

RUDRAV

COUNTER DRONE SYSTEMS



HELPING BUILD A SECURE NATION



Growing drone operations



Over the past few years, the use of Unmanned Aerial Systems (UAS), particularly drones, has witnessed a stable and healthy growth around the world. The use of drones for civil and defence applications has also increased now more than ever before. Improved regulatory framework, increased use of drone services for industry specific solutions, increased requirement for qualitative data in various industries and push for automation have accelerated the acceptance of drone-based services.

The market is expected to grow at a favorable 20-25% annually. The sky is expected to be crowded with authorized and unauthorized drone operations with increased risk to privacy and creation of a potential threat to personnel and assets on the ground as well as in air.

Novel security threats posed by increased use of drones

Drones make physical fences meaningless. They are fully capable of jeopardizing the safety of important establishments, thereby, creating a dent in the reputation, disrupting businesses and endangering human lives.

Physical Attacks: High performance, low cost platform for hostile and terror activities, to drop harmful or explosive payload or damage via collision.

Strategic Assets: With developed and developing nations introducing asymmetric warfare techniques involving drones, there is a need to ensure protection from such attacks.

Terrorism: Renowned terrorist organizations have announced formal drone units.

Regulatory Developments: Regulatory framework has been improvised and online approvals are enabled. Also, with 6+ lacs unregistered drones, flying is expected to rise, accompanied by relevant threats.

Drone-Based Delivery: Global drone delivery market projected at \$2.3b by 2023 with >50% emerging from Asia-Pacific, leading to rise of drones in the sky.

Criminal Uses: Drones are increasingly used for spying, hacking, border smuggling and robberies.



