SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE

COL David Phillips

PROGRAM EXECUTIVE OFFICER
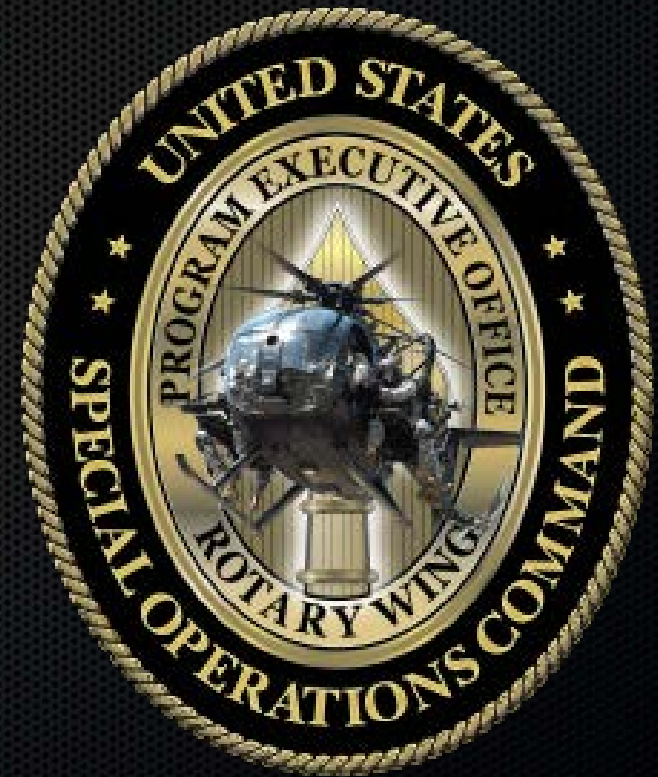
ROTARY WING

Agenda

- **Introduction & Video**

- **History / Environment**

- **Portfolio Overview**

- **Program Highlights**

- **FY16-17 Accomplishments**

- **FY18 Way Forward**

- **Resourcing Strategic View**

- **Wrap Up & Questions**

History Matters

*On December 7, 1941, the United States faced a crisis that led to rapid and innovative change. After the Japanese attacked Pearl Harbor, the Navy and Army struggled to think of ways to strike back at Japan with existing capabilities. In just four months, a handful of senior Naval officers and an Army Lieutenant Colonel met the challenge with a rapid, innovative, and courageous solution requiring **new training, quick modifications to existing aircraft, and employment of capabilities and personnel using ways not previously imagined**. Their quick, innovative thinking allowed the U.S. to conduct a strong counterpunch, a bombing raid on Tokyo, with sixteen B-25 bombers launched from the aircraft carrier, **USS Hornet, on April 18, 1942**, boosting national morale and helping to shift the course of World War II toward victory.*

The Environment

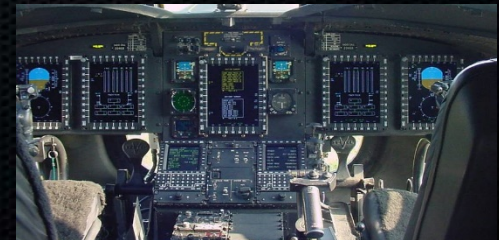- **Today's environment is changing rapidly**, described by retired General Michael Hayden as the new "*global disorder"*

- **Challenges**: the growth of enemy anti-access / area denial capability, cyber and space threats, and proliferation of weapons technologies.

- **The Army Operating Concept**, describes the future environment -- an unknown future, and looks to build capabilities to "Win in a Complex World."

- **Mission Command** doctrine – we need learning, empowered organizations with initiative that can exploit the environment.

