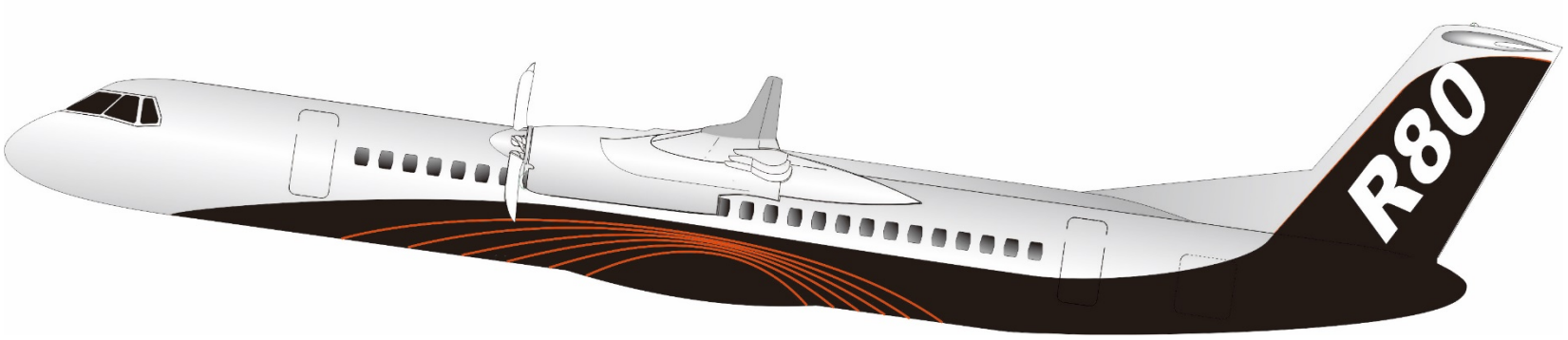
REGIO AVIASI INDUSTRI

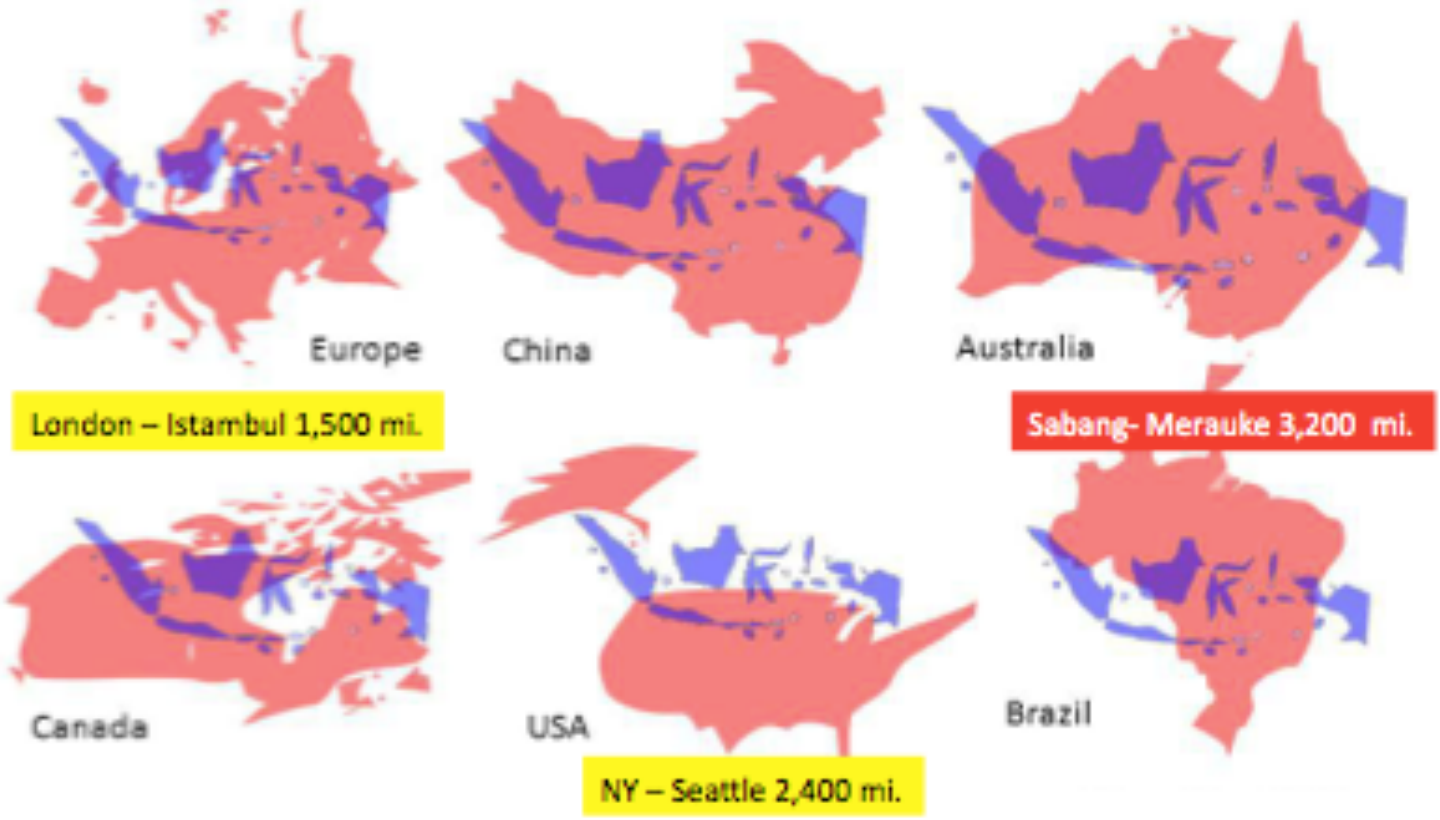
R80
REGIONAL TURBOPROP

The Regioprop R-80
New Generation Turboprop



PT Regio Aviasi Industri, Indonesia
November 2015

Background


Europe
China
Australia
London – Istambul 1,500 mi.
Sabang- Merauke 3,200 mi.
Canada
USA
Brazil
NY – Seattle 2,400 mi.

PT REGIO AVIASI INDUSTRI (RAI)

PT Regio Aviasi Industri (RAI) was founded by HE BJ Habibie in 2012 to design, develop, and manufacture a type-certified, twin engine 80 -90 pax regional turboprop, the R80.

The R80 is designed for low operating economics, high reliability & maintainability, excellent passenger comfort, advanced avionics, low pilot workload and comply to the world airworthiness standards, to serve Indonesian as well as International markets.

The R80 will be designed to enter the market in 2021.

Board of Commissioners

BJ Habibie
Chairman

Ery Firmansyah
Vice Chairman 1

Ilham A. Habibie
Vice Chairman 2

Board of Directors

Agung Nugroho
President Director

Rahayu S Arifin
Corp Secretary

Tjahjo kartiko
Director of Technology

Harry Wiguna
Director of Finance

Agung B. Ismadi
Director of Business and Administration

Vision & Mission

Vision

- To become a leading global aircraft OEM with a portfolio of aircraft and related services;
- To achieve sustainable growth through meeting market and customer requirements, and to see these concepts through to flight;
- To contribute to the development of national and international aerospace business, and thereby stimulating domestic GDP growth in Indonesia.

Mission

- Firstly, to develop a sustainable and profitable aircraft manufacturing business, which upholds good governance principles;
- Secondly, to develop competitive regional aircraft products in its target market segments both in terms of technology and economics;
- Lastly the purpose of RAI is to develop national, regional and international partnerships in the aerospace sector.

