SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE
Accelerating SOF Innovation

Ms. Deb Woods *Program Executive Officer C4*

COMMAND, CONTROL, COMMUNICATIONS, & COMPUTERS OVERVIEW

Program Executive Office for C4

Vision

One Force, One Environment – Reliable, secure communications and seamless connectivity for SOF from dismounted to garrison operations

Mission

Manage the development, acquisition, fielding, new equipment training, and sustainment of C4 and Military Information Support Operations (MISO) systems

FUNDING		
	FY19	**FY20**
• **RDT&E:**	**$35M**	**$35M**
• **PROC:**	**$417M**	**$418M**

Portfolio

ENTERPRISE NETWORKS

Special Operations Command Research, Analysis, and Threat Evaluation System

SOF Information Technology Enterprise Operations and Maintenance Services
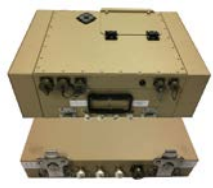

C4 Information & Automated Systems

SCAMPI (not an acronym)

MISO SYSTEMS

Next Generation Loudspeaker System

Fly-Away Broadcast System

MISO-Print

Media Production Center

Multi Mission Payload

TACTICAL COMMUNICATIONS

SOF Tactical Communications

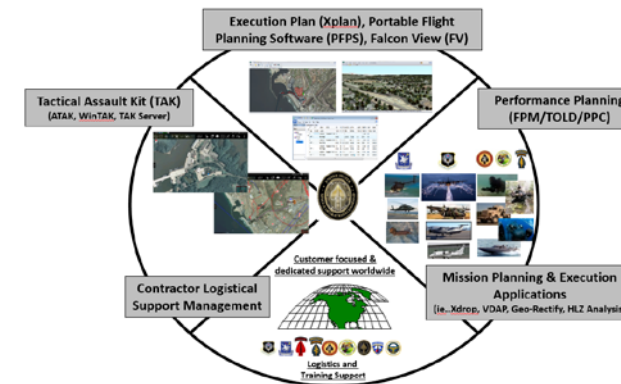**Satellite Deployable Nodes / Mobile SOF Strategic Entry Point**

Tactical Local Area Network

Radio Integration System

SPECIAL OPERATIONS MISSION PLANNING & EXECUTION

DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE

Focus Areas

- **Acquisition Agility**
  - Non-Traditional Methods
  - Strategic Sourcing

- **Transformational Capabilities**
  - Hyper-Enabled Operator
  - Assured Communications

- **Dynamic Operational Environments**
  - Interagency and International Interoperability
  - Transregional, Multi-Domain, Multi-Functional

SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE
Accelerating SOF Innovation

LtCol Shelton Richards *PM Tactical Communications, PEO C4*
COMMAND, CONTROL, COMMUNICATIONS, & COMPUTERS OVERVIEW

PM Tactical Communications

NEXT GENERATION TACTICAL COMMUNICATIONS (NGTC)

SATELLITE DEPLOYABLE NODE (SDN)

RADIO INTEGRATION SYSTEM (RIS)

TACTICAL LOCAL AREA NETWORK (TACLAN)

FIELD COMPUTING DEVICE (FCD)

PM TACTICAL COMMUNICATIONS FUNDING

	FY19	FY20
RDTE	$18.4M	$24.4M
PROC	$309.4M	$213.5M

Next Generation Tactical Communications

- **Provides Next Generation SOF Tactical Communications**

- **Capabilities Include: Real Time, Hostile and Friendly Force Information; Line of Sight (LOS) and Beyond LOS (BLOS) Communications; and Access to Situational Awareness in the Form of Intelligence Inputs, Broadcasts, and Networks**

- **Consists of Two Form Factors: 1) Manpack and 2) Handheld**

ACQUISITION STRATEGY
• COTS/NDI • Future capabilities: Evolutionary Technology Insertions

PERIOD OF PERFORMANCE
• These systems are supported by multiple contracts

MILESTONES
• Production/Sustainment • Capital Equipment Replacement Program

POINT OF CONTACT
• 813.826.9482 (TILO)

FUNDING		
	FY19	FY20
• RDT&E	$4.6M	$10.6M
• PROC	$104.4M	$83.1M

CURRENT CONTRACT/OEM
• Various

Satellite Deployable Node (SDN)

- **Family of deployable, super high frequency, multi-band, SATCOM systems providing deployed SOF users with the transport path for access to the SOF Information Environment**

