



D E N E L

COMPANY PROFILE



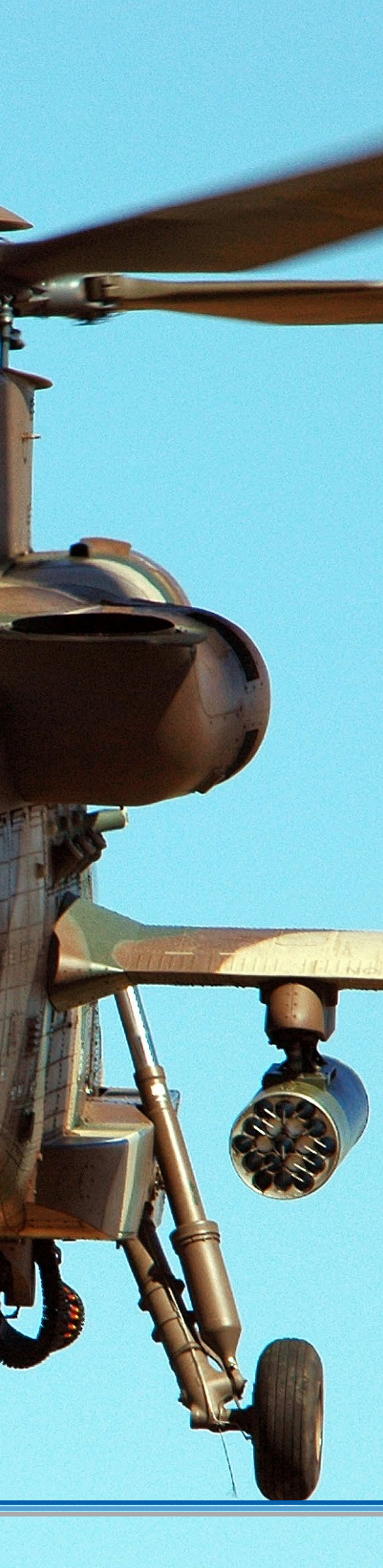


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DENEL GROUP



DENEL GROUP OF SOUTH AFRICA

Denel SOC Ltd is a commercially-driven company and strategic partner for innovative defence, security, aerospace and related technology solutions. It groups together several defence and aerospace business units and associated companies.

Its defence capabilities date back more than 70 years when some of Denel's first manufacturing plants were established. Between the Denel business units there is a collective experience of over 200 years.

VISION

The credible State-Owned South African strategic partner for innovative aerospace, defence, security and related technology solutions.

PURPOSE

As a value driven SOC, Denel's purpose is to:

- Supply South Africa's aerospace, defence and security environment with strategic technology capability, products, services and support;
- Leverage indigenous capability to access selected export markets;
- Contribute to the socio-economic imperatives of Government such as:
 - Job creation, skills development and social investment;
 - Enhancing the local technology and manufacturing base;
 - Supplier development;
 - Exploiting commercial use of technology; and
 - Foreign policy and regional security objectives.
- Be a responsible corporate citizen to ensure:
 - Good governance, and sustainability
 - Transformation and employee well being

Denel is a holding company, wholly owned by its shareholder, the South African Government. The associated businesses in the Denel Group have equity partnerships with major international companies in aerostructures, electro optics and munitions fields. It is managed as one, integrated business, it has an executive management team responsible for daily operations, reporting to an independent Board of Directors appointed by the South African Government through the Minister of Public Enterprises.



DENEL'S CORE CAPABILITIES:



Guided Weapons Capability

- Innovation, Design, Engineering, Modelling, Upgrades, Assembly, Test and Support of Missiles.



Land Capability

- Research and Development, Innovation, Design, Engineering, Manufacturing, Assembly, Test and Support of Infantry Systems, artillery Systems, Ammunition and Vehicles.



Air Capability

- Research and Development, Innovation, Design, Engineering, Integration, Upgrades, Continued Air Worthiness (CAW) and Maintenance Repair and Overhaul (MRO) of Aircraft and Unmanned Aerial Vehicle Systems (UAVS).



Integrated Systems Capability

- Complex Military and Commercial Security System Integration: Design, Development, Engineering, Integration, and through life support of Land, Air and Sea systems. Ground based Air Defence Systems.

