



MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

“MALAYSIAN AEROSPACE INDUSTRY BLUEPRINT 2030 IMPLEMENTATION & CURRENT PROGRESS”

National Aerospace Industry Coordinating Office (NAICO)

26 July 2019 | PRESENTATION TO UTM FKE

Global Market Opportunity

Aerospace OEMs forecasted more than 40,000 new aircraft needed globally by 2036.

AIRBUS



US\$5.3 trillion

34,900 new aircraft



US\$6.05 trillion

41,030 new aircraft

Source: Airbus Global Market Forecast 2017
Boeing Current Market Outlook 2017 - 2036

Regional Scenario

Regional aerospace market is growing rapidly due to the increasing number of aircraft in the region. Boeing estimates that more than 4,200 new aircraft to be delivered to SEA countries by 2037.



Thailand

- U-Tapao Int. Airport expansion project (EEC plan 2017-2021).
- Strategic collaboration with Airbus.
- Thailand 4.0: Aerospace as one of five growth engines.
- 10 years to develop regional MRO capability.



Singapore

- 10% of global MRO output.
- Repair stations & workshops.
- Aerospace spares hub.
- Commercial aviation hub & MRO cluster.
- Presence of OEMs.
- Strong local champion.



Vietnam

- Growing LCC business creating opportunity for MRO activities.
- New MRO cluster @ Long Thanh International Airport Development Project and Danang Airport.



Indonesia

- Strong contender for commercial MRO activities through GMF AeroAsia.
- Growing LCC business is expected to grow MRO activities in Batam.



Philippines

- Philippines Investment Priority Plans 2017 included MRO as focus sector.
- MRO cluster @ Clark International Airport and Clark Freeport Zone.



Malaysia: A Regional Champion



National Policy On Aerospace Industry

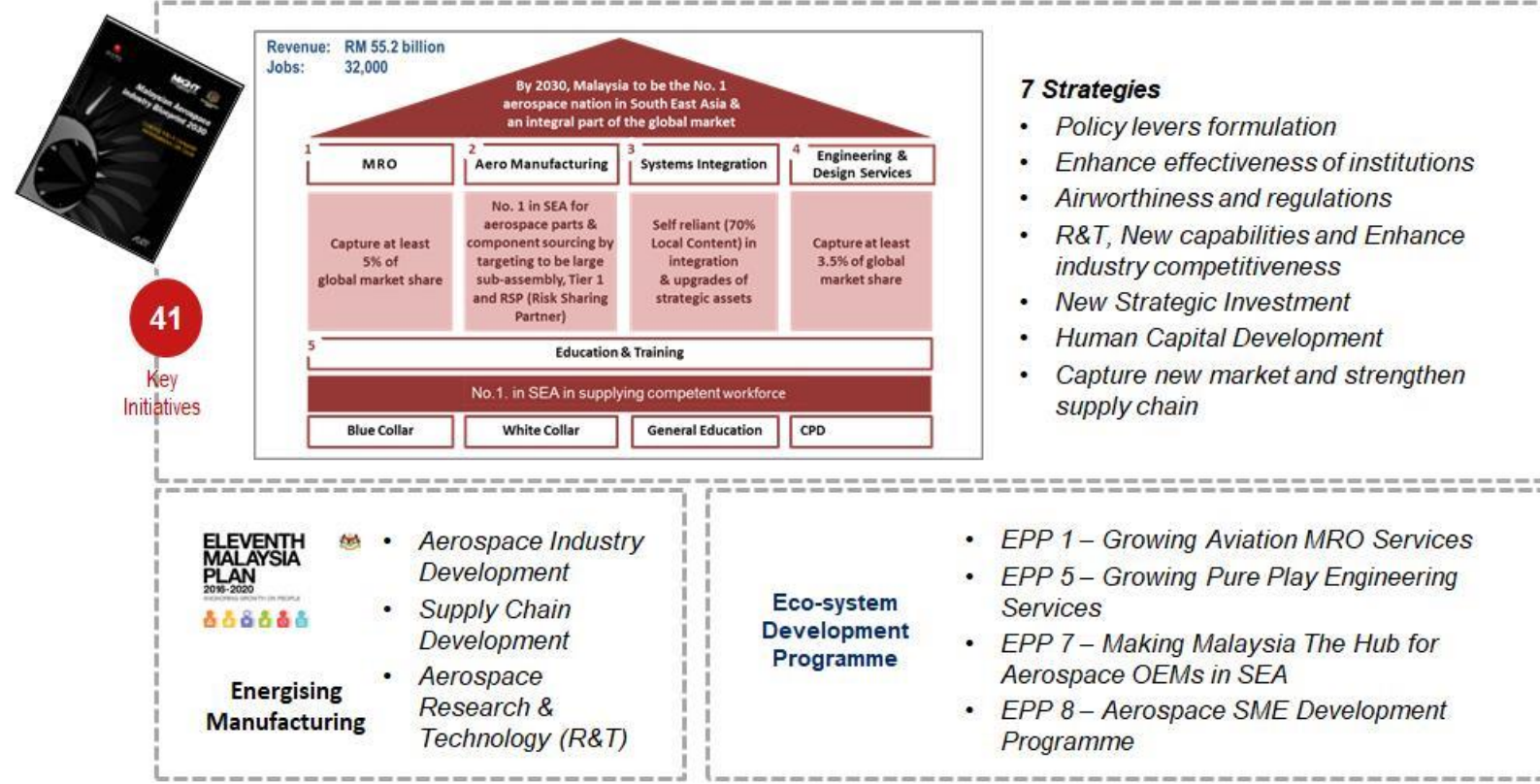
**Cruising Into
A Complete
Aerospace
Eco-system**

