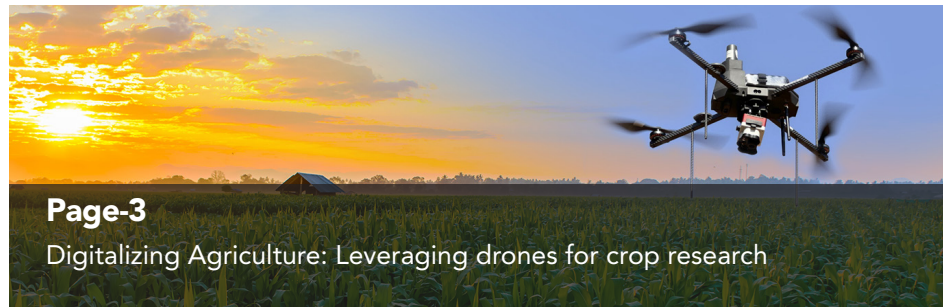


THE DRONE CHRONICLE



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Govt working to improve R&D in drone sector for Indian IP creation: Minister of Defence

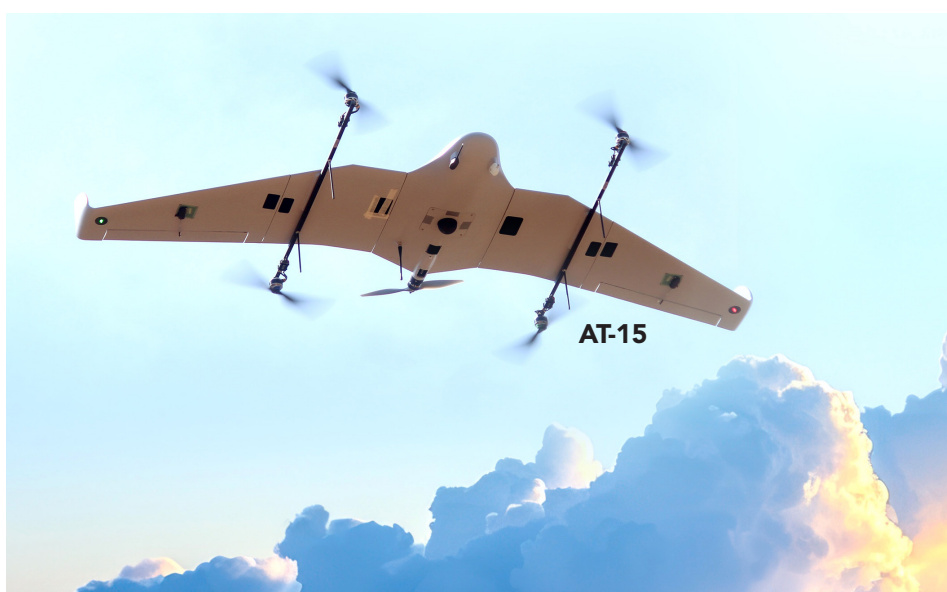
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Digitalizing Agriculture: Leveraging drones for crop research

Page - 2 Asteria advocates policy reforms for a thriving drone ecosystem at MPSEDC event

Page - 4 Growth of the Indian drone sector in 2024: A Transformative Year

ASTERIA AEROSPACE ENHANCES INDIAN ARMY'S EYES IN THE SKY WITH SUPPLY OF ITS INDIGENOUSLY DEVELOPED AT-15 VTOL DRONES



Asteria Aerospace, a full-stack drone technology company proudly announces the successful delivery of the largest-ever contract of its AT-15 Vertical Takeoff and Landing (VTOL) drones to the Indian Army. This significant milestone underscores Asteria's commitment to Atmanirbhar Bharat and delivery of cutting-edge solutions to meet the stringent requirements of defence and homeland security agencies.

"This delivery of Asteria's indigenously developed AT-15 surveillance drones to the Indian Ministry of Defence demonstrates our unwavering support to meet the evolving needs of our defence

forces", said Neel Mehta, Director & Co-founder, Asteria Aerospace. "These man-portable drones are equipped with multiple advanced features such as best-in-class flight performance in high altitude areas, integrated high-resolution day and night cameras, and support for precision artillery targeting. We are confident that they will play a crucial role in enhancing the surveillance capabilities of the Indian Army."

