

UN/UAE High Level Forum : “Space as a driver Sustainable Development”



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06-09 November 2017
UAE : Dubai

**The National Space Policy’s overarching Principle of Space activities
Contributing to Economic Growth & Socio-Economic development**

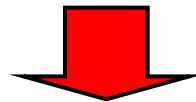
Nomfuneko Majaja
Chief Director :Space Affairs



PRIMARY LEGISLATIVE FRAMEWORK

- The primary legislative framework governing space activities in South Africa is the Space Affairs Act (Act 84 of 1993) as amended in 1995 (the Act) :

- ▶ The Act establishes the South African Council for Space Affairs, which reports to the Minister of Trade and Industry “to control certain space affairs in the Republic.
- ▶ The functions and objects of the Council are to implement the regulatory functions of the policy and to ensure that space activities are conducted in accordance to the international agreements and treaties.



However :-

- The government is working on reviewing the Space affairs Act to take into consideration domestic needs and implement the international Obligations



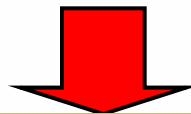
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In the recent years government has been resuscitating its programme

One such outcome has been the approval by Cabinet in 2008 year of the National Space Policy. (the Policy)

- ▶ The policy provides guidelines to all space stakeholders on how the space activities should be conducted.
- ▶ It puts emphasis on the need for coordination of all space related activities.
- ▶ The Policy's Overarching Principle of space Activities is for space activities to contribute to Economic Growth & Socio economic - development.
- ▶ Amongst the implementation Guidelines is Promoting a Domestic Space Industry



National Space Industry Framework (Scoping Exercise)
Building Capacity in the Domestic Industry & creating an enabling regulatory environment for national space activities to contribute to Economic growth

The Policy is implemented by various government departments /institutions according to their mandates



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POLICY PRINCIPLES

The pursuit of space activities in SA is informed by the overarching principle that *such activities should contribute to economic growth and sustainable development*

6 Guiding Principles: SA commitment

Utilise outer space for peaceful purposes

Develop and maintain a robust and appropriate set of capabilities, services and products

Ensure SA stakeholders are responsible users of the space environment according to international regulations

Promote R&D in space science and technology

Greater levels of self sufficiency and international competitiveness

Mutually beneficial cooperation with other nations



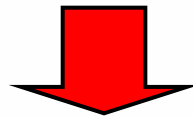
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In order to effect the policy ..

A National Space Agency Act of 2008 was promulgated.

- ▶ The Act establishes a National Space Agency under the auspices of the DST as an institutional vehicle to coordinate the space activities in the country for effective utilisation of space resources in tackling socio-economic challenges.
- ▶ The Agency is implementing the Policy & Strategy through its diverse programmes



National Space Strategy (DST):

The Strategy identifies 3 key priority areas to be followed by the country 's space programme in the next 10 years, which are;

- ▶ Environmental and resource management
- ▶ Public Safety & Security
- ▶ Innovation & Economic Growth



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Industry Contributions

- Department offering a range of Industry interventions to enhance competitiveness
 - Funding (grants and low interest rate loans)
 - Manufacturing Competitiveness Enhancement Program (MCEP)
 - The Technology & Human Resource For Industry Program (THRIP) –Triple partnership incl University, Industry and Government .
 - Clustering(creating a common location for similar economic activities for co-location, knowledge diffusion, sharing of resources etc
 - Incubation Programs for SMEs
 - Supplier Development Programs
- Space Commercial Services with
 - New Space Systems – manufacturing satellites with support of public investment developing value added products & services and exporting these to a number of countries; contributing to economic growth & foreign exchange.
- Denel SpaceTeq (State Institution) designing, developing and manufacturing satellite components and in the process of developing an EO satellite with the support of national government (Investment to upgrade the AIT (DST & the dti)
- University of Stellenbosch - Cube Space (Spin off company)



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Space Programme: **SANSA**

South African National Space Agency : 5 main goals exhibiting Policy Principles

Goal 1: World-class & efficient services & societal benefits (Societal Capital)

Goal 2: Cutting-edge research, development, innovation, technology and applications (Intellectual Capital)

Goal 3: Human capital development, transformation & science advancement (Human Capital)

Goal 4: Globally competitive national space industry (Industrial Capital)

Goal 5: Make South Africa a recognised global space citizen (Global Capital)



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Application examples: Using satellite data in support of Socio economic development food security for South Africa

Satellite data converted into actionable information on crop- and range-land, can help the food producers and policy decision making in South Africa.