**No 1
Aerospace
Nation in SEA**

RM 55.2 billion revenue
32,000 jobs
by 2030

Aerospace Industry Blueprint 2030

Malaysian Aerospace Industry Blueprint 2030 has set a target for Malaysia to become the No. 1 aerospace nation in South East Asia & integral part of the global market.



The Malaysian Aerospace Council (MAC) provides vision, direction and the overall development plan for the national aerospace industry.

The National Aerospace Industry Coordinating Office (NAICO) was established to undertake the implementation and monitoring of aerospace industry development initiatives.

Implementing Agencies

Various ministries and agencies involved in developing the overall aerospace industry ecosystem in Malaysia.



Military Operations



Civil Regulations



Malaysia Aerospace Council



Space Policy & Regulations



SME's Development



UNIVERSITI TEKNOLOGI MALAYSIA



Military Regulations



Malaysian Aviation Commission
Suruhanjaya Pengebangan Malaysia
Economic & Commercial Regulations



Industry Facilitator



Remote Sensing Applications



UNIVERSITI SAINS MALAYSIA



Defence & Security R&D



Investment Promotion



Satellite Applications



UNIVERSITI ISLAM MALAYSIA



UNIVERSITI PUTRA MALAYSIA



Export Promotion



UNIVERSITI TUN HUSSEIN ONN MALAYSIA



Productivity Enhancement

Education & Training

Strategy 1: Apply Policies that will impact the Future Landscape of the Industry

Procurement Policy, Industry Collaboration Program & Space Policy are key in shaping the future landscape of the industry.

- 1.1 Formulate **guidelines** that will address local industry participation in strategic acquisition projects.
- 1.2 Formulate clear policy on **acquisition of MRO services** for Government aircraft emphasizing on “performance” of the MRO provider.
- 1.3 Encourage capable local design/engineering & systems integration companies to **participate in upgrades and modification contracts**.
- 1.4 Acquire systems that can be developed by local industry (i.e. UAV, Simulators & Ground Systems) from **local sources**.
- 1.5 Participate in International Aircraft Development program as a **risk sharing partner** to maximize opportunities to capture design & build work packages.
- 1.6 Use **Industry Collaboration Program (ICP)** as means to enter new market and enable technology transfer.
- 1.7 Develop a robust **space program** based on National Space Policy and Outer Space Treaty.

Strategy 2: Enhance the Effectiveness of Institutions that have Direct Influence on the Growth of the Industry

Government buyers, industry regulator & SME developer must remain effective in influencing the growth of the industry.

- 2.1 Promote awareness amongst the procuring Ministries on the potentials of the industry to participate in Government projects.
- 2.2 Corporatize DCA to transform it into Malaysian Aviation Authority, enabling it to expand capability in certification of aircraft parts manufactured in Malaysia within EASA framework
- 2.3 Expand DGTA to make it capable of regulating more design & engineering activities undertaken by local industry hence, become an important facilitator of industry development.
- 2.4 Optimize the role of SME Corp in assisting the growth of hi-tech, global SMEs.
- 2.5 Establish a special entity, National Aerospace Coordinating Agency, to coordinate the blueprint implementation until 2030.

Strategy 3: Improve Airworthiness and Space Regulations and Promote Green Practices

Civil & military airworthiness regulations and regulation of space related activities must promote and facilitate industry growth as well as green practices.

- 3.1 Harmonize civil and military airworthiness regulations / practices to unify industry certification process, simplify workforce licensing and facilitate industry innovation.
- 3.2 Empower the National Space Agency (ANGKASA) to **administer and regulate astronautics** related activities and satellite applications.
- 3.3 Introduce regulations that ensure **disposal activities** are carried out in accordance with “green” practices & standards, and promote MS ISO 50001 certification to encourage aerospace companies to **adopt energy efficiency** and subsequently achieve cost-competitiveness.

Strategy 4: Invest in R&T to Develop New Capabilities and Enhance Industry Competitiveness

S&T application in aerospace has to be intensified to enhance industry competitiveness and develop new capabilities.

- 4.1 Develop **National Aerospace R&T Roadmap** to prioritize industry-led collaborative R&T.
- 4.2 Focus **aerospace R&D** in “improvements in MRO processes”; “aircraft structural integrity”; “advanced manufacturing processes” (namely robotics & 3D Printing); and UAV payloads, data link, mission system, launch/retrieve for application in civil & military.
- 4.3 Invest in **capability development programs** in avionics, mission systems, sensors integration; Electronic Warfare (EW); Ground Systems, ATC/ADC; and missiles/rockets development.
- 4.4 Empower **RMAF’s CAESE** as the national center for Advanced Systems focusing on avionics & equipment integration and as national authority for Operational Test & Evaluation, and **MINDEF’s research institution (STRIDE)** as the national center for Aircraft Structural Integrity.
- 4.5 Empower the National Space Agency (ANGKASA) to coordinate R&D in astronautics science and technology as well as satellite applications through the National Space Center, Banting
- 4.6 Establish **National Composite Center**, as CoE for composite R&T focusing on new production technologies, thermoplastics & green composites.
- 4.7 Invest in **automation** to reduce labor content in parts & components manufacturing.

