

# RF spectrum and site audit





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01

## Our fleet

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## DJI Phantom

- Photogrammetry
- Surveying
- Footage
  - Video
  - Images

03

# Our fleet continued



## DJI Matrice 210 series

- Photogrammetry
- Surveying
- Footage
  - Video
  - Images
- Mobile site audits



# Our fleet continued

## DJI Matrice 300 RTK series



- 3D modelling
- Tower Inspections
- Broadcast site audits
- Mobile site audits
- D-RTK compatible
- Satellite + Microwave measurements

# Our fleet continued



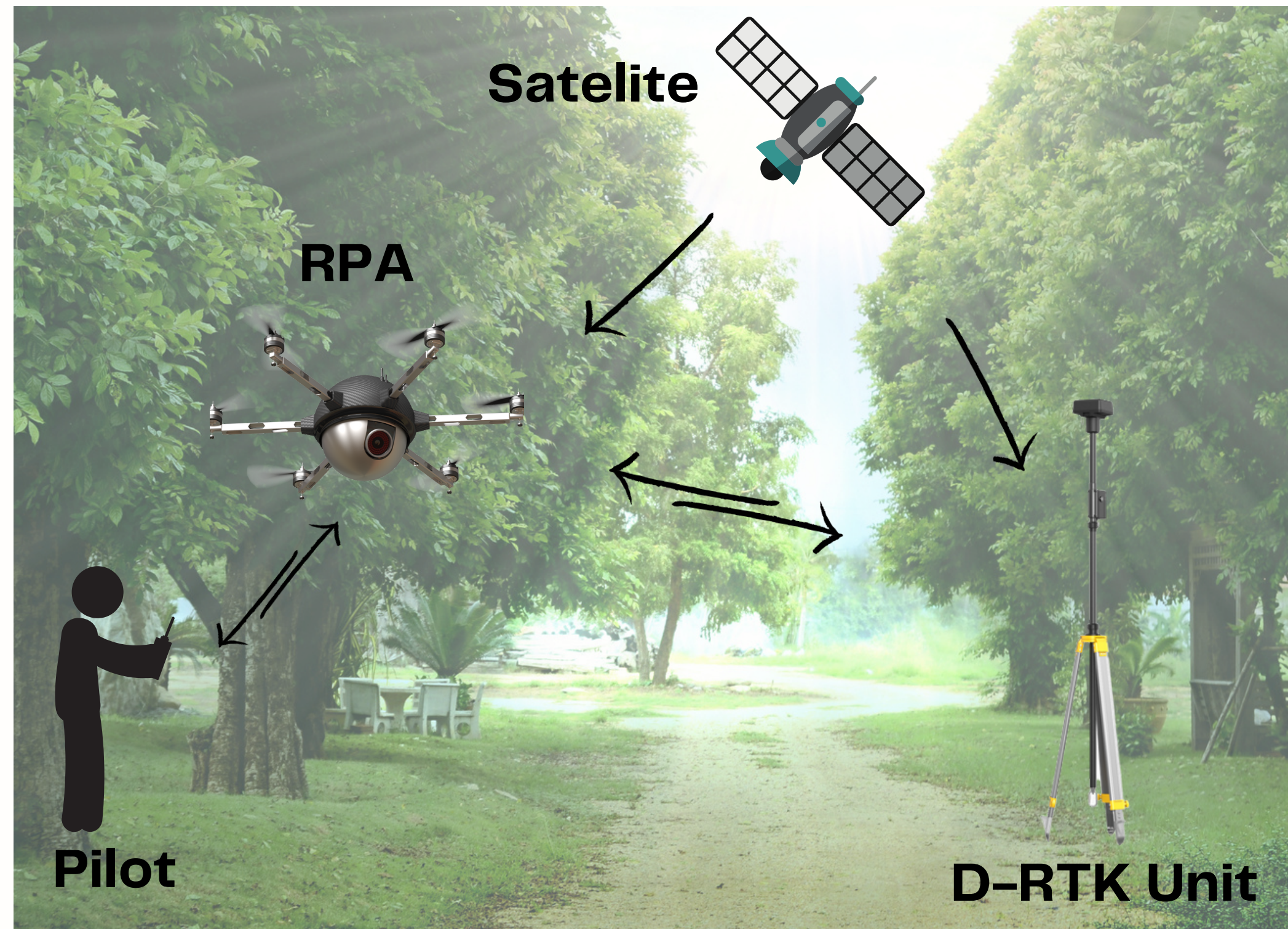
## DJI Matrice 600 Pro

- Broadcast site audits
- Mobile site audits
- D-RTK compatible