- ***The need for innovative solutions is clear; will acquisition be able to deliver the right solutions faster to keep up?***
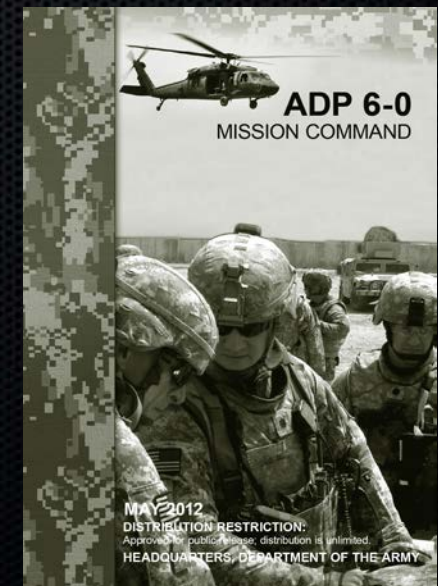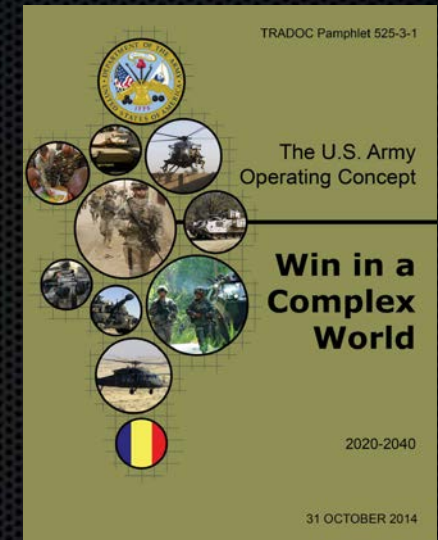
PEO Rotary Wing

Mission: Rapid and focused acquisition, research and development, and life-cycle logistics support to the operators of the USASOAC--160th Special Operations Aviation Regiment which provides SOF rotary wing capability to the joint force.

- **Win:** Sustain current operations, ensuring SOF readiness to win the current fight.

- **Transform:** Strategic resource sponsorship for current and future capabilities.

- **People:** Support the people and program offices located at Joint Base Langley Eustis (PM TAPO, PM MELB); in Orlando (PM STS); and at MacDill AFB (PM SKR).

- *How:*
  1. *Keep operators involved / build networks with the supported component commands.*
  2. *Exploit proven technologies. Collaborate with Army and DoD. Take and manage risk.*
  3. *Ensure we take care of our people that work each day to accomplish our mission.*

Rotary Wing Network

USASOAC
SIMO
(Capability Sponsor)

160th SOAR (A)
Operators

PEO RW USSOCOM
(Resource Sponsor)

PM TAPO/PM SKR/PM STS/PM MELB
(Materiel Developer)

1. Culture

2. TTPs

3. Risk

| Other Services | Army Staff | USAACE | AMCOM | RDECOM | Industry Partners |

PEO Rotary Wing

MOBILITY

A/MH-6 Light Attack/Assault

Medium Assault MH-60

Heavy Assault MH-47

Airframe Recapitalization

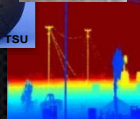## MISSION EQUIPMENT

Active Aircraft Survivability Equipment

Passive Aircraft Survivability Equipment

Avionics

Sensors   **Silent Knight Radar**

Common Hardware & Software

TRAINING SYSTEMS

A/MH-6M Little Bird

MH-47G CMS

MH-60M CMS

Battle Staff Training Exercise Management Control

Stimulated vs Simulated

Mobility

A/MH-6M Block 3.0
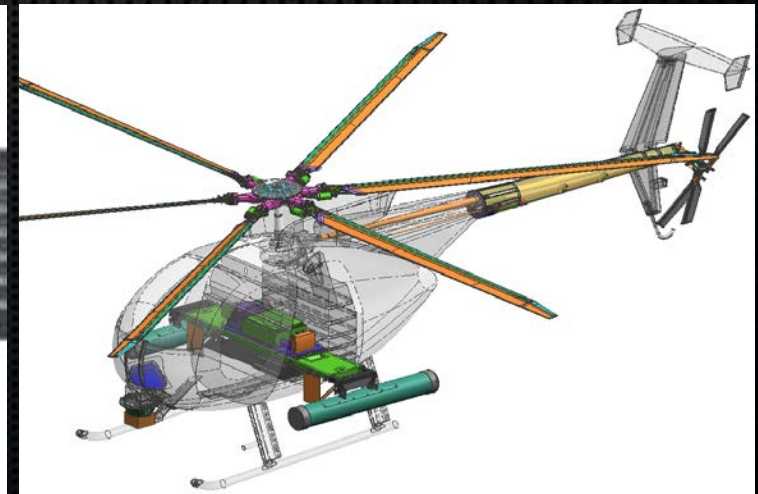

MH-60M Block 1.0

MH-47G Renew

A/MH-6M

AH-6M

MH-6M

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Current A/MH-6 Efforts

- Block 2.2 upgrade execution
  - ➤ Improves crew safety

- Block 3. 0 upgrade
  - ➤ Improves payload
  - ➤ Improves flight controls
  - ➤ Improves cockpit

