

Case Study - Beyond the Visible - Multispectral & TIR sUAS Minefield Mapping

Lessons Learned from the Successful Deployment of Multispectral & TIR Imaging Over Live Minefields

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1. Introduction



Norwegian People's Aid



SESU



IKMAA



DMA



LMAC



HCND



Mobility
Robotics

ODYSSEY
2025



Ministry of Foreign Affairs of the
Netherlands



2. Minefield Scenarios

Obscured by grass/weeds
Buried by sand



3. Materials Analysis

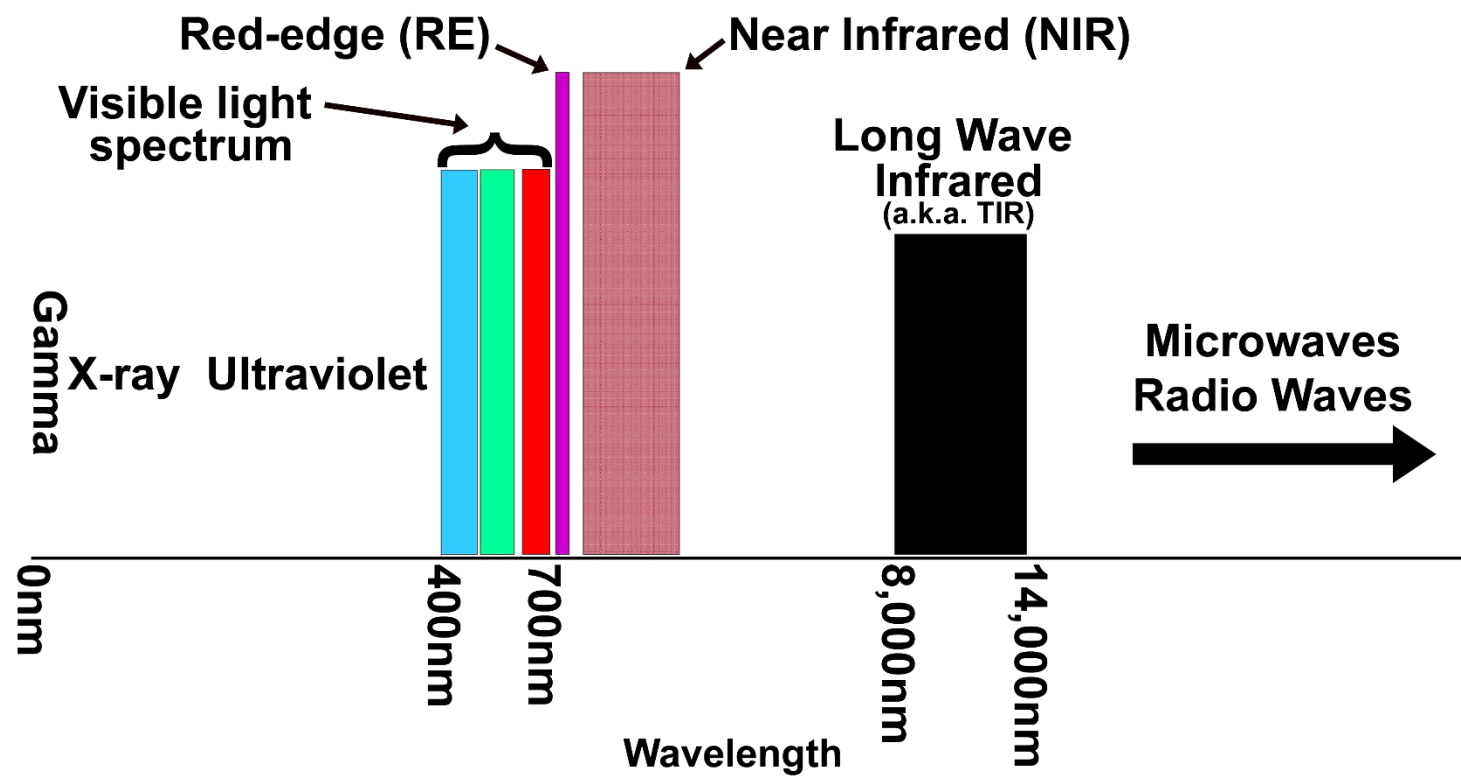
Metal, plastic, rubber, other materials

Colour/pigments

Size, shape, distinctive features

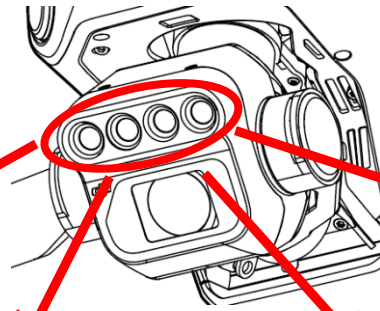


4. Sensors – IR

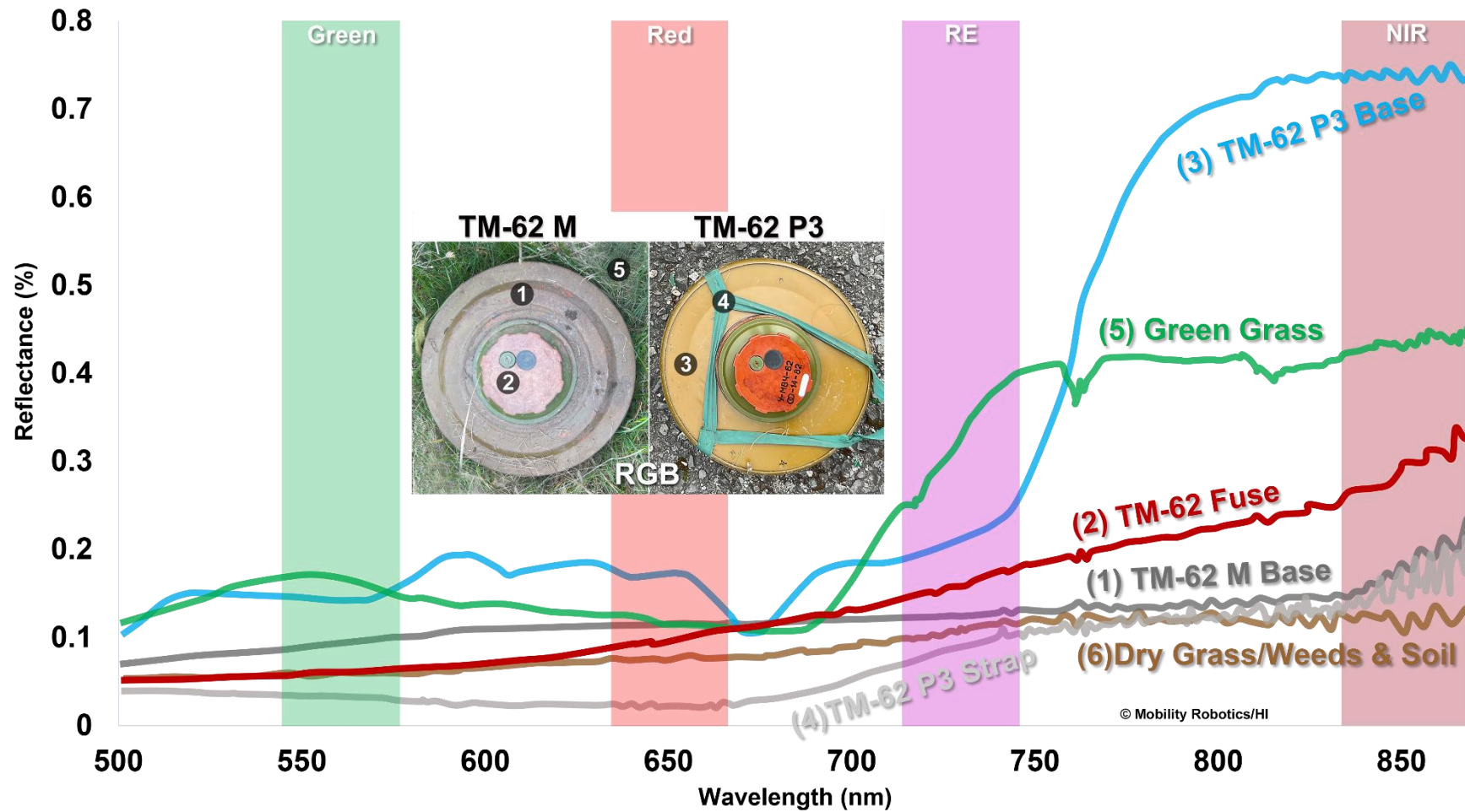


Differences in NIR & TIR

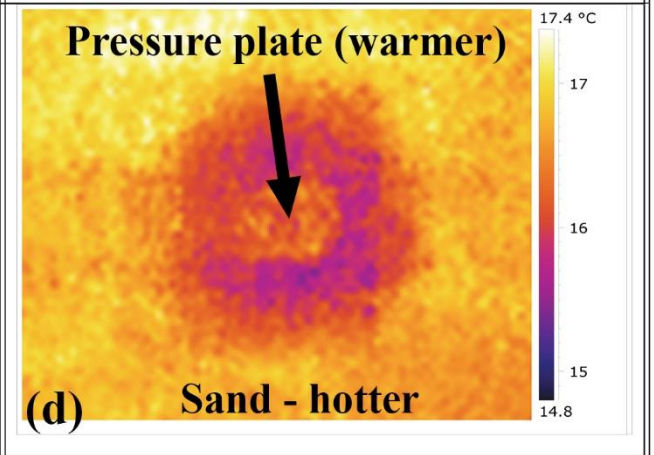
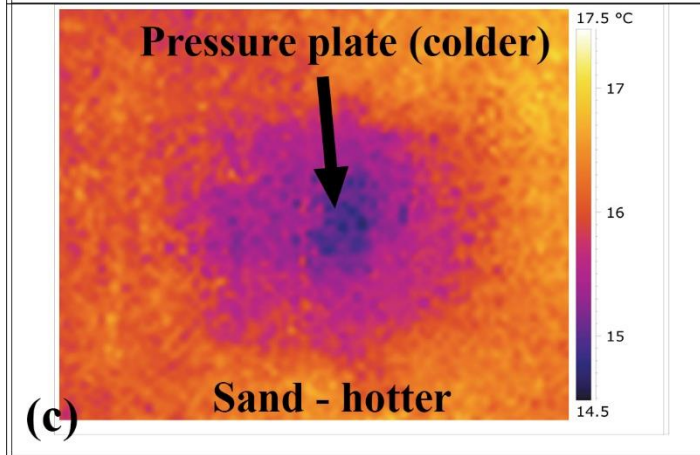
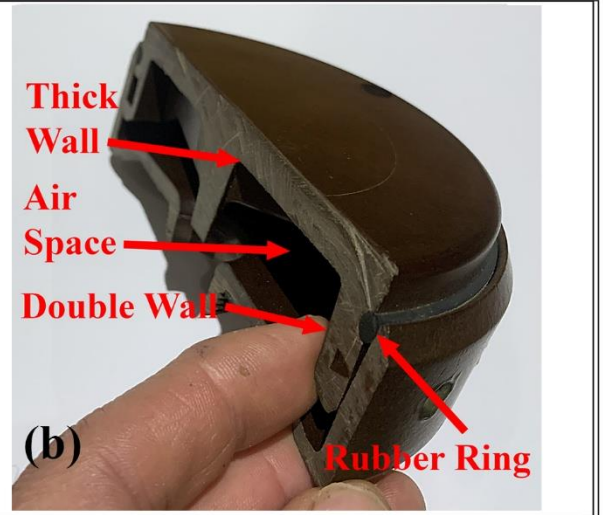
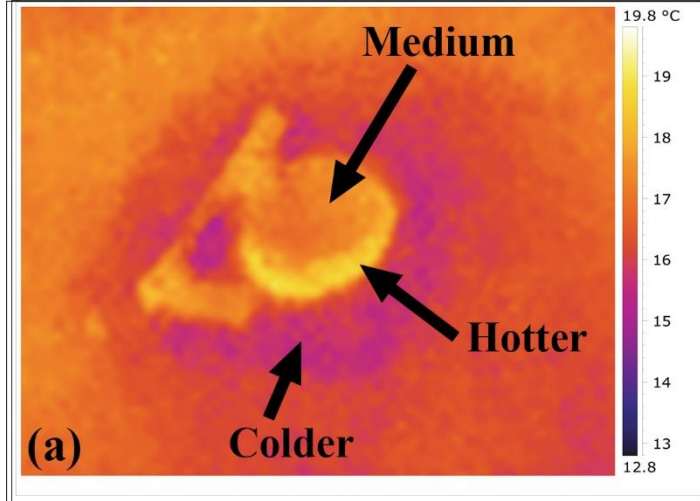
5. Sensors - MS