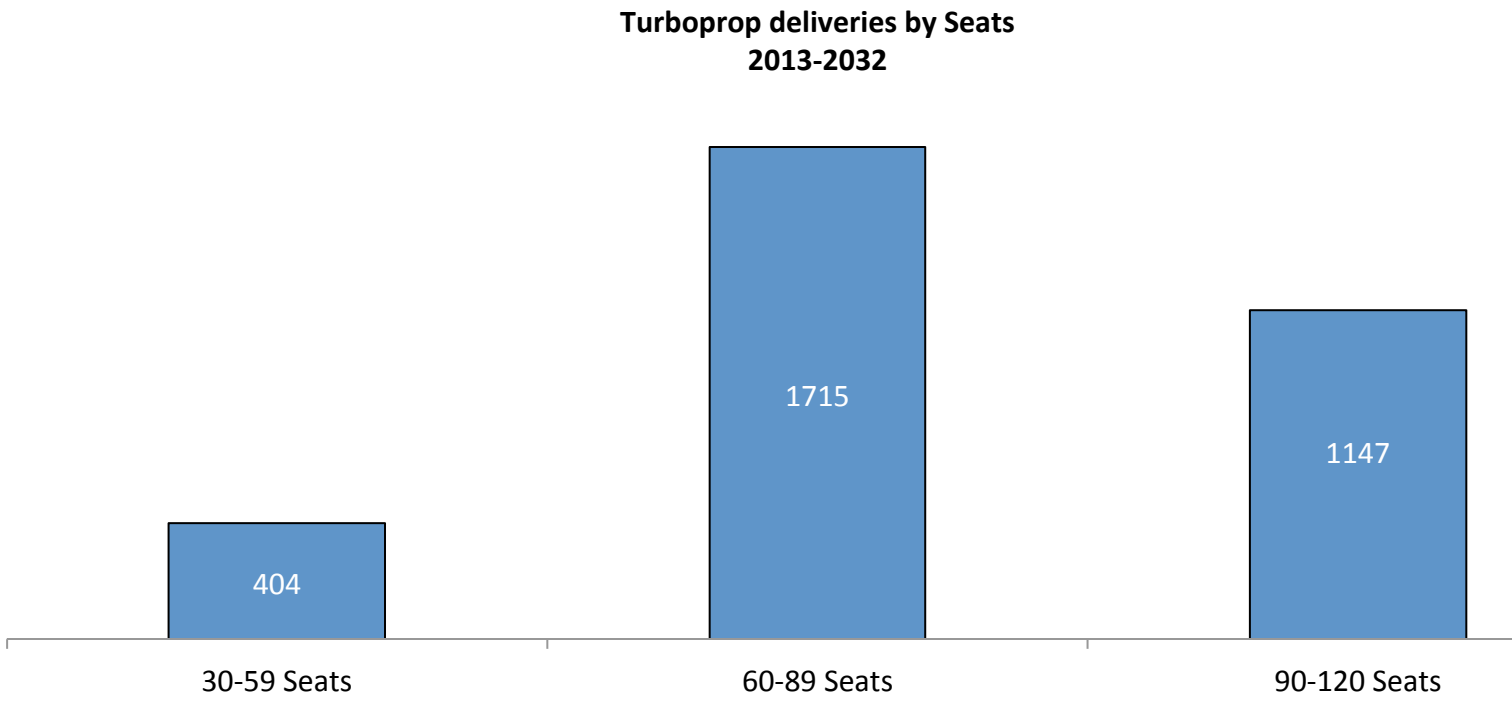
RAI's strategy is……

- To fill a gap in the market with regards to customer needs that are not currently being met by the competition.
- To maximize the lessons learned from previous experience to develop a new product, while implementing the state-of-the-art technology brings competitive values to the product.
- To build the right ecosystem around the aircraft platform to make it successful and to increase value of the program.
- To use Indonesia as the launch platform for the program but quickly going to the international markets after.

Market Opportunity Assessment, World Market

60-89 seat demand is expected to be attract a total of 1715 aircraft.

90-120 seat market is expected to open up in the next decade with current players developing market.

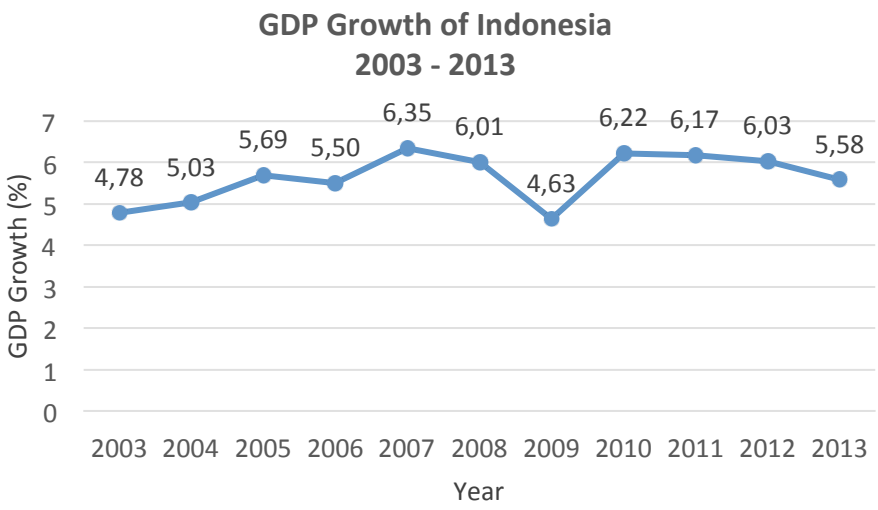


Source: RAI and Frost & Sullivan

Market Opportunity Assessment

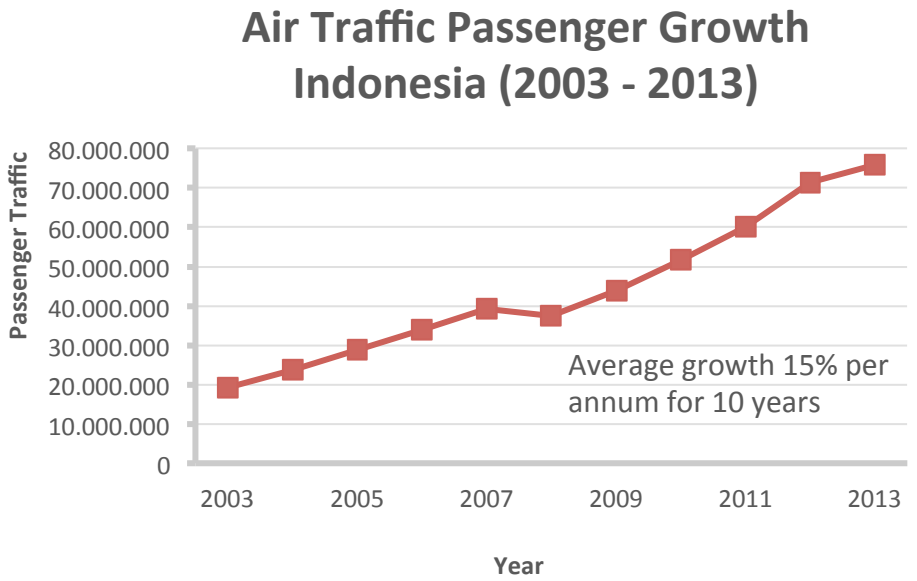
Indonesia' GDP growth rate coupled with a large population with an increasing disposable income is and will drive the requirement for aviation.

