ANNUAL PERFORMANCE PLAN
2015/2016

science & technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

sansa
SOUTH AFRICAN NATIONAL
SPACE AGENCY

FOREWORD BY THE CHAIRPERSON

SANSA is pleased to be at the forefront of prioritising innovation and capacity-building in Africa through cooperation with international partners and platforms such the AfriGEOSS.

Joy-Marie Lawrence
Chairperson of the SANSA Board Accounting Authority

The fifth administration of our democratic government has adopted the National Development Plan as an enabler in further entrenching accelerated growth in the economy and reducing poverty, unemployment and inequality.

In giving bearing to these imperatives, as well as critically review the operating and socio-economic environment in which SANSA operates, the Agency's strategic priorities were reviewed and aligned firmly to its legislative mandate to better serve the emerging, long-term priorities of the nation.

This new and revised Annual Performance Plan, approved by the SANSA Board and aligned with the Department of Science and Technology's strategic priorities, is the result of strengthening and repositioning the Agency to represent and coordinate the interests of the broader space community and society in South Africa for the benefit of the country.

The performance planned for the year ahead aims to ensure that economic transformation, social progress and human capital development goals are achieved and contribute meaningfully to improving various national outcomes.

These include the development of a skilled workforce and sustainable human settlements, the provision of decision support tools for environmental resource management and utilising satellite technologies to optimise the identification of service delivery location points and enable better service delivery and spatial development within an equitable society.

SANSA is pleased to be at the forefront of prioritising innovation and capacity-building in Africa through cooperation with international partners and platforms such the AfriGEOSS.

The Agency is eager to move South Africa forward as an international hub for space solutions for the future world.

The Minister of Science and Technology and the SANSA Board invite all South Africans to join this journey as we lead and inspire the South African community to create a better future using science, technology and innovation for socio-economic growth and transformation.

Official sign-off

The signatories hereby certify that this Annual Performance Plan:

- was developed by the management and Board of the South African National Space Agency (SANSA) in consultation withthe Department of Science & Technology (DST)
- was prepared in line with SANSA's current Strategic Plan
- accurately reflects the performance targets which SANSA will endeavour to achieve with the resources available in the 2015/16 budget allocation.

Ms Bulelwa Pono
Chief Financial Officer

Signature: _____

Dr Sandile Malinga
Head Official Responsible for Planning

Signature: _____

Ms Joy-Marie Lawrence
Accounting Authority

Signature: _____

Approved by:

Mrs Naledi Pandor
Minister of Science and Technology
Executive Authority

Signature: _____

SOUTH AFRICA

as an international Hub for Space Solutions for the world of the future.

LEAD AND INSPIRE

the South African Space Community to create a better future.

SANSA'S SIX VALUES:

- Service
- Teamwork
- Excellence
- Integrity
- Respect
- Personal Growth

THE 2015/16 SANSA ANNUAL PERFORMANCE PLAN INDICATES HOW THE RESPECTIVE DIVISIONS WITHIN SANSA INTEND TO CONTRIBUTE TOWARDS ACHIEVING THE FOLLOWING STRATEGIC GOALS:

1. Address South Africa's challenges through space services and products
2. Lead high-impact collaborative R&D on a national scale
3. Develop national human capacity and ensure transformation
4. Enhance the competitiveness of the South African space industry
5. Develop active global partnerships
6. Ensure the growth and sustainability of SANSA
7. Transform SANSA into a high-performance Agency.

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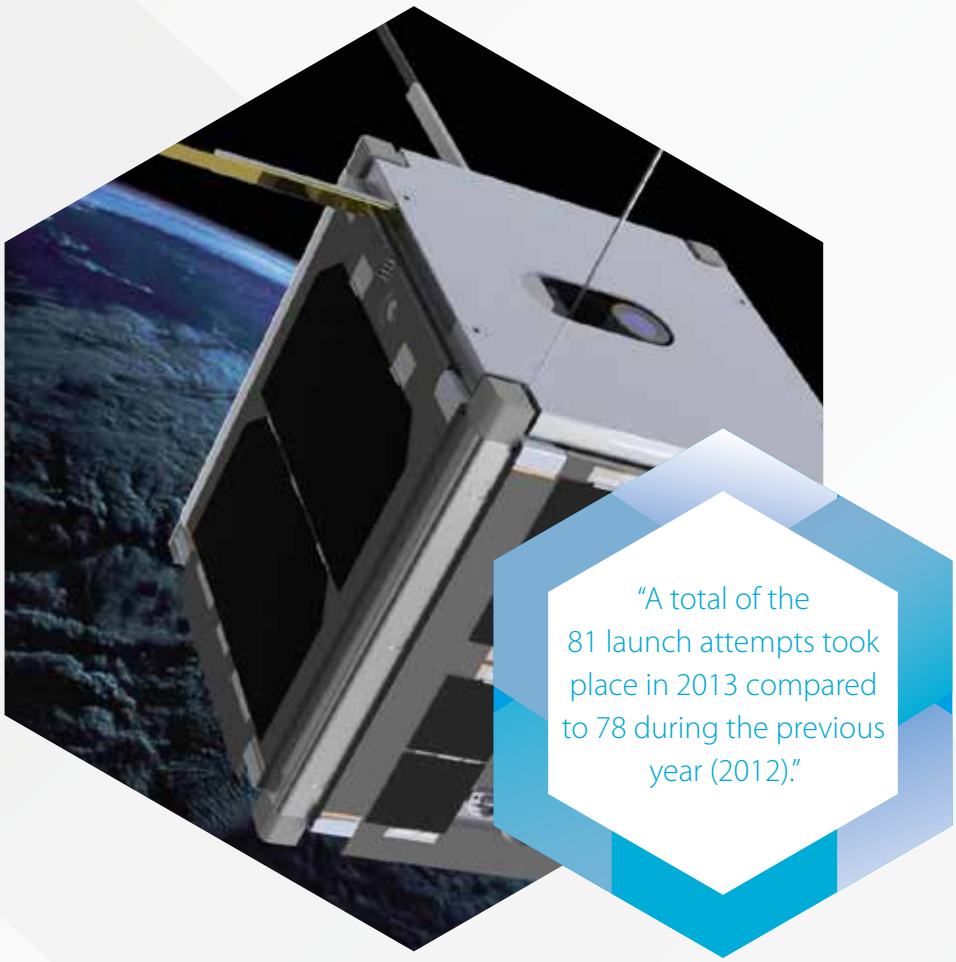


SITUATIONAL ANALYSIS

The Current Global Space Environment

The Growth of Commercial Space

The global space economy grew by 4% in 2013 to $314.17 billion from the $304.31 billion recorded growth in 2013. The bulk of the growth was driven by growth in the commercial space industry, which includes the supply of commercial products and services, infrastructure and support industries.

The commercial sector constitutes approximately 75% of the space economy, while government spending makes up the remainder.

Government Space Market

The significant cuts in the US Government space budget were offset by the growth in the space budgets of other countries. The US Government Space budget is valued at $41 Billion USD, while the combined total budget of all other countries is estimated at approximately 33 billion USD as at 2013.

Space Applications

Space products and services continue to become more readily available and integrated into the daily lives of billions of people globally. Most technologies rely on space assets to deliver their benefits, such as television satellite broadcasting, communications and navigation devices. Space products and services are increasingly providing an interface between space and other forms of technology.

In this regard, government and industry are increasingly sponsoring competitions to develop new and innovative applications. In harnessing the talent of developers, the space industry gains creative new techniques to further develop new products and services based on existing space systems.

Launch Activities

The majority of launches were undertaken by Russia, the United States, China and Europe. A total of the 81 launch attempts took place in 2013 compared to 78 during the previous year (2012).

Small Emerging Space Companies

The combined effect of declining launch costs and cost-saving advances in satellite technology has created opportunities for small and medium space companies to enter the space market with new niche services and solutions for a growing number of customers. These companies are well-positioned to serve the increasing demand for bandwidth and services across regions with the potential for large population growth, such as Asia, Africa and the Middle East.

Space Partnerships

Governments are increasingly recognising the utility of space as a tool for international trade and development. Advanced spacefaring countries reap political and economic benefits from their existing space capabilities through partnerships with emerging nations that are seeking societal and development benefits. These partnerships can involve any combination of financial assistance, infrastructure development and training programmes. Significant attention is focused on Africa, where the expected increase in the demand for satellite services is 11% or more each year from 2013 through 2017.

