DR. HANS C. MUMM

hans@hansmumm.com • 703-303-1752

EDUCATION

Colorado Technical University, Colorado Springs, CO 2015
Doctorate of Management, Doctorate Candidate
Concentration: Homeland Security
Dissertation: Managing the Integration and Harmonization of National Airspace for Unmanned and Manned Systems

American Military University, Manassas VA 2009
M.S., Strategic Intelligence

Chadwick University, Chadwick, AL 1997
B.S., Business Administration

GRANTS AND SPONSORSHIP

Army Aviation and Applied Technology Directorate (AATD) Agreement Number# W911W6-06-2-0009, Victory Systems, LLC. ($3, 200,000) — 2006

Virginia's Center for Innovative Technology CIT Award#TRA-99-004 Advanced Multi-Fuel Systems, Inc. ($100,000) — 1999

US Department of Transportation, CRADA Award# 97-CRDA-0112 — 1997

CIVILIAN AWARDS AND DECORATIONS

Exceptional Performance Award-with monetary bonus-US Government	Jul 2014
Secretary of Defense Medal for Exceptional Public Service	Oct 2010
Recipient as one of the "Ten Outstanding Young Americans"	Jun 2005
Finalist for the ROA Outstanding Junior Officer (Strom Thurmond Award)	Sep 2004
Outstanding Young Virginian, Virginia Jaycees	Oct 2003
National Defense PAC "American Patriot Ingenuity Award" for service during "Operation Iraqi Freedom"	Mar 2003

MILITARY AWARDS AND DECORATIONS

Twenty three Personal military ribbons/medals including combat medals	1994-2010
Six unit medals/citations	1994-2010
Two Directors Awards, Defense Intelligence Agency (DIA)	2001-2010

PROFESSIONAL EXPERIENCE

Branch Chief, Continuous Monitoring, US Government Agency, CIO,
In fulfilling of Joint Duty requirements for Office of the Director of National Intelligence, GS-15 — **Oct 2013 to Present**

Responsibilities:
- Provide leadership, guidance and standards leading six business areas for the agency including: Continuous Monitoring (CM) Outreach and Assessment, Continuous Monitoring Analysis, Enterprise Audit Analysis, Wireless Watch (rouge wireless detection), Federal Information Security

Management Act (FISMA Scanning), and System and Application Security Patch Management Board.
- Information Systems Security Manager for the Director of Agency responsible for information security program, policies and procedures for the sixteen organizations supporting the Director's area.
- Create and lead the development and execution of step 6 of Intelligence Community Directive 503 including continuous monitoring policies, systems, and reporting mechanisms for CIA.
- Oversee the development and execution of a broad range of policies, processes, and guidance regarding information technology security.
- Branch Chief responsible for leading more than 20 Contractor and Government resources who analyze asses and mitigate issues with information technology systems.
- Program manager in charge of three separate multi-million dollars services contracts, and a wireless laboratory.
- Provide leadership in aspects of budgeting, staffing, contracts, government staff development, and outreach.

Accomplishments:
- Received awards and accolades for creating and delivering a first of its kind Continuous Monitoring system (processes and technologies) for security controls using technical means – first known end to end continuous monitoring system in the intelligence community.
- Developed requirements, growing an architecture, and developing documentation supporting Agency CM operations
  - o Scans enterprise systems and networks
  - o Collects compliance data from platform management systems
- Implemented and operated a continuous monitoring analysis function that:
  - o Satisfies the requirements of ICD503, NIST SP800-53 and DNI Guidance in support of the Agency Risk Management Framework in support of network defense and counterintelligence functions, proactively analyzes compliance and vulnerability data
  - o Analyzes and tracks CM data and provides Agency management a view of system, business line (directorate), and enterprise risk
- Supporting continuous system authorization by tracking system risk and compliance over time
- Created and communicated budget for startup branch receiving management concurrence and funding to support the resource requirements and diverse missions of the Continuous Monitory Branch
- Increased budget year over year by 50% and staffing levels by 150%
- Proposed and assisted in authoring multiple Agency Community Standards and Instructions to protect and defend the IC and agency IT networks.
- Implementing a Wireless assessment and perimeter monitoring function that satisfies Federal Information Security Management Act (FISMA) and Agency technical security requirements
- Supporting Agency mobile computing and wireless networking initiatives by providing security engineering expertise
- Performing monthly enterprise FISMA scans and reporting results to CIO
- Implementing and operated an enterprise audit analysis function that:
  - o satisfies the requirements of ICS 500-27
  - o in support of network defense and counterintelligence functions, proactively analyzes enterprise audit collections for incidents of misuse, compromise, or intrusion
  - o analyzes audit for application issues and provides application developers assistance as necessary

