

Submission to the Economics and Industry Standing Committee  
Inquiry into Western Australia's Economic Relationship with India  
Legislative Assembly, Parliament of Western Australia



Boeing designed large combat drone for RAAF

## **WA-INDIA Collaboration for Advanced Technology Systems for Australian National Security**

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# INTRODUCTION

• We have all heard the latest news from India (in addition to how bravely they are dealing with COVID-19 and improving the recovery rate):

- India is Pharmacy to the World
- Foreign exchange reserves USD 540 Billion
- Over two dozen companies pledge USD 1.5 billion to set up mobile-phone factories in India
- India's Reliance ranked No 2 brand globally after Apple in FutureBrand Index 2020 list
- India ranks first in number of organic farmers
- Apple begins assembling iPhone SE (2020) in India, to go on sale soon
- UN Environmental Program (UNEP) launches new partnership to promote renewable energy in India
- India and Australia sign two new Defence arrangements

Yet the trade relationship between India and Australia and more-so between India and Western Australia does not really recognize any news like the above ...

- This submission aims to highlight one area in which, collaboration is extremely important for National Security as well as improved economic relationship.

# RECENT MEDIA ARTICLES OF CONCERN

**Chinese drones are freely available and used in Australia. Is that a matter of concern? Chinese 2017 law requires that data is stored within China and that organizations and network operators submit to government conducted security checks.**

- **1. The Sharp Sword Drone:** China and the drone threat to Australia:
  - <https://www.lowyinstitute.org/the-interpretor/sharp-sword-china-and-drone-threat-australia>
  - It is worth examining why China is investing so heavily in drones, particularly in the unmanned combat air vehicles (UCAVs), which could loiter over targets for hours longer than a crewed aircraft, posing a very different type of threat.
- **2. The Australian Defence Force has resumed its use of Chinese-made DJI drones** after a 2-week suspension, but Australian defence minister suggested they may now be relegated to 'unclassified' missions.
  - <https://www.sbs.com.au/news/australian-military-drone-supplier-warns-of-likely-chinese-cyber-backdoor-in-dji-quadcopters>
- **3. US warning against Chinese drone technology monitoring Australian airports.** – 28Jan2019
  - <https://www.smh.com.au/politics/federal/us-warning-against-chinese-drone-technology-monitoring-australian-airports-20190122-p50srz.html>
  - CASA has opted for a Chinese-developed technology called DJI Aerospace despite official US concerns the company could be sending drone-harvested data back to Beijing. Objected by Australian Defence. MP.

# RECENT MEDIA ARTICLES OF CONCERN ... contd

- **4. Chinese drone maker DJI left users at high risk of spying and hacking under security flaw**
  - <https://www.abc.net.au/news/2018-11-14/dji-drones-were-exposed-to-security-flaw/10491150>
- **5. From student to drone swarms: how the Chinese Communist Party trains its cadres in Australia**
  - [file:///C:/Users/Atul%20Ji/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/34GG7MDL/SMH%20-%202018%20-%20From%20student%20to%20drone%20swarms\\_%20how%20the%20Chinese%20Communist%20Party%20trains%20its%20cadres%20in%20Australia.pdf](file:///C:/Users/Atul%20Ji/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/34GG7MDL/SMH%20-%202018%20-%20From%20student%20to%20drone%20swarms_%20how%20the%20Chinese%20Communist%20Party%20trains%20its%20cadres%20in%20Australia.pdf)
- **6. Chinese national arrested in US probe of possible transfer of software to Beijing**
  - <https://www.wionews.com/world/chinese-national-arrested-in-us-probe-of-possible-transfer-of-software-to-beijing-323810>

Yet China is a global leader in commercial and recreational drone technology and as a supplier, it has almost **70-80% of the global market share in drone hardware.**

# WHAT CAN UNMANNED AERIAL SYSTEMS or DRONES DO?

CAPTURE AND INTERPRET DATA TO GAIN VALUABLE INSIGHT

COMPREHENSIVE 'BIRD'S EYE' VIEW OF ASSETS - EMPOWERS DECISION MAKING, BETTER PREDICT MAINTENANCE REQUIREMENTS, PRESERVES ASSET, AVOID COSTLY AND LIFE-THREATENING INCIDENTS & ANTICIPATE BUDGET EXPENDITURE

