



MEDUSA SENSING

SENSORS AND SOFTWARE FOR RADIOACTIVITY MONITORING

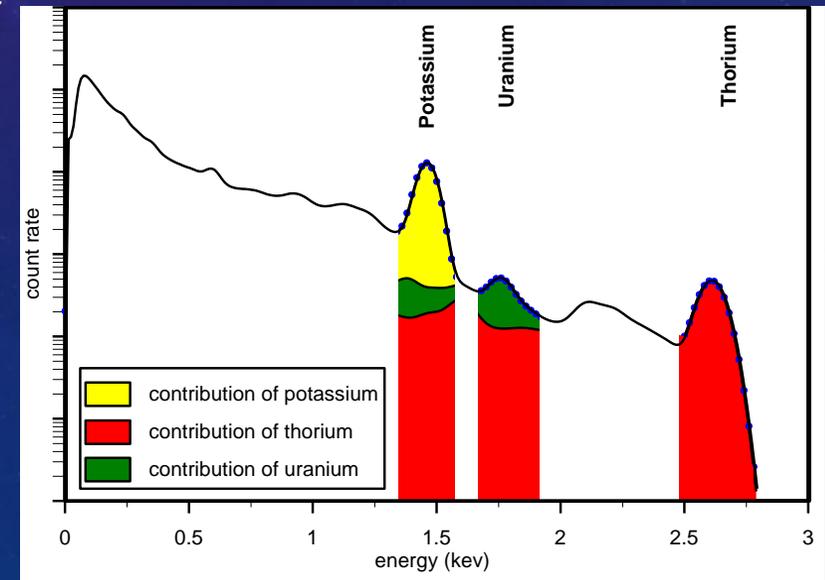
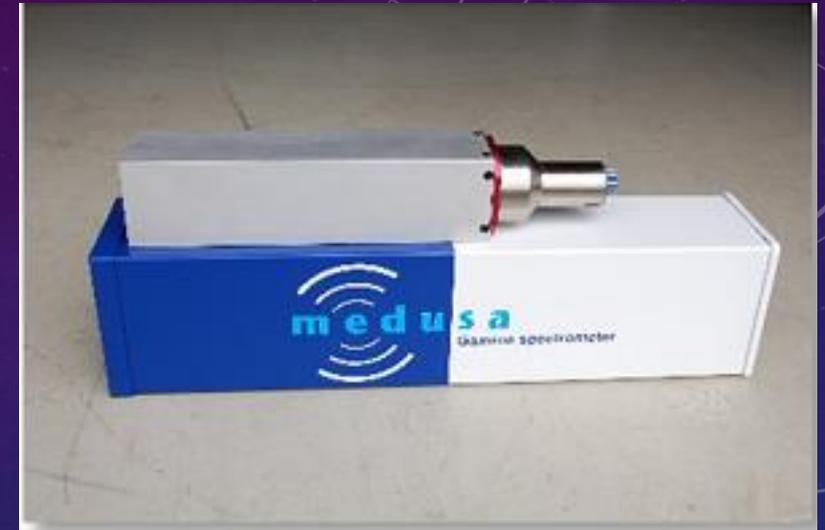
COMPANY PROFILE

- Medusa started in 2000, as spin-off of nuclear accelerator in Groningen, NL
- We develop sensors and software for radiation detection
- Applications:
 - Prospecting (airborne gamma-ray systems)
 - Agriculture (airborne systems)
 - Underwater sediment mapping
 - Geotechnics (road mapping systems, density measurement systems)
 - Safety (radiation monitoring)



