Shoe Form Factor Ground Penetrating Radar

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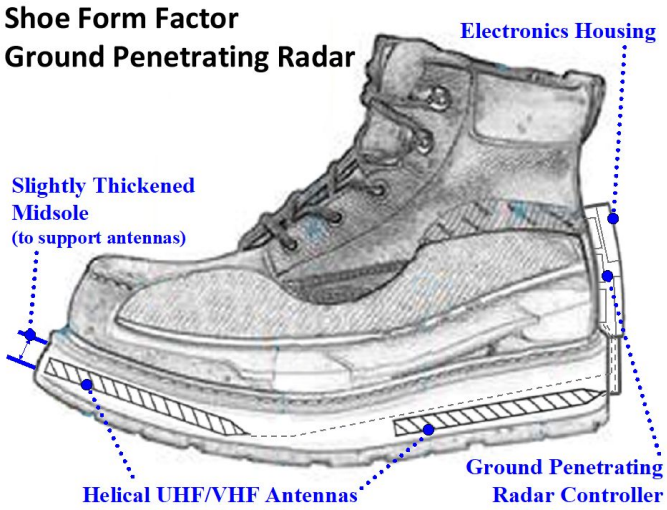
HR001122S0041 DSO Office-wide BAA
Abstract Summary Slide Template

CONCEPT



APPROACH

Create a shoe based Ground Penetrating Radar (GPR)

- Worn comfortably, easy to use
- Detect mines, unexploded ordnance, and tunnels at a distance that is relevant for warfighters
- Technical thrust: Sensing and Measurement
- New: Convenient form factor for specialized tech
- New: Smaller, normally lawnmower size
- New: Always available, detect prior to explosions
- New: Focus on lateral sensing and detection
- Antennas already exist in needed sizes (UHF/VHF)
- Necessary processing already small enough

IMPACT

Conveniently detect buried threats to warfighters.

- Often need for mine or IED detection only occurs after injury or explosion
- Worn system provides continuous monitoring
- Limited increase to soldier weight burden
- Finds tunnels and buried structures
- Directly applicable to Army and Marines
- Secondary benefit of mapping large regions
  - Squad or platoon simply walks an area
  - Water, construction, defenses

CONTEXT

Mine, IED, and unexploded ordnance detection currently performed using human carried or vehicle mounted GPR or metal detectors

- Detect when area found to be dangerous
- Lawnmower size system by ImpulseRadar
- Vehicle GPR from Chemring Sensors and Electronics Systems (CSES)
- Army Engineer Research and Development Center looking at flying drones with GPR
- Rats, mongooses, and trained dogs have also been used for mine detection.