



"In the middle of difficulty lies opportunity"

Albert Einstein

SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS **EXPANDING THE COMPETITIVE SPACE**

Ms. Lisa Sanders, Director, Science & Technology
SCIENCE & TECHNOLOGY OVERVIEW



SOF AT&L-ST Vision

Innovate for Future Threats

**Relentlessly Discover, Develop, Adapt and Employ
Next Generation Technologies that Provide SOF
an Overwhelming Competitive Advantage**

Modernization of SOF – Prepare Today to Win Tomorrow

Science & Technology (S&T) 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

- USSOCOM SOF AT&L, Engage SOF (eSOF)
(813) 826-9482

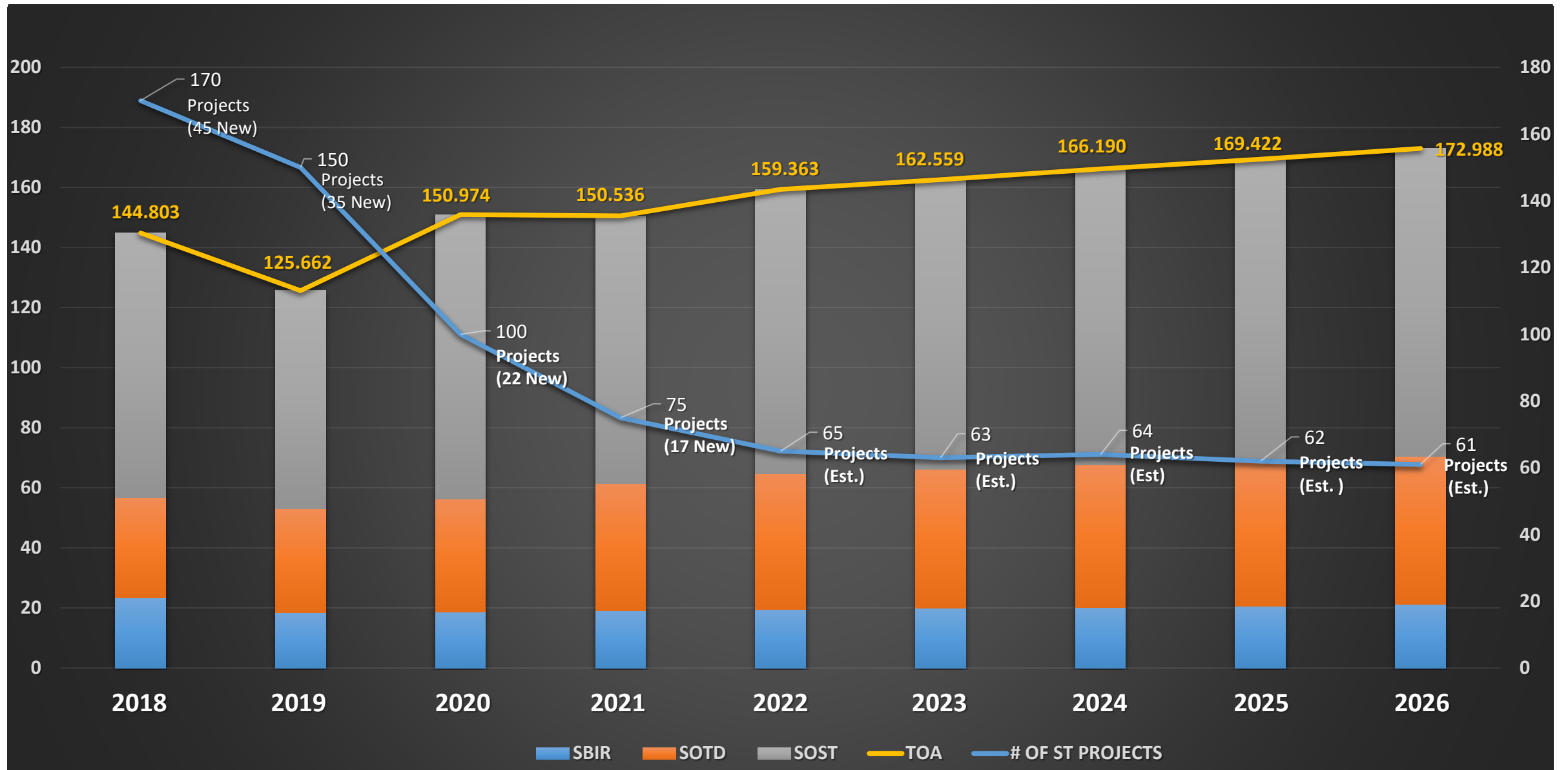
FUNDING

