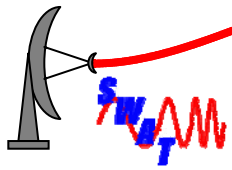


THz Radar Imaging (Caltech/JPL)



Program: Navy Explosive Ordnance Division Phase 2 (through June 2010).

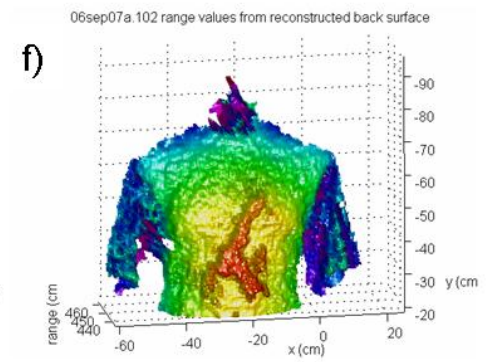
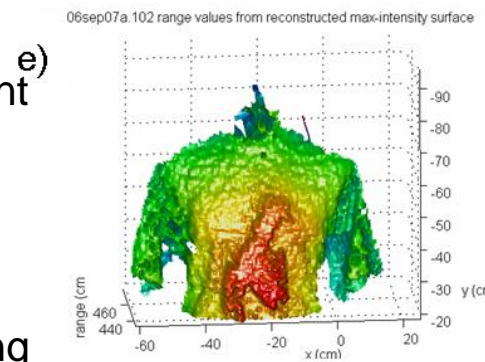
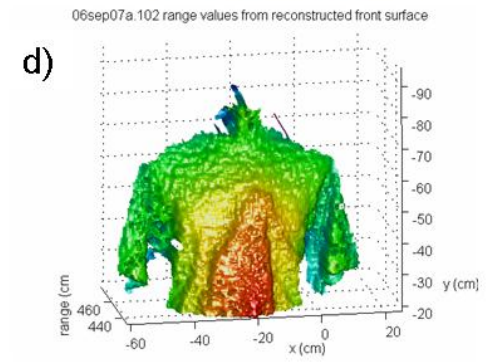
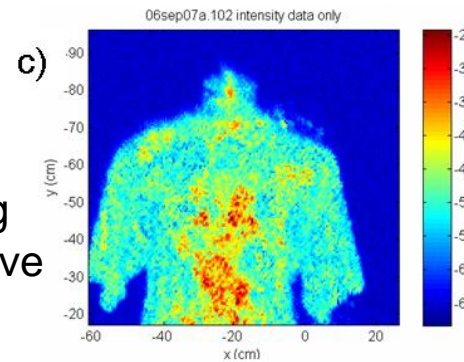
Purpose: Develop THz imaging radar for remote undergarment screening at 4-25m

Underlying Technology: Solid state broad band swept frequency THz heterodyne sensor/source technology & FMCW radar

State-of-the-Art: Passive THz systems being developed under DARPA. This is the first active 3D radar system to be prototyped & tested

Major Accomplishments to date:

- Prototyped complete 550-650 GHz instrument with 30 GHz FMCW sweep and scanned single pixel imaging and ranging
- Resolution <2cm in 3D, 1msec/pixel
- Complete pixel-by-pixel display in real time
- Much new phenomenology uncovered leading to expanded applications & sponsors



Images from 600 GHz FMCW radar system using different reconstruction algorithms. Resolution is 1x1x1 cm on target at 4m.