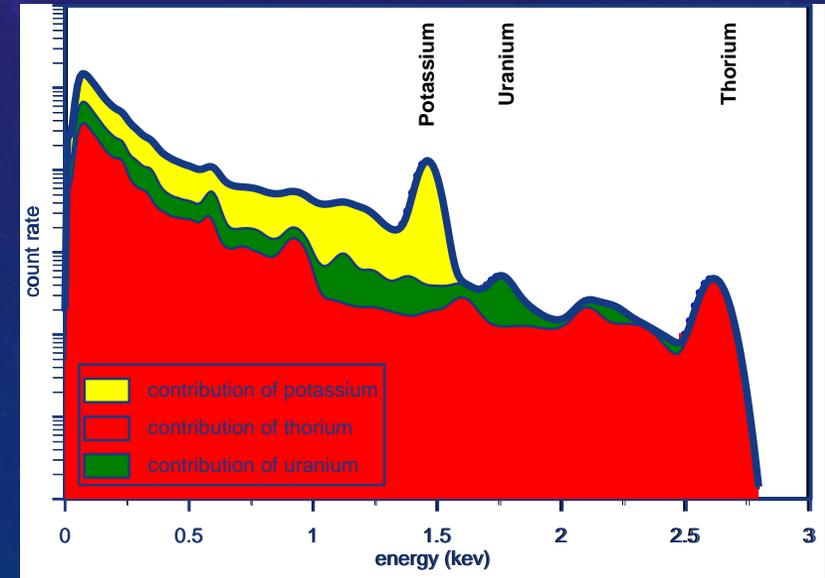
TECHNOLOGY

- Improved detector technology
 - Use CsI instead of NaI
 - CsI is very robust, has better efficiency and is very temperature stable
 - Get away from standard product – tailor and optimize to the need of the client



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- Improved data analysis models
 - Full spectrum analysis – incorporate 100% of the spectral counts
 - Modelling approach to radon and cosmic corrections
 - Straightforward and easy to use implementation into software
- Improved system calibration
 - Use Nuclear Particle Transport Codes to model detector response



MEDUSA OR STANDARD PACK?

