UNITED STATES ARMY
SPECIAL OPERATIONS COMMAND

FY20 Priority Research Topics

11 July 2019

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY
SPECIAL OPERATIONS COMMAND
2929 DESERT STORM DRIVE
FORT BRAGG, NORTH CAROLINA 28310-9110

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MEMORANDUM FOR Record

SUBJECT: FY20 ARSOF Priority Research Topics List

1. This memorandum serves to approve ARSOF priority research topics for FY20. These priorities inform future force development related analyses such as USASOC led Capabilities Based Assessments, ARSOF graduate student research, Rand Studies, etc.

2. Topics reflect ARSOF high priority issues, in particular those best suited for academic discovery and are developed via an assessment of strategic guidance, the contemporary and future operating environment, current and projected knowledge shortfalls, and current or projected capability shortfalls.

3. The (21) enclosed priorities are aligned to (5) categories (ARSOF Operating Concept, Operations, Contact Layer, Technology, and Title Ten Functions) and each includes a broad description of the problem set or hypothesis as well as a list of specific research questions.

4. The ARSOF Priority Research Topics List is published annually by the Education Department, 2nd Special Warfare Training Group at the following link: https://www.soc.mil/swcs/SWEG/ResearchPapers.htm.

5. Point of contact for this action is Mr. Larry Deel, USASOC DCS G9 at COMM 910-396-0476, or email larry.deel@socom.mil.

Encl

FRANCIS M. BEAUDETTE
Lieutenant General, USA
Commanding

Foreword

The following research topics reflect Commanding General, US Army Special Operations Command (USASOC) priority issues, in particular those best suited for academic study. These topics support the FY20 USASOC Campaign of Learning and were developed via an assessment of strategic guidance, the contemporary and future operating environment, current and projected knowledge shortfalls, current and projected capability shortfalls, and input from USASOC HQ staff and Component Subordinate Commands/ Units (CSC/Us).

The research topics are updated annually as appropriate. They inform USASOC internal analyses as well as nominations for RAND Studies, the US Army War College Key Strategic Issues List (KSIL), Joint Professional Military Education (JPME) Topics, Joint Special Operations University (JSOU) Special Operations Research Topics list, Army Special Operations Forces (ARSOF) graduate student thesis topic selection, and other academic research.

Results spiral into the USASOC Strategic Planning Process as appropriate to inform strategic resourcing and/or future force development decisions, or sometimes simply add to the enterprise-wide body of knowledge in support of the Campaign of Learning.

For additional information on any of the topics, please contact the USASOC DCS G9 study coordinator, Mr. John (Brooke) Tannehill at 910-432-2328/ john.tannehill1@socom.mil or Mr. Damon Cussen at 910-396-0493/ damon.cussen@socom.mil.

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ARSOF Operating Concept for 2028

1. Optimizing the ARSOF Soldier for the Future Operating Environment (FOE). ARSOF requires new operating concepts and associated capabilities to confront a broad range of anticipated future security challenges. In an increasingly complex and globally-scaled operating environment characterized by exponential advances in technology, an accelerating rate of change, hyper-enabled adversaries, etc., the Soldier, the cornerstone of ARSOF's contribution to the Nation, must correspondingly optimize to confront these challenges.

• What enhancements in competency, cognition, performance, and total health increase the ability of the future ARSOF Soldier to successfully navigate changing human terrain and new technology landscapes?

• How will the ARSOF Soldier seamlessly navigate the digital/ technology space while remaining fully proficient in "analog" operations?

• How should regional alignment, language expertise, and cross-cultural agility evolve?

• What legal or ethical challenges are associated with biological, mechanical, or digital enhancements?

2. Optimizing ARSOF Units of Action for the Future Operating Environment. ARSOF must rapidly and continuously form and reform units of action to respond to the challenges of the future operating environment. Threats will present unabatedly across multiple domains and battlefield frames, rendering obsolete or ineffective existing time-consuming practices of task organization, planning, pre-mission training, and deployment.

• Should ARSOF establish configurable, purpose-built, task-organized teams optimized to deploy on order, to proactively conduct global special operations activities, to stay ahead of threat intentions?