Airports



Power Plants



Refineries

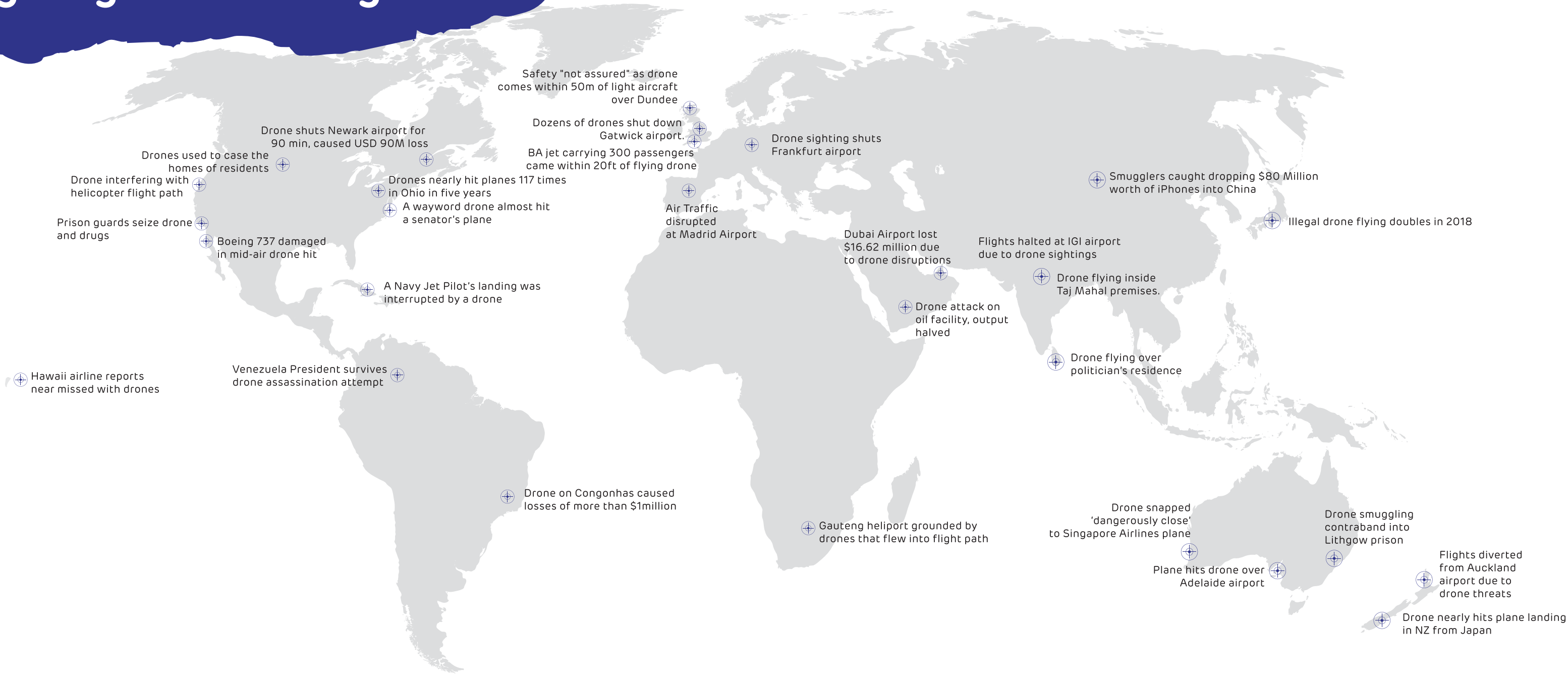


Sensitive Sites



Critical Infrastructures

Risks involved with drone sightings across the globe



We offer a robust platform with unique offerings

Experience: Only company with an experience in Unmanned Aerial Vehicles, Counter Drones and Infrastructure Handling, including Airports.

Proven: One of the few systems successfully demonstrated and implemented for Indian and Global customers across Defence and Commercials segments.

Local Ecosystem: Local manufacturing and support ecosystem in India, ensuring reliable and efficient customer service.

Skilled Resources: Highly qualified resources trained to develop and operate the system.

Modularity: Modern, smart, highly modular & comprehensive solution - can be tailored to customers' specific needs.