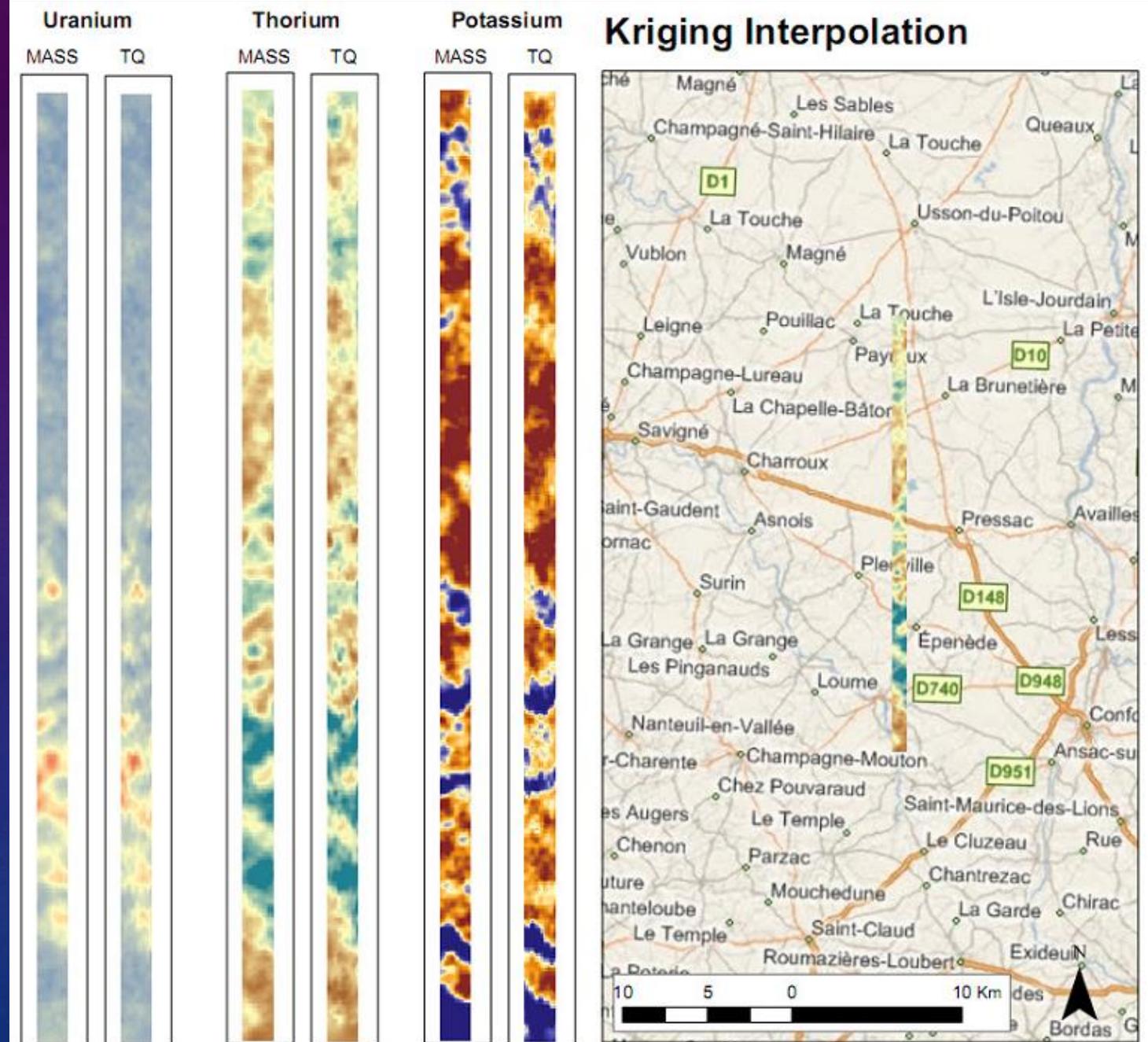


- 4x4L “standard” pack, IAEA “windows” analysis vs to 1x4L Medusa with FSA
- Tests: BGR (D) and TerraQuest (F)
- Overall result: 1x4L CsI + FSA is up to par with 4x4L + “windows”
- Efficiency gain highest for
- Much less volume, much less weight

Table 4: Relative efficiency (i.e. efficiency Medusa/efficiency reference) for both surveys.

	Medusa4L vs 4x4L pack	Medusa 4L vs 12x4L pack
Expected efficiency solely based on volume ratio	25%	8%
Relative efficiency ^{40}K	43%	16%
Relative efficiency ^{238}U	143%	56%
Relative efficiency ^{232}Th	83%	34%
Average relative efficiency	90%	40%

- Results from the Terraquest test in Niort, France
- Left, labeled MASS = Medusa MS4000
- Right, labeled TQ = 3x 16L RSI packs