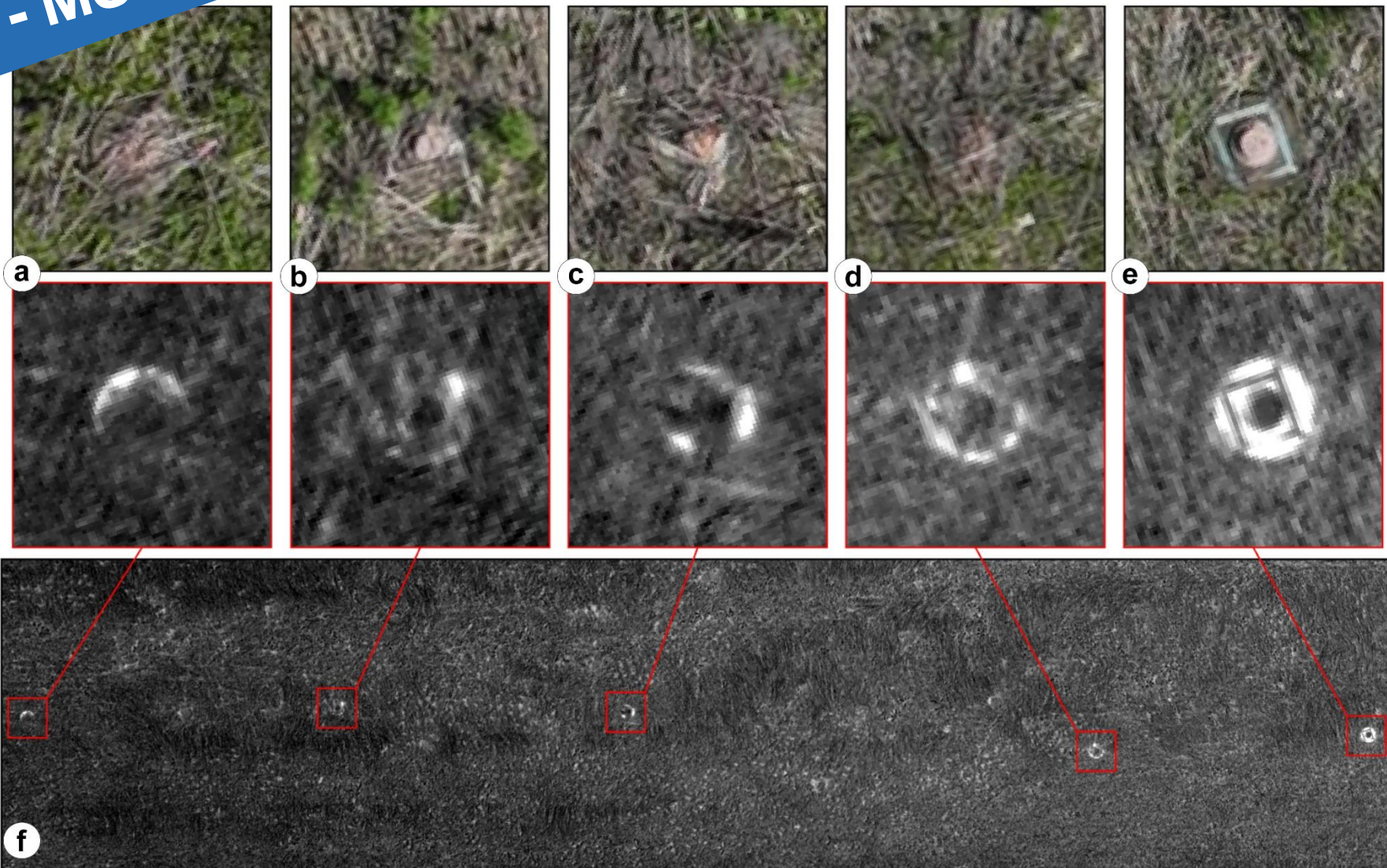
DJI M3M



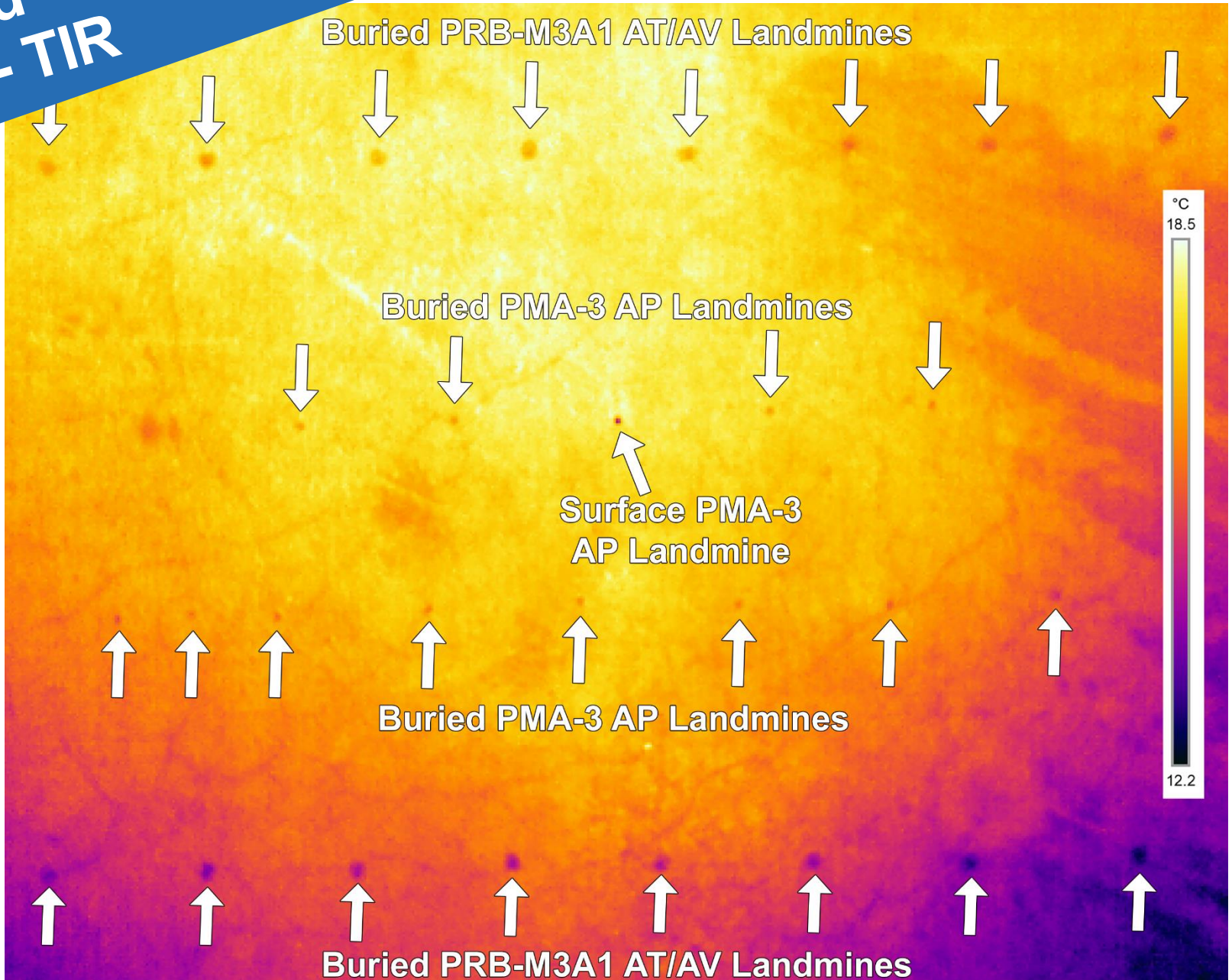
