



## **RAYMOND J. LEOPOLD, Ph.D.**

### **MASTER INVENTOR FOR MOTOROLA GLOBAL TELECOMMUNICATIONS, ENGINEERING HALL OF FAME, LAUREATE FOR SPACE**

Dr. Raymond J. Leopold is the co-creator of the Iridium System, the first realization of worldwide personal communications; he led the Iridium technical effort from conception to operation. He was the Vice President and Chief Technical Officer of the Motorola Satellite Communications Group, and then the VP & CTO of the Motorola Global Telecommunications Solutions Sector (the original builder of cellphone systems). Motorola named him both a Distinguished Innovator and a Master Innovator. It then conferred upon him the title of Dan Noble Fellow, the company's highest technical honor.

After graduating from the USAF Academy he served two tours in the Pentagon, one on the Air Staff and one in the Office of the Secretary of Defense, as well as military tours at both the Air Force Weapons Laboratory in New Mexico and the Air Force Electronics Systems Division in Massachusetts. He was also an engineering professor at the United States Air Force Academy.

He was the Jerome C. Hunsaker Visiting Professor of Aerospace Systems in the Department of Aeronautics and Astronautics at MIT in Cambridge, Massachusetts, where he had also delivered their Golden Anniversary Minta Martin Lecture in 2004. He has a Ph.D. in Electrical Engineering from the University of New Mexico and a Master of Electrical Engineering degree from North Carolina State University. He is a distinguished alumnus of the University of New Mexico School of Engineering and was inducted into the NC State University Electrical and Computer Engineering Hall of Fame.

Dr. Leopold is an *Aviation Week and Space Technology* 'Laureate for Space' and is an inductee in their Hall of Fame at the National Air and Space Museum. He has an honorary Doctorate of Telecommunications Management from the South Dakota School of Mines and Technology. The Mobile Satellite Users' Association has presented him with its Pioneer Award. He is a Life Fellow of the IEEE and a recipient of its Third Millennium Medal. He is also a recipient of the American Institute of Aeronautics and Astronautics (AIAA) Biennial Communications Award. Dr. Leopold holds 27 U.S. patents and 75 patents in other countries. He and his wife live in Northwest Montana, where they raised their six children.

## **For Those Who Believe**

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*"For those who believe, no proof is necessary; for those who disbelieve, no proof is possible."*

The sentiments in this quotation have been attributed to Ignatius of Loyola, Stuart Chase, Franz Viktor Werfel, and probably many others over the past five centuries. But whoever said it, I accept this quote as being fundamentally sound.

So, why then should I embark on such a fool's errand? Well, if disbelievers are reading this, they are demonstrating some intellectual curiosity and are being somewhat open to the possibility of learning something. Believers, too, are often curious, and hopefully my few words here will enhance their beliefs and prepare them better for further meditations of their own.

My expertise is in engineering, particularly in the fields of communications and telecommunications, where we build systems for the betterment of mankind, and where we talk in terms of signal-to-noise ratios, protocols, attributes, interference, and bit-error rates. And, as an engineer, I'm interested in results. I want to use what I've learned for the betterment of people, like my family, friends, and associates, but also for people whom I'll never meet.

So let me describe something I've come to appreciate as a human being living in our three-dimensional world, where we only know how to transit time in an apparently-forward direction, to address this issue at hand.

Those among us who believe in God either have been inspired with a special gift from God and/or have been able to come to appreciate the existence of God by submitting to our own, personal humility (not unlike a telecommunications attribute/protocol), oftentimes by the Awe we recognize (with a sufficient signal-to-noise ratio) from Goodness we have known and/or from the vastness and order of the universe around us. Humility has allowed us to recognize that the One Most Omnipotent Being is neither ourselves nor our worldly desires, nor any lesser god, but is instead that One Most Superior Being who, timelessly, creates it all. Without humility (like a noisy communications channel) recognition becomes difficult.

Disbelievers and believers alike, begin with a Gedanken experiment (a thought experiment) where you imagine (using attributes and protocols from your own life experiences) what an All-Powerful, All-Loving, Most Superior Being would be, and how that Being would view you – You, with all of your faults and limitations, but with all of your positive attributes, as well. Now, try to view yourself in the same way as you would imagine an Omnipotent, All-Knowing God viewing you, while you block out everything else. That image should be You in your truest humility, nothing more, nothing less. Be honest, let yourself go, and let your innermost and humble 'self' go where it should go. While meditating, correct whatever you feel needs correction (as a most loving parent would correct you) and then repeat the Gedanken experiment. Correct and repeat, until you find the solace and peace of knowing you are where you ought to be.

Let The Awe be revealed!