AVANTIX

AIRBORNE NEXT GENERATION V/UHF GROUND EMITTER LOCATION SYSTEM

EW Europe 2019

Booth F6

A DEDICATED TECHNOLOGY CENTER FOR ELECTRONIC WARFARE

Aix-en-Provence, south of France

Design to specs
Products & solutions

40 years of innovation for defense & homeland security customers.

Low / medium volumes

30mn
NORTH OF MARSEILLE

250
Engineers

Validation & integration for turn-key solutions

Quality certified
ISO 9001
EN 9100

1500m²
Facility

Professional services

Localisation from airborne

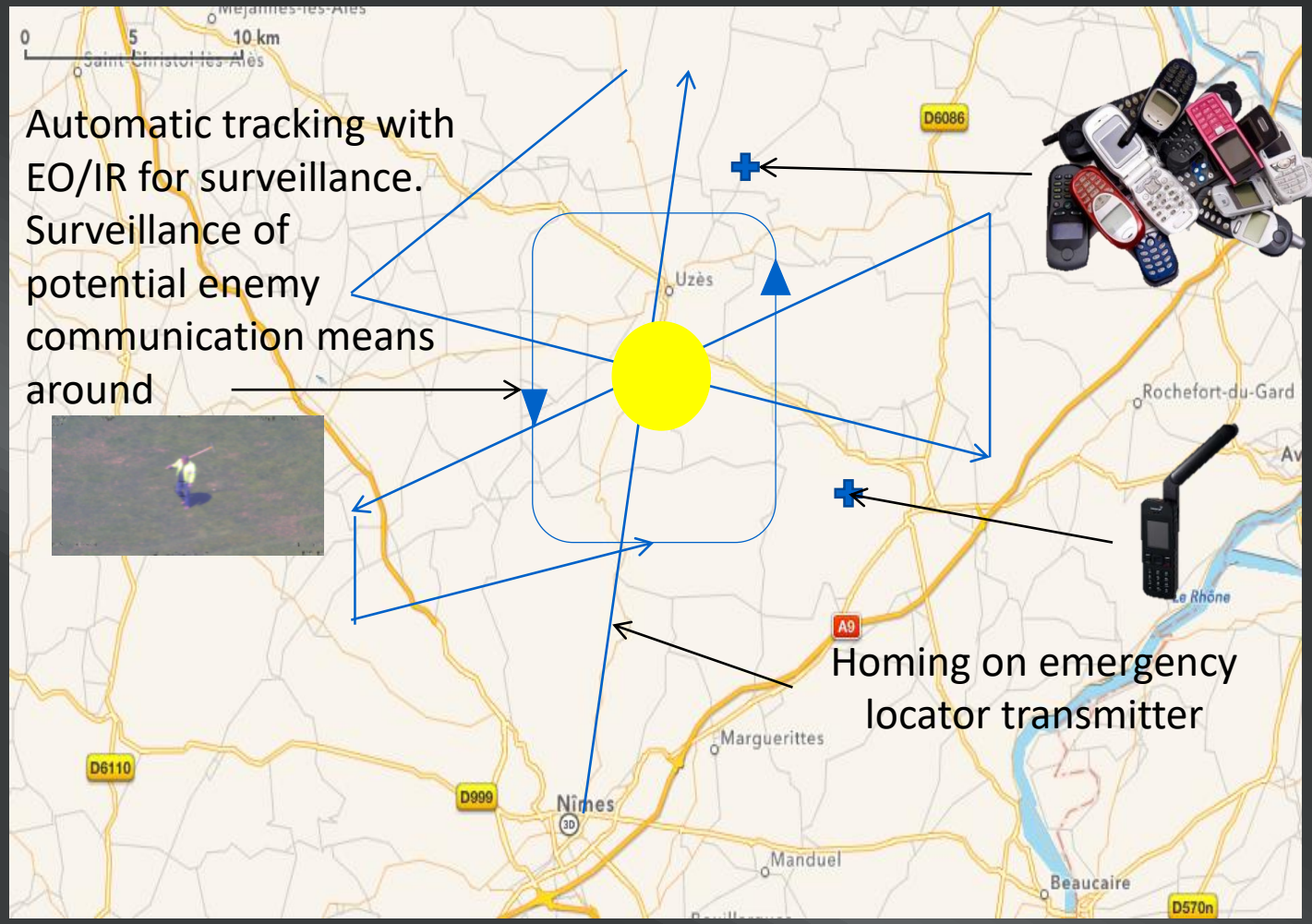
On the ground operator
- > UAV remote control payload by the operator
- > real time visualization
- > precise geolocation

On board operator
- > real time visualization
- > precise geolocation

OPERATIONAL SCENARIO

PILOT EXTRACTION

- Context : Pilot ejection at night near a village controlled by enemy;
- Objective : find the pilot and propose best scenario for extraction based on enemy emitter movement & IMINT.
- Communication : aircraft emergency frequency & civil mobile communication.



HOW CAN YOU TRUST YOUR LOCATION DATA?