6. Sensors - TIR



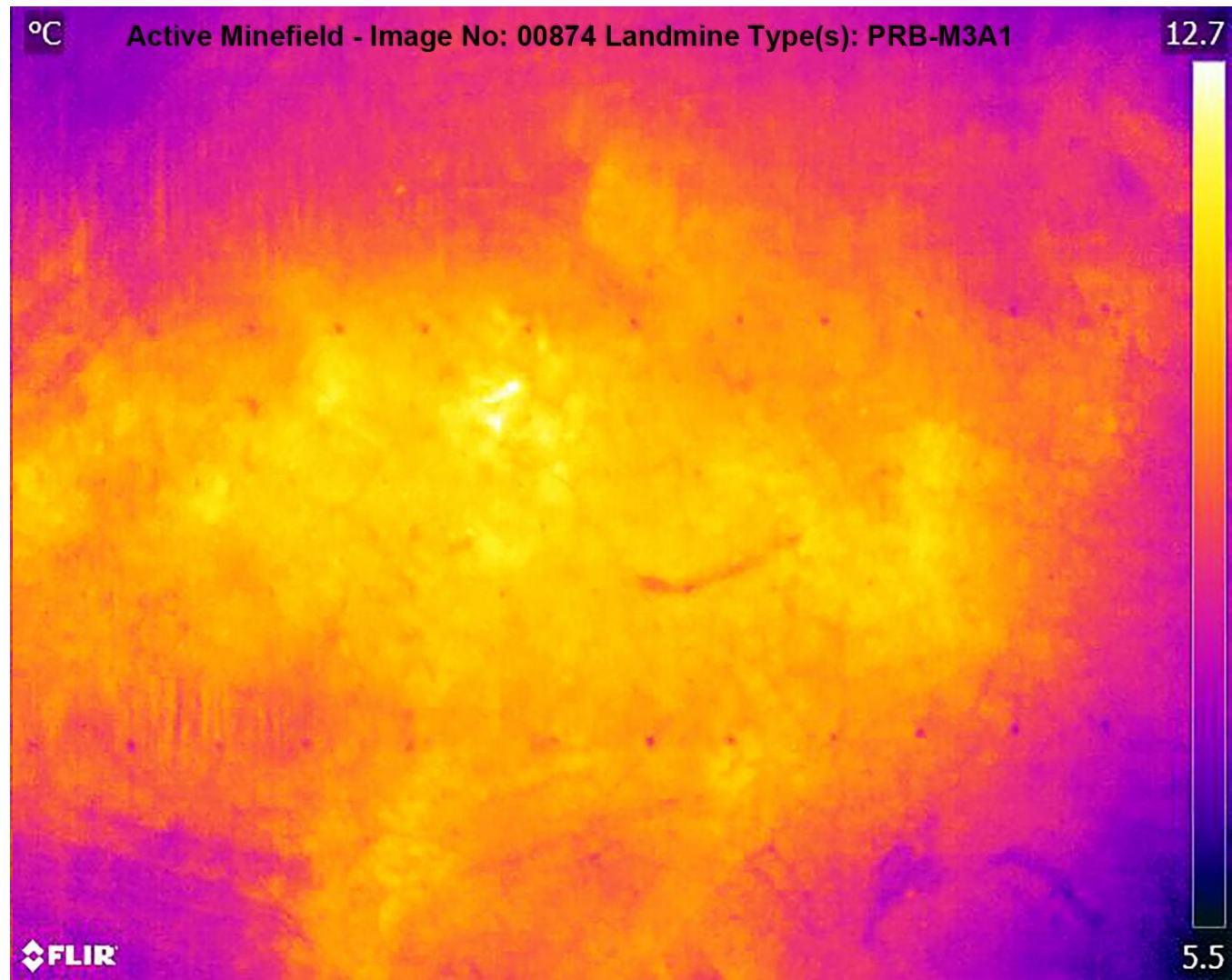
7. Real World Signatures - MS