• Should ARSOF move away from the Special Forces Group, Psychological Operations (PSYOP) and Civil Affairs Battalions, in favor of a standing CONUS-based "Special Warfare Group" for each of the theatres (i.e. a Special Operations Task Force)? Would (multiple) task-organized teams that continuously train and operate together create and maintain increased readiness, responsiveness, and operational synergy?

- What new or enhanced capabilities are necessary to implement an expanded concept of maneuver? One that considers the near continuous and asymmetric employment of the physical, cognitive, and virtual aspects of maneuver across multiple domains and battlefield frames, through time, at all levels of war, globally, and in some cases simultaneously, to deter and defeat adversary strategies below the level of armed conflict, and when necessary, fight and win our Nation's wars against increasingly capable peer and near-peer rivals.

3. Operationalizing Force Management for the mid-21st Century Security Environment. Though relatively agile and responsive, USASOC exercises its force generation responsibilities in a manner that will not be sufficiently nimble to address the rapidly evolving global security environment. USASOC requires much greater speed and agility in the execution of its Title 10 organize, man, train, and equip responsibilities. Competitors are responding, and will increasingly respond, with speed and lethality, enabled by disruptive technologies and unencumbered by rigid bureaucratic systems. In the future operating environment, agility will be key to maintaining a comparative advantage over our competitors.

- How can USASOC streamline its force management processes to better posture the force to more rapidly respond to increasingly emergent operational needs?

- How can USASOC change organizational culture and processes in what is best characterized as an entrenched bureaucracy?

- How can USASOC improve Total Force talent development and management to select, train, and retain the highest quality personnel across the operating and generating force, to include Active and Reserve Component Soldiers, DA Civilians, and Government Contractors?

Operations

1. **Information Warfare**. In an increasingly hyper-connected and globally scaled information environment, highlighting the relevance of persons and populations across the conflict continuum, the employment of "ideas" via the influence potential of information is increasingly important to shape conditions within the operating environment. Information warfare, and the power of the narrative to impact the perceptions, decision making, and/or behavior of adversary, neutral, or foreign target audiences, is paramount to achieve an enduring or temporary position of advantage relative to the enemy and population. The internet and social media, as well as the "virtual" assimilation of groups and individuals into global collectives, have created entirely new and powerful opportunities for information operations and industrial scale influence.

- How do ARSOF PSYOP alter mission focus, training and education, unit of action construct, force disposition, etc. to increase operational effectiveness?

- What changes are required to streamline the delegation of authorities from the Geographic Combatant Commands to maneuver echelons, as well as improve the associated permissions approval process, particularly outside declared theatres of active armed conflict (ODTAAC)?

- How can ARSOF leverage recently approved programs, such as "Deterrence, Assurance and Competition MISO Program (DACMP)?

- What investments in Artificial Intelligence (AI) and Machine Learning (ML) are necessary to more effectively harness the synergy of physical and information power?

- How can AI/ML be utilized to better assess Measures of Performance/ Measures of Effectiveness for Information Warfare?

- Adversaries have rapidly accelerated their Information Warfare capabilities on a trajectory that outpaces our own. How does the US acquire and sustain overmatch?

2. Special Operations Forces (SOF)-Space-Cyber Electro Magnetic Activities (CEMA) Nexus. In an increasingly complex, ambiguous, and technology-saturated mid-21st Century security environment, highlighting the relevance of transparency and reach, an opportunity presents at the nexus of SOF, Space, and Cyber. From space comes a full view of the planet and global access. From SOF, with its forward posture and agile forward positioning, comes knowledge of the people, cultures and populations and the ability, if needed, to deliver precision fires. From Cyber comes an understanding of the global pulse through the World Wide Web, social media, etc., as well as the ability to deliver non-kinetic effects via computer networks operations, electronic warfare, information warfare, etc. The nexus of the three hyper-enables situational awareness across all facets of the operating environment (physical, virtual, and human), to include precision (strategic) indicators and warnings, enabling the Joint Force to operate ahead of threat intentions across the conflict continuum; to see, sense, and when necessary, strike deep - with physical, information, and/or virtual power - dictating the terms of the adversary's next move to prevail in the contact layer, and attain overmatch in the blunt and surge layers through increased operational time, speed, precision, range, and lethality. This fusion of SOF, space, and CEMA, increasingly enabled by Artificial Intelligence, enables the US and our partners to challenge adversaries in new and unique ways, applying focused combinations of mutually enhancing defeat mechanisms.

