



SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE

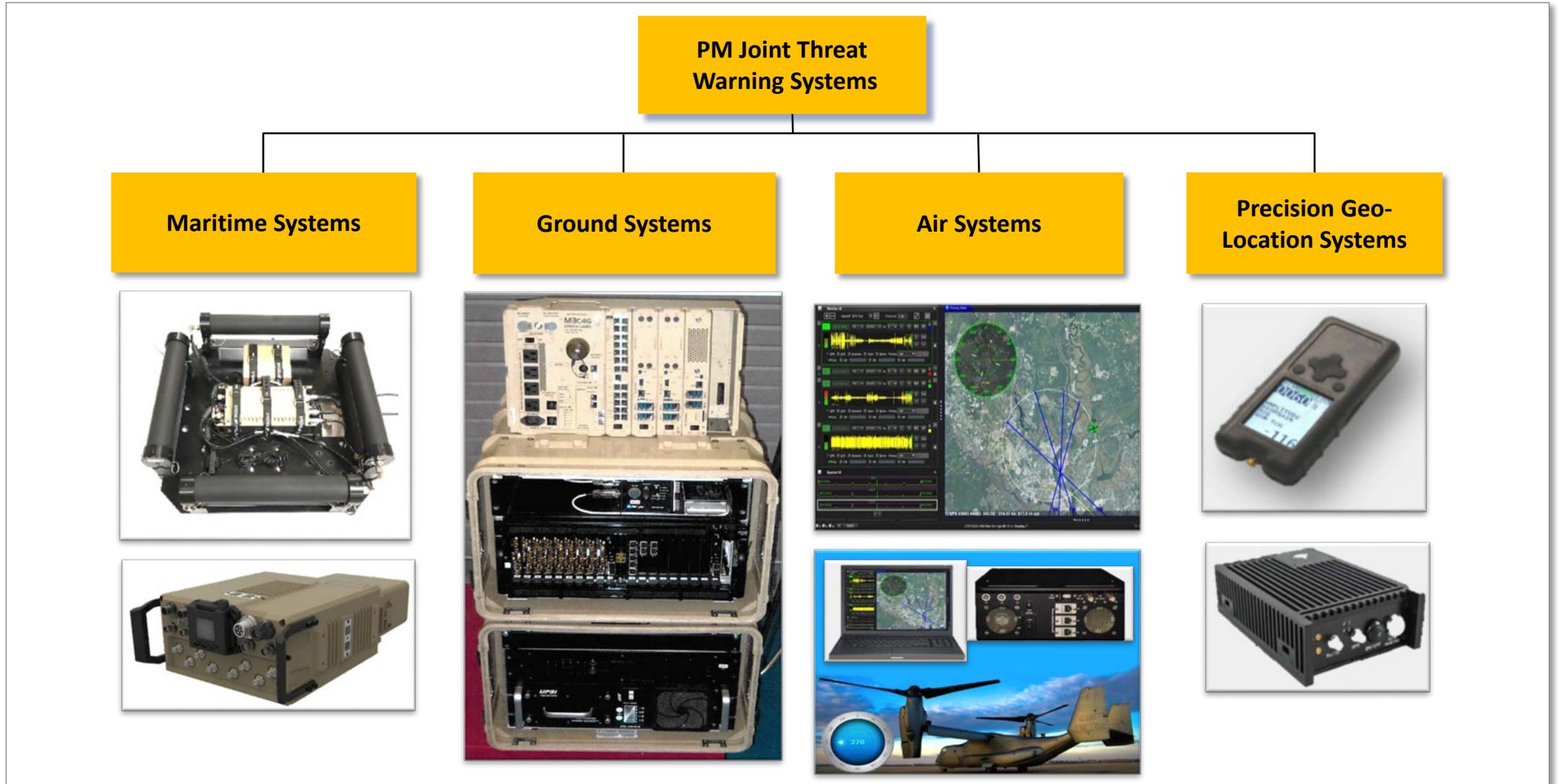
Accelerating SOF Innovation

Mr. Nate Meidl *Program Manager*

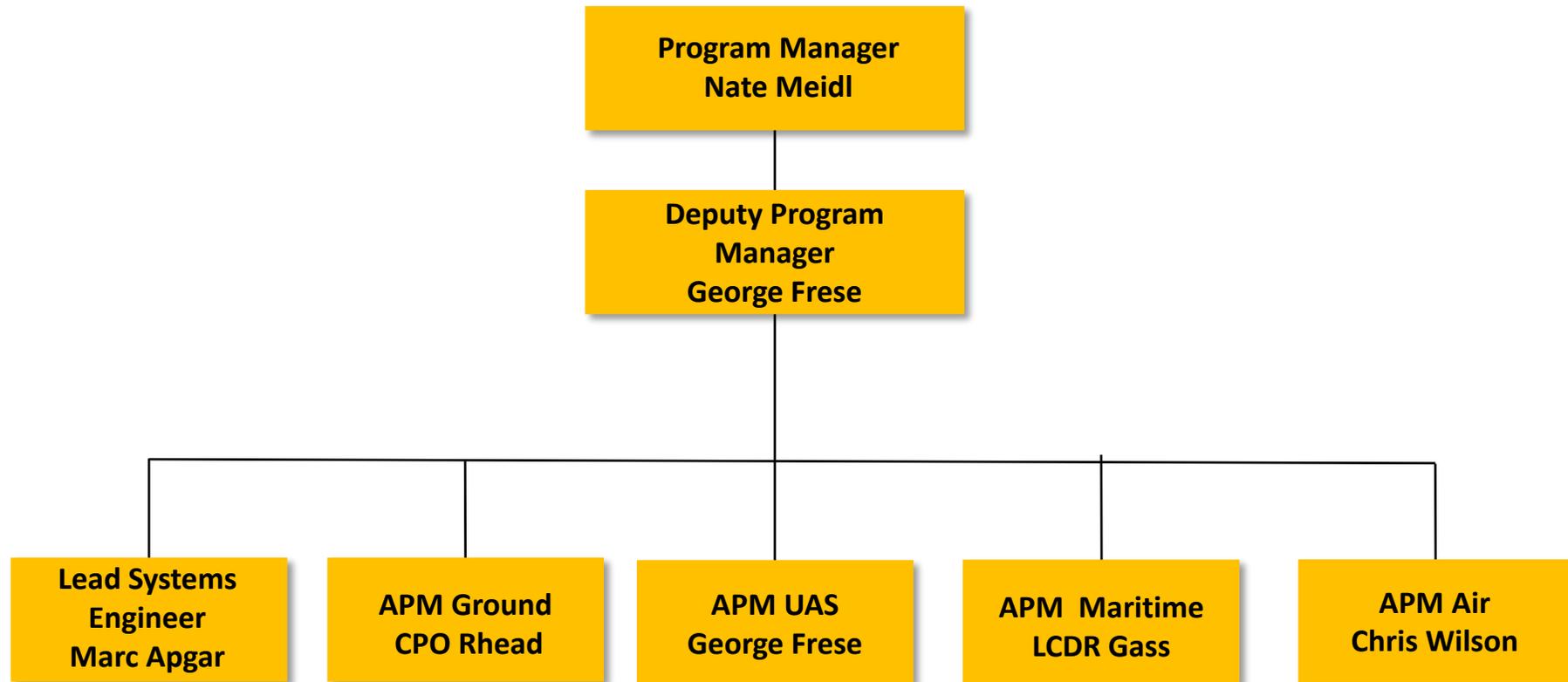
JOINT THREAT WARNING SYSTEM (JTWS)



Program Manager Joint Threat Warning Systems



JTWS Organization



Program Manager

Joint Threat Warning Systems

Mission:

Synchronize acquisition of signals intelligence across the ground, air and maritime domains. Develop and field interoperable, networked sensors based upon open hardware and software architectures to enable the common operating picture and feed data into all-source analysis tools

Priorities:

- **Software Defined/Interoperable**
- **Cyber/IA hardening**
- **Be Positioned to Rapidly Respond to Dynamic Mission Requirements, Threat Picture, and Signals of Interest**
- **Technical Insertion Of Emerging/Maturing Technologies**

Program Manager

Joint Threat Warning Systems

ACQUISITION STRATEGY

- Incremental Procurement of COTS/GOTS/NDI with Technical Insertions and Planned Program Improvements

Funding

<u>APPROP</u>	<u>FY19</u>	<u>FY20</u>
O&M	\$21M	\$24M
PROC	\$39M	\$53M
RDT&E	\$ 5M	\$12M

POINT OF CONTACT

- Technology & Industry Liaison Office
- TILO@SOCOM.mil
- 813-826-9482

Innovation Opportunities

- JTWS Industry Collaboration Event (Oct (T)/St. Petersburg, FL)
- JTWS Industry Demo Event (Sep 16-20/ MUTC, IN)

Program Manager Joint Threat Warning Systems

How can Industry help the SIGINT Operator

Cooperation: We need vendors to collaborate, across platforms and networks, in order to bring the best capability to the SOF warfighter

Integration: Plan and design for integration and interoperability with existing SOF SIGINT systems.

Innovation: Continuously innovate to provide the best technology to the warfighter

JTWS Air Variants

(Light, Medium, Heavy)



Air Light



Air Medium



Air 2 Heavy

Broadcast
Receiver, Radio
and Audio Box

Main Processing
Unit

Direction Finding
Unit

KG / Router Unit

Main Receiver
Unit

Description:

- JTWS-Air (Light) provides Threat Warning and SIGINT capability in a carry-on/carry-off configuration with reduced size, weight, and power for use onboard CV-22,C-146 aircraft
- JTWS-Air (Medium) provides Threat Warning and SIGINT capability as required to meet AFSOC mission requirements
- JTWS-Air 2 (Heavy) provides Threat Warning and enhanced SIGINT capability in a carry-on/carry-off configuration onboard C-130 aircraft

Operational Relevance:

- Provides Force Protection, Threat Warning, and Situational Awareness to SOF Elements in an Airborne Configuration

Opportunities:

- Evolutionary Technology Insertions (ETI) to add capability
- Improved DF Accuracy via enhanced DF/Geolocation Algorithms and/or antennas in same form factor as current antennas
- Sensors capable of remote operations over low-bandwidth links
- Cyber-hardened systems able to connect to DoD Networks
- Use Broad Area Announcements as path to submit technology and capability enhancements
- Input via USSOCOM TILO for un-solicited proposals

JTWS UAS



Modular Payload Bay

SIGINT Kit Payload



Description:

- SIGINT Situational Awareness & Threat Warning for Small UAS platforms (Hand & Rail Launched)
- Swappable SIGINT payloads for PUMA I & II

Operational Relevance:

- Force Protection and Situational Awareness
- Tactical SIGINT with real-time Direction Finding and Geo-location
- Tactical, single, small UAS with focused payload

Opportunities:

- Develop IAW Modular Payload standards
- Trellisware MANET WAVEFORM is the CIO directed STANDARD
- Future payload development as users provide feedback on other Signals of Interest (SOI)
- Input via TILO for non-solicited proposals

JTWS Ground SIGINT Kit (Static, Mobile, and Body Worn)



Description:

- **Static-** Next Generation Multi-Protocol Collection System with capability of Static at reduced SWaP
- **Mobile-** HF/VHF/UHF DF Receiver & Multi-protocol COMINT (some in development/test)
- **Body Worn-** VHF/UHF Direction Finding, Rugged, man-packable, Requires 1 SIGINT operator per kit, Trellisware MANET WAVEFORM is the STANDARD

Operational Mission:

- Threat Warning, Force Protection, and Situational Awareness toolbox consisting of SIGINT capabilities that are man-packable

Opportunities:

