## UNITED STATES PATENT AND TRADEMARK OFFICE

## BEFORE THE PATENT TRIAL AND APPEAL BOARD

PANASONIC SYSTEM NETWORKS CO., LTD.
Petitioner

v.

6115187 CANADA, INC. Patent Owner

\_\_\_\_\_

Case IPR \_\_\_\_\_ U.S. Patent No. 6,844,990 Issue Date: January 18, 2005

Title: METHOD FOR CAPTURING AND DISPLAYING A VARIABLE RESOLUTION DIGITAL PANORAMIC IMAGE

DECLARATION OF SHISHIR K. SHAH, PH.D.



## I, Shishir K. Shah, declare as follows:

- 1. I have been retained by Panasonic System Networks Co., Ltd. ("Petitioner") as an expert in this case.
- 2. I have been asked to provide my opinions concerning the subject matter disclosed in U.S. Patent No. 6,844,990 ("the '990 patent") and in the prior art, in particular relating to image correction methods.
- 3. I have also been asked to provide my opinions concerning the state of the relevant art prior to May 11, 2001, and the level and knowledge of one of ordinary skill in the art in the May 2001 time frame.
- 4. I have reviewed certain prior art references and analyzed whether certain limitations of the claims of the '990 patent are disclosed and/or would have been obvious in view of those prior art references. I have also reviewed portions of the Declaration of Jack Feinberg, Ph.D. (Exhibit 1013).
- 5. My opinions set forth in this declaration are based on my education, training and experience in the relevant field, as well as the materials I reviewed in this case, and the scientific knowledge regarding the same subject matter.

## I. Qualifications

6. I earned a bachelor of science (B.S.) in Mechanical Engineering from the University of Texas at Austin in 1994, a master of science (M.S.) in Electrical and Computer Engineering from the University of Texas at Austin in 1995, and a



Ph.D. in Electrical and Computer Engineering from the University of Texas at Austin in 1998.

- 7. I have over 20 years of experience of in the areas of imaging and image analysis.
- 8. I am currently an Associate Professor in the Department of Computer Science at the University of Houston.
- 9. I am currently serving as the Director of the Quantitative Imaging Lab in the Department of Computer Science at the University of Houston.
- 10. A listing of my publications and research is included in my curriculum vitae, a copy of which is attached as Appendix A.
- 11. I have been retained in this matter by Panasonic System Networks Co., Ltd. ("Petitioner") to provide an analysis of the scope and content of prior art references that existed prior to the earliest date of filing of the patent application underlying U.S. Patent No. 6,844,990 ("the '990 patent"). In particular, I analyzed whether certain limitations of the claims of the '990 patent are described in the prior art references.
- 12. I am being compensated for my work. My fee is not contingent on the outcome of any matter or on any of the technical positions I explain in this declaration. I have no financial interest in Petitioner.



13. I have been informed that the assignee of the patent, 6115187 CANADA, INC., is also known as ImmerVision Inc. (hereinafter referred to as "Patentee"). I have no financial interest in the Patentee or the '990 patent.

## II. Documents Reviewed

- 14. I have reviewed the '990 patent. Exhibit 1001.
- 15. I have reviewed European Patent Publication EP 1 028 389 A2 Shiota ("Shiota"). Exhibit 1008.
- 16. I have reviewed an English language translation of Japanese Patent Application Publication No. 2000-242773 to Matsui ("Matsui"). Exhibit 1010. I have also looked at the original Japanese document. Exhibit 1009.
- 17. I have reviewed an English language translation of Japanese Patent Application Publication No. 11-261868 to Enami ("Enami"). Exhibit 1012. I have also looked at the original Japanese document. Exhibit 1011.
- 18. I have also reviewed U.S. Patent No. 5,686,957 ("Baker") (Exhibit 1002,), U.S. Patent No. 6,128,145 ("Nagaoka") (Exhibit 1003,), and U.S. Patent No. 3,953,111 ("Fisher") (Exhibit 1004).
- 19. As noted earlier, I have also reviewed portions of the Declaration of Jack Feinberg, Ph.D. Exhibit 1013.



## III. The Person of Ordinary Skill in the Relevant Field in the Relevant Timeframe

- 20. I have been informed that "a person of ordinary skill in the relevant art" is a hypothetical person to whom an expert in the relevant field could assign a routine task with reasonable confidence that the task would be successfully carried out. I have been informed that the level of skill in the art can be deduced by examining the prior art references. I have been informed that "a person of ordinary skill in the relevant art" is a hypothetical person who is presumed to have known the relevant art at the time of the invention. Factors that may be considered in determining the level of ordinary skill in the art may include: (1) type of problems encountered in the art; (2) prior art solutions to those problems; (3) rapidity with which innovations are made; (4) sophistication of the technology; and (5) educational level of active workers in the field. In a given case, every factor may not be present, and one or more factors may predominate. In many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.
- 21. I have been informed that the date for determining whether a document or information is considered "prior art" is May 11, 2001.
- 22. A person of ordinary skill in the subject matter claimed and disclosed in the '990 patent would have at least a bachelor's degree in Physics and/or Electrical



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