Lead Intelligence Community Policy Officer, IC CIO, Office of the Director of National Intelligence,   **Dec 2012**

GS-15   **to Oct 2013**

Responsibilities**:**

Lead and oversee the development and execution of a broad range of policies, processes, and guidance regarding information technology security including but not limited to: information technology information security and risk management, computer network defense, enabling functions and intelligence disciplines, as well as the integration and adoption of the aforementioned areas within internal government policies and practices. Charged to communicate these policies, processes, and guidelines to community stakeholders.

- Serve as the liaison to the Committee on National Security Systems (CNSS) and National Institute of Standards and Technology (NIST) committees.
- Participated in multiple working groups on related directives, policy guidance, standards, and initiatives addressing the IC-CIO equities.
- Communicated and directed staff actions with Intelligence Community (IC) CIO leadership/ODNI/ and other IC members.

Accomplishments:

- Negotiated and coordinated to full concurrence for four CNSS policies and two special projects including two policies that had been stalled for more than 18 months.
- Researched, authored and successfully negotiated statement of work and final contract for an IC IT compliance system after contract had lapsed by 6 months and both government and the service provider were frustrated with each other and the process.
- Personally selected by Data Management Division Chief to lead the team to answer Congressionally Directed Actions (CDA) allowing Congress to understand certain efforts within the IC which allowed for funding to be restarted to those efforts.
- Proposed and assisted in authoring two Intelligence Community Standards (ICS) to protect and defend the IC and DOD IT networks.

Division Chief of Cyber Network Defense, CIO, Office of the Director of National Intelligence,GS-15   **Dec 2010-Dec-2012**

Responsibilities:

- Oversaw and directed the ODNI CIO's computer network and defense (CND) and Intelligence Community Incident Response Center (IC-IRC) Programs.
- Enhanced the Intelligence Community's CND capabilities by leading two of the twelve major USG cyber security initiatives in support of the Comprehensive National Cyber Initiative.
- Managed the integration of cyber capabilities to detect and counter adversary cyber threats to the IC's information environment.
- Transitioned the IC-IRC from passive reporting to real-time network monitoring with security awareness.
- Provided leadership and directed IC CIO's Integrated Computer Network Defense initiatives implemented in 2012.

Accomplishments:

- Oversaw 42 programs and initiatives under the Comprehensive National Cyber-security Initiative (CNCI) and then lead the transition of all programs to the owner of record by Congressional mandate. For additional information, see Comprehensive National Cybersecurity Initiative: Legal Authorities and Policy Considerations (#R40427).
- Supervised numerous contracts and drafted contract documentation including award fee justifications for contractors who support the OCIO/ ODNI missions.
- Assessed staffing requirements in relation to current and future staffing needs and made the appropriate budgetary adjustments.
- Applied multidisciplinary knowledge of laws and regulations, principles and policies to create solutions to meet the needs of the organization.
- Earned certificates of appreciation from ODNI/ICCIO for ICD 502 Concept of Operations.

- Division Team recognized for successfully creating, planning, and executing a national level cyber exercises that tested the Intelligence Community Directive (ICD) 502 CONOPS.

Adjunct Professor, American Military University   **Sep 2011**
                                                                                        to Present

Responsibilities**:** Adjunct professor teaching in the Security and Global Studies undergraduate school instructing: "Introduction to the Intelligence Community", "Intelligence Collection and Analysis" and "Intelligence and Assassination".

Accomplishments:
- Highly regarded instructor who maintains a full student enrollment.
- Able to teach a diverse group of students from a number of countries around the world and successfully create a community of interest (COI) that engage the students on multiple levels.
- Utilize teaching techniques that foster academic discussions while simultaneously fostering mutual understanding and respect for the individual students and their viewpoints.
- Strong student following due to quality of instruction and ability to provide real world examples.