- FY21 BA2/BA3: \$49.5M/\$96.9M = \$146.4M
- FY22 BA2/BA3: \$44.8M/\$93.7M = \$138.5M

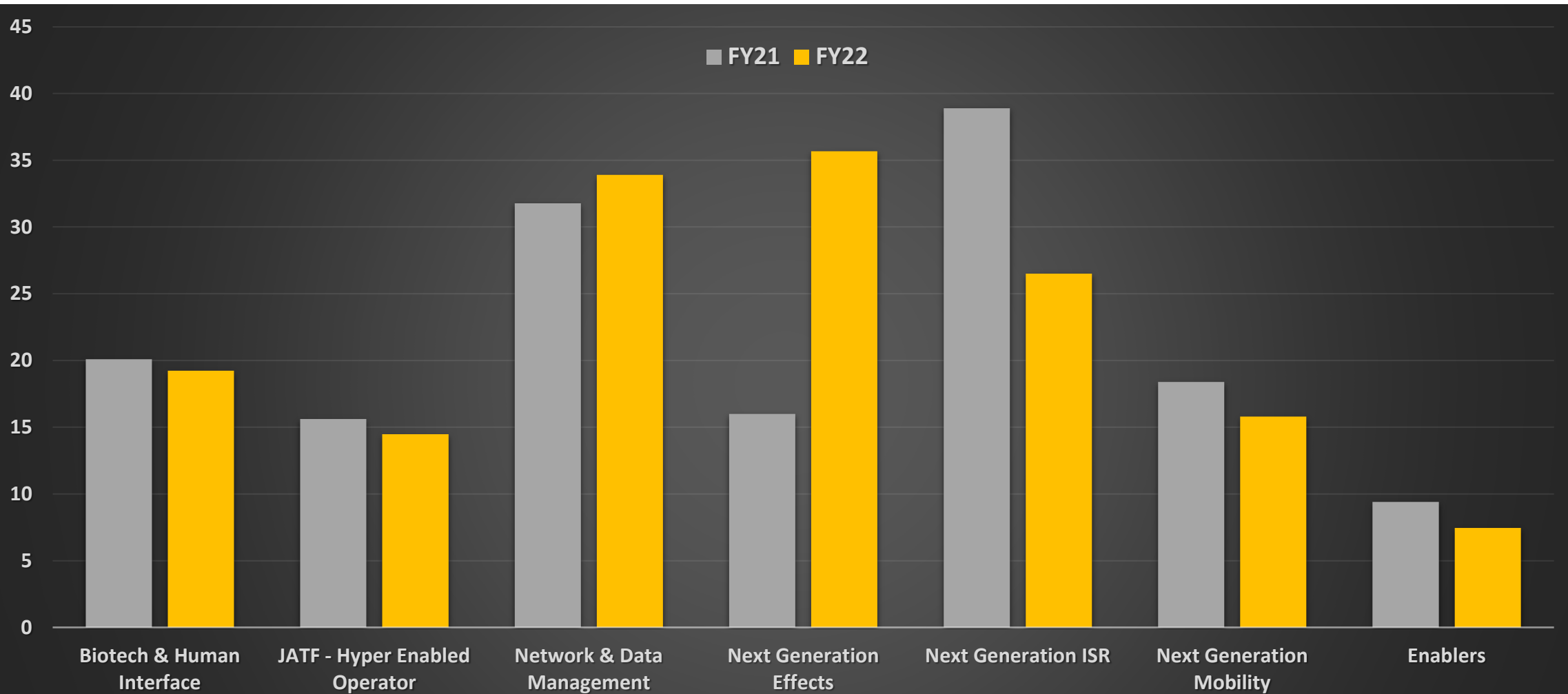
CURRENT CONTRACT/OEM

- Various

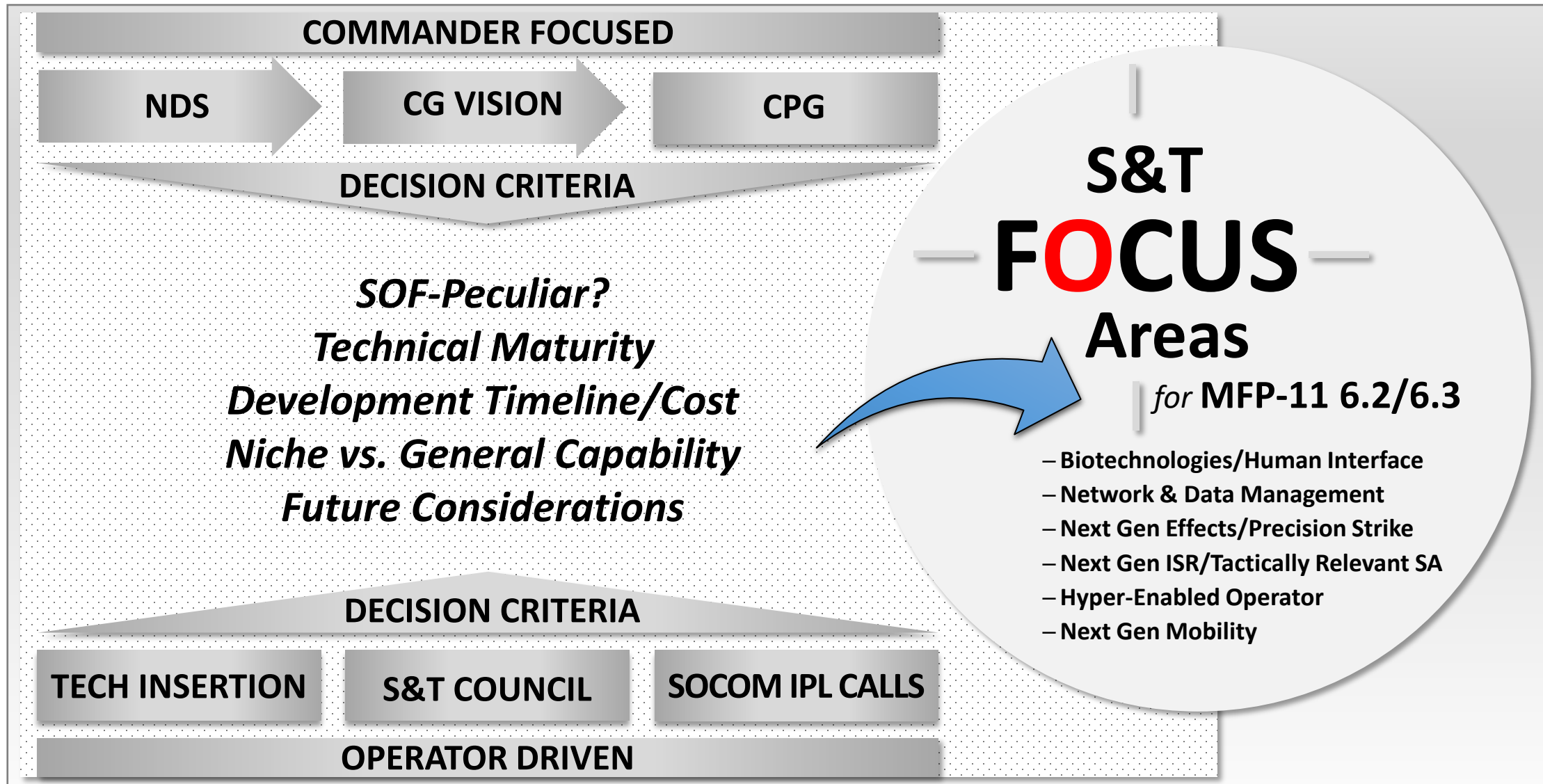
S&T Projects vs Funding



S&T Project Funding FY21/FY22 By Focus Area



SOF Priority Considerations



S&T Integrated Priority List (STIPL)

