



Avian radar

Solution Focussed

Affordable

Reliable



advanced
protection
systems

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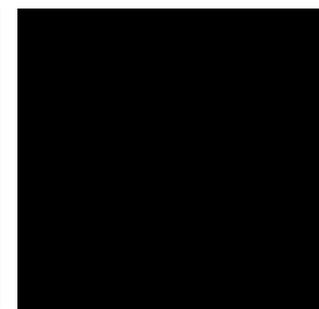
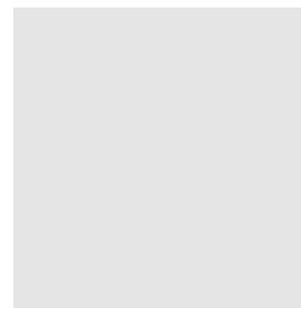
ADVANCED PROTECTION SYSTEMS S.A

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Who is actually APS ?

In a Nutshell:

- Polish Technology company from Gdansk;
- Established 2015;
- Engineering and manufacturing of modular, 3D-drone- and bird detection radars;
- Vertically integrated, offering turn-key C-UAS solutions;
- Manufacturing own electronic components / ITAR free;
- 50 + employees (and growing), but agile;
- Subsidiaries in UK and US.

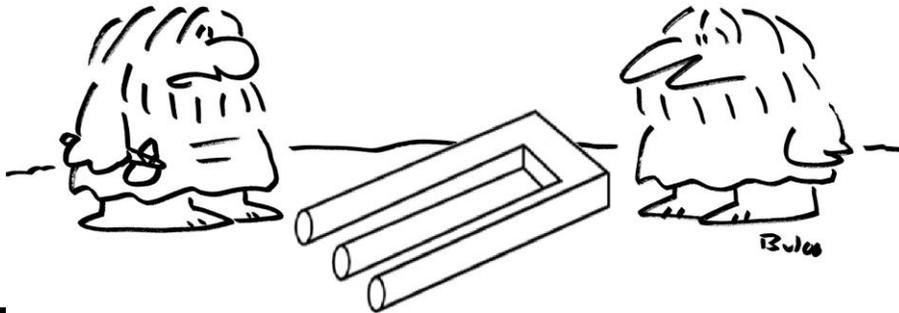


Avian radars and Aerodrome wildlife hazard management

THE silver bullet or.....



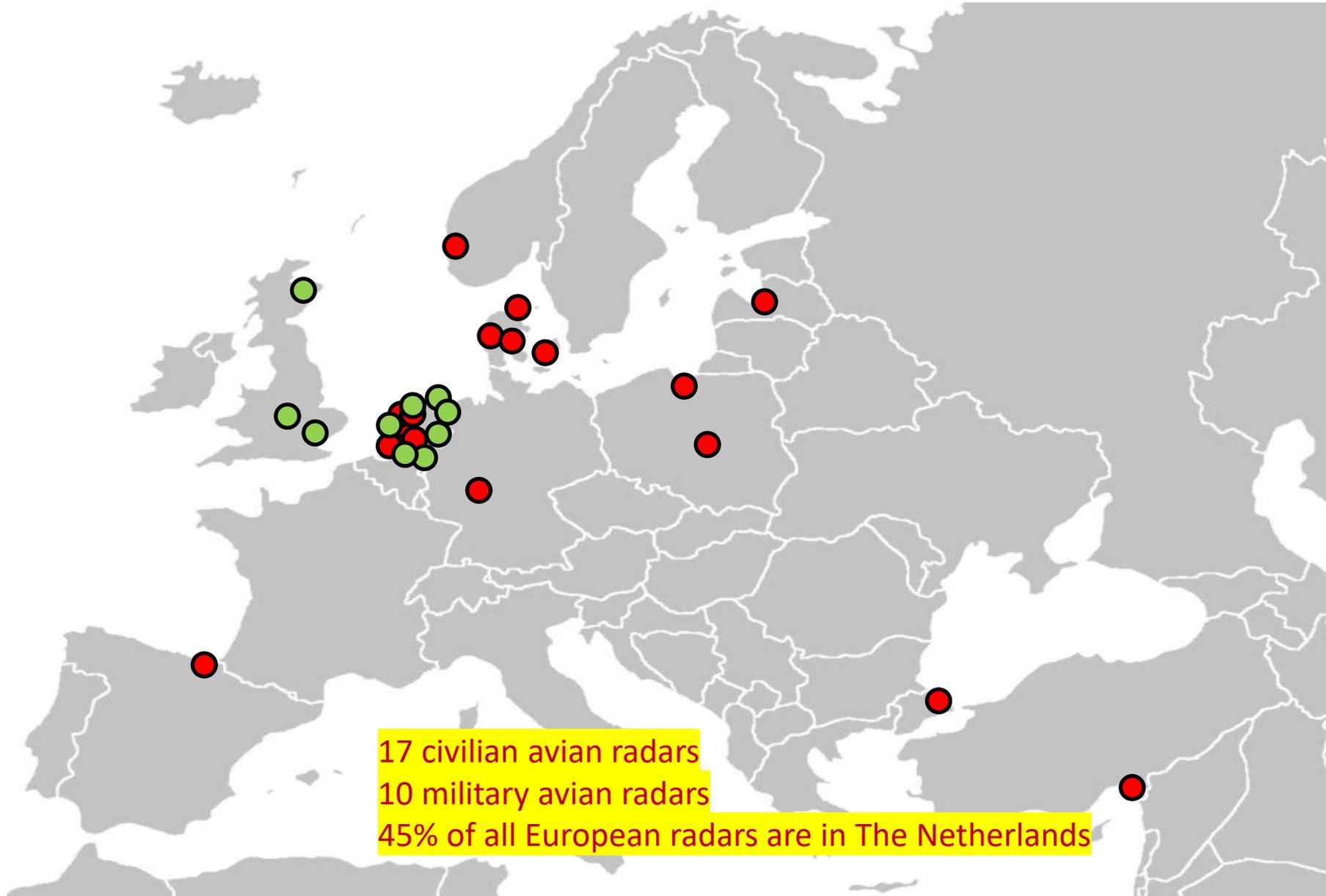
.....Just an effective tool in wildlife hazard management ?



