

SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE



Ms. Lisa Sanders
DIRECTOR SCIENCE & TECHNOLOGY

SCIENCE & TECHNOLOGY OVERVIEW

“Somewhere something incredible
is waiting to be known.”



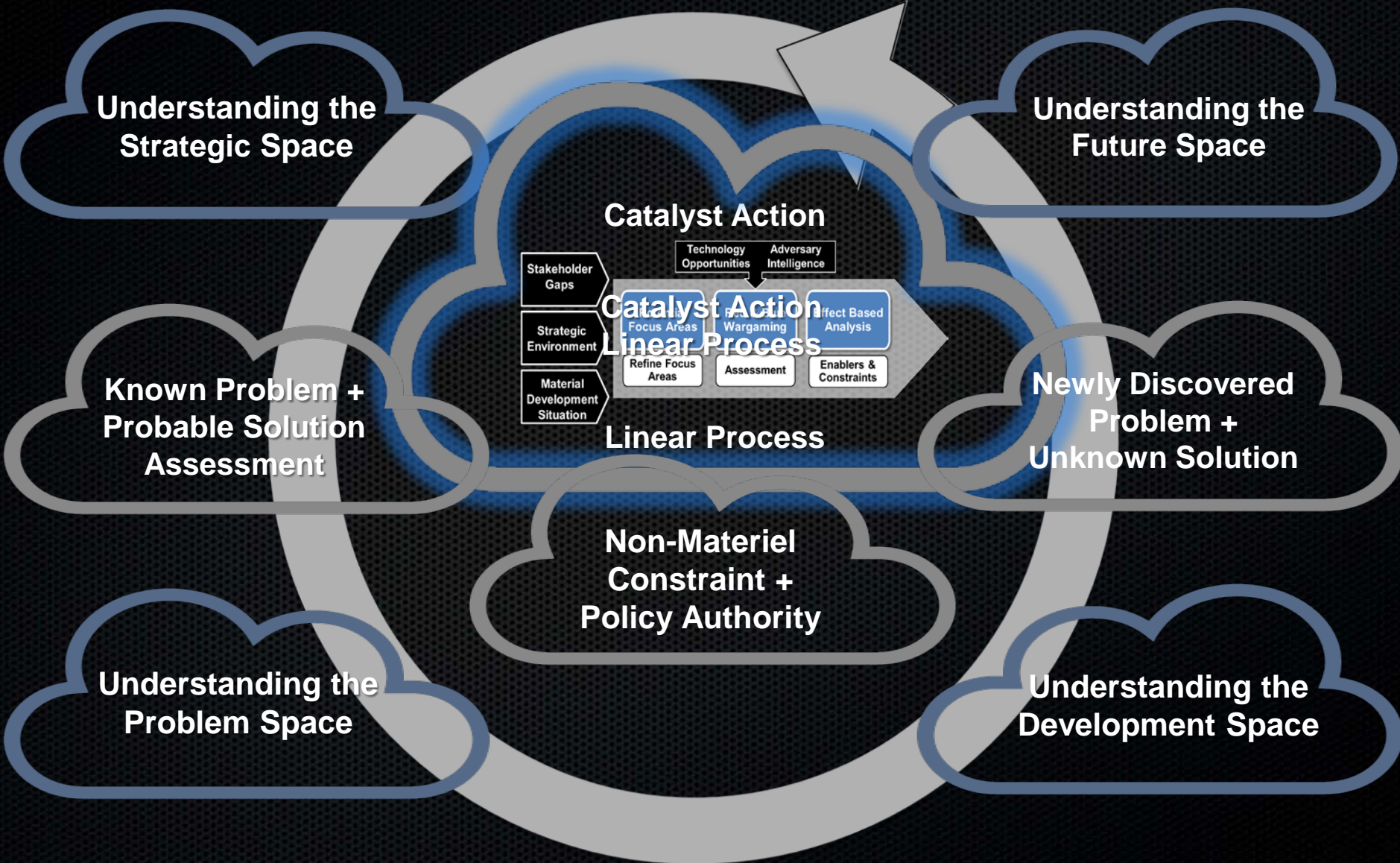
SCIENCE AND TECHNOLOGY

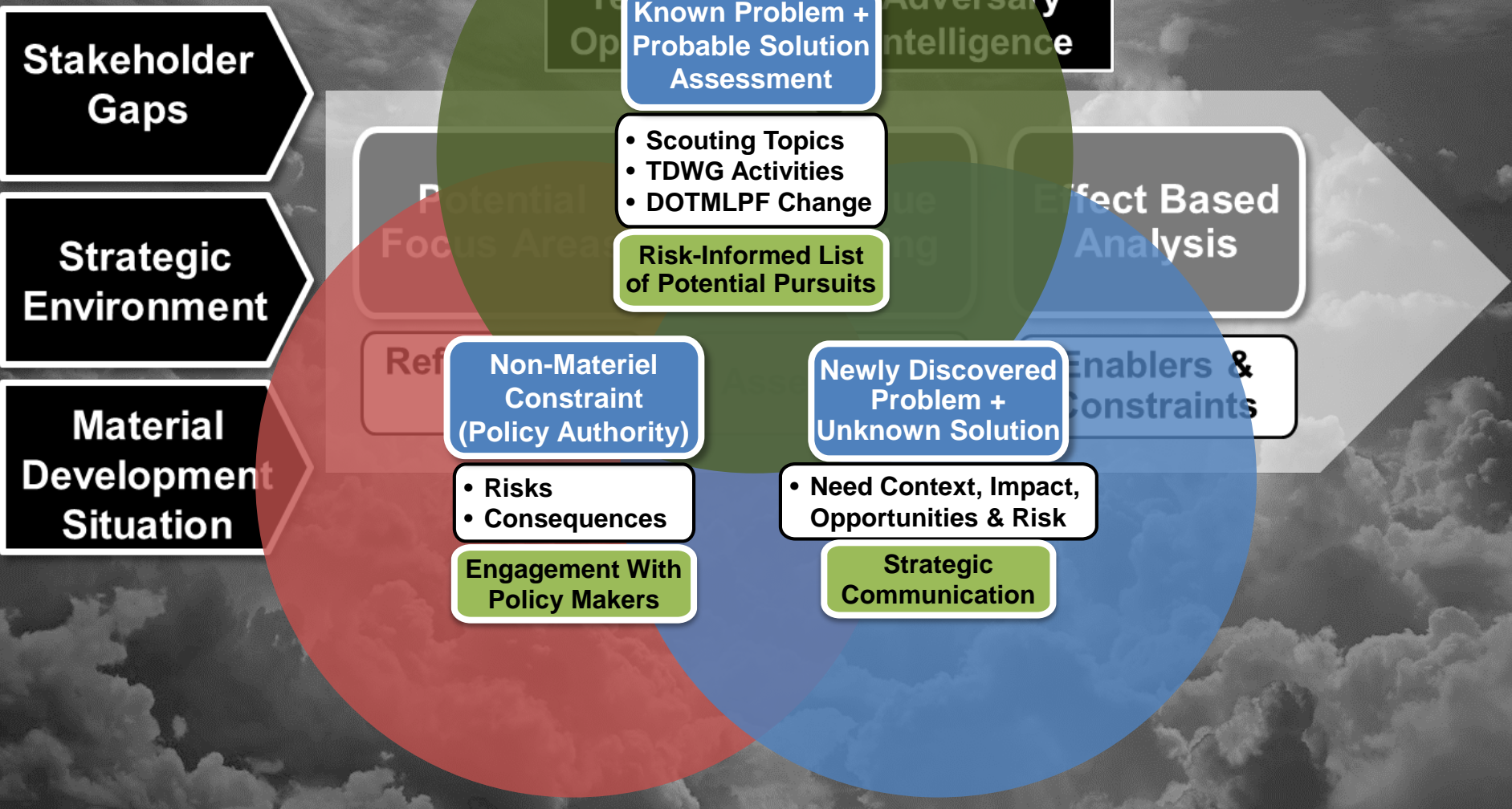
S&T Vision



**Discover, Enable, and Transition technologies
to provide an asymmetric advantage for
Special Operations Forces**

S&T Futures Process





Stakeholder Gaps

Strategic Environment

Material Development Situation

Te Op
Adversary Intelligence

Known Problem + Probable Solution Assessment

- Scouting Topics
- TDWG Activities
- DOTMLPF Change

Risk-Informed List of Potential Pursuits

Potential Focus Areas
Ref

Non-Materiel Constraint (Policy Authority)