Demonstrated Services

◆ Crop Condition Assessment



Crop Monitoring

- ◆ Cropped area estimation
- ◆ Crop condition monitoring



Damage/Stress Assessment

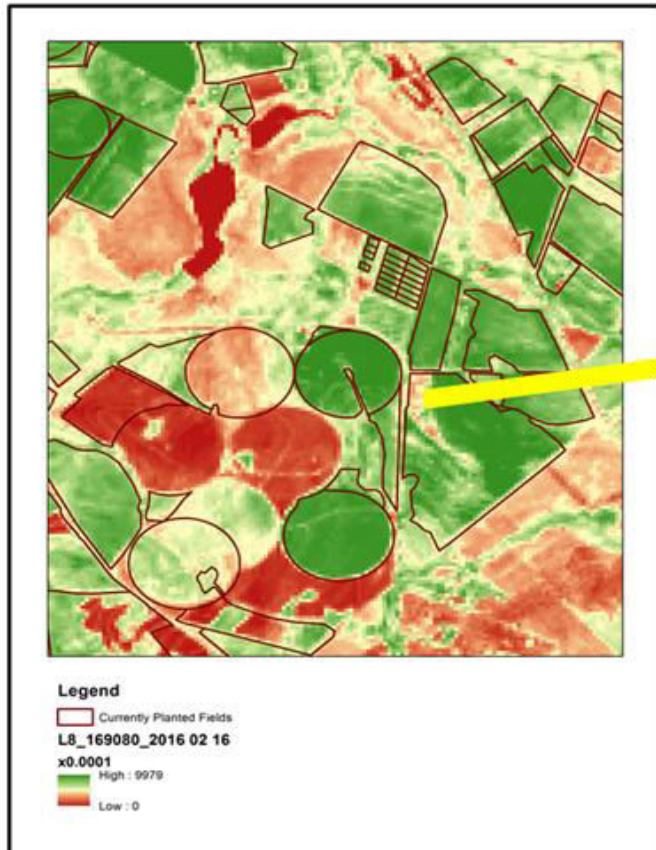




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Visualizing Crop Stress and Estimation