"Yeah, it's a neat invention,
but I haven't found a practical
use for it yet."

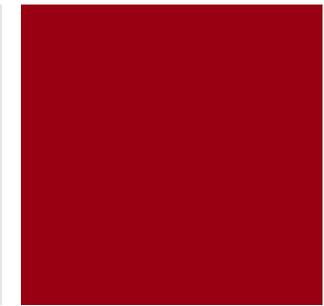
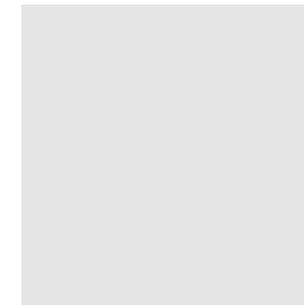
Avian radars in Europe over the last 20 years

- Civil operators
- Military operators



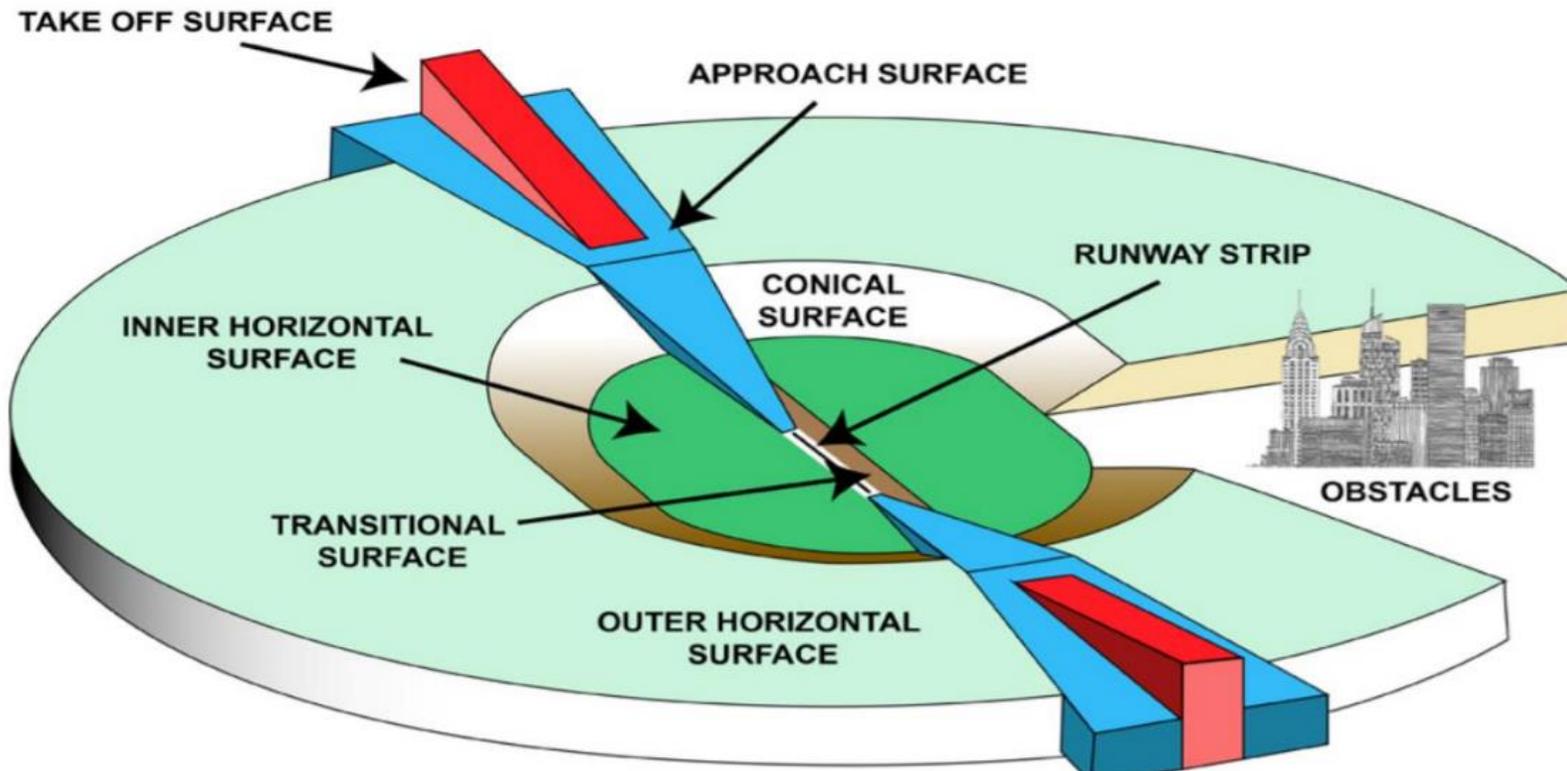
Avian radar: Why such a limited success?

- Not ALL airports/ airbases have equally the same issue with birdstrikes (different needs/ requirements);
- Some avian radars are not always applied effectively;
- Price
- Reliability/accuracy



True value of radar: the obtained DATA

- Radar helps to assess risks of likelihood of a birdstrike in Critical Flight Area (CFA).
- Compliance to CAP 772/ ICAO 9137
- Creates an evidence based robust data collection which supports against possible litigations in case of a birdstrike)
- Provides intelligence for further mitigation measures. !.

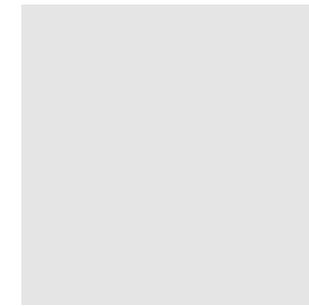


Red = climb out 7°

