



# Uncovering More Ground

**Aircraft Mounted Ground Penetrating Synthetic  
Aperture Radar Integrated with Multiple Sensors  
and High Definition Video**

*"We did a landmine removal project that cost the UN about \$50M. If we had known which portions of the land didn't contain landmines, we could have performed the remediation for around \$20M."*



**Representative of Landmine Clearance NGO**

- Historical data assimilation
  - Types of munitions used
  - Historical strategies of engagement, landmine use and encampment protection
- Terrain study – geological anomalies
  - Types of soil
  - Terrain configuration
- Right technology combination
- Flight patterns

## Maximizing the Effectiveness of Airborne Surveys





## Multiple Sensors Attached to a Small Rotary Aircraft

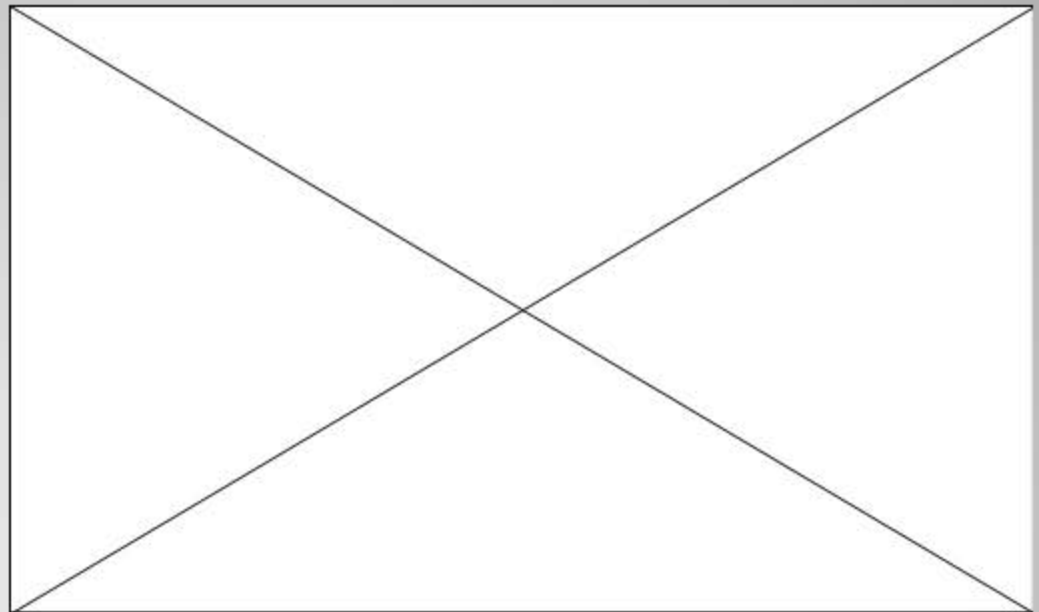




- RAPID DETECTION
- IDENTIFICATION

•Wide area flights find “areas to further investigate”

•Spotlight mode pounds the area of interest with multiple frequencies



## Wide Area or Spotlight mode for Characterization





- RAPID DETECTION
- IDENTIFICATION

## ● Project Goals

- Find quarantined land that does not contain landmines or ordinance
- Return this land to productive use
- Leave contaminated land alone – or – clear the land of its hazards using conventional methods such as flailers, dogs, bees or other technologies

**Results –  
Hazards Quarantined**



# Signs of Landmines & Munitions

❖ Contaminated soil & foliage via infrared sensors

❖ Munitions below the surface via ground penetrating synthetic aperture radar

❖ High definition video



## Multiple Sensors & a Large Frequency Range





- RAPID DETECTION
- IDENTIFICATION

- A multi-phased testing and validation process with Centre for Testing Development and Training and the Faculty of Geodesy, University of Zagreb
  - Summer 2010 - Technical test and evaluation using a Robinson 44 lightweight helicopter
  - Fall 2010 - Operational validation multiple tests
  - January 2011 - Launch of fully operational solution



**Next Steps...**



# Questions

Mineseeker Operations UK Limited

Edward Cross, CEO  
[ecross@mineseeker.com](mailto:ecross@mineseeker.com)

Sheri Osborn, CEO-USA  
[sosborn@mineseeker.com](mailto:sosborn@mineseeker.com)

Tel. +44.1746.768.869  
Cell. +44.7771.365.699

+1.408.504.7336