- Risks
- Consequences

Engagement With Policy Makers

Newly Discovered Problem + Unknown Solution

- Need Context, Impact, Opportunities & Risk

Strategic Communication

Effect Based Analysis
Enablers & Constraints

Science & Technology Budget

- **Applied Research (BA2) & Advanced Technology Development (BA3)**
 - **BA2:** Studies, Early Laboratory Hardware, Software Development Models, Concept Exploration. Technology Readiness Level (TRL) 3-5
 - **BA3:** Operational Prototypes, Advanced Technology Demonstrations, Technical Experimentation, Technology Insertions. TRL 5-7

ACQUISITION STRATEGY

- Various (Competition, IDIQ, CRADA, Prize Challenges, etc.)
- External Leveraging (OGAs, Services, Laboratories)

PERIOD OF PERFORMANCE

- Project Dependent
- Emphasizing Tech Discovery, PEO TIRs needs, and game-changing technology development

MILESTONES

- Project Dependent

POINT OF CONTACT

- 813-826-9482 (TILO)

FUNDING

- FY17 BA2/3: \$18.86M/\$26.21M
- FY18 BA2/3: \$15.16M/\$30.0M
- Note: Does not include TTL / MISO

CURRENT CONTRACT/OEM

- Various

SOF 'Hard Problems'



"Somewhere something incredible
is waiting to be known."

-Carl Sagan

- **SOF Small Unit Dominance**
 - *Integrated Operator*
- **Assured Communications**
 - *Cyber*
 - *Contested Environment*
 - *Austere/Remote Operating Location*
- **Comprehensive Signature Management**

SOF Small Unit Dominance

MISSIONS

- Direct Action
- Hostage Rescue and Recovery
- Counterterrorism
- Countering Weapons of Mass Destruction
- Counterinsurgency

SITUATIONAL AWARENESS

INFORMATION MANAGEMENT

- Fusing
- Display

SENSORS

- PNT
- Optical
- Infrared
- RF

DISMOUNTED



OPERATOR

COMMUNICATIONS

Big Problem #2

PROTECTION

TACTICAL

- Armor
- Jammers

HOLISTIC

- Medical
- Human Performance

LETHALITY

– SCALABLE

- Effect
- Size
- Range

MOBILITY

- Dismounted
- Ground Transit
- Insertion

Adversary Impact

- Capability / Threat
- Task / Purpose
- Intelligence

Non-Materiel Enablers / Constraints

- Doctrine
- Training
- Policy / Authority
- Task / Purpose

SOF Mission Assured Communications

GLOBAL NETWORK

- Interoperable, Adaptive Networks
- Infinitely Scalable
- Resilient, Robust, & Redundant
- Big Data Analytics

INFORMATION MANAGEMENT

- Increased Capacity & Efficiency
- Reduce Cognitive Workload
- Multiple Transport Methods

