

**Ref:02/1/5/2**

**MINISTER**

**QUESTION NO. 791 FOR WRITTEN REPLY: NATIONAL ASSEMBLY**

A draft reply to **Mr R K Purdon (DA)** to the above-mentioned question is enclosed for your consideration.

**MS NOSIPHO NGCABA**

**DIRECTOR-GENERAL**

**DATE:**

**DRAFT REPLY APPROVED/AMENDED**

**MS N P MOKONYANE, MP**

**MINISTER OF ENVIRONMENTAL AFFAIRS**

**DATE:**

**NATIONAL ASSEMBLY**

**(For written reply)**

**QUESTION NO. 791 {NW914E}**

**INTERNAL QUESTION PAPER NO. 9 of 2019**

**DATE OF PUBLICATION: 20 March 2019**

**Mr R K Purdon (DA) to ask the Minister of Environmental Affairs:**

(1) What is the current (a) storage, (b) processing and (c) product development capabilities of the South African Weather Service; and

(2) what (a) products and (b) capabilities have been developed for astronomy by (i) her department and (ii) the entities reporting to her in the past three financial years?

**791. THE MINISTER OF ENVIRONMENTAL AFFAIRS REPLIES:**

(1) (a) The South African Weather Service (SAWS) has constantly struggled to upgrade its computer capabilities due to budget constraints over the last few years. The nature of the business of the SAWS is heavily reliant on computing power and storage in executing its mandate to South Africa. This reliance is mostly on High Performance Computing (HPC) and high end server infrastructure in processing and generating products required for Disaster Risk Reduction in South Africa related to Weather and Climate.

(b) The South African Weather Service has in the last eighteen months upgraded its HPC Facillity to the following:

* 336 CPU’s that equates to 4032 cores that gives a speed of 73.8 Terra Flops; and
* Storage Capaicity on the HPC is 2 Petabytes.

The current upgraded HPC is used at 90% capacity at 90% of the time to fulfill some of the South African Weather Service operational needs. The South African Weather Service has a Memoradum of Understanding (MoU) with CSIR, Meraka Institute to use its Center for High Perfomance Computing (CHPC) for research work and Business Continuty Processes (disaster recovery). With the South African Weather Service increased opertional requirements to run Numerical Weather Predictions (NWP) models i.e additional Regional NWP models, Ensembles NWP models, Oceans and Coasts models, Air Quality Models, new and enhanced Climate Prediction models, etc. Due to this increased operational workloads, the South African Weather Service is looking into replacing its HPC capabalities within 2 to 3 year time frame , as well as looking at alternatives including using HPC as service in the Cloud.

(c) The HIGH-END Servers used in SAWS is to run its Virtual eniviroment for all its production enviroment related to weather and climate, as well as all its back office enviroment. Currently, the enviroment consist of 23 high-end servers and 800 Terra Bytes which runs 250 virtual servers for the South African Weather Service. The IT enviroment at SAWS Head Office is currently in the process of being upgraded, with SAWS regional offices being done in the next 6 to 12 months. For BCP requirements the South African Weather Service also needs to upgrade its disaster recovery infrastructure over the next 12 to 18 months. The South African Weather Service is also looking into cloud offering to compliment server requirements and reduce costs for infrastructure.

(2) (a and b)SAWS is not involved in astronomy, this lies completely outside SAWS and perhaps it could be traced back to DST with the SKA project. However, SAWS is working with South African National Space Agency (SANSA), the agency under Department of Science and Technology. SANSA has recently been designated by International Civil Aviation Organisation (ICAO) as Regional Space Weather Centre to provide space weather products in support of Avaition industry. The capabilities and product development lies with SANSA. SAWS is working with SANSA as the provisions of space weather are included as the standard and recommended practices in ICAO which is under the custodianship of SAWS for the provision of aeronautical meteorological services to international air navigation.

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