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# SAIF

SOUTH  
AFRICAN  
ISOTOPE  
FACILITY



## **UPDATE ON SAIF October 2019:**

### **Launch of SAIF / Procurement of Cyclone 70 Cyclotron**

The launch of the first phase of SAIF (South African Isotope Facility) has taken off safely, with the NRF CEO Dr Molapo Qhobela announcing in his keynote address to the CYC2019 delegates that a contract was signed on 6 September 2019 with IBA (Ion Beam Applications) for the acquisition, supply and installation of a Cyclone 70 MeV Cyclotron and associated beam lines to be used as a source of high energy protons for isotope production and research. Fundamentally a breakthrough filled with long term institutional benefits, the iThemba LABS management views the commitment by the South African Government to support the first phase of SAIF as a bold step which levels the playing field for smooth implementation of TIP (Technology Innovation Platform), SAINTS (Southern African Institutes of Nuclear Technology and Sciences) and IRI-G (International Research Infrastructure Gateway) as the core supporting pillars of the overall recapitalization and long-term sustainability project. With SAIF clearly emerging as the distinct and most critical of the four pillars of the iThemba LABS sustainability project, the contract signed in September 2019 with IBA for the delivery and installation in year 2022 of the 70 MeV Cyclotron has prompted the launch of a dedicated SAIF newsletter to inform staff on a regular basis on critical milestones that will be achieved along the delivery timelines between 2019 and 2022.

iThemba LABS launched the South African Isotope Facility (SAIF) with the procurement of a Cyclone® 70 Cyclotron and associated beam lines from Ion Beam Applications S.A. (IBA) to be used as a high-energy, high intensity proton cyclotron for isotope production and research. The SAIF strategy of iThemba LABS, endorsed and approved by the NRF Board as an infrastructure renewal project focusses on the increased use of the existing cyclotron at iThemba LABS for dedicated research and training, whilst supporting the acquisition of a new 70 MeV cyclotron to increase the production of Radioisotopes in view of a growing local and international market and to create a financially sustainable research enterprise. Subsequently, the South African Government through the Department of Science and Innovation (DSI) and the National Treasury (NT) endorsed and provided support for the SAIF strategy.

The benefit to South Africa, Science and Society on the investment in the 70 MeV cyclotron will be realised through the:

- Increase in beam time availability for research (capacity will increase by a factor of three);
- Development of new research fields and applications including:

- o Research into new and innovative solutions for cancer treatment and early diagnostics;
  - o Fundamental research into sub-atomic physics to obtain an understanding of the astrophysical origin of the elements;
  - o Radiation hardness testing for the space sciences;
  - o Research into the development of nano-materials;
  - o Increase of the number of post- graduates supervised and supported by the facility.
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- Increase in number of post graduate students training;
  - Excellent opportunity for young South Africans to acquire technical skills in Accelerator Based Sciences and Technologies;
  - Increased radioisotope production (sales) by five-fold and revenue; ?Positive impact of South African Current Account through significant increase in export revenue;
  - Positive impact of South African Current Account through significant increase in export revenue;

The SAIF Phase 1, which consists of the Radio-Isotope Facility (based on the 70 MeV cyclotron) and the LERIB facility, is planned to be completed in 2022 and to coincide with the hosting in Cape Town of the INPC (International Nuclear Physics Conference) which is the most prestigious conference in the physics domain.