MH-60 Program

Current MH-60 Efforts

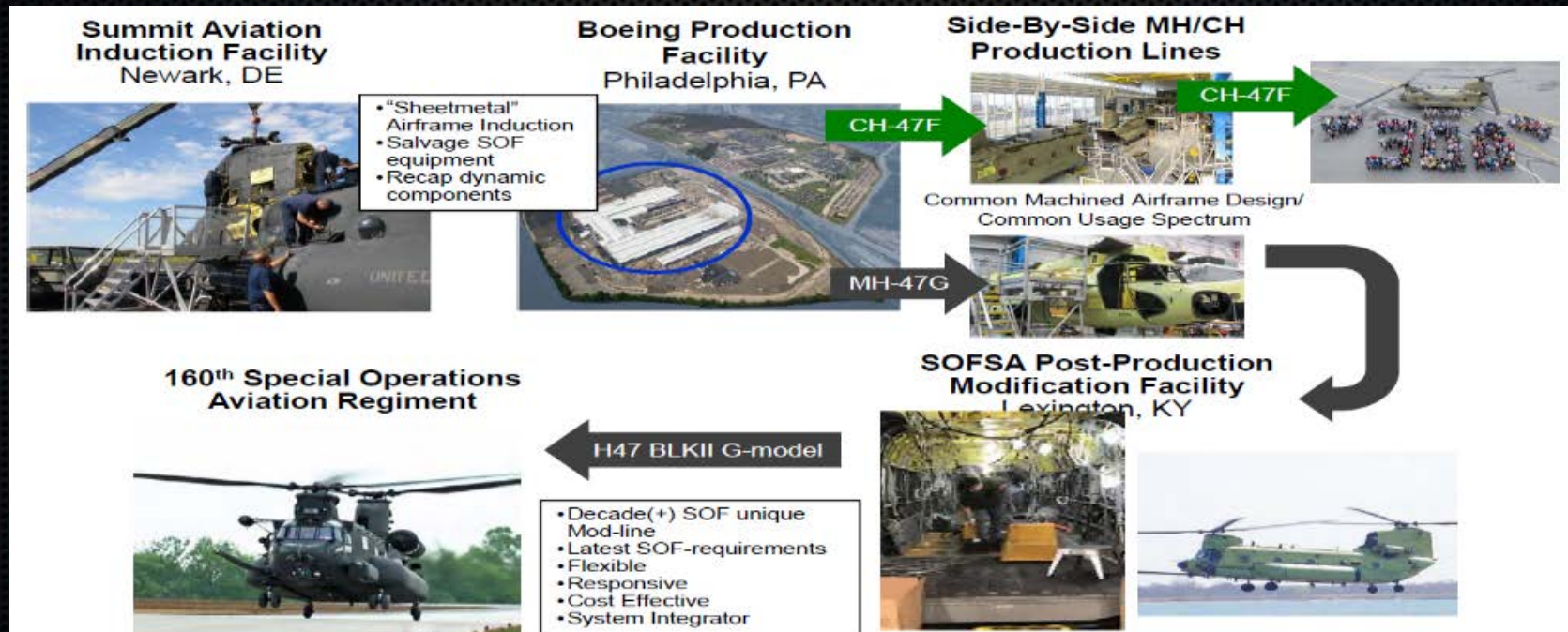- MH-60M Block 0

- Block 1 Upgrade

MH-47 Program

Current MH-47G Efforts

- RENEW

  ➢ Modernization and Recap program for 61 legacy airframes

  ➢ Executed in collaboration with the Army's H-47 Block II F-model effort

- Development Efforts

  ➢ Payload Restoration

  ➢ Advanced Parallel Actuator System (APAS)

  ➢ Engine Barrier Filter

Technology Trends

	Sony Trinitron - 2001	Panasonic Viera - 2013	Samsung UHD - 2017
Performance	4:3, 480p, RCA	16:9, 1080p, 3D, HDMI, WiFi	16:9, 2160p, 4K Ultra HD, HDMI, WiFi
Size	32" 35.4" x 27.4" x 22.6" = 21,921 in³	55" 50.6" x 30.0" x 2.0" = 3036 in³	65" 53.5 x 36.4" x 2.0" = 4381 in³
Weight	~ 165 lbs	~ 83 lbs	~51 lbs
Cost (2017 Constant Dollars)	~ $1359	~ $1030	~$799

Increased capability, Lower SWaP, Lower Cost

Mission Equipment Efforts

Aircraft Survivability Equipment:
- Lightweight IR Countermeasure Development
- SIRFC Enhancements
- Flare Improvements