Initiatives in the Group on Earth Observation (GEO) and the Committee on Earth Observation Satellites (CEOS) are progressing well. In particular, the AfriGEOSS plans will lead to better coordination of Earth observation initiatives on the African continent. SANSA and other national partners have to contribute to this important initiative, led by the Department of Science and Technology (DST), to promote South Africa's standing on the continent and facilitate the sharing of knowledge, resources and skills in Africa.

National Space Strategy

The National Space Strategy (NSS) is a national road map and implementation framework for a viable and sustainable national space programme.The NSS, as approved by Cabinet, sets national goals and objectives for space science and technology. The table on the next page indicates the alignment of the SANSA strategic goals with the objectives of the NSS.

	National Space Strategy Objectives	SANSA's Goal Alignment
1	Developing the local private space science and technology industry sector	Goal 4
2	Developing services and products that can respond to user needs	Goal 1
3	Satellite or services offered from existing facilities	Goals 1 and 2
4	Organising some of the current space science and technology activities into strategic programmes	Goal 2
5	Optimising the organisation of future space activities to respond to opportunities with international industrial partners or international space agencies	Goal 5
6	Partnerships with established and developing spacefaring countries for industrial and capacity development purposes	Goals 2, 3 and 5
7	Strengthening training and technology transfer programmes, including the sharing of experience and expertise	Goals 3 and 4
8	Promoting space science and technology in academic institutions and science centres and the provision of opportunities for both short-term and long-term training and education	Goal 3
9	Responding to challenges and opportunities in Africa	Goal 5
10	Advocating the importance of space science and technology as a priority measure for meeting national development needs	Goals 1 and 3
11	Building local awareness of space science and technology	Goals 1, 2, 3 and 4, 6, 7

SANSA'S INTERFACE IN THE NSI LANDSCAPE

SANSA's five key stakeholder groups are:

1. Government departments with an interest in space-related activities, including but not limited to the DST, to which the Agency reports
2. Departments/Entities that fulfil some agency function, eg funding agencies
3. Government departments and state entities that SANSA supports in one form or the other
4. Partner research and development (R&D) institutions
5. Industry partners and clients.

National Development Plan

The National Development Plan (NDP) is now at the foundational phase of implementation. SANSA will play a key role in addressing some of the central challenges identified in the plan.

Areas of contribution include the creation of high-technology jobs; the improvement of geospatial patterns to foster the development of marginalised communities; the planning and monitoring of backbone national infrastructure through space systems; health surveillance and intelligence through satellites; space-based service delivery and performance monitoring to assist in the eradication of corruption; and the provision of geospatial decision-making tools for decision-makers.

The 2014-2019 Medium-Term Strategic Framework

The Government has adopted the 2014-2019 Medium-Term Strategic Framework (MTSF) as the first five-year building block towards realising the 2030 Vision in the NDP. The MTSF lists 14 key outcomes, as well as associated activities and targets to be achieved by 2019 that cover the focus areas identified in the NDP. There are eight outcomes that have a direct impact on and alignment with the SANSA mandates. These outcomes are:

Outcome 1:
Quality basic education

The initiatives in this outcome include sustaining and accelerating improvements in school performance. Satellite technologies can assist the Department of Basic Education to design digital classrooms to assist remote and rural located learners with accessing learning material.
This quality lesson can assist to improve and increase school performance results.

Outcome 3:
All people in South Africa are and feel safe

This outcome can be achieved only if South Africa's borders are effectively defended and secured, an area in which SANSA can contribute. Earth observation satellites provide information on monitoring cross -border theft, drug trafficking and African peace-keeping, as well as crime prevention and national security monitoring.

Outcome 4:
Decent employment through inclusive economic growth

Key targets in this outcome include growing the economy rate to above 5%, achieving much higher levels of employment creation and more rapidly reducing inequality. SANSA will make a meaningful contribution towards the achievement of this outcome through satellite manufacturing as a potential employment generator.

Outcome 5:
A skilled and capable workforce to support an inclusive growth path

SANSA will contribute to building an inclusive society and a growing and competitive economy through basic and applied science and human capital development by creating new knowledge and highly skilled individuals.

The FUNDISA Disk resources, which is an example of a SANSA initiative, provide students and learners with an overiew of and gateway to remote sensing and Earth observation technologies.

Outcome 6:
Comprehensive rural development and land reform

SANSA will advocate the use of space technology to improve access to quality basic infrastructure and services, particularly education, in remote, rural and infrastructure-challenged regions of our country.

Partnerships and collaboration that promote cost-effective satellite enabled distance-learning programmes independent of ground-based infrastructure, will help ensure connectivity across physical boundaries to bridge the gap between the "haves" and "have-nots".

Outcome 8:
Sustainable human settlements and improved quality of household life

SANSA will provide government with satellite-derived products, such as the National Human Settlements Layer, to clearly map human settlements patterns, specifically the dynamics of informal settlements. This will improve the linkages between human settlements planning, economic and commercial development and spatial planning frameworks to guide investment decisions, increase integration and improve the location of human settlements.

Outcome 9:
A responsive, accountable, effective and efficient local government system.

The expected central focus is sustainable and reliable access to basic services. SANSA will equip municipalities and local governments to extend basic services to millions of households by providing national geospatial support data products, as well as national land-use and land-cover products. GIS and RS technologies will assist government to make better decisions and monitor service delivery progress.

Outcome 10:
Environmental assets and natural resources that are well-protected and continually enhanced.

Government must improve decision-making tools and harness research and information management capacity to identify, develop and maintain datasets to generate policy-relevant statistics, indicators and indices to achieve this outcome. Globally, space-based systems are critically important for risk prediction and mitigation. Space technologies are crucial to providing operational applications or solutions that address national challenges, as well as decision support tools for government. These include applications in natural resource management, climate change, environmental management and disaster management. SANSA will ensure that space-derived solutions are integrated into service delivery for the benefit of society.

National Space Programme (NSP) formulation

The National Space Strategy sets the national goals and objectives for space science and technology. The draft implementation plan from the DST "*provides a framework for the formalisation of a national space programme and further provides guiding principles on how the operationalisation is to be realised".*

In line with this, a national consultative process was undertaken to formulate a coherent National Space Programme (NSP 2030). This plan defines programmatic and technology road-mapping that takes the South African space programme to the year 2030.

The NSP 2030 consists of the National Earth Observation Programme (NEOP), National Space Science Programme (NSSP), National Space Engineering Programme (NSEP) and National Space Operations Programme (NSOP). The NSP sets project and resourcing priorities, clarifies institutional interfaces, highlights high-level outputs and measures of success for the NSP.