- Indonesia's GDP has grown consistently over 5% in the last 20 years



Source: The Worldbank

- Indonesia shows tremendous potential for aviation – one of the largest aviation growth, and yet only 6% of its 250 million population have ever flown!

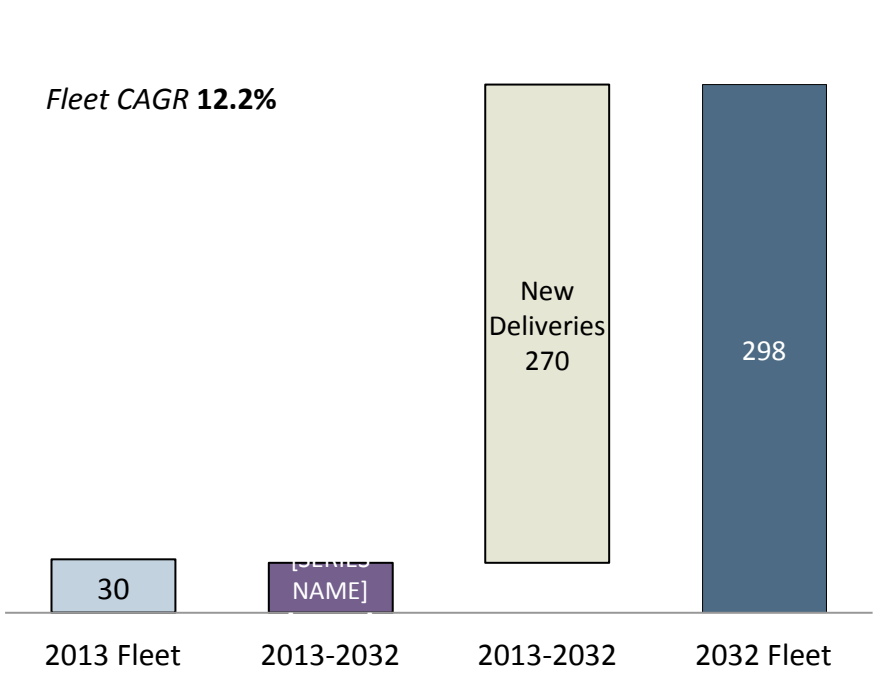


Source: Ministry of Transportation, Indonesia

Market Opportunity Assessment

The demand for turboprops in Indonesia is 270 aircrafts in 20 years. RAI is in an ideal position to serve this market.

Indonesia Fleet Projections, 60-120 Seats (2012-2031)

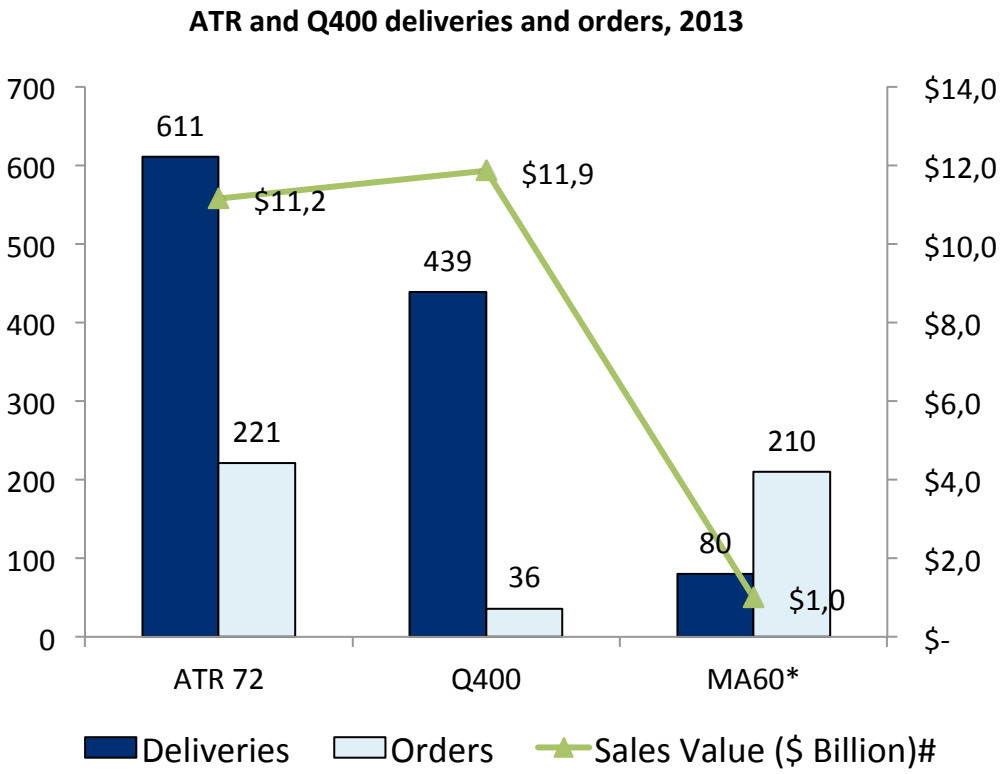


Source: Frost & Sullivan, 2013

- The current turboprop fleet is very small. However as the economy has bloomed in the last decade, the requirement for air travel has been growing;
- Air travel is the only feasible travel option for many islands in the archipelago country;
- Routes are short enough to be covered economically by a turboprop.

Competitive Analysis

Q400 flies at a cruise speed of 360 knots which is 90 knots faster than ATR. It also boasts of a noise reduction technology and increased passenger comfort



