

South Africa's newest space satellites

South African-born Elon Musk and his company, SpaceX, are famous for their cutting-edge scientific and technological advances.

Some of SpaceX's achievements include missions that have transported astronauts and cargo to the International Space Station using reusable rockets as well as the development of a satellite constellation called Starlink. The satellites in the Starlink constellation provide high-speed internet to even the most remote locations around the world.

Things got exciting for South Africa when three nano-satellites were launched on 13 January 2022 onboard the Falcon 9 rocket, taking off from the Cape Canaveral Space Force Station in Florida, USA.

The three nano-satellites are part of a new mission called Maritime Domain Awareness Satellite (MDASat-1), which aims to have direct benefits for South Africa.

The mission will monitor ship movements off the coast of South Africa. This forms part of the government's 'Operation Phakisa' which aims to fast-track critical development issues.


Using Automatic Identification System data, which are transmitted at radio frequencies, the positions of ships will be monitored in the territorial waters of South Africa. This

will help effectively manage our natural resources, identify ships that may be fishing illegally and protect fish stocks and species found in the waters around South Africa.

This mission has demonstrated that South Africa has the potential to contribute to space technology as these nano-satellites were locally produced at the Africa Space Innovation Centre at Cape Peninsula University of Technology (CPUT).

These were not the first satellites to be developed and produced at CPUT. In collaboration with the French / South African Institute of Technology and the South African National Space Agency two previous launches have taken place. In 2013, the ZACUBE-1 was Africa's first nano-satellite launch, followed by the launch of ZACUBE-2 in 2018.

The initiation of the mission MDASat-1 paves the way for future space endeavours by South Africa.

Article prepared by David Jean du Preez  who has a PhD in Meteorology from the University of Pretoria. Jean is presently the Chair of Model-Based Environmental Exposure Science at the University of Augsburg in Germany.

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