

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION,

Petitioner,

v.

DIRECTSTREAM, LLC,

Patent Owner.

IPR2018-01594 (Patent 6,434,687 B1)

IPR2018-01599 (Patent 6,076,152)

IPR2018-01600 (Patent 6,247,110 B1)

IPR2018-01601 (Patent 7,225,324 B2)

IPR2018-01602 (Patent 7,225,324 B2)

IPR2018-01603 (Patent 7,225,324 B2)

IPR2018-01604 (Patent 7,421,524 B2)

IPR2018-01605 (Patent 7,620,800 B2)

IPR2018-01606 (Patent 7,620,800 B2)

IPR2018-01607 (Patent 7,620,800 B2)

DECLARATION OF JON HUPPENTHAL

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I. INTRODUCTION

1. I am an inventor of U.S. Patents 6,076,152, 6,247,110, 6,434,687, 7,225,324, 7,421,524, and 7,620,800 and one of the original employees of SRC Computers.

2. Everything in this declaration is based on my personal knowledge and professional judgment. Several of the documents referenced in Exhibit B and attached to this declaration are based on my personal knowledge from awareness of them at the time of their creation, documents I personally created, or business records of SRC Computers/DirectStream, LLC, which I am a custodian of. Furthermore, all photographs in this document were taken by myself at the time with the exception of the SRC-6e, which was taken from the SRC Computers/DirectStream's photo archive.

3. If called as a witness during this matter, I am prepared to testify competently about them.

II. QUALIFICATIONS

4. My *curriculum vitae* is provided as Exhibit A. Relevant highlights are summarized below.

5. I received a Bachelor's Degree in Electrical Engineering from Purdue University in West Lafayette, Indiana in 1979, and am a named inventor on 27 United States Patents, as well as numerous foreign counterparts. These patents cover methods and apparatus for wafer level testing of semiconductors, high-speed

computer interconnect technologies, FPGA-based reconfigurable processor designs, heterogeneous computer system designs, optimal application programming techniques for reconfigurable processors, and methods for the use of heterogeneous computer systems.

6. I also held a Top Secret SCI security clearance with SI TK endorsements. To achieve these clearances, I was subjected to extended background investigations by various U.S. Governmental Intelligence Services, which included polygraph testing.

7. I am currently the Executive Vice-President and Chief Technology Officer for Systems at DirectStream, LLC. In this role I am responsible for, and actively participate in, the design and manufacture of all DirectStream FPGA-based computer systems.

8. In 1996, I was asked by Seymour Cray, the father of supercomputing, to be one of the founders of SRC Computers LLC. I served as the Vice-President of Hardware Development for the company through December of 2003. In January 2004, I became the company's Chief Executive Officer and Chief Technology Officer serving in that position until the company was acquired by DirectStream, LLC in February of 2016. While at SRC Computers I invented, developed and patented the FPGA-based MAP[®] processor, as well as the system architecture incorporating it and methods for its optimal use. I was also responsible for overseeing the entire intellectual property program at SRC.

9. Prior to SRC Computers, I was Manager of Electrical Design initially for Cray Research in 1988 and then Cray Computer Corporation after its separation in 1999. I stayed in this role until March of 1995 and was responsible for the electrical design and testing at the wafer, module and system level of the Cray-3, Cray-4 and Cray-5 Gallium Arsenide-based supercomputers.

10. I have been a member of the Advisory Boards for the School of Electrical and Computer Engineering of the University of Colorado, Colorado Technical University and the Catholic University of America. At the 2010 World Conference in Computer Science, I gave the keynote address and received the Outstanding Achievement Award in recognition of my “leadership and outstanding research to the field of Heterogeneous Systems”.

III. STATE OF THE ART

A. Cray Research and Cray Computer Corporation

11. In order to understand the DirectStream patents under discussion, it is imperative to understand the high-performance computing (HPC) field for which they were developed. For example, as shown in patent number 6,607,152 col. 1 lines 35-49; patent number 7,421,524 col. 1 line 21, col. 1 line 28 – col. 2 line 12; patent number 7,620,800 col. 1 line 39-61; patent number 6,434,687 col. 1 line 20, col. 1 line 52-63. Such an understanding unquestionably starts with Seymour Cray and the Cray family of supercomputer systems.

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