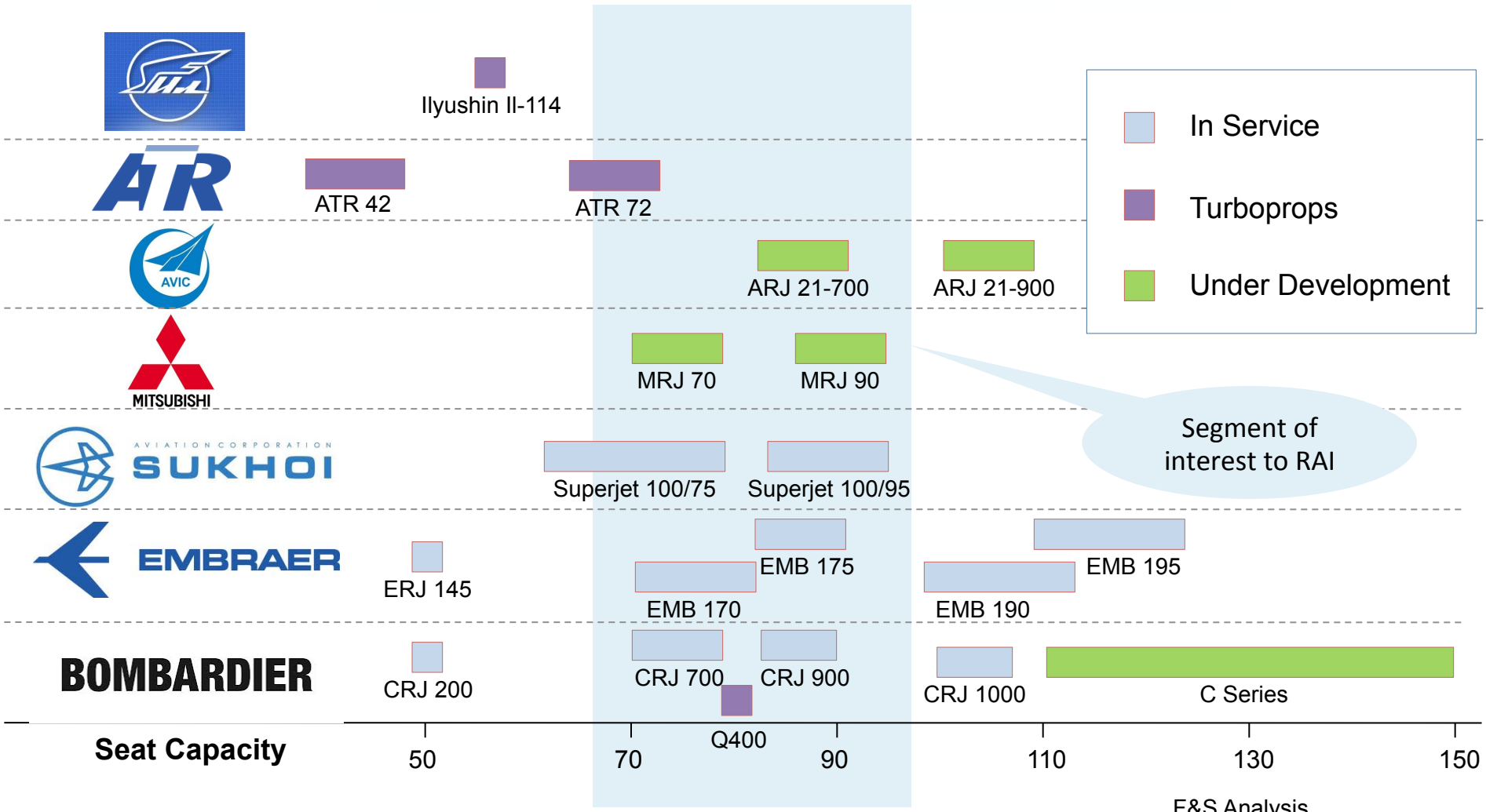
- ATR has a significant backlog of orders occupying their production capacity for 3 years;
- The average DOC of Q400 is slightly higher than that of ATR (ATR has the least fuel cost, however due to older fleet has higher maintenance cost. The total cost is marginally in favour of ATR);
- MA60 is known to have safety concerns.

* - order announcements of MA60 are unreliable as most airlines which allegedly have ordered are from China

* - Average price of ATR72, Q400 and MA60 is $18.25, $27 and $12.5 million respectively

Competitive Analysis

Bombardier and especially ATR are the main competitors for this program though other countries such as India and Korea have potential programs



