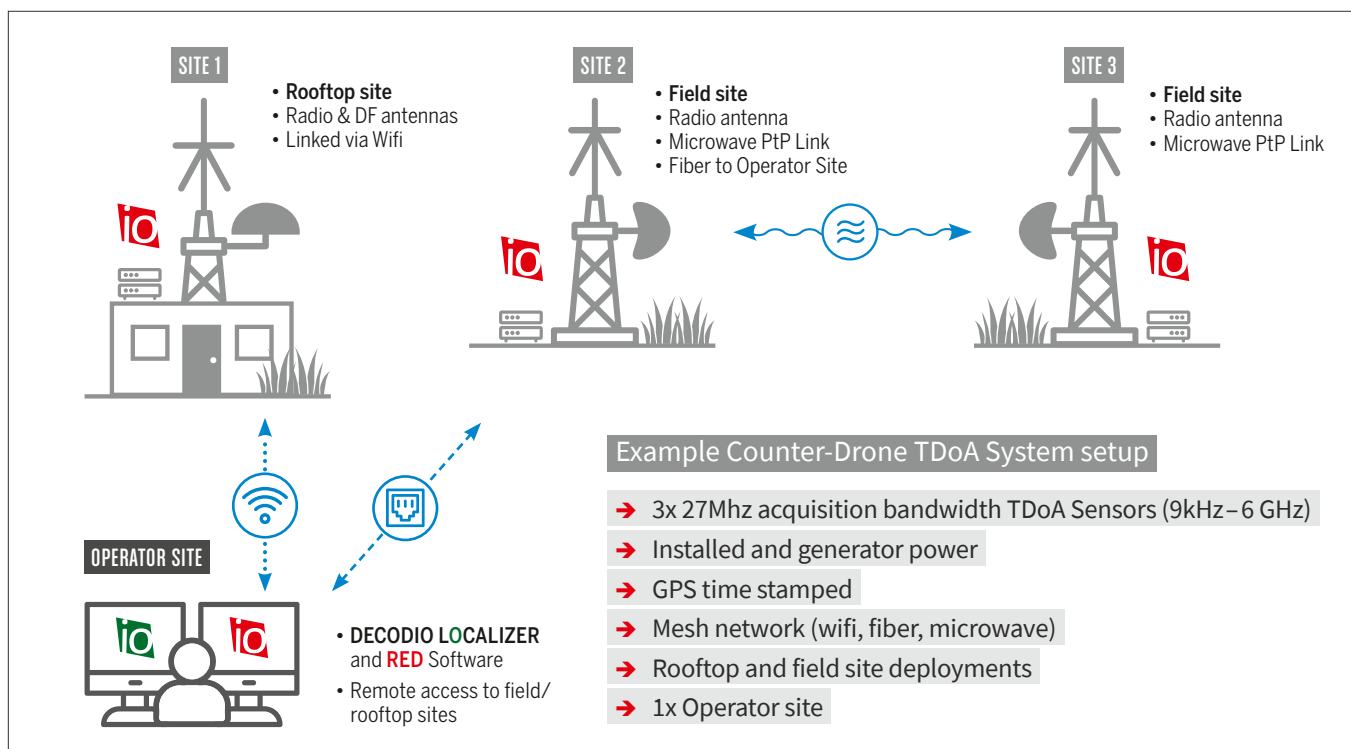
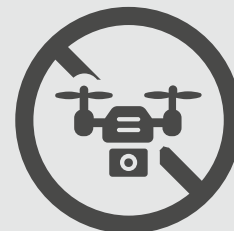


DECODIO Counter-Drone

Target the archer, not just the arrow.

HIGH-LIGHTS

- ➔ Drone uplink localization
- ➔ Low-altitude hovering drone localization
- ➔ Custom designs and project consulting
- ➔ Mesh network (IP, Microwave, LTE)
- ➔ Easy to integrate, open architecture
- ➔ Mitigates bad weather impacts to CUAS sensors



DECODIO LOCALIZER augments radar-based counter drone solutions, targeting VHF/UHF drone operator uplink signals (including hoppers) through TDoA (time difference of arrival). 100% passive localization.

Cued from other sources, LOCALIZER cross-fixes low hovering drones, difficult for RADAR systems requiring moving targets, or camera/night vision systems obstructed by fog. Also, the system easily fixes drone UHF uplink signals, enabling police to quickly locate an unauthorized drone controller.

Decodio tailors each system to specific client needs, selecting receivers and hardware from top providers, such as: NARDA, Signal Hound, Tektronix, Rohde & Schwarz, IZT, and others.

1x Operator uses LOCALIZER and controls all deployed RED sites from one screen, instantly plots signal locations on high-quality maps (street, topo, custom), and records every cross-fix for later playback.

Great for post-event evidence and deep analysis.



FIELD TEST RESULTS (JULY 2021)

3x site TDoA system localized drone uplink signals between 830/860 MHz and around 2.4 GHz, with a probability area of 50 meters, using 3x stations spaced about 500 meters apart.

Hovering drones (15m altitude) downlink signals were quickly localized to within 50 meters when drone was centered between the 3x RED sites. Signals were known.

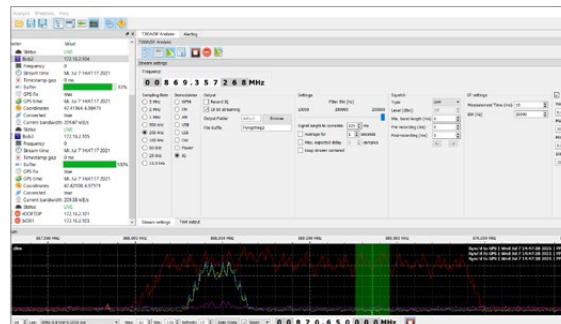
Our system solves the tracking of low-altitude hovering drones (difficult for RADAR systems) and drone operator UHF uplink signal localization during bad weather conditions.

EXAMPLE USE CASE

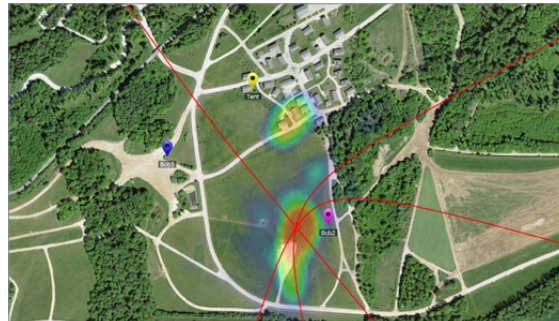
- A major international airport has multiple drone incursions from local hobbyists.
- Their radar-based counter-drone system is having trouble finding low-flying hovering drones and the drone operator located 5 km away.
- Decodio installs a 3x site TDoA system using existing infrastructure.
- **RED** software triggers on drone UHF downlink and controller UHF uplink bursts.
- **LOCALIZER** software creates an emissions heatmap, records results, and enables Police to search emitter area and arrest drone operator.



TDoA-BASED LOCALIZATION



LOCALIZER combines data from 3x **RED** field sites inside a single display. Operator easily marks drone uplink signal (frequency hopper), shown above as a green marker.



LOCALIZER instantly plots the TDoA parabolas and creates a heatmap over the emitter location. Switch between street, topo, or custom maps. Measure between **RED** sites and the emitter location. In the map, the upper heatmap is the drone and the lower heatmap is the drone controller estimated position.



Pair a camera, friendly drone, hand held spectrum analyzer, or other system to walk up to the target emitter.