- The National Security Strategy of 2017 states that "Today, cyberspace offers state and non-state actors the ability to wage campaigns against American political, economic, and security interests without ever physically crossing our borders." How does the SOF, Space, CEMA nexus support a whole of government approach to mitigate this challenge? Does this nexus better posture the Joint Force to proactively campaign (and win), in the contact layer?

- The Army is transitioning from Unified Land Operations to Multi-Domain Operations (MDO) as its new operating paradigm. MDO is on track to become a Joint warfighting concept. How could the SOF, Space, CEMA nexus better enable the Joint Force to maneuver (or create effects) in the operational and strategic deep fires areas?

- What organic capabilities does ARSOF need and what capabilities are sufficient on demand from USCYBERCOM, US Army Space and Missile Defense Command, the Joint Force, and/or the Interagency, etc.?

3. ARSOF Support to Multi-Domain Operations; Sensing in the Deep Maneuver and Fires Areas. The Army and Joint Force must be capable of conducting operational-level, multi-domain, physical, cognitive, and virtual maneuver across the conflict continuum to gain advantages over our Nation's adversaries. In support of multi-domain operations, ARSOF campaign in the Contact Layer to buy down risk by setting deterrence conditions early, and can penetrate peer adversary systems in the Blunt Layer if deterrence fails. In the Surge Layer, ARSOF target key adversarial systems and mobilize populations to generate indigenous mass, countering adversary influence or opening windows of opportunity for Joint Force Commanders across the conflict continuum. The operational and strategic deep fires areas are areas beyond the feasible range of movement for conventional forces but where the joint force can employ joint fires, SOF, information, and virtual capabilities. ARSOF's persistent forward presence enables deep understanding and influence across all facets of the operational environment (physical, virtual, and human); delays/ disrupts enemy preparations; and supports the convergence of joint multi-domain capabilities at the precise location and time in the targeting / interdiction of high-value systems.

- How does ARSOF leverage unilateral, partner, proxy, and/or indigenous resistance capabilities to see and sense deep across multiple domains (land, maritime, air, space, cyber, and human) to enable the Joint Force to prevail across the conflict continuum?

- How does ARSOF leverage physical, virtual, and/or cognitive capabilities across multiple domains to see and sense deep to enable the Joint Force to prevail across the conflict continuum?

- How does ARSOF support/ synergize the Joint Interagency Multinational (JIM) to see and sense deep across multiple domains to enable the Joint Force to prevail across the conflict continuum?

- How does the SOF-SPACE-CEMA nexus enable ARSOF to see and sense deep across the conflict continuum in support of MDO?

- In the deep maneuver and fires areas, in close proximity to a full spectrum of adversary capabilities across multiple domains, how does ARSOF reduce risk to mission and force?

- What (technical) sensing capabilities could be leveraged (e.g. visual, electronic, acoustic, thermal, digital, etc.)?

4. Special Activities. The ability of SOF to conduct clandestine operations is increasingly challenged by peer and near-peer adversaries (i.e. persistent surveillance, big data analytics, data aggregation, biometrics, etc.). These operations require non-standard functions which are critical to success. How can SOF improve its efficiency in these enabling functions to provide Joint Force Commanders increased optionality across the conflict continuum? (Discussion and research on this topic would need to be at the S//NF level. Please contact the study coordinator for more information).

5. SOF Readiness and Lethality in support of Multi-Domain Operations (MDO). In support of MDO, ARSOF campaigns in the *Contact Layer* to buy down risk by setting deterrence conditions early, and can penetrate peer adversary systems in the *Blunt Layer* if deterrence fails. In the Surge Layer, ARSOF target key adversarial systems and mobilize populations to generate indigenous mass, countering adversary influence or opening windows of opportunity for Joint Force Commanders across the conflict continuum. MDO enables the joint force to outmaneuver adversaries physically, virtually, and cognitively, applying combined arms in and across all domains. MDO enables the joint force via three interrelated tenets: a calibrated force posture (combination of position and the ability to maneuver across strategic distances); multi-domain formations (the capacity, capability, and endurance necessary to operate across multiple domains in contested spaces against a near-peer adversary); and convergence (the rapid and continuous integration of capabilities in all domains that optimizes effects to overmatch the enemy through cross-domain synergy and multiple forms of attack all enabled by mission command and disciplined initiative). ARSOF, with its unique capabilities, persistent presence in the contact layer and enhanced lethality, inherently contribute to the Army and Joint Force in MDO, providing synergistic capabilities across all domains and battlefield frames to defeat an adversary's operations to destabilize the region, deter the escalation of violence, and, should violence escalate, enable a rapid transition to armed conflict. ARSOF also supports operations in the conflict phase, with emphasis on unilateral and/or bilateral capabilities to facilitate joint force freedom of maneuver, as well as surgical strikes to neutralize, destroy, or mitigate high-value targets.