DEFEND THE NETWORK

- Cyber Hacks
- Denied Environments

ALL DOMAINS



EXPEDITIONARY COMMS

- Remote Locations
- Highly Contested
- Device Agnostic
- Low Signature

Adversary Impact

- Capability / Threat
- Task / Purpose
- Intelligence

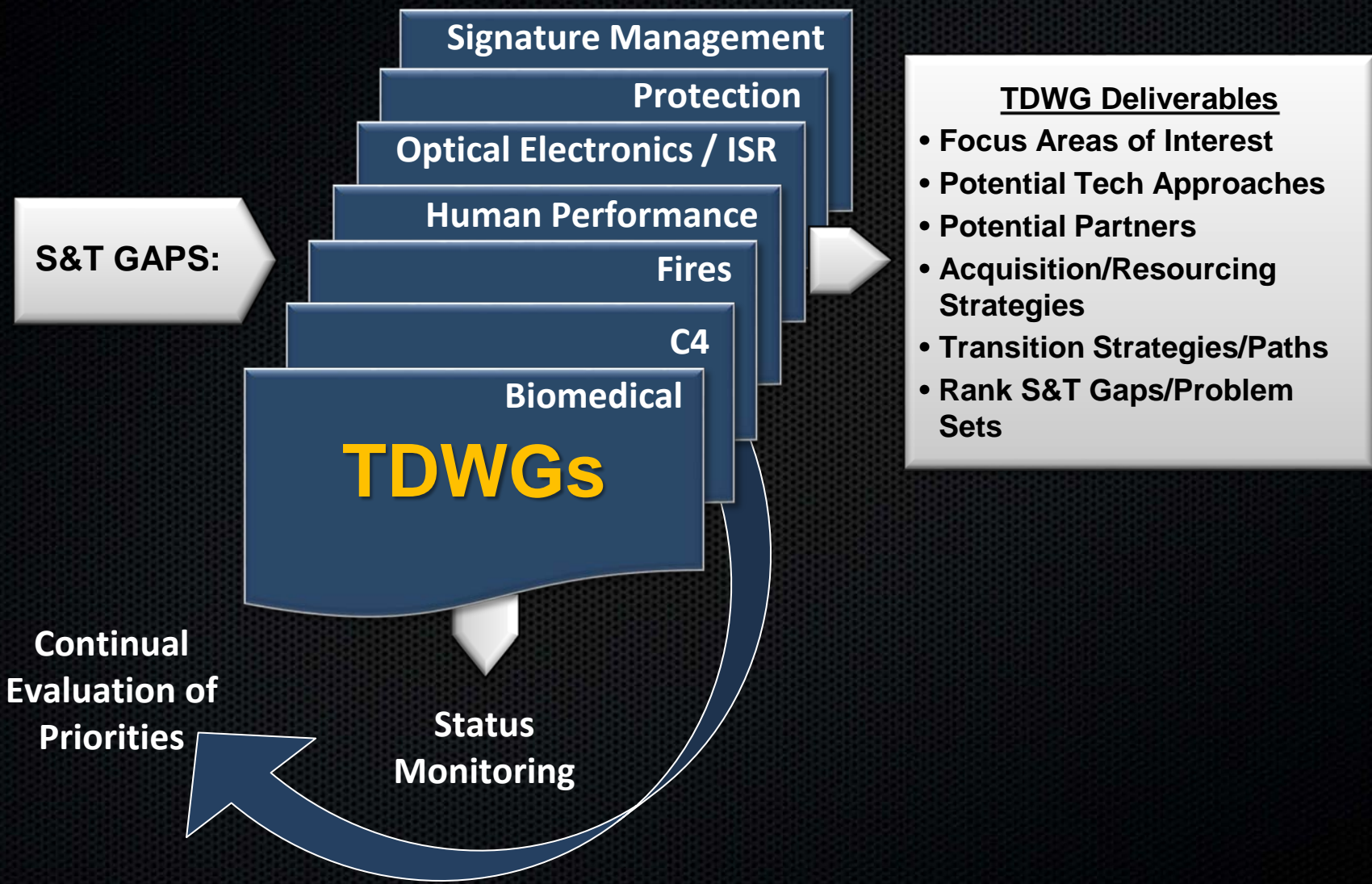
Non-Materiel Enablers / Constraints

- Doctrine
- Training
- Policy / Authority
- Task / Purpose

S&T Engagement Tools

S&T ACTIVITY	OPPORTUNITY	ENGAGEMENT
Small Business Innovation Research (SBIR) Small Business Technology Transfer (STTR)	<ul style="list-style-type: none"> • S&T manages SOCOM's SBIR/STTR programs • Stimulates innovation for small businesses • 3 Phases, Phase I is a Study (\$150K), Phase II Prototype (\$1.5M), Phase III Commercialization 	<ul style="list-style-type: none"> • www.ussocomsbir.com • USSOCOM participates in three SBIR/STTR Topics Call per year (April, August, and December timeframes)
Technical Experimentation (TE) Events	<ul style="list-style-type: none"> • Conducts 3 US-based events every fiscal year each with different theme(s) • Industry opportunity to engage and demonstrate technology and concepts and get direct feedback from SOF Operators and SOCOM Acquisition Professionals 	<ul style="list-style-type: none"> • Normally 1 TE Event/QTR • TE Request for Information (RFI) posted on FBO.gov for each TE Event • https://www.socom.mil/SOF-ATL/Pages/technical-experimentation.aspx
Cooperative Research & Development Agreements (CRADA)	<ul style="list-style-type: none"> • SOCOM employs Overarching and Specific (Traditional) CRADAs • Legal agreement to provide general and specific access to USSOCOM needs 	<ul style="list-style-type: none"> • Allows for the formulation and execution of Individual Work Plans (IWP) between the Collaborator – PEO/Directorate within SOF AT&L