ASSOCIATED COMPANIES:

- Hensoldt Optronics (Pty) Ltd – Denel 30%
- Rheinmetall Denel Munition (Pty) Ltd –Denel 49%
- Tawazun Dynamics LLC – Denel 49%

Denel is a critical supplier of sovereign and strategic capabilities ensuring security of supply to the Department of Defence (supporting foreign policy and providing strategic independence). With Denel as a Prime contractor and Level 4 & 5 System Integrator, its leadership is vital in the local defence industry which provides mostly high-quality jobs and significant economic and technology multipliers. The South African Defence Industry (SADI) is dependent on Denel to survive according to the South African Aerospace & Defence Masterplan.



NEW OPERATING MODEL:

CONSOLIDATED & RESTRUCTURED DENEL - OPERATING MODEL

Core skills allocated to the structure to maintain a critical mass for all key capabilities to execute programmes, partner with industry and ramp-up as operational requirements dictate.

Denel SOC
Holding Company Concept
(R&D, Innovation, IP
Development & Integration)

Denel Associates & Subsidiaries
Rheinmetall Denel Munitions
Barij Dynamics (UAE)
Hensoldt Optronics (SA)

Commercial

Business Development, IP Registry & Management, Offset Management, Compliance and Properties

Guided Weapons

Innovation, Design,
Engineering, Modelling,
Upgrades, Assembly, Test
and Support

*Restore core
and rebuild*

Land Capability

Research and Development,
Innovation, Design,
Engineering, Manufacturing,
Assembly, Test and Support

*Strengthen core
and diversify*

Air Capability

Research and Development,
Innovation, Design,
Engineering, Integration,
Upgrades, CAW and MRO

*Strengthen core
and grow*

Integrated Systems

System Level Design,
Engineering, Integration,
T&E, ILS, Commissioning
and Support

*Diversify to Commercial/
SOE's*

Key Products / Systems

Missiles and Precision
Guided Munitions (PGM's)
supply and support.

Key Products / Systems

Infantry, Artillery, Armoured
Vehicles, Mechatronics and
Infantry Weapons Products
supply and support.
Small Weapons Ammunition
and Medium Calibre
Munitions supply.

Key Products / Systems / Services

Military Aircraft and Engine
MRO, Aircraft Systems
Integration and Upgrades,
Rooivalk Helicopter,
Unmanned Aerial Vehicles,
Aerospace Test and
Evaluation (OTR) and
other Aerospace products
and support.

Key Products / Systems

Complex Integrated Systems
- Military (e.g. GBADS),
COTS Security Systems and
Cyber Solutions supply and
support.

Shared Services

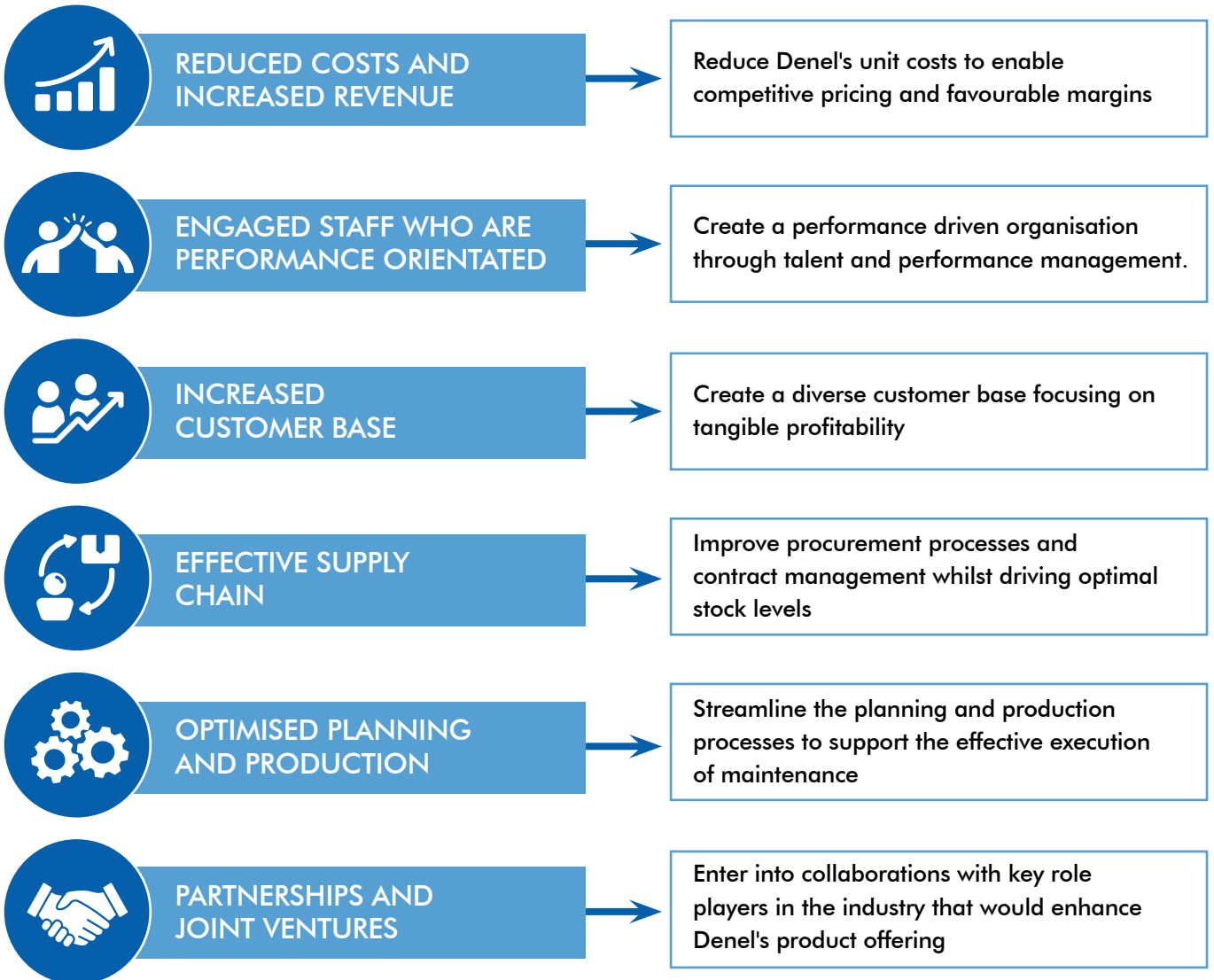
Human Resources, Financial Services, Legal Services, Risk / SHEQ / Configuration, Business Development, Supply Chain, Communications and ICT Services

