

# Miniaturized Radar Technology for the Stockpile and the Warfighter

SAND2015-6370PE

## R&D Challenge

Engineer small, lightweight radar systems

Imaging techniques are essential to numerous stockpile, tactical warfare, and civilian applications:

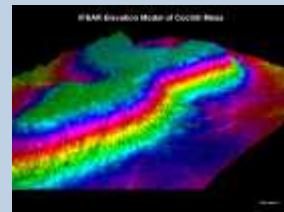
- Weapon radars
- Intelligence
- Force protection in theater, damage assessment
- Search and rescue
- Environmental monitoring
- Nonproliferation/treaty verification)

**MiniSAR** stands for miniaturized Synthetic Aperture Radar

## Approach

Electronics miniaturization, software algorithms for video applications, and inverse methods for moving targets

LDRD 1997-98" SAR-Automatic Terrain Mapping



LDRD '04-'06: In-flight image software



MiniSAR Image – Baseball diamond on Kirtland Air Force Base in New Mexico

## Impact & Benefit

SAR and miniSAR technology expertise and technology has been reapplied to Sandia's NW work

Also applied to the detection of Improvised Explosive Devices in Afghanistan



MiniSAR provides tactical eyes for the warfighter



B61 Lifetime Extension benefits from new radar expertise