- How might ARSOF optimize its forward presence to enable a deep understanding and influence across all facets of the operational environment (physical, virtual, and human); delay/ disrupt enemy preparation; and/or support the convergence of joint multi-domain capabilities at the precise location and time in the targeting / interdiction of high-value systems?

- How might ARSOF increase readiness through enduring changes to force composition and/or disposition?

- How might ARSOF increase their capability to prevent/ deter adversary strategies in the contact layer through such activities as civil affairs operations to remove factors of instability, influence operations to inoculate foreign audiences against nefarious influence, Security Force Assistance to improve partner capability, support to strategic messaging, support to public diplomacy, etc.?

- How might ARSOF better harness its suite of lethal capabilities to enhance joint force convergence?

- In the conflict space, how does ARSOF better penetrate and disintegrate enemy anti-access and area denial systems throughout the depth of the battlespace to enable strategic, operational, and tactical maneuver as well as exploit the resulting freedom of maneuver to achieve joint force operational and strategic objectives?

- How does ARSOF re-compete to better consolidate gains and produce sustainable outcomes, set conditions for long-term deterrence, and adapt to the new security environment?

Contact Layer

1. Leveraging Operational and Strategic Maneuver to Counter Revisionist States. . The NSS also notes that "protecting American interests requires that we compete continuously within and across contests being played out in regions around the world." The National Defense Strategy states "The reemergence of long-term strategic competition - rapid dispersion of technologies - and new concepts of warfare and competition that span the entire spectrum of conflict require a Joint Force structured to match this reality." The US requires a comprehensive strategy for the contact layer but has not executed true "statecraft" in decades. Our adversaries are adeptly using information to achieve their objectives, though the US campaigns defensively, often (re)acting, then attempting to create a narrative to support that action. A comprehensive strategy/ narrative up front that informs follow-on actions is imperative. In this space, the US must proactively employ all tools across the diplomatic, informational, military, and economic to both understand, and place at risk, those things our adversaries value.

- How does ARSOF contribute to a proactive campaign that leverages operational and strategic maneuver to prevent, deter, and/or defeat adversary strategies in the contact layer, an area where they seek to achieve their objectives below the perceived policy threshold of US armed intervention?

- What are some historical, as well as future conceptual examples, of ARSOF campaigning, and winning in the contact layer, noting that a "win" might be characterized as improving the US strategic position, developing greater understanding and expanding influence, increasing governance, or simply retaining the initiative for follow-on action?

2. Maneuver Paradigms for the 21st Century. The US is out of position and ill-equipped to deal with modern security challenges. If not a strategic emergency, it is certainly a crisis. In an era of unrelenting competition, US systems and thinking still center on a binary peace-war paradigm. Adversaries are already waging a multi-domain, global campaign against the US, and steps need to be taken now to regain the global competitive advantage once enjoyed.

- How might ARSOF, as part of the joint force, better conduct near-continuous and asymmetric maneuver across multiple domains and battlefield frames, through time, at all levels of war, globally, and in some cases simultaneously, to deter and defeat adversary strategies below the level of armed conflict, and when necessary, fight and win our Nation's wars against increasingly capable peer and near peer rivals?

- How might geographic combatant commands be more flexible to deal with what are increasingly global vice regional threats? Current tactical, operational, and strategic models are not effective against an adversary that has an integrated strategy across all levels of war.

- How might Component Commands, which are currently Title 10-focused (organize, man, train, equip), vice warfighting HQs, better support the Theater Special Operations Commands?

- Fully integrated, cross-functional, interagency teams are imperative to address challenges in the contact layer. Could a global Memorandum of Agreement better facilitate co-deployment (and employment) of US government agencies?

