

**EXPERT DECLARATION OF DR. RAYMOND LEOPOLD**

**FOR**

***INTER PARTES* REVIEW OF U.S. PATENT NO. 7,245,874**

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## I. INTRODUCTION

1. I, Dr. Raymond J. Leopold, submit this declaration in support of a Petition for Inter Partes Review of United States Patent No. 7,243,874 (“the ‘874 Patent”), owned by Elbit Systems Land and C4I Land (“Elbit”). I have been retained in this matter by Baker Botts L.L.P. (“Counsel”) on behalf of Hughes Network Systems, LLC (the “Petitioner”). I am aware that both this ‘874 patent and United States Patent 6,240,073 are subjects of a pending litigation.

2. I make this declaration based upon my personal knowledge. I am over the age of 21 and am competent to make this declaration.

3. The statements herein include my opinions and the bases for those opinions, which relate to at least the following documents of the pending inter partes review petition:

- Ex. 1001 - U.S. Patent No. 7,245,874 by Yehuda Rest et al. entitled “Infrastructure for Telephony Network” (the “’874 Patent”);
- Ex. 1002 - File History for U.S. Patent No. 7,245,874;
- Ex. 1004 - U.S. Patent No. 6,459,708 to Cox (“Cox”);
- Ex. 1005 - U.S. Patent No. 6,731,649 to Silverman (“Silverman”);
- Ex. 1006 - Application No. WO/95/50 29576 to Arimilli (“Arimilli”);
- Ex. 1007 - U.S. Patent No. 7,113,780 to McKenna (“McKenna”);
- Ex. 1008 - Canadian Patent CA 2,290,967 A1 to Henkel (“Henkel”);

- Ex. 1009 - U.S. Patent No. 5,623,532 to Houde, et al. (“Houde”);
- Ex. 1019 - Excerpts of Newton’s Telecom Dictionary (14th ed.);
- Ex. 1020 - U.S. Patent No. 7,065,321 to Lim (“Lim”)

4. My materials considered for forming my opinions herein have included at least the above-referenced documents.

5. Although I am being compensated for my time at a rate of \$480 per hour in preparing this declaration, the opinions herein are my own, and I have no stake in the outcome of the review proceeding. My compensation does not depend in any way on the outcome of the Petitioner’s petition

## II. QUALIFICATIONS

6. I provide the following overview of my background as it pertains to my qualifications for providing expert testimony in this matter.

7. I have over 40 years of experience in satellite system design and implementation and related fields, and am the named inventor on numerous issued patents in the field. I was a co-inventor of the Iridium System, an early and well-known personal communications system. The Iridium System supported the operation of subscriber units across the entire world, and allowed for interconnection of those subscriber units with any other Iridium phone, cell phone, or wired phone utilizing the global Public Switched Telephone Network (PSTN). Iridium was put into operation on November 1, 1998 and has operated

continuously since then. The backbone of the Iridium system is an operational constellation of 66 satellites that were put in orbit beginning in May 1997. These satellites have far exceeded their contracted lifetimes, due in no small part to the robustness we had built into their design. Generally, there was a flurry of technology development, in the area of satellite construction and communications, leading up to and around the time of the launch of the Iridium system in late 1998 when it became operational commercially.

8. The Iridium System was built and launched by Motorola, Inc., a company where I worked as an engineer developing and producing satellite communications and telecommunications systems. While at Motorola, I served as Chief Engineer of Motorola's Satellite Communications Group, and was eventually promoted to the position of Vice President and Chief Technical Officer of that business unit. My primary responsibility while at Motorola was the design and implementation of the Iridium Satellite Program that culminated in the deployment of the Iridium System described above. This work led to the issuance of a number of the patents that I am named as an inventor on. In addition to my work at Motorola, I also served as an "unofficial member" of the United States delegation that attended the ITU (International Telecommunications Union's) World Administrative Radio Conference (WARC' 92) from Feb 3, 1992 to Mar 3, 1992 in Torremolinos, Spain, where the world's first allocation of electromagnetic

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