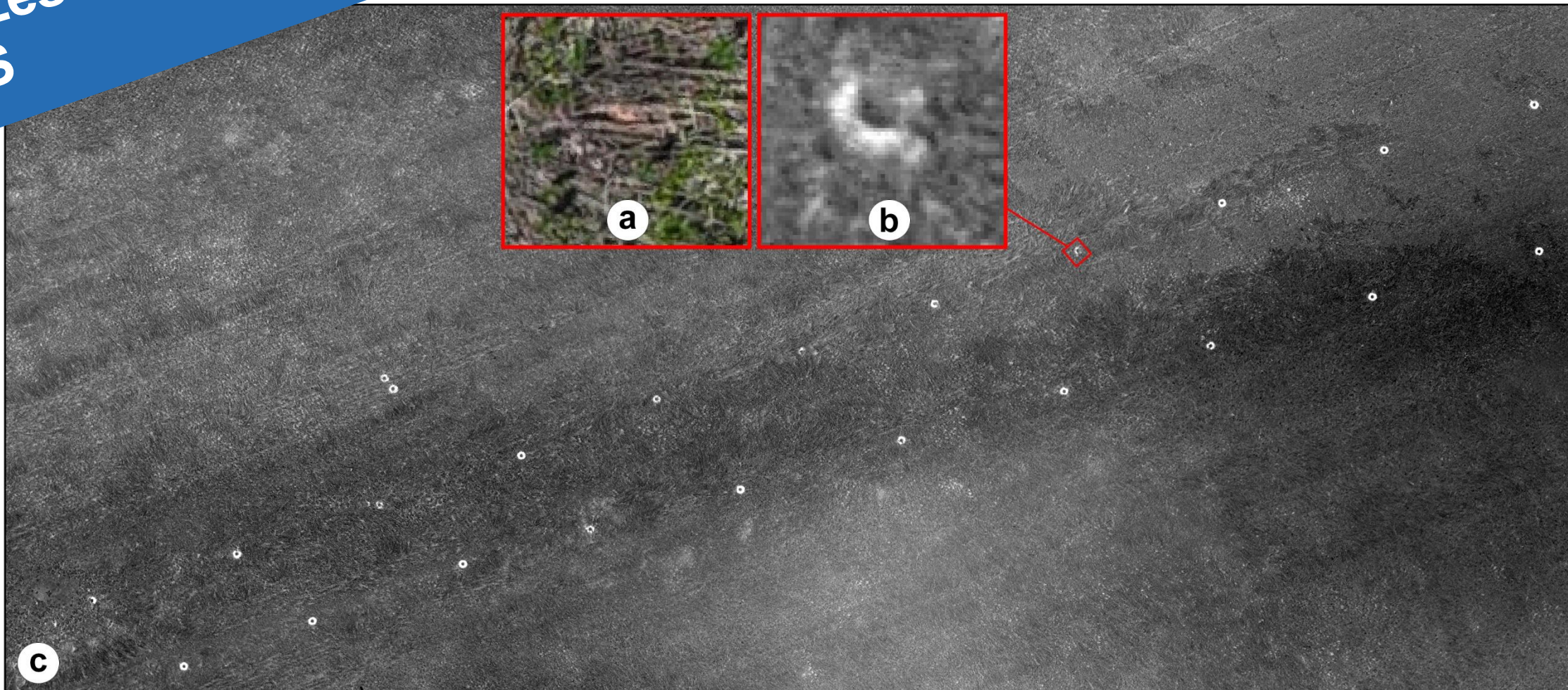
8. Real World Signatures - TIR



8. Real World Signatures - TIR



