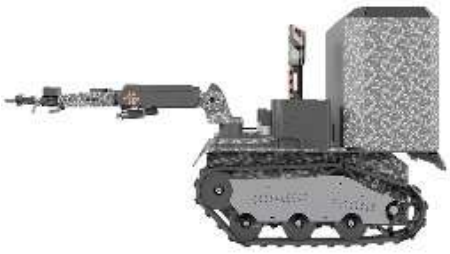
CUTTING EDGE ELECTRONIC EQUIPMENTS
FOR
AVIATION & DEFENCE SECURITY

ROBOTIC BOMB DISPOSAL ROVER	EXPLOSIVE VAPOUR DETECTOR	COUNTER DRONE JAMMERS	FOREIGN OBJECT DETECTOR

NETRA

NETRA DEFENCE & SECURITY PRODUCTS

BOMB DISPOSAL ROVER



NETRA PRABAL

ROBOTIC BOMB DISPOSAL ROVER
Distance – 1 km
Bionic Arms and Replaceable tools

FOREIGN OBJECT DETECTOR

NETRA GARUDAKSH

FOREIGN OBJECT DETECTOR AND REMOVAL
Static alongside runway | Mounted on Follow-me vehicle | As robot Rover
Does not disturb Runway activity & works in inclement weather

EXPLOSIVE DETECTOR

NETRA SHWAN MK – I

EXPLOSIVE & UNDER VEHICLE DETECTOR
REVOLUTIONARY GAS CHROMATOGRAPH TECHNOLOGY. TO DETECT REGULAR AND IMPROVISED SUBSTANCES

JAMMERS – C U A S

NETRA GHATAK MARK III

COUNTER DRONE GUN
Range : 2+ km
Protection of combat team of more than 10

JAMMERS – C U A S

NETRA RAKSHAK MARK I

COUNTER DRONE SYSTEM / BACKPACK
Range: 3km – 4km

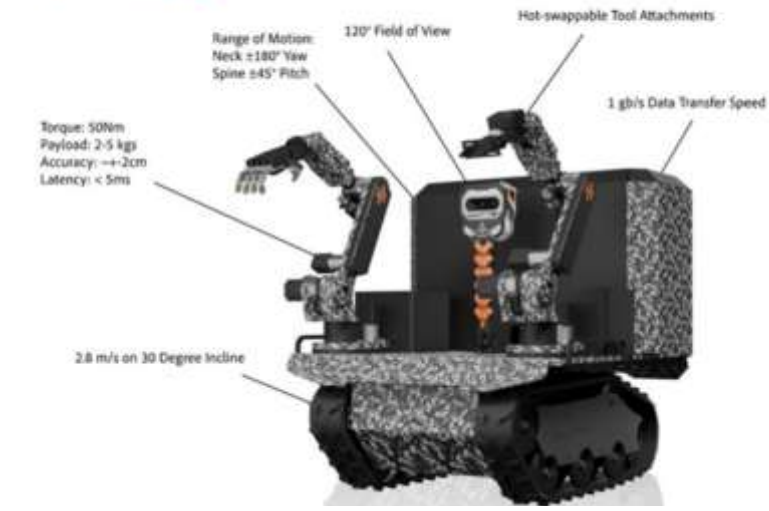
With enhanced range – Area Denial Equipment

JAMMERS – C U A S

NETRA DIVYA CHAKSHU-DRONE DETECTION SYSTEM

ROGUE DRONE & PILOT DETECTION BY RADIO FREQUENCY ANALYSIS
Range: 2 km
Stationery equipment can be mounted for detection

NETRA PRABAL ROBOTIC BOMB DISPOSAL DETECTOR



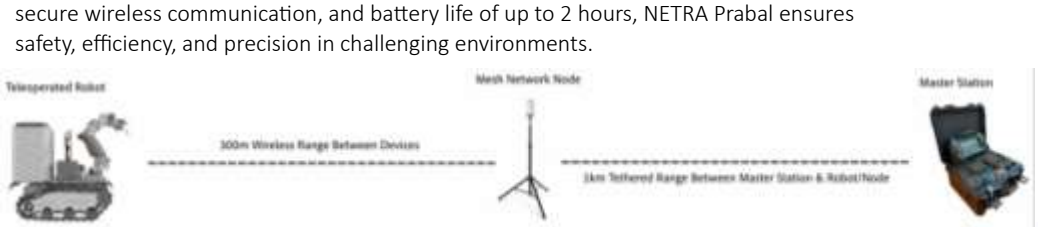
An advanced Teleoperated robot designed for hazardous environments, equipped with dual robotic arms that offer 6 degrees of freedom for precise manipulation. The system supports modular tool attachments, such as bionic hands, rotary grinders and metal detectors, allowing for versatile applications.