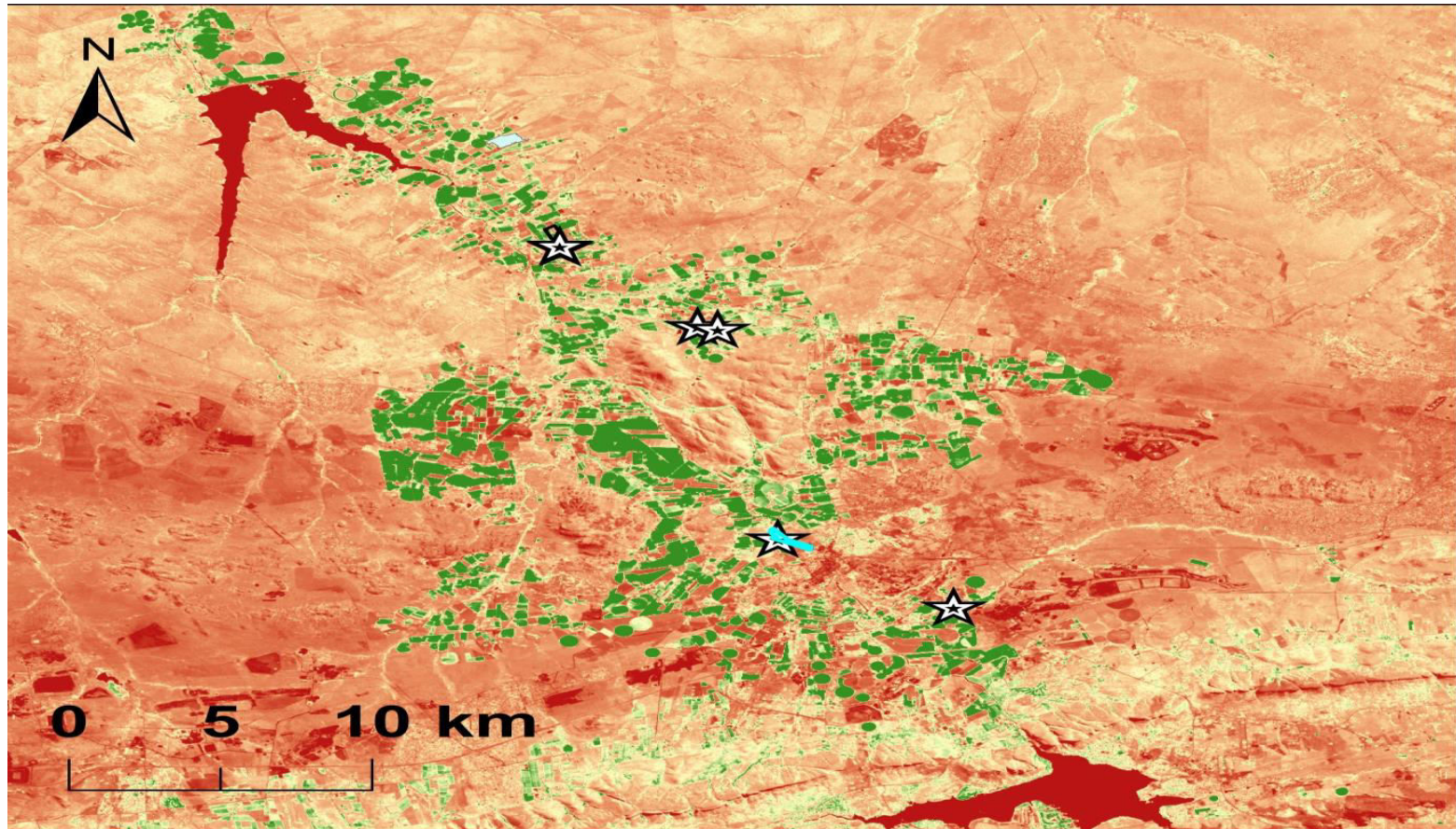




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Mapping Irrigated Fields

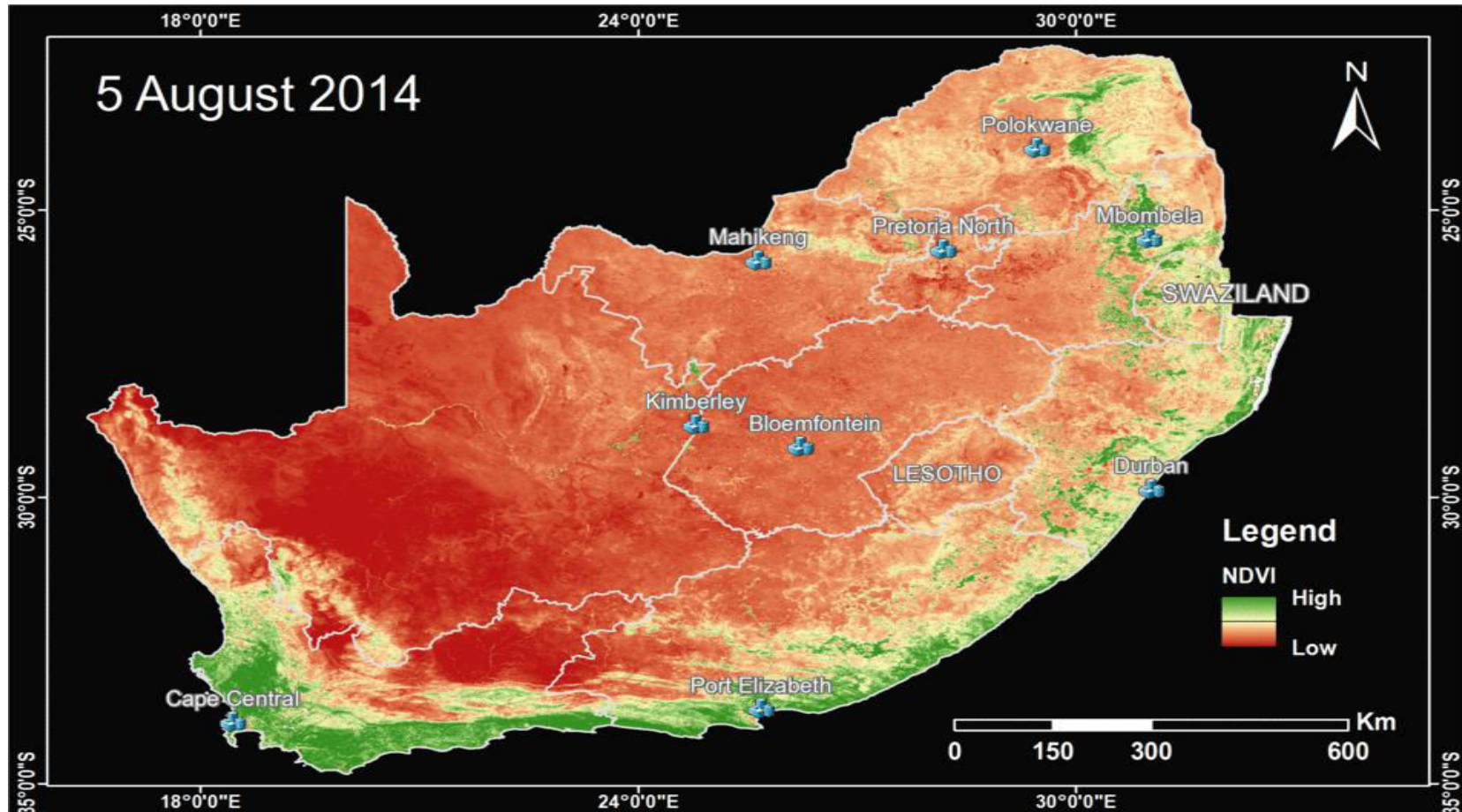




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Drought Monitoring



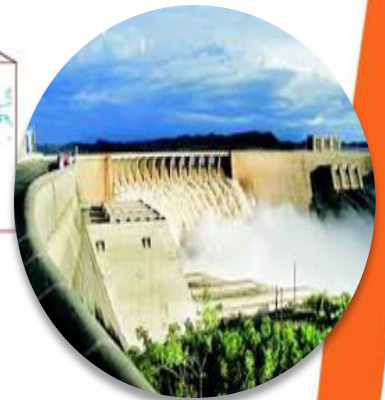