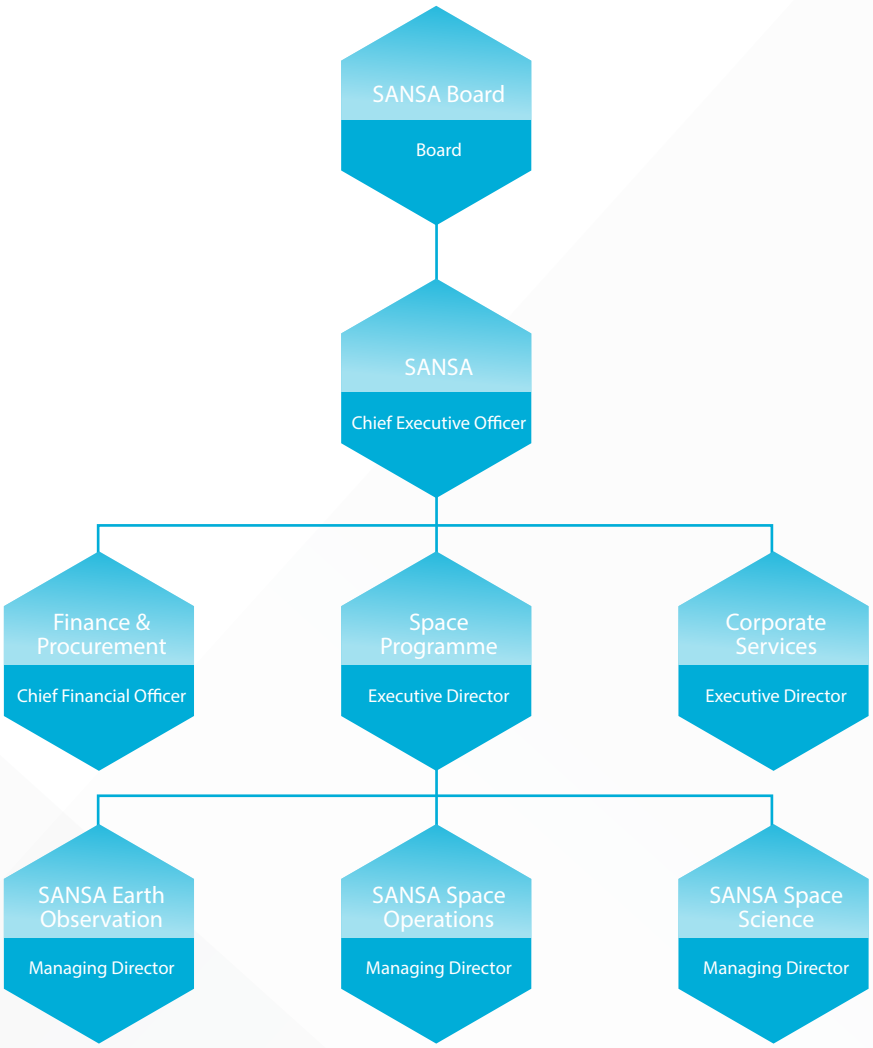
ORGANISATIONAL ENVIRONMENT

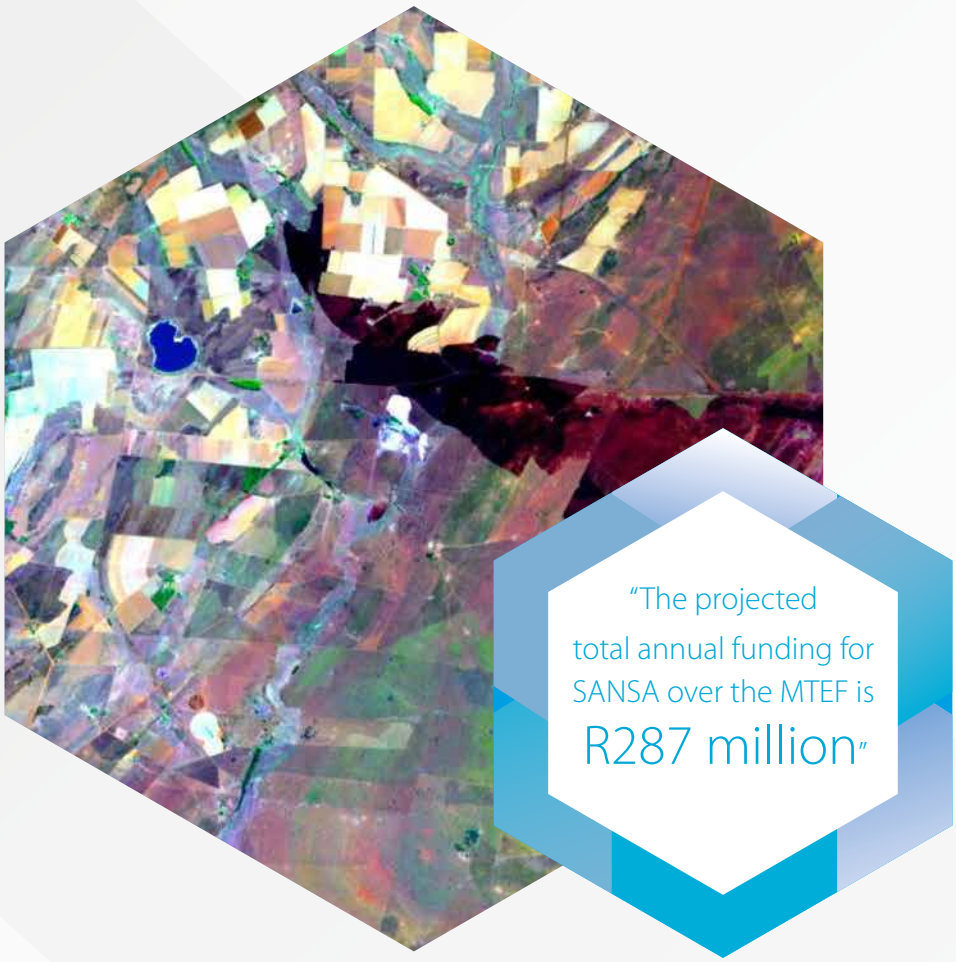
Organisational Structure

To deliver on its mandate, SANSA is structured as follows:

- SANSA Corporate Office
- SANSA Earth Observation directorate
- SANSA Space Operations directorate
- SANSA Space Science directorate
- SANSA Space Engineering directorate.

SANSA ORGANISATIONAL STRUCTURE





REVISIONS TO LEGISLATIVE AND OTHER MANDATES

There are no significant changes to the South African National Space Agency legislation and other mandates that relate directly to SANSA.

OVERVIEW OF 2015/16 BUDGET AND MTEF ESTIMATES

Transfers and Revenue Estimates

South African National Space Agency: Source of Funds

Total Transfers and Revenue Outlook over the MTEF
The projected total annual funding for SANSA over the MTEF is R287 million (2015/16), R290 million (2016/17) and R312 million (2017/18), with an MTEF total of R889 million.

Total Expenditure outlook over the MTEF

The projected total expenditure for SANSA over the MTEF is R889 million, with allocations of R287 million in 2015/16, R290 million in 2016/17 and R312 million in 2017/18.

The overall spending focus over the medium-term is to contribute to the NDP priorities of radical economic transformation; rapid economic growth and job creation; rural development, land and agrarian reform and food security; access to adequate human settlements and quality basic services; and ensuring quality health care and social security for all citizens.

This will be achieved through the following allocations to SANSA programmes:

Corporate Support Programme

The Corporate Support Programme is allocated R117 million over the MTEF, with annual allocations of R39 million in 2015/16, R38 million in 2016/17 and R40 million in 2017/18 for mainly governance and administrative support to all core programmes.

Earth Observation Programme

The Earth Observation Programme is allocated R207 million over the MTEF. Annual allocations are R70 million in 2015/16, R67 million in 2016/17 and R70 million in 2017/18. The major expenditure in this programme is on access to Earth observation satellites and the related maintenance of data processing and storage facilities for satellite imagery that consists of an invaluable database that spans more than 50 years.

These activities contribute to providing crucial geospatial information for the planning and monitoring of the country's resources in achieving all the NDP priorities stated above. The cost of accessing satellite data has increased significantly over the past two years with as much as 60% due to the availability of new upgrades and technologies.

The cost pressures of accessing satellites are felt keenly as technologies change and data systems need maintenance to keep up with the technological changes. Discontinuing the funding

TABLE 2: SOUTH AFRICAN NATIONAL SPACE AGENCY: EXPENDITURES BY PROGRAMME

Programme R'000	Approved Budget			Medium-Term Expenditure Estimate			Total MTEF	% of Total
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18		
Corporate Support	33 034	34 855	41 197	38 802	38 190	40 093	117 085	13%
Earth Observation	62 000	62 506	66 221	69 601	66 693	70 268	206 562	23%
Space Operation	30 000	42 182	42 676	47 442	50 874	53 832	152 148	17%
Space Science	32 877	33 548	36 371	33 779	31 732	33 101	98 612	11%
Space Engineering	16 200	49 000	70 000	97 466	102 653	114 681	314 800	35%
Total Programme Allocation	174 111	222 091	256 465	287 091	290 142	331 974	889 207	100%

for these programmes will have a catastrophic impact on providing the country with national geospatial information.

Space Operations Programme

The Space Operations Programme provides ground support infrastructure maintenance for telemetry services to enable remote sensing processes in the acquisition of satellite data and imagery. Infrastructure (ground segments) for international clients is hosted at Hartebeesthoek to generate operational income and to maintain the investment in the antennae infrastructure and related operating systems. The allocated budget for the MTEF is externally sourced at R152 million over the MTEF, with annual allocations of R47 million in 2015/16, R51 million in 2016/17 and R54 million in 2017/18.

Space Science Programme

The Space Science Programme has an allocation of R99 million over the MTEF, with annual allocations of R34 million in 2015/16, R32 million in 2016/17 and R33 million in 2017/18. The major expense is employee costs for scientists and engineers who focus on basic and applied space science research, as well as the administration of scientific data ground segments, provision of space weather and other geo-space products and services.

Space Engineering Programme

The Satellite Build Programme has an allocation of R315 million over the MTEF and annually an amount of R97 million in 2015/16, R103 million in 2016/17 and R115 million in 2017/18. The satellite development programme is a catalyst for maintaining and developing new capabilities in space-based technologies to contribute to economic transformation.

The programme also ensures the creation of high-technology jobs within the national space industry to provide a continuity in the availability of skills for space-related activities.