Emerging Technology Officer/ Budget Officer, Defense Intelligence Agency   **Apr 2007**
Captain, US Army, Mobilized Reservist Aug 09 to Oct 10-Assigned to the Warrior Transition **to Oct**
Unit/Wounded Warrior Unit-Fort Belvoir, VA-Intern at NRO/ ODNI/ ICCIO Staff Officer- **2010**
Interagency IC Liaison
Responsibilities:
- Testing and evaluation of current and future technologies for effectiveness and relevance to the DIA mission activities.
- Responsible for a $10M+ annual budget and spend plan, implementing the FAR/DFAR.
- Worked closely with DIA section heads drafting initial operations capabilities/technology requirements and provided feedback on available programs and technology (risk vs. gain, create risk reduction plans)
- Assessed future threat capabilities stemming from innovative or disruptive applications of both mature and emerging technologies that could have adversely affected the unit's mission.
- Maintained cognizance over the Defense Trade Controls (ITAR) and the import/export regulations ensuring unit compliance with laws and regulations.
- Maintained control and knowledge of all funding requirements and ensured appropriate input was provided to DIA's budget formulation, spend plan and unfunded requirements.
- Ensured appropriate input was provided for POM cycle input.
- Authored test plans and approach documents, test methodologies, provided metrics and analysis.
- Drafted project management plan and maintained the requirements traceability matrix.
- Certified Contracting Officer Representative who is able to assess the situation quickly and take decisive actions. Able to create flexible solutions based on unique circumstances that improved contract effectiveness.

Director of Special Projects, Unmanned Vehicle and Robotics (Principal),   **Mar 2000**
Victory Systems, LLC (Concurrent)   **to Present**

Responsibilities**:**
- Received grant award #W911W6-06-200009 for a Technology Investment Agreement to pursue the Dual Configuration Vertical Takeoff and Landing Air Vehicle (DCAV) valued at $3.2M.
- Funded and assisted in the design and creation of a portable FAA certified helicopter flight simulator
  (http://www.whirlybirdsimulator.com)
- Received certification as an SDVOB business February 14, 2013 by the Department of Veterans Affairs, Center for Veterans Enterprise (CVA)
- Researched worldwide business development opportunities as well as regulatory and legal issues involving technology sales and technology transfer for foreign governments and private customers.
- Evaluated new sensor systems for UAV and robotics to extend mission capabilities i.e.: EO/IR, Low-light cameras, laser designation/range finder, NBC, and flight control options.

- Evaluated systems architecture development, test plans, and disaster recovery programs.
- Managed relationships to establish partnerships with: Center for Innovative Technology, Virginia Tech, Oak Ridge National Labs, National Security Agency, Federal Aviation Administration, Naval Research Laboratory and the US Army Aviation Technology Directorate. Regularly briefed members of Congress, Senate, and Pentagon Officials and associated staffs.
- Authored Congressional level papers including the draft legislation titled "Establish a National Inter-Agency Working Group to Develop Policies and Protocols on the Use of UAVs and Robots" cultivated support from the armed services and the US House and US Senate.
- Served as principal or co-principal investigator conducting major research on the use, policies, and laws of UAVs for military, law enforcement, and Homeland Security concerns.

Senior Intelligence Officer, DNI Liaison, CIO –Information Sharing (contractor)   **Jun 2006**
Nortel Government Solutions   **to Dec 2010**

Responsibilities**:**
- ODNI/ICCIO liaison to the DIA for creating solutions for IC-wide information-sharing issues.
- Assisted DIA and other IC members with Information Sharing Initiatives, and helped align those initiatives to meet the ODNI/CIO's mission objectives.
- Identified new and emerging technologies to assist the CIO in the mission space including but not limited to, web enabled collaboration tools and knowledge management tools.
- Prepared and briefed innovative technologies for the consideration of senior management within the OCIO.
- Presented the DNI requirements at customer requirements gathering meetings and then assisted in converting collected user requirements into technical requirements that were implemented by other teams within CIO's office.

Accomplishments:
- Demonstrated intellectual leadership and understanding of current national public policy to create actionable technology implementation plans.
- Researched and evaluated technologies for cross-domain security and identity management that were being piloted for integration into the IC IT security and information assurance program.
- Expert knowledge was utilized to draft problem resolution papers using organizational compliant technologies.
- Awarded Certificate of Achievement for advancing ODNI/ICCIO information sharing initiatives.

Senior Intelligence Officer, DIA, UFAC, (Contractor)   **Feb 2006**
MPRI   **to May 2006**

Responsibilities**:**
- Conducted analysis to detect, characterize, assess and defeat, foreign hardened and deeply buried underground facilities (UGFs).
- Targeted UGFs associated with terrorist organizations that were designed to provide protection and concealment for critical assets.
- Created knowledge management database for the Historical Underground Exploitation (HUGE) effort.
- Developed analytical efforts to conduct in-depth, all-source research on foreign UGFs and produce facility folders, to support detection and characteristics of specified foreign underground facilities and assessments of selected foreign UGF programs.

