



International SOF Week Collider Event Technology Focus Area 1

Technology Focus Area: Laser-Augmented Midwave Imager (LAMI) Demonstrator

Technology Focus Area Advocate: USASOC, NSW, PM-SOF Lethality, Visual Augmentation Systems

Problem Statement: Midwave Infrared (MWIR) cameras utilized by USSOCOM operators provide valuable imagery to the user, but don't inherently contain the ability to view near infrared (NIR) or short wave infrared (SWIR) lasers, which limits USSOCOM operators ability to accomplish missions.

Operational Vignette: A USSOCOM operator is in an overwatch position utilizing his fielded LAMI in a hand-held form factor, observing an assault element maneuvering towards a compound. He sees NIR lasers through his LAMI from the compound right before hostile fire is focused onto the friendly assault element. The operator in overwatch is able to provide hostile positions to the assault element and help direct fire because he is able to view the enemy's NIR pointers.

Characterization of Successful Prototype:

- The purpose of this TFA is not to develop and build an entire shock-hardened weapon sight or packaged hand-held imager. Rather, it is to develop a build a **prototype demonstrator** (a 'brass board' or 'camera(s) in a box') that is primarily a MWIR imager, but with the ability to see either a NIR or SWIR (ideally, both) laser. Final 'fieldable' packaging is not desired for this effort.
- This could take the form of a single broad-band sensor, or a MWIR sensor + a second NIR or SWIR sensor coaligned with the MWIR sensor. Note that full NIR or SWIR imaging is not required, just the ability to accurately detect the laser or laser spot, and overlay that in the correct position on the MWIR imagery.
- A successful prototype would come with two sets of lenses:
 1. The first set of lenses would enables a user to recognize a human at 1200 meters with the MWIR channel and see a NIR/SWIR laser spot at that same distance.
 2. The second set of lenses would enable a wider field-of-view with the ability to recognize a human at 800m, and see a NIR/SWIR laser spot at the same distance.
- It should be kept in mind that a fielded version of the LAMI would be of the size, weight, and power (SWaP) to be mounted onto an operator's weapon or held in their hand to utilize.