Blue = Approach 3°

Input for further mitigation measures:

- Understand the importance of collected data and how this information can be transferred into meaningful, tactical and strategic actions to mitigate the presence of birds in the Critical Flight Area.
- Aerodrome Operators need a link between sophisticated technology and operational practice to gain maximum effectiveness of their radar assets. !

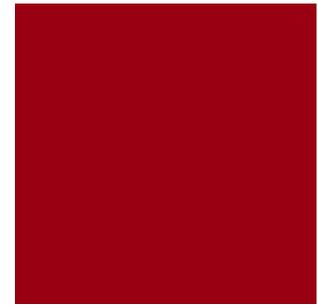
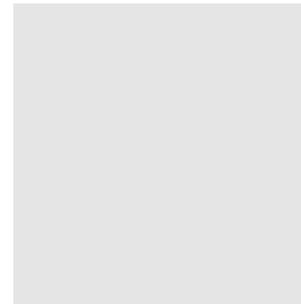


APS acknowledges that this gap needs to be bridged, therefore we are:

Solution focussed



- We go beyond supplying just technology but want to ;
- Providing reliable, actionable information which can be applied in a practical way;
- Involve SME's : Converting precious data into meaningful information;
Understanding and assisting how this information can be applied
startegically and tactically in the wildlife hazard control process.