Sensors and Weapons:
- Degraded Visual Environment Development
- Market Research for a Potential New EO/IR Sensor
- Terrain Following / Terrain Avoidance Radar

Avionics:
- Secure Real Time Video Integration
- Tactical Airborne Network Integration
- Mission Processor Upgrades

Sustainment:
- Sustain operational availability
- Control sustainment costs of mission equipment
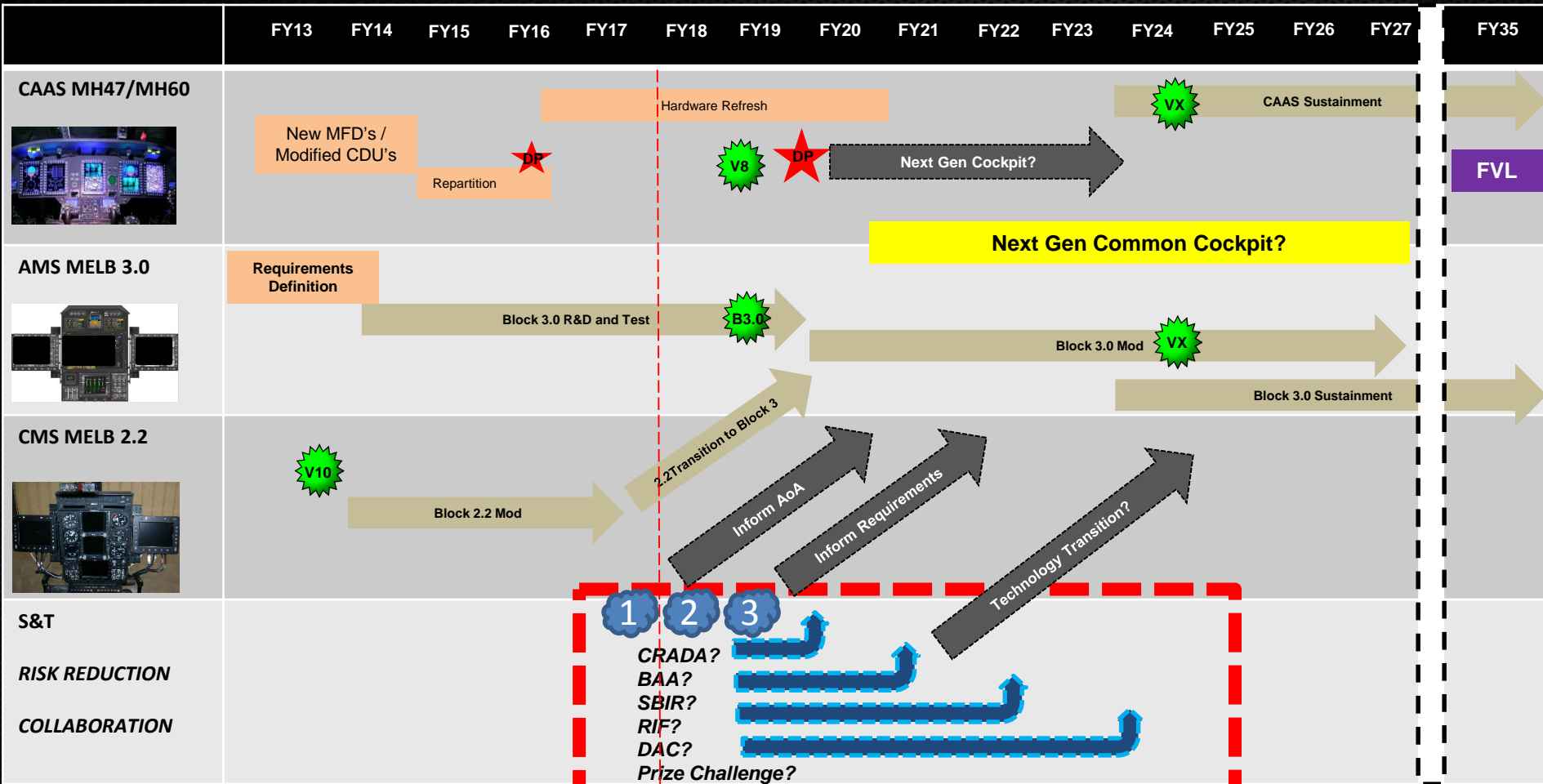
Direct Fire Threat (Detect and Locate)

Radar Threat (Receive and Jam)

EO/IR Missile Threat (Detect and Decoy/Jam)