9. Lessons Learned - MS

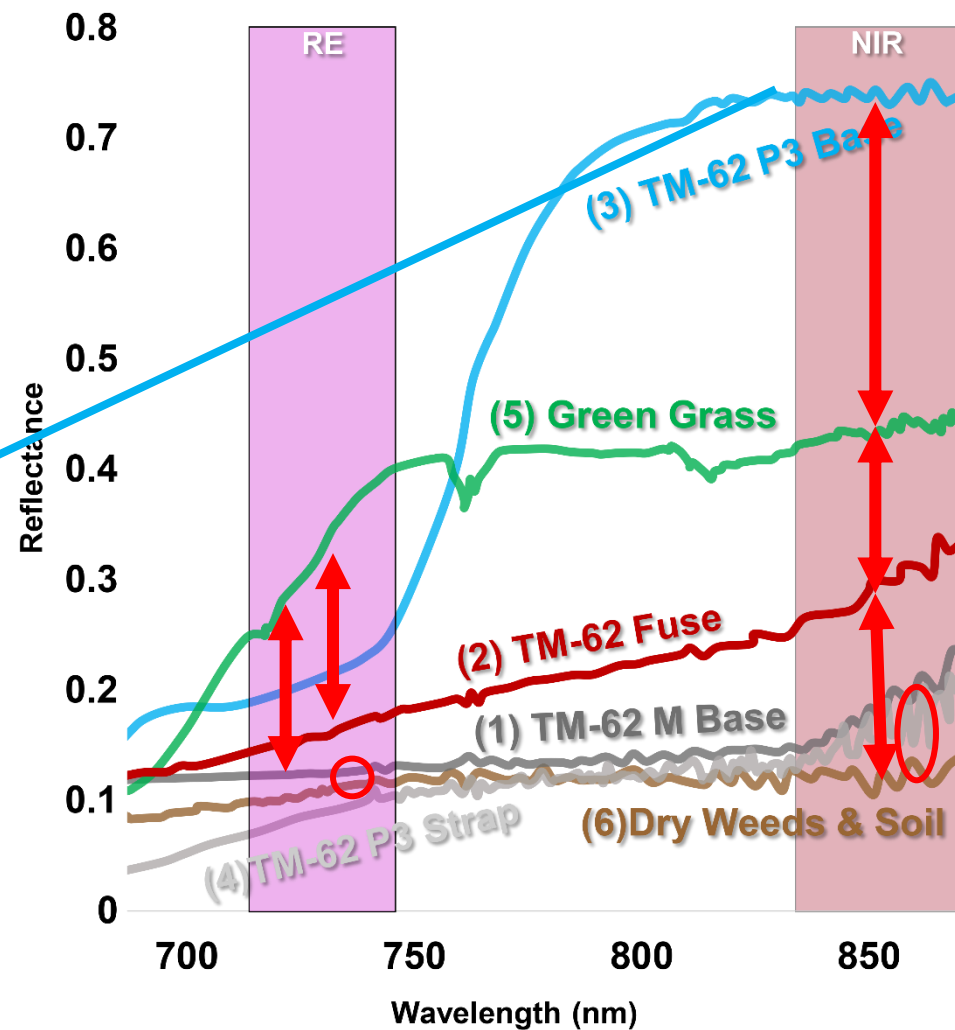
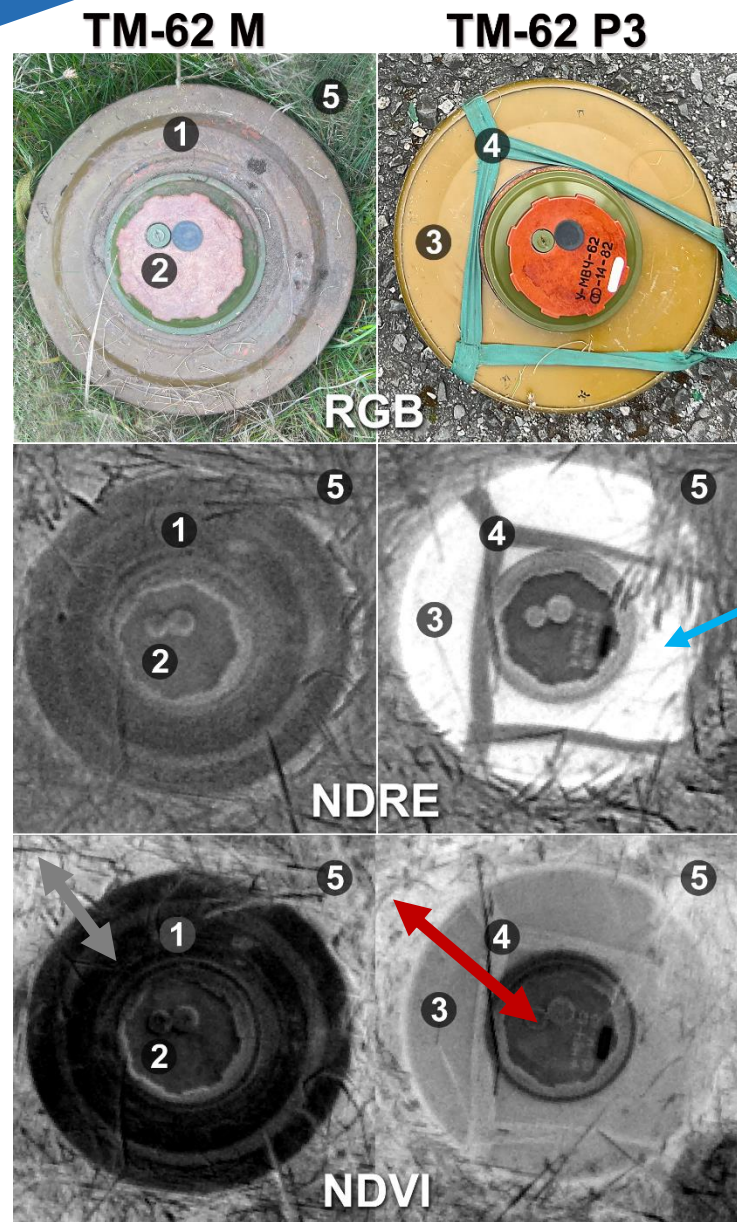


