

# NATIONAL SPACE CONFERENCE 2025

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## Space for Societal Resilience, Transformation and Intelligence

**DATE:** 20 – 22 August 2025

**VENUE:** CSIR ICC, Tshwane, South Africa



science, technology  
& innovation

Department:  
Science, Technology and Innovation  
REPUBLIC OF SOUTH AFRICA



sa air force

Department:  
Defence  
REPUBLIC OF SOUTH AFRICA



Touching lives through innovation

# HIGHLIGHTS

Lulu Makapela

National Earth Observations and Space Secretariat (NEOSS)  
*“an initiative of the DSTI, hosted and Managed by the CSIR”*





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# NSC 2025 Support and Collaboration

## HOST



## Co-organisers



## Partners



## Sponsors



ALIENS



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## National Space Conference Dashboard



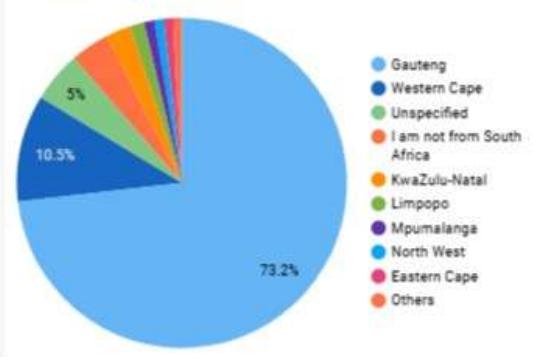
Event: Space Conference 2025

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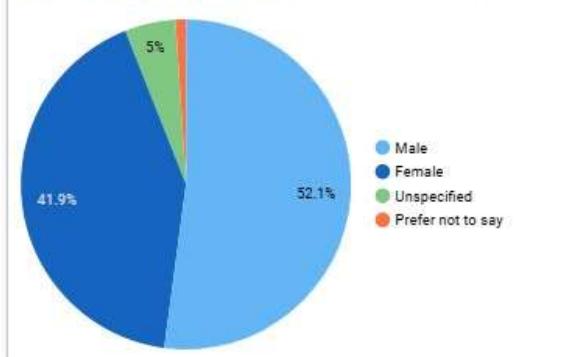
Total Participants