- What are some required changes in training and education to create "21st Century Maneuverists?"

- Does maneuver, as defined, need to be expanded to consider physical and information power, as well as cyber and electromagnetic capabilities?

- How might ARSOF garner a clearer understanding of adversary actions and underlying logic to maneuver those adversaries into unfavorable positions in order to set the conditions that dictate the terms of the next move?

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3. Modeling and Simulation tools for Irregular Warfare and Special Operations. Existing Correlation of Forces Models facilitate experimentation for physical maneuver against peer adversaries in high-end conflict. ARSOF, in support of an Army and Joint campaign of experimentation, require manual wargame rules of adjudication for use in wargames, table-top exercises, and manual simulations that ultimately could be used for Correlation of Forces Modeling. The rules could be used as a campaign planning aid and also to inform adjudication of SOF effects from the tactical to operational level in Army Wargames and Experiments such as "How the Army Fights" and "UNIFIED CHALLENGE". Rules should be probabilistic in nature, allowing for a range of outcomes.

•   What specific historical outcomes and successful missions from WWII through OIR could inform expected friendly and enemy personnel and materiel losses, as well as related effects of Army special operations, on enemy, friendly, neutral, and/or civilian populations in conceptual contemporary or future operations?

•   What specific rules govern the execution of core activities such as Special Reconnaissance, Direct Action, PSYOP, and Unconventional Warfare?

4. Revisionist States' Strategic Indicators and Warnings. Warnings intelligence, which has its roots in Cold War ballistic missile defense, largely focuses on high-end conflict conducted by Nation States on the "right side" of the operational continuum. Revisionist states however, will continue to seek to further their political objectives short of the threshold of war.

•   In the contemporary and future strategic operating environment, how can ARSOF and the joint force shift from primarily observing and calculating physical capabilities, to seeing, assessing, and understanding indications of adversary physical, cognitive, and/or virtual capabilities (and activities) earlier in their development and risk profile, to maximize decision space to form a response?

5. Civil Resistance in the mid-21st Century Security Environment. Societal change, driven by any number of factors (e.g. social media, technology enablement, economic rebalancing, climate change, resource competition, ideology) may significantly change the nature of future resistance movements. Large, ungoverned spaces/ corridors in dense urban areas/ mega-cities, where the legitimate government only has partial control, may embolden populations, tip the balance of power, or even de-facto shift nation state borders. Additionally, the ease with which resistance elements may acquire advanced technology, formerly only available to developed nations, will exponentially increase.

- How will mid-21st Century conditions affect civil resistance, and correspondingly ARSOF's ability to develop understanding and wield influence, leverage the indigenous approach, respond to crisis, and/or conduct precision targeting?

- How should ARSOF prepare for potential exponential advances in a populace's ability to drive its own narrative, engage in cyber warfare, as well as other forms of asymmetric warfare?

Technology

1. Robotic and Autonomous Systems (RAS) in support of ARSOF. Robotic systems, combined with increasing levels of autonomy, have the potential of revolutionizing the way ARSOF and the joint force fights in the future. The increasing availability and capability of RAS operating in and across multiple domains provide ARSOF increased options across multiple capability areas such as logistics and target interdiction. Unmanned aerial systems and unmanned ground systems improvements include increased mobility, miniaturization, software and processing speeds, autonomy, sensor/ weapons payloads, and networking abilities. Central to any incorporation of RAS into military operations is the establishment of the Manned-Unmanned Team (MUM-T). Effective MUM-T successfully leverages the inherent and complementary strengths of the unmanned system and the ARSOF Soldier. Artificial intelligence is key to greater autonomy of the robotic system, which will result in an increased reduction to the physical and cognitive load for the soldier, allowing for the conduct of other important tasks. CONOPS and Tactics, Techniques, and Procedures (TTPs) to delineate appropriate roles and level of autonomy in the human-machine team during the conduct of military operations will be necessary to reduce risk.

What specific roles and associated CONOPS/ TTPs could be envisaged for the following RAS capabilities? What other functions could be considered?

➢ Logistics - Provisioning of supplies to remotely deployed units.

➢ Force Protection - Ability to search confined or denied areas, route clearance, etc.

➢ Target Interdiction - Ability to conduct precision targeting and interdiction using singular or swarm technology.