0 3 7 13 20 Metres



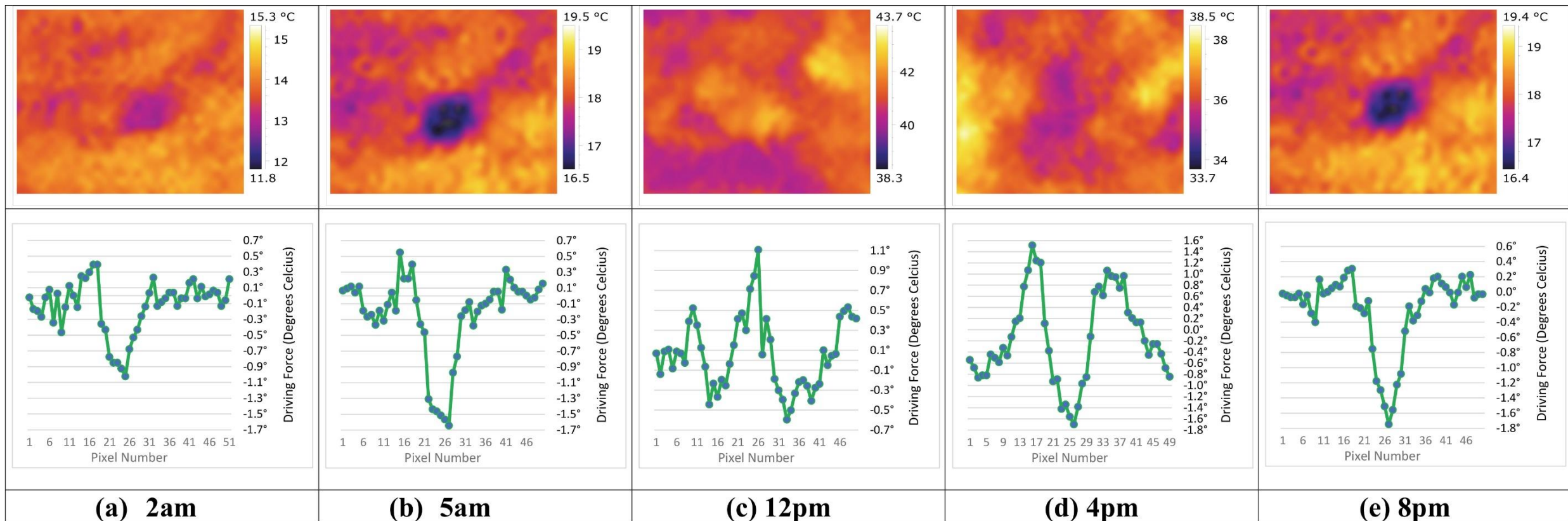
Mobility Robotics

9. Lessons Learned - MS



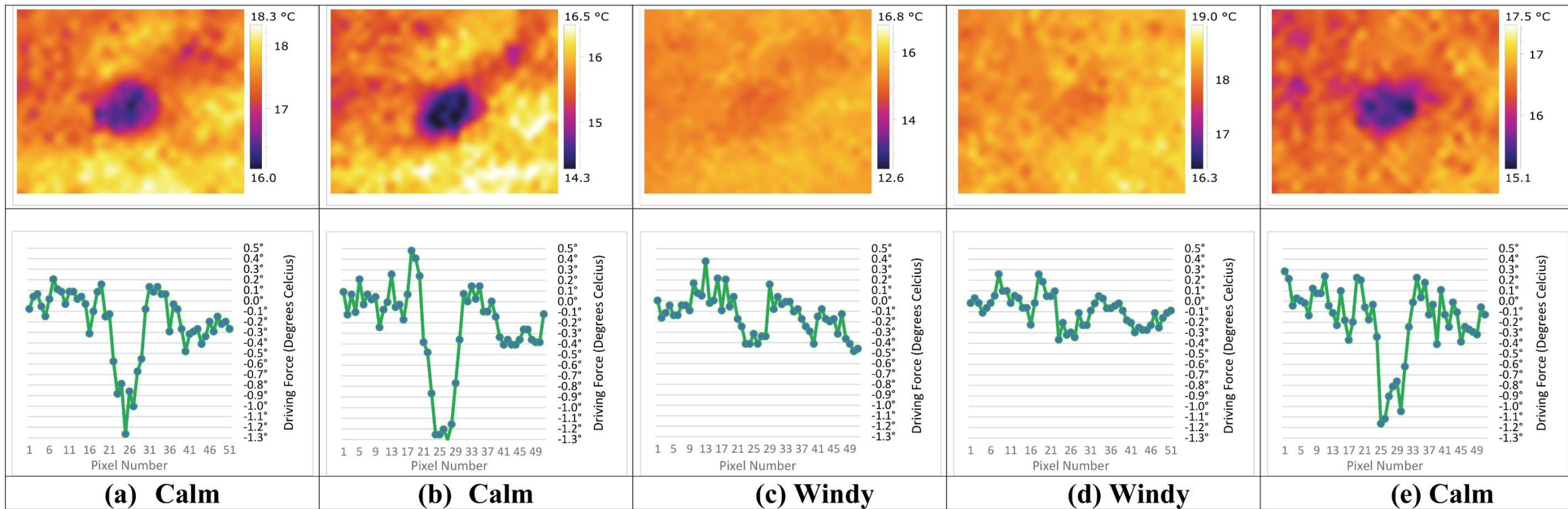
9. Lessons Learned - TIR

Diurnal cycle

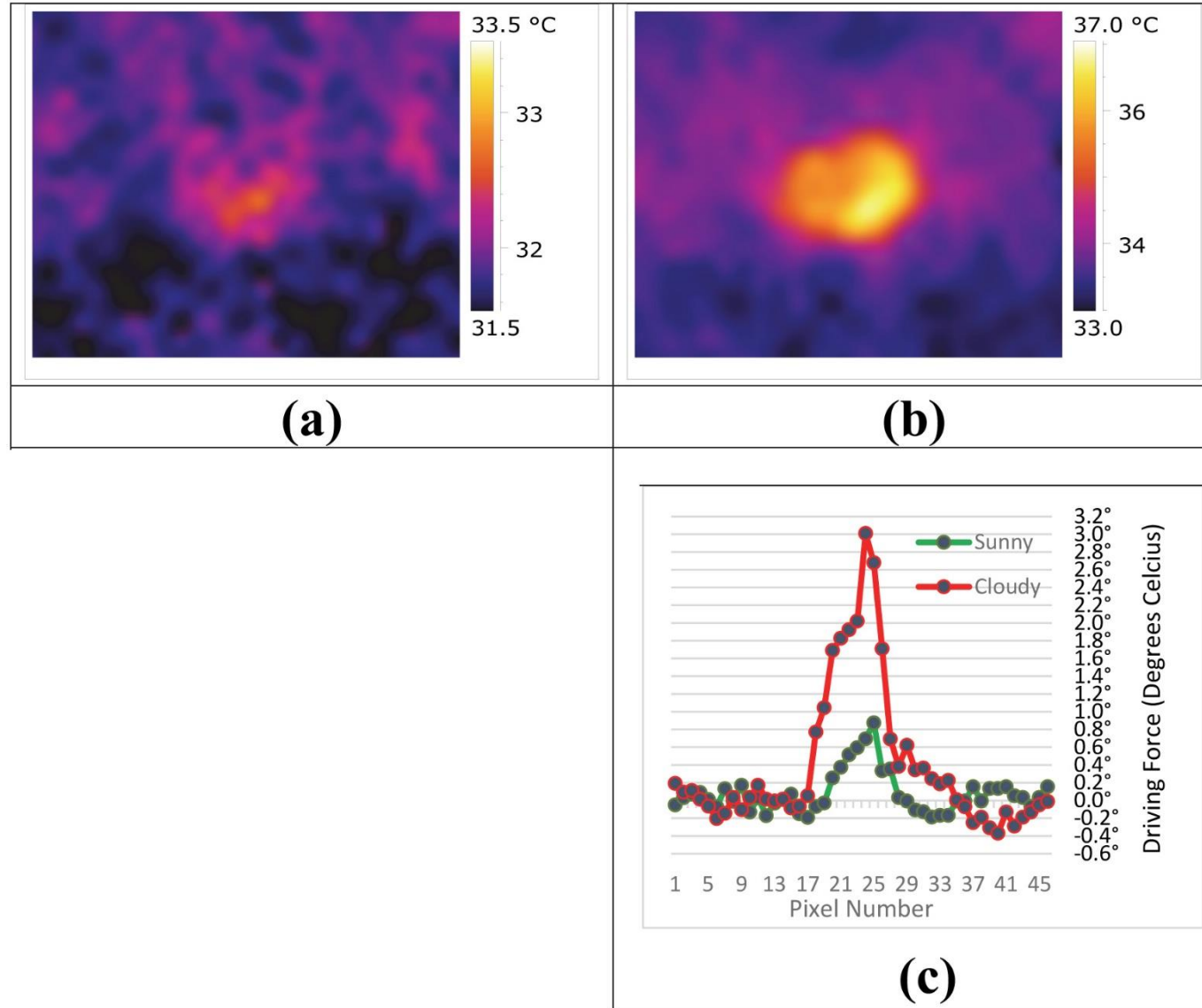


