Aerospace & Defence
Government of Karnataka
1. India’s Rise as Aerospace & Defence Hub
2. Karnataka leading Aerospace & Defence Revolution in India
3. Ecosystem Integrators
4. Policy Push
5. Key Market Players
6. Future Opportunities
India’s Rise as a Aerospace and Defence Hub

**Defence**

- **3rd** largest armed forces in the world
- Indian defence expenditure has reached USD 42.83 billion (INR 4,283 Crores) in 2017-18
- Total defence capital spending is estimated at USD 75.38 billion (INR 4.9 trillion) between FY 2017 and FY 2020

**Aerospace**

- Indian aviation market expected to reach a value of US$ 54.8 billion (INR 5,480 Crores) till 2019
- Total passenger traffic stood at 22.4 Crore during 2016
- Indian carriers are expected to have possessions of 800 aircrafts by 2020

**World’s largest arms importer**

- **CAGR @ 9.7%** (2008-16)
- 69% of capital spending is towards acquisition of aircrafts & aero engines

**Sector has received FDI amounting to INR 25.49 crores (USD 5.12 Million) from April 2000 to June 2017 as per Department of Industry Policy and Promotion**

**Among largest civil aviation market**

- **CAGR @ 8.5%** (2014-19)
- Expected to become **3rd largest aerospace industry** by 2020
Sector Snapshot
Karnataka
Karnataka undisputed Leader in Aerospace & Defence

Milestones in the Development of Aerospace Sector

1940
- Hindustan Aircraft Limited Formed (First Aircraft company)

1942
- Formation of Indian Institute of Science

1959
- National Aerospace Laboratories formed

2009
- Launch of Boeing Research & Technology-India centre
- European Aeronautic Defence and Space Co (EADS), opened an innovation centre
- Honeywell inaugurated a research development & engineering facility

2010
- Manufacturing joint venture between Rolls-Royce and Hindustan Aeronautics Limited

Karnataka Aerospace Policy 2013-2023

Phase 1: Preparing
Phase 2: Mobilizing
Phase 3: Motivating
Karnataka’s Unique Advantages

- **1st Aircraft Manufacturing Unit**
- **1st Space Research Center**
- First state to announce the aerospace policy
- Bengaluru International Airport is the first airport in India under PPP model
- India’s first private aerospace SEZ, operational at Belagavi

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**High growth sizable market**

- Presence of more than 2,000 small and medium enterprises focused on component manufacturing, tooling & testing equipment and assembling

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**Existing Value Chain**

- Presence of India’s flagship aircraft manufacturing and aviation research organizations such as HAL, NAL, ADA

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**Institutional Support**

- Fast tracked approvals through Single Window Mechanism

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**Manufacturing Expertise**

- Leader in heavy manufacturing, Headquartered PSUs such as, BHEL, BEML, etc.
- Largest hub of semiconductor design companies

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**Expertise in IT**

- Deep IT domain experience, Bengaluru is the world’s fourth-largest technology cluster
Karnataka’s World Class Hi Tech Aerospace & Defence Clusters

- Aerospace SEZ at Belagavi
- Co-locating a Aerospace Training Institute co-located with IAF training centre.
- Manufacturing cluster at Belagavi

- Establishment of Aerospace Research & Innovation Centre co-located with IISc proposed at Chitradurga
- Aerospace & Aeronautical University at Davanagere
- Establishment of Flying training school at Davanagere

- Hi-tech Defence & Aerospace Park & SEZ, Devanahalli.
- MRO at KIAL & Mysuru
- Manufacturing cluster at Dakshina Kannada District
- Defence production cluster in the Aerospace sector around HAL Helicopter Unit, Tumakuru
Colleges & Training Centres

► Indian Institute of Science (IISc) and Council for Scientific Industrial Research offers opportunities in research and training for aeronautical graduate
► Establishment of Aerospace Research & Innovation Centre co-located with IISc proposed at Chitradurga
► Aerospace & Aeronautical University at Davanagere
► Establishment of Flying training school at Davanagere
► Co-locating a Aerospace Training Institute co-located with IAF training centre

Government-funded Indian Space Research Organization headquartered in Bengaluru
► Defence Research and Development Organization under Ministry of Defence has ten high end labs in Bengaluru/Karnataka, the most in any city in India
► The Aeronautical Society of India formed a platform where engineers, industrialists and professionals could work together for the industry
Global Linkages

March 2009
India’s first public-private aerospace research consortium and it is devoted to emerging network technologies and concepts

December 2009
European Aeronautic Defence and Space company
Commenced research operations in Bengaluru

March 2010
Create a manufacturing joint venture company in Bengaluru with Hindustan Aeronautics Limited

2017
Government of Karnataka partners with Dassault Systèmes to Set Up a Center of Excellence in Aerospace & Defense

May 2009
Research, development & engineering facility in Bengaluru

2015
Boeing, Tata Advanced Systems sign pact for aerospace, defence manufacturing operations in Bengaluru
(Source: The Hindu, July 15, 2015)
Policy Push
Karnataka Aerospace Policy 2013-23
Robust Policy Environment
Position Karnataka as a vibrant aerospace hub of Asia and a globally recognised aerospace destination

Phase II (2018-23)

- Attract investments to the tune of INR 36,000 crores (6 Billion USD) in the Aerospace sector
- Create additional employment opportunities (direct and indirect) to about 60,000 persons in the next five years by a process of inclusive development
- Enhance the contribution of Aerospace sector towards increasing the share of industry in the State’s GDP from 30% to 32%
Since 2013-14 the State has approved **119 project proposals** with a proposed investment of INR 11,820 crore with an employment potential for about 35,000 persons.

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**Incentives**

- Investment Promotion subsidy
- Exemption from stamp duty
- Concessional registration charges
- Exemption from entry tax
- Subsidy for Effluent Treatment Plant (ETP)
- Exemption from tax on electricity tariff

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**Policy Highlights**

- Boosting exports
- Focus on R&D
- Operationalization of Bengaluru Aerospace Park and Bangalore Aerospace SEZ

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**MRO Focus**

- Encourage airports in the State to support MRO as a strategic activity
- Setting up of MRO facilities
- Special incentives for MRO segment

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**Special Interventions**

- Focus on cluster approach
- Aerospace University and Flying school
- Funding Ventures through Karnataka Aerospace Venture Capital Fund
- Aerospace, Research & Innovation Centre

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**Differentiators**
Key Players
Global companies in Karnataka

- HAL
- AIRBUS
- Rolls-Royce
- Bharat Electronics
- ISRO
- AEQUS
- Wipro
- Honeywell
- Thales
- Mahindra Aerospace
- UTC Aerospace Systems
- Boeing
- GE Aviation
Future Opportunities
Bengaluru’s Heli-taxi Service

Bengaluru is set to launch a helicopter taxi service from its international airport to Electronics City, helping passengers save hours in commute and beat the city’s traffic.

Thumby Aviation will start the service with one helicopter, eventually expand to connect Whitefield, the HAL airport, and some high-rise buildings that have rooftop helipads, based on the demand.

1. Establishment and Strengthening of Infrastructure
2. Augmenting capacity for Research, Design and Development for defence products
3. Encouraging synergistic sectors like civil aerospace and internal security
4. Building collaborations and investments in emerging technologies
5. Focus on skill development to enhance generation of technical manpower
6. Establishing MRO facilities to achieve faster turnaround times
Thank You