

SA earns global recognition in space science capabilities

South Africa's international reputation has also been enhanced, with the country now seen as a leading player in the space science sector.



Source: pixabay.com

South Africa has won an extraordinary victory in space science, with the South African National Space Agency (SANSA) being selected by the International Civil Aviation Organisation (ICAO) to become the designated regional provider of space weather information to the entire aviation sector using African airspace.

This means that every aircraft flying in the continent's airspace will rely on SANSA for the space weather information it needs to submit as part of its flight plan. Space weather, which can influence the performance and reliability of aviation and other technological systems, is caused by the sun, the nature of the Earth's magnetic field and atmosphere, and the earth's location in the solar system.

SANSA, an entity of the Department of Science and Technology, underwent an extensive assessment to earn the distinction of becoming one of two ICAO-designated regional space weather centres – the other being a joint Russia-China centre.

SANSA will partner with one of the ICAO's three global space weather centres, PECASUS, the Pan-European Consortium for Aviation Space Weather User Services, to provide ICAO with space weather information for the African region.

PECASUS is a consortium of nine European countries, and partnering with it will provide South Africa with better access to international models and expertise.

This victory comes shortly after the launch of the continent's most advanced nanosatellite so far, the ZACube-2, in December 2018.



SA launches most advanced nanosatellite

2 Jan 2019



The use of space science and technology for the good of the nation is the aim of South Africa's National Space Policy and National Space Strategy, and space weather information has both national and international benefits.

Growing science, engineering, technology and innovation sectors

South Africa's designation as a regional space weather information provider will grow the science, engineering, technology and innovation sector, offering opportunities to develop scarce skills and increase national research output, while ensuring that usable products are generated from the knowledge.

South Africa's international reputation has also been enhanced, with the country now seen as a leading player in the space science sector.

Owing to the increased interconnectedness and interdependence of technological systems in the world today (which will expand as the Fourth Industrial Revolution gathers momentum), space weather events can have a negative impact on multiple systems, leading to serious operational failures in the communication, navigation, energy and aviation sectors, among others, with potentially disastrous effects.

Space weather can lead to:

- Reduced signals from global navigation satellite systems, adversely affecting navigation;
- Increased radiation, which can destroy human cells and tissue, especially during long-haul flights; and
- Blackouts of high-frequency radio communications, which are critically important for the aviation and marine sectors.

SANSA's designation by the ICAO presents an opportunity to further use the newly revamped space weather centre at Hermanus in the Western Cape. The centre's monitoring of the sun and its activity has been providing the country with vital early warnings and forecasts on space weather conditions, and these benefits will now be extended to the international aviation community.

The upgraded centre was unveiled by the Minister of Science and Technology, Mmamoloko Kubayi-Ngubane, on 20 April 2018, and processes are currently underway to secure additional funding to further capacitate the centre for the huge task that lies ahead.

The international community has supported South Africa's ICAO designation and has demonstrated confidence in SANSA's ability to provide the services required. The process that SANSA underwent to achieve this designation has already enhanced South Africa's reputation in the space science and technology field.

While South Africa is the only African country with operational space weather capabilities, it will engage with other countries on the continent on data sharing, infrastructure hosting, training, product development, and research collaboration opportunities.

The country's space science programme is feeding the knowledge economy and placing the national system of innovation at the centre of South Africa's developmental agenda.

For more, visit: <https://www.bizcommunity.com>