

## Overview of the South African Aerospace Industry Landscape

The South African aerospace industry is active and vibrant and can demonstrate a long and proud history of aerospace innovation, research, development and manufacturing. The industry, which was already manufacturing full aircraft in the late 1920's has turned that early step and many subsequent innovations into long standing partnerships with many of the world's leading aerospace original equipment manufacturers.

Many South African aerospace companies are single source suppliers of components and assemblies to the likes of Saab, Boeing and Airbus to name a few. In addition South Africa also has a long track record of producing full aircraft and complex aircraft systems from for instance the Rooivalk helicopter all the way to general aviation aircraft such as the Sling, to building aircraft under licence, such as the Dassault Mirage etc. South Africa also has a very mature research and development agenda through which the country has become a globally recognised leader in key technological offerings such as titanium beneficiation, air traffic management, avionics and electronic warfare systems and UAV's, to name a few.

The sector in South Africa consists of a range of stakeholders in general aviation, commercial, aviation, military aviation, air traffic management, aircraft part and system manufacturing, integration, propulsion avionics, sensors, ICT systems, and advanced manufacturing, including university and science council based fundamental research into new materials (titanium and natural composites).

Given the increased overlap between products intended for defence and civilian use, the aerospace industry includes companies that produce defence equipment or products by making use of civilian technologies, or which manufacture dual-use products that are saleable in both defence and non-defence markets. The technological intensity of the aerospace and defence sector acts as a driver for new technologies and technical skills to be developed in the country, that are diffused to other sectors thereby intensifying industrialisation and contributing to the evolution towards a knowledge economy.

The industry consists of 120 well established local companies and state owned entities employing over 5000 specialist, scientists, engineers, artisan and technicians, with an approximate turnover of R5B/annum.

### POSSIBLE COLLABORATION

Four main types of collaboration could be offered in the aerospace sector:

- a. Business matching
- b. Business Supporting Organizations Collaborations
- c. Tertiary education and research exchange
- d. Local and National Government interaction

a. BUSINESS MATCHING: list of South African SMEs invited to the matchmaking event

Company	Activity	Sector	Commodity	Description
Aerosud Aviation <a href="http://www.aerosud.co.za">www.aerosud.co.za</a>	Established leader in the aviation industry supplying integrated manufacturing solutions. Aerosud is a smart supplier, capable of adding value to partnerships involving programme management, design, development and production processes.	Commercial aviation	Metal assemblies  Machinings Composites  Cabin Electrical Design&Engineering Production	Small part manufacture; Medium sized structural assemblies. Small and Medium components – soft metals. Non-structural; Small and Medium sized structural composites; Medium sized stamp forming; Composite assemblies. Vacuum form interiors; Galleys, closets etc. Small and medium sized looms. Design; Structural analysis; Product and material qualification. Industrialization; Prototyping; Process qualification; Full scale productions.
Denel Aerospace Systems <a href="http://www.denel.co.za">www.denel.co.za</a>	Specialises in advanced manufacturing of complex aerostructures.	Aerospace & Defence	Design&Engineering Machining Metals Composites	Aerospace systems design and manufacturing (structural analysis, optimization); Part manufacturing (medium and assemblies).
Denel Dynamics <a href="http://www.deneldynamics.co.za">http://www.deneldynamics.co.za</a>	Innovative leader in advanced systems technology. Its core business includes tactical missiles, precision guided weapons, unmanned aerial vehicle systems and space solutions. Products are designed, developed and manufactured in South Africa.	Aerospace & Defence	Design&Engineering Machining Metals Composites	Missile and UAV design and manufacturing; Machining of metals (small and medium size); Full system manufacturing
Denel Spaceteq <a href="http://www.spaceteq.co.za">http://www.spaceteq.co.za</a>	Provider of high-performance small- and medium-sized satellites and related systems and solutions to the local and international aerospace market.	Space	Design&Engineering	Space satellite systems design and development
ATNS <a href="https://www.atns.com">https://www.atns.com</a>	Provides expert Air Traffic Control and Management solutions for South Africa as well as 10% of the world's airspace.	Civil Aviation	Services - ATM	Air traffic management
Aeroservices <a href="http://aeroservices.co.za">http://aeroservices.co.za</a>	Buying and selling aircraft surplus spares and manufacturing composite structures for the local aerospace industry	Commercial Aviation	Cabin Design&Engineering  Production	Vacuum form interiors; Galleys, closets etc. Design; Structural analysis; Product and material qualification. Industrialization.
Daliff Precision Engineering <a href="http://www.daliff.co.za">http://www.daliff.co.za</a>	Machined components for the aerospace, avionics/electronics and defence industries.	Aerospace & Defence	Metal assemblies Machinings	Small assemblies Small and Medium components – soft metals; Small and Medium components – hard metals