- **Special Communications**: Resilient, survivable, federated networks and information ecosystems critical for successful execution of SOF missions
- **Tailorable Lethality**: Significant increases in precision effects and combat lethality to deliver small unit dominance
- **Electronic Warfare (EW)**: Offensive EW and Cyber effects that can enable or execute collaborative non-kinetic/kinetic effects
- **Human Performance Optimization**: Novel means to monitor in real time, while safely improving/increasing the SOF operator's physical and cognitive abilities
- **Data Enabled SOF**: Advances in artificial intelligence/machine learning (AI/ML) and edge computing techniques to enable data accessibility, advanced processing and analysis, and dissemination in contested/disconnected operating environments. Advance SOF effectiveness through flexible autonomy, reduced operator cognitive loading, and timely actionable insight to tactical decision making



- Supporting decisionmakers in their investment decisions
- Command's investigator of High-Risk, Asymmetric and Disruptive Concepts, Capabilities and Technology in the Force Design (5-15 year) window
- Chartered for 3 Innovation Foundry events per year, as well as their follow-on events
- Enabler-for-S&T-Enablers, as well as CFAs

Strategic Engagement Overview

Focus: Academia, UARCs, & FFRDCs

Academic IDIQ: USF (5 year / \$85M ceiling),
15 Task Orders, Academic Consortium

UARC Consortium: JHU, PSU, GTRI, & UMD

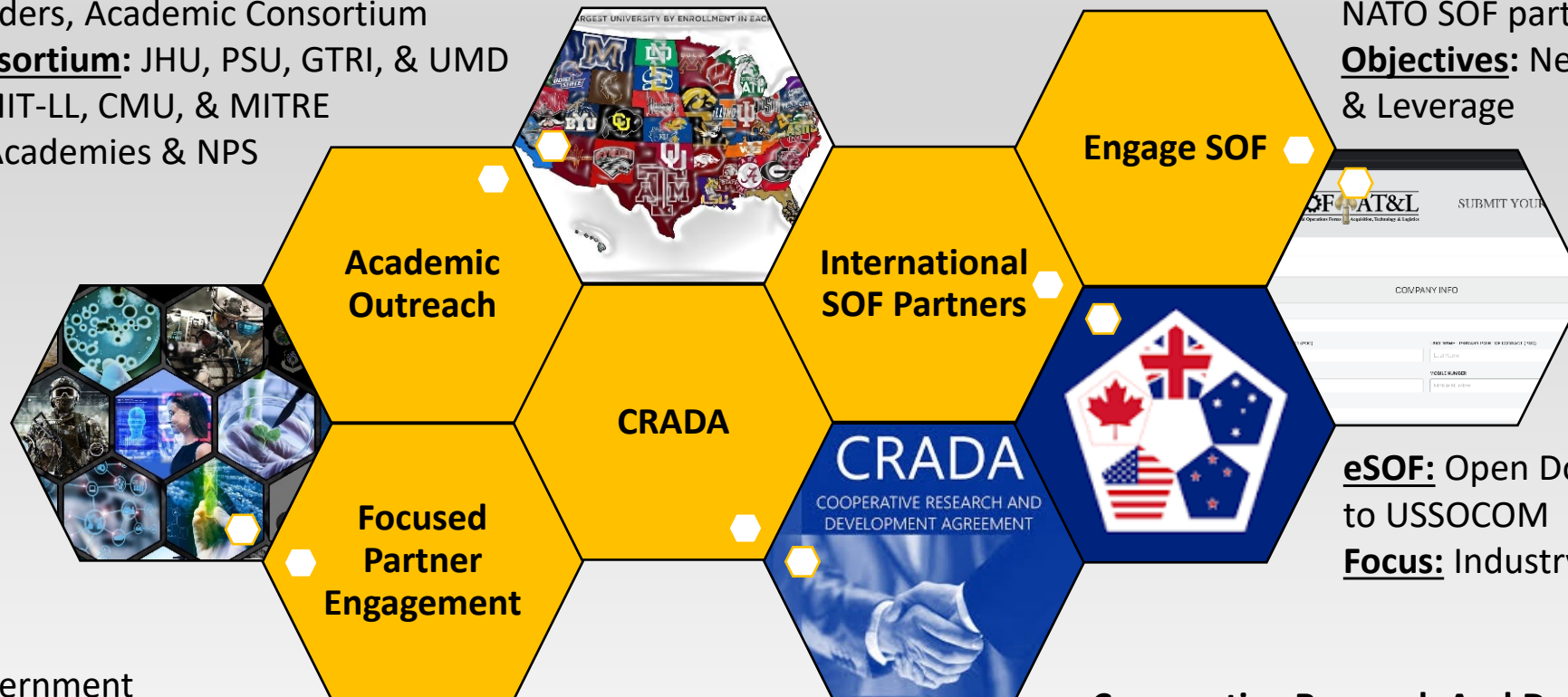
FFRDCs: MIT-LL, CMU, & MITRE

Military: Academies & NPS

International SOF Partners:

Engage with FVEY and
NATO SOF partners

Objectives: Network
& Leverage



Focus: Government

Relationships: DoD Labs, DARPA,
OSD orgs, DoE Labs, Intelligence Community


Objectives: Network, Leverage, & Influence

eSOF: Open Door
to USSOCOM

Focus: Industry

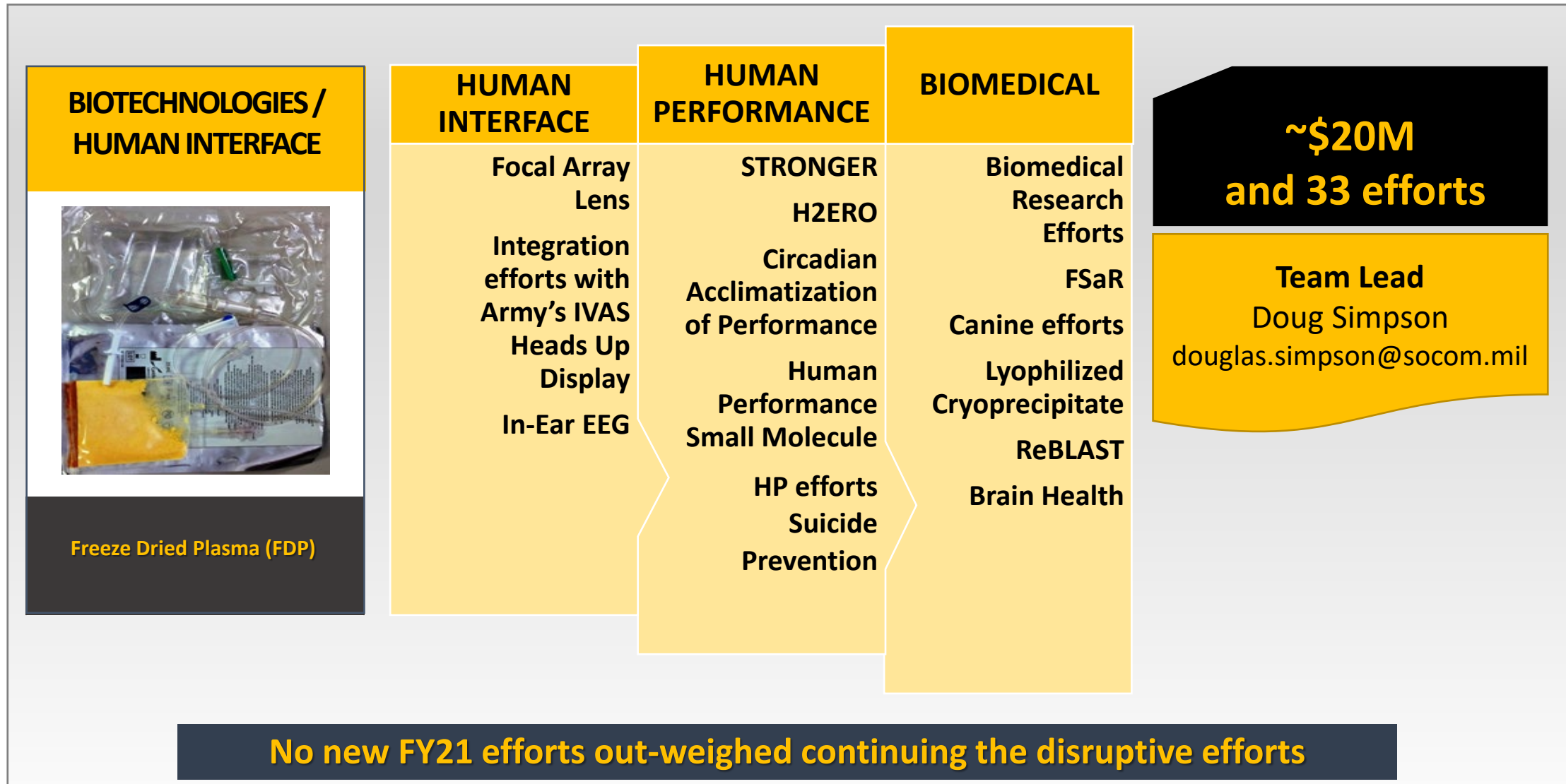
**Cooperative Research And Development
Agreements (CRADA):** 304 Active
Objectives: Leverage Collaborators

