

Counter UAS

Detect/Track/Identify/Defeat

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The Worldwide UAS Threat

MENACE IN THE SKY

1 Drone could have been operated from anywhere outside airport

2 It was so close there was 'serious risk of collision'

3 Pilot spotted drone at 700ft. But it did not appear on radar

4 Collision could damage engine or shatter cockpit windscreen - blinding the pilot

DRONE NEAR MISSES

Southend
Heathrow
Gatwick

DRONES YOU CAN BUY

<p>Husban X4 H107C Price: £35</p> <p>A quadcopter with camera. Can fly for about 15 minutes</p>	<p>DJI Phantom Price: £390</p> <p>World's most popular drone, can fly up to 22mph</p>	<p>Parrot AR 2.0 Elite Price: £320</p> <p>Steered with smartphone via wi-fi. Includes HD camera</p>
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Drone stunt causes riot and forces suspended soccer match

Soccer fans at this point are used to invaders who jump on the pitch and cause the game to be delayed a few seconds until stadium security guards inevitably catch the intruder and escort him off. But those are normally human.

During the Serbia-Albania international soccer match on Oct. 14, fans and players saw a different kind of intruder: A **small drone** carrying a pro-Albanian flag.



OPINION DRONES: THE THREAT TO NUCLEAR PLANTS



North Korea's low-tech drones pose new military threat

The recent discovery of three drones, presumably from North Korea, is drawing keen attention to the types of unmanned aerial vehicles the communist state has and their military capabilities. Pyongyang is known to have begun developing military drones in the 1990s as they could serve as a lethal yet low-cost weapons system. Seoul officials believe that the North has imported a series of drones, which were made in China, Russia and other nations, and modified them to serve its specific military objectives. They think the North has already deployed weaponized drones to some of its frontline units.

N. Korea's military drones

- 1 **Banghyeon-1 S**
Wingspan: body length: 4.8 m/15.8 m
Top speed: 180 kph
Flight altitude: 3 km
*Capable of carrying 20-25kg of explosives
- 2 **VR-3 Rea**
Wingspan: body length: 2.24 m/7.36 m
Top speed: 360 kph
Flight altitude: 6 km
- 3 **Pheeta-1T**
Wingspan: body length: 3.25 m/10.76 m
Top speed: 180 kph
Flight altitude: 2.5 km
- 4 **Durumagi**
Wingspan: body length: 3 m/9.84 m
Weight: payload weight: 25 kg
Maximum range: 300 km
*Multi purpose drone
- 5 **MQM-107D**
Wingspan: body length: 5.6 m/18.4 m
Top speed: 400 kph

Drone found on Baengnyeongdo Island
Wingspan: body length: 1.50 m/4.92 m
Weight: payload weight: 15 kg/11 kg
Top speed: 180-200 kph
Flight altitude: 5-10 km
Maximum range: 100-200 km

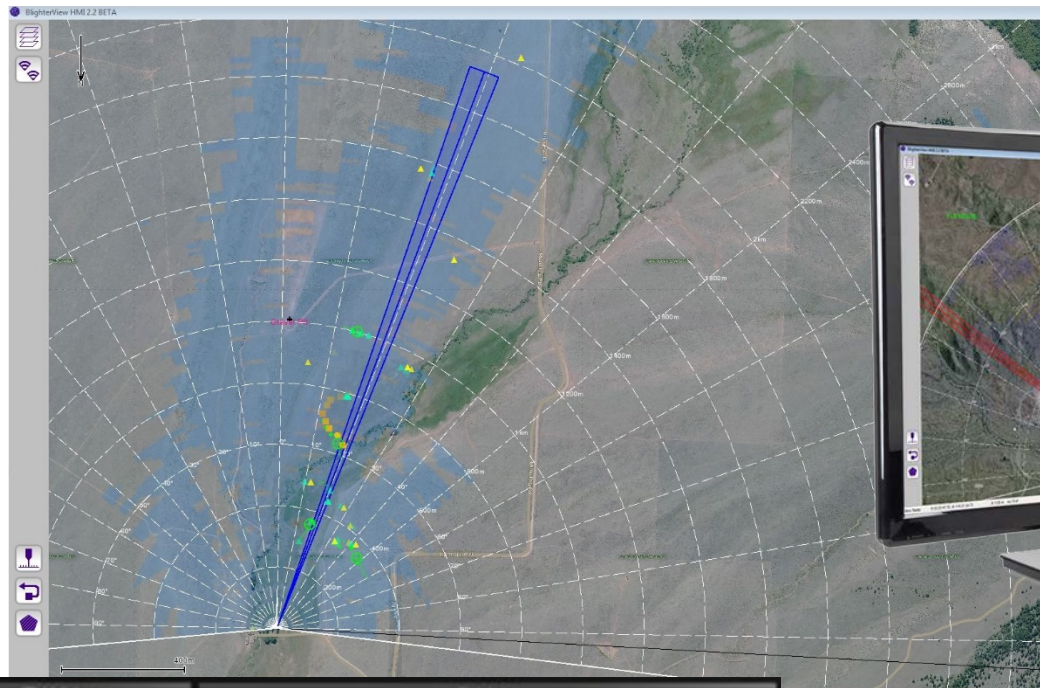
Drone found in Paju
Wingspan: body length: 1.90 m/6.23 m
Weight: payload weight: 10 kg/11 kg
Top speed: 180-200 kph
Flight altitude: 5-10 km
Maximum range: 100-200 km