With a unique blended wing design, Asteria's AT-15 drone boasts superior aerodynamics for flight efficiency and high wind resistance to operate in altitudes up to 6000 meters above mean sea level. Its vertical takeoff and landing capability allows it to be launched and recovered from confined areas. The AT-15 has an impressive flight time of up to 120 minutes and a range of up to 20 km line of sight, ensuring prolonged surveillance and reconnaissance operations over large areas. An integrated EO-IR payload on the drone with high zoom capability enables critical aerial intelligence gathering from high standoff distances in day & night. Further, the drone is constructed fully out of composite materials making it robust, lightweight, and man portable.

Asteria Aerospace operates a state-of-the-art 28,000 sq. ft. design and production facility in Bengaluru with a DSIR-recognized R&D lab to build future-ready products with the highest standards of quality and compliance. Additionally, the company maintains a strategic presence in Gurugram to cater to its diverse clientele, including government and defence agencies.

ELEVATING DRONE OPERATIONS: SKYDECK'S INTEGRATED FRAMEWORK FOR MISSIONS, FLEETS, AND PROJECT MANAGEMENT

Drone operations today extend far beyond just flying - they encompass a complex ecosystem of tasks that require seamless coordination. From defining project goals and navigating regulatory requirements to optimizing flight paths and converting raw data into actionable insights, every aspect demands precision. Even minor inefficiencies can lead to costly delays and missed opportunities. This is where SkyDeck revolutionizes the game with its all-in-one platform that simplifies drone operations, enabling teams to work smarter, eliminate redundancies, and deliver results with efficiency and precision.

Transforming Complexity into Efficiency
SkyDeck is purpose-built to eliminate

operational challenges in drone projects. By integrating project management, mission planning, fleet management, and data processing into a unified platform, it streamlines the entire process. With SkyDeck, businesses can break free from disjointed systems, enabling smooth collaboration across diverse teams and processes. This unified approach ensures that no task or team operates in isolation, driving efficiency across all aspects of your drone operations.

Key Benefits of a Unified Platform

- Efficient Project Management
- Seamless Collaboration
- Scalable Operations

GEOSMART 2024 EXPERIENCE WITH ASTERIA AEROSPACE



Asteria showcased advanced mapping and surveillance solutions - A200-XT & AT-15 drones for precision data capture and SkyDeck – End-to-end cloud & AI-based drone data management platform.



GOVT WORKING TO IMPROVE R&D IN DRONE SECTOR FOR INDIAN IP CREATION: MINISTER OF DEFENCE

COURTESY: BUSINESS LINE

“ India is aiming to become a drone hub of the world. Several initiatives have been taken in this regard. This will not only help the Indian economy but also make significant contributions to our Make in India and the Aatmanirbhar Bharat initiatives. We are already working to improve Research & Development through reliable certification mechanisms, and facilitate Indian Intellectual Property creation in this sector. ”

Rajnath Singh, Defence Minister of India

The Centre is committed to creating an ‘Adaptive Defence’ in the country to counter challenges posed by the fast-changing world, says Defence Minister. Addressing the inaugural Delhi Defence Dialogue (DDD) organised by the Manohar Parrikar Institute for Defence Studies and Analyses (MP-IDSA), Defence Minister Rajnath Singh said that the Modi government is committed to creating an ‘Adaptive Defence’ in the country to counter the challenges posed by rapidly evolving global landscape. The theme of the Delhi Defence Dialogue was, ‘Adaptive Defence: Navigating the Changing Landscape of Modern Warfare’.

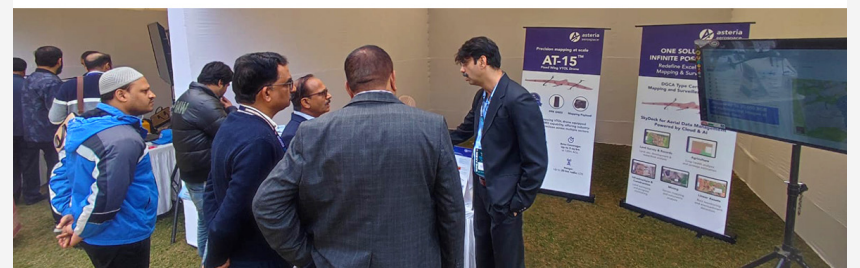
BHUBANESWAR-CUTTACK COMMISSIONERATE POLICE PLANS DRONE INTEGRATION FOR SMART POLICING IN TWIN CITIES

COURTESY: TIMES OF INDIA

In a bid to modernise infrastructure, the Commissionerate police have decided to incorporate drone technology as a major component of its smart policing initiative.