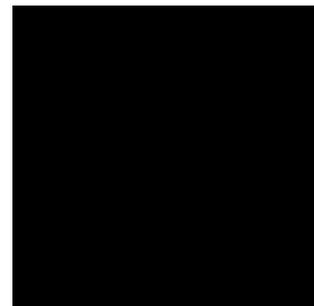
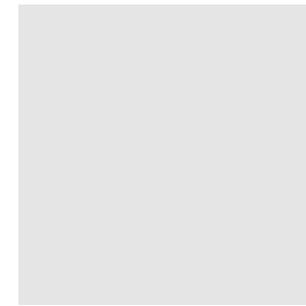


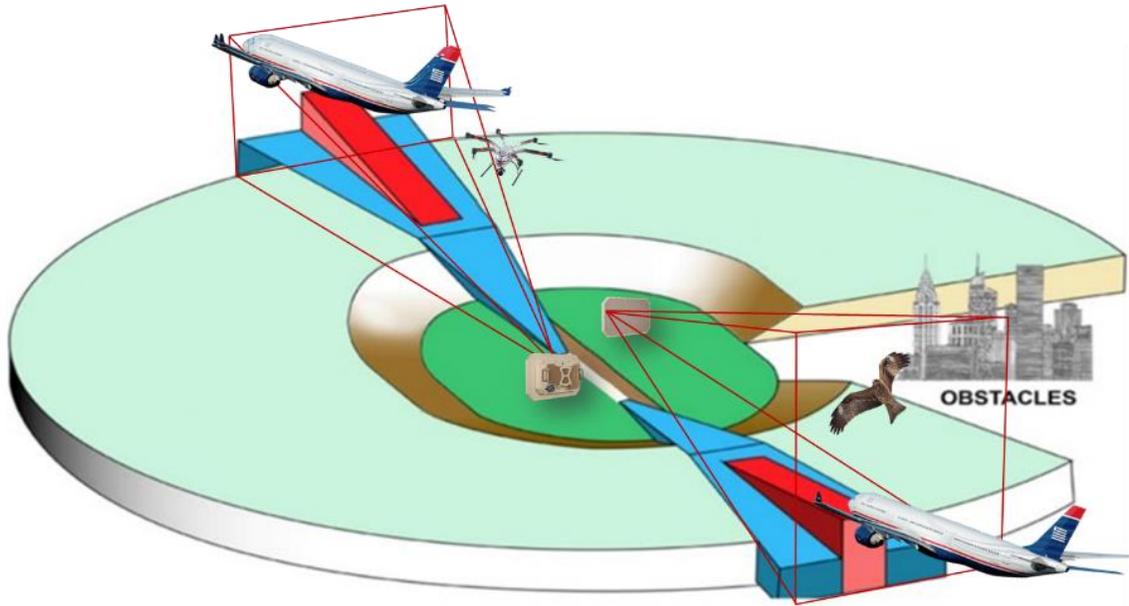
Secondly: **Affordability**



An avian radar within every aerodromes budget range;

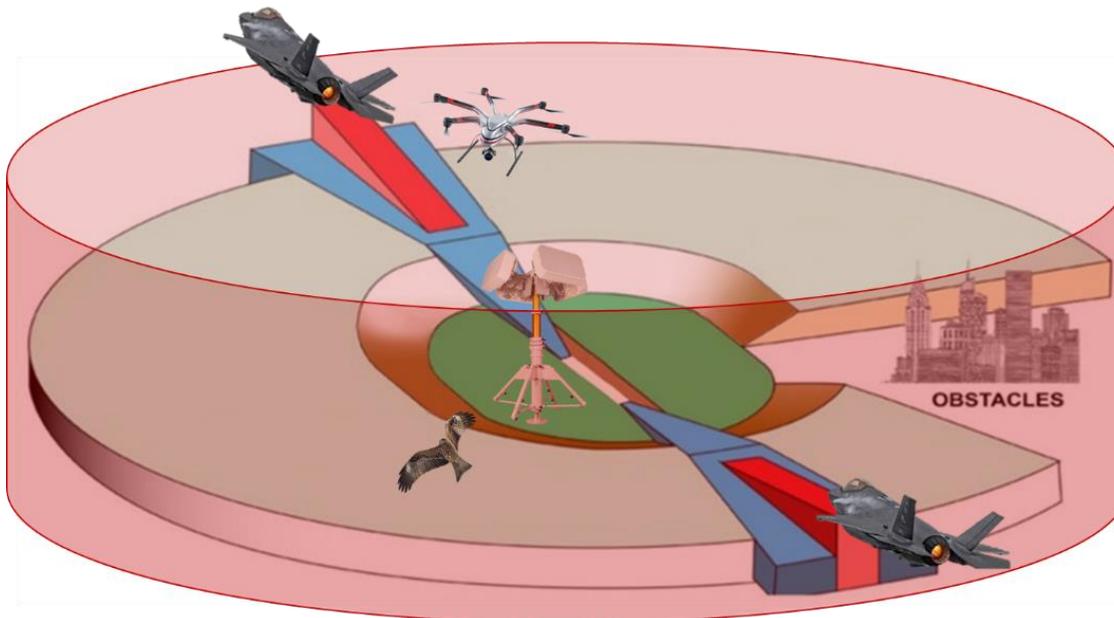
- Cutting out expensive annual service and support fees;
- Offering flexibility in detection capabilities (detection distances and dual bird/ drone detection capability);
- Modularity in number of radars;



