Telangana State

Drone Framework

Information Technology,
Eletronics & Communication Department,
Govt. of Telangana

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Preamble 01

The world is moving in to The Fourth industrial Revolution -the digital revolution and for India, it brings tremendous opportunities to leapfrog many stages of development. The Telangana State is poised to leverage the emerging technologies not just to leap frog but to vault to a new era of transformation by framing new policies to enable the ecosystems or these technologies to flourish.

While technologies such as AI, blockchain and cloud are being adopted by the state, it also realizes the potential of Unmanned Aircraft Vehicles (UAVs), comm monly referred to as drones, and is working towards democratizing the sky and enabling new participants in aviation. Drones are evolving beyond their military origin, they've moved to the consumer market and are currently being used in commercial and civil government applications that span sectors and industries ranging from construction, agriculture, healthcare, police, insurance, to journalism and cinematography.

The global market for drones is projected to be $100 billion by 2021 and the fastest growth opportunity would be from Government and business spends amounting to about $13 billion. The usage of drone and its technology is spread out across sectors and industries ranging from construction, agriculture, healthcare, police, insurance, to journalism and cinematography. The Indian UAV market is expected to reach nearly 4% of the global market. With 22.5% of the world's UAV imports, India tops the list of drone-importing countries.2

Further, with the Director General Of Civil Aviation (DGCA) issuing the regulaions, India has the opportunity to become a global leader in drones and Telangana, the youngest State in India, is looking at tapping this opportunity by bringing in a policy that enables the drone industry to grow and improve service delivery to the citizens, demonstrating the use of technology for societal benefit.

[1]Goldman Sachs Research report.

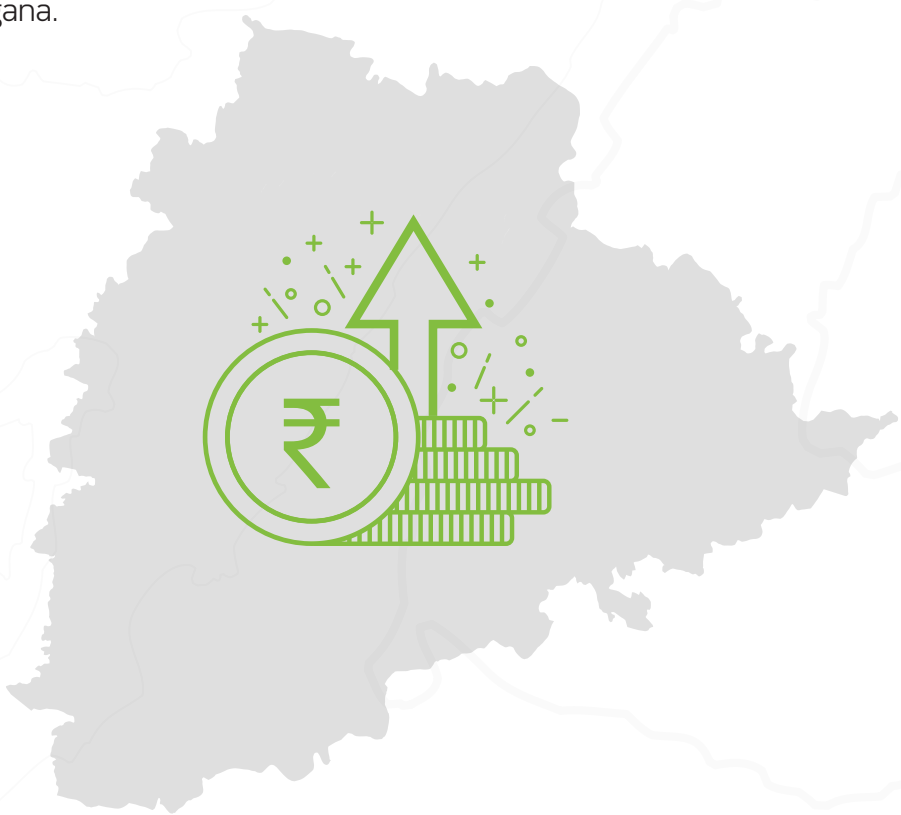
[2]PwC India Report on "Data on Wings - A Close look at Drones in India."