Model built on a foundation of standardised Governance, DoA, Policies, Practices, Standards and Business Management Systems

Industry involvement and development through supply chain with PPPs for lower level production, manufacturing and support

NEW CUSTOMER / MARKET FACING OPERATING MODEL

STRATEGIC FRAMEWORK



GUIDED WEAPONS



GUIDED WEAPONS

*Innovation, Design, Engineering, Modelling,
Upgrades, Assembly, Test and Support*

Key Products / Systems

Missiles and Precision Guided Munitions (PGM's) supply and support

Past milestones, present trends and future battle space are the focus points that shape the dynamic evolution of products and solutions offering. Today's competitive products are developed from an experience that spans over 45 years in the design, development and production of missiles and guided weapons business.

As proud Innovators of competitive South-African missiles, guided weapons capability prides itself in:

- Maintaining relationships with all key customers through enhancing the strategic relations with the Department of Defence and Armscor
- An exceptional ability to respond to unique customer requirements
- Provide innovative and creative designs that deliver robust and reliable product solutions

This business unit based in the Irene Campus has its roots in missile research, design and development, starting in 1964 with the establishment of the Institute for Rocket Research, which later became the National Institute for Defence Research at the Council for Scientific and Industrial Research (CSIR). Its flagship programmes include the A-Darter joint development of the air-to-air missile with Brazil and its successful relationship with the Finnish Navy using the Umkhonto surface to air missile. These are making the South African missiles industry fly internationally.





LAND CAPABILITY

Research and Development, Innovation, Design, Engineering, Manufacturing, Assembly, Test and Support

Key Products / Systems

Infantry, Artillery, Armoured Vehicles, Mechatronics and Infantry Weapons Products supply and support. Small Weapons Ammunition and Medium Calibre Munitions supply.

This business unit primarily serves the South African National Defence Force (SANDF) and international customers as a system designer and integrator. It is also a subsystem supplier for artillery, rapid-fire medium-calibre weapons and combat vehicle systems.

The main activities, include the supply of the following key products and services:

- Utilising its high-end technology and engineering capabilities to take complex systems and/or products through their entire life-cycle, from conceptualisation to production.

- Providing product and logistic support, including qualification, maintenance, upgrades and eventual decommissioning, as required. A prime example is the development of the "Badger" family of new generation Infantry Combat Vehicles (ICV), under "Project Hoefyster".

The Hoefyster project uses Denel's five state-of-the-art modular combat turret variants, equipped with home-grown GI-30 rapid fire cannons (30mm CamGun), 60mm breech loading long-range mortar systems and Denel Dynamic's Ingwe antitank missile systems.