Electrothread <a href="http://www.electrothread.com">http://www.electrothread.com</a>	Design and Manufacture of High Performance Electrical Harness and Cable Products as well as other Systems and Sub-Assemblies for Military, Aerospace, Motorsport and Railway Industries.	Aerospace & Defence	Electrical	Wire marking; Small and medium sized looms.
AAT Composites <a href="http://www.aatcomposites.com">http://www.aatcomposites.com</a>	Supplier of high performance composite parts for Premium aircraft seat manufactures and the automotive industry.	Commercial Aviation	Composites Cabin Production	Non-structural; Small and Medium sized structural composites; Composite assemblies. Seats. Industrialization; Full scale production.
African NDT Centre <a href="http://www.andtc.com">http://www.andtc.com</a>	NDT centre of excellence in South Africa providing inspection services for the integrity of specimens or parts in the aerospace as well as other industries. Specialist consultation services provider to a variety of diverse industries that operate in the NDT environment and has well equipped training facilities and expert training facilitators.	Aerospace & Defence	Non-destructive testing	Radiographic testing; Penetrant testing; Ultrasonic testing/Phased array; Training/Qualification
Astra Aviation <a href="http://www.astra-aviation.com">http://www.astra-aviation.com</a>	Provides service and efficiency to airlines operating in Africa including flight support services, airline support services and systems and equipment.	Commercial Aviation	Design&Engineering OEM	Design; Structural analysis; Product and material qualification. Trainer.
Jonker Sailplanes <a href="http://www.jonkersailplanes.co.za">http://www.jonkersailplanes.co.za</a>	Sailplane Manufacturer.	Commercial Aviation	Composites Design&Engineering Production OEM	Small and Medium sized structural composites; Composite assemblies. Design; Structural analysis; Product and material qualification. Industrialization; Prototyping; Process qualification; Full scale productions. Sailplanes
Slick Aircraft Company <a href="http://www.slickaircraft.com">http://www.slickaircraft.com</a>	Established to promote and market the Slick 360 aircraft as well as to do research and development on existing and new projects.	Commercial Aviation	Composites Production OEM	Small and Medium sized structural composites; Composite assemblies. Prototyping. Experimental type aircraft.
The Airplane Factory <a href="http://airplanefactory.co.za">http://airplanefactory.co.za</a>	Focuses on the development and manufacture of high quality, high utility aircraft. The Airplane Factory's first aircraft, the Sling, is a competitively priced high all round performance aluminium light sport aircraft which can be purchased ready to fly or as a homebuild kit.	Commercial Aviation	Metal Assemblies Composites Electrical Design&Engineering Production OEM	Small part manufacture; Medium sized structural assemblies. Non-structural; Small and medium sized looms. Design; Structural analysis; Product and material qualification. Industrialization; Prototyping; Full scale production. Experimental type aircraft