Broad Agency Announcements (BAA)	<ul style="list-style-type: none"> • SOCOM S&T Directorate/PEOs develop and post BAAs to FBO.gov that provide Areas of Interest (AOI) to Industry and other External Organizations 	<ul style="list-style-type: none"> • S&T BAA once per year in April • TALOS BAA once per year in January • Biomedical BAA once per year in February through US Army
Vulcan	<ul style="list-style-type: none"> • Web-based platform that enables anyone to quickly describe technology and upload supporting documentation to a secure, shared, searchable, central database 	<ul style="list-style-type: none"> • Vulcan supports evaluation/assessment/scoring of submitted technologies, and sharing of results • Go to www.vulcan-sof.com and register

Technology Development Working Groups (TDWGs)



Science and Technology Directorate

BIOMEDICAL/ HUMAN PERFORMANCE



Human Performance

FIRES



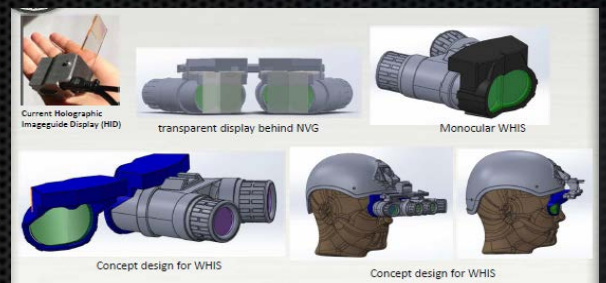
AC-130J High Energy Laser (HEL)

C4



VHF/UHF Magnetically Coupled Antennas

JOINT ACQUISITION TASK FORCE TACTICAL ASSAULT LIGHT OPERATOR SUIT (JATF TALOS)



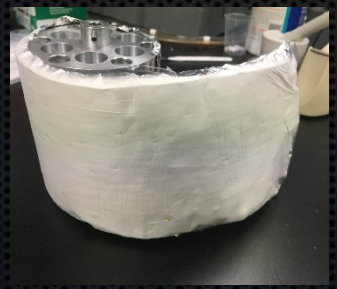
Integrated Advanced Visual Augmentation System (VAS), and Exoskeleton

OPTICAL ELECTRONICS



MAVERIC (Coalition Warfare Program)

PROTECTION



Kevlar Nanofibers

TECHNICAL EXPERIMENTATION



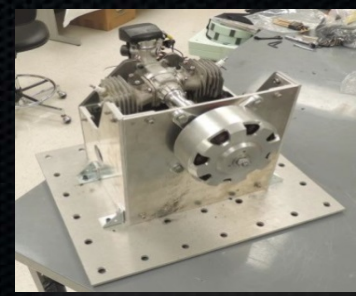
Technical Experimentation

EMERGING CAPABILITIES & PROTOTYPING



Semi-Automated Counter-Propaganda Platform (SCP) JCTD

Small Business Innovation Research (SBIR)