TABLE 3: SOUTH AFRICAN NATIONAL SPACE AGENCY: EXPENDITURE ESTIMATES BY SUB PROGRAMME

Sub Programme R'000	Approved Budget			Medium-Term Expenditure Estimate			Total MTEF	% of Total
	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18		
Administration	33 034	34 855	41 197	38 802	38 190	40 093	117 085	13%
Research & Applications Development	35 561	38 837	41 368	45 137	43 784	44 851	133 772	15%
Data, Products and Services	17 630	17 907	32 343	35 346	36 620	38 456	110 442	12%
Data Systems Management	6 200	18 170	18 824	9 422	6 305	8 775	24 502	3%
HCD and Science Advancement	28 959	10 574	11 398	16 264	15 532	15 288	47 085	5%
Space Operations	12 450	31 036	26 858	29 622	31 687	33 491	94 800	11%
Data Downloading Services	15 200	14 832	7 203	8 318	9 024	9 599	26 941	3%
Applied Science and Technology	8 877	6 710	7 274	6 713	6 347	6 740	19 800	2%
Satellite Development and Strategic Initiatives	16 200	49 000	70 000	97 466	102 653	114 681	314 800	35%
Total Sub Progeamme Expenditure	174 111	221 921	256 465	287 091	290 142	311 974	889 207	100%
Economic Classification								
Current payments	144 211	162 283	188 122	193 989	192 331	201 469	587 789	66%
Compensation of employees	70 147	82 228	92 044	103 305	111 703	118 923	333 931	38%
Goods and services	74 064	80 055	96 078	90 683	80 629	82 547	253 858	29%
Payments for Capital Assets	29 900	59 808	68 343	93 102	97 811	110 505	301 418	34%
Machinery and equipment	28 200	58 108	68 225	92 977	97 680	110 367	301 024	34%
Intangible Assets	1 700	1 700	118	125	131	138	394	0%
Total Sub Programme Expenditure	174 111	222 091	256 465	287 091	290 142	311 974	889 207	100%

STRATEGIC GOALS

SANSA has identified seven strategic goals to achieve its mandate. The first five strategic goals are outward-looking with a focus on the core functional areas of SANSA and a predominantly national focus. They reflect SANSA's strategic intent to lead, coordinate and drive programmes in collaboration with its national partners to achieve its mandate and the national objectives aligned with the NSS and NSP. The remaining two strategic goals are inwardly focused to ensure that SANSA's growth as a high-performing Agency is sustainable.

SANSA implements its seven strategic goals through activities clustered along the five broad strategic programmes profiled below:

- Corporate Support Programme

The Corporate Support Programme provides management, administrative and technical support across all operating units. This facilitates operational efficiency and cost-effective management, aligned with sound governance principles and the seamless integration and collaboration between SANSA directorates.

- Earth Observations Programme

SANSA's Earth Observation Programme is responsible for the collection, processing, archiving and distribution of Earth observation data and data products for societal benefit. SANSA maintains an Earth observation portfolio of sensors, provides an R&D platform in Earth observation technologies, conducts satellite image processing and correction and provides human capital development in Earth observation and science advancement.

- Space Science Programme

The Space Science Programme leads multi-disciplinary space science. Key functions include basic and applied science research, the support of space-facilitated science through science data acquisition, coordination and administration of scientific data ground segments, as well as the provision of space weather and other geo-space products and services on a commercial and private basis. The programme also provides leadership in postgraduate science student training and primary science advancement, as well as learner and educator space science support.

- Space Operations Programme

The Space Operations Programme is responsible for the acquisition of satellite data for the Earth observation programme and the provision of ground segment support. Through this programme, SANSA conducts various space operations, including launch and early-orbit support, in-orbit testing, satellite life-cycle support and satellite mission control for national and international space industry clients and governments. The programme also supplies hosting capabilities and intends to extend this capability to Teleports.

- Space Engineering Programme

SANSA's Space Engineering Programme leads systems engineering and project management expertise and drives a small satellite build programme in South Africa in partnership with primary contractors, R&D institutions and private sector partners. The programme conducts satellite and sub-systems analysis, leads the technical side of space programme project management, provides human capital development in space engineering and facilitates private space industry partnerships.

Strategic Goal 1:
Address South Africa's challenges through space services and products

Investment in space has a crucial role in providing operational applications or solutions that address national challenges and provide decision-support tools for government. These include applications in natural resource management, climate change and environmental management, disaster management, rural development and urban planning, national safety and security.

The primary objective here is to ensure that space is integrated into service delivery and is an indispensable tool in government decision and policy formulation.

Goal 1 has two strategic objectives as summarised in Table 1.

EACH OF THE PROGRAMMES CONTRIBUTE TO ACHIEVING SANSA'S STRATEGIC GOALS AS INDICATED BELOW:

Programmes					
Strategic Goals	Corporate Support	Earth Observation	Space Science	Space Operations	Space Engineering
Address South Africa's challenges through space services and products		•	•		
Lead high-impact collaborative R&D on a national scale		•	•		
Develop national human capacity and ensure transformation		•	•	•	•
Enhance the competitiveness of the South African space industry		•		•	•
Develop active global partnerships	•	•	•	•	•
Ensure the growth and sustainability of SANSA	•				
Transform SANSA into a high-performance Agency	•				

TABLE 1: GOAL 1 STRATEGY, MEASURES AND TARGETS

Strategic Goal 1: Address South Africa's challenges through space services and products

National Space Strategy Alignment

Objective 2: Developing services and products that can respond to user needs

Objective 3: Satellite or services offered from existing facilities

Objective10: Advocating the importance of space science and technology as a priority measure in meeting national development needs

Objective 11: Building local awareness of space science and technology

SO1.1. Lead and faciliate the creation of high-impact products and applications to address society's needs and challenges

Measure: The number of national high-impact products and applications

Five year target: 22 national high-impact operational space related applications by end March 2020

Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • identify and work closely with government departments that have a high impact on societies • continually assess user needs by engaging public service providers (incl government) and private sector users • continually scan the global landscape for new applications that meet societal needs • work with public service providers to translate their needs into technical requirements for developers who develop the necessary operational applications • identify unique space-based products and services to enhance the South African non-space industry • collaborate with science councils, Higher Education Institutions (HEIs) and industry to develop high-impact operational applications • ensure that there is synergy between the R&D agenda and the applications • fund the applications development projects • set and monitor the delivery standards of space related applications • continually monitor the impact of the applications • National geospatial decision support data products • National land-use and land-cover base maps (information products) • Space weather services • Magnetic Technology	T1.1. Four high-impact national products and applications	1	1	1	1

SO1.2 Provide government with effective policy or decision tools and support

Measure: The number of government decisions supported or policy tools

Five year target: Ten effective decision or policy support tools by end March 2020

Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
• To achieve this SANSA will: • continually assess policy and strategy directions nationally and globally • provide government with policy and decision intelligence, as well as thought leadership • equip government with the support needed for the international engagement in space related matters • continually monitor the impact of government decision tools and support • Space weather impact on aviation • Mapping urban population movement	T1.2. Two government policy support tools	-	-	-	2

IMPLEMENTATION APPROACH

1. National Geospatial Decision-Support Data Products

SANSA will timeously and efficiently provide users with high quality image data products. SANSA acquires satellite data from a number of international satellites for national benefit. These include Landsat 8, SPOT 6 and 7, and MODIS. This centralised acquisition under single-license multi-user arrangements eradicates unnecessary and duplicated acquisitions in the public sector, ensures long-term archiving of valuable data stock and saves over 80% on the commercial list prices for the collective public sector.

An estimated 40 government entities at national and provincial levels use these data resources. SANSA has also negotiated favourable licensing that provides users in the South African private sector and SADC region with discounted access to these data. SANSA seeks to:

- increase ease-of-access to national geospatial decision-support data products
- improve processing tools to enhance user experience and benefit
- improve the quality of the data products
- improve turnaround times.

OPERATION PHAKISA (MARINE INFORMATION SERVICES)

As part of the NDP, the country has embarked on Operation Phakisa. The initiative aims to leverage R177 billion from ocean activities by 2033. Four critical areas have been identified: transport and manufacturing, offshore oil and gas exploration, aquaculture and marine protection services. SANSA and its partners will contribute in varying degrees to these areas and more specifically, to the marine protection services. SANSA's ground station field-of-view covers some of the territorial waters of South Africa. This will assist in the collection of the optical and radar data required for marine services. The Agency will support the processing of the data and derivation of the required information.