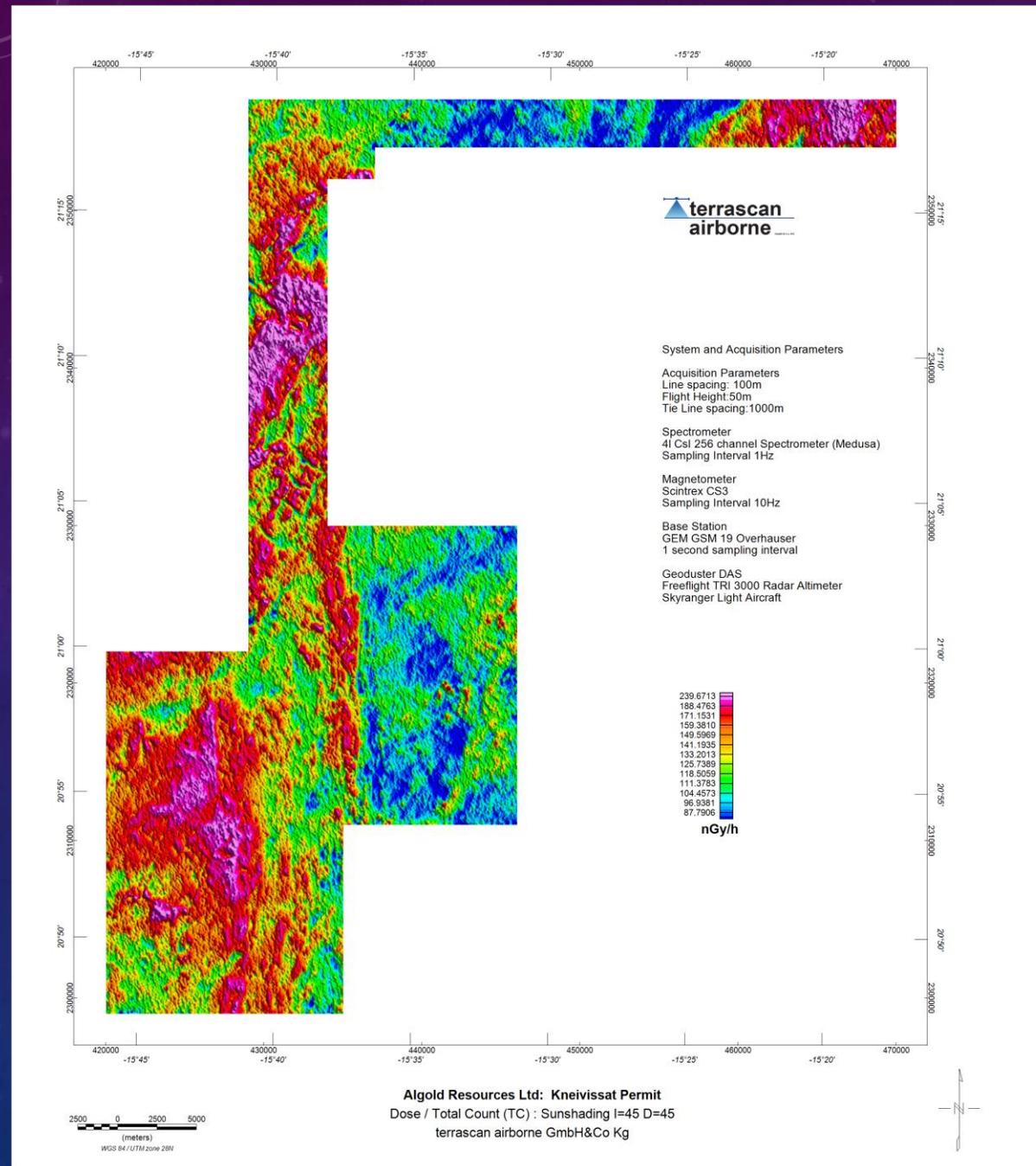


SELECTED SURVEY RESULTS

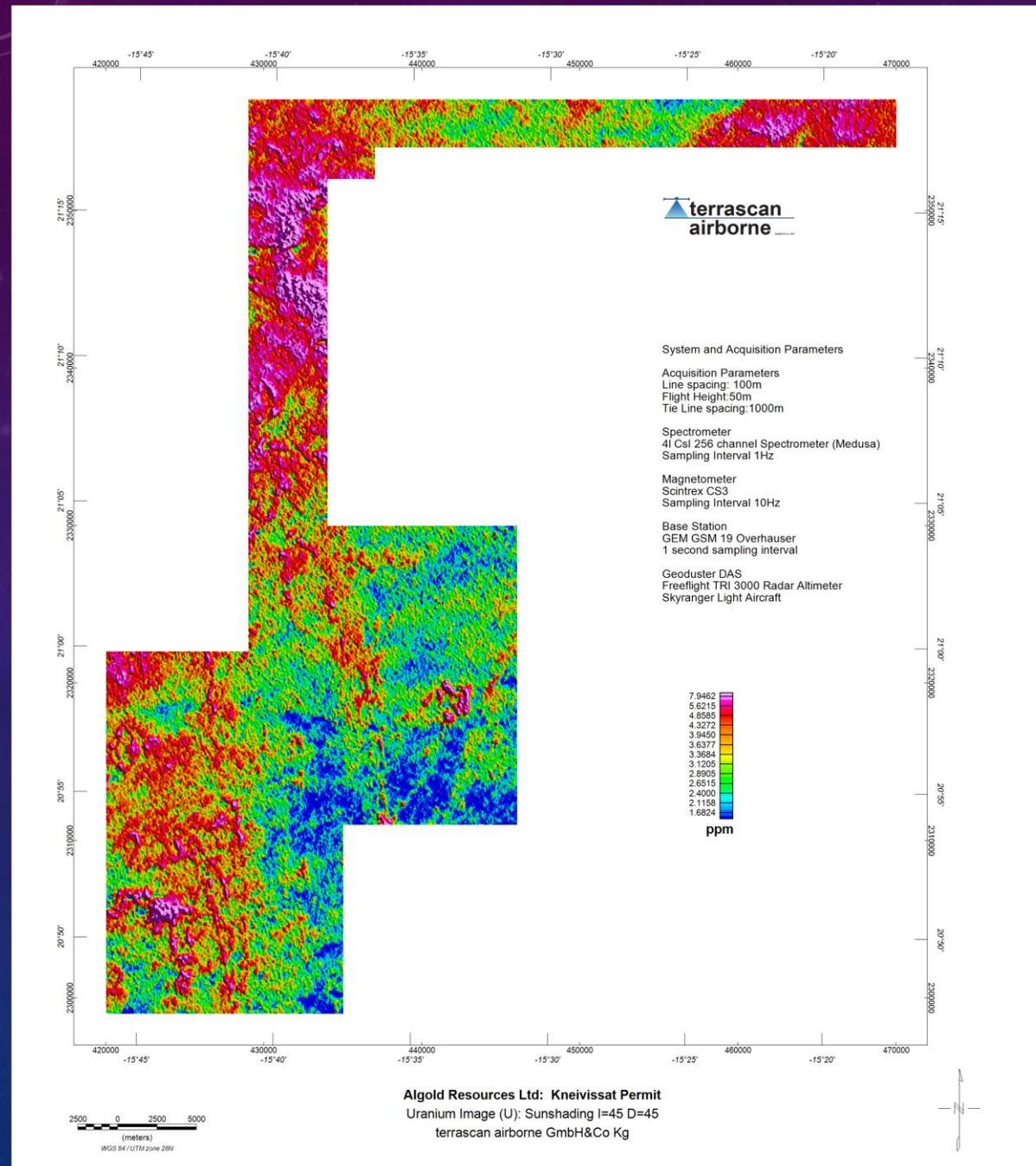
- Terrascan Airborne GmbH
 - Data taken for AIGold (Kneivissat Permit)
 - Data processing by Dr. Reiner Wackerle
 - Data QC'd and approved by dr. Alan Reid
- SkyTEM
 - Data taken for Lundin Mining
 - Data Processed and QC'd by mr Tom Grand
- Ayotte
 - Data taken in Northern Quebec
 - Data processed and QC'd by Medusa