The aim of this project is to replace some of the SANDF's ageing fleet of Ratel Infantry Combat Vehicles in a phased approach and create specific export potential. Other products and systems include several artillery systems, combat turrets and rapid-fire small-and medium-calibre weapons, for which a wide range of highly competitive, unparalleled world-class products are available.

OLIFANT MANUFACTURING COMPANY (OMC)

OMC is a leader in the design, development and manufacture of mine and Improvised Explosive Device (IED) protected and wheeled armoured vehicles. It covers all disciplines of the military vehicle spectrum, including conceptualisation, design and development, manufacture and life circle support. OMC is currently responsible for the support of more than 7,000 of the armoured vehicles and military trucks in service with the South African Army as well as the South African Police Service. This support includes upgrades, re-manufacture, the supply of spares and support facilities. Similarly, OMC, through its own facilities and partnerships worldwide, also supports more

than 3,500 vehicles across the world.

The RG12, RG31, RG32, RG41 series of Light Armoured Landmine Protected Vehicles equipped with lightweight Tactical Remote Turrets, offers ultimate protection for its occupants and is ideal for peace-keeping, military patrol and security operations.

OMC also provides technical support, spares, training, vehicle upgrades and other services to its local and international customers, directly or through partnerships, teaming agreements and approved dealers.

MECHATRONICS

Mechatronics is a highly capable defence systems business with particular expertise in turret systems and subsystems. Products include Fire Directing Systems (FDS), Remotely Controlled Turrets, Weapon Stations, Fire Control Subsystems (FCS), Shooting Training Systems and related products. Mechatronics has an excellent track record in developing and providing ballistic FDS and FCS systems for ground and air platforms, including Main Battle Tanks such as the South African Olifant Main Battle Tank and the Rooivalk Helicopter Cannon Turret. The company also designs light turrets and has extensive experience in systems integration, and both land and air turret systems.



PRETORIA METAL PRESSINGS (PMP)

A large portion of PMP's turnover is through exports, making the company a valuable earner of foreign exchange. The company has been supplying quality products to military and police forces, and to the hunting and sporting fraternities around the world, for more than 80 years. During World War II, PMP produced around 45% of the 303 rounds used by the World Allied Forces – a total of 768 million rounds.

Brass Products

PMP's non-ferrous foundry and rolling plant can produce tons of brass daily. A large portion is used for the manufacture of ammunition by PMP itself, with the remainder supplied as brass strips, cups and discs to local and international clients.

Military Ammunition: Small and Medium Calibre

The SANDF considers Denel PMP's product lines to be of sovereign importance to its requirements. Besides PMP's full range of small-calibre (5,56mm to 12,7mm) and medium calibre ammunition (20mm to 35mm) used on navy vessels, helicopters, fighter aircraft and anti-aircraft cannons, as well as infantry fighting vehicles; PMP has completed the development of a family of 30mm x 173 medium calibre rounds for use in new generation infantry fighting vehicles, specifically for the Hoefyster project for the SANDF.

Sporting Ammunition

PMP's ProAmm, Standard and Super ranges of hunting ammunition have established a reputation for quality, accuracy and reliability in South Africa as well as in the international markets.

Power Cartridges

UK firm, Martin Baker, licensed PMP to produce power cartridges and rocket motors for the safe ejection of pilots from aircraft. PMP also produces escape systems and canopy fragilization systems for fighter aircraft and helicopters.

Other related Products

The company also manufactures primary explosive products, high quality percussion caps of all types, as well as links for various small-and medium-calibre rounds.

Infantry Weapons

PMP manufactures one unique 20x42mm weapon, a semi-automatic shoulder-fired rifle. The compact weapon has the capability to fire an explosive projectile weighing 115 gram over a distance of up to 1000m at a muzzle velocity of 308 m/s.