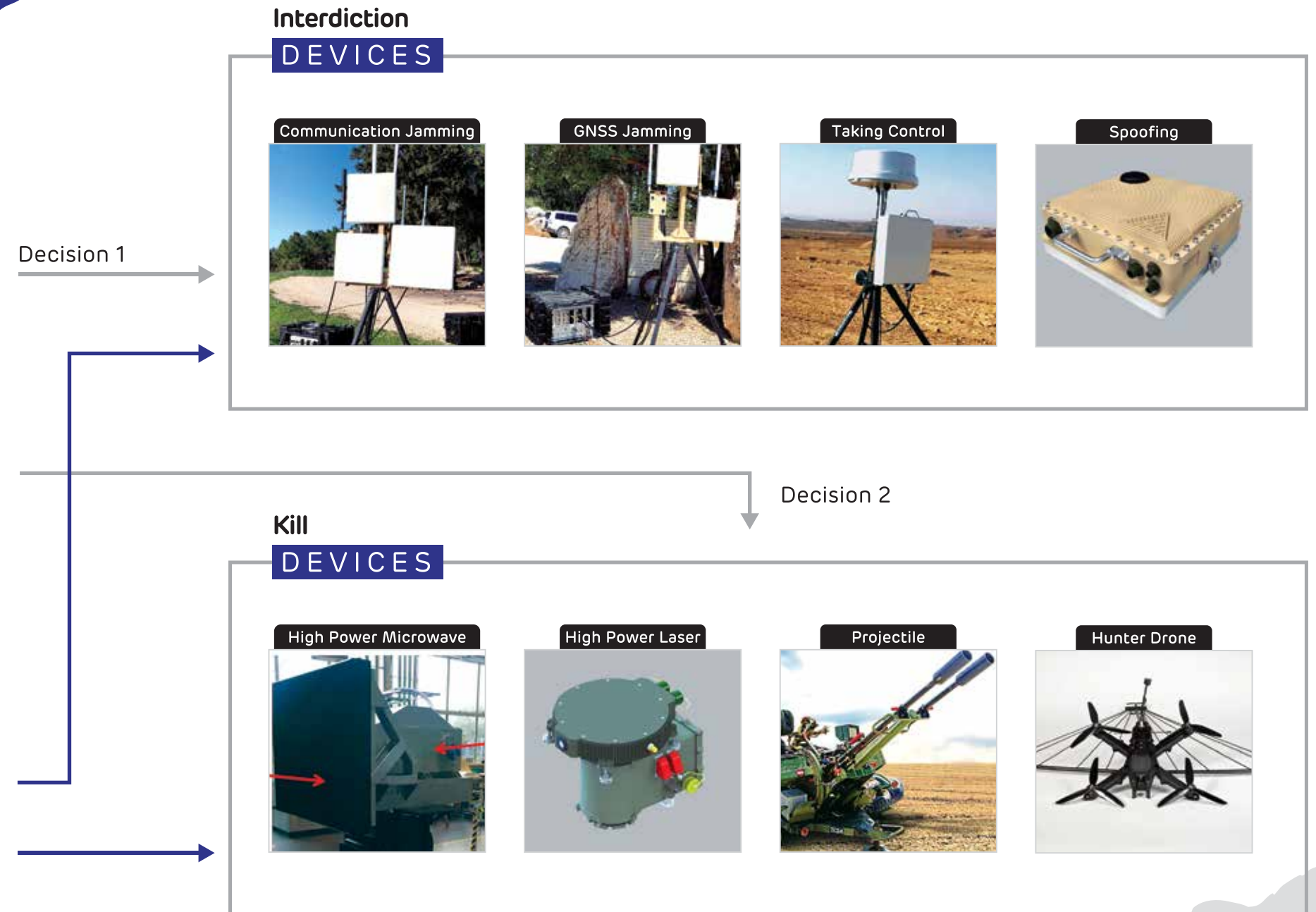
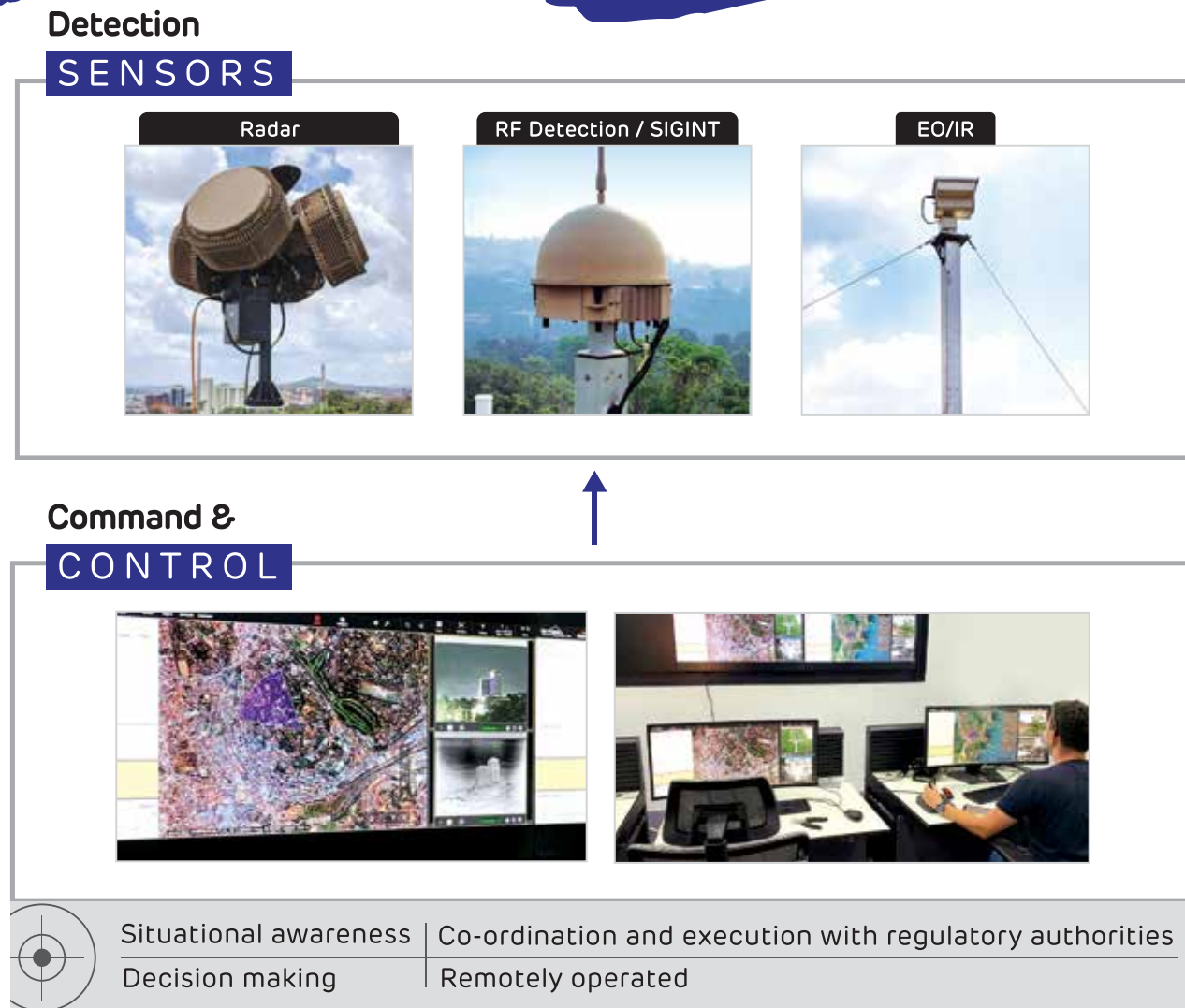
Reliability: Next-gen and highly reliable system developed through years of innovation while complying to Global Military Standards.