R80 Concept

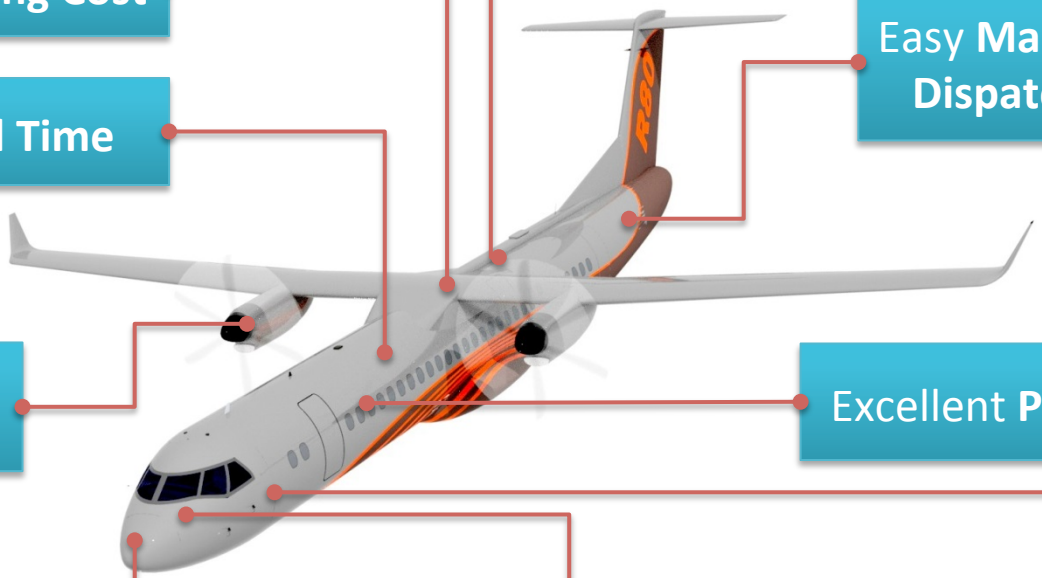
High **Payloads**

Low **Direct Operating Cost**

Quick Turn Around Time

Efficient **Engine**

Optimum **Structure design**



Modern **Cockpit Design**

Fly by Wire
Flight Control System

Easy **Maintenance** & High **Dispatch Reliability**

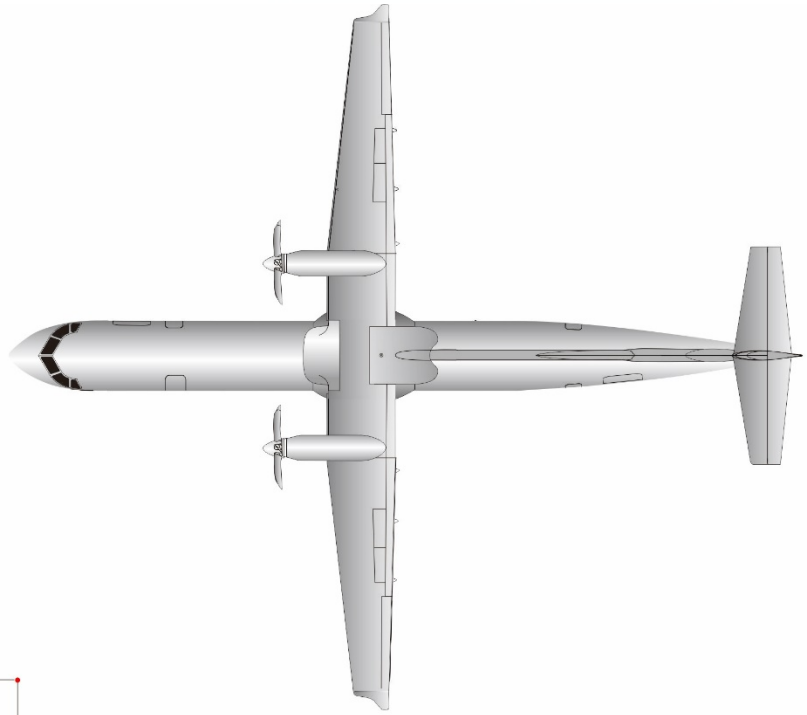
Excellent **Passenger Comfort**

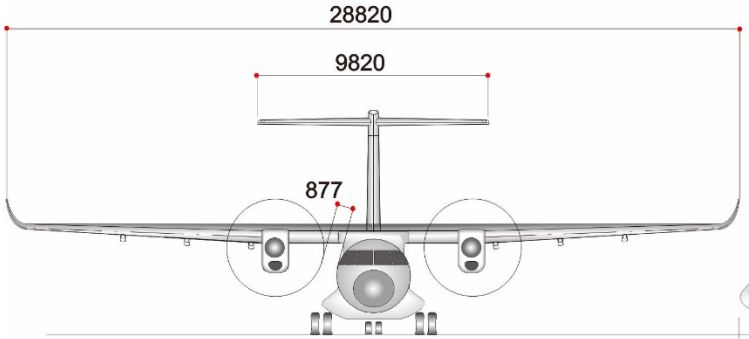
R-80 Specifications and Positioning

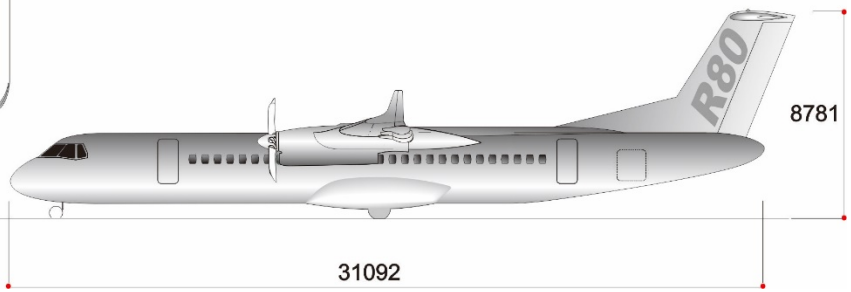
The R-80 has been designed for easy maintenance, high dispatch reliability and a longer interval for AC checks, and will use latest/ up-coming technologies

R80
REGIONAL TURBOPROP

Pax Number	: 80 pax @ 29" pitch
Design Range	: 800 nm (1480 km)
Design Payload	: 7600 kg @ 800 nm range
Max. Payload	: 8780 kg @ 400 nm range
Cruising Altitude	: 25.000 ft (7,800 m)
OEI Ceiling Altitude	: 17,000 ft (5,300 m)
Economical Cruising Speed	: 290 kts (537 kmh)
Max. Cruising Speed	: 330 kts (611 kmh)
Take Off Field Length	: 4.500 ft (1.370 m)
Engine	: 2 x 4,600 shp Engine Class
Max. Take Off Weight	: 27,500 kg
Max. Landing Weight	: 26,900 kg
Operating Empty Weight	: 16,900 kg