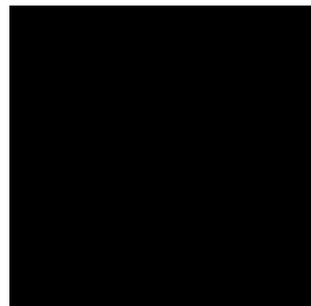
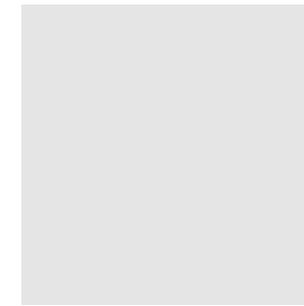


Flexible and modular:
keeping the costs under control

Monitoring only the critical flight
zones (approach and climb out areas)



Providing a 360° view of the
aerodrome



And last: **Reliability/ accuracy**



- Classification of birds not solely based on RCS (Radar Cross Section) of airborne target (bird)
- APS makes use of advanced AI to discriminate birds from other airborne targets (like: drones).
- AI is continuously improved by SME's input of visual identification of airborne target with measured RCS
- Also further classification into subgroups have been made more reliable (big birds, medium sized birds, flocks etc).



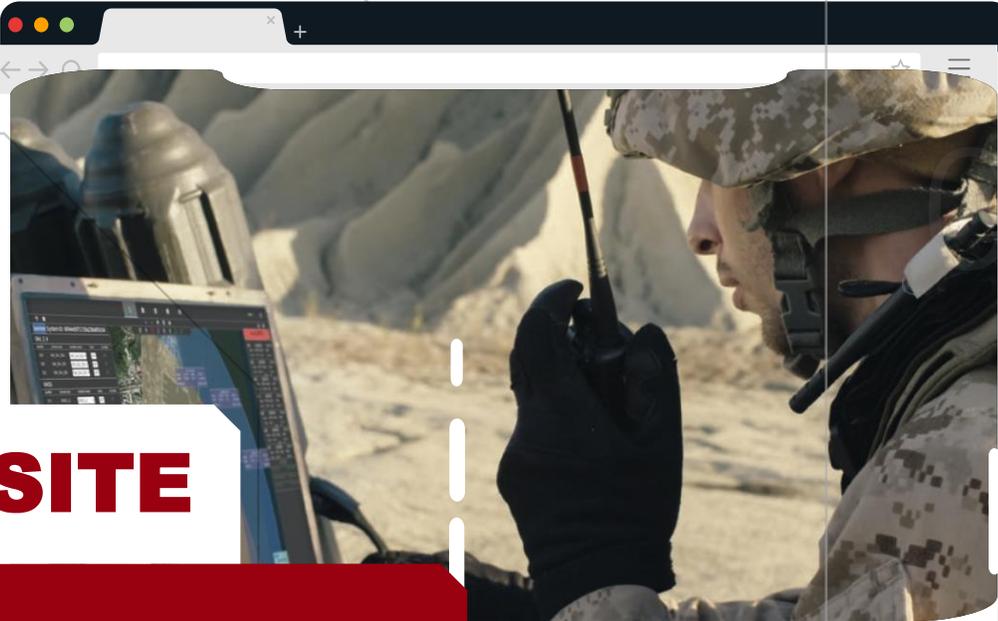
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