

U.S. Patent No. 6,943,710  
Declaration In Support Of Petition For *Inter Partes* Review

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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UNIFIED PATENTS INC.

Petitioner

v.

GE Video Compression, LLC,

Patent Owner

Patent No. 6,943,710

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**DECLARATION OF DR. IMMANUEL FREEDMAN IN SUPPORT OF  
PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 6,943,710**

**UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 *et seq.***

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I, Immanuel Freedman, declare as follows:

1. I make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters contained herein.

2. As provided herein, I provide technical assistance in connection with the *inter partes* review of U.S. Patent No. 6,943,710 (“the ’710 Patent”), Exhibit 1001.

3. This declaration is a statement of my opinions on issues related to the patentability of claims 25, 33, and 60-63 of the ’710 Patent.

## **I. BACKGROUND AND QUALIFICATIONS**

4. My relevant qualifications, including my educational background and career history is summarized below. My full curriculum vitae is attached as Exhibit A to this report.

5. I have over 30 years of industry experience, a substantial portion of which was spent working with image and video coding and developing models and simulations to analyze various video and imaging systems. I obtained a Bachelor of Science degree in Physics from the University of Durham, England in 1979. After graduating, I worked as a scientist for the National Coal Board, where I developed and validated a microcomputer system for detecting coalmine fires and heatings. In 1985 I began working as a software engineer for Laser-Scan Ltd. in Cambridge, England.

6. I then obtained a Doctorate in Physics from the University of Durham, England in 1986. After receiving my Doctorate I served as a Research Assistant at University College London from September 1986 to June of 1987, where I developed digital image processing algorithms to improve image and stereo-matching quality for a digital terrain modeling system including software and algorithms for affine transformation, edge filtering, kriging interpolation and image stereo matching with sub-pixel acuity. I continued my work with digital image processing as a Research Associate at the University of Maryland, from June 1987 to September 1988. During my time at the University of Maryland I designed low-complexity algorithms for filtering, segmenting, clustering, and path planning based on digital images organized by quad-tree data structures.

7. From September 1988 to June 1994 I worked as a Senior Systems Engineer for the Hughes STX Corporation. As part of my work, I developed methods for comparison of sky maps from the Cosmic Background Explorer (COBE) mission with sky maps from other missions based on scientific data stored in a spatially referenced database using a quad-tree data structure. In my role I led the Systems Engineering and end-to-end development of a novel system for compressing data that combined scientific modeling with statistical data compression. I was also charged with designing and developing evaluation tools to ensure user-transparent, system-wide compression of a 380 GB dynamic database

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