# EDWARD A. MARTIN, PhD

Dr. Martin is a Senior Training Systems Analyst with VSAT, and is the Principal Investigator on an innovation research program to develop a low cost means of providing onset acceleration cues to a pilot as part of real time immersive training in a flight simulator; in support of the Joint Strike Fighter.

Dr. Martin has over 32 years of experience in flight training simulation, both as an engineer with Link Simulation and with the US Air Force at Wright-Patterson Air Force Base. His primary interest is the area of motion and force cueing, and he has earned an international reputation in the areas of whole-body motion and dynamic seat cueing.

Immediately prior to leaving the Air Force for the private sector, Dr. Martin managed Air Force Research Laboratory (AFRL) programs to develop technologies enabling systems engineers to better consider the human operator's cognitive and physical limitations and capabilities in the design of complex systems. He responded to numerous requests for support and consultations on motion and force cueing, including the Federal Aviation Administration (FAA), NATO, industry, and the American Institute of Aeronautics & Astronautics (AIAA) Modeling & Simulation Technical Committee.

In prior Air Force assignments, Dr. Martin was the motion system expert for the Air Force training system acquisition community at the Aeronautical Systems Division (now Center). Here he played a key role in developing Air Force engineering and management training system policies and concepts, including support of the Air Force goal to bring motion simulation requirements in closer alignment to those of the FAA. He also served as the ASC Chairman of the Simulator Fidelity Training Effectiveness Working Group for ten years. This working group was chartered to identify, foster, and coordinate research addressing simulator cueing deficiencies potentially leading to degradation of training effectiveness. Members included participants from DoD laboratories, NASA, and the major commands. Research included projects dealing with drive laws for cueing systems, tolerances for time delays, simulator sickness, and visual cues required to support low-level flight simulation.

Directly applicable to his VSAT assignments, Dr. Martin was the Principal Investigator for an AFRL-supported study to determine whether a seat-cuing mechanism could effectively be substituted for full platform motion in flight simulators. This research used the first Air Force dynamic seat having a frequency response sufficient to provide timely onset cues, and the findings of the study are extremely pertinent to his VSAT work.

Dr. Martin holds a B.S. and M.S. in Electrical Engineering from the Virginia Military Institute and Syracuse University, respectively, and earned his Ph.D. in Biomedical Engineering from the Ohio State University. Among his many awards is the prestigious AIAA DeFlorez Training Award. He has authored numerous technical papers and has been an invited speaker/instructor at several seminars, workshops and technical short courses on motions cueing.