- Satellite + Microwave measurements



# D-RTK GNSS

- Centimeter-Level Positioning Accuracy
- IP65 level ingress protection
- Built-in IMUs for optimization





# Drone characterization: Anechoic chamber

- Full anechoic chamber for drone characterization
  - Receive pattern (Roll, Pitch and Azimuth offsets)
  - Receiver gain
  - Front-to-back ratio

- Special jacket has been designed to cover the RPA to ensure that it is shielded against Radio Frequency interference!





# 03

## Multi-Spectral direction finding

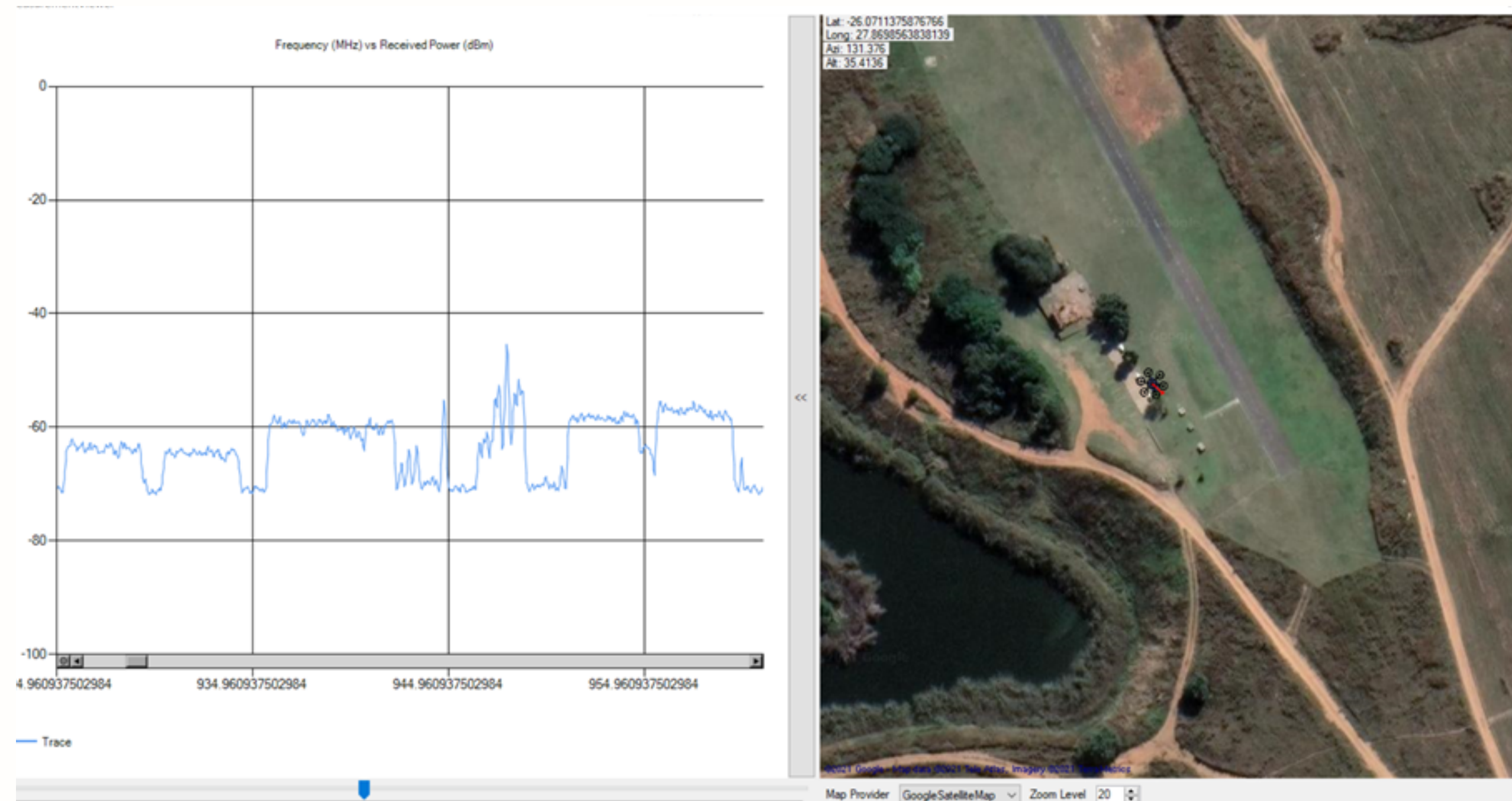
- Point rotation out of clutter measurements
- Multi spectrum analysis
- Not limited to environment
- Database compiling
- Fast results and feedback