Strategy 5: Promote Aerospace Investments through Incentives and Matching Funding

Growth momentum has to be maintained and this requires investments to be promoted via incentives & matching funding.

- 5.1 Maintain MRO & Aero-Manufacturing as **promoted activities** for investment promotion beyond 2020.
- 5.2 Support the **growth of aerospace SMEs** through matching funding for purchase of capital equipment; AS9100 / NADCAP certifications & OEM approvals; and participation in international trade shows.
- 5.3 Promote investments (**FDI/DDI**) in “Component & Engine MRO”; “STC Development”; “Aero-Manufacturing” esp. Airframe Equipment & Engines assembly as well as OEM regional HQ for parts sourcing; and other aero-product development activities.
- 5.4 Attract FDI from **raw material supplier** to set up warehouse in country and serve the region.

Strategy 6: Attract and Prepare the Workforce of Tomorrow for Malaysia and the Region

Capable white collar & highly skilled blue collars are the workforce of tomorrow for Malaysia and the region.

- 6.1 Establish “**Center for Learning, Skill & Employment**” for aerospace industry to coordinate all matters between industry & academia relating to education, qualification, CPD and job placement.
- 6.2 Prepare sufficient **Design Engineers** with signatory status to capture bigger design & build work packages in the next generation single aisle project.
- 6.3 Establish a structured program & encourage training institution to invest in **aero-structure manufacturing & large format machining training** emphasizing on blue collar workforce productivity.
- 6.4 Develop a structured program to continuously **expose Government personnel** involved in strategic Government acquisitions and Though-life Support.
- 6.5 Use **NCC & CAESE as training centers** for composite manufacturing and system integration respectively, and employ ANGKASA to develop a structured human capital program with industry & academia
- 6.6 Encourage MRO training institutions to invest in **B-2 LAE program**.
- 6.7 Develop a structured program to **migrate retired military workforce** into civil sector.

Strategy 7: Capture New Market and Strengthen Local Supply Chain

Expand current business, capture new markets and enhance the capacity of local supply chain to collectively grow the industry revenue and market share.

- 7.1 Leverage on **Bi-Lateral relationships** to access bigger defense regional market.
- 7.2 Offer **Fleet Technical Management / Part 21 Design Services**. to local & regional airlines & aircraft owners.
- 7.3 Attract OEMs to AAC as their main **offshore center for engineering services**.
- 7.4 Explore new market in **re-manufacturing** & end-of-life aircraft disposal.
- 7.5 Increase **number of certified SMEs at Tier 3 & 4** undertaking detailed parts manufacturing and tooling / jigs, including migrating companies from other sectors.
- 7.6 Set up **Central Secondary Process facility** to serve increased number of Tier 3 & 4 metal players.
- 7.7 Expand **MIAC role** to enable MIAC Subang to be the preferred integrated hub for aviation services and aerospace park; an example to other centers in Senai and Melaka.

Time-Based KPIs

To ensure implementation of the Blueprint resulted in the desired outcomes, KPIs are assigned to each focus area based on the specific milestones.

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
MRO: (Market share)						3%											5%
A-Mfrg: (Position)						No.2											No.1
E&D: (Market share)						0.03%											3.5%
SI: (Local content)						10%											70%
T&E: (Position)						-											No.1

Source: Blueprint 2030

Blueprint Implementation Status* (1/2)

24

On-going Implementation

9

On-going Coordination

8

Under Review

- 1 Policy levers formulation**
- 1.1 Aerospace Industry Collaboration Program (ICP) Strategy
 - 1.2 Formulation of Performance Based Contracting (PBC)
 - 1.6 Implementation of ICP initiatives by BIP
 - 1.7 National Space Policy (ANGKASA)

- 2 Enhance effectiveness of institutions**
- 2.1 Awareness on local capability through MyAero, LIMA and DSA
 - 2.2 Transformation of Department of Civil Aviation (DCA) to Civil Aviation Authority Malaysia (CAAM)
 - 2.4 Aerospace SMEs development initiatives
 - 2.5 Establishment of National Aerospace Industry Coordinating Office (NAICO)

- 3 Airworthiness and regulations**
- 3.1 Initiatives to establish SIRIM as AS9100 Cert. Body
 - 3.2 ANGKASA as centre for space related activities and satellite application

- 4 Research & Technology, New capabilities and Enhance industry competitiveness**
- 4.1 National Aerospace R&T Roadmap
 - 4.2 Industry-led R&T under 11MP High Value Added & Complex Programme
 - 4.5 National Space Centre leading astronautics R&D
 - 4.6 Composite R&T implemented under AMIC as COE for Industry-led Aerospace R&T
 - 4.7 Initiative on automation implemented under 11MP High Value Added & Complex Programme and Industry4WRD initiative

- 5 New Strategic Investment**
- 5.1 Promotion of Malaysian Aerospace Eco-system at International Airshows and KLIABC
 - 5.2 Development of Malaysian SMEs in the global aerospace manufacturing industry
 - 5.3 Investment promotions programme by MIDA

*As of June 2019

To date, NAICO has facilitated the implementation of twenty four (24) initiatives in the Blueprint.

