



# US Army Special Operations Command Technology Challenges

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USASOC S&T



# US Army Special Operations Command

- US Army Special Forces Command
  - 1 SFG, 3 SFG, 5 SFG, 7 SFG, 10 SFG
  - 19 SFG, 20 SFG
- Army Special Operations Aviation Command (160<sup>th</sup> SOAR)
- JFK Special Warfare Center and School
- 75<sup>th</sup> Ranger Regiment
- 4<sup>th</sup> Military Information Support Operations
- 95<sup>th</sup> Civil Affairs Brigade
- 528<sup>th</sup> Sustainment Brigade
- Other units
- Surgeon, Psychologist, etc.





# US Army Special Operations Command

- Unconventional Warfare, Foreign Internal Defense, Special Reconnaissance, Direct Action, Combating Terrorism, Counter-proliferation, and Information Operations.
- Over 50% of SOCOM and an even larger majority of missions and casualties
- USASOC does training, doctrine, provision for Army SOF.
- 22,000 active duty soldiers in 50+ countries





# Directorate for Science and Technology

- Provide a forum for S&T representatives to communicate with each other, primary command staff and stakeholders.
- Enable USASOC to speak with one voice on S&T issues and accelerate innovation on behalf of the warfighter.





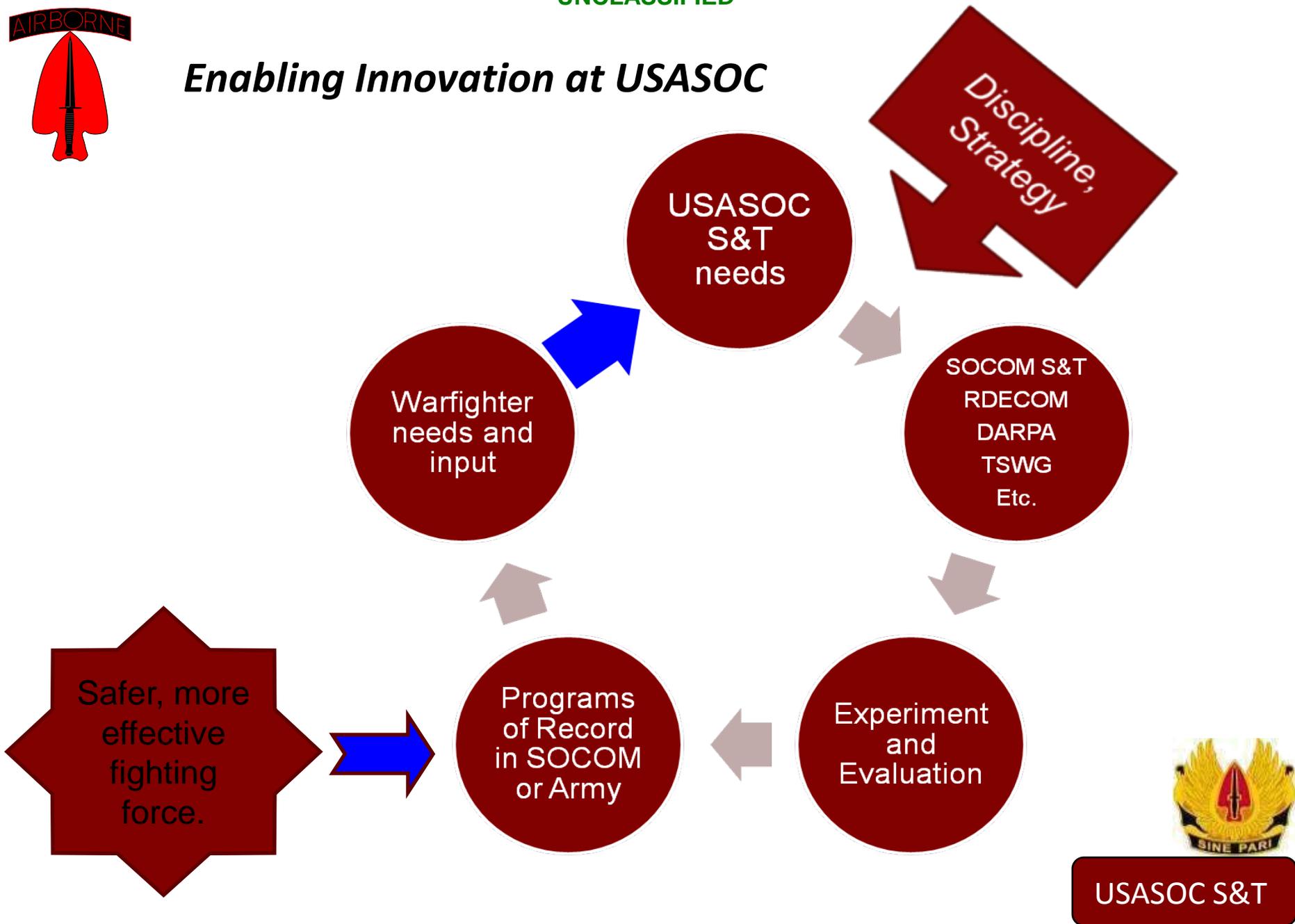
# Office of Science and Technology Objectives