SIRFC

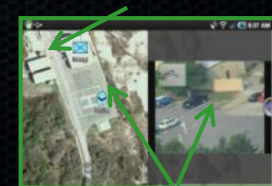**Degraded Visual Environment**

Ground Force Software Compatible

GOTS/COTS Material Solution

Moving map with other Friendly icons shown

Live video with location of Video shown on imagery

Future Cockpit Considerations

- **Size, Weight, and Power of future hardware**
- **Intuitive Interfaces**
  - Swipe, pinch and grabbing
  - Positive habit transfer from 'personal devices'
- **Networking**
  - Platform connectivity to air, ground, and maritime assets
  - Cyber security and Information Awareness
- **FACE / HOST / OMS Concepts**
- **Hardware architecture options**
  - Smart vs. dumb displays
  - Multi Core processing
  - Federated vs. integrated
- **Software architecture options**
  - ARINC-661
  - Flight critical vs. mission application isolation
  - Development environments
- **Commercial vs. military hardware and applications**
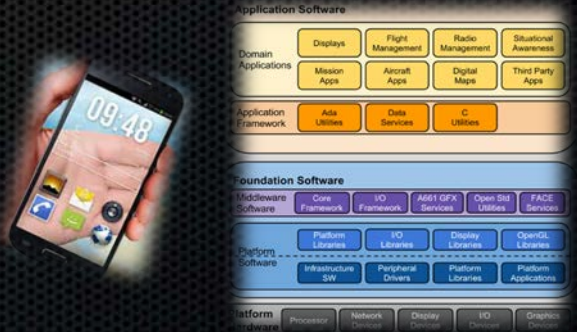
Can we build a system that is more adaptable to the changing environment?

RW S&T – Virtual Reality

- **Recent Efforts:**
  - **Investigate the use of Virtual Reality**
  - **Aid the definition of Pilot Vehicle Interface (PVI) requirements**
  - **Rapidly prototype design alternatives**
  - **Time required – six months**

- **Further applications of this technology across a program's life cycle:**
  - **Investigating a VR capability for deployable mission rehearsal and training**
  - **For sustainment, this tool could augment both maintainer training and actual maintenance tasks**

Virtual reality (VR) efforts have the potential to revolutionize the way we design cockpits and crew interfaces; conduct mission rehearsals; and perform aircraft maintenance.

Current Training Systems Efforts

- Legacy Upgrade Effort
    - MH-47E to MH-47G Completed
    - MH-60K to MH-60M Completed
- Concurrency and Re-host

Key Accomplishments:
- MH-47-1 DD-250 signed Mar 2016
- MH-60-1 DD-250 signed Oct 2016
- MH-47-2 Government Acceptance Testing
- A/MH-6 Little Bird (LASAR) Block 2.2 upgrade and NEXUS Storage upgrade Government Acceptance Testing
- MH-60-2 Hardware Software Integration (HSI) ongoing