Blueprint Implementation Status* (2/2)



To date, NAICO has facilitated the implementation of twenty four (24) initiatives in the Blueprint.

6 Human Capital Development

- 6.1 NAICO as Industry Lead Body for Aerospace Industry and Technical Expert Panel for Malaysia Board of Technologists (MBOT)
 - Occupational Framework for the Aerospace Industry
 - Critical Occupational List for Aerospace Industry
- 6.3 Structured training programme
 - Aerospace NOSS: Aero Assembly, MRO B2, QA
 - Prior Recognition Program
 - Professional Technologists & Certified Technician
 - Master in Aviation Management (UniKL MIAT)
 - BEng in Aerospace Manufacturing (UTHM)
 - BEng Tech Aerospace Composite Manufacturing (DRB-Hicom U)
 - Diploma Eng Tech Aerospace Composite Manufacturing (DRB-Hicom U)
 - Industrial Diploma Aerospace Composite Manufacturing (KKTU)
- 6.6 B2-Avionics LAE programme – NOSS for B2

7 Capture new market and strengthen supply chain

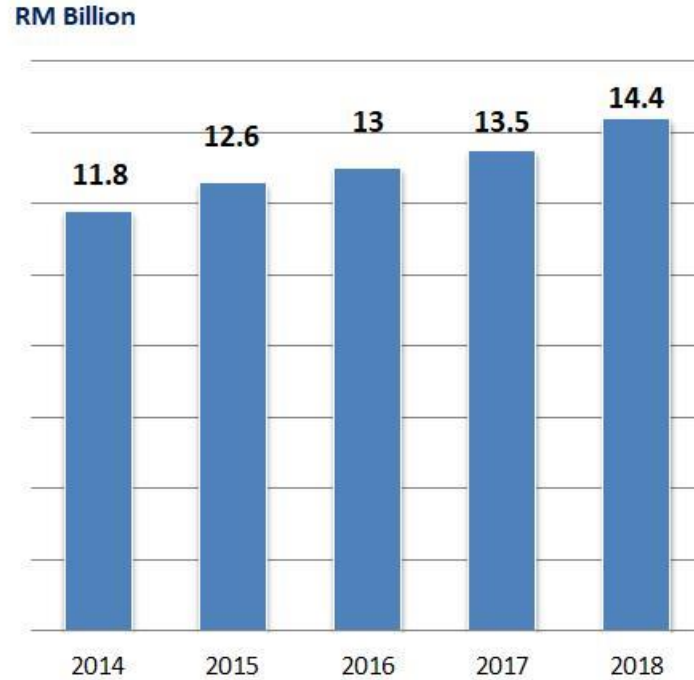
- 7.5 Development of Malaysian SMEs in the global aerospace manufacturing industry EPP8
- 7.6 Investment of Asahi Aero & T7 Kilgour as independent Secondary Process Facility
- 7.8 Expansion of aerospace park
 - KLIA Aeropolis
 - Subang Aerotech Park
 - UMW High Value Manufacturing Park



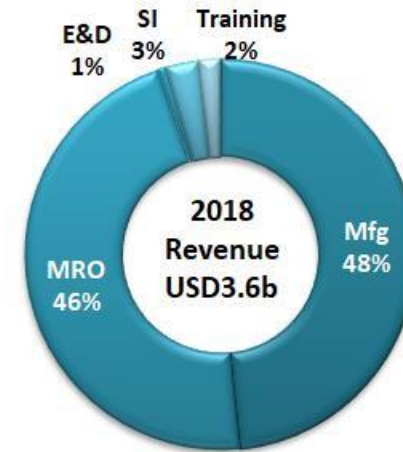
*As of May 2019

Industry Performance

Malaysia's aerospace industry continues to grow since the implementation of the Malaysia Aerospace Blueprint 2030 in 2015.



- The industry recorded **RM14.4 billion (USD 3.6 billion)** revenue with **24,500 highly skilled workers** in the industry.
- Aerospace manufacturing remains the major contributor with 48% revenue followed by MRO at 46%.