## Live spectrum analysis

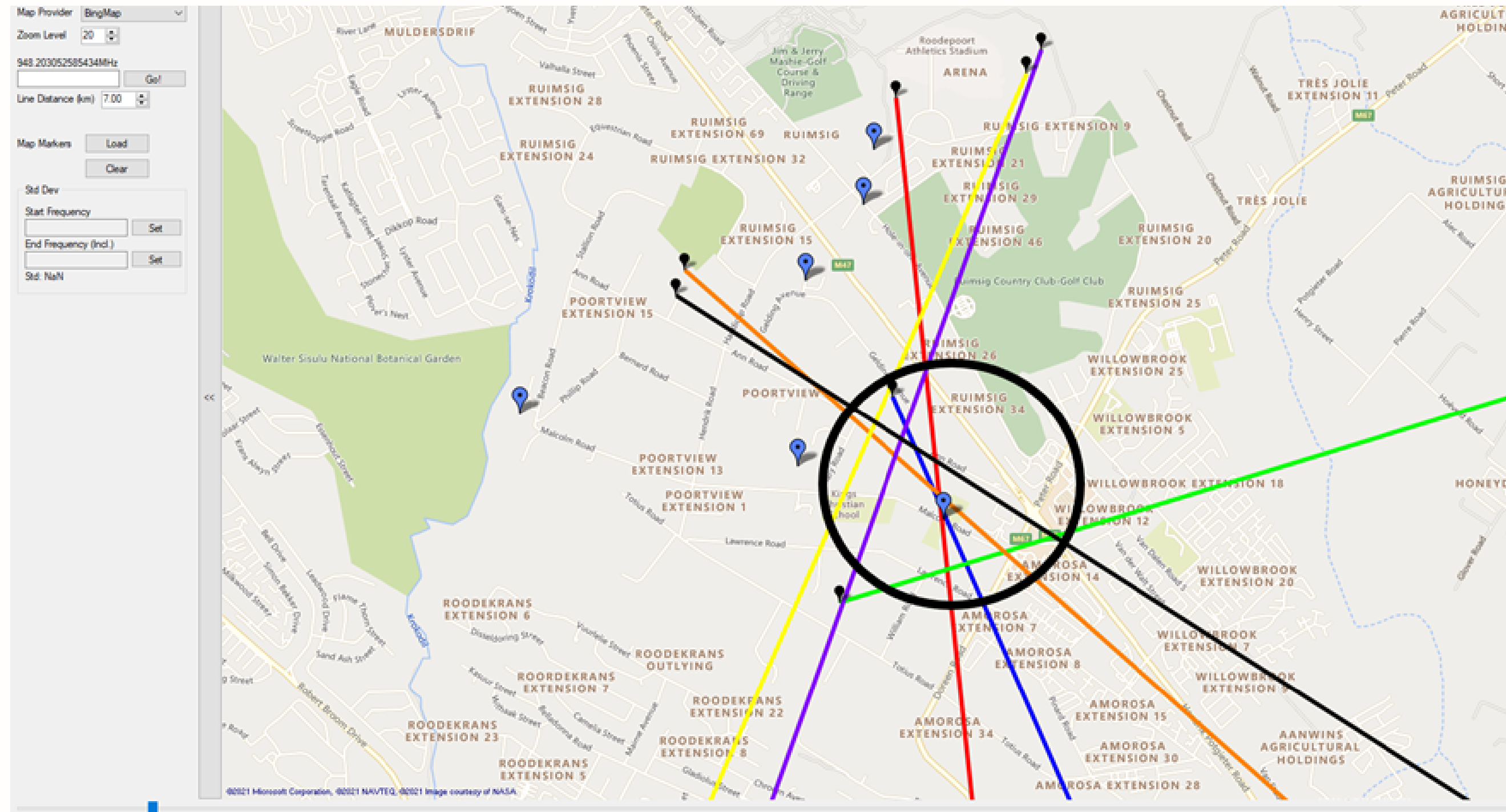
- See wideband information per selected RPA azimuth in DF measurement
- View drone movement and relative spectrum





