

**1** Purifying The Air We Breathe With Pulsed Radio Waves

**2** 'Eagle' Soaring High Thanks To Deep Tech

**3** Revolutionising Robotics: Startup Unleashes The Power Of ROS Using Hardware Acceleration

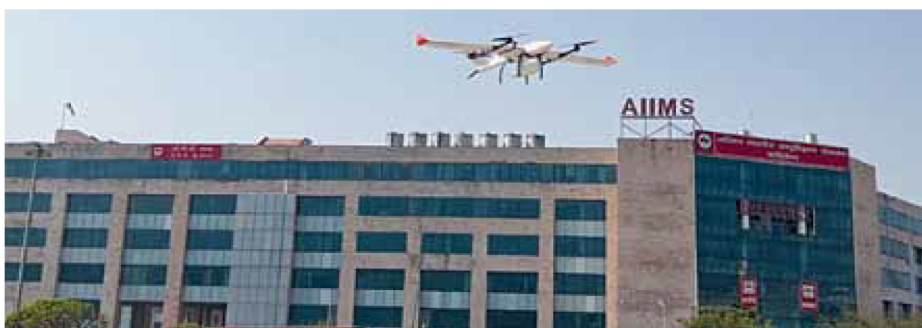
## 2 'EAGLE' SOARING HIGH THANKS TO DEEP TECH

Gurugram-based TechEagle is India's leading drone startup, which boasts of having delivered Asia's first vaccine via drone in Telangana in 2021. But there's more to this 2015-born company, which is working to holistically solve the healthcare and logistics problem of our times by combining aerospace, electronics, sensory tech, lidar, optical sensors, AI-vision, and 5G

**D**id you know that India's logistics costs account for around 14% of its GDP, while the global average is just 7-8%? The Founder and CEO of TechEagle, Vikram Singh, mentioned this fact while elaborating, "Still, we are losing more than 500 lives every day because of the poor infrastructure and inaccessibility. And more than 30,000 parcels are getting delayed every single hour as we speak. So, this was a big enough problem for us to take up and resolve."

The idea was conceived at IIT Kanpur by Vikram and his friend Anshu Abhishek. As per the founder, TechEagle's approach is to use deep tech to provide logistics access to everyone on demand. Vikram says, "We are developing the end-to-end indigenous technology of aerial vehicles, which we call drones. We have also been coordinating with the government departments to bring out the right framework of the policy for the same."

Earlier, the team started building the MVP, which required a pilot to operate. But later on, realising that it would create another problem of pilot crunch, they started working on building autonomous drones, which used GPS navigation and ran in autopilot mode. Then the second realisation happened in the form of the non-availability of runways for take-off and landing, TechEagle worked on develop-



TechEagle's Vertiplane flying over AIIMS building in Rishikesh

ing the technology of Vertical Take-Off and Landing (VTOL). Last year, the company started building a network of on-demand drone delivery.

The team wanted to develop a solution that could operate autonomously, minimise capital cost, and offer long-range capabilities. Vikram says, "To achieve this, we designed a hybrid drone, Vertiplane, that combines the features of helicopters and fixed-wing aircraft. It is fully electric and can fly up to 100 kilometres in less than one hour, making it ideal for time-sensitive deliveries." The startup looks forward to utilising the combined capabilities of aerospace, electronics, sensory tech, lidar, optical sensors, AI-vision, and 5G to provide end-to-end tech solutions.

Telling about his personal journey, Vikram mentions the dire state of accessibility in rural India. He comes from a small village, called Kishanganj, in the Tonk district in

Rajasthan, which is still not connected to the main city. The founder lost his close associates due to the lack of basic infrastructure like roads and healthcare facilities. Though he got admission to the chemical engineering stream at IIT Kanpur, from the very first week of the orientation program with seniors, he was fascinated with UAVs and their application to solving the logistics challenge.

TechEagle raised its seed round in 2021 without disclosing the details. Vikram says that they are looking forward to more funding in the near future. In March, the startup won the Qualcomm Design in India Challenge 2022 for developing a 5G-based command and control system over the cloud.

Actively seeking partnerships, the startup plans to innovate in several areas, including payload capacity, range, drone connectivity, integration of manned and unmanned space, and autonomous logistics in the near future. On the question of going abroad with their vision, the founder says that their primary focus is currently on the drone delivery service market in India.

As a message to the budding entrepreneurs of India, Vikram advises, "Rather than relying on imports and retrofitting, we should prioritise indigenous development and design solutions that truly address the needs of the masses." He believes that by focusing on long-term, sustainable technological solutions, India can create businesses that can be exported globally.



The TechEagle team after winning an award

—Vaishali Yadav