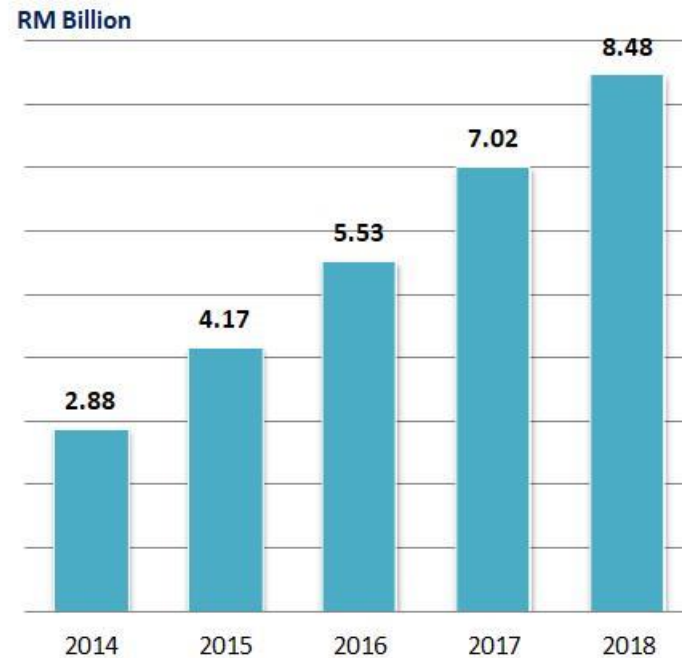


Export Performance & Investments

Malaysia's aerospace export in 2018 recorded RM8.48 billion (USD 2.1 billion), an increase of 20% compared with 2017.

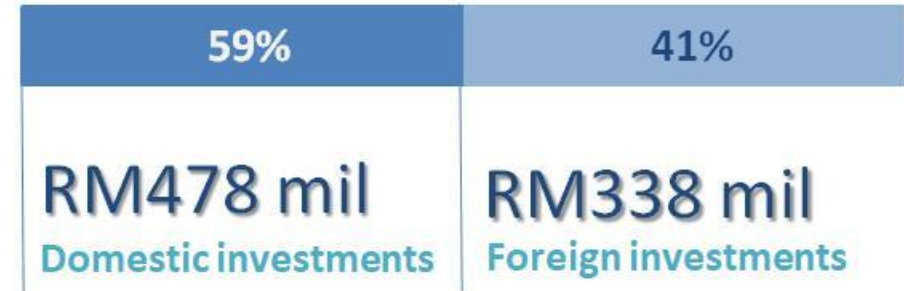
Approved Investments in the Aerospace Industry for 2018 was RM816.3 million.