# Vector based RF source identification

- Plot vector for every measurement point in color of choice
- Automatic source detection per channel or selected frequency



# 04

## Broadcast site audit

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- Antenna pattern determination per channel
  - Elevation pattern
  - Azimuth pattern
  - 3D pattern
- Antenna tilt determination
- Antenna center of radiation height allocation
- Channel EIRP
- Antenna null-fill
- Broadcast Coverage predictions
- VHF and UHF broadcasting technologies





# 05

## Mobile site audit

- Site channel occupancy detection
- Antenna pattern determination per channel
  - Elevation pattern
  - Azimuth pattern
- Antenna tilt determination
- Antenna center of radiation height allocation
- Channel EIRP
- Antenna null-fill
- GSM, UMTS, LTE, LTE-A, 5G technologies





# 06

## Broadcast and mobile tower modelling

- Tower modelling enabled through photogrammetry
- New Lidar technology used on DJI M300 RTK, creates highly accurate models for analysis and measurements.

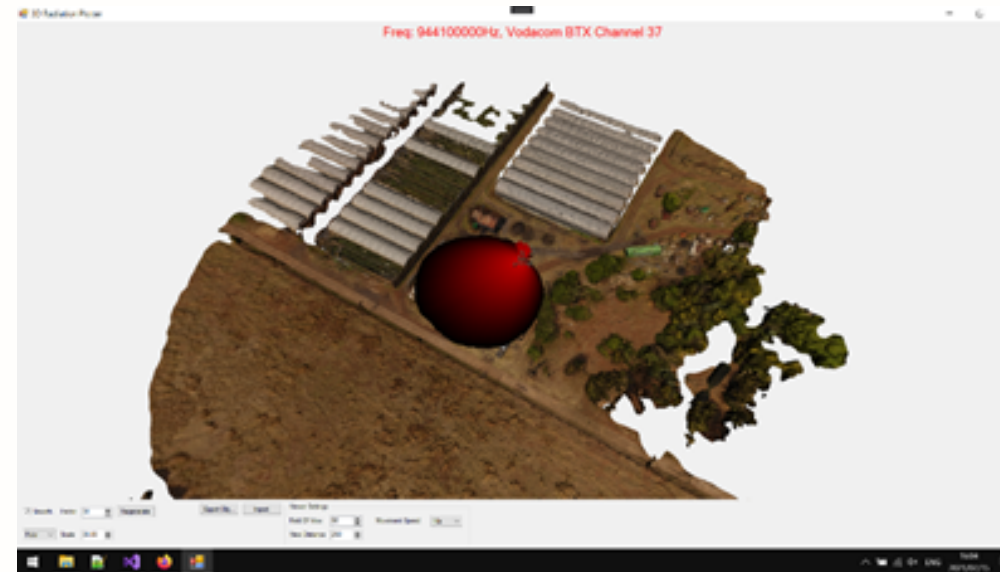




07

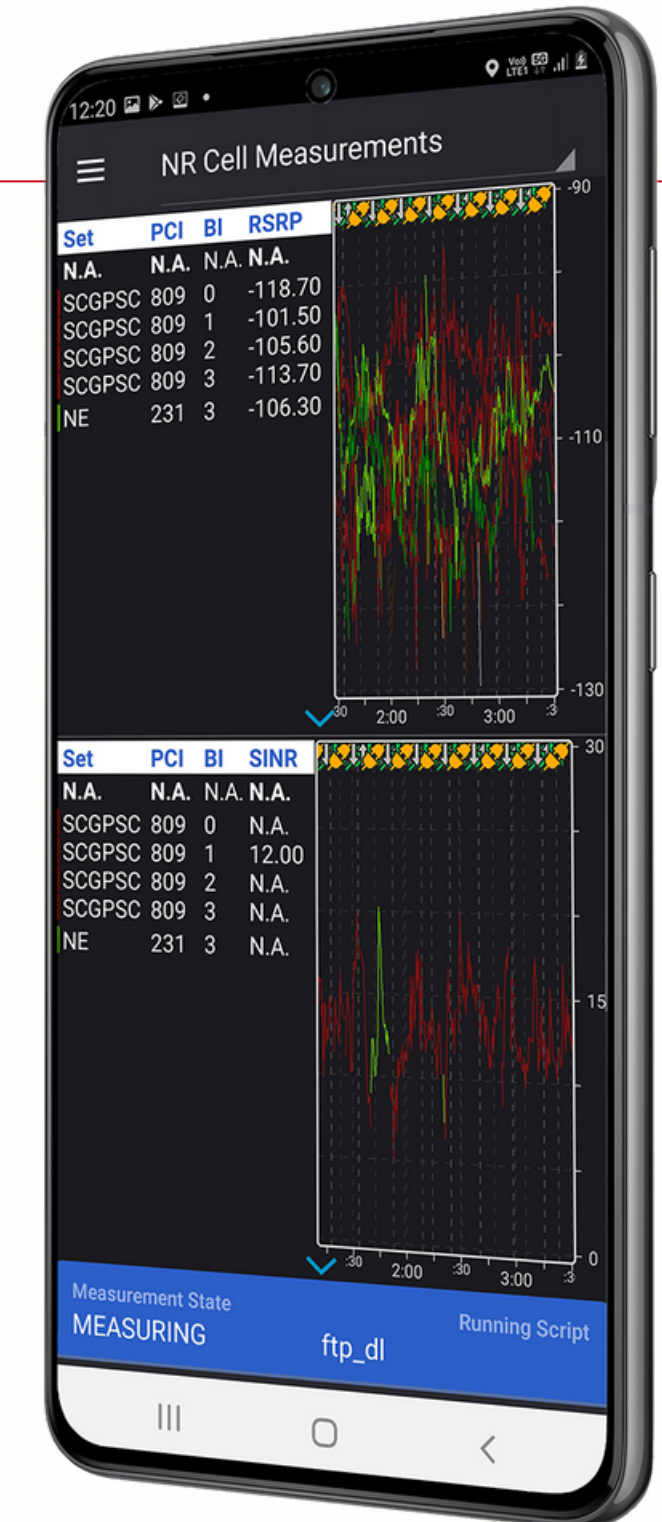
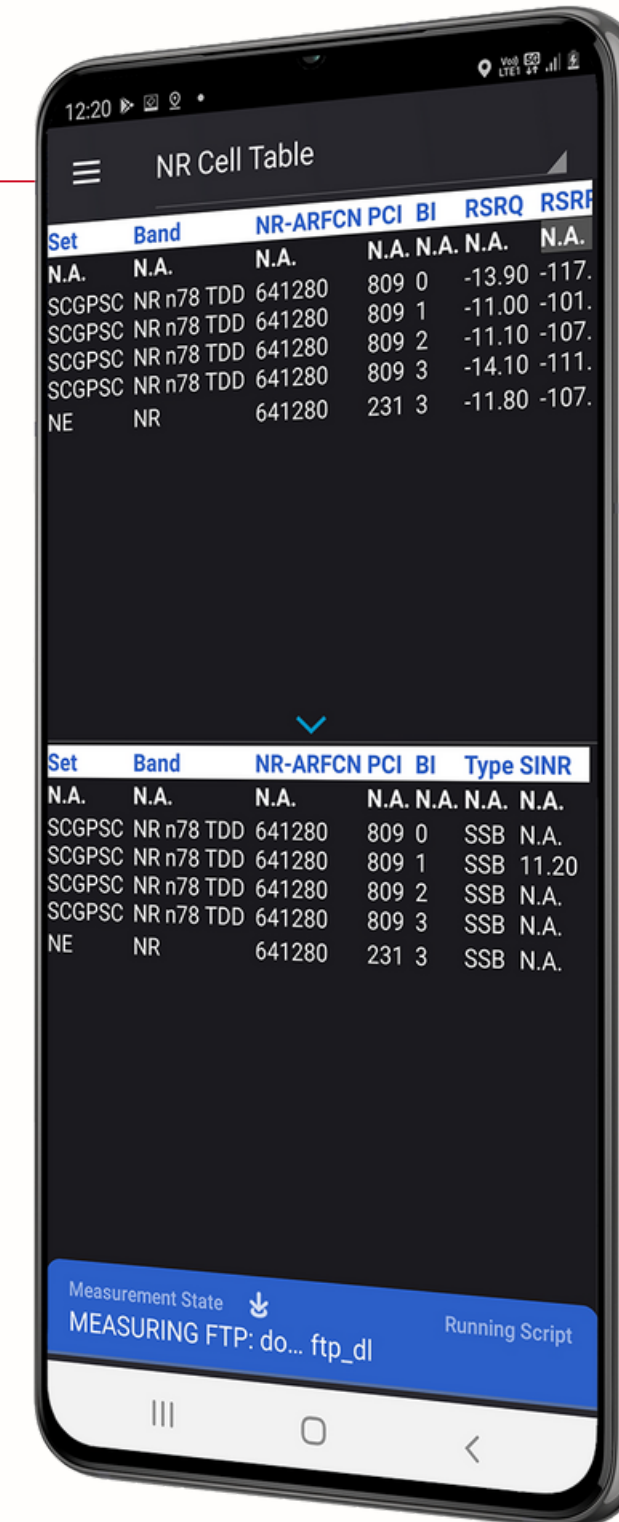
# 3D tower model and RF information integration

- Antenna specifications can be determined
  - Antenna mounting height
  - Antenna dimensions
  - Mast dimensions
  - Tower inspections



# Channel specific inspections

- Using Keysight Nemo Handy mobile tool we are enable to integrate spectrum data as well as inter-modulated data to make more accurate conclusions about specific channels
- GSM, UMTS, LTE, LTE-A, 5G technologies





09

# Satellite beam measurements + Microwave

- Measurements for microwave links and satellite dish antennas
  - Antenna 3 dB beamwidth
  - Main beam direction indication
  - Maximum transmitting power

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