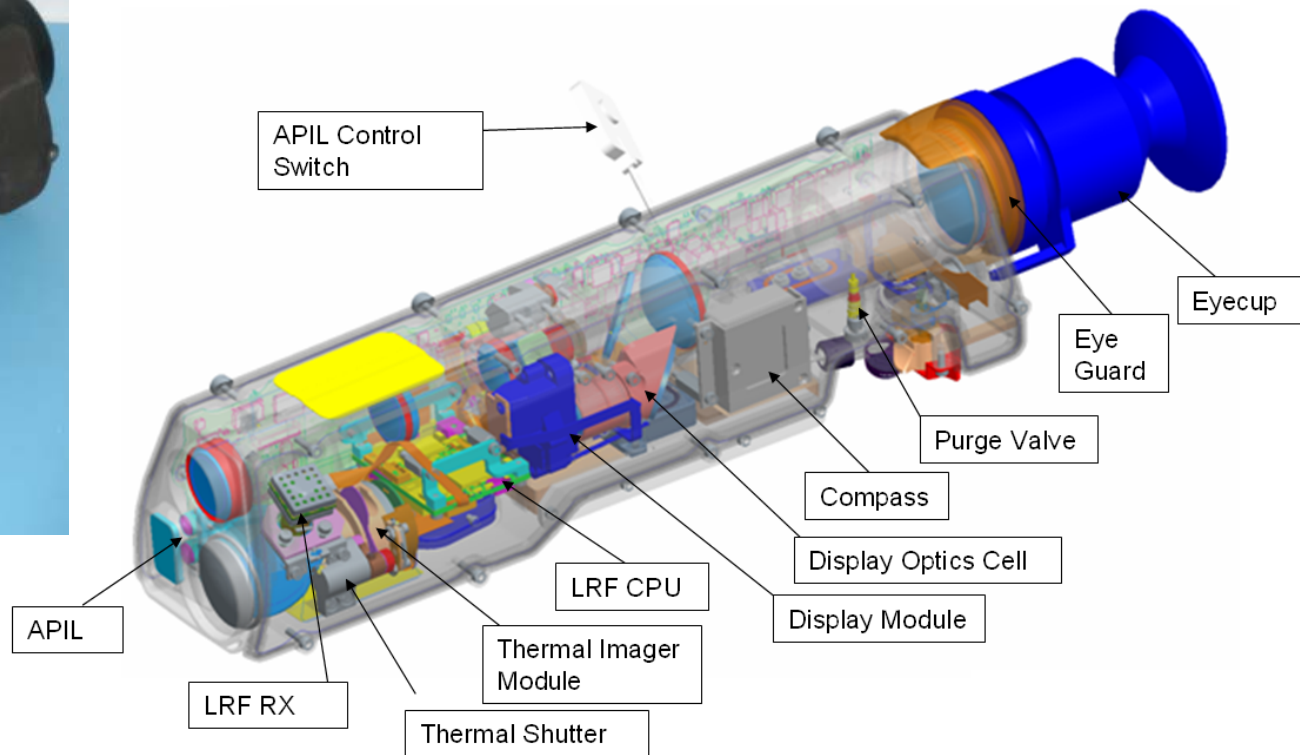


# **NDIA Fire Control Panel 2009 May 21**

L-3 Communications  
Integrated Optical Systems  
Brashear Division

# Brashear Fire Control Legacy



# Thought-Provoking Question #1 (part 1)

**What potential unique functionality will be available to the ground warfighter that offers paradigm breakthrough?**

➤ *Integrated day / night / “all weather” combat sight*

- Enabled by dual band sensor and color display of fused imaging.
- For example, fused SWIR & LWIR, or selectable integrated direct-view optic & LWIR.
- Eliminate added weight and unfavorable weight distribution of “clip-ons” by designing compact system for dual-band use from the start.
- Provides seamless ease of use by soldier and increased DRI performance against targets.

# Thought-Provoking Question #1 (part 2)

- **Digital battlefield connectivity and information flow**
  - **Expect more frequent cooperative, handoff, and NLOS style engagements**
    - *Scouts send back info to small group via network*
    - *Expect overhead imaging keyed to map info and absolute targeting coordinates*
    - *Enabled by fire control (rangerfinder) integrated with GPS & northseeking unit*
  - **The soldier needs more INFO, not more DATA**
    - *The answer is not moving more video pixels around a network*
    - *Instead, provide targeting info and target cueing info fused with situational awareness view*
  - **Use limited-range transceivers to create a self-organizing network**
    - *Share local targeting information and target cueing information*
    - *My buddy is engaging a target...where is his target in my FOV?*

# Thought-Provoking Question #3 (part 1)

**What Doctrine or Operations alterations could be enabled through enhanced capabilities of small arms fire control?**

- *Tactical fire control system improvements*
  - Counter-defilade capability of airburst weapon system with fire control (IAWS / “XM25”)
  - Add to this - Automated target tracking and lasing for accurate range to evasive targets.
    - *Results in increased  $P(h)$  for airburst / counter-defilade weapon system.*

# Thought-Provoking Question #3 (part 2)

- *More pervasive deployment of tactical fire control systems (for example, on M4)*
  - Compact, simple to use (“unthinking use”) fire control to increase long range accuracy of every soldier using M4 while maintaining CQB capability of combat optic.
  - Results in increased  $P(h)$  and increased effective range of weapon.

# Thought-Provoking Question #8

**Any comments relative to projection for full spectrum warfighter capable systems encompassing CCO like capability (CQB) with added capability of advanced fire control (extend range)?**

- *Rapid, accurate engagement without needing time for cheek weld and sight picture acquisition*
  - Near-to-eye display of virtual reticle.
  - Enabled by small lightweight low power cameras and heads-up transparent display module.
  - Results in decreased time to put effects on target.
  - Combat optic with adjusted aimpoint increases P(h) at extended range.

# Backup



# Other Issues

- Pervasive use of RWS with crew-served weapons
  - Robotic “dog” with enhanced senses
    - Sniper detection?
    - House clearing?
  - Need to improve efficiency of house clearing ops
  - Wide FOV foveated NVG
  - Higher fidelity, all-at-once thru-the-wall viewing could change tactics
  - NLOS and handoff engagements face doctrinal issues because soldier who pulls the trigger did not ID the target
1. What potential unique functionality will be available to the ground warfighter that offer paradigm breakthrough.
  2. Crew served fire control on and off vehicles and the standalone fire control vs vehicle fire control.
  3. What Doctrine or Operations alterations could be enabled through enhanced capabilities of small arms fire control.
  4. Describe complexity challenges for seamless ease of use operations by the warfighter.
  5. What are the prime areas for miniaturization.
    1. Smaller pixel sensors, lower power electronics,
  6. Comment on the advantages and disadvantages of Common module approach.
  7. Where are specific investments needed for the Advanced Fire Control capability for the warfighter with boots on the ground?
  8. Share comments relative to projection for full spectrum warfighter capable systems encompassing CCO like capability (CQB) with added capability of advanced fire control (extend range).
  9. With the DOD review of major programs on-going, what is your view of ground warfighters affordably increasing battlespace influence with small arms fire control, including performance and timeliness.