

UAV Detection and Engagement





1

Current
Reality

2

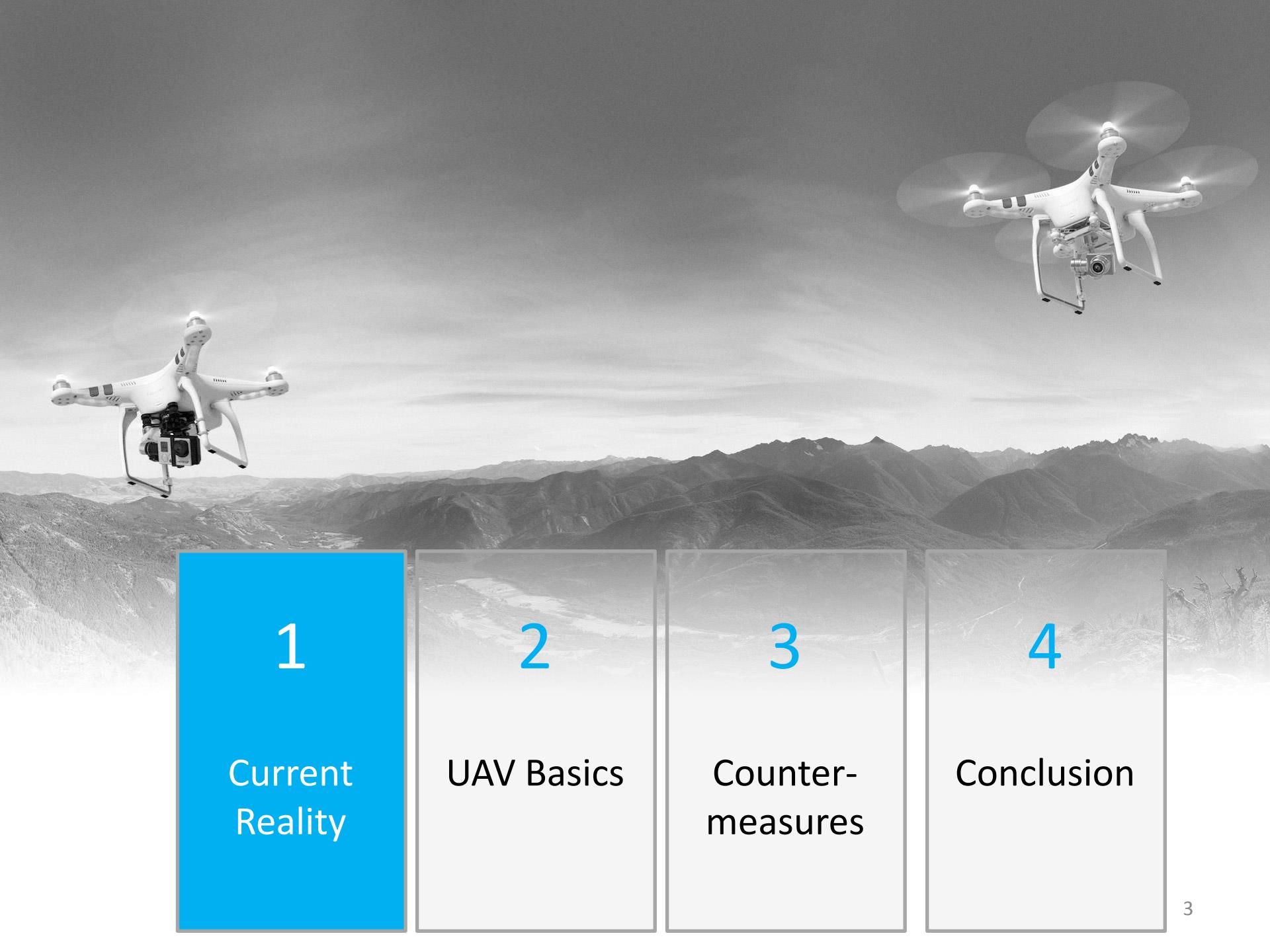
UAV Basics

3

Counter-
measures

4

Conclusion



1

Current
Reality

2

UAV Basics

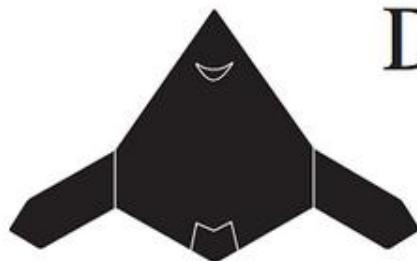
3

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Conclusion

DRONE SURVIVAL GUIDE



X47C
Military Surveillance / Attack
USA

Meter
0 2 4 6 8 10
Feet
0 5 10 15 20 25 30 35



Sentinel
Military Surveillance
USA



nEUROn
Military Surveillance / Attack
France



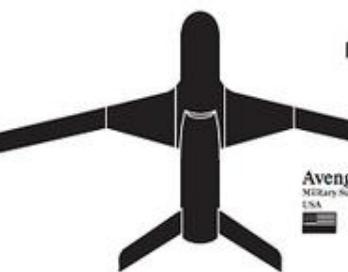
Global Hawk
Military Surveillance
USA



Soaring Dragon
Military Surveillance / Attack
China



Mantis
Military Surveillance / Attack
UK



Avenger
Military Surveillance / Attack
USA



Eitan
Military Surveillance
Israel/Germany



Reaper
Military Surveillance / Attack
USA/UK



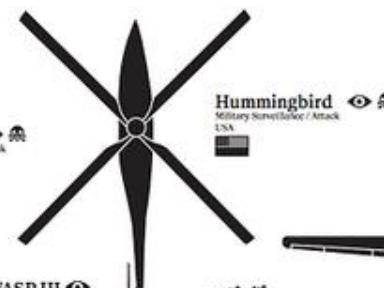
Barracuda
Military Surveillance
France/Germany