TitaMED Precision Engineering <a href="http://www.titamed.co.za">http://www.titamed.co.za</a>	Specialises in high precision engineering with exotic materials such as titanium, stainless steel, nitronic, aluminium and high performance polymers.	Commercial Aviation	Machinings	Small and Medium components – soft metals; Small and Medium components – hard metals
TMI Dynamics <a href="http://www.tmi-za.com">http://www.tmi-za.com</a>	TMI Dynamics provides effective innovative solutions through cutting-edge modelling techniques, real-time simulations and control for global aerospace, defence and automotive industries.	Aerospace & Defence	Modelling & Simulation	Systems modelling; Simulator design and manufacturing
Hensoldt <a href="https://www.hensoldt.net">https://www.hensoldt.net</a>	Is a globally leading supplier of premium sensors for security and surveillance missions. Capitalising on more than a hundred years of experience in high-performance technology, they are a world market leader for missile warning systems and submarine periscopes. Moreover, HENSOLDT is well represented in the market for radar systems, optronics and electronic protection systems.	Defence	Design&Engineering Manufacturing Electrical Metals Composites Optics	Sensor design and manufacturing for, surveillance, and situational awareness; Optics manufacturing; Coatings
Incomar <a href="http://www.incoaero.com/">http://www.incoaero.com/</a>	Incomar Aerospace and Defence Systems (IADS) is a defence company with its primary focus on providing specialist support to the defence industry and the South African National Defence Force (SANDF) in collaboration with Incomar Aeronautics (IA) and Evilox 381.	Defence	Design&Engineering	Electronic systems design; Test flight and development
TETA <a href="http://www.teta.org.za">http://www.teta.org.za</a>	The Transport Education and Training Authority (TETA) is tasked with the responsibility of education, training and skills development in the South African Transport Sector.	Aviation Training	Sector education and training authority	Regulatory body
CAA <a href="http://www.caa.co.za">www.caa.co.za</a>	Is a stand-alone authority mandated with controlling, promoting, regulating, supporting, developing, enforcing and continuously improving levels of safety and security throughout the civil aviation industry. The SACAA is an agency of the Department of Transport (DoT).	Aviation Regulation	Civil aviation regulation	Regulatory body

Aerial Monitoring Solutions <a href="http://aerialmonitoringsolutions.co.za">http://aerialmonitoringsolutions.co.za</a>	AMS offers reliable and efficient unmanned systems to aid the customer in effectively and safely undertaking monitoring duties. It is focused on supplier high quality system to the commercial civil unmanned aircraft market.	Aerospace & Defence	UAV manufacturing	Design and manufacturing; Machining
Challenge Air <a href="http://www.challengeair.co.za">http://www.challengeair.co.za</a>	The Challenge Air scope includes any aircraft from crop-dusters and helicopters to large airliners. The company is capable of designing most modifications and repairs to these aircraft utilizing in-house design and analysis with internationally renowned NX Nastran finite element software.	Commercial Aviation	Manufacturing of general aviation systems	Manufacturing; Design; Analysis.
SCS Aerospace Group <a href="http://scshgroup.com/">http://scshgroup.com/</a>	It comprises of eight subsidiary companies and provides commercial satellite solutions including advanced engineering services, decision making and operational solutions using space and related technologies.	Space	Satellite systems design	Small and micro satellite design and manufacturing Mission analysis and optimisation
Space Advisory Company <a href="http://www.spaceadvisorycompany.com">http://www.spaceadvisorycompany.com</a>	It offers a number of services spanning Systems Engineering, Functional Area Engineering, Space Craft Design including Structural, Thermal Engineering Assembly, Integration and Testing (AIT) and sub-systems that include System Level Software, Attitude Determination and Controls Systems (ADCS) and Power System.	Space	Satellite systems management	Systems engineering in specific space fields; Radar (synthetic aperture); Electro-optics
Paramount Aerospace <a href="http://www.paramountgroup.com">www.paramountgroup.com</a>	The company has one of the strongest aerospace offerings, encompassing world leading capabilities in mission sensors and systems, avionics, logistical and planning support, R&D, UAVs and systems integration.	Aerospace & Defence	Design Manufacturing MRO	Avionics systems design and manufacturing; Electronics and HUMS; Maintenance repair and overhaul of aircraft; Aircraft system design and upgrade; Manufacturing

South African manufacturers all purchase raw material, adhesive, paints, electrical components from overseas and specialised manufacturing machinery from USA and Europe.