Technical Experimentation (TE)

- **TE 21-2, 21-25 June 2021 at Muscatatuck, IN**
 - Experimentation Focus: Next Generation ISR/Tactically Relevant SA, Biotechnologies/Human Interface
- **TE 21-3, 26-30 July 2021 at Muscatatuck, IN**
 - Experimentation Focus: Sense Through The Wall (STTW)
- **TE 22-1, 15-19 November 2021 at Key West, FL or Coronado, CA (TBD)**
 - Experimentation Focus: Combat Diver/ Surface Systems
- **Public Link:**
<https://www.socom.mil/SOF-ATL/Pages/technical-experimentation.aspx>
- **Linked  Group: SOCOM Technical Experimentation**



Biotechnologies and Human Interface Capability Functional Area (CFA)



Joint Acquisition Task Force (JATF) – Hyper Enabled Operator (HEO) CFA

JOINT ACQUISITION TASK FORCE HEO



Enhance Operator Cognition –
Information Dominance
at the Edge

Advanced Analytics at the Edge – Operator Worn Compute

- Make more informed decisions, faster.

Automated Analytics

- Build and share a common operating picture

Voice to Voice Language Translation

- Make more informed decisions, faster.

Beyond Line of Sight Communications

- High bandwidth comms in a SATCOM-denied environment

~\$16M

Numerous efforts

Team Lead

COL Ryan Barnes

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Proof of Concept

Prototyping as a
Service

Tech Sprints &
Engineering Support

Network and Data Management CFA

NETWORK & DATA MANAGEMENT



Advanced Machine Learning and Tactical Edge Computing

AI/ML

Edge Computing

NVIDIA

Alt-PNT

DANAUS

Passive Alt Navigation

Quantum Gyroscope

Real-Time 3D Mapping

Augmented Reality TAK

3D Visualization at the Tactical Edge

GPS-Denied Global Navigation System

Comms in all Environments

Superconducting Quantum Interference Device

60Ghz WPAN Intra Team Comms

JHU Cold Comms

Hyper Cognitive Communication

Cognitive Router

Lean Services Architecture

PDW Anti-Jam Radio

Jam Resistant Wireless Comms

Cyber

Data Driven Intelligence

Advanced Machine Learning for RF Spectrum

Edge-Based Emotion Recognition

Secure Avionics

Computational Diversity

General Neural Network

Distant Whisper

~\$32M and 23 efforts

Team Lead
Peter Depa
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- NDM CFA portfolio consists of a blend of continuing efforts and new-start efforts, all focused on transformative capability development
- Multiple projects include AI/ML and Edge Computing technology development

Next Generation Effects CFA

NEXT GENERATION EFFECTS



Offensive Electronic Warfare
Capability Development

Unmanned Systems Defeat

- Detection, Tracking & Disabling SUAS
- Joint Intermediate Force Effects projects