All-in-One AMC: Comprehensive repair, maintenance or replacements to ensure minimal downtime.

MRO Excellence: Proven, modern and lean concept of three levels of maintenance to ensure efficient operational availability, serviceability and economic considerations.



End-to-end solution



Comprehensive and smart solutions to secure your airspace

Combination of sensors with enhanced ranges that maximise availability, accuracy and protection, with easy operability.

- Offers complete solution comprising of Detection, Classification and Neutralization capabilities.
- Provides direction, range, altitude, location and velocity data points accurately.
- Detects and neutralizes multiple drones at a time.
- Operates in all user-required frequencies.
- Automatic / Manual, Premium C2 platform.
- System can be deployed for 24X7 operations.
- Single operator - one-display integrating data from all sensors into high-end ASP.
- Installation in <20 mins by a single person.
- MIL-STD-810G compliant to operate in harsh environmental conditions.



Mutli-layered platform for complete safety and reliability

Tailor-made solutions, configured for commercial deployments.

Multi-layered platform providing full protection:



1. Radar Systems

- Advanced 3D (X and S Band) multi-mission.
- Detects >100 targets at a time.
- 30 m up to 10+ km detection range.
- 360 degrees coverage.



2. SIGINT / High-power RF

- Fully passive, >10 km radius.
- 24X7, can be used in all weather conditions and portable.
- Whole band coverage 400 MHz to 6000 MHz.



3. Electro Optic / Infra-Red

- >5 km range.
- Cooled and Uncooled configuration with Laser Range Finder.



4. Neutralization

- Communication and GNSS Jammer.
- Clean spectrum jamming, takeover, spoofing.
- >10 km range across 400 MHz to 6 GHz bands.



5. Command and Control Centre

- Automatic detection and defeating.
- Easy integration to existing applications.
- All sensors controlled from one computer.
- Automatic updates to threat library.