2. National Land-Use Land-Cover Base Information Layers

SANSA will process some of the satellite imagery to provide base information products for national use. Satellite imagery provides the user with useful information. SANSA uses its extensive data repository to derive base information layers that can be complemented by other users to provide comprehensive solutions.

SANSA has identified four key national land-use and land-cover information layers.

(a) National Human Settlements Layer:

The focus of this information layer is on mapping all built-up areas using automated algorithms. The results of the human settlements maps will be disseminated to the Department of Human Settlements, Housing Development Agency, Statistics South Africa, Municipal Demarcation Board, Eskom, Department of Environmental Affairs, Municipalities, Department of Agriculture, Forestry and Fisheries and Department of Water Affairs and Sanitation.

The digital human settlements maps will also be available on the web to allow users to interactively query the geo-databases and extract attributes of interest from the maps.

(b) National Water Layer:

This information layer will focus on supporting the Department of Water Affairs and Sanitation, Department of Environmental Affairs and Department of Agriculture, Forestry and Fisheries with water information products.

Priority will be given to the automated extraction of water bodies using Landsat 8, SPOT 6 and SPOT 7 satellite imagery. Water body maps will produce an inventory of all water bodies, such as the dams in the country, to comply with the Water Act and for water licences purposes.

Additional work will be undertaken to support water quality assessment, water demand modelling and land degradation assessment at water catchment level. The work on this project is aligned with the ESA-funded TIGER programme.

(c) National Vegetation Layer:

The focus of this information layer is on automating the generation of vegetation indices at a national scale using Landsat 8 data. These products will be delivered to the clients on a monthly basis as mosaicked normalised vegetation composites.

The vegetation mapping project will also encompass the mapping of rangelands in South Africa, which will be undertaken with the GEOGLAM framework. The users of vegetation products include the Department of Agriculture, Forestry and Fisheries for rangeland assessment and the Department of Water Affairs and Sanitation and Department of Environmental Affairs. SPOT 6, SPOT 7 and CBERS 4 will also be integrated into this project.

(d) National Disaster Management Layer:

This information layer will be developed for the National Disaster Management Centre.

The focus will be on flood prediction and vulnerability modelling, developing flood and fire maps, monitoring drought and generating a reference of datasets for disaster management. SANSA looks forward to supporting various disaster management authorities at provincial level. Collaboration with NASA and ESA will be strengthened to reach this goal.

3. Space Weather Services

Space weather is important to our daily lives because it can affect the technology that man has become so dependent upon. The role of technology in society is ever-increasing and the potential for space weather to impact daily lives, therefore, is also growing. The following technologies can be affected by space weather:

(a) Satellite systems:

Space weather affects the electronics, communications and navigation systems of a satellite and can cause changes in a satellite's orbit. Satellites cost Rand billions to develop and launch and the loss of a satellite system or its use can, therefore, be very costly.

(b) Electric power networks:

Space weather changes may create Geomagnetically Induced Currents (GICs) which, in turn, could damage expensive transformers, cause power outages and result in significant economic loss.

(c) Satellite-based navigation:

Satellite-based navigation (eg GPS) range errors increase when there is a variation in the total electron content induced by space weather. Apart from its impact on navigation, space weather can also increase radiation levels on board planes, particularly long-haul flights that fly at higher altitudes. This could affect flight crews and frequent flyers and needs continued close surveillance by airlines.

(d) Satellite-based communication:

The extent to which radio signals that propagate from satellites to the Earth through the ionosphere are refracted and attenuated, is proportional to the total electron content along the ray path, which in turn depends on space weather conditions. This could cause interruptions in radio communication from satellites such as voice, video, weather and internet data relayed via satellites.

(e) HF-based communication:

The extent to which radio signals at the High Frequency (HF) band travelling through the ionosphere are refracted, attenuated and absorbed depend on the geomagnetic conditions in space, which in turn depends on space weather conditions. This could cause a ground-to-ground or ground-to-air HF radio communications blackout, which would affect the defence, aviation and amateur radio sectors.

(f) Aviation:

The effect of space weather on aviation can include a disruption in HF communications, satellite navigation system errors and radiation hazards to humans and avionics. The aviation industry require space weather products that assist with flight planning and the International Civil Aviation Organisation (ICAO) has recommended that by 2017, all flight plans must include space weather information by law. SANSA aims to be ready to provide this service.

SANSA operates the only Space Weather Regional Warning Centre in Africa as part of the International Space Environment Service (ISES).

The Space Weather Centre provides an important service to the nation by monitoring the sun and its activity to provide information, early warnings and forecasts of space weather conditions.

The space weather and related geospace products and services are required primarily for communications and navigation systems in the defence, aeronautics, navigation and communications sectors. Currently, the space weather service offers daily (working day) space weather updates and early warnings to space weather clients. SANSA has a mobile SMS and email warning system and a Twitter account to facilitate emergency warnings.

Priorities for the year ahead entails:

- further improve space weather services
- provide appropriate products and services to the aviation industry
- focus work more on energy security applications
- develop a mobile application.

4. Magnetic Technology Services

SANSA operates a magnetically clean facility that includes a large three-axis Helmholtz coil system. This facility provides an important service to the nation and clients in the space and non-space sectors by providing electric and magnetic navigation ground support and other magnetic technology services, such as landing compass calibrations, magnetic sensor sourcing and integration.

These magnetic technology services are primarily provided to the defence, navigation and aviation sectors, which also make use of SANSA on a consultancy basis for electric and magnetic technology requirements. The priorities for the year include:

- providing an evaluation and test facility for space-qualified and other magnetic sensors
- increasing support to the maritime environment.

Strategic Goal 2: Lead high-impact collaborative R&D on a national scale

SANSA firmly believes in the value of science - both basic and applied science – to create new knowledge, new technologies and innovation with a direct impact on the economy and society. Science also increases our knowledge and understanding of our universe, its sustainability and ourselves.

In this regard, SANSA will foster and lead collaborative space-related R&D on a national scale. The primary objective is to: Increase the national space research output.

TABLE 2: GOAL 2 STRATEGY, MEASURES AND TARGETS

Strategic Goal 2: Lead high-impact collaborative R&D on a national scale					
National Space Strategy Alignment Objective 3: Satellite or services offered from existing facilities Objective 4: Organising some of the current space science and technology activities into strategic programmes Objective 6: Partnerships with established and developing spacefaring countries for industrial and capacity development purposes Objective 11: Building local awareness of space science and technology					
SO2.1. Increase the national space research output (This productivity score is based on a function of research funding sourced + publications (journals, books, reports, proceedings) + students graduated + research rating status)					
NSS Alignment : Objective 3 - Satellite or services offered from existing facilities					
Measure: The national research productivity score for space-supported R&D					
Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • develop and implement a clear national space R&D plan aligned with the NSP • provide national space R&D infrastructure (observational networks, data centres, facilities) • conduct collaborative R&D with science councils, universities and industry • ensure that there is synergy between research and applications support national R&D through funding • foster international partnerships and facilitate national access to multinational projects • provide national seed funding that will unlock matching international funding	T2.1. Achieve a research productivity score of 750	100	200	200	250

THE KEY ACTIVITIES IN 2015/16 ARE THE FOLLOWING:

1. Increase research publications in space related areas

South Africans produced a total of 9 793 high-impact publications in 2012, which translated to a world share of 0.73%. South African research outputs are below that of its BRICS counterparts, where Brazil, Russia and India produced 37 000, 28 000 and 48 000 research publications respectively in 2012.

SANSA's priority for the year, therefore, is to increase the number of space-related publications in high-impact factor journals at a national level. Some of the key projects to be undertaken seek to address this.

The key research themes identified by the NSP will guide the research priorities and allocation of resources within SANSA and in any R&D that SANSA supports.

2. Supervise additional MSc and PhD students in space-related areas

The MTSF has a target of 2 400 PhDs per year from 2014 and 12 000 by 2019. South African universities awarded 1 878 doctoral degrees in 2012, of which only 985 or 52% were in SET fields. The NSP has prioritised and identified a number of human capacity development programmes, including the Accelerated Capacity Development programme. SANSA aims to contribute to the sustained increase of doctoral degrees through the dedicated and planned supervision of MSc and PhD students in space-related areas. Increasing the pool of doctoral graduates will contribute to better quality research outputs and superior generation of new knowledge.

The priorities for the year, with an emphasis on student supervision, will include:

- fostering a higher uptake of students by researchers
- strengthening space research linkages with national and international universities
- providing SANSA bursaries to students and facilitating student development through skills intervention programmes and targeted opportunities.

3. Increase the success rate of winning grant funding for space research

In an environment of scare resources, researchers need to increase their research funding through sourcing specific research grant funding.