- **Provides high-capacity voice, data, VTC, and video at all levels of classification**

- **Consists of heavy, medium, light, SATCOM on-the-move, and airborne ISR transport**

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• COTS/NDI • Future capabilities: Evolutionary Technology Insertions	• These systems are supported by multiple contracts	• Production/Sustainment • Capital Equipment Replacement Program

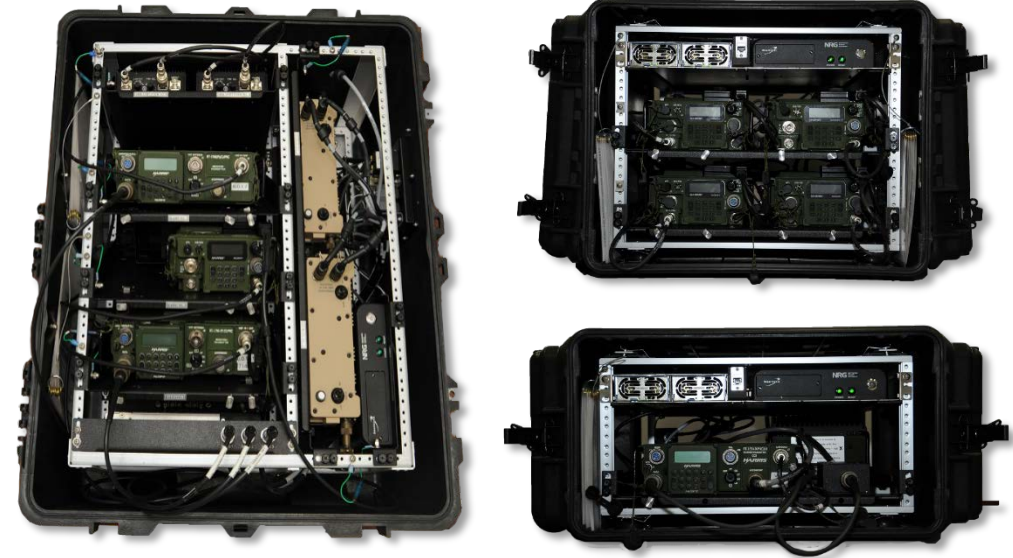| POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		FY19 FY20	• Various
	• RDT&E	$9.2M $10.5M	
	• PROC	$170.1M $114.2M	

Radio Integration System (RIS)

- **Provides command, control, and communications (C3) between deployed Special Operations Force (SOF) bases and Liaison teams to SOF headquarters, and SOF support elements**

- **Modular: Enables the SOF operator to tailor the system to meet current mission requirements**

- **Scalable: Facilitates reduction in size, weight, and power requirements**

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• COTS/NDI • Future capabilities: Evolutionary Technology Insertions	• These systems are supported by multiple contracts	• Production/Sustainment • Capital Equipment Replacement Program

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		FY19 FY20	• Various
	• RDT&E	$0M $0M	
	• PROC	$7.8M $4.3M	

Tactical Local Area Network (TACLAN)

- Family of systems provides SOF commanders and forward-deployed forces advanced automated data processing and display capabilities through a common deployed tactical local area network infrastructure and Field Computing Devices (FCD)

- Provides specialized and common software applications to support a wide range of SOF mission sets from the individual and small team level to larger SOF Task Force contingents

- Seamless connectivity to multi-level secure networks to facilitate information exchange between the SOF Warfighter, and DoD information networks.

- Improves SOF tactical situational awareness, command and control, mission planning and execution activities, and intelligence analysis and reporting

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• COTS/NDI • Future capabilities: Evolutionary Technology Insertions	• These systems are supported by multiple contracts	• Production/Sustainment • Capital Equipment Replacement Program

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)			• Various

FUNDING

	FY19	FY20
• RDT&E	$4.2M	$3.3M
• PROC	$27.1M	$13.1M

Field Computing Device (FCD)

FCD-R   **FCD-W**

- **End User Device for TACLAN suite of software**
  - FCD-Rugged (FCR-R): Semi or fully ruggedized laptop/computer:
    - Fielded to the operators in static deployed positions
  - FCD-Wearable (FCD-W): Handheld Wearable Device:
    - Fielded to the dismounted mobile operator engaged in combat or reconnaissance patrols

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• COTS/NDI • Future capabilities: Evolutionary Technology Insertions	• These systems are supported by multiple contracts	• Production/Sustainment • Capital Equipment Replacement Program