The police intends to use drones in conjunction with specialised teams, including VIP security units, to ensure the protection of distinguished guests and NRIs. “Drone has emerged as a transformative tool in modern policing and traffic management. Equipped with advanced sensors, cameras and GPS technology, drones offer real-time surveillance, crowd monitoring and rapid response capabilities. They can be deployed to monitor traffic low, identify bottlenecks, detect violations and assist in accident investigations,” the police officer said.

ASTERIA ADVOCATES POLICY REFORMS FOR A THRIVING DRONE ECOSYSTEM AT MPSEDC EVENT



Asteria participated in the Drone Workshop organized by the Madhya Pradesh State Electronics Development Corporation (MPSEDC) in Bhopal, contributing to insightful discussions on drone policies and innovations within the state. During the event, Asteria showcased its DGCA type-certified A200-XT drone, designed for surveying and mapping applications across various industries. It also demonstrated SkyDeck, its advanced cloud-based platform for seamless aerial data management, and highlighted the AT-15 drone’s cutting-edge capabilities for large-scale mapping, offering precision and high-efficiency outcomes tailored to industry needs.




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WHITEPAPER

DIGITALIZING AGRICULTURE: LEVERAGING DRONES FOR CROP RESEARCH

Challenges with Traditional Methods

High Dependency on Experienced & Skilled Field Resources

The reliance on expert personnel for data collection is costly and labor-intensive. Skilled agronomists and technicians are required to manually gather data, which can lead to inconsistencies and errors due to human limitations and variability. This dependency on human resources also makes scaling up operations difficult, as the availability of skilled labor is limited.

Low Data Fidelity

Traditional methods struggle with maintaining accuracy, completeness, and consistency of data. Inconsistent data collection techniques and human errors can lead to discrepancies, reducing the reliability of the data. Low data fidelity impacts the overall quality of research and decision-making processes.

Cost of Quality Data Collection

Gathering high-quality data using traditional methods is expensive. The costs associated with manual labor, equipment, and time required for data collection add up, making it a costly endeavor.

These expenses can be prohibitive for smaller farms or research projects with limited budgets.

Low Scalability

Scaling traditional methods to cover larger areas or diverse conditions is challenging. Manual data collection is time-consuming and labor-intensive, making it impractical for large-scale operations. As agricultural fields expand, the limitations of traditional methods become more apparent, hindering comprehensive data collection.

Time Sensitivity of Data Collection and Research/Analysis

In agriculture, timely data collection is crucial for accurate analysis and effective decision-making. Traditional methods often lag behind, causing delays that can affect the quality and relevance of the data gathered, particularly in assessing seed vigor, viability, growth, and yield. Furthermore, the time-consuming process of manual data collection, processing, and analysis can stretch research timelines by weeks or even months, slowing down critical decisions that are vital to the success of crop research and development.

How Drone Solution Enables Phenotyping and Crop Research

- High throughput
- Digitization of crop traits
- Digitalization & standardization of processes
- High resolution, accurate & time sensitive data collection
- Scalable method
- Digital twins of the field
- Provides bird's eye view of the field
- Data-driven decision making

How Asteria Delivers

Asteria leverages advanced technology and robust practices to deliver exceptional drone-based solutions. Our capabilities and streamlined workflows ensure high-quality data and efficient operations, empowering agriculture input companies to achieve their goals.

Capabilities

- In-house manufactured drone hardware
- Swappable high-resolution imaging & video sensors
- Autonomous flight capabilities & GPS tracking
- Tight integration of drone hardware operations and software layers
- Robust data management and governance practices
- Access to data pipeline for timely transfer of data
- Proprietary built crop-specific algorithms
- Proven experience in GIS & analytics

Drone Platform



- 40 minutes of flight time
- Up to 5 km communication range
- Up to 35 km/hr Wind Resistance