Accomplishments:
- Recognized by decision makers for expertise in Middle Eastern UGF location and characterization due to first-hand knowledge having been physically in the tunnels in Iraq and other locations.
- Created actionable intelligence products that were later adopted to create new policies for US and its allies during the Iraqi government coalition transition.
- Led a multi-intelligence collection effort to characterize and locate specific underground facilities within the Middle East.

- In the characterization and search phases for UGF was routinely relied upon for expert judgment and discretion when reporting findings through IC channels and congressional data requests.
- Awarded Certificate of Achievement for Iraq UGF products authored and published.

National Reconnaissance Office (NRO) Senior Threat Analyst (Contractor), ManTech

May 2005
to Feb 2006

Responsibilities:
- Provided full scope intelligence analysis for battle staff planning concerning battlefield intelligence preparation.
- Supported contingency operations concerning the overhead systems and nodes involving SIGINT, IMINT, HUMINT, and CI.
- Responsible for coordinating technical support to author, edit, and staff publications, documents and papers concerning joint doctrine, tactics, techniques, and procedures.

Accomplishments:
- Researched and characterized threats to US space system that were acted upon by the NRO Assistant Director and briefed to NRO Director.
- Drafted documents that provided analysis on multiple security threat technologies.
- Assigned to a team of more than 100 experts who evaluated and critically reviewed a range of products and services for numerous compliance requirements and then made independent judgments based on researched results. This study created solutions to current and future threats to US space systems.

Counter Proliferation Office /Defense Intelligence Analyst
Captain, US Army, Mobilized Reservist

**Feb 2003
to Feb
2005**

Responsibilities:
- Authored and co-authored numerous intelligence products that had a direct effect of the outcome of Operation Iraqi Freedom (OIF) including the famous "Iraqi Leadership Deck of Cards", cargo pocket flip books, cross reference books in Arabic and English along with posters and other materials used by US and Coalition Special Forces, and several Information Operation campaigns.
- Briefed and advised officials on matters directly related to data development for newly developed analytic architecture to mine actionable intelligence for use against WMD, counter proliferation, advanced conventional weapons proliferation, leadership analysis, terrorism finance, and counter-terrorism.
- Conducted collections missions and mission support with HUMINT, CID, and CI operators on the ground in Iraq.
- Drafted and coordinated risk reduction/risk mitigation plans.
- Drafted software/hardware test plans for integration of new technology, evaluated and integrated new technology to solve individual customer needs; coordinated, wrote and tested the disaster recovery plans for applications within directorate.

Accomplishments:
- Created and lead the "most successful information operations campaign in the history of DIA" (quoted from award given to me and my team) creating intelligence products that had a direct effect of the outcome of Operation Iraqi Freedom including the famous "Iraqi Leadership Deck of Cards".
- Wrote numerous management plans and schedules to keep team on track for milestone completion.
- Coordinated with HUMINT operators and the IC to create a comprehensive Iraqi Leadership Database, including 3,000 personalities to support CENTCOM during Operation Iraqi Freedom (OIF) - the first one known to exist in the IC.
- Recognized as a subject matter expert in terrorism and counter-terrorism intelligence gathering tracking and analysis. SES evaluation states, "he does not think outside of the box, he looks far beyond the box".

- Exercised discretion while leading multi-disciplined, multi-national team to achieve wide spread results.
- Awarded three Joint Service Commendation Medals, three Army Achievement Medals, Army Reserve Component Achievement Medal, Global War on Terrorism Medal, three Unit Meritorious Achievement medals, and the Military Outstanding Volunteer Medal.

Advanced Multi-Fuel Systems, Owner / CEO / President / Operator   **Dec 1997 to Feb 2003**

Responsibilities:
Created firm for research and develop environmental and defense technology for the ground-based and aviation industry. This technology created and built the provisionally patented Universal Fuel Control System and was tested with independent research and testing completed by Virginia Poly Technical as well as the Federal Aviation Administration. The system has two parts; an automatic fuel recognition and analysis system, coupled with a neural network (artificial intelligence) computer that reads the fuel analysis and changes the engine's operating parameters to match the fuel being used.

