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Trials of FindMine GPSAR – FSD Ukraine

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FSD

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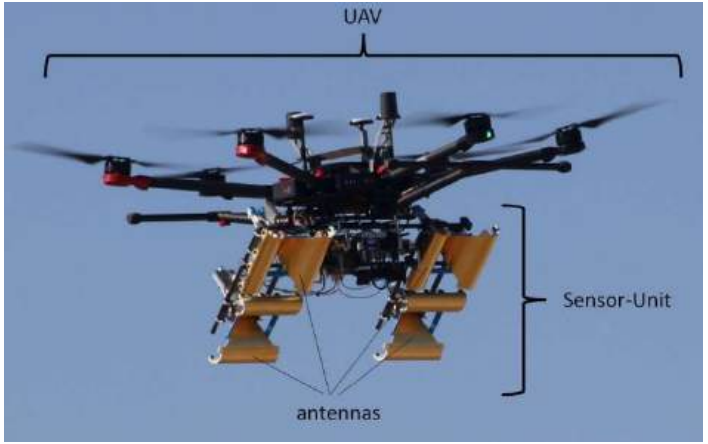
FindMine GPSAR

- UAV-based sensor system for mine detection.
- FindMine GPSAR-System (ground penetrating synthetic aperture radar system
- In dry and uniform soil with low vegetation, metallic APMs (anti-personnel mines) and AVMs (anti-vehicle mines) buried at their typical application depths are detectable
- Unburied larger UXOs, metallic APMs, metallic AVMs, and metallic wires can be detected in optically dense grass-like vegetation
- FSD has partnered with Findmine since 2017



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Trial in Ukraine (June 2025) – Positives

- Trialled across a dedicated training site.
  - Targets have been buried for 6 months +
  - Tested with Findmine staff and independently
  - All field conditions replicated at the test site
  - All targets found
- Ability to conduct data analysis in-country. approx. 30-40 mins to analyse each 25 m² box (can be reduced to 15-20 mins if all things align)
- Limited in-country training of FSD staff due to the high skill levels of the FSD team
- The team found the system easy to use

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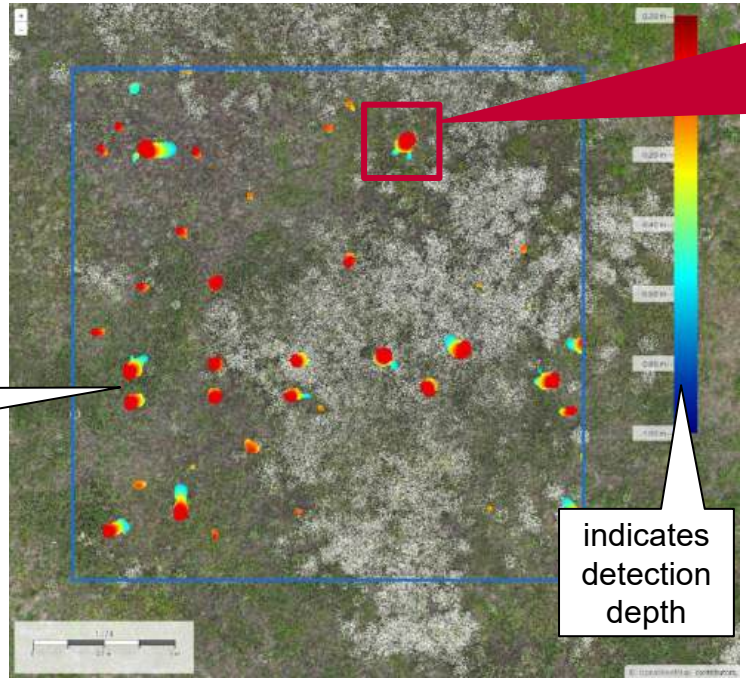
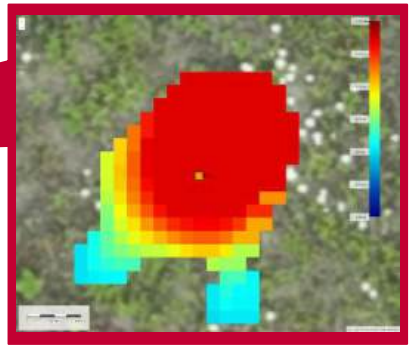
Trial in Ukraine (June 2025) – Result 1

findmine funded by URS ENDRESS foundation.