Non-Kinetic Attack

- Covert Signal Injection Using Electron accelerators
- SOF Target Electronic Attack & Vulnerability Analysis
- Air Launched Drone Swarm Payloads

Electronic Warfare

- Offensive Precision HPM Attack
- Particle Beams for Counter-Power Grid Applications
- Counter GPS Jamming

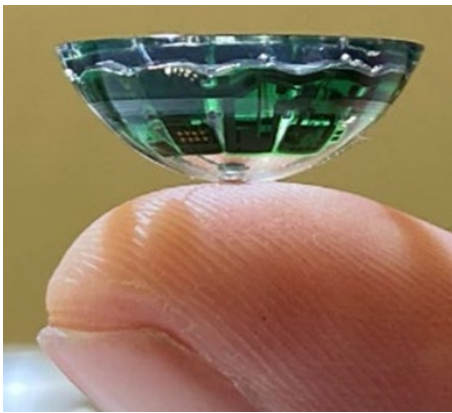
**~\$16M
and 6 efforts**

Team Lead

Kanesha Wimberly
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Next Gen ISR CFA

ISR / TACTICALLY RELEVANT SITUATIONAL AWARENESS



Eye Mounted Display

SITUATIONAL AWARENESS

- Beholder
- Eye Mounted Display
- LPD Wireless Comms
- Differential Segmented Aperture

INTELLIGENT SENSOR

- Autonomy Enabled Sensor
- Unattended Sensor
- NANTENDO

SPACE

- Modular Integrated Payloads
- Prometheus
- TENCAP (CIP-A, OASIS)

OPTICS

- 5Km TVS
- Folded Optics
- Sensor Agnostic Miniature

~\$39M
28 efforts

Team Lead
Dan Granados
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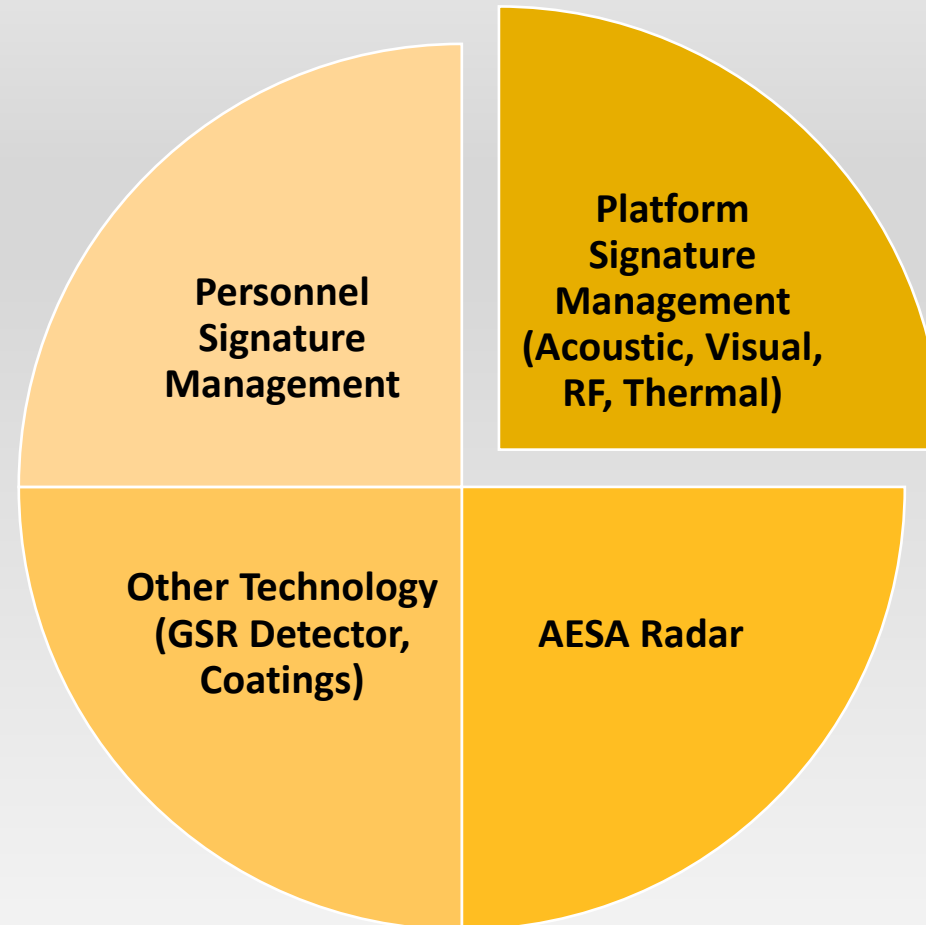
- NGISR portfolio encompasses tactically relevant situational awareness in all domains; focusing project efforts; transitioning incremental projects to programs of record