Herti
Surveillance
UK



Predator
Military Surveillance / Attack
USA/Iraq/Morocco/Turkey/UAE



Hummingbird
Military Surveillance / Attack
USA



Shadow
Military Surveillance
USA/NATO



Rustom I
Military Surveillance
India



Fire Scout
Military Surveillance / Attack
USA

WASP III
Military Reconnaissance
USA/NATO



Scan Eagle
Military Surveillance
USA/NATO



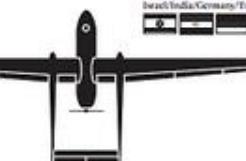
Harpy
Military Attack
Israel



Killer Bee
Surveillance
USA



Raven
Military Reconnaissance
USA/NATO



Air robot
Domestic surveillance
UK

Aeryon Scout
Domestic Surveillance
Canada

AR Parrot
Consumer photography
USA

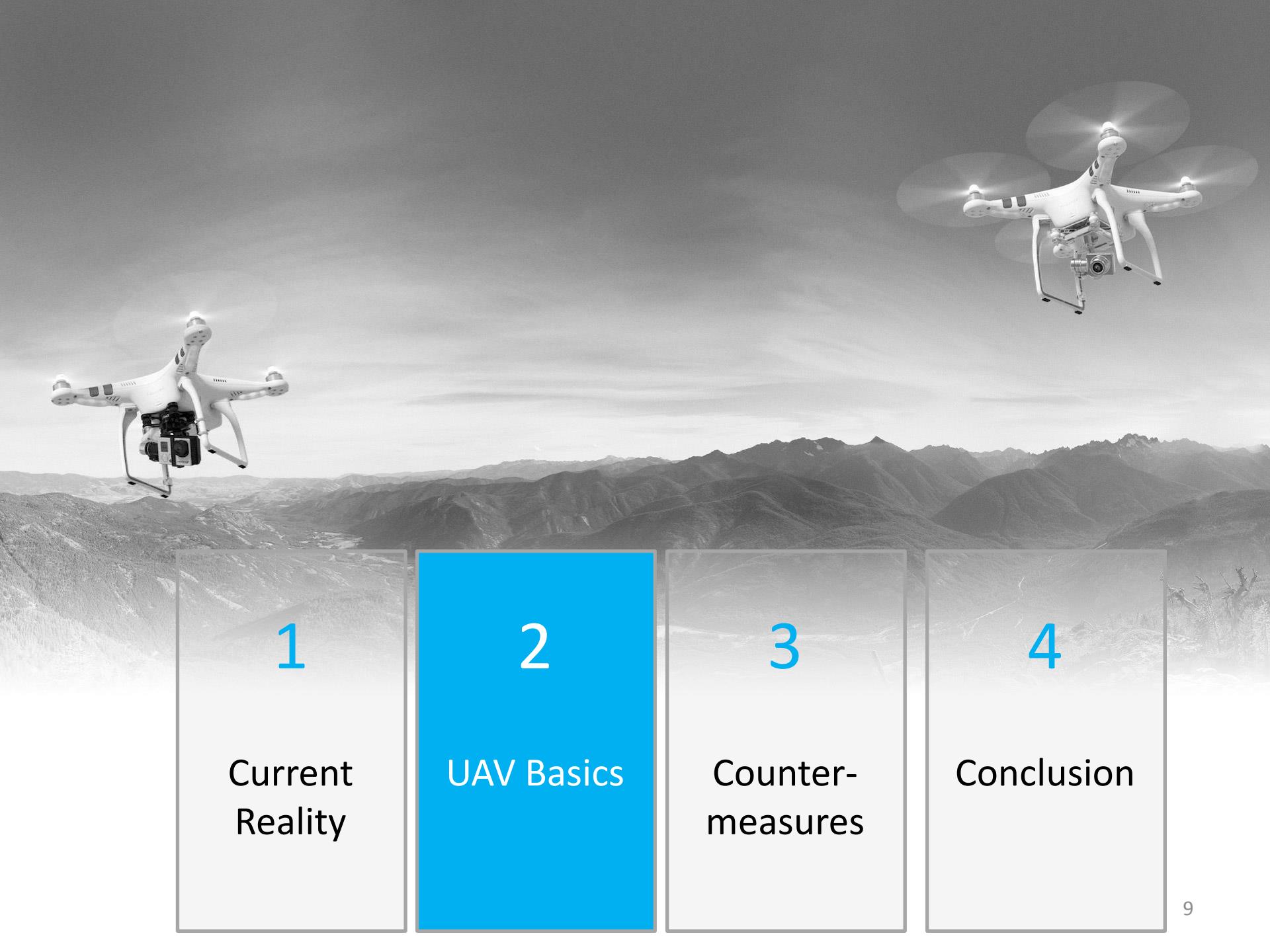




Current Reality







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UAV Basics

Flight Controller



Imaging



Airframe

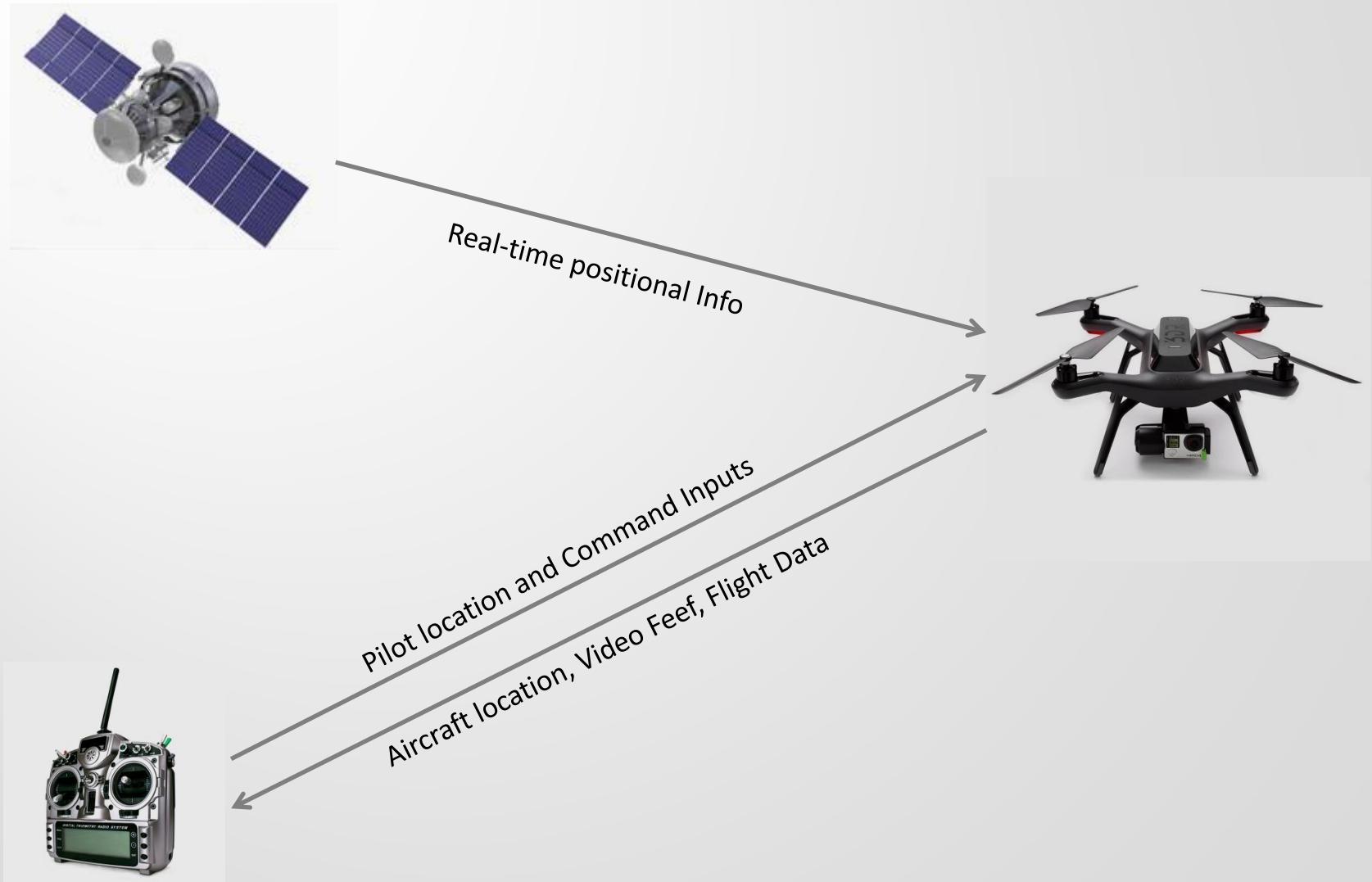


Ground Control Station



Power Source

UAV Basics





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Countermeasures



Detection



Identification



Neutralisation

Command & Control



Detection

Countermeasures





Detection

Countermeasures

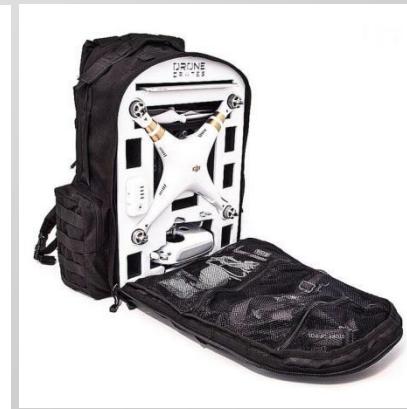




Identification

Countermeasures

- Electronical
 - IFF
 - Transponder
- Procedural: need for database
- Visual: Training needed

