Agenda

- D-Fend Solutions – About Us

- Environment and Threat

- Challenges & Considerations

  - Differentiating Different Drone Threats

- Traditional C-UAS Technologies

- Capabilities for Controlled and Safe C-UAS Solutions for Continuity

- Flexible / Adaptable Deployments

- Foreseeing the Drone Future;
        Staying a Drone Threat Ahead

- Counter-Drown Concepts for Continuity

SESSION SPEAKER: TERRY DIVITTORIO

○ D-Fend Solutions, GM, North America

○ 20+ years Technical, Operational, Managerial, Security, Cyber Industry Experience

  ○ WestBridge, VariQ, KCG, CSC, Foreground, Copper River, PPC, Booz Allen

○ 15+ years US Air Force Career NCO

○ Education:

  ○ MBA, Telecom Mgmt., Alaska Pacific

  ○ BS, Computer Science, Wayland Baptist

  ○ AAS, Information Technology, Air Force Comm. College

ABOUT US:

Leading global provider of counter-drone solutions for complex, sensitive and challenging environments.

OUR MISSION:

Provide comprehensive, safe, and scalable solutions for securing sensitive and important assets, critical infrastructures, defense forces and people from the ever-growing threat of rogue drones.

VERTICALS

Air Traffic

Governmental Events and VIP Protection

Law Enforcment

Stadiums and Events

Military

Critical Infrastructure

BBC NEWS 09:01   HEADLINES | GATWICK AIR

CARACAS, VENEZUELA   AUG. 4

NICOLÁS MADURO
PRESIDENT OF VENEZUELA

The time for economic recovery has arrived
And —

#WSJLIVE
WSJ Live

newsy

CNN
10:54 AM ET

euronews.

No Comment   02/07/2018
BUGEY, FRANCE

CNBC

This is what happens when
a drone collides into a plane

University of Dayton
Research Institute

All drones used in these Incidents :

○ **Commercial** drones (cost < US$ 1,500)

and/or

○ Do It Yourself (DIY) drones – **built from off-the-shelf commercial parts**

ADDRESSING ALL MAJOR THREATS

High Endurance Drones

Do It Yourself (DIY)

Wi-Fi Drones

DIFFERENT DRONES, DIFFERENT THREATS
Threat Categories

Attack

Size ▮▮▮▮▯
Range ▮▮▮▮▮

Trafficking

Size ▮▮▮▮▮
Range ▮▮▮▮▮

Collision

Size ▮▮▮▯▯
Range ▮▮▮▮▮

Espionage

Size ▮▮▯▯▯
Range ▮▮▮▮▮

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EnforceAir Threat Focus

Major Threats:

Payload :   **3- 12 Kg**

Distance: **4- 20 Km**

Protocols: **Lightbridge, Ocusync,**
                               DIY433/915 MHz, eWi-Fi
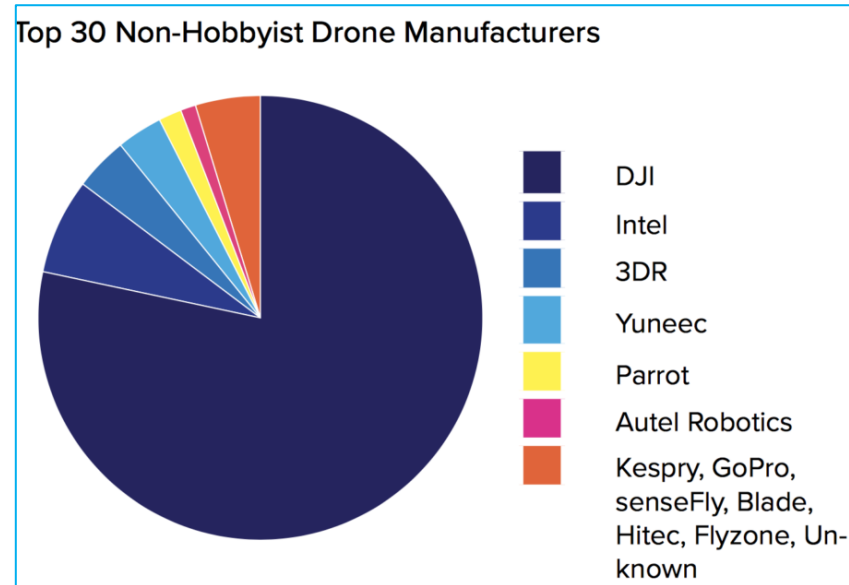
Threat type :   **Terror& crime,**
                               intelligence gathering

MAIN FOCUS

Minor Threats:

Payload :   **<0.5 kg**

Distance: **<0.3 Km**

Protocols: **Wi-Fi**

Threat type :   **Reckless users**

2ND PRIORITY

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HIGH SECURITY LEVEL

- HEDs > 80% market

- WIFI & DIY Drones

- Must protect against new drones and new radio modules

Top 30 Non-Hobbyist Drone Manufacturers

- DJI
- Intel
- 3DR
- Yuneec
- Parrot
- Autel Robotics
- Kespry, GoPro, senseFly, Blade, Hitec, Flyzone, Unknown

Traditional counter-drone technologies

Detection

Radar

Optical

DF

Acoustic

Flying Objects
False Positives

No Clear Line-of-Sight
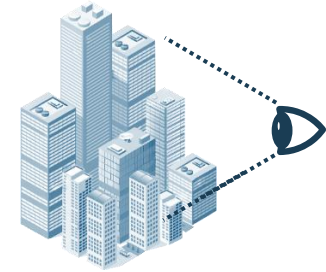
Mitigation

Radio control &
GPS jamming

Kinetic

Signals Disruption

Wi Fi

Collateral Damage

Rural Environments

Sensitive Environments

D-FEND SOLUTIONS

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Government Advancement

COUNTER-DRONE SOLUTIONS FOR SENSITIVE ENVIRONMENTS

Detection

Radar

Optical

DF

Acoustic

Remote Control <-> Drone Communications

Mitigation

Radio control & GPS jamming

Kinetic

Disconnect, Take Over and Control, Safe Route, Safe Landing
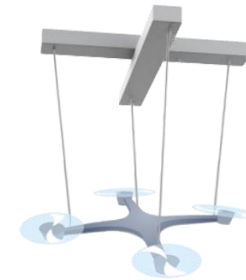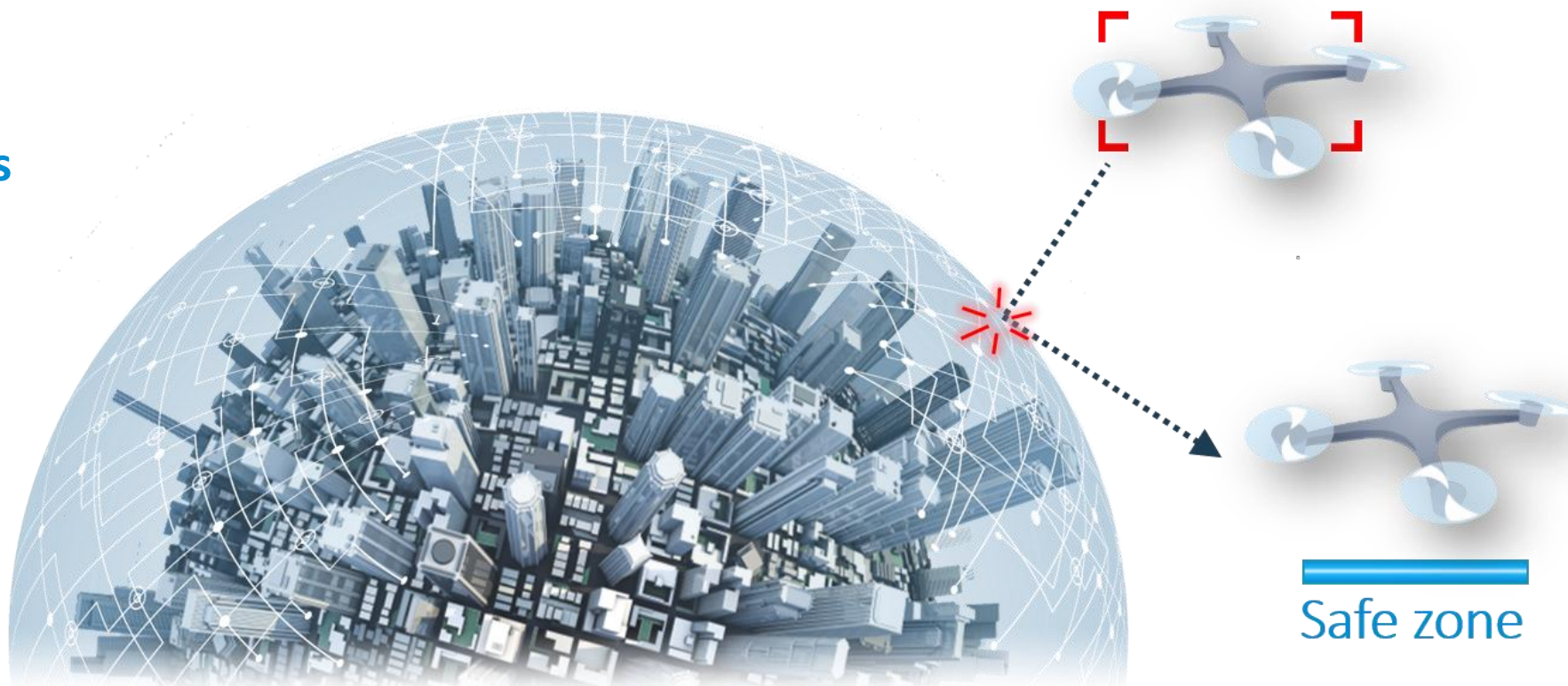
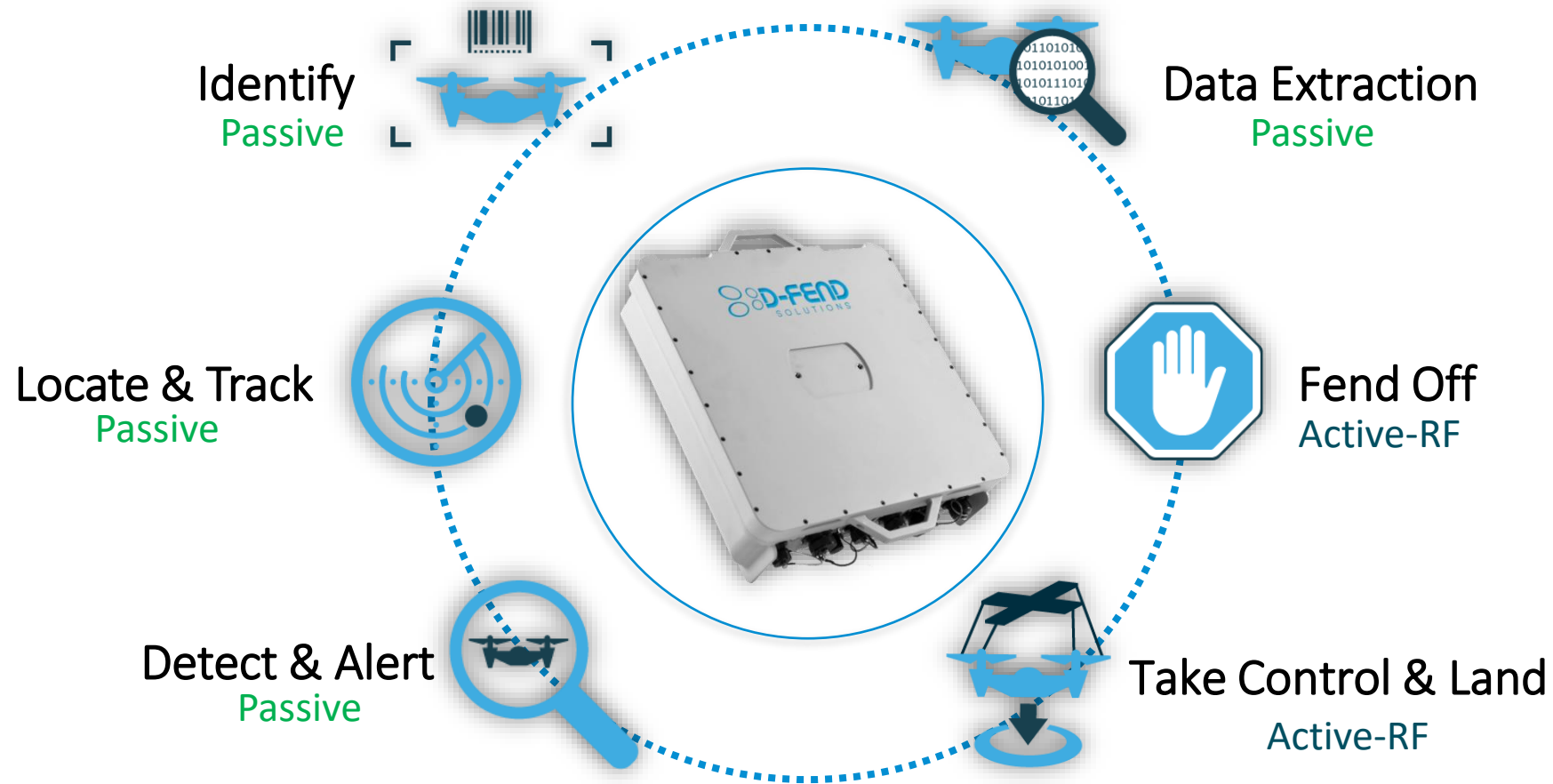**Rural** Environments