The priorities for this year include:

- proactively scanning for national and international research grant opportunities systematically communicating research grant opportunities
- collaboratively developing high quality, multi-institutional, multi-disciplinary research proposals in space research projects
- strategically aligning research focus areas with important national and international areas.

The weighting of the different components that contribute to the research productivity score are given below.

RESEARCH PRODUCTIVITY SCORING METHOD

Description	Points per item
Publications	The sum of the weighted points per impact factor and author position
Research funding	1 point per R30 000 of research funding
MSc students graduated	20 per student
PhD students graduated	60 per student
Technical reports	5 per report

Description	Points per item
Conference proceedings	5 per proceeding
Whole books	100 per book
Chapters in books	15 per chapter
First-time A-rating	100 per researcher
First-time other than A-rating	50 per researcher
Improvement in rating	50 per researcher
Retention in rating	40 per researcher

Strategic Goal 3:
Develop national human capacity and ensure transformation

The viability of the NSP in delivering on its targets requires an increased interest in STEM (science, technology, engineering, mathematics) fields and developing rare and transferable skills to meet national demand. Capacity development in space-related areas will benefit not only space science and technology, but will have a spillover effect and impact other areas that require scientists, engineers and technicians.

TABLE 3: GOAL 3 STRATEGY, MEASURES AND TARGETS

Strategic Goal 3: Develop national human capacity and ensure transformation

National Space Strategy Alignment

Objective 6: Creating partnerships with established and developing spacefaring countries for industrial and capacity development purposes

Objective 7: Strengthening training and technology transfer programmes, including the sharing of experience and expertise

Objective 8: Promoting space science and technology in academic institutions and science centres and providing opportunities for short- and long-term training and education

Objective 10: Advocating the importance of space science and technology as a priority measure for meeting national development needs

Objective 11: Building local awareness of space science and technology

S3.1. Increase youth awareness of science

Measure: The number of youth directly engaged (This excludes arms-length engagement with the youth, eg visits to the SANSA exhibit stand)

Five year target: 15 000 young people directly engaged by end March 2020

Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • attract, develop and grow the national space science and technology skills base • develop, maintain and market space science and technology infrastructure to remain relevant and sought after • use SANSA facilities to expose young people to science • have a focused science advancement programme at each directorate with dedicated personnel to drive the initiative • partner with SAASTA (South African Agency for Science and Technology Advancement) and national science centres	T.3.1. Directly engage 8 000 young people	2 000	3 000	2 500	500

SO3.2 Support students and interns with a transformation agenda

Measure: The number of supported students and interns for formalised training (This excludes short courses and focuses on degree-registered students and interns)

Five year target: Total of 350 students supported by end March 2020

Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • provide research support (funding, data, research facilities) to students • conduct short course training and schools • ensure that SANSA researchers co-supervise research students • partner with national and international universities • run internship programmes and workplace training initiatives • ensure that all the above support a transformation agenda	T3.2. Support 40 students	30	3	0	7

THE KEY ACTIVITIES IN 2015/16 ARE THE FOLLOWING:

1. Increase youth awareness of science

SANSA's role in increasing the STEM pipeline ranges from stimulating interest in science and promoting the inclusion of space science into the South African curriculum for undergraduate and postgraduate student training, work-force training and employment. The socio-economic value of improving the overall scientific literacy of society and educating the public about the benefits of space is indisputable.

- SANSA, in partnership with SAASTA, will offer curriculum-based activities using space as the driver to create excitement in science and technology
- SANSA will participate in national science advancement activities, such as SciFest Africa
- SANSA will continue to develop the SANSA Science Centre and the SANSA Space Lab as vehicles for engaging the youth in science.

2. Support student training with a transformation agenda

The NDP aims to increase the participation rate in higher education to over 30 percent by 2030. Currently, South Africa's gross tertiary enrolment ratio ranking of 96 lags behind the other BRICS countries where Russia, China, Brazil and India are ranked 13th, 80th, 82nd and 94th respectively. Therefore, South Africa must increase its tertiary education enrolment to meet the NDP target and be on par with its BRICS counterparts.

SANSA will increase its focus on producing space students:

- SANSA, in partnership with the NRF, will identify research niche areas and pursue funding opportunities for prospective MSc and PhD students, as well as bursary funding.
- SANSA will offer student supervision in space related areas at universities
- SANSA scientists will partner with universities to act as guest lecturers on space-related topics to increase student awareness about space research.

Strategic Goal 4: Enhance the competitiveness of the South African space industry

The global space industry is growing at a rapid rate and is currently estimated at $314 billion USD. The industry drives new technologies and innovation with applications that extend beyond space systems into sectors such as medicine, manufacturing, security and energy.

One of the objectives of the National Space Strategy is for South Africa to capture a reasonable share of this global space market.

TABLE 4: GOAL 4 STRATEGY, MEASURES AND TARGETS

Strategic Goal 4: Enhance the competitiveness of the South African space industry					
National Space Strategy Alignment Objective 1: Developing the local private space science and technology industry sector Objective 7: Strengthening training and technology transfer programmes, including the sharing of experience and expertise Objective 11: Building local awareness of space science and technology					
Strategic Objective S4.1. Generate greater benefit for the space programme through space operations activities					
M4.1.1: Successful satellite pass monitoring rate for Earth Observation M4.1.2: Total income generated from space operations activities M4.1.3: Total amount of space operations income invested in other SANSA programmes					
Five year targets: T4.1.1: Successful satellite pass monitoring rate for Earth Observation at 99% T4.1.2: Total income of R326 million over five years generated from space operations activities T4.1.3: Total amount of R60 million over five years of space operations income invested in other SANSA programmes					
Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • support EO data acquisition • increase launch support activities • increase the in-orbit-testing business • increase the infrastructure hosting business • invest in new infrastructure • develop the satellite-based augmentation navigation applications • actively market the business • optimise the support of other SANSA programmes • ensure the gainful employment of skilled staff	T4.1.1 Successful satellite pass monitoring rate for earth observation				97%
	T4.1.2 Total income generated from space operations activities				R58.3 million
	T4.1.3: Total amount of space operations money invested in other SANSA programmes				R10,176 million

SO4.2 Grow the national space industry					
M4.2.1: The number of direct jobs supported externally through SANSA programme contracting M4.2.2: The progress status on the EO-Sat1 development project M4.2.3: The total contract expenditure to SMEs for core space projects M4.2.4: The total contract expenditure to the broad space-related industry for core space projects					
Five year targets: T4.2.1: A total of 100 direct jobs supported externally through SANSA programme contracting T4.2.2: Proportional progress culminating in EO-Sat1 launch T4.2.3: A total contract expenditure of R65 million over five years to SMEs for core space projects T4.2.4: The total contract expenditure of R306 million over five years to the broad space- related industry for core space projects					
Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • develop the RSA Space Industrial capability • develop Competitive Space Technology • provide leadership to implement a domestic space engineering programme with clear performance measures • grow the share of RSA's participation in the international space market • support industry jobs through contracting for direct space-related work • develop EO-Sat1 and the related industry • ensure that a significant component of SANSA work (in terms of monetary value) is outsourced to the private space industry • ensure that a significant component of SANSA work (in terms of monetary value) is outsourced to the space industry (both public and private)	T4.2.1: The number of direct jobs supported externally through SANSA programme contracting				44
	T4.2.2 : The progress status on the EO-Sat1 development project				25%
	T4.2.3 The total contract expenditure to SMEs for core space projects				R 2.4 million
	T4.2.4: The total contract expenditure to the broad space- related industry for core space projects				R 50 million

THE KEY ACTIVITIES IN 2015/16 ARE THE FOLLOWING:

1. Generate greater benefit for the space programme through space operations activities

Apart from the Earth observation support services, the space operations activities are conducted largely to service the international commercial market. Therefore, their value to the South African community lies in the funding of high-skilled jobs, foreign income generated for the country and use of this income to support other SANSA programmes with direct public value.

Earth Observation Support

A large proportion (74%) of SANSA's space operations activities relating to the daily passes of Low Earth Orbit (LEO) satellites are devoted to data acquisition for SANSA's Earth observation programme. A total of 5 880 satellite passes are forecast for the year, of which 4 380 passes will be for Earth observation and a targeted success pass acquisition of 97%.

Income Generation

Space operations activities generate large foreign revenue with some local income from Earth observation data acquisition and defence-related work. The value of SANSA's space operations is its self-funding ability and the income generated is important. The targeted revenue for the year is R58 million, R3 million up from the 2014/15 baseline of R55 million.