Awarded 2016 Army Modeling and Simulation Team
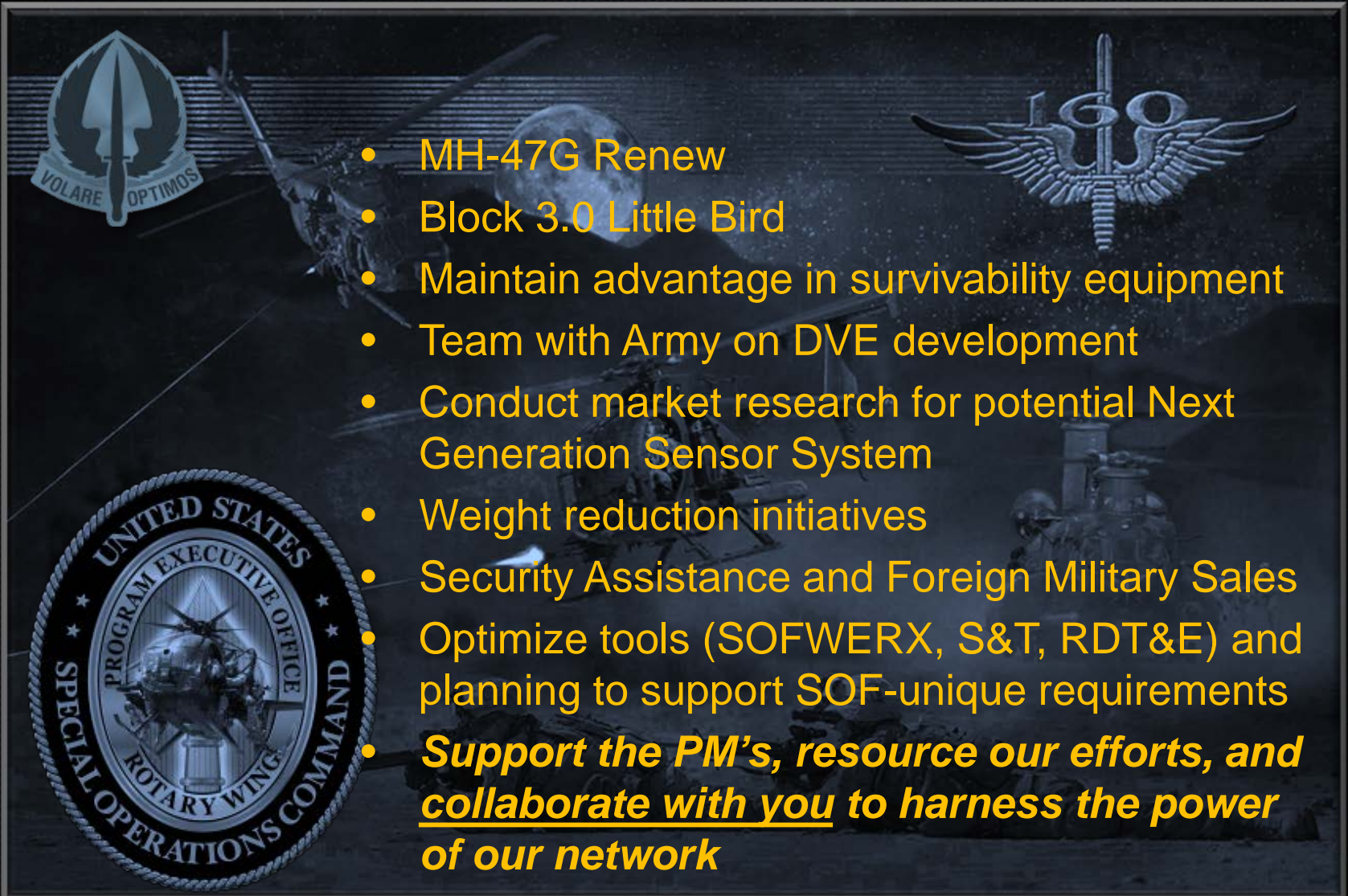
FY16-17 Recap

- A/MH-6M MELB Block 3.0 Continued Flight Qualification Testing (FQT)

- Completed MH-60M Blk 1.0 Integration and inductions

- Continued MH-47G Blk 2.3 Upgrade

- Completed Conversion of MH-47E and MH-60K Combat Mission Simulators (CMS) to stimulated MH-47G and MH-60M configurations respectively

- Purchased:

    - 12 MH-47G Block 2.3 upgrades

    - 8 A/MH-6 Block 2.2 upgrades

    - 13 Terrain Following / Terrain Avoidance SKR LRIP systems

    - 1 MH-47G Combat Mission Simulator

    - 1 MH-60M Combat Mission Simulator

    - 118 Mission Equipment Packages
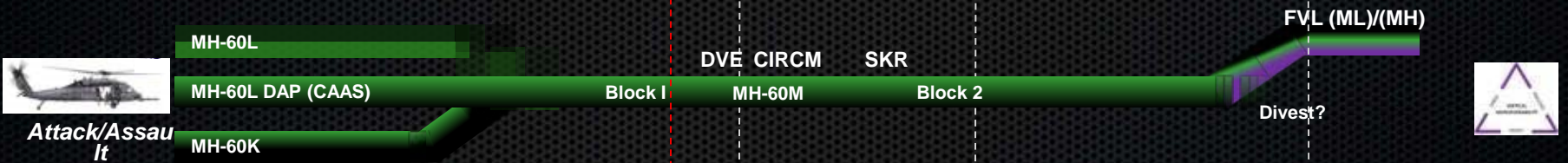
What's Ahead?

- MH-47G Renew
- Block 3.0 Little Bird
- Maintain advantage in survivability equipment
- Team with Army on DVE development
- Conduct market research for potential Next Generation Sensor System
- Weight reduction initiatives
- Security Assistance and Foreign Military Sales
- Optimize tools (SOFWERX, S&T, RDT&E) and planning to support SOF-unique requirements
- ***Support the PM's, resource our efforts, and <u>collaborate with you</u> to harness the power of our network***

Questions?

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