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		FY19 FY20	• Various
	• RDT&E	$4.2M $3.3M	
	• PROC	$27.1M $13.1M	

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Tactical Communications Areas of Interest

- Size, Weight, and Power Reduction
  - **Modularity, Hardware Commonality, Reduced Complexity of Operation and Maintenance**
    - **Antenna Profile Reduction**
    - **Cybersecurity - Secure Communications**
    - **Cross Domain Solutions**
    - **Mission Module Technical Insertion**
    - **Wireless/Tethered Personal Area Network**

Tactical Communications Areas of Interest

- **LOS and BLOS Radio Frequency (RF) Communications:**
  - Signature reduction
  - Jam Resistant Waveforms
- **High Bandwidth RF Communications**
  - Intelligence, Surveillance, Reconnaissance Transmissions; Wideband High Frequency
- **Multi-band, Capable of Access to Available Architectures**
  - C, X, Ku, Ka Band
  - High Throughput Commercial Ka Band
- **Satellite Communications (SATCOM) On-The-Move Antennas - Ground, Airborne, and Maritime**

SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE
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Tricia Hill *PM Enterprise Networks, PEO C4*

COMMAND, CONTROL, COMMUNICATIONS, & COMPUTERS OVERVIEW

Enterprise Networks

SCAMPI

SOCRATES

CIMDPS

C4IAS

ENTERPRISE LICENSE AGREEMENTS

MOBILE COMMS

DISTRIBUTION A: APPROVED FOR PUBLIC RELEASE

Enterprise Networks - Garrison

- **Provides SOCOM Unclassified/Classified garrison infrastructure and end user devices**

- **Provides SOCOM Telecommunications system enabling network transport voice, data, and video services (all classifications)**

- **Provides SOCOM intelligence automation enterprise architecture ensuring interoperability with DoD, national, and service intelligence information systems**

- **Provides a variety of automated tools for Command and Control, collaboration, planning, analysis, processing, and dissemination**

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Evolutionary acquisition strategy based on availability of COTS • Future capabilities: Evolutionary Technology Insertions	• Supported by multiple contracts	• Production/Sustainment • Capital Equipment Replacement Program

POINT OF CONTACT	FUNDING	CONTRACTOR/OEM
• 813.826.9482 (TILO)	FY19 FY20 • PROC: $91.8M $89.0M • O&M: $131.7M $196.8M	• Multiple

Enterprise Networks

Areas of Interest

- **Neural Networks**
  - Quantum Computing
  - Artificial Intelligence
  - Machine Learning
  - Advanced Analytics

- **Cloud Technologies**
  - Hybrid Cloud leveraging containerized solutions
  - Permission Based Blockchain
  - Desktop as a Service (DaaS)

- **Communications**
  - Unified Communications w/Management System
  - Classified Mobile Messaging Device (DAR encryption)
  - Software Defined Networks

- **Internet of Thinking (Self Healing Network)**

- **Virtual Reality**

- **Edge Computing**

SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE
Accelerating SOF Innovation

Joanne Johnson *PM Military Information Support Operations (MISO), PEO C4*
COMMAND, CONTROL, COMMUNICATIONS, & COMPUTERS OVERVIEW

Military Information Support Operations (MISO)

FLY-AWAY BROADCAST SYSTEM

MEDIA PRODUCTION CENTER

MISO-PRINT

**SPECIAL OPERATIONS
SCIENCE & TECHNOLOGY (SOST)**

NEXT GEN LOUDSPEAKER SYSTEM

MULTI-MISSION PAYLOAD

Next Generation Loudspeaker System

- **Provides Next Generation SOF Message Dissemination Capability**

- **Capabilities:** Modular/Interconnected Amplifiers And Speakers Providing High Quality Recorded Audio, Live Dissemination, And Acoustic Deception Capability.