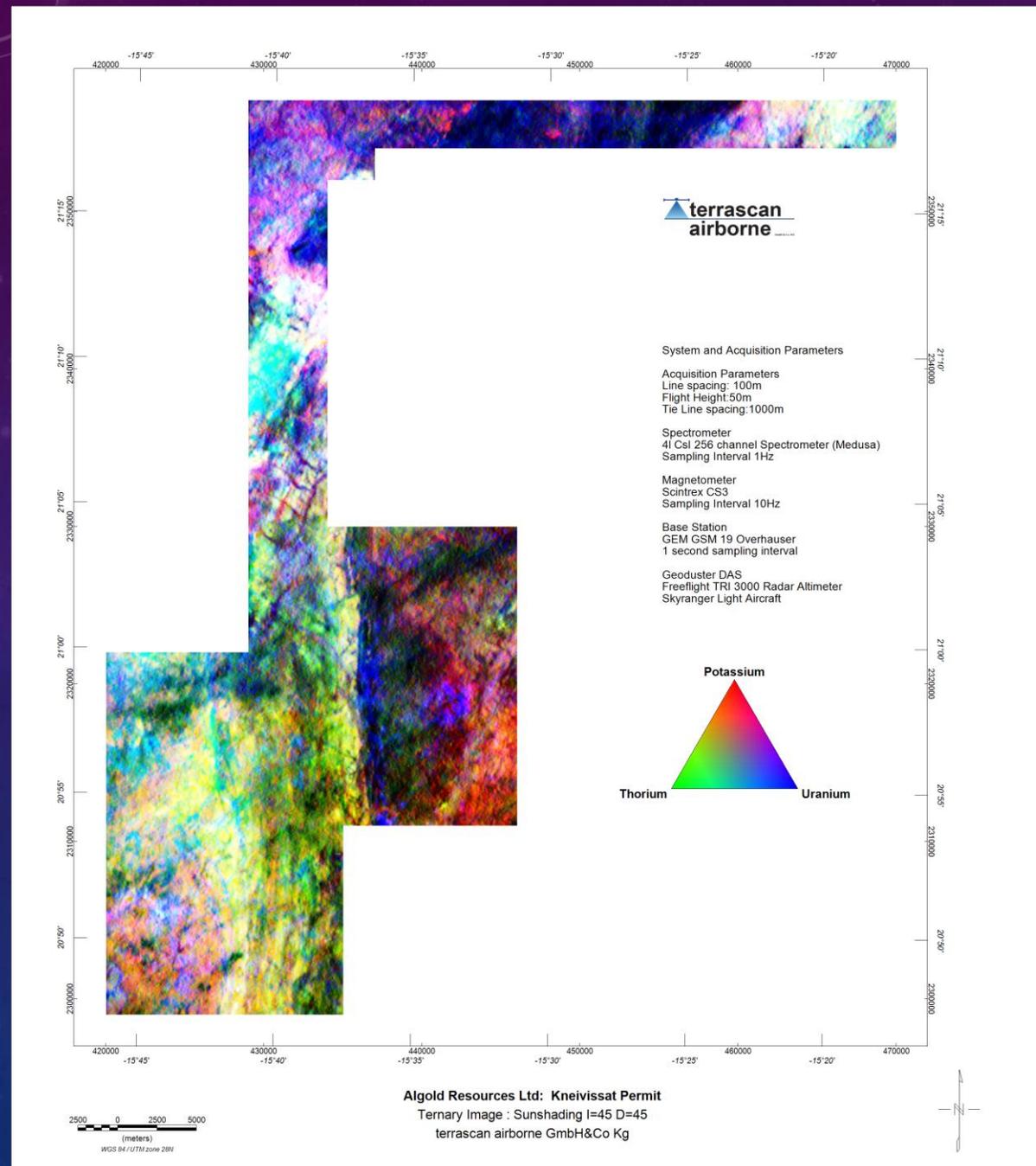
- Kneivissat Permit
- By Terrascan Airborne
- Spectrometer: MS-4000
- Magnetometer Scintrex CS3
- Data courtesy of Algold Resources Ltd
- www.algold.com
- MAP: 40K