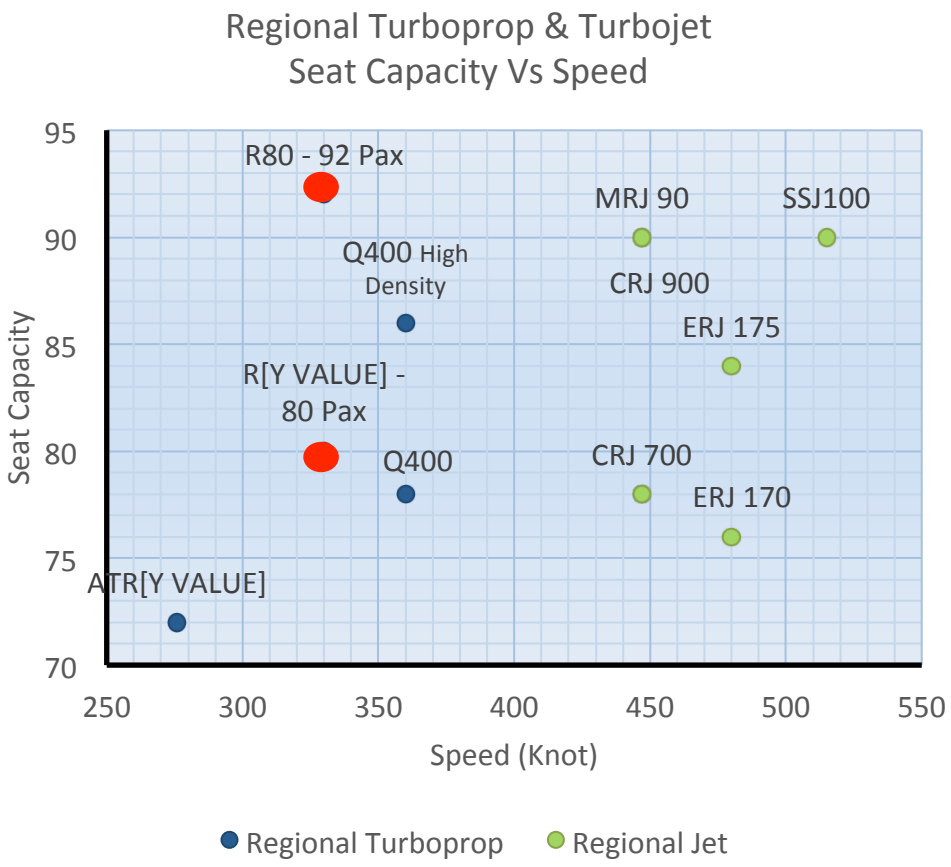


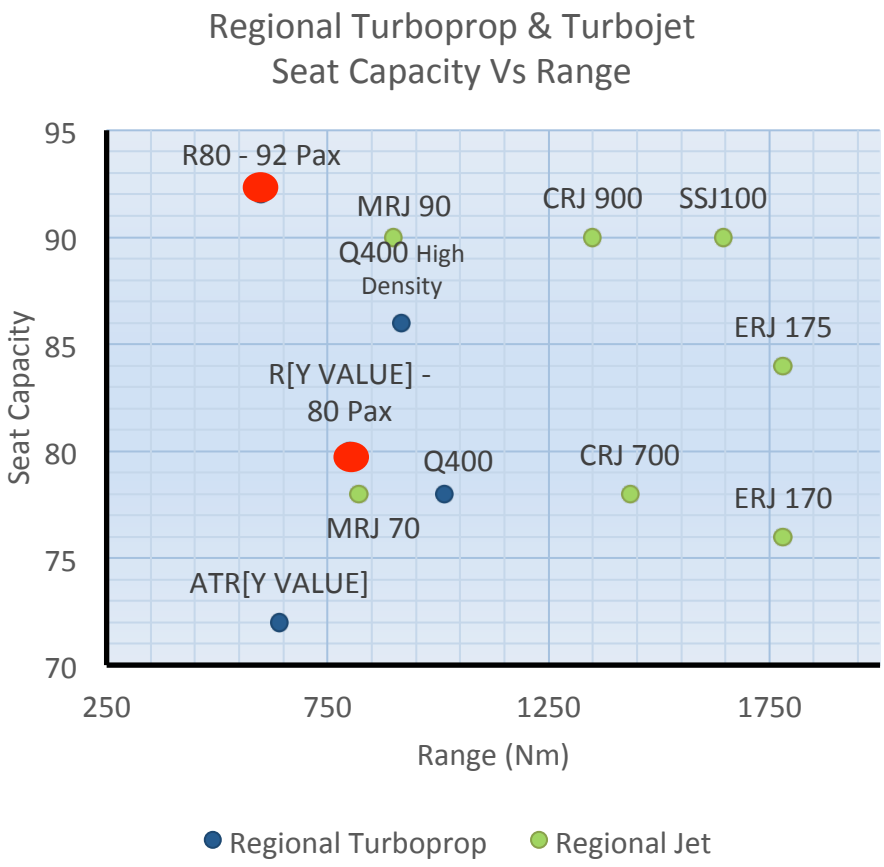




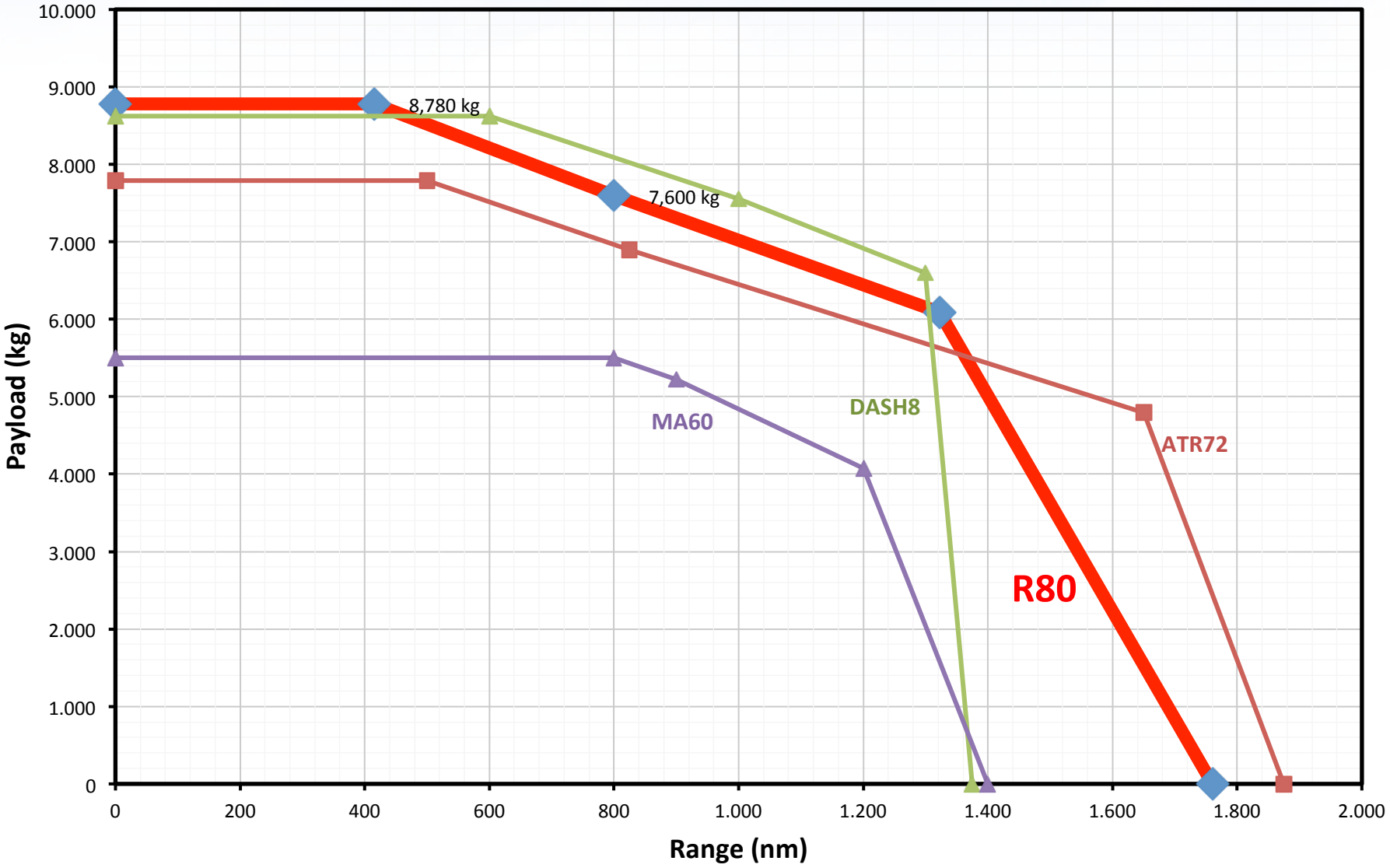
R-80 Specifications and Positioning

The R-80 is positioned closer to the ATR 72, but with more capacity, and retains some of the flexibility that a Dash 8-Q400 has in terms of speed, but not range



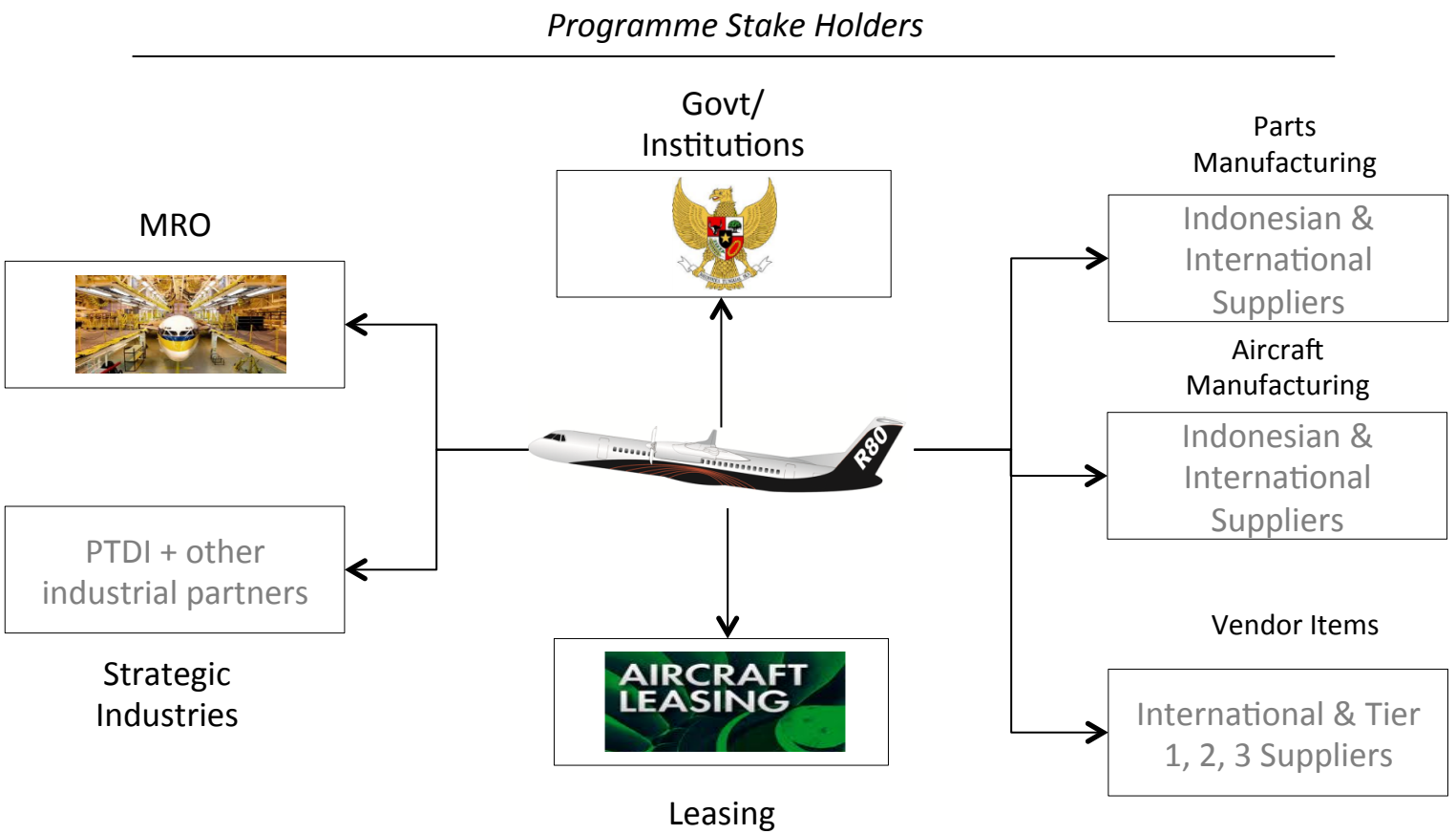


Payload Range Comparison



Worldwide Partnership

R80 is a b2b program, partnering with Indonesian Strategic Industry, PT Dirgantara Indonesia (Indonesian Aerospace). Government support will be in the industrial infrastructure aspect and regulations.