Sensitive Environments

ENFORCEAIR™ BY D-FEND

An autonomous counter-drone system
which detects & takes control over rogue commercial drones
and lands them safely in a designated zone

Designed for
Urban Environments

✓ Non-jamming

✓ Non-kinetic
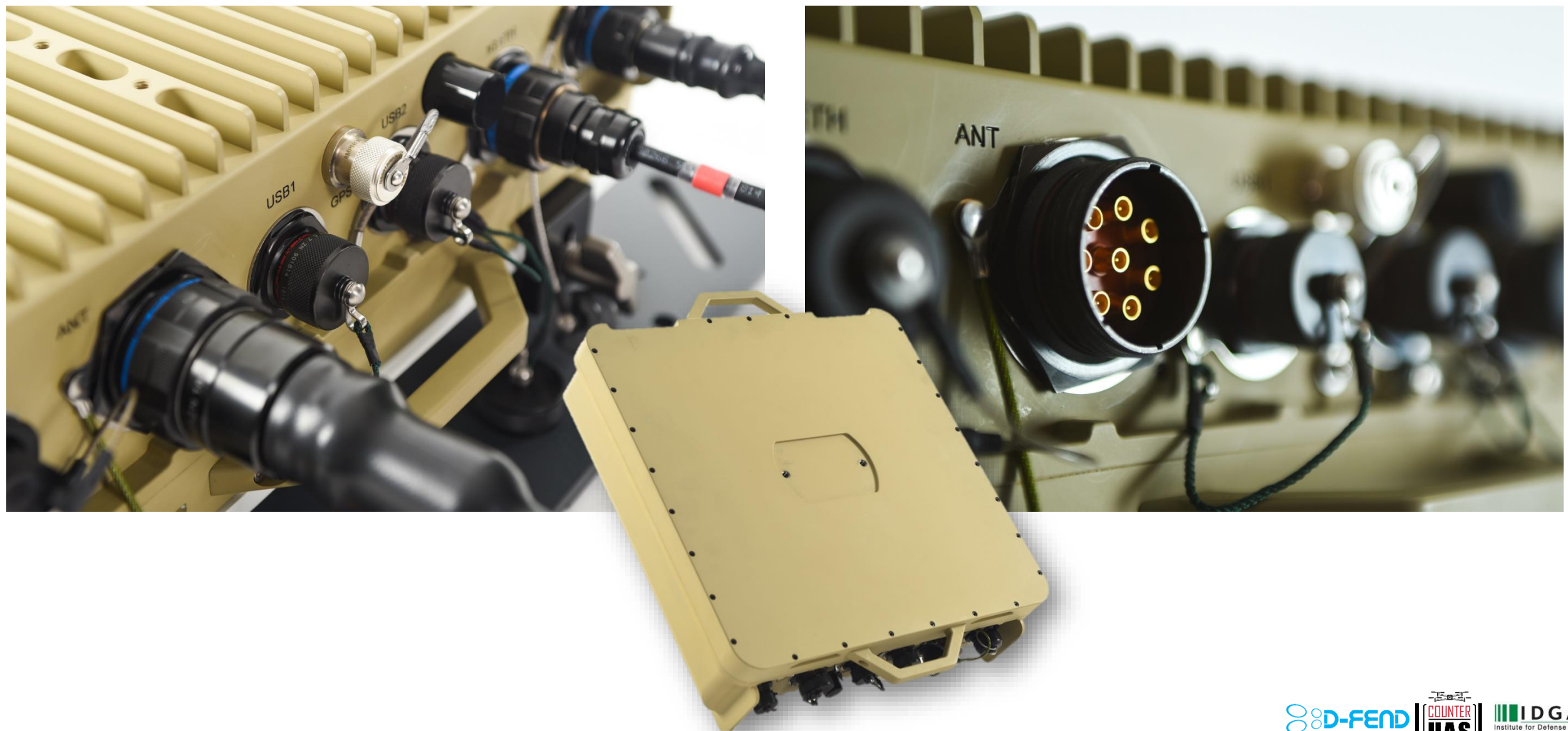
✓ No line of sight

Safe zone

OPERATIONAL FLEXIBILITY

Easily customize the EnforceAir to meet your changing operational needs

MIL STD (810F) FORM FACTOR

TACTICAL DEPLOYMENT - MIL
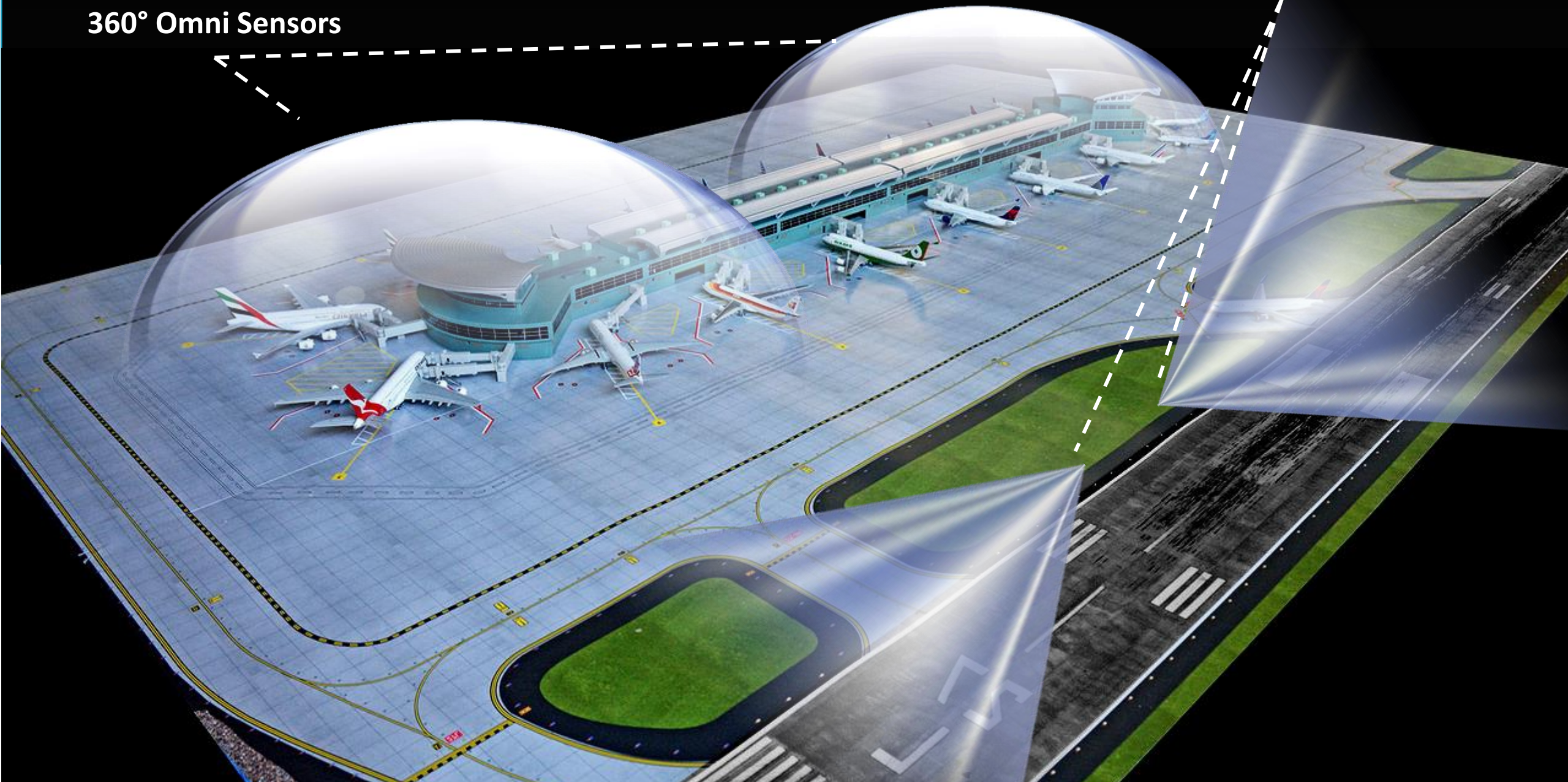
Stationary deployments

Omni

Directional

AIRPORT DEPLOYMENT

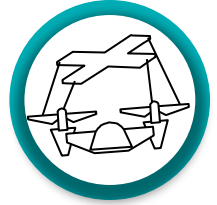360° Omni Sensors

Long Distance
Directional Sensors

MILITARY DEPLOYMENTS

360^0 coverage

Summary: D-Fend Solutions' Core Concepts

CONTROL
The best way to **control** the drone threat and ensure **continuity** is to **take control of the drone** itself

SAFETY
A **safe landing** or fending off of the rogue drone is the best possible outcome for **safe airspace and continuity**

FOCUS
Counter-drone measures must **focus on the real risk, the most dangerous drones,** and employ drone risk analysis, assessment, and prioritization

FUTURE
The constantly changing and increasingly complex drone threat requires foreseeing the drone future and **always staying a drone threat ahead**.

Thank You!