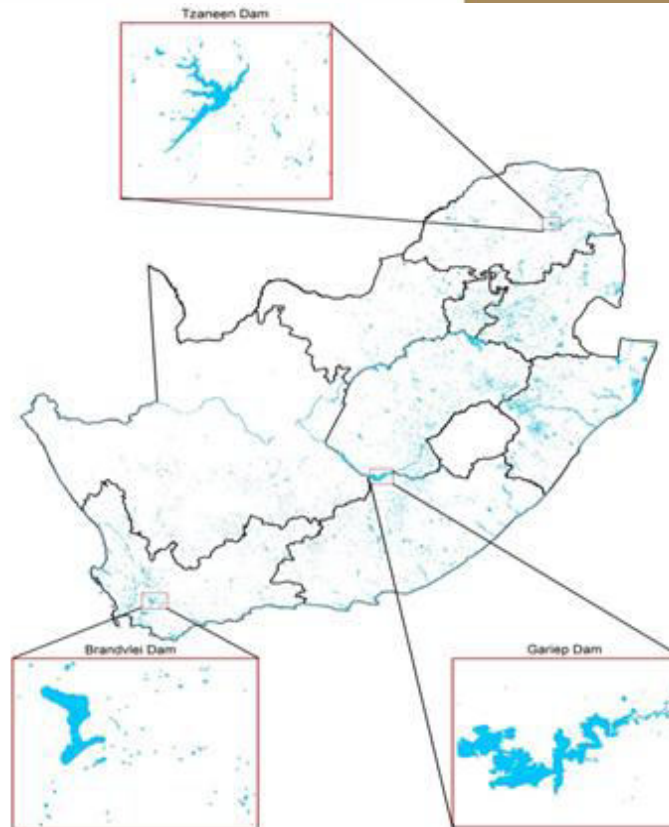


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Water Management

- Monitor water levels
- Easier water audits
- Water licensing & water use management
- Improve catchment management
 - ✓ promote livelihoods and
 - ✓ ecosystem sustainability