Forecasted Sales and Launch Customers

Signing Letter Of Intent 145 units R80.

NAM Air
orders 100 Aircrafts

Kalstar Aviation
orders 25 Aircrafts

KALSTAR AVIATION
fly smart with us

Trigana Air Service
orders 20 Aircrafts

TRIGANA AIR

Potential Launch Customers

RAI is currently in discussions with potential launch partners in Indonesia showing positive response, and there may newcomers on the block.

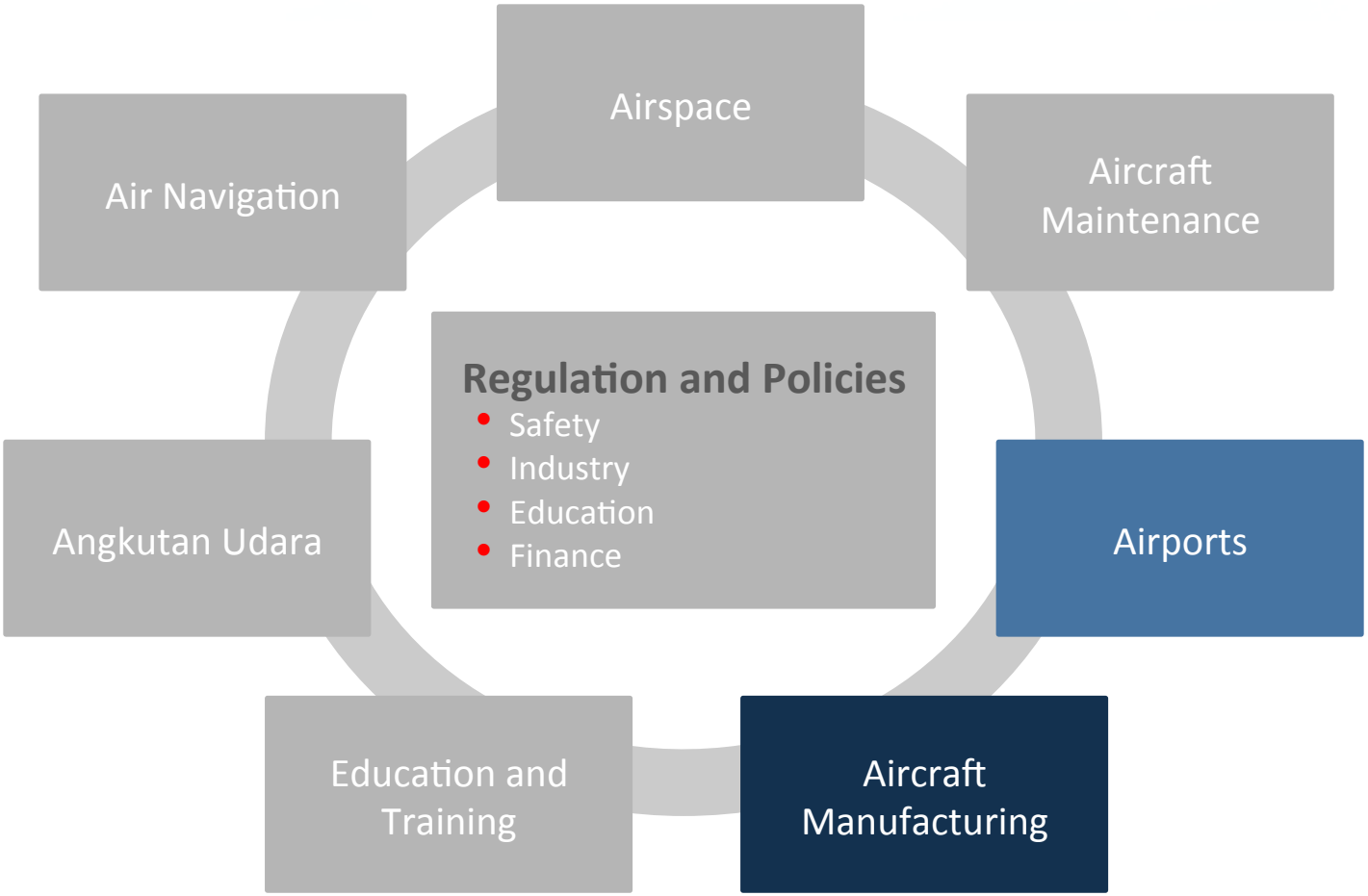
Indonesian Market

- Citilink Garuda Indonesia
- Lion Air
- Garuda Indonesia
- Merpati
- SKY
- Sriwijaya Air – Your Flying Partner
- KAL STAR
- Trigana Air Service

