

## Uncooled Focal Plane Array Producibility

Improve producibility of high resolution (640x480) Uncooled Infrared sensor technology to provide advanced sensors for multiple weapon systems.

### OBJECTIVE / SOLUTION

This three year program is designed to improve the producibility of the high resolution (640x480) Uncooled Infrared (IR) sensor technology in order to affordably field advanced Uncooled IR sensor technology.

### ACHIEVEMENTS

Raytheon Vision Systems, BAE Systems, and DRS Technologies have delivered 640x480 IR focal plane arrays for Thermal Weapon Sights, Driver Vision Enhancer, Stryker Remote Weapon Station, and Low Cost Guided Imaging Rocket (LOGIR) missile program. They are developing and evaluating semiconductor manufacturing processes (improving release process of the Micro Electro-Mechanical System (MEMS) structure; designing new readout integrated circuits; fabricating 640x480 focal plane arrays); and developing equipment for batch processing the packaging of the focal plane arrays.

### STATUS

The program is in the third year of a three year project.

- Cost reductions have been achieved such that the cost target of \$2,000 per packaged focal plane array in quantities of 100 per week is very close.
- Package yields have improved to greater than 95%.
- Labor cost reductions of greater than 70% have been realized.
- Cycle time has been reduced by greater than 70% through automation and batch processing.
- Package weight has been reduced over 50%.
- Work continues on improvements in semiconductor manufacturing processes to achieve yields greater than 50%.

### WEAPON SYSTEMS / SECONDARY ITEMS IMPACTED

- Rifle Sights, Driver's Viewer, and Unmanned Ground Vehicle (UGV)
- Mid-Range Munition for Future Combat Systems (FCS) Block I
- Thermal Weapon Sights (TWS II) components
- Driver Vision Enhancement (DVE) systems.



Thermal Weapon Sight



Image Intensification System