TYPICAL SERVICES INCLUDE:

- [INSPECTIONS, AUDITS AND SURVEYS](#) - CAPTURE DATA FROM EVEN THE HARDEST TO REACH PLACES
- [LIFECYCLE MONITORING](#) - ENSURE INTEGRITY OF ASSET THROUGH STRATEGIC, PROACTIVE MAINTENANCE AND INSPECTIONS
- [DIGITAL 3D MODELS](#) - DELIVER ASSETS DIRECTLY TO DESKTOP, OFFICE OR BOARDROOM VIA A USER-FRIENDLY INTERFACE
- [ANALYTICS](#) - IDENTIFY TRENDS BETWEEN MULTIPLE DATASETS AND OVER TIME IN ORDER TO BETTER PREDICT MAINTENANCE REQUIREMENTS
- [WA CONTEXT: LAND SURVEY, MINING, ROADS, ENVIRONMENT, OFFSHORE & OTHER ASSETS, AGRICULTURE](#)

# Strengthening WA's economic relationship with India

## — How WA can take advantage of new Strategic Relationship at National Level

- **WA can take lead in forming a strategic manufacturing alliance with India** to develop sensitive equipment for mutual benefit. There is already an agreement at National level.
- **Two landmark Defence Arrangements** between Australia and India have been established as part of the **Australia-India Comprehensive Strategic Partnership** announced by Prime Minister Scott Morrison and Indian Prime Minister Narendra Modi.
- The **Australia-India Mutual Logistics Support Arrangement** and the **Defence Science and Technology Implementing Arrangement** provide a framework to deepen defence cooperation between the two countries.
- Australian Defence Minister acknowledges India is a significant security partner for Australia. The **Science and Technology Implementing Arrangement** will facilitate improved collaboration between defence science and technology research organisations.

# Improved Strategic Relationship

- Australian Defence Minister again acknowledged on 6 July 2020 that India Australia Defence relationship is at historic high. There is already a high degree of trust.
- HMA Ships Canberra, Success, Newcastle and Parramatta, supported by the submarine HMAS Collins and a Royal Australian Air Force P8-A Poseidon aircraft, went to India for **AUSINDEX 2019 bilateral Navy exercise**.
- The revival of 'the **Quadrilateral Security Dialogue 2.0**' between the US, Japan, India and Australia may soon be yield a joint effort.
- FIAWA already has an MOU with Indian MSME Forum, New Delhi and is willing to work with WA Government Department of Asia Engagement under Hon Minister Peter Tinley, in advanced technology areas e.g. drones.



## Some Drones Built in Australia

- Australian manufacturers like Silvertone UAV and Carbonix are developing some drones for specific applications
- The **Loyal Wingman combat drone** (built by Boeing Australia for \$40M for RAAF) called Airpower Teaming System, has been unveiled at a time when Australia looks to bolster its defence force amid rising tensions with China. Prime Minister Scott Morrison said: 'We're investing to enhance the agility and capability of the Australian Defence Force so we can protect our nation and our allies.'
- Australia unveils new Defence drone as tension with China rise – 5May2020

<https://www.dailymail.co.uk/news/article-8286919/Australia-unveils-new-defence-drone-tension-China-rise.html?ito=rss-flipboard>



# SECURE OPTIONS FOR AUSTRALIA

## COLLABORATION WITH NATURAL SECURITY ALLY INDIA

Should Australia look at some other secure collaborative options for its small and mid range drones for sensitive applications? Australia-India Defence collaboration could be extended to this area. Some options are highlighted below:

- **DRDO Imperial Eagle** – 2.5 Kg weight, payload 250gm, imagery camera accuracy 1 degree, max speed 90 km/h
- The **DRDO Netra** is an Indian, light-weight, autonomous quadcopter mini UAV for surveillance and reconnaissance operations.[2][5] It has been jointly developed by the Research and Development Establishment (R&DE),[6] and IdeaForge, a Mumbai-based firm. Base Cost ~ A\$ 40,000.  
[https://en.wikipedia.org/wiki/DRDO\\_Netra](https://en.wikipedia.org/wiki/DRDO_Netra)
- The indigenous **Unmanned Air Vehicle (UAV) Nishant** developed by ADE, DRDO HAS BEEN INDUCTED INTO THE Indian Army. Weight 350-380 Kg, max speed 216 km/h, [https://en.wikipedia.org/wiki/DRDO\\_Nishant](https://en.wikipedia.org/wiki/DRDO_Nishant) . Base cost ~A\$16M. developed for battlefield surveillance and reconnaissance needs of the Indian Army. High degree of piloting skill required to prevent crashes.
- DRDO's long range multi-mission drone, **Rustom-2** is under development. It had composite fiber material (800 kg class) Short Range Remotely Piloted Aircraft System (SR-RPAS).

# SECURE GENERAL-PURPOSE DRONES IN INDIAN PRIVATE SECTOR

## (A) FLYING WING JF3 (COST ~\$11,000):

<b>Aircraft Dimensions</b>	160cm x 50cm x 12cm	<b>Range</b>	21 km (Ideal Condition)
<b>Battery Quantity</b>	1	<b>Endurance</b>	Upto 80 min (Ideal Condition)
<b>Aircraft Weight</b>	1950 g	<b>Max speed</b>	60 km/hr
<b>Max Payload Weight</b>	300 g	<b>Cruise speed</b>	35- 40 km/hr
<b>Frame</b>	EPP and Carbon Fibre	<b>Operational Flight Altitude</b>	500m
<b>GPS Receiver</b>	8M, Ublox	<b>Mode</b>	Autonomous and manual
<b>Receiver</b>	6 Channel	<b>Take-off and landing</b>	Hand launch/Catapult and belly landing
<b>Transmitter</b>	2.4 GHz 8 channel	<b>Wind resistance</b>	Upto 20 km/hr
<b>LIPO Battery</b>	6 Cell 5200 Mah	<b>Max Continuous Discharge</b>	25C
<b>DAY Camera</b>	10MP, 4K Gopro 7 - interchangeable	<b>Operating Temperature</b>	14° to 104° F (-10° to 40° C)
<b>Operating Frequency</b>	2.400 GHz	<b>Autonomous</b>	Mission planner software
<b>Manual Operating Transmission Distance</b>	1.5km (Extendable)	<b>Telemetry range</b>	30 km

## SECURE GENERAL-PURPOSE DRONES IN INDIAN PRIVATE SECTOR (B) VINCENT SKY - Proprietary Aerial Foliage Penetration

- ‘VINCENT SKY’, a proprietary product operating up to 3.8 kilometres altitude, with a range of up to 200-kilometers from the the Ground Control Station and an endurance of 15 hours at a stretch, makes it the most preferred solution for foliage penetration and other EO/IR sensors on board.
- Besides, with its 300 meter Short Take-Off and Landing (STOL), “VINCENT SKY” provides the Operator with the capability to execute Aerial Missions from Remote locations rather than being limited to airport facilities.
- Equipped with a large payload of 30 kg and a wide range of possible sensors with world-class electronics,” VINCENT SKY” operates up to a distance of up to 2000 Kilometers in one mission and is a reliable platform for delivering real-time video and information capture.
- **NB: These are only few examples amongst several drone manufacturers in India.**

THERE IS  
NO  
BETTER  
TIME  
THAN  
NOW

Australian Defence has recently released the 2020 Defence Strategic Update and Force Structure Plan (FSP) 2020. FSP 2020 outlines a wide range of new system investments, with unmanned system developments and acquisitions appearing prominently in the plan.

These new Defence investments should present considerable opportunities for collaborative Defence Industry and interest within the broader drone sector.

## About the Author

- The author is an ex Commander from the Indian Navy with multiple years of experience in missiles, avionics, defence systems, airborne armament, engineering support of land based and seaborne active flying operations
- In WA the author has been working in Energy, Infrastructure and Mining sector for the last 28 years
- He has also done dedicated community work for the last 28 years in WA and is currently the Chairperson of FIAWA, the Senior umbrella body of 62-member organisations of Indian Heritage
- The author is in touch with various reliable high technology manufacturers in India and has been invited to multiple Ministerial webinars as the Australian representative
- Willing to assist WA Government Department of Asia Engagement to exploit 'low hanging fruit' opportunities of collaboration with India