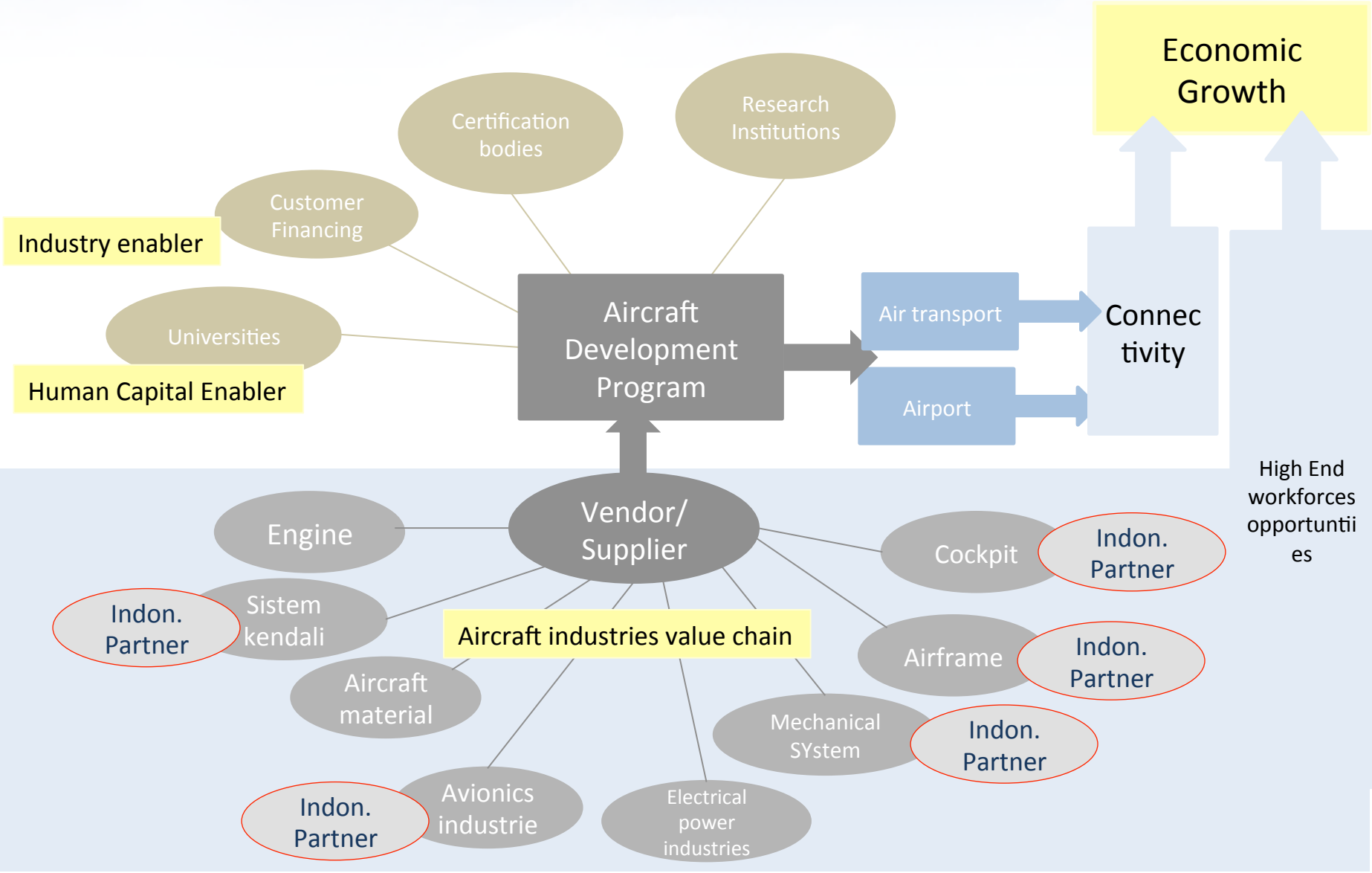
International Market

- firefly
- MASwings
- Cebu Pacific
- Jet Konnect
- Bangkok Airways
- spiceJet – flying for everyone
- Azul – Linhas Aéreas Brasileiras
- Air Tahiti Nui

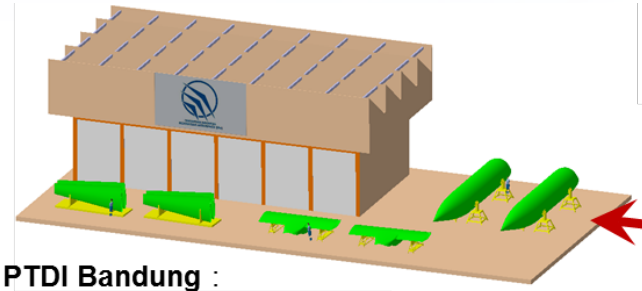
Aerospace Ecosystems



Aircraft Industry Value Chain



R80 Program & New Airport of West Java

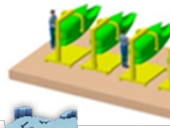


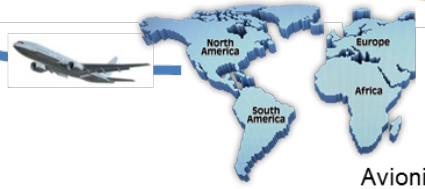
PTDI Bandung :
Aircraft component (Fuselage, Wing, Empennage, Doors)

tol gate 6X6 m

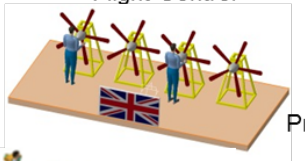
PT. RAI at Kertajati
Aircraft integration

engine





Avionic, Electrical, ECS, APU, Hydraulic, Flight Deck, Flight Control



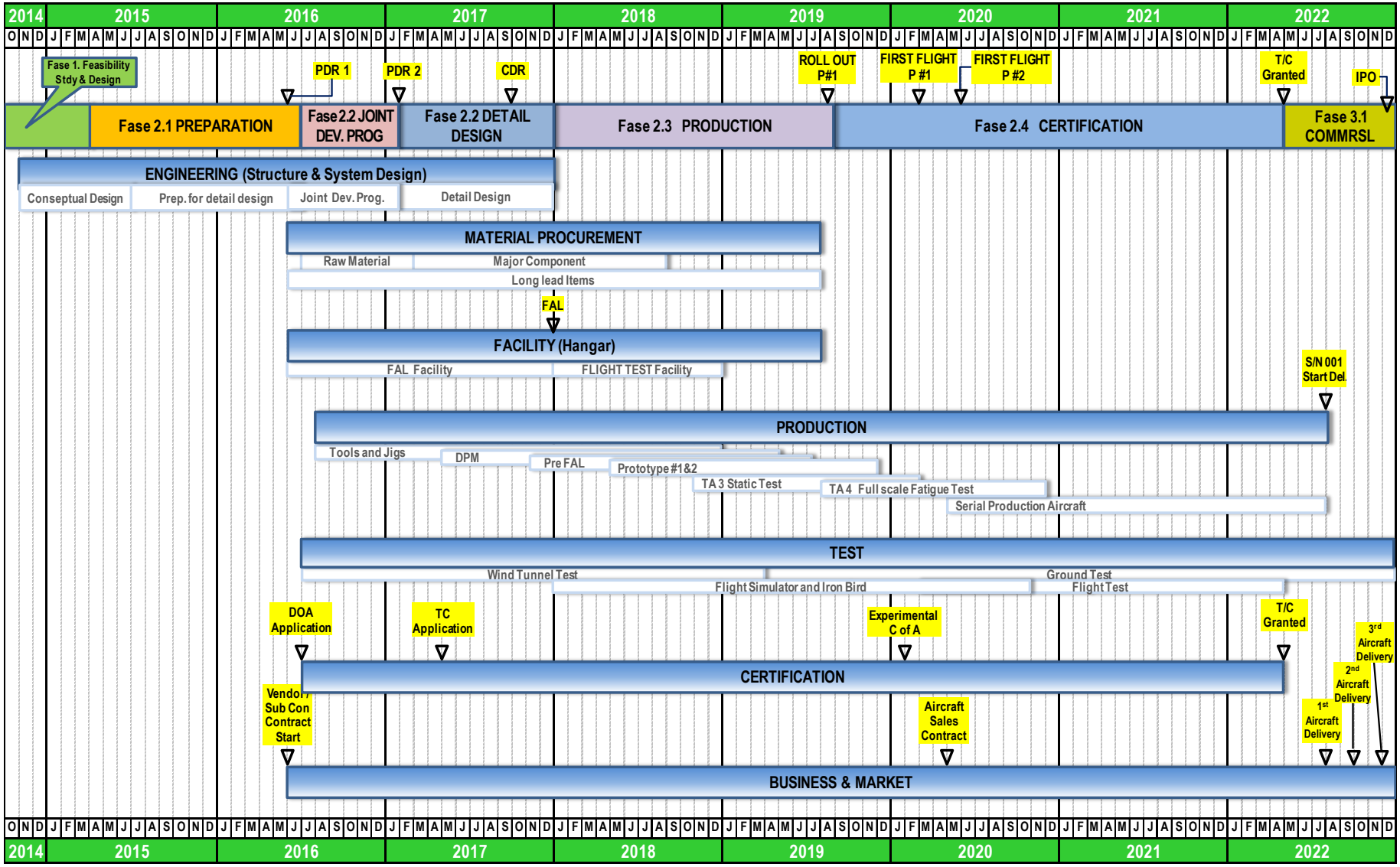
Propeller

Landing Gear

Execution plan

RAI's execution plan will take it about 4 years from now to see first flight

REGIOPROP R80 Program Master Phasing Plan



Thank you