- Integrate software solutions into existing hardware
- Annual Assessment of Alternatives (AoA) to inform RDT&E and Procurement decisions
- Evolutionary Technical Insertions (ETI) for capability
- Use BAAs as vehicles to submit software capability enhancements
- Input via TILO for non-solicited proposals

JTWS Maritime System



Description:

- HF/VHF/UHF DF Receiver & Multi-protocol COMINT (some in development/test)
- Carry-on/Carry-Off SIGINT Capabilities for Standard and Non-standard Platforms
- Configurable, ruggedized, low-profile capabilities that minimize SWaP

Operational Mission:

- Configurable, Ruggedized, Low-profile Capabilities Performing Simultaneous Survey, Detection, DF, Processing of Intelligence Information, and Other Missions
- Support Find, Fix, and Finish Operations

Opportunities:

- Integrate software solutions into existing hardware
- Annual Assessment of Alternatives (AoA) to inform RDT&E and Procurement decisions
- Evolutionary Technical Insertions (ETI) for capability
- Use BAAs as vehicles to submit software capability enhancements
- Input via TILO for non-solicited proposals

Precision Geo-Location System (Air, Ground, Maritime)



Description:

- Primary Sensors and Handheld Devices Capable of Processing Frequency Measurements
- Self-Configurable and Supports Numerous Protocols
- Stand-Alone Mode for Collecting Signal Measurements & Geographical Coordinates

Operational Mission:

- Geo-Locate Signals of Interest (SOI) for Air, Ground and Maritime
- Survey, Location Identification, Direction Finding, and other missions

Opportunities:

- Multifunction PGL systems to reduce kit size
- 29 different sensors currently approved for use by the Program of Record
- BAA/RFI process as new requirements emerge; Demo Event/industry Day with Users
- Input via TILO for unsolicited proposals

JTWS Futures - Tech Insertion Roadmap

(U) Functional Area: Redirected Approach to Hardware/Software Solutions



(U) Modular/Open/Scalable - Research

Investigate the current state of Industry standards, and other organizational efforts, to ultimately support: Plug & Play components; Scalable (from light to heavy capabilities) SIGINT & PGL kits.



(U) DF Decoupling - Research

Research the feasibility of receiver agnostic DF arrays, attempting to separate Hardware & Processing to improve Packaging, Integration, Modularity, and Performance.



(U) Backplane standardization

Refine backplane standards and stand up reference implementation lab



(U) Open standard DF antenna

Prototype GOTS and COTS antennas that comply with government defined ICD.



