MORPH: A System for Robust Higher Performance Using Customization," IEEE (1996) (EX1005);
- My initial declaration submitted with Intel's Petition (EX1006);
- The Board's Institution Decision in this proceeding (Paper 13);
- Patent Owner's Motion to Amend the Claims (Paper 26);
- Declaration of William Mangione-Smith, Ph.D., in Support of Patent Owner's Motion to Amend the Claims (EX2027);
- Patent Owner's Response ("POR") in this proceeding (Paper 34);
- Declaration of William Mangione-Smith, Ph.D., in Support of the POR (EX2028);

## Declaration in Support of Intel's Response to Patent Owner's Motion to Amend

- U.S. Patent No. 5,737,631 to Trimberger ("Trimberger"); and
- Any other materials referenced in this declaration.

### II. LEVEL OF ORDINARY SKILL IN THE ART

5. My opinions in this declaration are based on the knowledge of a person of ordinary skill in the art ("POSA") at the time of the '867 patent

6. My determination of the level of ordinary skill in the art is set forth in my prior declaration supporting Intel's Petition. *See* EX1006 ¶¶ 66-67.

### III. DATA MOVEMENT AMENDMENT

7. I understand that the Patent Owner amended claim 1 to replace the word "retrieves" with "transfers" in the amended limitation, "wherein the data prefetch unit [~~retrieves~~] transfers only computational data required by the algorithm from a second memory . . . and places the [~~retrieved~~] computational data in the first memory." (MTA 4). In my opinion, that amendment changes the scope of the claim because it no longer requires the data prefetch unit itself to do the prefetching from the second memory. Instead, in the Patent Owner's amended claim language, another unit altogether could retrieve the computational data from second memory. In that case, the data prefetch unit merely needs to act as a conduit in *transferring* that data and placing it in the first memory in order to satisfy the amended claim. Thus, a system where the data prefetch unit is not actually required to retrieve the computational data from memory would fall within the scope of the amended claim

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