- Develop a consolidated, validated S&T priority list
  - Approved by USASOC CG.
  - Every item has a plan for development and adoption by the force.
  - No duplication of effort.
- Develop active, productive relationships with a broad array of S&T agencies and activities
  - SOCOM S&T, TSWG, DARPA, RDECOM (ARL's, ARO)
  - Academia: University of North Carolina, Naval Postgraduate School, JHU Applied Physics Laboratory
  - Private sector
- Leverage P2 programs to achieve capabilities; modify when necessary with P11 funded technology to provide required capability for ARSOF.
- Improve information exchange regarding technology projects relevant to USASOC, emerging technology opportunities and upcoming events.
- Improve S&T situational awareness of activities among commodity areas, key CSC/CSU representatives, and S&T performers.





# Enabling Innovation at USASOC





# USASOC S&T Council Membership

- . USASOC Office of Science & Technology
  - . Command Science Advisor
- . CSC/CSU Representatives
  - . USASFC            USAJFKSWCS            ARSOCIC
  - . ARSOAC            160th SOAR            528th Sustainment BDE (SO)
  - . 4th MISG            95th CA BDE            75th Ranger Regiment
- . USASOC Directorates/Staff Elements
  - . Command Surgeon and Psychologist
  - . G2, ACE
  - . G3X, Futures, PAD
  - . G3 Requirements Validation, Lessons Learned Office
  - . G4, DCSENG
  - . G6, KMO
  - . G8 CDD, SPAD, TED, SARD Division Chiefs
  - . G8 CDD Capability Development Integration (CDI)
  - . G8 CDD Commodity Area Chiefs
    - . C4, ISR, MISO, Mobility, Target Engagement, Soldier Systems





# USASOC Process

## Science & Technology Gap List

- Input continuously solicited throughout the command to analyze capabilities, collect and validate S&T gaps
- Used to develop a consolidated and categorized list of S&T areas of interest
- Serves as the basis for developing a command S&T strategy and plan
- Review current list for format & comments

[USASOC S&T Gap List](#)



USASOC S&T



# Objectives of S&T Gap Process

- Establish a Command validated S&T Gap List
  - Identify, prioritize and resource S&T shortfalls and deficiencies
  - Maximize synchronization with USSOCOM Components, Army, & OGAs for collaboration and funding
  - Leverage USSOCOM and outside funding in support of ARSOF requirements
- Ensure participation and visibility for all USASOC Stakeholders





# Science & Technology Advisory Team Support to ARSOF

## Science and Technology Advisory Team (STAT)

- . Agreement between LTG Mulholland (USASOC) and MG Justice (RDECOM) on 30 AUG 2010
- . Three member team led by a LTC includes a civilian Scientist/Engineer GS-13/15, and an NCOIC E7/9.
- . Deployment periods for 179 days
- . Responsibility for collecting, analyzing and interpreting data and information in support of the CJSOTF-A
- . Provide materiel solutions when applicable to eliminate or reduce capability/technology gaps reported by SOF

## STAT Progress

- Deployed FEB 2011
- Prepared and submitted 24 Requests for Information (RFIs)
  - . Located on Portal: [STAT Team RFI List](#)
  - . 9 Still working, 12 Closed, 3 Projects
- Team traveling to meet SOF
- Replacement team scheduled for JUL deployment





# Technology Program Office Activities

## JUONS 0125

- Supports USASFC requirement for stand-off IED detection
- #4 USASFC Capability Gap
- UTV with GPR on front / TALON with Ground Penetrating Radar
- USASFC and JIEDDO supports this draft JUONS
- JIEDDO willing to financially support JUONS once validated
- Reviewed by USASFC & 3rd SFG
- Forwarded to CJSOTF(A) June 17th for review and submittal

## SANDI

- SANDI is JIEDDO's #1 project to mitigate #1 OEF Threat – VOIEDs
- Phase II:
  - Develop and test SANDI configuration;
  - Build and deploy 10 SANDI kits to OEF September 2011
- Benefit to SOF
  - Supports USASFC requirement for stand-off IED detection
  - JUONS in process
  - JIEDDO funding initiated
  - Supports JUONS 0125
  - Potential additional CONOPs and SOF applications
  - Phase III – Maneuver and additional payloads