Export on Aerospace



11 Approved investment projects

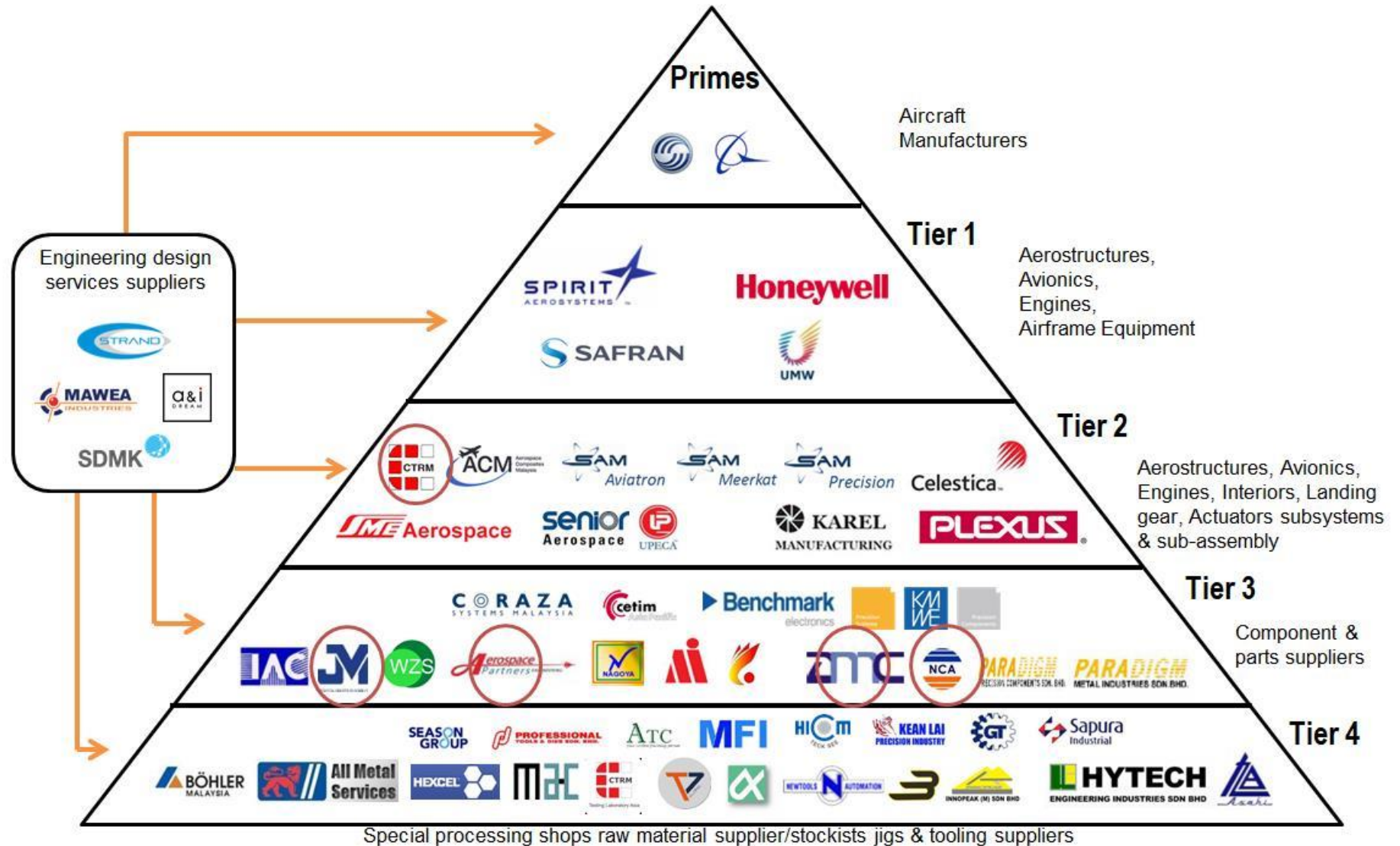
Total **RM816.3 mil**



2,442 Job opportunities

Aero-Manufacturing Supply Chain...

Malaysia aerospace manufacturing supply chain consist of both foreign and local companies producing aerospace parts and components for global market.



MRO Supply Chain...

Malaysia MRO supply chain covers the whole spectrum of MRO activities.



Airframe MRO (Source: AAT)



Airframe MRO (Source: SAE)



Component MRO (Source: SR Technic)