AIR CAPABILITY

Research and Development, Innovation, Design, Engineering, Integration, Upgrades, CAW and MRO

Key Products / Systems / Services

Military Aircraft and Engine MRO, Aircraft Systems Integration and Upgrades, Rooivalk Helicopter, Unmanned Aerial Vehicles, Aerospace Test and Evaluation and other Aerospace products and support



Denel's Air Capability remains a strategic capability for the SANDF as pronounced in the Defence Review 2015 and delivers end-to-end-aeronautical solutions including aircraft, engine and component maintenance, repair and overhaul (MRO), aircraft system upgrades and integration with a core manufacturing capability required for MRO support and Unmanned Aerial Vehicle (UAV) systems. It is the custodian of unique SAAF capabilities as follows:

- Original Equipment Manufacturer (OEM) of the Rooivalk Combat Support Helicopter (CSH)
- Design Authority of the Oryx Medium Transport Helicopter (MTH)

- Engine and Major Component MRO facilities for locally manufactured items on the Oryx and Rooivalk
- Accredited A109 Arrius Engine MRO facility
- Primary MRO service provider and only accredited facility in Africa for the C130B-H model aircraft

It is also an Accredited Repair & Overhaul Centre for Airbus Helicopters (Puma and Super Puma) and dynamic components, an MRO service provider and the only accredited facility in Africa for the Lockheed Martin C130B-H model aircraft and an Accredited SAFRAN engine MRO facility for the Makila and Arrius engine types.



This unit is also South Africa's biggest supplier of Unmanned Aerial Systems (UAS), producing some of the most rugged and reliable tactical UAV systems in the world - Seeker 200 tactical ISR System, Seeker 400 multi-mission, multi-role ISR, the Hungwe UAV and the Skua high-speed target drone.

The Seeker 200 tactical Unmanned Aerial System evolved from the battle-proven Seeker II system. This feature-packed derivative offers an engine with long service intervals (> 250 h), long endurance, low noise levels (<70 dB open throttle at 1 000 ft AGL), short take-off distance (~300 m ASL) and a rapid rate of climb (~750 ft/min).

Seeker 400 UAS operates at direct line-of-sight (LOS) ranges of up to 250 km with more than 10 h over target and provides cruising speed of 150 km/h and up to 16 h endurance with multiple sensor payload capability of up to 100 kg; high-definition video imagery; real-time data acquisition and transmission to remote receivers; autonomous take-off and landing capability; external wing hard points for carriage of external fuel tanks or other requirements; manual and autonomous capability (flight control and payload control); brake-assisted ground operation; separate or combined shelter configurations for the Mission Control Unit (MCU) and Tracking and Communications Unit (TCU).

OVERBERG TEST RANGE

The Test Range's spectrum of services ranges from tests of short-range guided munitions for land, sea and air combat, to evaluation of modern standoff weapons and aviation systems. The Test Range was established in the mid-eighties as an integrated test facility with the flexibility to allow multipurpose applications. Since final qualification in 1991, it has proved its ability to manage and execute any combination of air, ground and sea flight tests, with quality assurance and performance verification services of the highest order. Whilst

its primary business goal is to meet the strategic flight test requirements of South Africa's military industrial users, the Test Range has built an enviable reputation with numerous international clients. In recent years the Test Range successfully executed tests for stand-off weapons and missiles for the German, Italian, Spanish and Singapore Air Forces, with further test series planned for various international clients.

To keep track of advances in technology and changing market needs, the Test Range's

instrumentation systems, facilities and business processes are enhanced on a continuous basis. The unique ecological location of the Test Range implies that quality services must be delivered within the boundaries of sound environmental management. Before every test campaign, all environmental risks are assessed to ensure no irreparable damage is done to the environment.





INTEGRATED SYSTEMS

MULTI-DISCIPLINARY System Level: Design, Engineering, Integration, Test and Evaluation (T&E), Integrated Logistic Support, Commissioning and Support

Key Products / Systems / Services

Complex Integrated Systems - Military (e.g. GBADS), COTS Security Systems and Cyber Solutions supply and support

Based at the Denel Irene campus, Integrated System Solution (ISS) capability include Complex Military and Commercial System Integration: Design, Development, Engineering, Integration, and through life support of Land, Air and Sea systems.

The unit is appointed as the design authority for Ground Based Air Defence Systems (GBADS) for the SANDF, and also specialises in complex cyber solutions. This business unit ensures Denel's protected defence and security interests through accredited cyber security services.

GBADS

Through the GBADS Projects, it has a proud track record in the integration and support of the following systems:

- Hardware
- Software
- Weapons
- Sensors
- Secure Communication Systems

Air Defence (AD) is an integral part of the SANDF and its primary role is to protect national assets, including own forces, against aerial attacks by aggressors.

GBADS is a collective description for a range of surface-to-air weapon systems with the objective to counter air attacks.

GBADS comprises three User System configurations, namely Mobile Systems (MobADS), Mechanised Systems (MecADS) and Air Mobile Systems (AmADS), optimised to operate in the rear, close and deep battle areas respectively.

