Special Operations Forces

Industry Conference

Program Executive Office
-Rotary Wing

Business Opportunities
and Technology

Rotary Wing Lift Transformation

MH-60M (72)

- Increase Situational Awareness
- Signature Management
- Lighter And Faster
- Increase Payloads
- Increase Lethality
- Increase Survivability
- Reduce Crewmember Workload
- Seamless And Quick Aircraft Integration

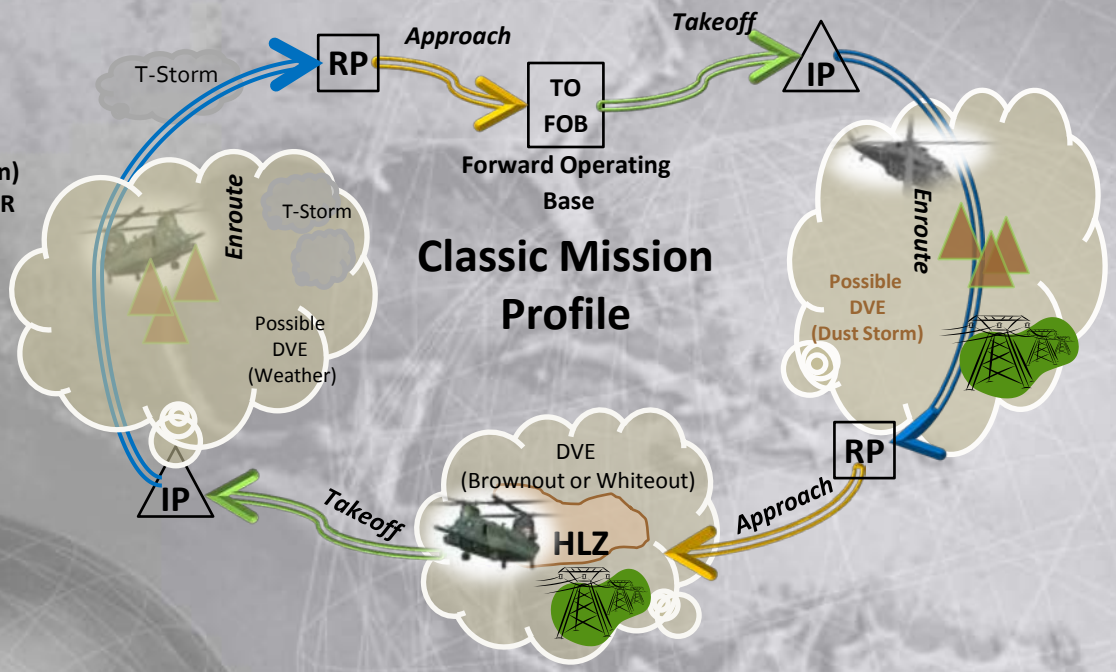
Funded Competitive Developmental Efforts

- Degraded Visual Environment (DVE)

Degraded Visual Environment (DVE)

ENROUTE

- Flight Path
- Obstacle Database
- High Res DEM (i.e. Buildings/Terrain)
- Ridgelines with MMR
- Tower Detection with MMR
- Integrated SVS/FLIR
- Threats
- BFT
- Sensed Wires
- Other Aircraft



APPROACH

- Flight Path
- Obstacles Database
- Ridgelines with MMR
- Tower Detection with MMR
- High Res DEM (i.e. Buildings/Terrain)
- Integrated SVS/FLIR
- Threats
- BFT
- Sensed Wires (thru dust)
- Sensed Obstacles (thru dust)
- Sensed Ditches
- Other Aircraft

TAKEOFF

- Flight Path
- Obstacles Database
- High Res DEM (i.e. Buildings/Terrain)
- Ridgelines with MMR
- Tower Detection with MMR
- Integrated SVS/FLIR
- Threats
- BFT
- Sensed Wires
- Other Aircraft

LANDING

- Flight Path
- Landing Point
- High Res DEM (i.e. Buildings/Terrain)
- Integrated SVS/FLIR
- Threats
- BFT
- Sensed Wires (thru dust)
- Sensed Obstacles (thru dust)
- Sensed Ditches
- Other Aircraft

Note: Red indicates the capability gap that cannot be filled without the DVE Sensor

Degraded Visual Environment (DVE)

- Current State Of The Technology
  - Numerous Potential Systems But No Single System Has Demonstrated The Ability To Provide All-weather Brown-out, White-out, And Cable/Obstacle Warning While Fitting Into Existing Onboard Sensors
- Ongoing Efforts
  - OSD Helicopter Survivability Task Force Funded DVE Effort With DARPA To Develop A Hardware And Software Synthetic Backbone
  - 3D-LZ JCTD Feasibility Study To Determine If A LIDAR Sensor Can Fit Into An Existing Q-2 FLIR Ball
  - Broad Agency Announcement Rapid Innovation Funding Project To Integrate A LIDAR Sensor Into A Q-2 FLIR Ball

Degraded Visual Environment (DVE) (Continue)

- Where We Want To Be
  - Brown Out / White Out Counter-measures
  - Cable Warning /Obstacles Avoidance
  - Synthetic Vision
- Potential Game Changers
  - Lightweight, Integrated, And Multi-spectral Sensor Fusion With Minimal A-kit Impacts

Degraded Visual Environment (DVE)

- Integrate And Qualify A Solution Capable Of Flying In All Degraded Visual Environments
- Leverage Other Service Science And Technology Efforts Relating To DVE

Acquisition Strategy

- Develop DVE Capability Using Multi-spectral Sensor Approach
- Integrate DVE Into Existing Aircraft Sensors

Period of Performance

FY13-FY18

Milestones

FY13 Begin RDT&E Effort for DVE
FY16 Milestone C Decision

Point of Contact

USSOCOM PEO-Rotary Wing

Funding

- ~$33.5M RDT&E FY13-FY15
- ~$84.8M PROC FY16-18

Current Contract/OEM

Helicopter Survivability Task Force Funded Effort For DARPA To Develop Synthetic Vision Backbone

Future Technology Interest

- Light Weight IR Countermeasures For MELB (LWIRCM)
- Light Weight Transparent Armor
- Noise/RF/IR Signature Management
- Aircraft With Rapid Ingress/Egress Capability With True Helicopter Capabilities On The Objective
- Long Endurance VTOL UAS
- Cargo UAS Resupply

Questions?