The satellite development programme, which is the primary driver of SANSA's industry development initiatives, is funded by the Economic Competitiveness Support Package (ECSP) with a primary objective of increasing South Africa's global competitiveness.

The success of this programme will be measured, inter alia, in job creation, technology, innovation and foreign direct investment.

Jobs Supported

SANSA and Denel Dynamics have a core compliment of employees that are directly involved with the satellite build programme. A total of 44 employees are forecasted for the year ahead, up from 40 in 2014/15.

EO-Sat1 Development

The vehicle for technology development and innovation is the satellite build programme. Progress in this project will be an indication of the technological and innovation progress of the country. The target for 2015/16 is a 25% progress status for the technical development milestones, with a baseline of 25% from 2014/15.

Contracting value to private SME space industry

SANSA's mandate, as prescribed in the SANSA Act, is to stimulate the South African space industry. SANSA will, therefore, ensure that its contracting efforts stimulate the private industry to benefit the country. This will require clear private company outsourcing targets. The targeted industries are in the space technology development sectors and Earth observation value-addition services. SANSA's target for private industry contracting for 2015/16 is R2.4 million with a baseline estimate of R2 million.

Contracting value to public and private space industry

SANSA will ensure that there is significant contracting within the space industry to meet its mandate of stimulating the space industry as a whole. Investment in space, due to its nature, is high risk and is globally heavily reliant on governments as anchor clients to support a country's national space industry.

As the lead implementer of the space programme, SANSA has to provide the necessary anchor to the local space industry. The industry requires steady contracting to provide the base work that keeps it going. The targeted broad industry contractual spend is R50 million.

The priorities for the year are:
- Conducting a comprehensive analysis of the current state of the local space industry
- Identifying the current demand and supply of skills and existing skills gaps in the local space industry
- Reviewing the current state of training in the local space industry
- Analysing the current global spacecraft ground support market and South Africa's competitive position as a service provider to develop clear market share metrics
- Developing the 2030 South African Space Industry Growth Plan based on the NSP.

Strategic Goal 5: Develop active global partnerships

Space science and technology is effective only when undertaken as part of a global partnership. South Africa, through SANSA, must position itself as a strategic partner for the African continent, BRICS countries and other continental and regional blocks, as well as other global players in space science and technology.

There is socio-economic value in establishing and maintaining effective and mutually beneficial international partnerships aligned with national strategic priorities that contribute to South Africa's space programme aspirations.

TABLE 5: GOAL 5 STRATEGY, MEASURES AND TARGETS

Strategic Goal 5: Develop active global partnerships					
National Space Strategy Alignment Objective 5: Optimising the organisation of future space activities to respond to opportunities with international industrial partners or international space agencies Objective 6: Partnerships with established and developing spacefaring countries for industrial and capacity development purposes Objective 9: Responding to challenges and opportunities in Africa					
SO5.1. Leverage a significant benefit for the space programme through global partnerships					
Measure M5.1:The equivalent revenue generated through partnerships as a proportion of the space programme revenue (This would include monetary and in-kind benefit)					
Five year target: Global partnerships contribute an equivalent of 10% to the space programme revenue					
Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • develop a clear partnership strategy • enter into formal strategic partnerships that support the partnership strategy • involve national partners in SANSA's strategic partnerships • involve national partners in multi-national proposals • actively participate in multi-national forums • enter into long-term funding agreements with partners • develop and implement a cost-benefit framework for partnerships (to quantify partnership value) • monitor and report all partnership engagements • foster African partnership through the AfriGEOSS • Continue ARMC initiatives as a key pillar of African collaboration	T4.1. Global partnerships contribute an equivalent of 5% to the space programme revenue	1.25%	1.25%	1.25%	1.25%

THE PRIORITIES FOR THE YEAR TO ACHIEVE THIS ARE TO:

- drive a clear business development plan
- nurture and enhance strategic stakeholder relationships within all SANSA programmes.

Strategic Goal 6:
Ensure the growth and sustainability of SANSA

SANSA has to adapt to the fast-changing global space market and meet the ever-changing socio-economic needs of the country to grow and remain sustainable. The Agency's ability to execute its mandate efficiently and effectively requires a strong focus on new business development, the effective engagement of key stakeholders and effective communication and promotional activities of the NSP to garner favourable publicity of the brand promise and increase the Agency's brand equity. A combination of the activities below will contribute to revenue growth for the Agency.

TABLE 6: GOAL 6 STRATEGY, MEASURES AND TARGETS

Strategic Goal 6: Ensure the growth and sustainability of SANSA

National Space Strategy Alignment

Objective 11: Building local awareness of space science and technology

Strategic Objective SO6.1. Ensure that SANSA has annual measurable growth and is sustainable

M6.1.1: Total SANSA income

M6.1.2: Estimated annual monetised impact

M6.1.3: SANSA's public value awareness

Five year target:

T6.1.1: Total SANSA revenue income of R1 259 billion by end March 2020

T6.1.2: Estimated monetised impact of R140 million by end March 2020

T6.1.3: SANSA's national public value awareness of 90% by end March 2020

Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • create and implement a multi-faceted promotions programme • identify and grow new revenue generating commercial and public sector opportunities • refocus on value-adding products and services for the public service that attract funding/resources • engage with high-level stakeholders (DST, government departments, PPC) to internalise RSA's reliance on space • align with key government departments • monitor and evaluate SANSA's impact • monitor and evaluate SANSA's brand awareness and value through an annual survey • standardise brand application • develop an innovative branding strategy and brand awareness campaign targeting internal and external stakeholders • monitor the implementation status of the NSP	T6.1.1 Total SANSA income				R223 million
	T6.1.2 Estimated annual monetised impact				R105 million
	T6.1.3 SANSA's public value awareness				50%

Strategic Objective SO6.2. Ensure the effective implementation of the NSP

Measure M6.2.: High-level NSP implementation progress status. This will be qualitatively measured against the deliverables in the NSP plan using green, orange and red dashboard deliverables in the NSP plan.

Five year target: About 90% of the NSP projects are active by end March 2020

Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • seek resources for the NSP • coordinate the NSP implementation • monitor the NSP implementation status • report on the NSP implementation status	T6.2. NSP implementation status of 30%.	-	-	-	-

Monitoring the implementation of the NSP will be done at a high level and more qualitatively, using a dashboard system that evaluates the status on NSP projects as outlined in the table below. It is recognised that not all projects will be started at once and the monitoring will assess the activity level of each project.

NSP Core Administration and Governance (NSP CAG) [SANSA Corporate Office]	National Earth Observation Programme (NEOP)	National Space Science Programme (NSSP)	National Space Engineering Programme (NSEP)	National Space Operations Programme (NSOP)
P1: Space Coordination and Industrial Development	P1: Earth Observation Data Centre (EODC) at SANSA	P1: Magnetic Anomaly Investigations	P1: Technology and Mission Development	P1: TT&C
P2: Space Programme Management	P2: Remote Sensing and Data Management Competence Development	P2: Status of the Space Environment	P2: Nano and Pico-satellites	P2: Mission Control
P3: Facilities Management	P3: Applications Development and Deployment	P3: Space Science in Remote Areas	P3: Mini Satellites	P3: Navigation
P4: Human Capacity Development	P4: EO for Earth System and Global Change Research	P4: Hazard Mitigation and Disaster Management	P4: Micro Satellites	P4: Communications
P5: Science Advancement and Space Awareness	P5: Human Capacity Development (HCD)	P5: Applied Electromagnetic Technology	P5: Industrial Development and Commercial Opportunities	P5: Capex and Infrastructure
P6: International Partnerships	P6: Cyber Infrastructure	P6 Infrastructure and Facilities	P6: Facilities	
	P7: Science Advancement	P7 Human Capacity Development and Science Advancement / Outreach	P7: Human Capital Development and Science Advancement	
	P8: User Needs and Future Vison Initiatives			
	P9: African Resource and Environment Management Satellite Constellation (ARMC)			

NSP Dashbord

The priorities for the year are to:

- Develop a SANSA-wide database of commercially relevant opportunities for potential business development
- Develop and present a long-term resourcing plan with clear milestones to the SANSA Board for approval
- Aggressively develop the SANSA business and revenue streams
- Develop, consult and obtain approval of a coherent, balanced product portfolio that encompass the pro-bono and price-listed items available at SANSA
- Actively engage high-level stakeholders to clarify and emphasise the SANSA value proposition
- Engage external expertise to produce a research report that evaluates and quantifies the value and impact created by space to reaffirm the SANSA mandate. Space remains a new frontier with a value proposition to humanity that is evolving and benefits that need to be communicated and quantified continuously
- Develop, consult and obtain approval of a Marketing Plan to communicate effectively and educate the public, partners and key stakeholders about SANSA, the NSP and its value proposition
- Develop and implement a brand promotion programme
- Monitor and evaluate awareness about the SANSA brand and value.