783

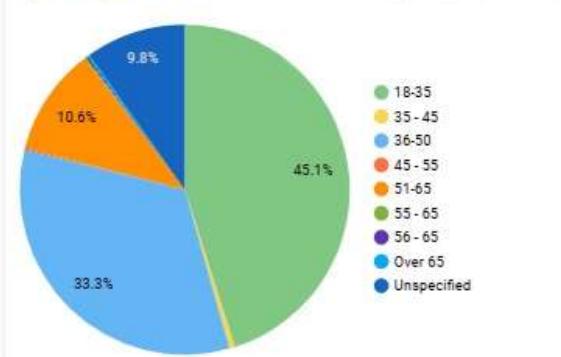
### Locations Represented



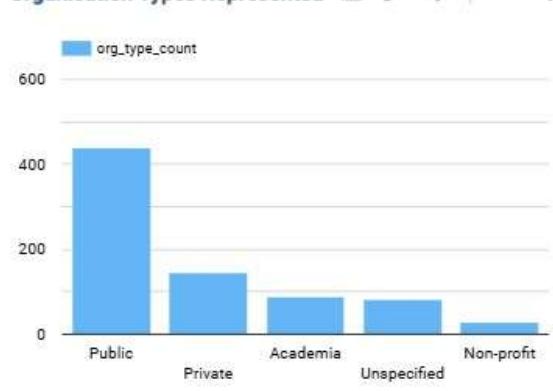
### Gender Groups Represented



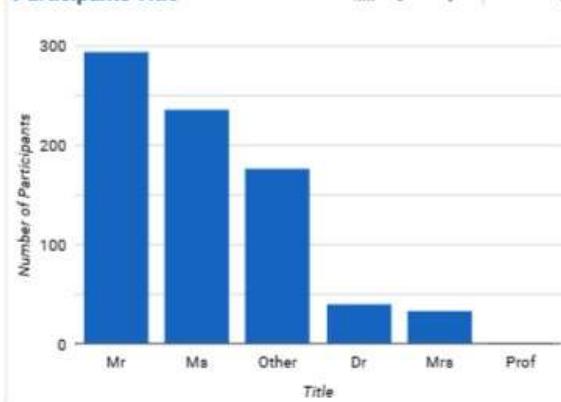
### Age Groups



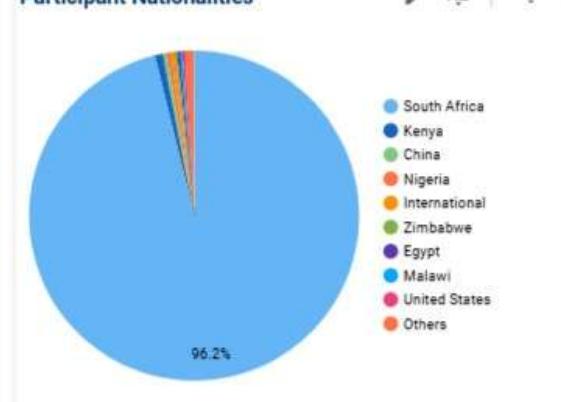
### Organisation Types Represented



### Participants Title



### Participant Nationalities



1

2

3

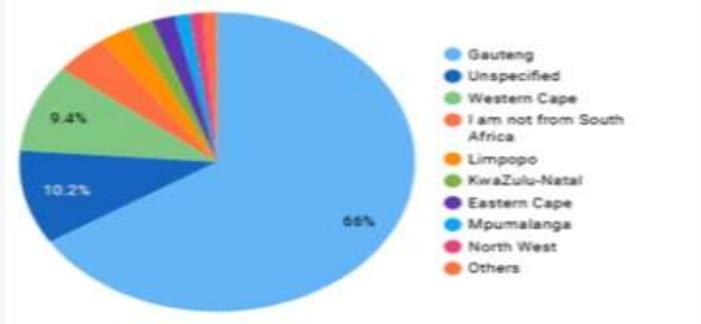
## National Space Conference Dashboard



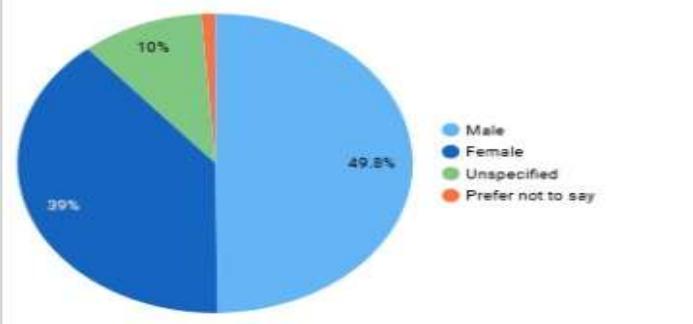
Event

Total Participants  
2,628

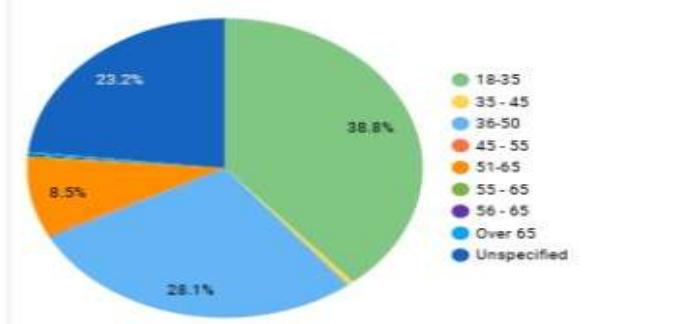
### Locations Represented



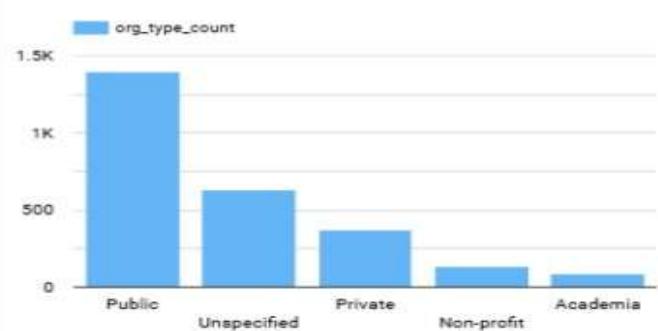
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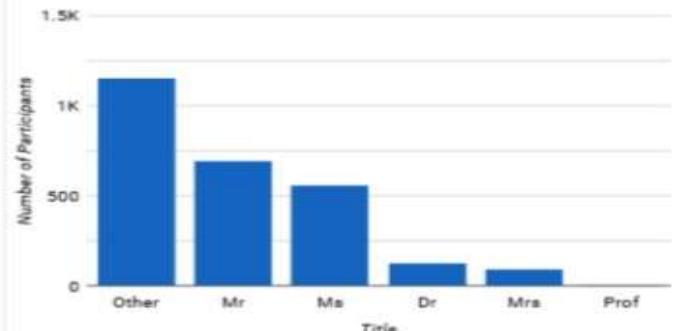
### Age Groups



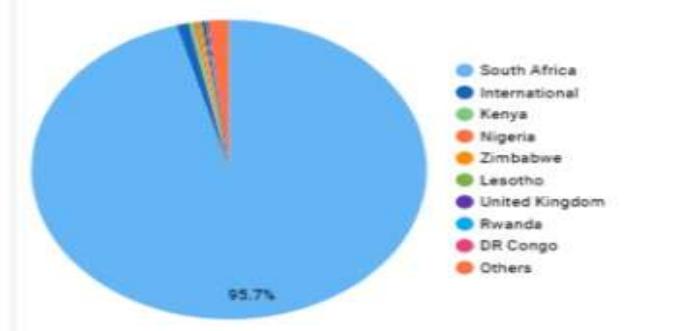
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# NSC 2025 Programme at a Glance

## Opening Session

Setting the vision: Space for Resilient and Inclusive Societies

## Special Session

Industry Reflections: Pathways to Resilience, Intelligence & Transformation

## Showcasing Sessions (x2)

SANSAN Space Weather, GNSS & EO (Day 1)

Intelligence-Driven Platforms (Day 2)

## Technical Sessions (x2)

Space Engineering, Security & Systems Innovation (Day 2)

Public Value & Development Impact (Day 3)

## Plenaries (x3)

Opening Plenary (Day 1)

Space Intelligence: EO, AI & Decision-Making (Day 2)

Resilient & Transformative Space Future (Day 3)

## E-Posters & Exhibitions

Daily exhibitions and interactive poster sessions

## Welcome Reception & Networking

Reception (Day 1 – STAR.VISION)

Networking Session (Day 3 – MFTZ)



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# Opening session

## Safety Moment and SAAF Choir

### Welcome Address – Humbulani Mudau (CEO, SANSA)

“Earth intelligence... can transform the lives of our citizens and build resilience to climate and geopolitical challenges.”

SANSA to host 6th Space Economic Leaders Meeting (SELM) at G20, September – enabling African participation with G20 space agencies.

### Keynote Address – Lt. Gen. Wiseman Mbambo (Chief, SAAF)

Call for sovereign space capabilities to reduce reliance on foreign assets.

Vision: South Africa evolves into a space force protecting national assets & citizenry.

### Opening Address – Dr Mlungisi Cele (DG, DSTI)

Science, technology & innovation positioned at the centre of government, society and environment.

Challenge: make space a growth frontier for Africa. Shift from consumers to creators & innovators in space technologies.

### Strategic Address – Dr Thulani Dlamini (CEO, CSIR)

CSIR's historic role in industrialisation & space innovation.

Foresight of founding leaders laid foundations for SA's space sector.