- **Six Variants:** 1) Dismounted, 2) Mounted, 3) Scatterable Media, 4) Sonic Projection, 5) Unmanned Ground Vehicle, 6) Unmanned Aerial Vehicle

- **Technology Interest Areas**: Listen Back Capability, Sonic Projection, Remote Programming, Web Based Internet Distribution, Wireless rechargeable power sources

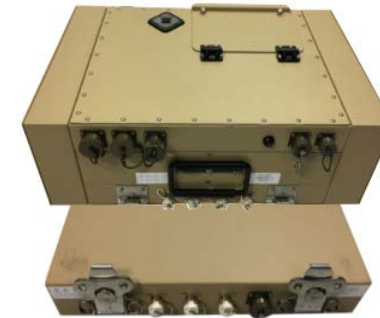| ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• **Developmental – Scatterable Media** • **Evolutionary – NGLS –Dismounted/Mounted** • **Future capabilities: Transformative capabilities**	• **Systems supported by multiple contracts**	• **NGLS-Mounted/Dismounted Capital Equipment Replacement Program (CERP) Evolutionary Dev** • **NGLS-Scatterable Media INC 1 Dev FY19-20** • **Initial look at emerging tech/future integration**

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• **813.826.9482 (TILO)**		**FY19** **FY20**	• **Sky Life** • **Tyonek TEAMCOR**
	• RDT&E • PROC	$6.6M $866K $0 $0	

Fly Away Broadcast System (FABS)

- A modular and highly-deployable radio (FM), television (TV), and SMS (cellular) broadcasting system able to transmit on a wide range of frequencies and spectrums, including: FM, SW, TV VHF, TV UHF, cellular and in both digital and analog formats.

- FABS V3 is an Evolutionary Technical Insertion (ETI) of the FABS V2 tactical system creating a 97% reduction in weight from 1200 lbs. to 50 lbs. and a 90% reduction in cost from $750K to $70K.

- **Technology Interest Areas:** AM broadcast, CDMA Capability, extended range and modular antenna payload for SUAS.

FABS V3 CORE SYSTEM

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Evolutionary Dev- FABS v3 • Transformative Development- reduced SWAP to man-packable and SUAS capability; government owned waveforms	• FABS systems supported by multiple contracts	• FABS v 3 fielded 7 Nov 2018 • FABS v3 Sustainment • Next Gen FABS in Development FY 19-21

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		FY19 FY20	• FABS v3 OEM-JHU • SPAWAR- SDN Integration/ Next Gen FABS • Par Gov- TAK Integration • Harris- Next Gen Mobility Integration
	• RDT&E $.87M $.88M • O&M $2.41M $2.75M		

Multi-Mission Payload (MMP)

- Provides airborne MISO broadcast Capability

- Integrated on manned (C-130, C-12) and unmanned (MQ-1C, MQ-9) aircraft

- Capabilities Include: FM radio broadcasts up to 175 nm, TV (VHF & UHF) up to 175 nm, Cellular broadcasts up to 21 nm

- Consists of Four Variants: 1) MMP-Heavy, 2) MMP-Medium, 3) MMP-Expanded, and 4) MMP-Light

- **Technology Interest Areas:** Size, Weight, and Power Reduction: Modularity, Hardware Commonality, Ultra-lightweight FM, TV, and Cellular Messaging Broadcast
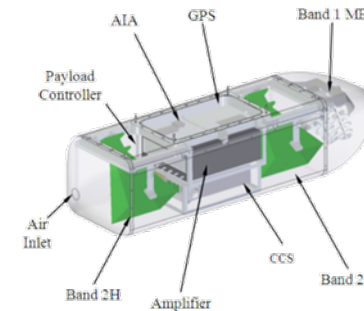
ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• **Developmental** • **COTS/NDI** • **Future capabilities: Evolutionary Technology Insertions**	• **MMP systems supported by multiple contracts**	• **Development/Production/Sustainment**

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• **813.826.9482 (TILO)**		FY19 FY20	• **Various**
	• RDT&E	$3.2M $1.2M	
	• PROC	$9.6M $13.3M	

MISO Special Operations Science & Technology

- **Advanced Technology Demonstrations delivering opportunities and solutions in emerging technologies that radically increase capability of PSYOP forces**
  - Apply Human Language Technology tools to increase capability and reduce human resource burden
  - Provide artificial intelligence & machine learning technologies for Target Audience Analysis and Evaluation
  - Enhance defensive capabilities with media manipulation & forensic tools
  - Provide data analytic tools that decrease the manpower & amount of time each analyst spends manually aggregating and analyzing pieces of data
  - Integrate resources from government, academia, and industry

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Advanced Technology Demonstrations • Emerging Technology Research and Prototypes • OTAs, PIAs, BAAs, SBIR	• Supported by multiple contracts through 2020	• Not Applicable

POINT OF CONTACT	FUNDING			CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		FY19	FY20	• Various
	• RDT&E	$4.3M	$4.5M	
	• PROC	$ N/A	$ N/A	