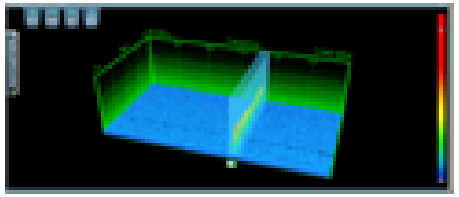
It is very easy for a Satellite phone user to provide fake GPS position

Fake Position

51° 28' 38" N

Access the raw signal processing data instead of GPS position

Radio Frequency analysis

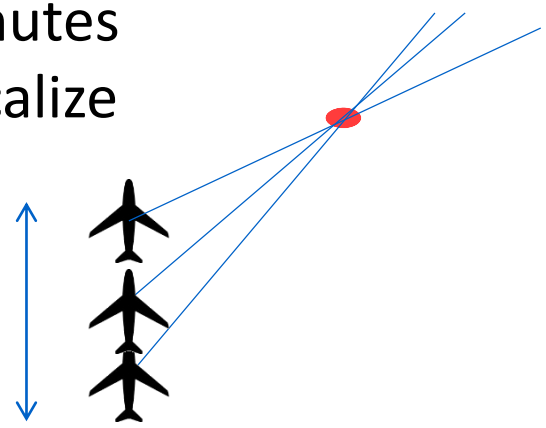


DOES 1D DIRECTION FINDING ENOUGH?

Traditional Direction Finder gives azimuth of an emitter on the ground, geolocation can be performed with aircraft scrolling speed.

3D geolocation (Azimuth + Elevation + Digital ground map) brings precise data and instantaneous geolocation for identification with an IMINT sensor.

A few minutes to geolocalize

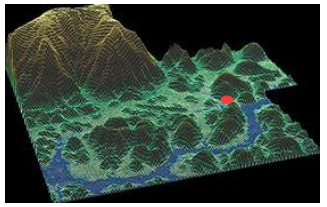


Elevation

Instantaneous geolocation

Azimuth

Spot on a digital map

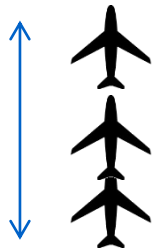


IS YOUR LOCATION RAPID ENOUGH?

Push to talk Communication can last only a few seconds. If your current system needs the airborne speed to localize it. You are sure to miss it! For other terminals it can a few minutes to localize and then difficult to identify with EO/IR.

Your system should work as fast as a telecom burst to detect short communication and track the target moving on the ground.

Too short communication to geolocalize



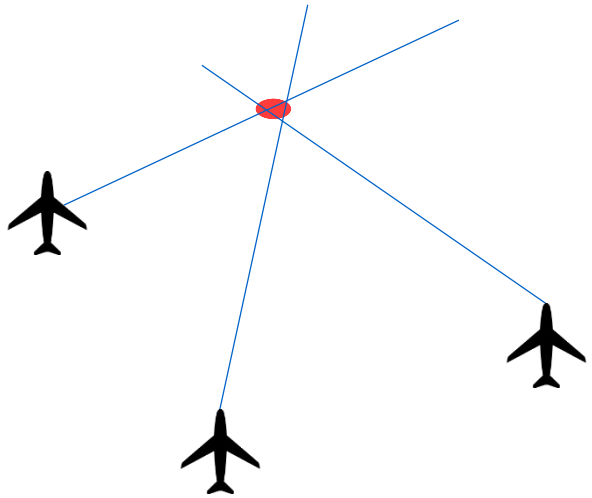
Geolocation of short communication & identification

HOW MANY PLATFORM DO YOU NEED TO DO PRECISE LOCALISATION?

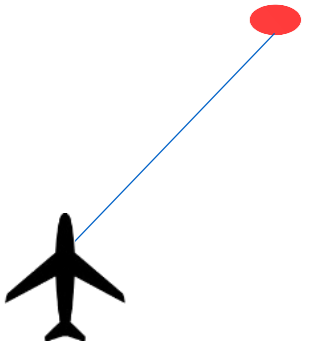
You might be able to localize precisely an emitter on the ground with 2 or 3 airborne platforms

Too complex and costly operations. You should require 1 platform to do the job

2 to 3 planes



1 plane



IS YOUR AIRBORNE C-ESM SENSOR CAPABILITY UP TO DATE?

Is your Tactical operator efficient enough?	A tactical operator analyzing gimbal EO/IR images is not enough	Connecting C-ESM payload to EO/IR for automatic detection enhances operator detection scenario for long endurance mission
Are you satisfied of the size of your antenna?	30MHz lead to long antenna or multiple antennas spread on the aircraft	Compact network of antennas that are integrated on a single location on the aircraft
Any hidden zone below your aircraft?	Horizontal 1D goniometer has difficulty to localize emitter under the aircraft	3D, 360° detection below the aircraft
Track low speed emitter on the ground?	Someone using a satellite phone push-to-talk in a car at low speed might be a challenge with traditional 1D goniometer	Your system should work as fast as telecom burst to detect short communication and track the target moving on the ground
Is your sensor linked to a platform?	Moving from a plane to a UAV, helicopter, fix balloon might be difficult for traditional goniometer	Geolocation without speed of the platform, A helicopter in hover mode will geolocalize and track emitter on the ground. A single antenna ease integration

WHAT YOUR NEXT GENERATION SENSOR SHOULD DO?

> A Single compact antenna to cover 30Mhz -3Ghz

> 3D Geolocation of short communication emitter on the ground
  > Identification with EO/IR sensor
  > Detection 360° around the aircraft

> Design for UAV mission : Remote payload control via Data Link

> Multi-platform integration

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THANK YOU

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