- What is the appropriate level of autonomy for RAS? Should they ever be fully independent or conversely, always include a human in the loop? What are the legal, moral, and/or ethical considerations?

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2. Emerging and future use of Artificial Intelligence in support of Special Operations. AI has the potential to significantly empower the ARSOF Soldier through improved decision-making and the execution of complex tasks with greater speed and efficiency. AI enables (predictive) analytics based on the ability to ingest and process enormous amounts of data, which can also be a powerful enabler by autonomously conducting and/or facilitating complex tasks that lessen the burden on the Soldier. This is particularly relevant in an increasingly complex, technology enabled, and information-saturated future operating environment where the cognitive load on the individual Solider will significantly increase. As an example, AI could seamlessly control multiple, spatially-dispersed, networked sensor platforms, autonomously processing voluminous amounts of full motion video and/or sensor data, alerting the operator only to potential items of interest.

- To what extent can ARSOF leverage AI as a force multiplier in the contemporary and future operating environment, as well as counter the adversary's use of the same? In what kind of lethal and non-lethal operations is AI appropriate?

- Relatively speaking, AI is in the early stages of utilization within military operations, though as technology progresses from special to potentially general application, a revolution in military affairs is possible. What is the appropriate utilization of special and general AI within a military context, to include suitable levels of autonomy?

- The current policy regarding AI is to ensure a human-in-the-loop, particularly where lethality is involved. Will this put the US at a disadvantage relative to our adversaries who are likely to have a much lower threshold as it pertains to legal, moral, and/or ethical considerations?

3. Leveraging Virtual, Mixed, and Augmented Reality to optimize ARSOF Training. There have been significant advances in Virtual, Mixed/ Merged, and Augmented Reality (VR, MR, and AR) in recent years. VR is a completely digital environment-360 degrees. AR is real world viewing, but with digital information overlays, sometimes called "Terminator Vision." Mixed or Merged Reality is real and virtual, intertwined, and is considered the "holy grail" of simulated environments. The DoD has recently experimented with various VR, MR, and AR platforms, and initial results have been favorable. Soldiers have rehearsed combat skills in virtual urban environments generated from real cities creating exceptional realism. Today's simulated environments are exponentially improving, powered with VR headsets and advanced physics engines that power modern games without the need for a large theater-type facility. Squad marksmanship, tactics, offensive cyber, telehealth and casualty management, as well as language and cultural training are some possible applications of VR, MR, and AR.

- To what extent can ARSOF leverage VR, MR, and AR technology to increase training effectiveness and perhaps reduce costs as well?

- What is the risk, if any, to using VR, MR, and AR to perform mission rehearsals?

- What ARSOF Core Activities and/or functions are best simulated in a synthetic environment?

4. Providing Internet in Denied Areas to enable ARSOF to wield Influence. In underdeveloped or denied areas, ARSOF requires internet access to reach local populations, indigenous forces, resistance forces, shadow governments, and other foreign target audiences in support of efforts to inform, persuade, direct, deceive, confuse, and/or disrupt. This capability would also enable ARSOF to counter adversarial influence; conduct virtual train, advise, and assist; military source operations, as well as other virtual aspects of Unconventional Warfare. Towers, UAS, and even Commando Solo, if it has access to ground based dish antennas, are temporary options, but do not provide the persistence and depth required. Additionally, most mitigation options inappropriately present an attributable signature, as recipients need access to cellular and data signals. While a feasible solution has yet to be identified, research thus far indicates the need for a mesh-like, self-healing network. For example, Space X's proposed plan for thousands of Low Earth Orbit (LEO) could provide robust and redundant capabilities for accessing foreign target audiences in areas that are presently denied or filtered by adversaries.

- Anticipating the launch of LEO satellites in the next decade, what are the potential opportunities for ARSOF? What are the risks?

- What are some near term mitigating strategies that could be considered to provide assured, secure connectivity.

- What geographic regions need to be pre-planned now, and for what purposes, in the event of emergent capabilities?