*b. BUSINESS SUPPORTING ORGANIZATIONS COLLABORATIONS: list of South African Industry grouping*

In South Africa there are three main industry grouping association on the Aerospace field:

- AMD – Aerospace, Maritime and Defence Industries Association of South Africa  
Its primary objectives are the representation of the industry in matters of mutual interest, and the promotion of a profitable, sustainable and responsible industry. The association is acknowledged as the only trade association of South Africa's defence industry (SADI) and is mandated by its members to promote and champion the collective interests of the industry. It comprises a cluster of leading companies in the South African private and public sector that supply defence materiel, products and services.
- CAASA – Commercial Aviation Association of South Africa  
It is a non-profit organisation with the aim to promote and protect the commercial interest of the general aviation industry in South African Aviation. Member companies include airport operators, non-scheduled operators, business aircraft operators, flying training organisations, aircraft maintenance companies and companies offering a whole range of supporting and retail services.
- CAMASA – Commercial Aviation Manufacturing Association of South Africa  
It is a non-profit company. It is the establishment of a Growth-Bilateral between Government and Industry to boost South African Commercial Aviation Manufacturing Exports through: public-private partnership, integrated growth plan, expanding advances manufacturing, future-oriented competitiveness (IoT, ind4.0)

→ CAMASA is part of the LOC of the event of December and it has identified specific area of collaboration that it is seeking to establish:

- Industry benchmarking of SME companies, gap analysis, supplier development strategies/methodologies/interventions/development process
- Industry organisation/development planning & execution
- Regional and National development strategy deployment.

*c. TERTIARY EDUCATION AND RESEARCH EXCHANGE*

A number of research centres and groups are part of the South African research and university landscape, where world-class research in the field of aerospace and space technologies is carried out. These are, e.g.:

- Council for Scientific and Industrial Research - CSIR
- National Aerospace Centre - NAC
- Stellenbosch University
- University of Cape Town
- University of the Western Cape
- Cape Peninsula University of Technology
- Wits University
- University of Johannesburg
- University of Pretoria
- Tshwane University of Technology
- Vaal University of Technology
- North West University
- University of Limpopo
- Nelson Mandela metropolitan University
- Central University of Technology

#### d. LOCAL AND NATIONAL GOVERNMENT INTERACTION

The Department (Ministry) of Trade and Industry (DTI) has put in place and manages a number of plans, actions and programmes aimed at facilitating and supporting an inclusive growth and the structural transformation of the South African economy.

- *National Industrial Policy (IPAP)*: The Industrial Policy Action Plan (IPAP) is firmly entrenched in Government's overall policy and plans to address the key challenges of economic and industrial growth and race based poverty, inequality and unemployment.
- *Black Industrialist Program*: black people directly involved in the origination, creation, significant ownership, management and operation of industrial enterprises that derive value from the manufacturing of goods and services at a large scale
- *Invest SA*: it is a division of the DTI providing a One-Stop-Shop service to investors. It provides investments promotion, facilitation and aftercare, which is geared at fast-tracking projects and reducing government red-tape. It facilitates the increase in the quality and quantity of domestic and foreign direct investments by providing and investment recruitment, problem-solving and information service to retain and expand investment in South Africa and Africa. It actively markets, promotes and facilitates investments in key high-yielding growth sectors of the South African economy.
- *Aerospace Industry Support Initiative (AISI)*: the initiative is aims at positioning the South African aerospace and defence related industry as global leader, in niche areas, whilst ensuring effective interdepartmental participation and collaboration. The initiative comprises four programmes: Supplier development; Sector strategic support initiatives; Industry development and technology support; Coordination, Promotion and Awareness. The AISI achieves impact in industry through focused programme-level interventions benefiting industry. The programmes are designed to assist industry in overcoming challenges faced by industry, and in doing so, ensuring that industry becomes more competitive. The programmes aim to improve the industrialisation processes and introduce technologies into industry, which will ultimately add to its overall competitiveness.

The participants will have the opportunity to learn more on the policies and interact with some of the entities responsible of supporting the South African industry and the creation of international joint venture and collaborations.

Financing opportunities are offered locally by agencies such as Industrial Development Corporation (IDC) and National Empowerment Fund (NEF).