# Technology Program Office Activities

## WCU 360° Vision Augmentation

- Benefit to SOF
  - Potential technology solution to MRAP visibility issue
  - Gain experience with UNC academic liaison
  - Expand application of USASOC-UNC Partnership
  - Project completed for current scholastic calendar
  - Culminating project demonstrations June 13, at Ft. Bragg
    - 3 projects demonstrated
    - USASFC, SORSE, Surgeon Office representatives attended
    - Excellent feedback/interaction
  - Additional projects proposed for the next scholastic cycle

## RSE JCTD

- Benefit to SOF
  - Upgrade to exiting capabilities
  - Develop baseline kit for Army – reduce MFPII resource requirements
- Achievements
  - Feeding new technologies through SWCS
  - Fielding new kits – CONOPS developed
  - USASFC G-8 Involvement

## Op3D JCTD

- Benefit to SOF
  - Increased Warfighter access to 3DGEoint
  - Improved 3DGEoint exploitation tools
- Achievements
  - Spiral 1 assessment complete
  - Spiral 2 Program Review Board





# Special Operations Research Support Element

- 12-man ODA representing the full breadth of ARSOF MOS and components.
- Organized to include representation from other SOCOM components.
- Provide early operator feedback and assessment of new technologies.
- Field new technologies in the force and enable combat evaluations.
- Recently adopted a detailed approach for evaluation of technologies: these evaluations are available on the USASOC SIPR portal.





# High priority S&T gaps

- Improved SIPR communications to the ODA
- IED stand-off detection and defeat
- Village Support Operations, especially force protection
- Intelligence, Surveillance, Reconnaissance
  - Full-motion video, signals intelligence
- Small, organic UAS, with advanced ISR
- Information and analytics
  - DCGS, Palantir, geospatial, socio-cultural
- Power and energy
  - Reduce size, weight of batteries, power systems, as well as the need for power





# High priority S&T gaps

## Long Term

- Tactical robotic systems (ground)
  - autonomous and semi-autonomous
- Identity fixing systems and their defeat
- Wearable computers, connected warrior
- Situational awareness – advanced imaging systems in smaller, lighter, cheaper packages
- Cyber warfare: defense and enabling
- Technologies to enable traditional SOF unconventional warfare operations.

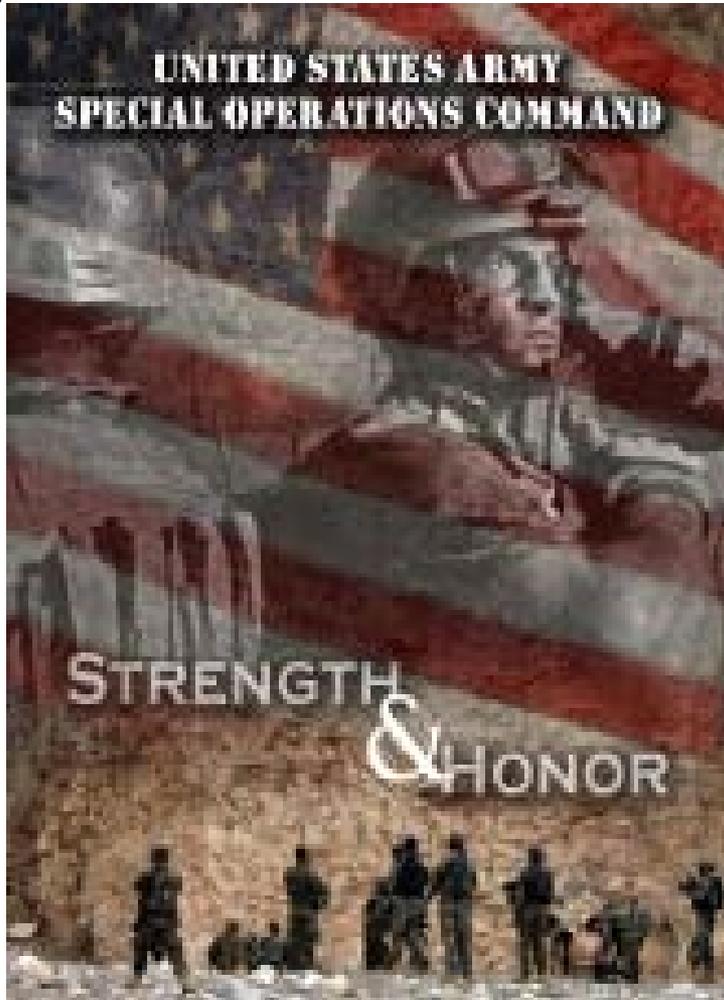




# Not of interest

- High frequency gravity waves
- Electrophoretic detection of humans
  - Or electrokinesis
- Expensive solutions to simple problems
- SOF peculiar solutions when GPF “big Army” can provide good systems with adequate BOI.





Thank you.

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