Accomplishments:
- Received CIT Award # TRA-99-004 to work with Virginia Tech, and Oak Ridge National Labs to create the world's first and only multiple fuel optimization system using artificial intelligence and pumping sensors in a unique way.
- Served as the principal investigator and creator of the Advance Multiple Fuel Optimization System. This new technology was created by using my own original research and was combined with applications from technology transfers from Oak Ridge National laboratories. This created the world's first and only system capable of detecting the specific types and grades of fuel an engine was operating on and then change the engine operating parameters to match the fuels at optimal levels.
- Flew the world's first and only helicopter that could fly on five separate fuels without engine modifications.

Other Experience – U.S. Army   **Feb1994 – Oct 2010**

Spent 16 years, 9 months serving the US military beginning as a Private First Class and retiring as Captain. Key positions included: Us intelligence Community, multiple combat tours, and instructed multiple courses, Medically retired as a wounded warrior in 2010.

SELECTED PUBLICATIONS AND PRESENTATIONS

Mumm, Hans C. Applying Complexity Leadership Theory to Drone Airspace Integration, publisher: Motivational Press   Jul 2015

Mumm, Hans C. Managing the Integration and Harmonization of National Airspace for Unmanned and Manned systems, publisher: Colorado Technical University (CTU) publication number: 3646158   Aug 2014

Mumm, Hans C. Embracing The Need For Leadership in the New World of Unmanned Vehicles and   Sep 2011

Robotics, publisher: ISIS (ISSN:2332-0311)

Radio interview with Al Cole on his show "People of Distinction" -CBS radio affiliate (author of Chicken Soup for the Soul)-Applying Complexity Theory Leadership to Drone Airspace Integration	Aug 2015
Radio interview- Hollis Chapman Radio Show-"How to Pursue Your Passion and Make Money Doing What you Love"- Applying Complexity Theory Leadership to Drone Airspace Integration	June 2015
Guest speaker-INFOWARCON-Applying Complexity Leadership Theory to Drone Airspace Integration	Apr 2015
Live Chat-Combatting Human Trafficking-CTU	Feb 2015
Live Chat-Embracing the Need for Leadership in the New World of Unmanned Vehicles and Robotics	Aug 2014
Human Trafficking: The Money, Power Terrorism Links, National Youth Leadership Forum	Feb 2010
Army Reservist: Consequences and Opportunities of the Spiral Effects of Technology & The Interconnectivity of the Leadership Decisions, National Youth Leadership Forum	Oct 2009
Information Operations Response to Russian Invasion, Republic of Georgia	May 2009
Emerging/ Disruptive Technologies: The Art of the Possible Striving to Not Confuse Activity with Results- The Forced Obsolescence of Enemies Systems and Tactics	Jun 2008
Development of National Policy on Unmanned Vehicles and Robotics	Sep 2005
The Iraq War-Are We Winning?, American Legion	Jul 2004
Reflections of a Modern Combat Veteran-Operation Iraqi Freedom, Reserve Officers Association	Apr 2004

PROFESSIONAL AFFILIATIONS

Reuters Researcher ID: B-8496-2013	2013 to Present
Open Researcher and Contributor ID (ORCID) member	2013 to Present
Academy of Management	2012 to Present
Ambassador, American Military University	2009 to Present
Treasurer, National Military Intelligence Association, Potomac Chapter	2001 to 2006
Reserve Officers Association	Life Member
Veterans of Foreign Wars, Post 9972	Life Member
The Military Order of the World Wars, Life Member, Board Member	2006
American Legion, Post 0364	2001 to Present
Senior Staff Advisor, National Defense Political Action Committee	2002 to 2004
Humanitarian Aid, Medical Equipment, Vietnam	1999 to 2005
National Defense Industrial Association	2000 to Present
Buffalo Soldiers 9&10th (Horse) Calvary Association	2009 to Present

PROFESSIONAL CERTIFICATIONS

Contracting Officer's Technical Representative, Defense Acquisition University	2009
Biological, Chemical, Nuclear, Radiological, and High Yield Explosives, Uniformed Services University	2008
Nuclear, Radiological, and High Yield Explosive, Uniformed Services University of the Health Sciences	2007
Bioterrorism and Homeland Security, Uniformed Services University of the Health Sciences	2007
Electronic and Technical Surveillance, National Technical Investigators' Association	2007
Chemical Warfare and Emergency Management, Uniformed Services University of the Health Sciences	2006
Rotorway Helicopter Construction, Rigging and Maintenance, Chandler, AZ	1996
Private Pilot's License Cert#2454351 Federal Aviation Administration	1991
Certificate of Management, Franklin Pierce College, Rindge, NH	1992