Operators control the robots remotely via an intuitive interface featuring augmented reality (AR) and gesture based controls, providing real time situational awareness and precise moments, With robust mobility, high definition cameras for comprehensive visual feedback, secure wireless communication, and battery life of up to 2 hours, NETRA Prabal ensures safety, efficiency, and precision in challenging environments.

System Features :

- **Modular Manipulators**: 6-DOF robotic arms for handling hazardous materials
- **Bionic hands**: 5 finger design with 10 N per finger grip strength for human like manipulation
- **Camera System**: Dual Cameras with real-time depth perception and object detection
- **Wireless Communication**: Up to 21Gb/S data rate, 23 ms latency, 200 m wireless, or1 km with fiber optics
- **Security Features**: AES-256 encryption, public private key authentication, and signed measures
- **Power System**: LiFe04 battery with 2-hour operation, 4-hour recharge.
- **Master Control Station**: AR integration with gesture control and a 7-inch handheld controller.

Mesh Network: Allows stable communication across devices without a direct line of sight



The HMS offers the operator an immersive, real time view of the robot's environment, enhancing situational awareness.

- Display: LCD Screen providing clear visuals for accurate task assessment
- Refresh Rate; 120 Hz for smooth movements and quick operator response
- Field of View: 110o for wide situational awareness
- Tracking: Inside-out tracking for accurate positioning without external senso
- Infrared-based sensors detect the operator's hand movements with high precision, translating them into seamless robotic actions

NETRA GARUDAKSH

NETRA Garudaksh is a FOD (Foreign Objects on Runways) System. Leveraging its expertise in teleoperated robotics, NETRA presents an autonomous FOD detection system that integrates AI, multi-modal collection, and real-time monitoring.

AUTONOMOUS OPERATION
Capable of independent runway scanning and debris detection without human intervention

REAL-TIME ALERT SYSTEM
Immediately notifies airport personnel of detected debris through siren and cloud-based alerts

GPS-GUIDED RUNWAY-SIDE SCANNING
Utilizes high-precision GPS to navigate and systematically scan the runway area

AUTOMATIC DEBRIS CLASSIFICATION
Advanced object detection algorithms can identify and classify different types of debris

GARUDAKSH UPARI
MOUNTED ON FOLLOW-ME VEHICLE

Follow on Vehicles owned by the Airport Operations team, plies the runway throughout the day. GARUDAKSH UPARI mounted on the "Follow on Vehicles" thus would keep tracking for FODs whenever these vehicles are on the runway, thus helping in constant monitoring of the runway

GARUDAKSH STHIR
STATIC ALONG THE RUNWAY

GARUDAKSH STHIR would be installed with a maximum height of no more than 1 feet above the ground, at a distance of 200 metres between each other along the length of one side of the runway, providing real-time detection of FODs

GARUDAKSH CHALAN
AUTONOMOUS ROVER

GARUDAKSH CHALAN is a solar powered autonomous rover/vehicle which circles the runway continuously at a distance of 75 metre from the centre of the runway and providing real-time detection of FODs

DATA MANAGEMENT SYSTEM
Real-time data from the GARUDAKSH models above is sent to a Central Control System. Automatic Alerts are also sent to the operations team for any actionables to take to remove the identified Foreign Object

