



EPIC Online Technology Meeting IR Imaging for Security and Surveillance

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“MBDA Perspective”

Chris Greenway – EO Seekers Group Leader, MBDA UK

- **MBDA is the European complex weapon prime**

- IR imaging technology predominantly aimed at Missile Seekers
 - ASRAAM (Air-to-Air) [Cooled MWIR]
 - Sea Venom (Anti-ship) [Uncooled LWIR]
 - Website : www.mbda-systems.com
 - Future portfolio ...



Sea Venom

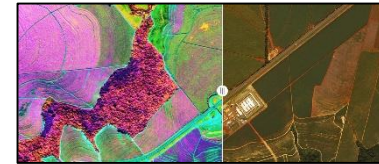
ASRAAM

- **Future Technologies and Capabilities**

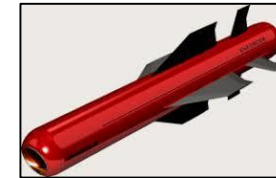
- Increased Performance
 - Thermal Sensitivity & Angular Resolution
 - Spectral Discrimination
 - High Dynamic Range
- Reduced SWaP / Cost
 - Compact systems > greater integration opportunities
 - Smaller calibre systems
 - Multi-mode or Multiple aperture systems



Polarimetric Imaging
MCM ITP (MBDA)



Hyperspectral Imaging
Gamaya



Sniper Concept
MBDA



Light - L16 camera



- **Performance is Important ... *but it has to fit the SWaP / C reqts***
>> How do we reduce SWaP / C ... *with minimal impact to performance?*

1. Uncooled Technology

- Offers lower cost and more compact systems
But ... does it always result in reduced performance ?
 - Longer staretimes, reduced NETD
 - If Uncooled == LWIR > larger systems or reduced optical resolution
- Can MWIR be more compact and cheaper : *HOT detectors, T2SL, miniaturised coolers ?*
- Can CMOS ever provide 23hr coverage : *Black Silicon imagers show increased lowlight performance ?*
- Can SWIR provide a 24hr stable, cost effective solution ?

2. What role will Computational Imaging play in Defence I²R solutions ?

- Reducing the hardware complexity ?
- Or : Increasing functionality and/or performance ?