Graphic by Nam Kyung-do



Detection

- Radar
- Video
- Audio
- RF Sniffers



All systems have their advantages & disadvantages – What works for your facility or event

Tracking & Identifying

- Radar
- Video
- Audio
- RF Sniffers



DATA: Radar Cross Sections +
Thermal & Daylight Video
Recognition = Threat Library

Possible acoustic or RF
signature profile as well



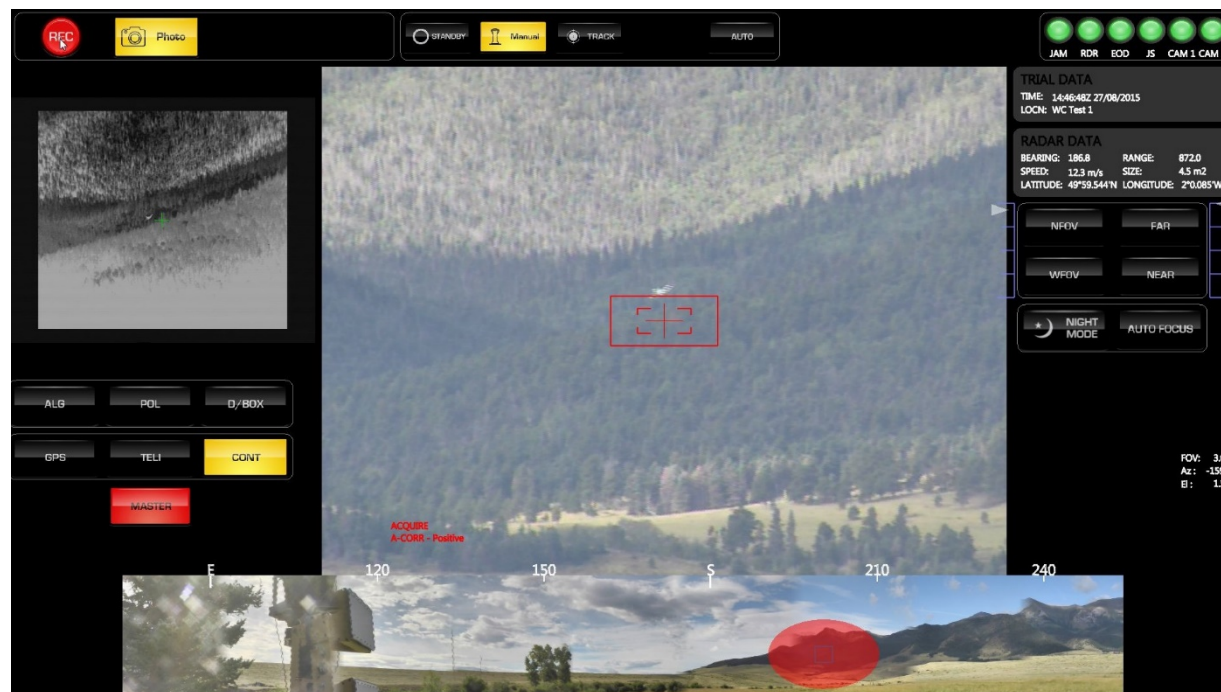
Defeat Capabilities

Inhibiting – Disruption, take over, and/or Defeat of RF and GNSS abilities

Taking over - Hacking

Dazzling

Kinetic Kill



**Question is:
What is allowed to be utilized at your location**

LITEYE



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Any Questions or Further Information:

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