Cost-effective and autonomous Foreign Object Detection solution for runway

Real-Time Debris Detection logging	The system continuously logs all detected debris items in real-time, including details such as location, size, and type of debris
Location Mapping of Detected Items	The detected debris locations are mapped to provide a visual representation of FOD hotspots and patterns across the runway and airport premises
Statistical Analysis of FOD Patterns	The system performs advanced analytics on the logged data to identify trends, seasonal variations, and other insights that can help optimize FOD management strategies
Maintenance Scheduling	The data collected is used to generate predictive maintenance schedules for the autonomous vehicles and other FOD detection equipment, ensuring optimal performance and uptime
Compliance Reporting	The system generates comprehensive reports to demonstrate regulatory compliance, including debris detection rates, response times, and preventive actions taken

Launch of Autonomous Rover based FOD removal system ~ Q3 2025

NETRA SHWAN MK - 1

EXPLOSIVE VAPOUR DETECTOR

HANDHELD / DESKTOP

NETRA EXPLOSIVE VAPOUR DETECTOR harnesses breakthrough gas-chromatograph-technology to identify a wide range of substances, including improvised compounds, with exceptional accuracy.

It is based on advanced technology far superior to what is available globally including vapor detection at PPT level, it also does not need direct line of sight or contact with substance, and recovery time from explosives detection is just 15 sec, and analysis & sampling time being 4 seconds each thus saving valuable checkpoint time.
NEVDS is used to protect against security threats and are used by Civil, Para-military and policing forces. The collected vapors are presented to an extremely sensitive detector using a selective pre-concentration gas chromatograph and electron capture technology. The unique system design, allows immediate analysis results with the capability to run multiple sequenced samples with practically no waiting time. The quick analysis results allow massive throughput needed in most security applications. The system is designed for fast recovery even after detection, allowing the user to continue using the system even after contamination which is most important for live system tests during daily use. The detector is designed to detect standard commercial, military substances and improvised compounds without any false alarms on common substances.

USAGE

- Government offices, embassies
- Airports, border checkpoints,
- chemical plants, conventions,
- correctional facilities,
- ground forces, power plants,
- sporting events,
- oil and gas refineries / storage

FEATURES & BENEFITS

- Vapor Detection (PPT Level)
- Fast Recovery, Highly Accurate
- Real-time Analysis
- Light-weight
- Detects standard commercial substances and improvised compounds
- Simple user interface
- Audio-Visual “Go / No Go” alarm
- Portable and desktop application
- Low maintenance

NETRA RAKSHAK MARK - I

NETRA RAKSHAK MARK- I is a versatile, man-portable counter-drone system that offers robust protection against unauthorized drone intrusions.

By jamming critical frequency bands, including 433 MHz, 915 MHz, GPS L1/L2/L5, 2.4 GHz, and 5.2/5.8 GHz, NETRA RAKSHAK MARK- I effectively neutralizes drones. Its remote operation, customizable settings, and omni-directional antennas ensure comprehensive coverage and rapid response to emerging threats.