Next Generation Mobility CFA

NEXT GENERATION MOBILITY



Signature Management



**~\$18M
and 12 efforts**

Team Lead
Conrad Lovell
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- Emphasize Focus on Platform Signature Management
- NGM Supports Air, Ground, Maritime Surface/Subsurface Technologies, and Sensor Defeat

S&T Engagement Tools

S&T ACTIVITY	OPPORTUNITY	ENGAGEMENT
<p>SOF Futures Innovation Foundry Events POC: Mr. Brian Sisco 813-826-2249, brian.sisco@socom.mil</p>	<ul style="list-style-type: none"> S&T has developed an S&T Futures Process S&T conducts “Innovation Foundry” events to enable SOF’s ability to accomplish their missions 10-15 years in the future 	<ul style="list-style-type: none"> S&T plans to conduct 2-3 SOF Futures Innovation Foundry Events per Fiscal Year Innovation Foundry events will provide opportunities for attending and injecting disruptive technology solutions for SOF
<p>Small Business Innovation Research (SBIR)/ Small Business Technology Transfer (STTR) POC: Mr. Mina Khalil 813-826-7003, mina.khalil@socom.mil</p>	<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"> https://www.socom.mil/SOF-ATL/Pages/sbir.aspx USSOCOM participates in three SBIR/STTR Topics Call per year (April, August, and December timeframes)
<p>Technical Experimentation (TE) Events POC: Mr. Dan Bernard 813-826-9917, dan.bernard@socom.mil</p>	<ul style="list-style-type: none"> Conducts 3-4 US-based events every fiscal year each with different theme(s) Industry opportunity to engage and demonstrate technology/concepts and get direct feedback from SOF Operators/Acquisition Professionals 	<ul style="list-style-type: none"> Normally 1 TE Event/QTR, TE Request for Information (RFI) posted on Beta.SAM.gov for each TE Event Go to https://www.socom.mil/SOF-ATL/Pages/technical-experimentation.aspx
<p>Cooperative Research & Development Agreements (CRADA) POC: Mr. Benjamin Chitty 813-826-5162, discovery@socom.mil</p>	<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
<p>Broad Agency Announcements (BAA) POC: Mr. Peter Greany 813-826-7423, peter.greany@socom.mil</p>	<ul style="list-style-type: none"> SOCOM S&T Directorate/PEOs develop and post BAAs to SAM.gov that provide Areas of Interest (AOI) to Industry and other External Organizations. 	<ul style="list-style-type: none"> S&T has posted a 5-year BAA that will be periodically updated with Areas of Interest (AOI) Biomedical BAA currently posted through US Army
<p>Tech Scouting Tool POC: Mr. Barton Graham 813-826-6903, barton.graham@socom.mil</p>	<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"> Tech Scouting Tool supports evaluation/ assessment/scoring of submitted technologies, and sharing of results Contact POC for instructions to register
<p>Engage SOF (eSOF) POC: Mrs. Shelvin Watts 813-826-1269, eSOF@socom.mil</p>	<ul style="list-style-type: none"> Conduit for the SOF AT&L Enterprise Matches your company’s product/service/capability to the appropriate personnel within the command and schedules discussions or demos 	<ul style="list-style-type: none"> Go to https://www.socom.mil/SOF-ATL/Pages/eSOF-before-you-submit.aspx for information and link to USSOCOM Areas of Interest and for the eSOF Submitting Your Idea Form

QUESTIONS?

