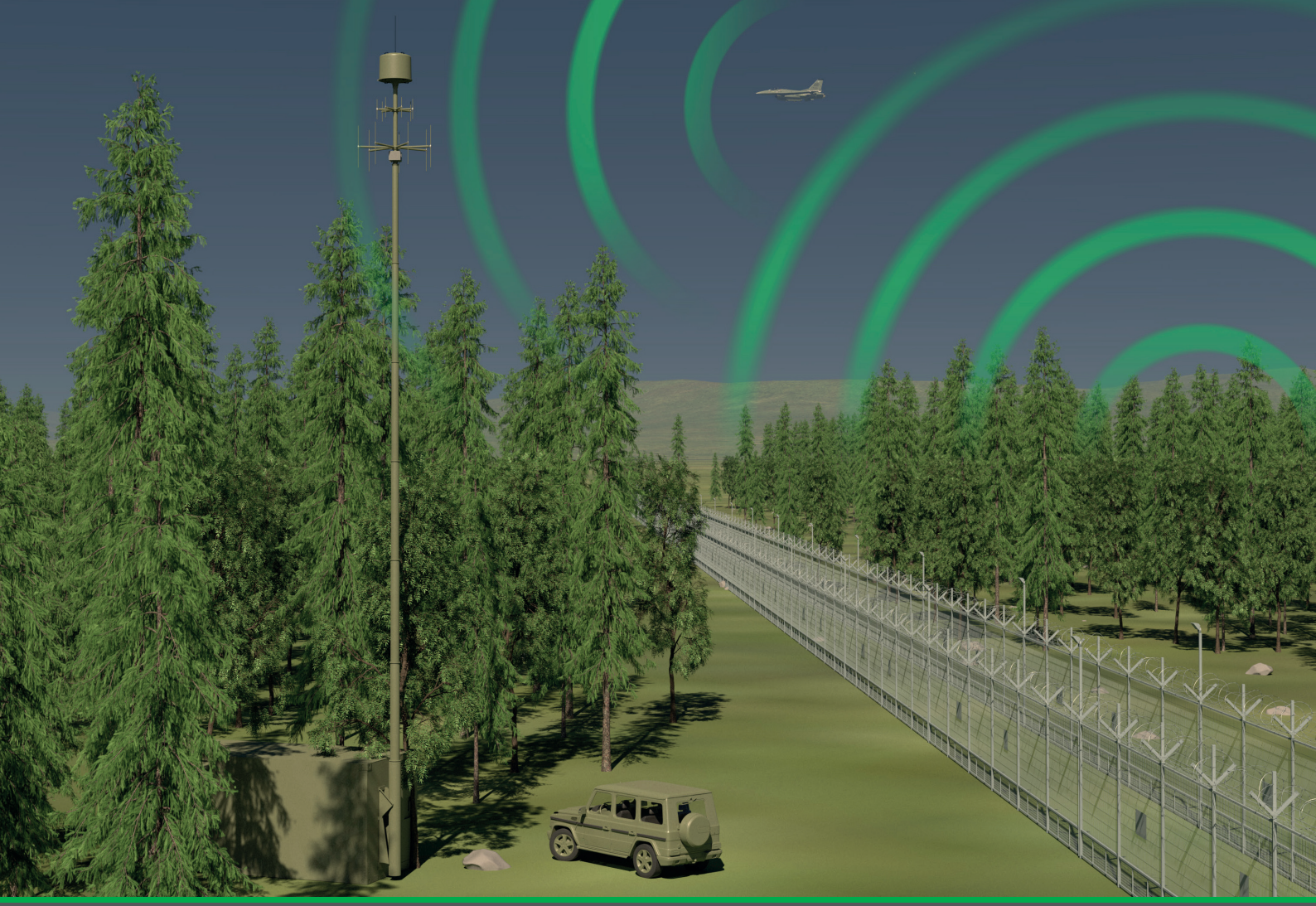


HENSOLDT **Twinvis** – Passive Radar

Twinvis is a passive radar that adds a new dimension to the world of surveillance and situational awareness.

It offers decisive operational advantages: it cannot be located due to the absence of any transmitted radar signals and does not need any emissions from targets to track them. Instead Twinvis works by using multiple existing VHF and UHF transmissions from analogue and digital radio as well as television.

Areas all over the world have sufficient transmitter-of-opportunity coverage for Twinvis to use.

Twinvis Passive Radar provides real-time omnidirectional 3D tracking of air targets. Its unique technical features allow tracking of highly agile targets and also ensure invisibility to hostile ECM systems; it provides the perfect placement for covert, non-cooperative surveillance tasks.