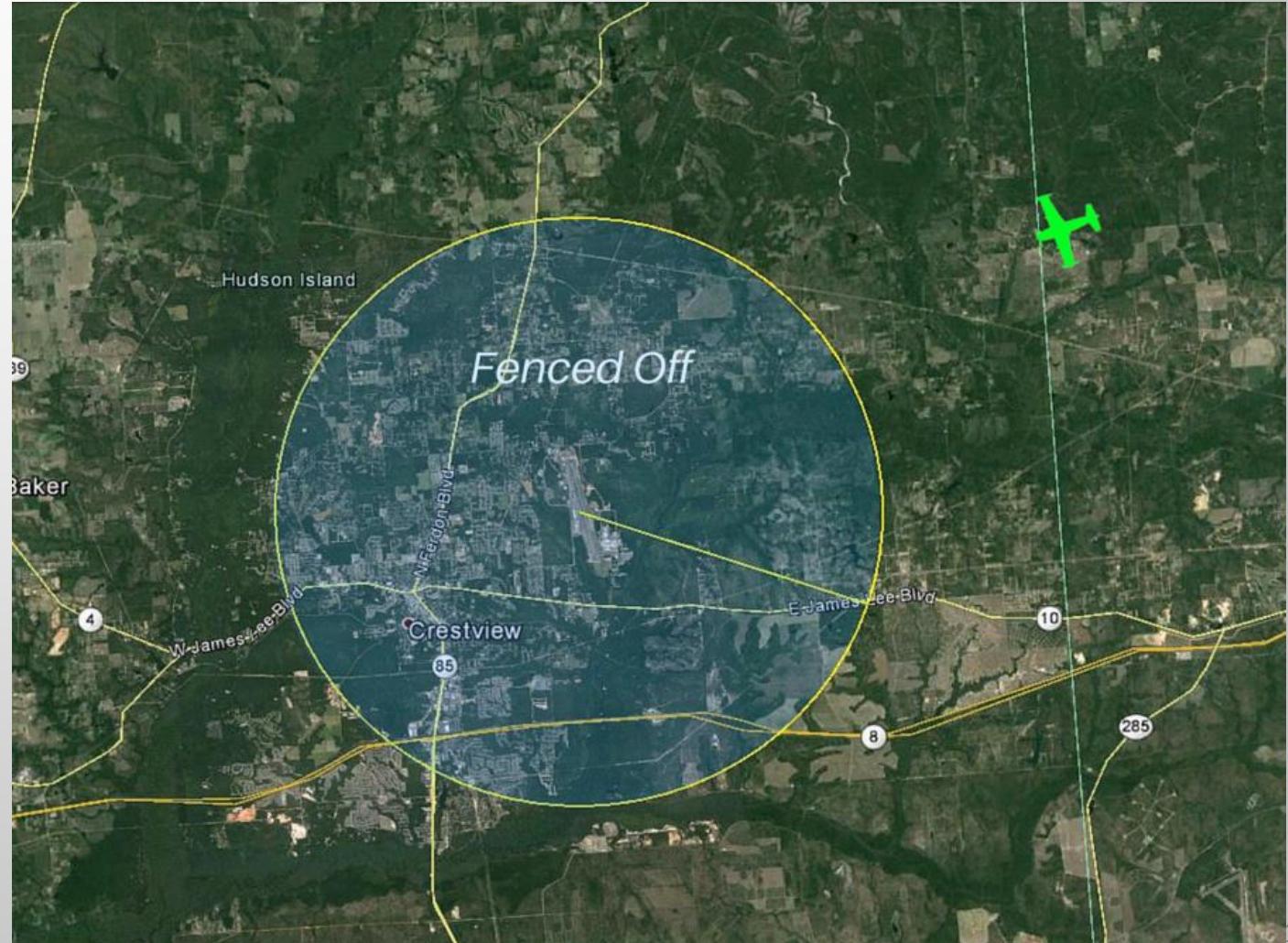




Countermeasures

Neutralisation

Geofencing





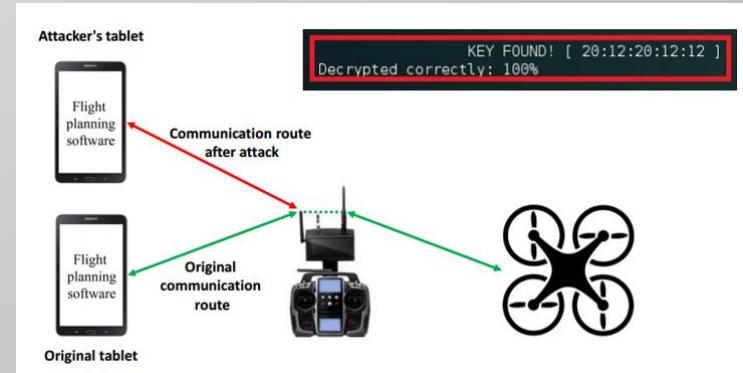
Countermeasures

Neutralisation

Jamming



Hacking / Spoofing





Countermeasures

Neutralisation

Bird of prey



Net



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Countermeasures

Neutralisation

Physical destruction





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Conclusions

- Out of comfort zone
- No “Silver Bullet”
- Damage Control
- Think outside the box



Drone Swarms: The Buzz of the Future

