

3-5 MICRON RADIOMETRIC SUPPORT

The NWS Metrology R&D Program is in the process of adding new capability to the Navy's calibration capabilities in 3-5 micron infrared imaging. Infrared imaging has become the leading technology in being able to quickly and correctly identify enemy forces. Also, unlike radar, infrared can operate passively thereby reducing the risk of detection and counterfire.

One of the primary two bandwidths used in infrared imaging technology is 3-5 micron. (The other, 8-12 micron, is addressed by another project.) Currently, there are no standards in the fleet or at NPSL to support 3 to 5 micron sensors



Figure 1 Infrared Imaging System

and imaging systems. This project remedies that situation.

Since hotter objects emit shorter wavelength (such as

the coils on a toaster which go from deep red to orange to yellow as they heat up) so the 3 to 5 micron band is generally used to image hotter targets such as missiles or aircraft.

Some important existing military infrared imagers use the 3 to 5 range: The new F/A-18 ATFLIR incorporates the 3-5 micron range, the Marines have a requirement in the 3-5 for their new TETS test set and, also, the Standard missile program utilizes the 3-5 region.

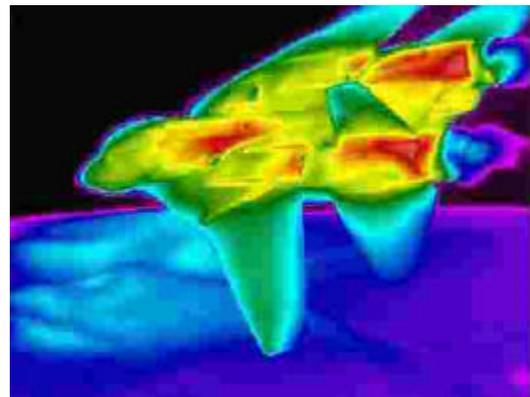


Figure 2 Infrared Image of Airplane

The final product will be a system that is useful to the fleet, accurate enough to address the measurement concerns likely to arise in the next few years, and traceable in as few steps as possible to NIST and NPSL.