9. Lessons Learned - TIR

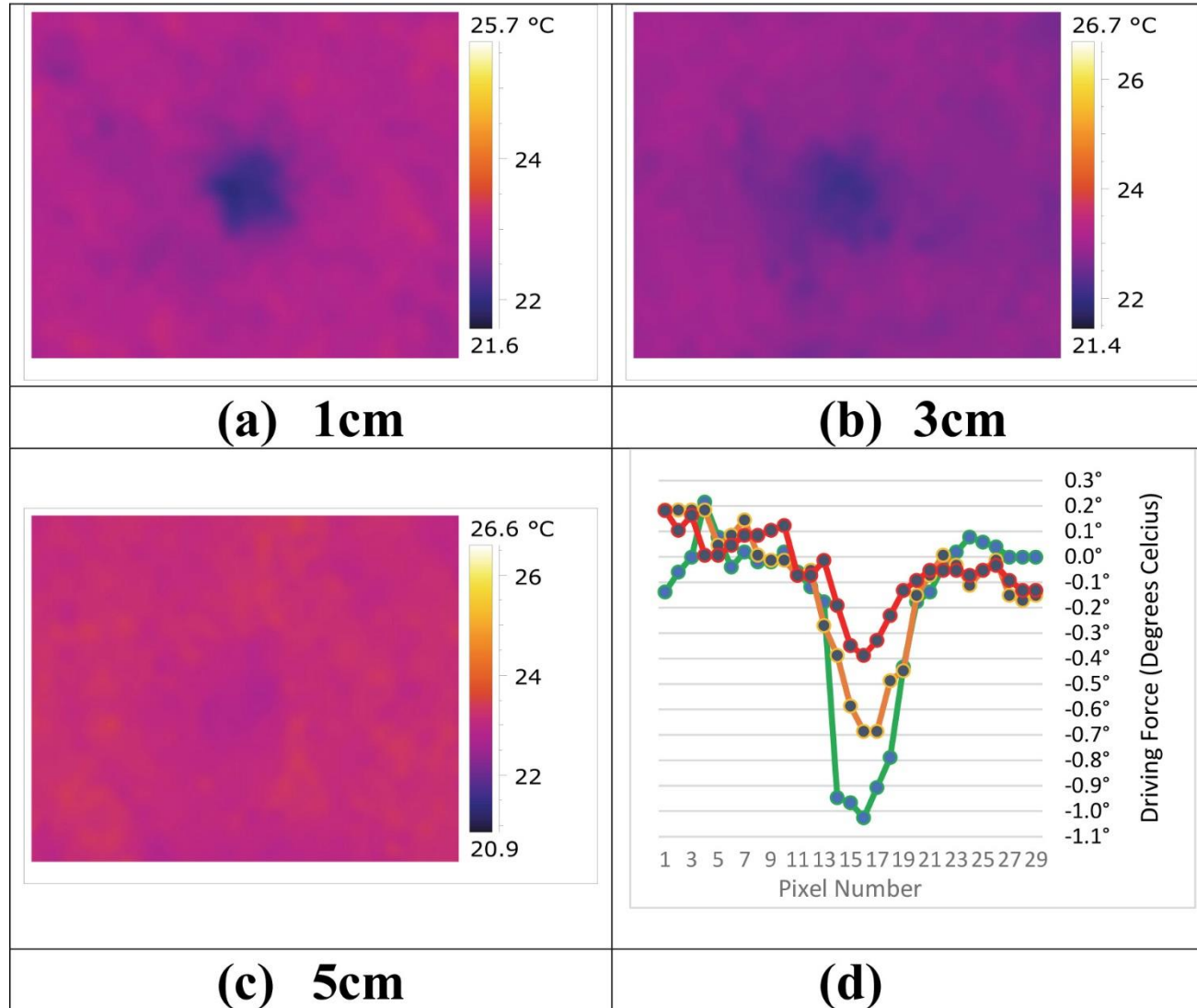
Wind



Cloud



Depth



10. Validating Results

Validation (deminers)



Thanks & Questions



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