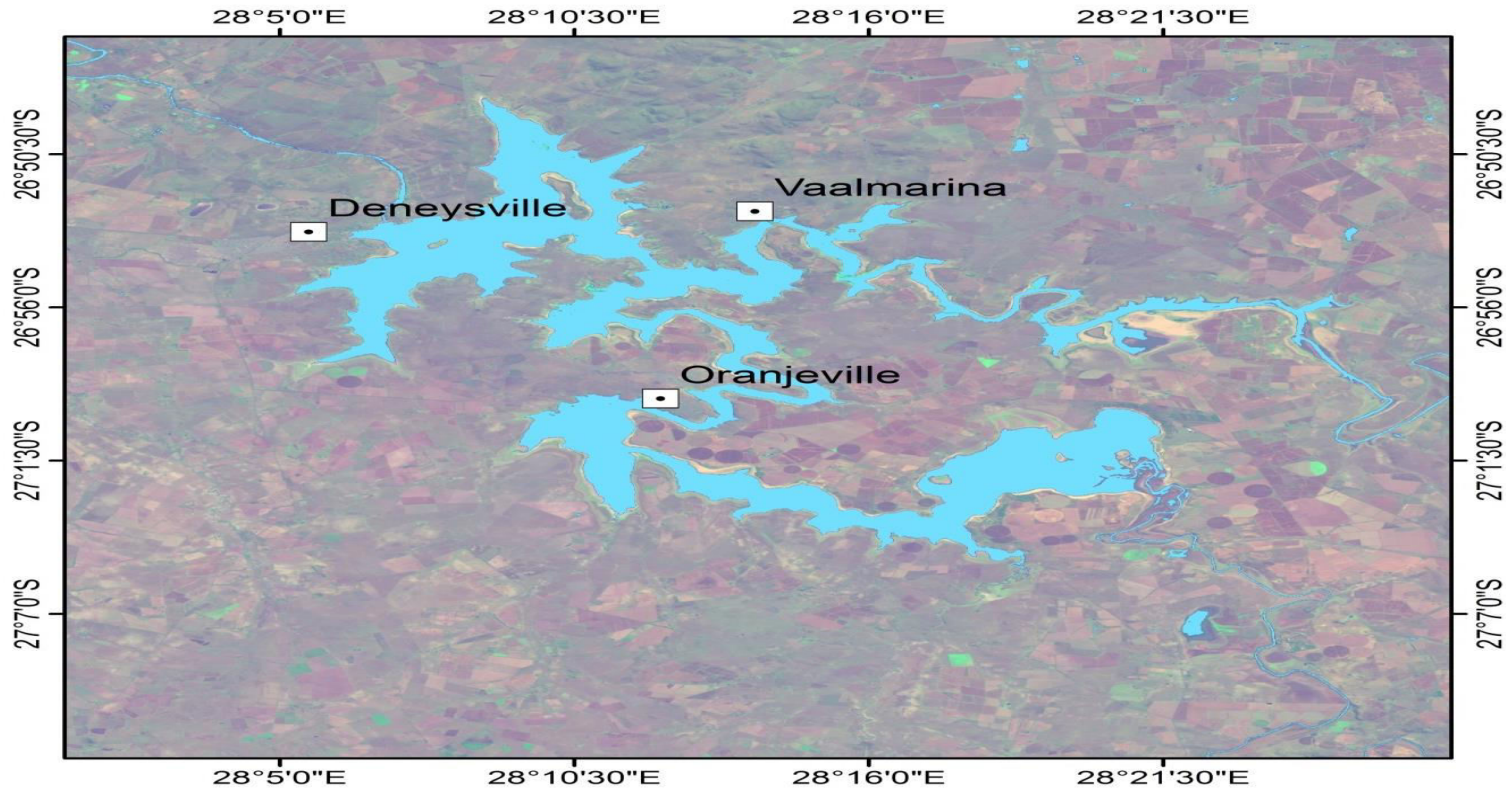


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National Water Body Mapping Vaal area

2016 Water Bodies Extracted at Vaal area





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EO Supporting Electrification Planning

Electrification plays a very vital role in the economic development of every country. It improves welfare and enhances the quality of almost every sphere of life.