Scalable and modular solution

Design the solution of choice with an option to upgrade further in future.

Key highlights

- Multi-layer detection and open interfaces to other sensors.
- Modular, scalable and flexible, thus, can be easily integrated to any architecture and configuration.
- Upgradable with additional sub-systems, user provided sensors and hard kill options without changes in interface.
- Interoperability with external systems using standard protocols.
- Independent sub-system design functionality enables sustained fail-safe operations in case of sub-system failure.
- Capable of centralized command and control operations, for better situational awareness at regional/higher echelon level.

Range of applications

The system comes in a ruggedized, transportable case, for installations on a variety of platforms in portable, mobile or stationary configurations.

Handheld



AFV



Vehicular



Transportable



Fixed



Globally admired proven system

A Field-Proven System at TRL-9 (Technology Readiness Level), which is deployed globally and is getting deployed at Adani Airports.

Key highlights

- Field-proven solution at TRL-9.
- Delivered to several customers from Israel, North Europe, America, Africa and South East Asia.
- Successfully demonstrated the Short Range, Medium Range and Long Range operations Live at Ahmedabad Airport on 18 March 2021 in the presence of multiple Central and State Government agencies as well as officials from:
 - Ministry of Civil Aviation: BCAS, DGCA, AAI.
 - Ministry of Home Affairs: BSF, CRPF, CISF, BPRD, NSG.
 - Ministry of Defence: NSA Office, Indian Army, Army Design Bureau, Northern Command, Indian Air Force.
 - Others: BEL, DRDO, Gujarat State Police and local representatives from Indian Army and Indian Air Force.



Indigenization in support of 'AatmaNirbhar Bharat'

Local ecosystem for prompt customer support

In continuation of Adani Group's vision of nation building, Adani Defence & Aerospace is keen to play an instrumental role in helping transform India into a destination for world-class, high-tech defence manufacturing, aligned to the Make in India initiative.

Key highlights

- 50,000+ sq. ft. of facility at Hyderabad dedicated to UAS and counter drone system.
- Established local ecosystem in counter drone systems through its facility in Hyderabad and Bengaluru.
- Engineers and technicians trained over 9 months on production lines in Israel.
- Ensures local manufacturing and local support for seamless servicing and operations.

**AatmaNirbhar
Bharat Abhiyan**



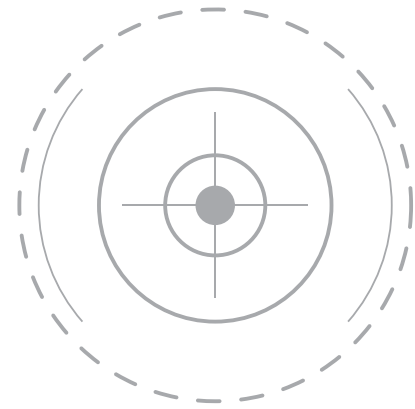
Adani Aerospace Park, Hyderabad

Production, assembly and integration of UAVs and Counter Drone Systems

- Assembly, integration and testing of Counter Drone Sub-systems
- Electro-mechanical systems integration
- High-precision machining
- 'D' and 'I' level support for Counter Drones
- Centralized helpdesk

Production and R&D, Bangalore

- Electronic Warfare, Systems, Avionics and Aerostructure production facility
- 1500+ skilled manpower and 150+ R&D Engineers
- 22 customer operation locations



Be future-ready to ensure security against threats

The world is rapidly changing and so are the security threats that surround us. This necessitates us to act with foresight and agility. It requires us to plan ahead together, in a manner that is not just safe and secure for one's business, but also safe for their stakeholders and customers.

Helping Build a Secure Nation

adani

Defence and
Aerospace

Adani Corporate House
Shantigram, S G Highway
Ahmedabad - 382 421
Gujarat, India
Ph: +91 79 2555 8458

    /AdaniOnline

www.adanidefence.com