Hybrid Electric Power Unit

S&T Virtual Symposium

- The USSOCOM S&T Directorate is offering a virtual presentation as a way to communicate areas of interest in FY18
- The videos feature an introduction by the USSOCOM S&T Advisor/S&T Director
- The presentations also include members of the S&T Directorate staff presenting information about their respective technology commodity areas of interest and intended technology objectives

The screenshot displays the SOF AT&L website interface. At the top, the logo and navigation menu are visible. The main content area is titled "S&T TDWG Virtual Symposium Videos" and features a grid of video thumbnails. The thumbnails are organized into sections: "S&T Overview" (top), "C4", "Multi-Purpose Canines", "Fires", "Optics", "Protection", "Human Performance", and "TE Overview". Each thumbnail includes a play button and a title. The footer contains distribution information and contact details.

Register for access to the video presentations:

<https://www.socom.mil/SOF-ATL/Pages/TDWG-Virt-Symp.aspx>

USSOCOM CRADAs

OVERARCHING CRADA

- Formulated to provide general access to USSOCOM gaps/needs to foster collaboration – must be consistent with missions of organization
- Allows for the formulation and execution of Individual Work Plans (IWP) between the Collaborator – PEO/Directorate within SOF AT&L
- Collaborator may request meetings with appropriate personnel to discuss IWP development – through the SOF AT&L Technical POC
- SOF AT&L Acquisition Executive signed – company coordination and acceptance – generally 30 days

SPECIFIC (TRADITIONAL) CRADA

- Formulated to provide a collaboration on a specific technology
- Follows USSOCOM Directive 70-1 Appendix Q procedures
- Standard Template
- Specifically between collaborator and single PEO/Directorate
- Writing and staffing is generally 90 to 120 days



Vulcan – Technology Scouting Application

- Web-based platform that enables anyone to quickly describe technology and upload supporting documentation to a secure, shared, searchable, central database
 - Information is entered into a “Scout Card”
 - Scout Cards can be easily disseminated across the SOF enterprise to individuals or teams
 - Enables everyone in SOF to be a Tech Scout
- Government users can remotely “poke” the organization or individual who originally entered the data to provide updates/respond to comments
- Vulcan supports evaluation/assessment/scoring of submitted technologies, and sharing of results
- Each time a Scout Card is interacted with it has an associated timeline showing technology maturation across events



Go to www.vulcan-sof.com and register

Vulcan provides an exponential increase in efficiency and effectiveness over existing business processes for gathering, disseminating, searching, assessing and acting on technology related information.

Technical Experimentation (TE)

UNCLASSIFIED

- **TE 17-3, 17-21 July 2017, Patuxent River, MD**
 - Experimentation Focus: C4/Intelligence, Surveillance, and Reconnaissance (ISR)
- **TE 18-1, 13-17 November 2017, Key West, FL**
 - Experimentation Focus: Combat Diving
- **Public Link:**
<http://www.socom.mil/SOF-ATL/Pages/technical-experimentation.aspx>
- **LinkedIn Group**
[SOCOM Technical Experimentation](#)



USSOCOM S&T Strategic Plan – In Development

Objectives

- Provide a unifying reference for long-term S&T planning
- Inform employees and stakeholders of the priorities for the S&T Directorate and Command
- Support USSOCOM POM planning, portfolio defense, and resourcing
- Ensure alignment between S&T's priorities and behaviors and the larger SOF Enterprise



Our Blueprint

Set unreasonable expectations
Execute an elastic business definition
A cause, not a business
Embrace and listen to new voices
Enable a market for innovation
Exploit low-risk experimentation
Create and exercise the network

USSOCOM acquisition ... light, agile, lethal: a pathfinder for DoD acquisition reform:
USSOCOM leads the way by focusing on modifying organization culture rather than processes.
GLEND A H. SCHEINER

LEADING THE REVOLUTION - GARY HAMEL



QUESTIONS?

