SPECIAL OPERATIONS FORCES INDUSTRY CONFERENCE

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Program Manager

SILENT KNIGHT RADAR
AGENDA

• Radar Background and Description
• Current Program Status
• Future Program Upgrades
BACKGROUND

• Replace existing terrain following/terrain avoidance (TF/TA) radars in Special Operations Forces (SOF) aircraft

• Address system commonality across SOF platforms (MH-60, MH-47, CV-22 and MC130)

• Increase capability with low probability of interception/low probability of detection (LPI/LPD)

• Address obsolescence and diminishing manufacturing sources of legacy systems
SKR PROGRAM MISSION

Develop, integrate, test, and procure a Special Operations Forces (SOF) common multi-mode radar with low probability of intercept/low probability of detection (LPI/LPD) to defeat advanced passive detection threats while maintaining ability to fly safe terrain following/terrain avoidance (TF/TA)
SKR PERFORMANCE OBJECTIVES

- Allow airborne forces safe low-level flight and safe ingress and egress in adverse environments
  - Safe terrain following over water and all types of terrain, including sand, ice, snow, and man-made obstacles
  - At 100 to 1000 feet above ground level in straight and turning flight, from 5 To 290 knots, in rain up to 10 millimeters/hour

- Provides navigation support, ground mapping, and weather information to air crews
  - Integrated guidance through the flight director display capability on both head-up and head-down display devices

- Radar weight less than 175 pounds
**SKR CAPABILITIES**

**Operational**
- Terrain Following/Terrain Avoidance
  - Higher Turn-Rate, Lower Velocity, Coupled
  - LPI-LPD Weather Penetration Operation
- Weather Detection
  - LPI-LPD Weather, Windshear, Turbulence
- Ground Map
  - LPI-LPD Ground Map
  - Selectable x2 or x4 Magnification
  - Selectable Azimuth Resolution Improvement
- Skin Paint Detection and Tracking
  - Air-to-Air Lookdown Capable
- Maritime Detection and Tracking
  - High Sea States (Sea State 5) Capable
- Adds Anti-Ice Radome (MH-47/MH-60/MC-130)
- 800 Hours Mean Time Between Failures

**Physical**
- One box Radar, Air Cooled, 175 lbs
- Ruggedized for Gunfire Vibration
- Room for future growth
SKR SUSTAINMENT CONCEPT

The SKR utilizes a two-level maintenance concept: aviation unit maintenance (AVUM) or organizational (O-level) and depot (D-level). O-level maintenance for the SKR consists of removal/replacement of LRUs on the platform. D-level maintenance consists of repair of LRUs at the depot.
# PROGRAM SCHEDULE

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<th>Milestone Decisions</th>
<th>FY 13</th>
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| Rotary Wing Testing |
|---------------------|----------------------------------|
| Developmental Flight Test | △                               |
| Qualification Flight Test | △                               |
| Operational Flight Test | △                               |

| Low Rate Production |
|---------------------|----------------------------------|
| CA                  | △                               |
| LRIP I              | △                               |
| LRIP II             | △                               |

| Full Rate Production |
|----------------------|----------------------------------|
| CA                   | △                               |

| Sustainment |
|-------------|----------------------------------|
| Organic Support | △                               |

**Milestone Decisions:**
- MS C/LRIP I:
- LRIP II:
- FRP:

**Rotary Wing Testing:**
- Developmental Flight Test:
- Qualification Flight Test:
- Operational Flight Test:

**Low Rate Production:**
- CA:
- LRIP I:
- LRIP II:

**Full Rate Production:**
- CA:

**Sustainment:**
- Organic Support
PROGRAM ACCOMPLISHMENTS

- FY 2012 Accomplishments
  - Began developmental flight testing on MH-47G
  - Began developmental flight testing on MH-60M
  - Demonstrated performance over water and foliated terrain

- FY 2013 Accomplishments
  - Demonstrated performance over mountainous terrain and sand dunes
  - Continued developmental flight testing on MH-47G and MH-60M
  - Focused on system integration
  - Successfully completed the program Milestone C
  - Awarded a low rate initial production (LRIP I) contract
  - USSOCOM nomination to 2013 DoD Packard Award of Acquisition Excellence
PROGRAM ACCOMPLISHMENTS

• FY 2014 Plans
  – Complete developmental flight testing on MH-47G and MH-60M
  – Award a low rate initial production (LRIP II) contract
  – Begin radar formal qualification testing (FQT)
  – Execute technology demonstration of SAR capability
  – Begin MC-130J demo activities

• FY 2015 Plans
  – Complete radar FQT
  – Complete initial operational test and evaluation (IOT&E)
  – Award a multi-year full rate production (FRP) contract
FUTURE PROGRAM UPGRADES
FUTURE PROGRAM UPGRADES

- FY 2016 and beyond
  - Continue FRP and fielding of SKR to the SOF RW fleet
  - Test and qualify the SKR on CV-22
  - Test and qualify the SKR on MC-130J
  - Field SKR to the SOF FW fleet
  - Develop an exportable version of SKR to capitalize on FMS opportunities
  - Integrate SKR into the USSOCOM’s DVE solution
  - Develop and integrate a blended TF/DTED navigation solution
  - Technology refresh and obsolescence mitigation
QUESTIONS