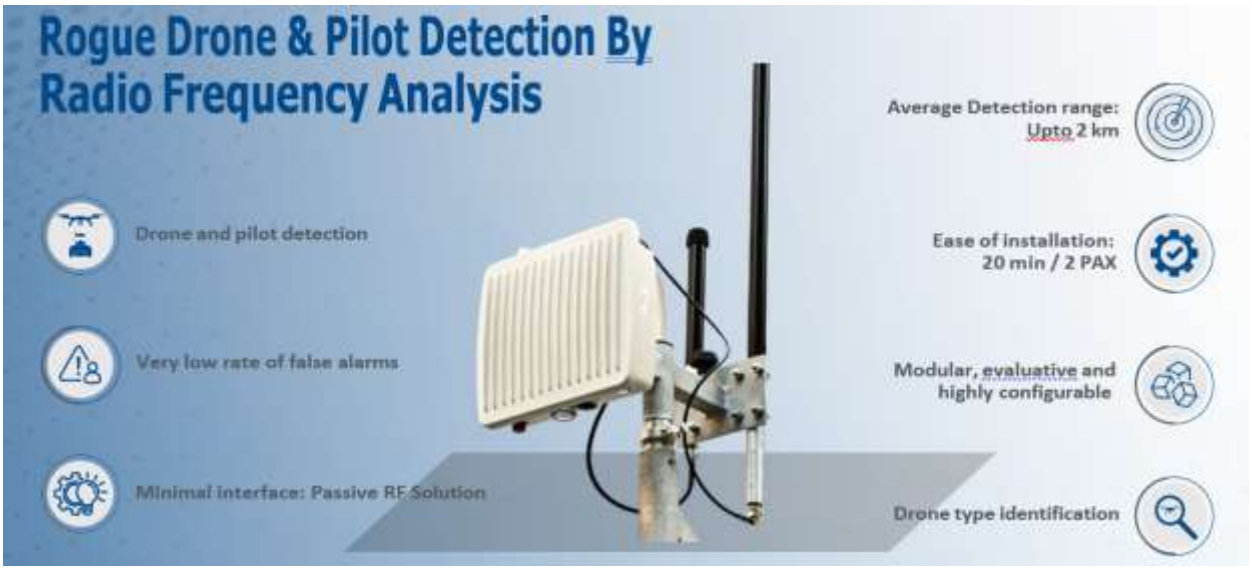
Parameter	Value	Remarks
Distance Coverage	3000-4000 m	Depends on Drone to RC and Drone Jammer Distance Ratio
Operation time	60 mins	
System Power	400 W	Maximum Output Power
Antenna Gain	up to 8 dBi	
Frequency Bands	420-450 MHZ 830-930 MHZ 2400-2500 MHZ 5150-5250 MHZ 5725-5875 MHZ	ISM Bands
GNSS Frequency bands	L1/L2/L5	
Antenna FOV	Omnidirectional	360^{O} Coverage in Azimuth
Battery Voltage	24V/30A	
Size	47 x 34 x 17 cm	

NETRA GHATAK MARK - III

PROTECTION OF COMBAT TEAM OF MORE THAN 10

Parameter	Value	Remarks
Range	2+ km	Depends on drone make and drone to RC distance
Continuous operation time	2 hours	
Antenna Gain	14-17 dBi	
Frequency Bands	902-928 MHz 2400-2484 MHz 5170-5250 MHz 5725-5875 MHz	
Navigation Frequency bands	L1: 1559-1610 MHz L2: 1215-1300 MHz L5: 1164-1215MHz	All GPS/GLONASS/BEIDOU bands jamming
Angular Coverage	25° Conical	
Battery Voltage/Capacity	24V/5AH	Portable plug and play battery Hot swap feature
Weight	<6.5 kg	
Size	72 cm x 20 cm x 23 cm	
Standards and Qualification	JSS 55555/MIL STD 810H	
Operating temperature	-20°C to 55°C	
Storage temperature	-30°C to 55°C	
Additional Features	• Interactive display • Audio jack for voice prompt External DC power option available Plug and play modular unit Optical scope • Battery hot swap feature for extended continuous operation	

NETRA DIVYA CHAKSHU



STATIONERY EQUIPMENT CAN BE MOUNTED FOR DETECTION

NETRA DIVYA CHAKSHU is a versatile and powerful counter-drone system designed to address modern drone security challenges. Our solutions offer both standalone capabilities and seamless integration into multi-layered Command and Control systems, providing comprehensive protection for your assets

Parameter	Value
Range	Upto 2 km
RF Spectrum Coverage	2.4 GHz / 5.8 GHz
Angular Coverage	Omnidirectional
Sensors	01
Reco. Distance Between 2 Systems	1.5 km for maximum coverage
Sensor Qualification	IP67
Operating Temperature	-20°C to +55°C
System Dimensions	24 x 24 x 13 cm
Masthead Weight	10 kg
Sensor Connectivity	Ethernet 1000 Base T (Gigabit)
Power Source	PoE+ (802.11at) (max 30W/sensor)

ABOUT NETRA

National Emerging Technology Research & Analysis, (NETRA) is a leading player in defence and aerospace technologies, specializing in cutting-edge solutions that address national security priorities. Netra collaborates closely with governments, working with both defence and law enforcement agencies, delivering niche product & services.

NETRA's vision is to serve the technological needs of Bharat, and help catapult her towards the 3rd largest economy in the world, and reduce her technological dependence on other countries.

It offers cutting edge electronic equipments for Aviation & defence security

NETRA's leadership and team of experts is dedicated to delivering innovative and reliable solutions to meet the unique needs of clients

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