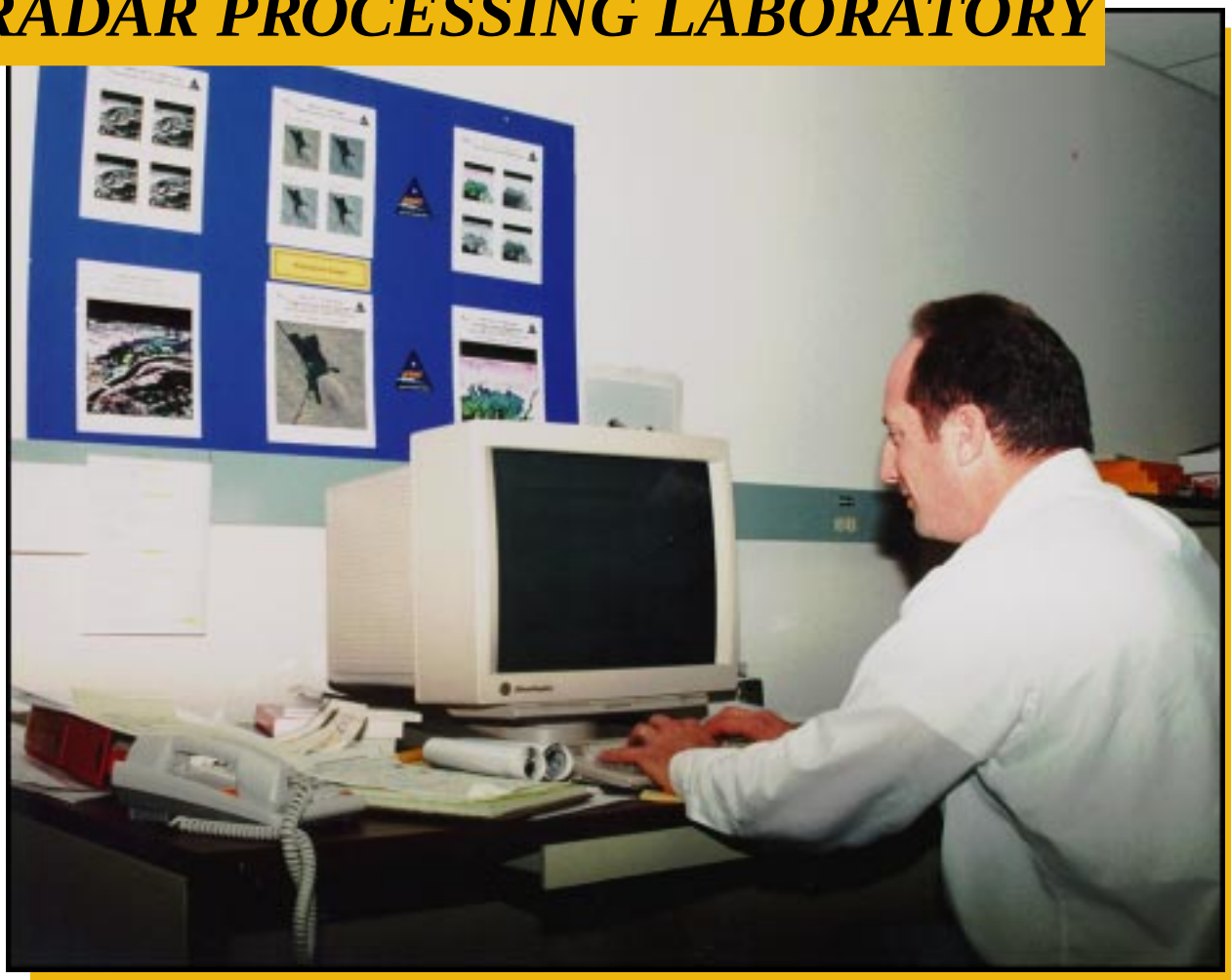
RADAR PROCESSING LABORATORY



The Radar Processing Laboratory provides the capability to convert and process SAR data collected by the P-3 SAR Flying Laboratory. Advanced signal processing techniques are used to develop a SAR image from raw radar data. The processing software in this laboratory is used to produce standard SAR imagery in the form of a high resolution, picture quality image. A typical SAR image is 4096 by 4096 pixels (5 x 5 km^2) at 1.5 m resolution in the tri-band (L, C, or X) modes. The Radar Processing Lab also supports the Computational Electromagnetics Group.

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Foliage Penetration for In-Theatre Operational Support

The Ultra-Wide Band (UWB/UHF) mode of the P-3 SAR system was designed to provide foliage penetration (FOPEN) target detection capabilities for high value targets (e.g., tanks, trucks, TELs, etc.) to the battlefield commander in locations where wooded areas provide deep hide for heavy equipment and supplies. The capability to provide picture quality images through forest canopy, day or night, and in all weather in an area such as Bosnia makes the P-3 SAR system a potentially powerful tool which could be made available to NATO forces. The current system utilizes post mission processing of SAR data, but the addition of a wide-band data link (such as the Common Data Link or CDL), when used in conjunction with a ground-based processor workstation, would facilitate the timely processing of image data while the aircraft was still airborne. The processing system is currently laboratory based but is deployable (which has been done in the past) to an area where processed imagery could be analyzed and passed to a tactical commander in a timely manner.

For more information contact the Synthetic Aperture Radar (SAR) Flying Laboratory RF Sensors Branch at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD at 301-342-0041.