Managing the Integration and Harmonization of National Air Space for Unmanned and Manned Systems
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This dissertation examines the leadership challenge created by the requirement to integrate unmanned aerial vehicles (UAVs) into the national airspace system (NAS). The lack of UAV-related federal rules and regulations is a primary factor prolonging this integration. This effort focuses primarily on the leadership portion of the solution and not the technological requirements. The research explores an adaptation of the complexity theory that offers a potential leadership framework for the government, industry, and academia to use for achieving the full integration of UAVs into the NAS. Due to the large number of stakeholders and the multitude of interrelated issues, a complexity-theory-leadership methodology was created and examined as a potential way to help the FAA accelerate their rule-making efforts.

This dissertation focuses on United States UAV issues. The United States is one of the leaders in the unmanned systems arena, to include the first significant use of recoverable autonomous weaponized systems in combat. Issues such as airspace, airworthiness, social issues, privacy issues, regulations, and the lack of policies, procedures, or governance are universal for all countries that are active in this technology area. This qualitative dissertation makes use of the grounded theory methodology as it combines a literature review and research along with interviews with subject matter experts, and information gained from attending UAV related gatherings/discussions. The investigation uncovered significant FAA process impediments as well as some possible break through concepts that could work well with the complexity-theory-leadership methodology.

Keywords: Complexity theory, leadership, change management, UAV, unmanned aerial vehicle, National Airspace, NAS, FAA, Federal Aviation Administration
SPEAKER BIOGRAPHY

Dr. Hans C. Mumm was a mustang, serving eight years in the enlisted ranks and over eight years as an officer in the US Army before becoming a wounded warrior and being medically discharged in 2010. Leadership is his passion and has been the key to his success. Dr. Mumm is a proven leader in a diverse set of fields including technical investigation, scientific research, military intelligence and small business owner. He is a published researcher in both the scientific and social science arenas.


Dr. Mumm’s unique skill set is a hybrid resulting from on the ground tactical combat experience and many years spent in strategic homeland security roles consulting on policy creation and fielding new technologies for the US Government. His UAV and robotics policies have focused on determining the specific uses, exceptions, and allowances; including studying the unintended consequences, future uses and misuses of such technologies.