Vision 02

The Government of Telangana understands the potential of drone industry and realizes that the government will have to catalyse the development of a drone ecosystem that will enable drone companies to flourish in the state. The state envisions:

*The creation of a drone ecosystem built on the strong foundations of an encouraging policy, robust infrastructure, research & development, and market access.

*This will enable and encourage the use of drones, which in turn leads to creation of employment opportunities and economic prosperity in the State of Telangana.



A vibrant drone ecosystem accelerating the economic growth in the State of Telangana.

Key Pillars 03

The goal of this policy is to strike a balance between drone usage and regulations that ultimately result in the increase of economic activity due to usage of drones. While the policy strikes to achieve this goal by providing an environment that encourages and supports the usage of drones for greater public good, the drone related security, enforcement of laws and regulations prescribed by the MHA, DGCA and MoD will be carried out by the state police. The presence of a drone friendly policy and a secure environment, supported by a pool of technical resources, will lead to the establishment of drone/anti-drone manufacturing companies. This policy is the first step towards that endeavor and is based around three key pillars:

Infrastructure

Testing Facility Faciltation Cell
Co-working Space

Talent Pool

Training Education Research

Incentives

Drone manufacturers Service providers

Infrastructure

In order to transform from an emerging area into a mature industry, drone manufacturers and service providers require significant infrastructure support to develop and test their products/solutions. The Government will establish a Telangana Drone City (TDC) that would become India's leading Unmanned Aerial Vehicles (UAVs) test and business center. This TDC will foster a drone ecosystem and will enable sharing of resources, best practices and promote innovation. Infrastructure support plays a key role in the development of any industry. The development of the TDC including a Testing Facility will lay down the foundation for a strong drone industry. The TDC will consist of the following components:

1. TESTING FACILITY:

This facility would provide access to a free-fly zone where drone manufacturers and service providers can develop better products/services faster, thus creating a competitive advantage. By collaborating with existing institutions across the State, the Government will create and enable access to testing infrastructure and a free-fly zone to drone companies across the State. The facility will include all the basic requirements along with the paraphernalia that includes the following, Air Strip for takeoff and landing, Ground Control Station, Mechanical and electrical lab, Hangar, Training, Helipad, On-site support specialists, Outdoor calibration and testing facilities, Recharging stations etc. The facility shall be established through a public private partnership, including public players, educational institutions, and Government.

2. CLOUD INFRASTRUCTURE:

Data processing and storage is a critical task for most drone-based projects. Therefore, the government will provide cloud services (Infrastructure as a service) to drone startups in the proposed T-Cloud.

3. CO-WORKING SPACE:

Enabling the R&D teams to be based at TDC will foster collaborative research and will decrease the time-to-market for a product/service. In addition, all companies will be able to avail the usual benefits of a coworking space such as sharing best practices and taking advantage of the existing research facilities.

4. FACILITATION CELL:

A facilitation cell will be created to facilitate a safe and sustainable usage of drones. The Cell would assist and guide the drone manufacturers and operators in activities related to getting all the required approvals, permits, etc. from DGCA and local authorities. The Director General of Police in accordance with the guidelines prescribed by DGCA, MHA and MoD will make the necessary enforcement and usage regulations for drones and anti-drone systems. The cell would also work on providing real-time updates for availability of testing facilities and other shared resources/services. The cell would help in selecting DSPs within the framework of DGCA's regulationsand working on establishing Standard Operating Procedures (SOPs) and guidelines regarding the procurement of equipment such as safety nets, frequency jammer guns and training of authorities. The cell would also assist companies or firms to avail the following services:

- Rapid prototyping support through T-Works: Through its partners, T-Works will enable access to drone and payload components, setup prototyping equipment specific to drone/anti-drone manufacturers as necessary, and partner with the TDC and other institutions for access to free-fly zones for testing.
- Insurance: The facilitation cell will help the drone operators procure necessary insurance packages. In addition, a mediation center will be set up with certified mediators to help with any dispute resolution in this regard.
- Online platform for permissions and data: The facilitation cell will collaborate with suitable partners to create an online platform linked to Digital Sky platform. This platform will interface with the police department to facilitate local police permissions. It will also be used to upload captured data and reports for future use.
- Security:The facilitation cell will comprise of a team of security experts who will identify, evaluate and suggest appropriate anti-drone technologies and drone monitoring systems to counter illegal drone utilization and antidrone operations