5. Exploiting and countering Electronic Warfare in support of SOF. ARSOF face an increasingly sophisticated Electronic Warfare (EW) threat from its peer/near peer adversaries. As systems become increasingly dependent on the electromagnetic spectrum (EMS), electronic warfare is increasingly relevant to exploit any inherent vulnerabilities. Russia and China have made substantial modernization efforts in their EW capabilities in recent years and EW is considered an integral part of their military operations. Those who can dominate the EMS can create asymmetric advantages by disrupting or destroying communications, unmanned systems, and other necessary electronic systems. ARSOF can contribute to EW efforts by using its inherent or jointly-coordinated assets to attack, protect, and/or support operations. In recent operations, EW has been used to diffuse improvised explosive devices, detect or jam enemy activities, while protecting friendly communication networks.

Continued improvements in technologies such as AI-assisted frequency hopping, directed energy weapons, and radio frequency counter-measures will provide exciting new possibilities for greater capabilities to dominate the EMS, but will drive the need to develop new concepts for their employment.

• How should EW (Electronic Attack, Electronic Protection, and Electronic Warfare Support) be best employed to support ARSOF operations?

• What SOF-specific EW capabilities are required for future operations (i.e. man-portable directed energy weapons, improved jamming to defeat enemy A2AD, or see-through-wall technology for built-up urban terrain)?

• How can RAS/ AI be incorporated into joint EMS operations (i.e. unmanned system electronic attack or AI-assisted frequency hopping)?

Title Ten Functions

1. ARSOF Recruiting. ARSOF faces manpower shortfalls across multiple formations. Qualified volunteers for Army Special Operations training, from both Initial Entry and In-Service populations, have declined in recent years. Contributing factors include a prosperous economy, a smaller Army, a decline in physical fitness, increasing numbers of voluntary withdrawals from assessment, high ARSOF OPTEMPO, difficulty in getting good candidates released from their parent units for Special Forces Assessment and Selection, and frequent deployments.

• How can USASOC better identify ARSOF candidates that are both willing and qualified to apply?

• What improvements can be made in current efforts, or resources augmented to 1) increase awareness of ARSOF through focused themes and messages, 2) integrate predictive modeling tools to identify recruits with the highest probability of success, 3) increase ARSOF's ability to draw qualified Soldiers from their parent units, or increase its access to those Soldiers, and 4) improve retention of high-quality ARSOF Soldiers?

• What are some ways that ARSOF can better utilize its existing manpower/ talent?

2. Talent Management. Talent management optimizes individual knowledge, skills, abilities, and behaviors against the needs of an organization, from entry level through senior leaders/ management, and includes command, staff, functional, and special assignments. Though manned with the highest quality personnel, ARSOF lacks an effective enterprise-wide career lifecycle management program that deliberately, and strategically, aligns the right individual to the right position, at the right time, throughout their career.

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Traditionally, the focus has been on the 'command track', a relatively very small portion of the total force. To develop and maximize human capital for the increasingly complex challenges of the future, a new talent management paradigm must be considered, one that discards the existing Industrial-age system in favor of a dynamic and holistic 21st century process.

• Could a cohort approach for each year group be an effective alternative, one that aligns individuals into command, staff, functional, or 'special' categories early in their career, with purpose built education, training, and assignments?

• What other alternatives could be considered, orthodox or otherwise, that better utilize (or build) requisite talent?

What is the 'cost" of deliberate, proactive, and dynamic talent management in manpower and dollars? Holistic, enduring, micro-management of tens of thousands of ARSOF Soldiers has an inherent cost.

• As AI/ML is being increasing leveraged to target potential successful recruits, can this (or other) technologies be utilized to better manage existing human capitol?

3. SOF Ethics. Recent ethical violations on the part of a few SOF Soldiers have sounded a call for increased scrutiny of all SOF operations. This unfortunate criminal behavior not only affects readiness, but also betrays the longstanding trust bestowed upon SOF operators who, conducting missions in the most remote parts of the world for extended periods of time with little to no supervision, are generally deemed less at risk. This is troubling, given the core characteristics embodied in our force such as maturity, courage, integrity, honor, etc. If this recent unethical behavior is part of a trend in which Soldiers are increasingly straying from our core values, creating a less moral culture within SOF, then research is critically necessary to identify the root cause(s).

• Are recent occurrences indicative of a broader force-wide decay in ethics?

• Are ethical lapses among SOF operators fundamentally different than those committed in the Conventional Force?

• Has the demographic within SOF changed? Does OPTEMPO or other operational conditions have any impact?

• Are there factors within SOF which might engender an "outlaw" mentality, leading to increased unethical behavior?