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Monitoring Housing Project :North West Province



Rustenburg Seraleng
Anglo-Platinum Flisp



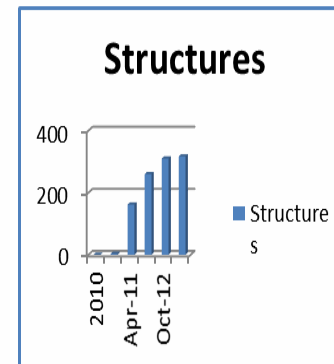
Legend

— Seraleng Anglo-Platinum Flisp
Boundary



Date: 08 October 2012

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Policy Principles: Promoting R&D in Space Science & Technology: CPUT Case

- Various Universities in the country are implementing this principle : UCT, Stellenbosch, Univ of Pretoria (Space Law)
- A case In Point is Cape Peninsula University of Technology (CPUT) with French South African Institute of Technology (FSATI) Program
- Established in 2008 and hosted by the Supported by National Government
- Holistic programme approach includes (1) community engagement, (2) academic, research and development, (3) innovation, (4) professional development and commercialisation.
 - Development of South Africa’s nascent satellite technology, platforms and infrastructure. In particular, this will include:
 - Strengthening and expanding existing Human Capacity Development programmes like the satellite engineering programme
 - Manufacturing, integrating, testing and launching EOSat1 and ZACUBE2.
 - Manufacturing and launching South Africa’s first indigenous cube satellite constellation to provide automatic identification system services to Operation Phakisa and the African continent.



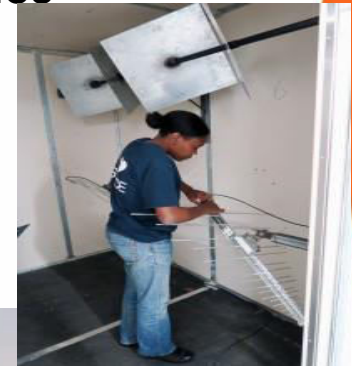
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FSATI/CPUT Programme meeting most Policy Principles

Highlights:

- Developed Africa's first nanosatellite, TshepisoSat, that was launched on 21 November 2013. The satellite is still operational.
- Founding host to the International African CubeSat Workshop Series
- More than 60 postgraduates have graduated
- The innovation hub, Africa Space Innovation Centre,
- develops cutting-edge radio systems for CubeSats.
- Contribute to the socio-economic development of South Africa and SDGs through supporting Operation Phakisa: Marine & Coastal Management





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Participation in Operation Phakisa Unlocking the economic potential of South Africa's oceans

Strategic Programme in the Country led by the Presidency intended to speed up service delivery in various sectors for socio economic benefits.

- The nano-satellite constellation enables the effective monitoring of South Africa's extensive ocean and coastal areas to facilitate national maritime domain awareness
- Four critical areas explored to unlock the potential of our country's vast coastline:
 - Marine Transport and Manufacturing
 - Offshore Oil and Gas Exploration;
 - Marine Protection Services and Ocean Governance & Aquaculture
- Benefits:
 - effective vessel tracking
 - enhanced security and safety
 - monitor activities within ocean economy
 - marine protection
 - maritime trade information





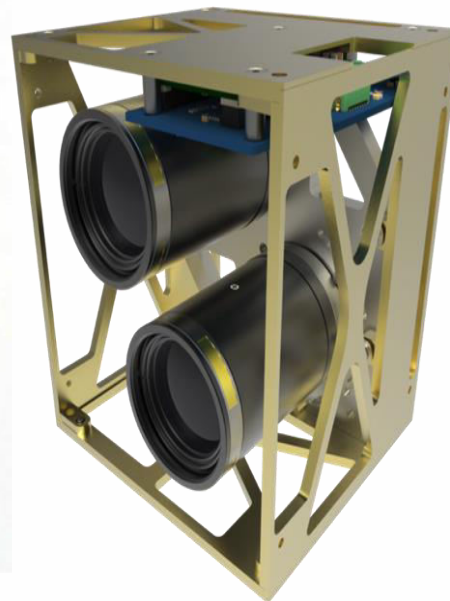
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FSATI/CPUT : Research & Innovation



Sub systems
Radios



Payloads:
fire detection, vessel
tracking



ZA CUBE 1
Launched in 2013 &
ZACUBE 2 to be
launched 2018



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Thank you for your attention
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