Twinvis adapts to a variety of operational scenarios and shows its state-of-the-art performance within Europe and overseas.

www.hensoldt.net

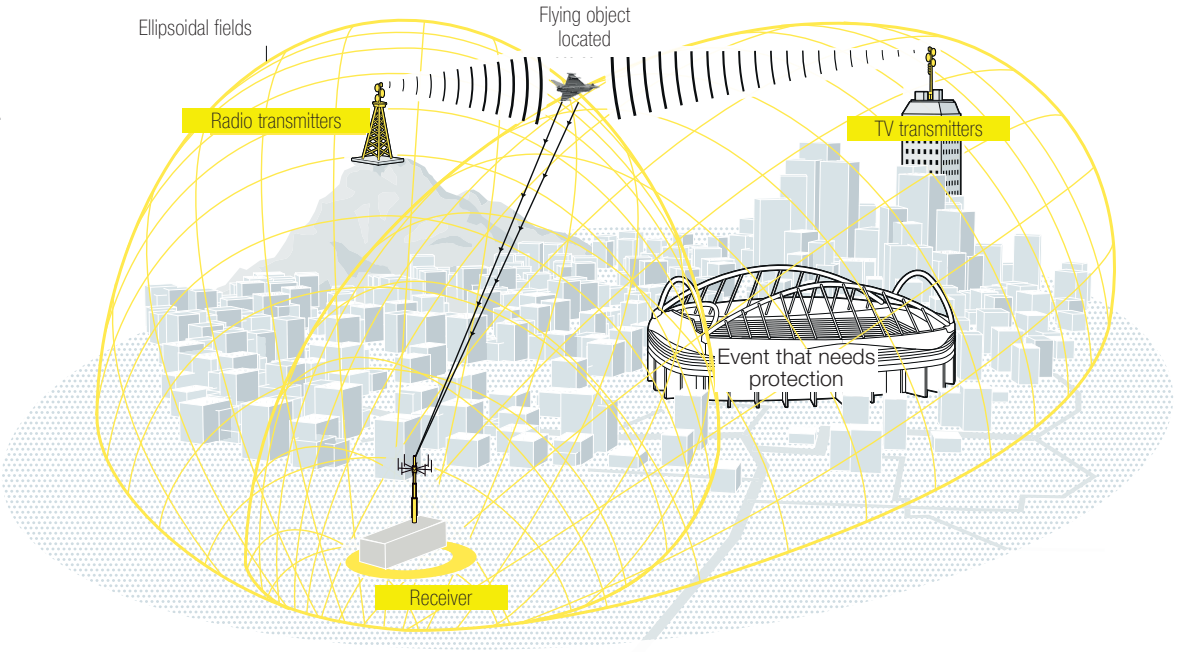
HENSOLDT
Detect and Protect.

Twinvis Passive Radar

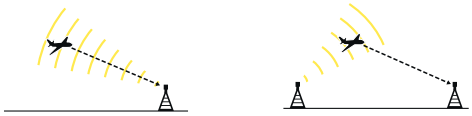
Twinvis placement
Twinvis exploits several ground-based transmission sources from various locations. It can also operate as a sensor cluster. The typical distance between Twinvis sensors and transmitters range from a few km to more than 100km, depending on the operational scenario.

What frequencies does passive radar use?
Radio and television stations around the world can be exploited;

- FM – Analogue FM radio broadcasting
- DAB/DVB-T – Digital radio and television broadcasting.



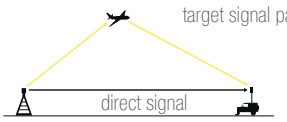
Different types of radar detection



Active
The radar transmits signals and receives reflections off the target being used for target positioning.

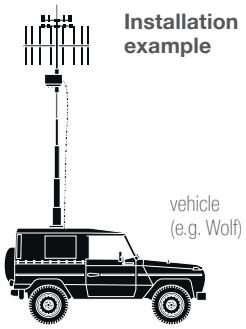
Passive
Emissions from several terrestrial broadcasting transmitters are reflected off the target being used at Twinvis for target positioning.

Detection using time difference



Multistatic principle
Time difference between direct and target signal path is used for target positioning.

Installation example



Applications

- Air surveillance of non-cooperative targets without any RF emission
- Long-range border/coastal surveillance
- Enables Command to minimise use of active radars
- GBAD silent target indication to friendly assets
- Gap filler and additional radar coverage
- Camp & event protection, e.g. G8 summit, sports events, ...
- Provides radar performance where active radars are not an option
- Wind farm clutter mitigation

Key Characteristics

- 360° azimuth coverage, 3D tracking
- Instrumented range/altitude 250 km
- Instrumented altitude 12500 m
- Horizontal accuracy 90% < 500 m RMS
- Altitude accuracy 70% < 1000 m RMS
- Track update rate < 1 s
- Antenna-to-track delay < 1.5 s
- Sensor cluster capability for extended coverage and/or accuracy
- Exploits several illuminator bands in parallel
- ASTERIX data link to CRCs
- System power consumption avg. 2500 W
- Designed for fusion with other sensors (e.g. active radars, PET systems)

Operational Benefits

- Without radar emissions resilient to ECM
- Tracks uncooperative and highly agile targets
- Can operate where active radars are prohibited
- Low power requirements
- All-weather capability
- Multistatic detection supports LPI tracking
- No transmission license required
- No electromagnetic pollution (important for operation in urban areas)
- Low LCC (no rotating parts, no transmitter, COTS computers)
- Remote, stand-alone operation

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