Media Production Center

- **Capabilities Include:** A set of independent but inter-related multi-media production, editing, mission planning software, and archiving capabilities providing Military Information Support Operations to PSYOP units and other select organizations with options for imagery, audio, animation, and audio/video (AV) products of varying degrees of technical complexity and operational responsiveness

- **Consists of Three Form Factors:**
  1) Light, 2) Medium, and 3) Heavy

- Technology Interest Areas include artificial intelligence, machine learning, advanced language translation, media manipulation, and digital forensic tools

High-end Laptop

Sony Camcorder (Medium Kit)

Canon SLR Camera

Canon Scanner

ACQUISITION STRATEGY
• Commodity Purchase Program • COTS • **Future capabilities: Evolutionary Technology Insertions**

PERIOD OF PERFORMANCE
• 18FEB to 17FEB Annual

MILESTONES
• Sustainment • Capital Equipment Replacement Program

POINT OF CONTACT
• **813.826.9482 (TILO)**

FUNDING		
	FY19	FY20
• RDT&E	$0	$0
• PROC	$0	$0
• O&M	$3.8M	$3.8M

CURRENT CONTRACT/OEM
• Annual Life Cycle Support Maintenance task orders supported by SOFSA/Lockheed Martin/Kodak & Charles River Analytics

Military Information Support Operations Print (MISO-P)

- The Military Information Support Operations Print System (MISOP) is a family of print systems designed to support the MISO print requirements of a GCC using the latest commercial digital press technologies. This Family of Systems supports from small units up to an entire theater of operations

- The MISO Print FoS consists of four variants: the tactical MISOP-Light, the MISOP-Medium (Fixed) - installed at a fixed site in Qatar supporting SOCCENT operations, |a deployable MISOP-Medium version, and the strategic MISOP-Heavy system at Fort Bragg, NC

- MISOP utilizes commercially available digital presses and auxiliary equipment for the creation, editing, and production of MISO print products

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Commodity Purchase Program • COTS	• 18FEB to 17FEB Annual	• Sustainment • Capital Equipment Replacement Program

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		FY19 FY20	• Annual Life Cycle Support Maintenance task order supported by SOFSA/Lockheed Martin/Kodak
	• RDT&E	$0 $0	
	• PROC	$0 $0	
	• O&M	$6.2M $4.4M	

SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE
Accelerating SOF Innovation

Howard Beasley *DPM SOMPE, PEO C4*

COMMAND, CONTROL, COMMUNICATIONS, & COMPUTERS OVERVIEW

Special Operation Mission Planning and Execution
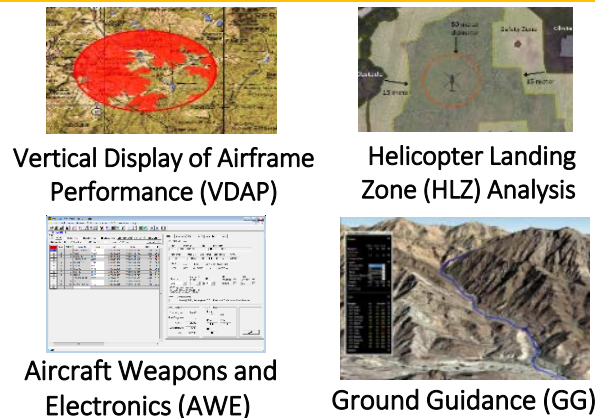
EXECUTION PLANNING (XPlan)

TACTICAL ASSAULT KIT (TAK)

MISSION PLANNING SUPPORT
ENGINEERS, DT, INTEGRATION, SETA


PERFORMANCE PLANNING

TACTICAL APPLICATIONS

Vertical Display of Airframe Performance (VDAP)

Helicopter Landing Zone (HLZ) Analysis

Aircraft Weapons and Electronics (AWE)

Ground Guidance (GG)

PM SOMPE
FUNDING

	FY19	FY20
RDTE	$7.5M	$8.3M
O&M	$21.2M	$21.8M

Execution Plan (XPlan)

- **Replaces PSPS, provides common & SOF-unique, Air, Ground and Maritime tactical / route Planning**

- **Increases speed of planning, provides intelligence data, weather info, mission briefing info**