FSD

- Evaluated area: **324 m²**
- Flight time: **11 mins**
- Processing time: **25 mins**





POM-3

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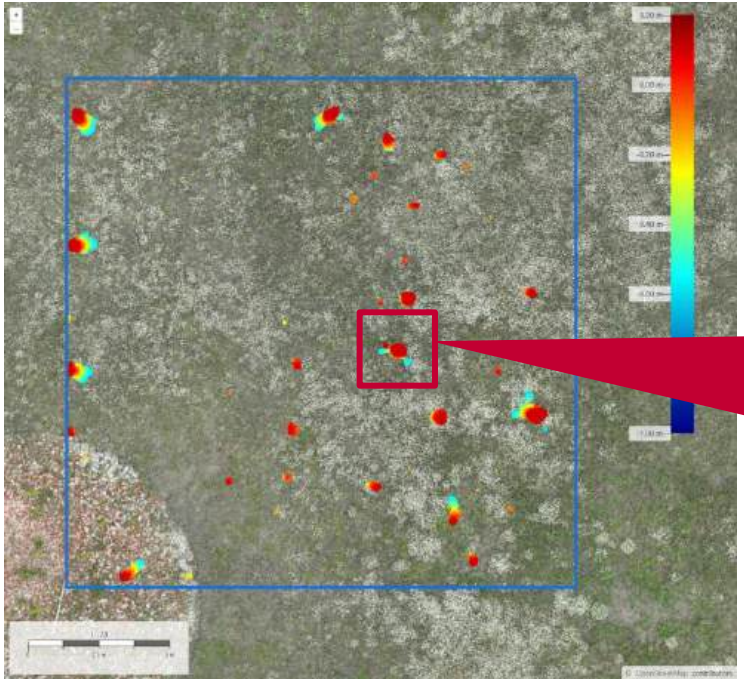
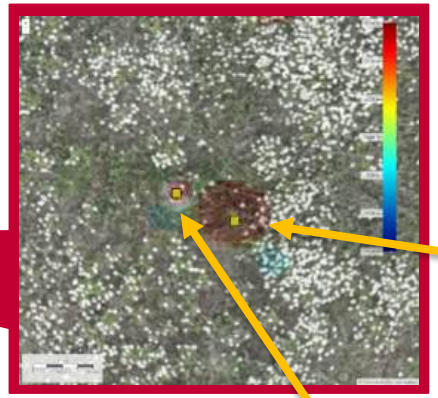
Trial in Ukraine (June 2025) – Result 2

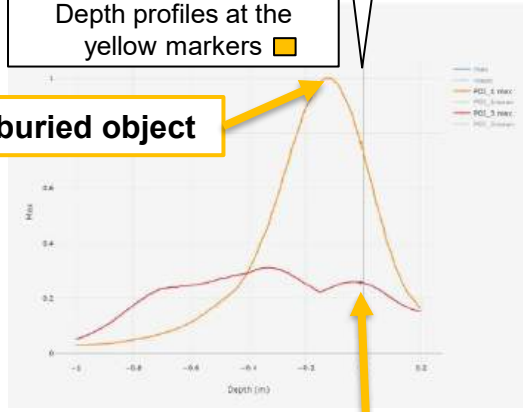


2 objects side by side



Surface level

Depth profiles at the yellow markers



buried object

TM62 hidden in vegetation

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Trial in Ukraine (June 2025) – Limitations

- Importation issues
- Spoofing caused the drone to crash
- Updated drone/software to cope with spoofing not ready to deploy until spring 2026
- Potential for false positives
- Local permissions to fly are problematic
- Wet soil increased the number of false positives

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Trial in Ukraine (June 2025) – Recommendations

- Trial usage of AI for data analysis and detection of EO items
- Due to a drone crash (spoofing), trials in high dry grass need to be rescheduled
- Due to drone not being available, trials on frozen soil need to be rescheduled
- Via AI/some other methods, attempt to reduce/remove/eliminate false positives

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