# Special Sessions –Industry Reflections

Reflections from DTIC, SAAF, DENEL, Dragonfly Aerospace, SANSA & NTCSA

**The dtic:** National Space Policy positioned as framework for self-sufficiency, competitiveness & societal benefit

**SAAF:** National security imperatives: collaboration in a congested & contested space domain

**DENEL:** Integrate civil & defence initiatives; prioritise youth training for security & growth

**SANSA:** Reinforced strategic value of national space capabilities, products & services

**Dragonfly:** SA components contribute to almost every satellite launched globally

**NTCSA:** practical use of remote sensing to solve infrastructure & operational challenges

**Overall:** innovation addressing urgent challenges, opening markets, enabling inclusive growth

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# Showcasing Sessions (1&2)

## SHOWCASING 1 : SANSA SPACE WEATHER & EO

### Space Weather & GNSS

- Space weather has global & local impacts (mid-latitudes like South Africa)
- GNSS-dependent industries: aviation, banking, power grids, sports
- October 2024 geomagnetic storm (Kp=9) showed:
  - Significant GNSS disruptions*
  - Threats to aviation & communication*
  - Need for timely forecasting*

Ground-based observation as vital as satellite data

Collaboration across ecosystem critical for resilience

### Earth Observation (EO)

South African Earth Observation System of Systems (SAEOSS) development

Integrated data streams for agriculture & natural resource monitoring

Use of autonomous agents to enhance monitoring & forecasting

Demonstrated value of linking space & Earth-based solutions

Turning EO data into actionable intelligence for resilience

## SHOWCASING 2 : INTELLIGENCE DRIVEN PLATFORMS

- Showcased EO-based monitoring tools & platform developments
- Tools presented have clear policy & medium-term relevance for:
  - Infrastructure resilience*
  - Disaster preparedness*
  - Climate adaptation*
- Focus on monitoring sovereignty & national security
- Support evidence-based decision-making aligned with geospatial policies & global goals (SDGs, Paris Agreement)
- Highlighted development of a data centre in space to advance digital transformation & secure data governance



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# Plenary (1&2)

## SPACE INTELLIGENCE

- Cutting-edge technologies – EO, AI & data fusion – transforming evidence-based planning
- Enabling more equitable service delivery, responsive governance & inclusive data access
- AI foundation models reshaping climate forecasting & grid management
- Affordable high-resolution imagery now accessible in Africa (via aggregators like Omnispace)
- Edge computing critical to overcome satellite data bottlenecks → near real-time intelligence
- Maritime resilience key for Africa's economy → VDES/AIS 2.0 vital for trade & security

## TRANSFORMATIVE SPACE FUTURE

- Deliberate support for startups & SMMEs to access the space economy
- Demonstrations showed strong progress, attracting wide participant interest
- Need to link national support to pan-African EO initiatives for broader skills & opportunities
- Innovative outreach & awareness essential to develop the future workforce
- Inclusive space economy depends on collaboration & partnerships – sharing resources, experiences & opportunities
- Shared growth is key to building a resilient & transformative space future





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# Technical Sessions (1&2)

## SPACE ENGINEERING, SECURITY AND SYSTEMS

- Industry leadership is essential – private sector drives, government enables
- Human capital & mentorship are the cornerstone of resilience
- Public–private partnerships unlock growth & sustainability
- Africa's opportunity: build indigenous EO, satellite & launch ecosystems
- Goal: sovereignty, socio-economic benefit & global competitiveness

## SPACE FOR TRANSFORMATION

- Transformative power of remote sensing, spectral analysis & machine learning
- Applications across agriculture, environment & conservation
- Improved soil moisture prediction & soil carbon management
- Enhanced climate resilience for smallholder farmers
- Detection of ocean plastic pollution
- Key message: data-driven, scalable technologies optimise resources, support sustainability & enable evidence-based





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# E-Posters , Exhibitions , Networking and Closing Session

12 E Posters ,

29 Exhibitions ,

2 Networking sessions,

and Closing Sessions





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# Organising Committee

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Itumeleng Mokoli  
Fikiswa Majola  
Kaizer Moroka  
Lesedi Mogotsi  
Muhammad Oumar

## SANSA

Asanda Sangoni  
Fumani Mdaka  
Vaneshree Maharaj

## SAAF

Major S Badenhorst  
Col. K Chetty  
Col. T Thomas-Herwels

## CSIR & NEOSS

Nontobeko Zulu  
Lulu Makapela  
Christelle Taylor  
NEOSS CoP Co-Chair  
Kershani Chetty  
Jessie Ndaba  
Athina Kenned



# Thank You



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