- **Supports Time-sensitive and Deliberate Mission Planning**

- **Mission Planning, Preview / Rehearsal in 2D and 3D**

- **Mission Execution and Situational Awareness for SOF Operations**

- **3rd Party tools / Plug-ins**
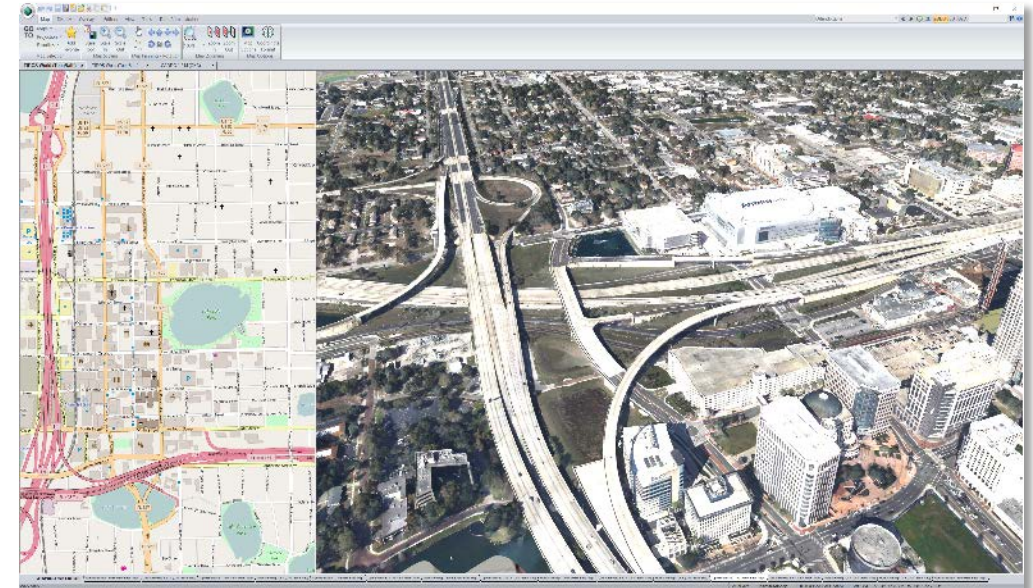
ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Joint Development Army / SOF • GOTS / COTS/ • Future capabilities: Evolutionary Technology Insertions	• Developed and supported by multiple contracts	• Development/Production/Sustainment

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		**FY19** **FY20** RDTE $2.5M $2.8M O&M $2.2M $2.5M	• Various – Nova Technologies, KBRwyle / CAS, GeoWeb 3D

Tactical Assault Kit (TAK)

- **Map-Based, Situational Awareness (SA) Software Application for a Common Operating Picture (COP)**
- **Provides Blue Force Tracking (BFT) &Tactical Capabilities for Special Operations Forces (SOF)**
- **40+ Organizations involved including Military, Civilian, Law Enforcement and Industry Partners**
- **Includes: DHS, JSOC, FBI, Secret Service**
- **Approved To Operate (ATO) on both TACLAN and PM Nett-Warrior Kits**
- **Core + plug-ins for tailored capability**

Android TAK (ATAK)

Windows TAK (WinTAK)

Linux TAK (TAK Server)

Web-based TAK (WebTAK)

iTAK-iOS & VTAK

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Joint Developmental / GOTS • Future capabilities: Evolutionary Technology Insertions	• Supported by multiple contracts	• Production/Sustainment

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)			• Various

FUNDING

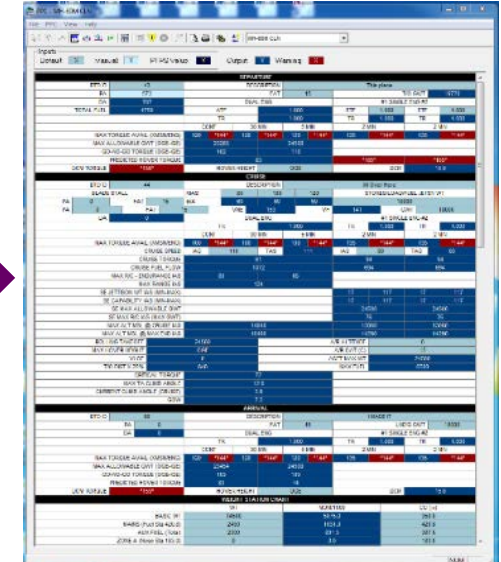|	FY19	FY20
RDTE	$5.7M	$5.9M
O&M	$4.1M	$4.3M

