PMA-272
EW Technology Needs
(ATRB Input)

CAPT Dwight Cousins

PMA272

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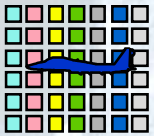
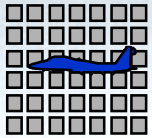
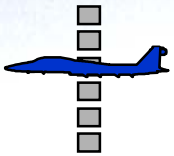
Brief Outline

- Threat Evolution
- EW Systems for TACAIR and Assault aircraft
- Technology Needs

IR Threat Evolution







2010
2nd Generation
Spectral Imagers/
Dual Mode Seekers

2005
1st Generation Imagers
MICA CCM
IRIS-T

2000
Scanning Imagers
Python V CCM

1980s/90s
Cross Array/Rosette
SA-16, 18 CCM
AA-11 Skin

1970/80
Cooled Con Scan
SA-13, 14, 16 CCM
AA-2D Skin

1960s
Spin Scan
SA-7 No CCM
AA-2A Hot Spot

RF Threat Evolution

Present (Upgraded)
SA-10, 12, 2S6, etc
Pulse Doppler Phased Array
Mobile / Integrated

1970 - 80s (Upgraded)
SA-6
Command/Semi-active Guidance
Mobile

1960 - 70s (Upgraded)
SA-2, 3, 4, 5
Large Command Guided
ZSU-23/4
Radar Directed

EW Suite

Assault Platforms

(H-1/3/46/53/60, variants, MV-22)

	Legacy	Interim	Future
RF SA	APR-39A (V)1 APR-39(V)1	APR-39 A(V)2 Upgrade	APR-39 B(V)2 Upgrade
RF CM	RR-129A	RR-129A	ALQ-162 (V)6 RR-129A
IR SA	AAR-47	AAR-47(V)2 Laser Detect	AAR-47(V)3 TADIRCM
IR CM	ALE-39 ALQ-144A (A/H-1) ALQ-157 (H-46, 53) MJU-27, 38	ALE-47 ALQ-144A (A/H-1) ALQ-157 (H-46, 53) MJU-32, 49	TADIRCM ALE-47 MJU-32, 49
IRCM KC-130J	ALE-47 MJU-50 M-206	ALE-47 MJU-50 M-206	TADIRCM ALE-47 MJU-50 M-206

TACAIR Platforms

(F/A-18 variants, F-14, AV-8B, EA-6, S-3, E-2, C-130 variants)

	Legacy	Interim	Future
RF SA	ALR-67(V)2	ALR-67(V)2 Upgrade	ALR-67(V)3
RF CM	ALQ-126 ALQ-164 RR-129A	ALQ-165 ALE-50 RR-129A	ALQ-214(V)3 ALE-55 RR-129A
IR SA	None	None	TADIRCM
IR CM F/A-18E/F	ALE-47 MJU-27, 38	ALE-47 MJU-38/49/57 MJU-XX (Bi-Flare)	TADIRCM ALE-47 MJU-47, 48 BOL IR
IRCM Legacy	ALE-39 MJU-27, 38	ALE-47 MJU-38/49/57 MJU-XX (Bi-Flare)	ALE-47 MJU-38/49/57 MJU-XX (Bi-Flare)

Technology Needs

1. Directed IR Countermeasures for TACAIR.
   1. Compact, High Power, Mid Band Laser Technology (Modulators, Photo Diodes).
   2. 2-Color IR Focal Plane Manufacturing Processes.

2. Enhanced RF Warning / Precision ID (Advanced DSP for Threat ID and Precision Location).
   1. Geolocation
   2. Precision location and ID

3. RF Threat Exploitation / New Generation Threat Countermeasure Technique Development.

Questions?