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| MEMORANDUM FROM THE PARLIAMENTARY OFFICE |

**NATIONAL ASSEMBLY**

**FOR WRITTEN REPLY**

**QUESTION 3566**

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**INTERNAL QUESTION PAPER NO 38 OF 2022**

 **Mr S S Zondo (IFP) to ask the Minister of Higher Education, Science and Innovation:**

(1) In line with arguments by experts from the Scientific Officer at the African Regional Centre for Space Science and Technology Education in English, that Africa’s outer space programme is integral to meeting many needs that African countries have, resulting in the Department of Science and Innovation’s funding of the Maritime Domain Awareness (MDA) programme at the Cape Peninsula University of Technology since 2008, with the launch of the first South African mini-constellation of three satellites for Maritime Domain Awareness (MDASat-1) in January 2022, of which the aim of the mission is to provide data gathered by the specified satellites to the South African government to contribute to the effective management of South African territorial waters, what total amount in funding has been provided for the MDA programme to date;

(2) whether his department will provide a detailed update on the MDA programme; if not, why not; if so, what are the relevant details;

(3) whether his department will furnish Mr S S Zondo with the relevant details of how the data gathered by the MDASat-1 has been utilised by the Government to fulfil the aims of the programme and enhance the security and protection of South African marine resources; if not, why not; if so, what are the relevant details? **NW4372E**

**REPLY:**

1. To date, a total of R28 048 067 (twenty-eight million forty-eight thousand and sixty-seven Rands) has been provided to the Cape Peninsula University of Technology (CPUT) towards the Maritime Domain Awareness Satellite (MDASAT) constellation. The funding covers research and development costs, including compensation of non-academic staff (engineers), student bursary support and constellation launch costs. The cost of the full constellation of nine satellites is R97 978 338 (Ninety-seven million nine hundred seventy-eight thousand three hundred thirty-eight), the balance of which has not yet been secured.
2. Since its launch on 13 January 2022, the MDASAT-1 constellation has been in the commissioning phase of its mission, which is the first phase of satellite operation and begins immediately after deployment. The satellites automatically deployed their antennas and the immediate message about battery voltages reading were excellent. Both the primary ground station at CPUT and the secondary at the Houwteq Assembly, Integration and Testing Facility (DenelSpaceteq) successfully tracked, commanded, and decoded the signals. Automatic beaconing was switched off, after some tests were performed with the Telemetry, Tracking and Command (TT&C) communications. All the satellites’ subsystems responded well, and all communication links, power operations and TT&C of all three satellites report a healthy status.

There has been a delay in the full commissioning of the Attitude Determination and Control System (ADCS) and payloads due to a few technical challenges related to the orientation (spin and tumbling) of the satellites in space. These challenges are being investigated by reproducing them on the engineering models in the lab before developing a software update that will be installed through the onboard software-defined radio.

1. The data currently being received from MDASAT-1 is being used to commission the various satellite subsystems and payload. Maritime domain awareness data has not yet been acquired due to the satellites still being in the commissioning phase of the mission. Once the satellites are fully commissioned, data will be integrated into the National Oceans and Coast Information Management System that will provides decision support tools for oceans governance and marine protection.