Performance Planning Tools

- **Current - Flight Performance Models (FPMs) Interface with Performance Planning Calculators –PPC & PX3**

- **Future – One Common Performance Calculator (CPC)**

- **Weight and Balance (W&B) – Calculates for aircraft specific configurations, determines if within the allowable range**

- **Fleet of Rotary Wing and Fixed Wing aircraft-20 Configurations**
  - MH-47G, MH-60M, MH-60L, A/MH-6M ,MQ-1CER
  - MC-130H, AC-130W, AC-130U, MC/EC/AC-130J, C-145A,
  - C-146A, U-28A, MC-12C, MQ-9A

ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Developmental / GOTS • Future capabilities: Evolutionary Technology Insertions	• Supported by multiple contracts	• Development/Production/Sustainment

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)			• Various

FUNDING

	FY19	FY20
RDTE	$2.0M	$2.2M
O&M	$.75M	$1.1M

Tactical Planning Applications

- **HLZ Analysis Tool** provides "Hasty" landing area suitability

- **Collaborative Mission Planning (CMP)**
  - Synchronize CONOP Management and COA Analysis

- **Visual Display of Aircraft Performance (VDAP)**
  - FPM output to map – Automates Go-No go decision

- **XDrop**-Airdrop planning (Bundle, CDS or Personnel)

- **Aircraft Weapons and Electronics (AWE)** interface

- **Ground Guidance**
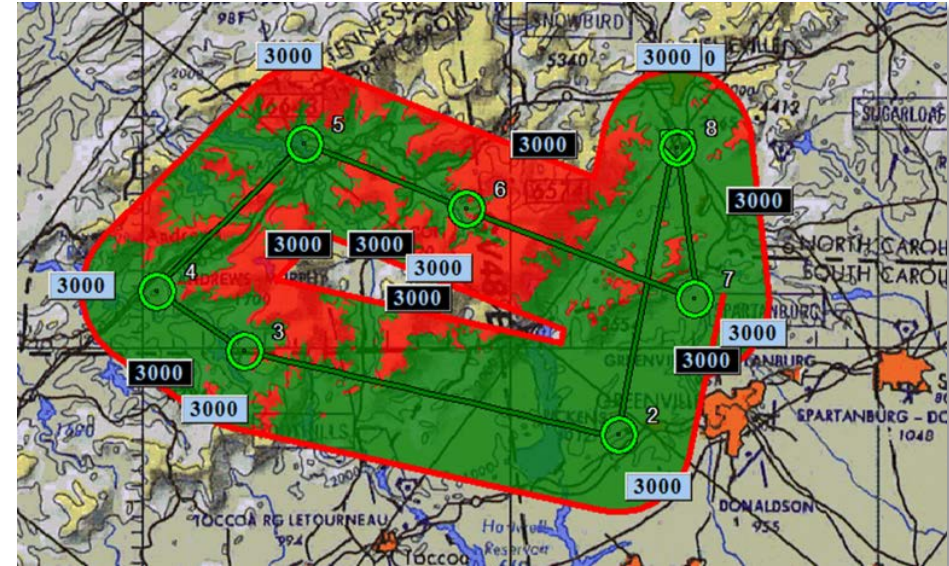
ACQUISITION STRATEGY	PERIOD OF PERFORMANCE	MILESTONES
• Developmental / COTS / GOTS • Future capabilities: Evolutionary Technology Insertions	• Supported by multiple contracts	• Development/Production/Sustainment

POINT OF CONTACT	FUNDING		CURRENT CONTRACT/OEM
• 813.826.9482 (TILO)		**FY19** **FY20**	• Various
	RDTE	$1.9M $2.0M	
	O&M	$.75M $.95M	

Mission Planning & Execution Areas of Interest

- **Innovation in Mission Planning automation**

- **Auto-Routing-** Best altitudes, directional airways, detection, terrain-following, diplomatic clearance, NOTAMS retrieval, divert bases etc.

- **Big Data-** Hosting and dissemination, access, sharing

- **Device Agnostic –** Getting away from platform or OS specific applications

- **Intuitive user interface-** Design vs. high complexity (KISS principle)

- **Use of Augmented & Virtual Reality (AR) & (VR)**

- **Cybersecurity-** Reducing vulnerabilities during build process, streamlining certification, accreditation across all systems

- **Supporting the balance between connected and denied area operations**

- **Real-time Collaborative Planning and Rehearsal –** Across all component systems (co-located and geographically separated)