Strategic Goal 7: Transform SANSA into a high performance Agency

Efficient and effective management will enable SANSA to achieve its objectives.

This implies being a high- performance organisation with transformational leadership, human capital management, business design and operational and technological efficiency and effectiveness.

TABLE 7: GOAL 7 STRATEGY, MEASURES AND TARGETS

Strategic Goal 7 Transform SANSA into a high-performance Agency					
National Space Strategy Alignment					
Objective 11: Building local awareness of space science and technology					
Strategic Objective S7.1. Ensure that SANSA has been optimised for high performance.					
Measure M7.1: Implementation of identified initiatives that contribute to enhanced organisational performance					
Five year target: Total of 20 identified initiatives fully implemented by end March 2020					
Strategic Approach	2015/16 Targets				
	KPI	Q1	Q2	Q3	Q4
To achieve this SANSA will: • ensure visionary transformational leadership and effective management of day-to-day operations • align its people to deliver on its mission, vision, strategy and brand promise • develop, grow and nurture an employment relationship that creates a high-performance culture • develop, grow and nurture an employment relationship that creates a customer-centric culture • develop and implement a compelling and competitive employee value proposition • optimise the organisational design and structure for high performance • ensure that all core support functions are performing to the highest standards • optimise information and business systems to support business, operations, innovation and managerial processes • drive continuous improvement and innovation • achieve equity in the workplace through promoting equal opportunity and fair treatment in employment	T7.1.1 Four initiatives that enhance organisational performance • Review business model and organisation structrure • Revise performance management system • Develop and implement a talent plan • Implement organisation performance information management system	1	1	1	1
	T7.1.2. Proportional (%) representation of permanent staff from designated groups in the top two management levels (manager, senior manager)	65%	65%	65%	65%

In this regard, to ensure that SANSA is optimised for high performance, the following will be undertaken:

- Align leadership and effectiveness
- Review organisation design to ensure that the structure reflects the organisation's strategic focus
- Ensuring a dynamic people strategy that continuously seeks to attract and retain the most capable individuals
- Align organisational culture to achieve strategic goals through employees who pursue corporate objectives
- Develop and communicate a clear Employee Value Proposition (EVP) to align the SANSA team to deliver on its mission, vision and strategy
- Grow and develop Business Support Systems to optimise information and support business, operations, innovation and managerial processes through:
  - Implementing the ICT governance framework
  - Developing and approving the ICT Roadmap for the next two years.

KEY PERFORMANCE INDICATORS

No	2015/16 Target				
	KPI	Q1	Q2	Q3	Q4
1	T1.1: Four high-impact national products and applications	1	1	1	1
2	T1.2: Two effective government policy support tools		1		1
3	T2.1: Achieve a research productivity score of 750	100	200	200	250
4	T3.1: Directly engage 8 000 young people	2 000	3 000	2 500	500
5	T3.2: Support 40 students	30	3	0	7
6	T4.1.1: EO satellite pass success rate				97%
7	T4.1.2: Total income generated				R58.3 million
8	T4.1.3: Subsidy to SANSA programmes				R10,176 million
9	T4.2.1: Number of direct jobs supported				44
10	T4.2.2: Progress on satellite development				25%
11	T4.2.3: Contract expenditure to private SME industry				R2.4 million
12	T4.2.4: Total expenditure outsourced to public and private space industry				R50 million
13	T5.1: Global partnerships contribute an equivalent of 5% to the space programme revenue				5%
14	T6.1.1: Annual Revenue Growth				R223 million
15	T6.1.2: Annual value of programme impact				R105 million
16	T6.1.3: Brand Awareness Survey Score				70%
17	T6.2: NSP implementation status of 5%	1.25%	1.25%	1.25%	5%
18	T7.1.1: At least four initiatives with clear actions and milestones that enhance organisational performance	1	1	1	1
19	T7.1.2: Proportional (%) representation of permanent staff from designated groups in the top two management levels (manager, senior manager)	65%	65%	65%	65%

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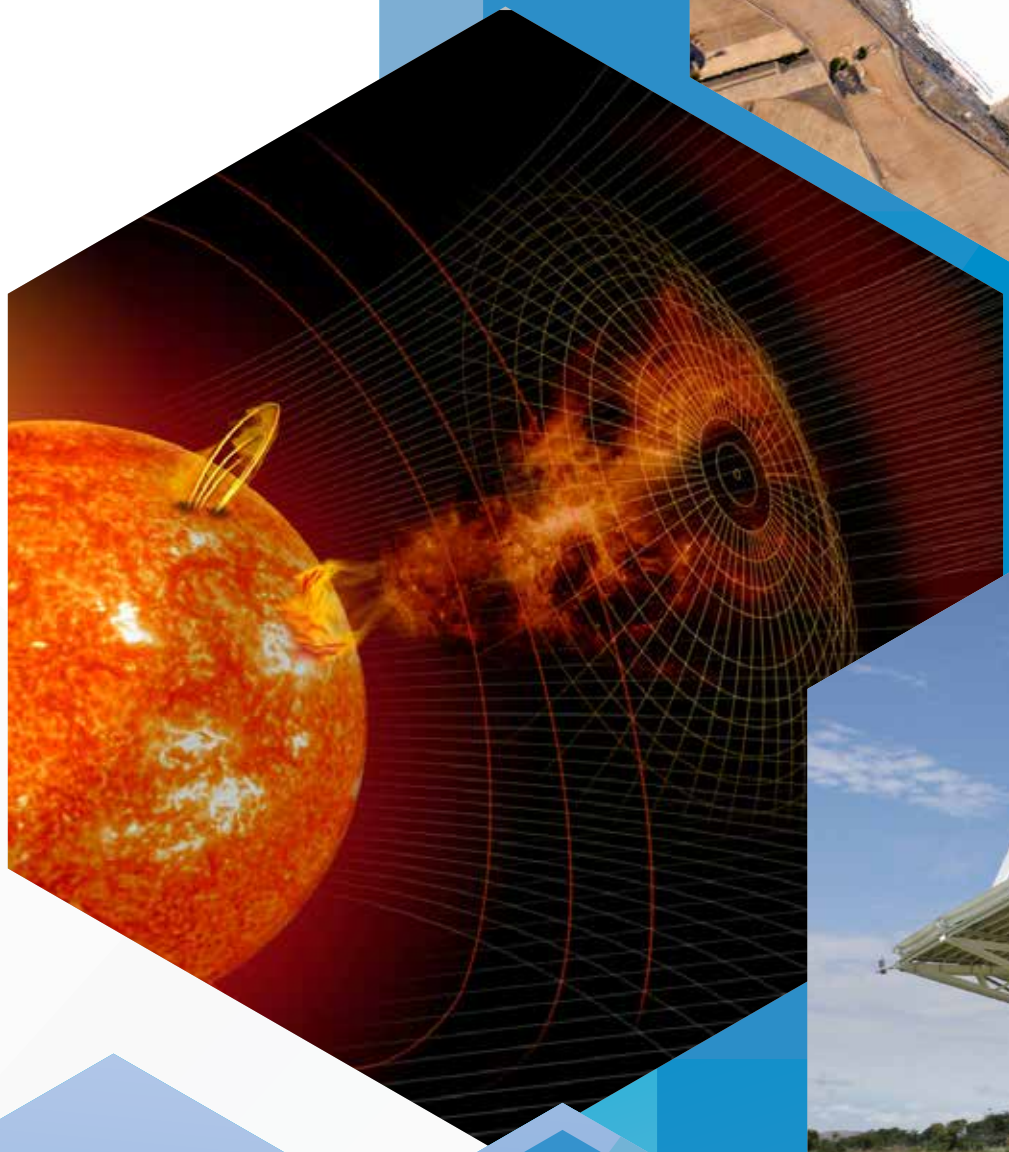

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Contact Information:
(T) 012 844 0500 / (F) 012 844 0396
(E) information@sansa.org.za

Physical Address:
South African National Space Agency (SANSA)
Enterprise Building
Mark Shuttleworth Street
Innovation Hub
Pretoria 0087, Gauteng, South Africa

Postal Address:
South African National Space Agency (SANSA)
PO Box 484, Sllverton 0127
Gauteng, South Africa

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