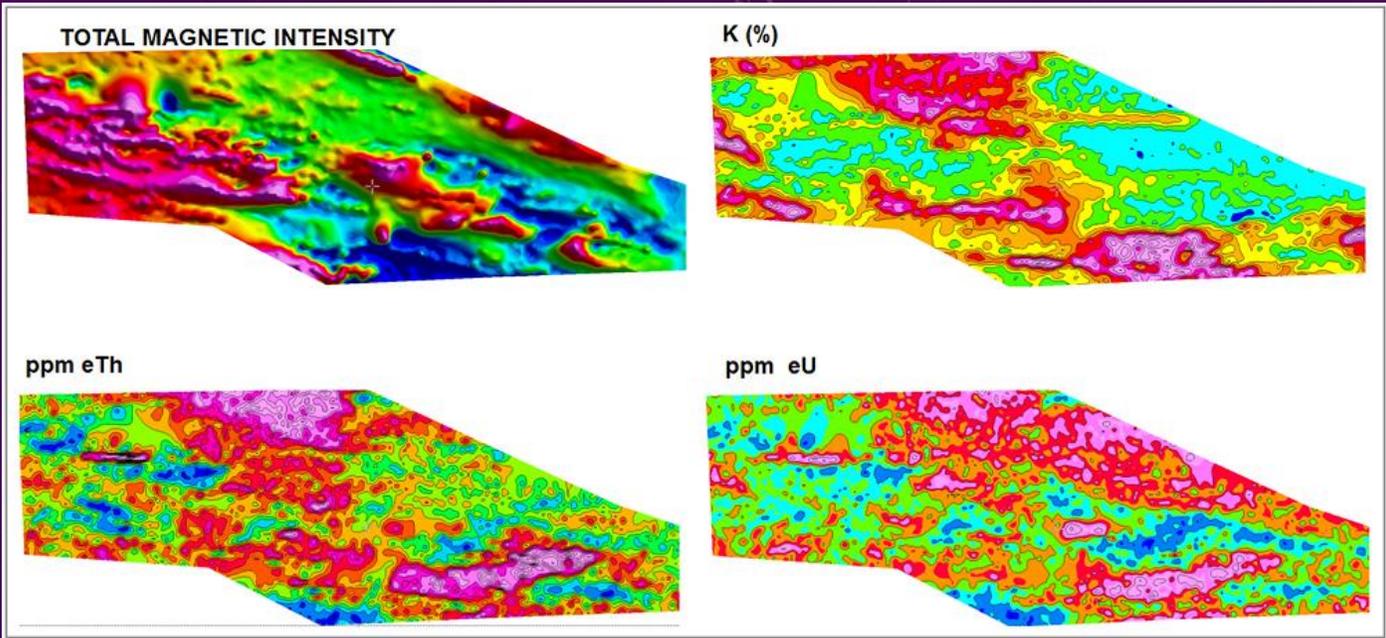


- Kneivissat Permit
- By Terrascan Airborne
- Spectrometer: MS-4000
- Magnetometer Scintrex CS3
- Data courtesy of Algold Resources Ltd
- www.algold.com
- MAP: ^{232}Th

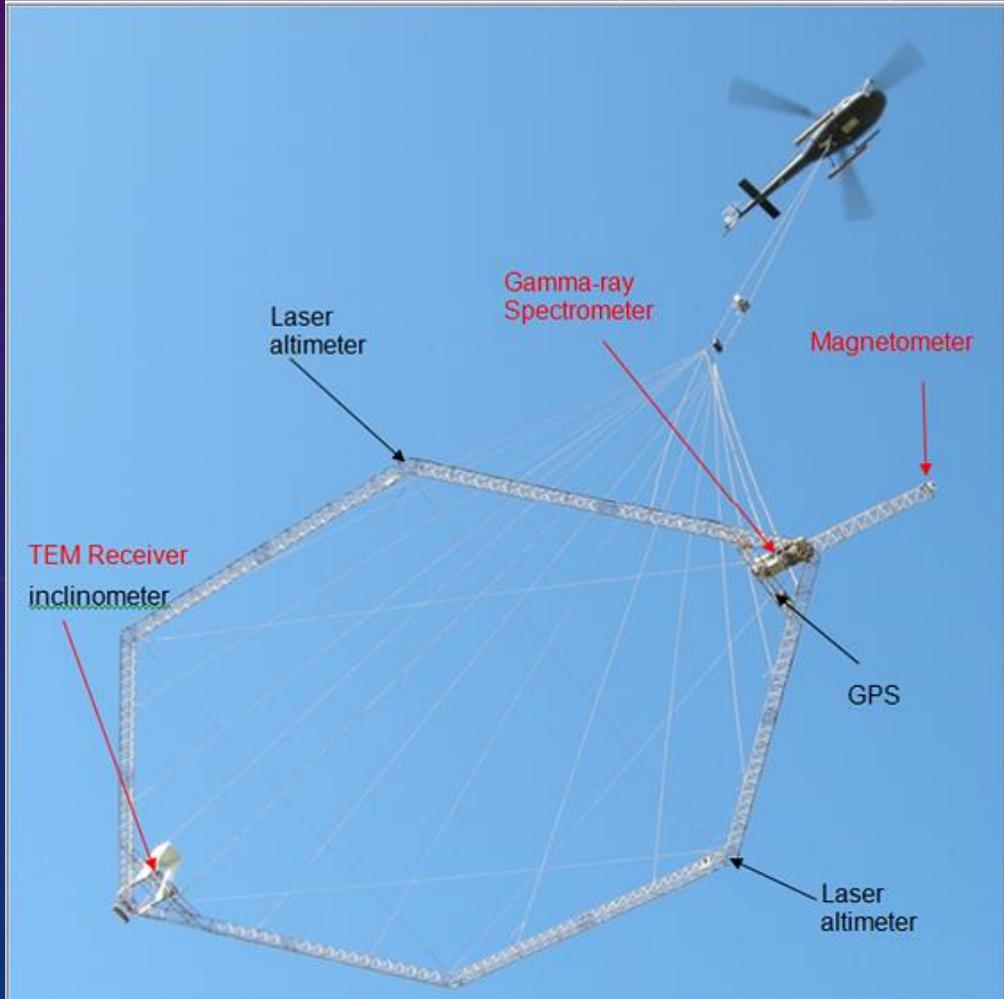


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- MAP: Ternary (K, Th, U)





- Survey Alconchel, Spain
- SkyTEM for Lundin Mining
- MS-4000 Spectrometer mounted on a SkyTEM frame





- Northern Quebec permits
- Olivier Ayotte
- System: MS-4000 spec
- Map: ^{232}Th