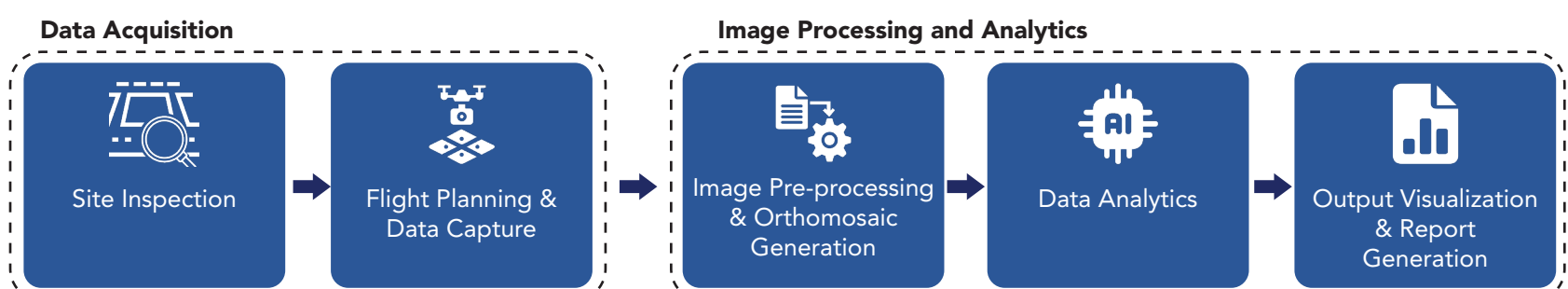
5 Band Multi-spectral Sensor



High Resolution RGB Sensor

- Fly as-low-as 25m AGL
- RGB Sensor Specs: High resolution Sensor (24MP, 36MP etc) GSD: <5mm/pixel
- Multi-spectral Sensor Specs: 5 Spectral Bands (RGB, NIR, Red-Edge) for multiple vegetation indices, GSD: <2cm/pixel

Streamlined Workflows





ARTICLE:

GROWTH OF THE INDIAN DRONE SECTOR IN 2024: A TRANSFORMATIVE YEAR

COURTESY: BUSINESS WORLD

The year 2024 has been a landmark period for India’s drone sector, showcasing exponential growth fueled by a blend of government policies, technological advancements, and a steady inflow of funding. With the market projected to grow from USD 71 billion in 2022 to USD billion by 2030 at a compound annual growth rate (CAGR) of 22 per cent, the sector’s transformative impact has been felt across agriculture, defence, logistics and infrastructure.

Key Drivers of Growth

In 2024, the agriculture sector has emerged as a significant beneficiary of drone technology. Farmers have adopted drones equipped with advanced sensors and imaging tools to monitor crop health, assess soil conditions and conduct precision pesticide applications. These innovations have enhanced productivity and minimised resource wastage, aligning with sustainable farming goals.

Similarly, the defence and security sectors have integrated drones into their operations, with applications ranging from surveillance and reconnaissance to tactical support. This has strengthened India’s national security apparatus, particularly in sensitive border regions.

Proactive Government Support

The government’s role has been pivotal in this growth story. Initiatives like the Production Linked Incentive (PLI) scheme, which offers a 20 per cent incentive on value addition and the Digital Sky Platform have created a streamlined regulatory framework. Additionally, the designation of 90 per cent of Indian airspace as a “green zone” has enabled easier drone operations without the need for prior security clearances.

Technological Innovations Driving Adoption

Technological advancements have significantly expanded the utility of drones in 2024. The integration of artificial intelligence (AI) and machine learning has enabled autonomous operations and advanced decision-making capabilities. Indian companies have adopted cutting-edge tools like LiDAR and multispectral imaging to enhance applications in mapping, disaster response and environmental monitoring.

Challenges and Opportunities Ahead

Despite this progress, the industry faces several hurdles. A shortage of skilled personnel poses a significant challenge, as the operation, maintenance and data analysis capabilities required in the sector demand specialised training. Comprehensive certification programs and collaborations between academic institutions and industry players are vital to addressing this gap.

Looking ahead, the potential for growth remains immense. Expanding applications in urban mobility, renewable energy, healthcare and industrial automation promise further opportunities. With sustained government support, strategic industry collaborations and continued innovation, India is well on its way to becoming a global leader in drone technology.





AT-15

Precision mapping at scale

Large-area mapping VTOL drone offering industry-leading survey precision across multiple sectors.



PPK GNSS



Mapping Payload



Ground Sampling
Distance: <4 cm
at 120 m AGL



Area Coverage:
Up to 5 sq km
at 120m AGL



Endurance:
120 mins
at MSL



Range:
Up to 20 km
radio LOS

To know more visit:

asteria.co.in/product/AT-15