(U) Chassis and SIGINT cards

Prototype Platform Chassis, test cards, and test in the field

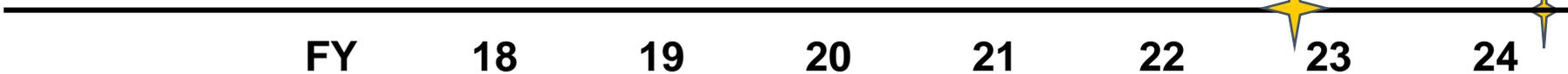


(U) Integrate DF antenna with SIGINT Receivers

Compare performance of multiple receivers with a standard DF antenna



(U) Modular/Open/Scalable - ETIs

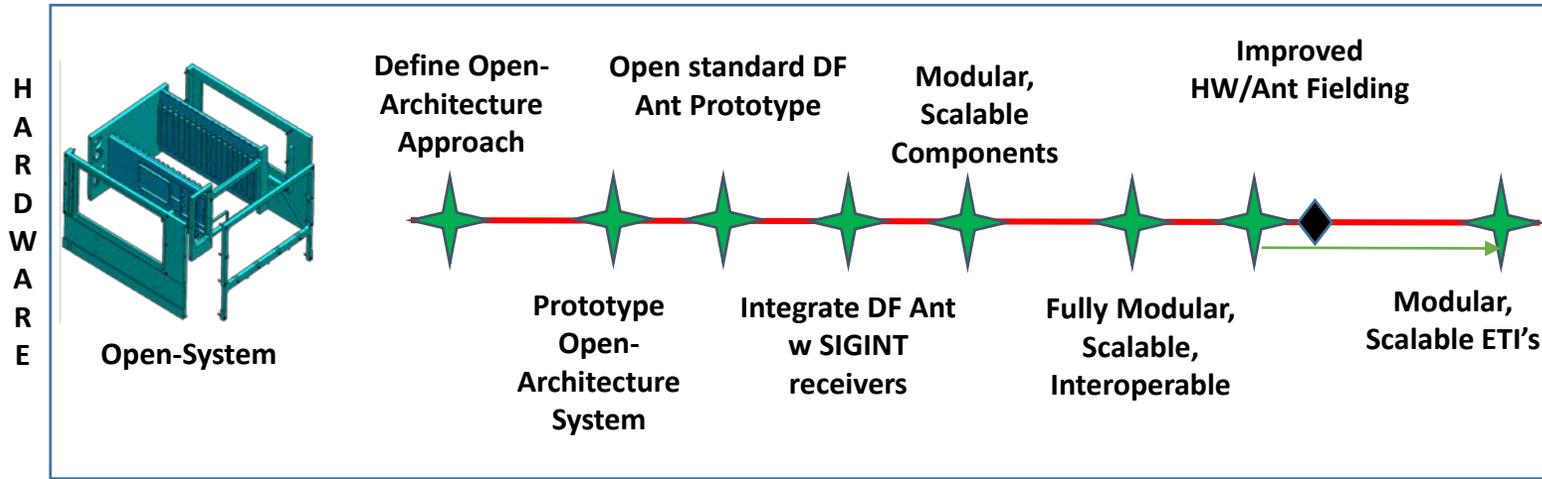


Current Project

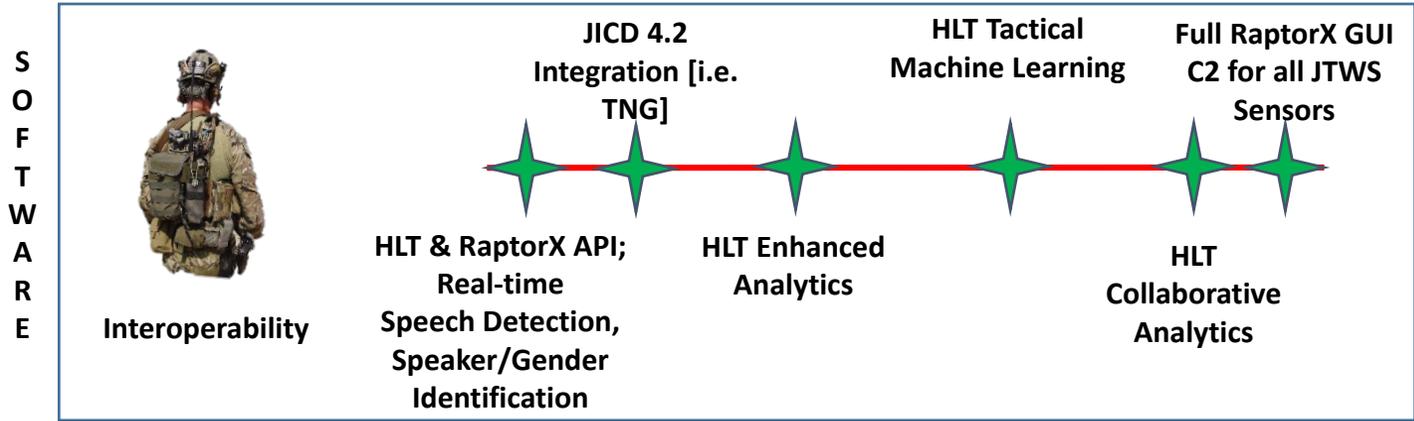


Projected Project

JTWS Tech Insertion Roadmap



Open/Modular Components can be fielded at any point when ready



FY 18 19 20 21 22 23 24

Fully Modular, Scalable, Interoperable, Cross-Domain SIGINT Solution, across All Sub-Programs, w/ C2 Commonality