Line MRO

Airframe MRO

Component MRO

Engine MRO

Modifications

FBO

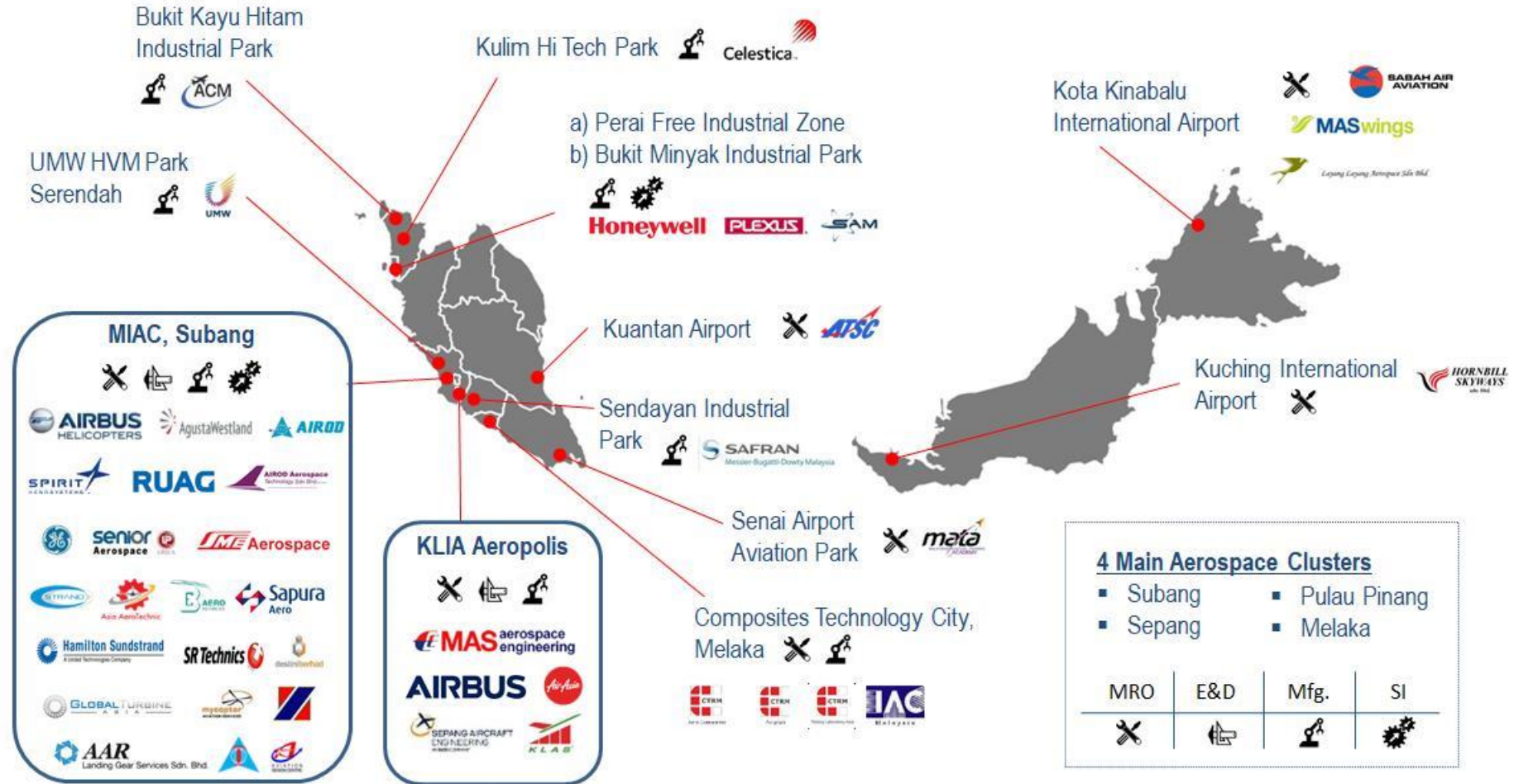
Engineering Services

Main MRO Players in Malaysia

Line MRO	MAS aerospace engineering	MASwings	FireFly	Malindo air	AirAsia	KLAP	ADMAL	Dviation				
Airframe MRO	MAS aerospace engineering	SEPIANG AIRCRAFT ENGINEERING	HAWKER PACIFIC	ATSC	ASIA AEROSPACE	SR	AIROD Aerospace Technology Sdn Bhd	AIROD	AJ AEROSERVICES	CAS		
Component MRO	Parker Aerospace	SR Technics	Honeywell	SA	AEROCLEAR	AEROKWAI	RUAG	Hamilton Sundstrand	AgustaWestland	AERO	mycopter	GKN AEROSPACE
Engine MRO	GE	GLOBAL TURBINE										
Modifications	AIROD	MAS aerospace engineering										
FBO	Sapura Aero	AeroHandlers	SKYPARK									
Engineering Services	STRAND	AIRBUS	AVIATION DESIGN CENTRE	CAIDMARK	STRIDE	CAeD						

Distribution of Aerospace Activities

Location of main aerospace activities and leading aerospace players in Malaysia.



World Class Capabilities & Products

Malaysia is currently a critical supplier for various aerospace products.

Spirit AeroSystems: Aero-structure Assembly



UMW Aerospace: Fan Case Production



CTRM: Fan Cowl Production



Safran Landing Systems: Carbon Brakes Production



Strengthening the Supply Chain

Quality investments triggered the needs to strengthening the local eco-system.

SMEs development programs: to nurture local companies to become global players.

GKN Aerospace: Investment on Repair Facility



GKN AEROSPACE ANNOUNCES REPAIR FACILITY FOR AIRCRAFT ENGINE COMPONENTS IN MALAYSIA



T7 Kilgour: Investment on Metal Treatment



Investment:
RM 81.7 million

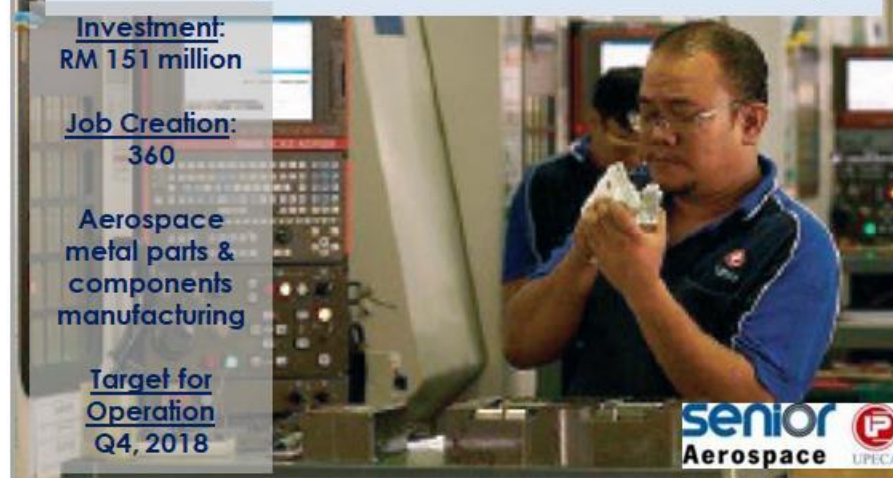
Job Creation:
95

Metal treatment for aero parts & components

Target for Operation
Q4, 2018




Senior Aerospace UPECA: Investment on New Facility




Investment:
RM 151 million

Job Creation:
360

Aerospace metal parts & components manufacturing

Target for Operation
Q4, 2018



Developing SMEs in the Global Aerospace Manufacturing Industry



Cranfield Management Development Centre



Industry 4.0 Implementation

Competency development programs were implemented under the High Value-Added & Complex Product Initiative of RMK11.