5. GOVERNMENT DRONE MANAGEMENT OFFICE:

While there are a wide range of potential applications, the focus areas for the government are agriculture, energy, municipal administration, mining, irrigation and public safety. The Government shall set up a Drone Management Office that will help government departments in procuring services from drone service providers in the following ways:

- Empanel vendors so that each department will not have to go through the RFP process
- Identify use cases or services relevant to the departments
- Enter in to framework agreements with vendors on prices, SLAs
- Undertake capacity building programs for government officials

Talent Pool

Telangana government understands that since the drone industry in India is ready to take off, there will be a huge talent demand. The talent pool needs to be developed through intensive training programs, developing educational curriculum and investing in research. The government plans to:

- Collaborate with Atal Innovation Mission to impart drone knowledge and skills to school students. Introduce drone technology modules and provide firsthand experience to the school students and support ATL initiative with teacher training sessions.
- Engage with TASK and introduce drone training modules in technical institutes to focus on skill sets required to make graduate students industry ready. The modules will be created in collaboration with the industry and as per the DGCA guidelines. It will cover pre-flight, in-flight and post flight modules. Also, collaborate with government institutes to provide facility for practical training of students.
- Encourage the development of specific domain-led programs for specific requirements like aerial photography, surveillance, remote sensing etc. These domain-led programs will help develop a freelancing ecosystem. Government will provide incentives to the drone academies to create these specific modules.
- Collaborate with nodal agencies to set up Aeromodelling clubs in prominent locations. Each nodal agency would in turn support several other institutes/colleges and set up similar Aeromodelling clubs across the state. The government would organize regular competitions/hackathons to ensure healthy participation.
- Collaborate with leading technological universities to create specialized courses on drone engineering so that the drone manufacturers can scout drone design engineers directly from colleges.
- Fund drone engineering research in leading technical universities through a public-private partnership model.

Incentives

In order to promote the IT and Electronics sectors, the Government has already come up with dedicated policies for these sectors. To further boost the drone industry, Government shall extend the following fiscal incentives available under "Incentives for IT/ITeS Units" and "ESDM Policy" to drone and drone component manufacturers and service providers.

For drone, anti-drone technology and drone component manufacturers:

1. SGST Reimbursement:

100% Reimbursement of State Goods and Services Tax (SGST) for a period of 7 years from the date of commencement of commercial production to Micro and Small compa- nies, limited to a maximum of INR 50 million. In case of Medium, Large and Mega compa- nies, this reimbursement is applicable for a period of 10 years from the date of comme- ncement of commercial production, limited to the investment made in plant and machi- nery.

100%
Reimbursement

2. Investment Subsidy:

25% Investment Subsidy, up to a maximum of INR 30 million, for the first 25 eligible companies in MSME, Large and Mega categories; up to a maximum of INR 7.5 million for the first 50 eligible companies in Micro and Small categories.

25%
Investment Subsidy

3. Lease rentals:

Land shall be made available at affordable costs to companies. Further, the Government shall provide a 30% subsidy on lease rentals to eligible companies for a period of 10 years.

30%
Subsidy on Lease rentals

4. Stamp Duty:

To reimburse 100% stamp duty on purchase of land for establishing a unit.

For drone/anti-droneservice providers and drone monitoring solution providers:

1. Capital Investment:

25% Capital investment subsidy limited to INR 5 million for fresh investments made post declaration of the said policy. This is a one-time subsidy for an Investment above INR 10 million (subject to company being in operation for last two financial years).

2. Lease Rental:

30% subsidy on lease rentals up to INR 500,000 per annum maximum up to a period of three years, built up office space, including incubators and coworking spaces. Eligibility as per operational guidelines.

3. Exhibition Stall Rental:

100% Exhibition stall rental cost limited to 9 sq.mt. of space and delegate registration charges at conferences/exhibitions will be reimbursed for participating in the notified national/international exhibitions. This incentive is upto a maximum amount of INR 1.5 million per annum for participation in single or multiple event.

4. Internet Charges:

100% Reimbursement of Internet Bandwidth charges upto INR 500,000 per annum for a period of three years.

5. R&D Grant:

Upto INR 1 Million Grant for undertaking an R&D Project in the area identified by the state government.

Subsidy on pilot training: 50% subsidy on pilot training fee through Telangana Aviation Academy for students/graduates from poor economic background

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