MILITARY IMAGE

The South African Air Force (SAAF) upgraded the Military Image Interpretation Centre (MIIC) at the Joint Air Reconnaissance Intelligence Centre (JARIC), was fulfilled through ISS.

JARIC, based at Air Force Base (AFB) Waterkloof, is an operational unit of the SAAF and has been performing image exploitation since 1967. This capability covers the acquisition and commissioning of the Military

Image Interpretation and Exploitation Capability (MIIEC) with state-of-the-art computer aided methods.

COMMAND AND CONTROL

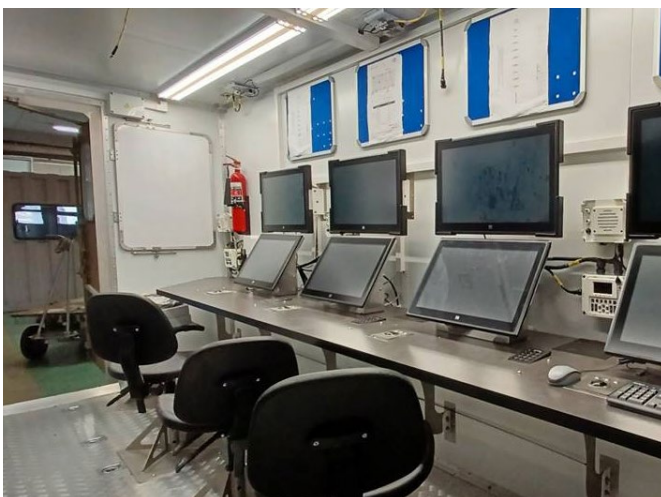
Together with industry partners, aspire to provide extensive Command & Control capabilities to provide complete situational awareness and improved decision making, when immediate actions are required in the air, land, sea and joint modalities.

Modern missions are more complex, dynamic and require collaboration

of many entities in order to succeed. Advances in technology have created opportunity in being able to provide the force agility and effectiveness required for the fundamental requirement of shared awareness in 21st century C2 systems.

ISS offers the best in modern day capability by leveraging long-standing relationships with

both local and foreign partners for the provision of C2 systems that are relevant not only to the defence environment but also within civil security domains, where consultation, coordination, cooperation and collaboration are the functional pillars for providing effective and cost-effective solutions.



NATIONAL DISASTER MANAGEMENT

ISS firmly believes that being prepared is half the battle won and, in conjunction with strategic industry partners, Denel's clients are able to

mitigate and manage the damage resulting from disasters of whatever nature. The system comprises of critical elements such as early

warning, situational awareness, predictive analysis, simulation and training and research and development.

CIVIL SECURITY: STATE OWNED ENTITIES AND BORDER MANAGEMENT

Denel has entered to become the trusted technology and systems solutions partner in fighting sabotage, theft, vandalism and general destruction of property and infrastructure.

Products and solutions will assist SOEs in their fight against crime, through detection, identification and coordinated action to prevent and/

or act against criminal activity. This includes the use of technologies such as:

- Command & Control
- Static & Mobile Solutions
- Surveillance and sensors
- Access control
- Simulation & Training
- Information integration
- Secure Communication
- Non-lethal self-protection systems

These same technologies and solutions can be employed to perform effective Border Management activities and information integration and Denel ISS intends becoming actively involved with national border control security agencies on the African continent.

CYBER SECURITY

Partnering with the Cyber Security Solutions and Services industry in the near future is currently under consideration.

The unit will intensify efforts to secure projects in command and control, communications, computers, cyber, intelligence, surveillance

and reconnaissance (C5ISR) solutions in national, provincial and international security institutions and/ or government departments. In doing so, it will apply defence-bred programme management and systems engineering capabilities in providing integrated solutions.



Report any incidents of

- **fraud,**
 - **corruption,**
 - **misconduct or**
 - **unethical behaviour**
- to Denel Whistleblowing Hotline

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GROUP **VALUES**



PERFORMANCE

WE EMBRACE OPERATIONAL EXCELLENCE



INTEGRITY

WE ARE HONEST, TRUTHFUL AND ETHICAL



INNOVATION

WE CREATE SUSTAINABLE INNOVATIVE SOLUTIONS



CARING

WE CARE FOR OUR PEOPLE, CUSTOMERS, COMMUNITIES,
NATIONS AND THE ENVIRONMENT



ACCOUNTABILITY

WE TAKE RESPONSIBILITY FOR ALL OUR ACTIONS



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