Virtual Reality for Aerospace Training



Automated Spray Painter



Online Robot

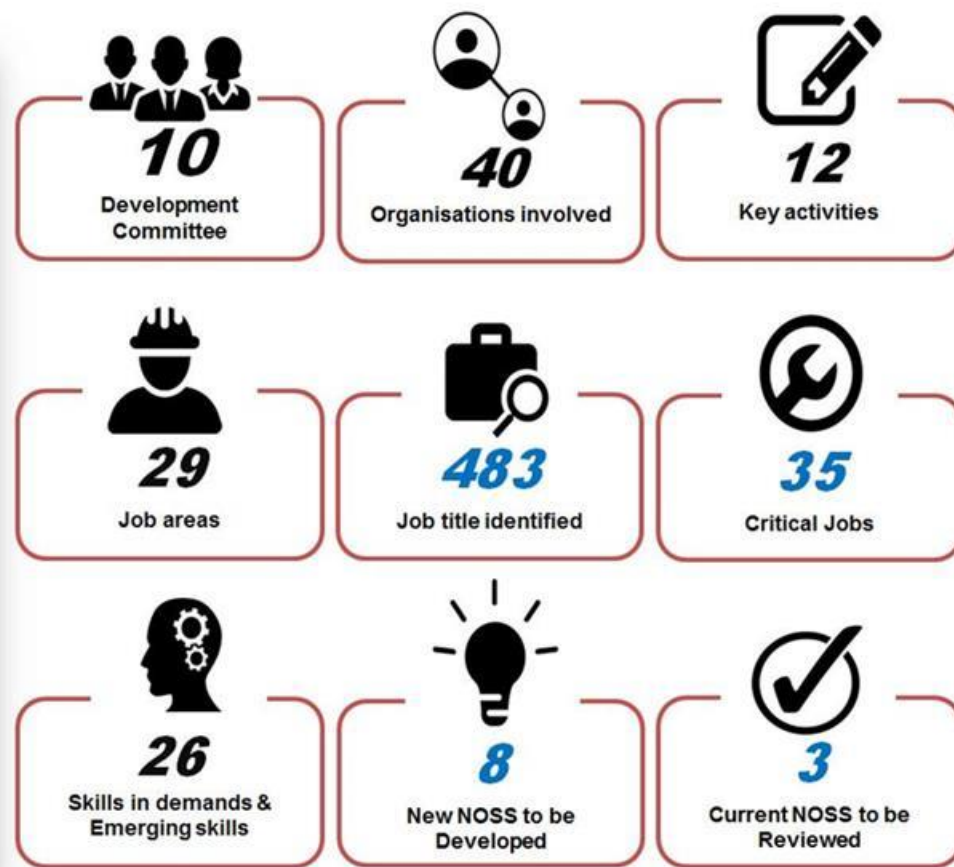
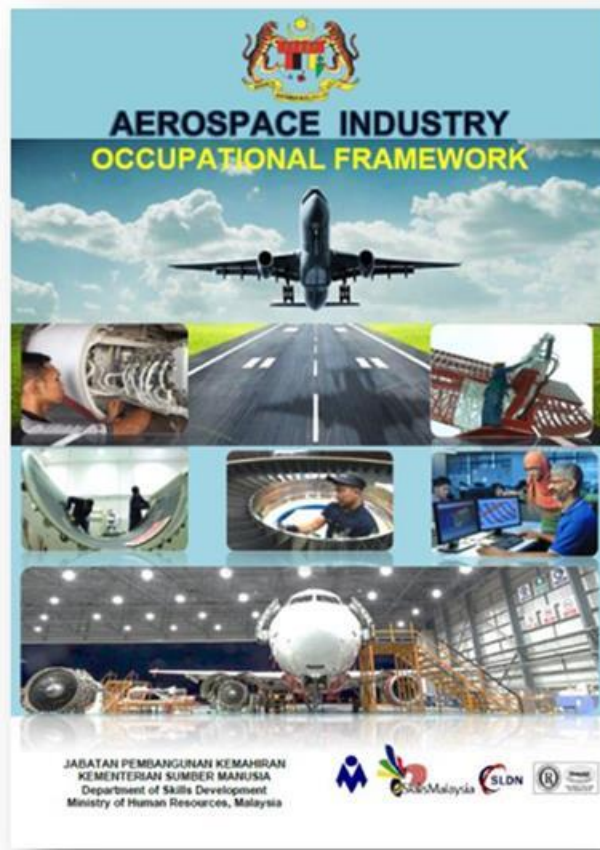


Automatic Fiber Placement



Aero Ind. Occupational Framework

Aerospace Industry Occupational Framework - identified areas to be further developed to produce highly-skilled workforce for the industry.



Recent Initiatives

New initiatives to further promote aerospace industry development include initiatives at state level.



AS9100

Certification Body

Centre for Aerospace Testing, Inspection & Calibration

AVIATAR



Nurturing Talents, Creativity & Innovation

Selangor Aerospace Action Plan

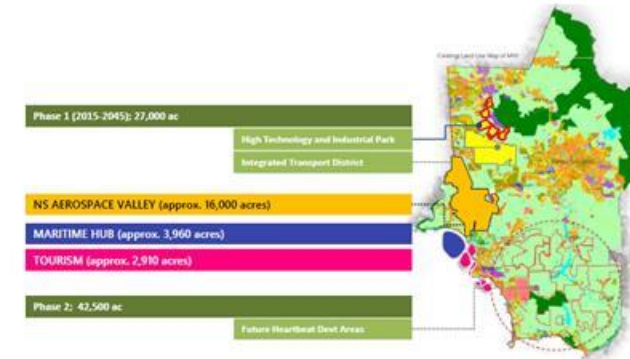


Kedah Northern Aeropolis



NS Aerospace Valley

PORT DICKSON INTEGRATED DEVELOPMENT
NS AEROSPACE VALLEY, MARITIME HUB & TOURISM



“The aerospace industry houses the most complex core technologies which are applicable to other industries and provide critical technologies for the future.”

TUN DR. MAHATHIR BIN MOHAMAD
LIMA '97 Langkawi





naicomalaysia@miti.gov.my

Thank you

MENARA MITI

No. 7, Jalan Sultan Haji Ahmad Shah, 50480 Kuala Lumpur, Malaysia
Tel: 603-8000 8000 | Fax: 603-6206 4693 | Email: webmiti@miti.gov.my | Website: www.miti.gov.my



www.miti.gov.my

MITIMalaysia

mitimalaysia

MITIMalaysia

MITIMalasiayoutube