

Access to Space for All Initiative Expert Meeting

15-17 May 2023

Space Unit
of The Mauritius Research &
Innovation Council
(MRIC)



PRESENTED BY

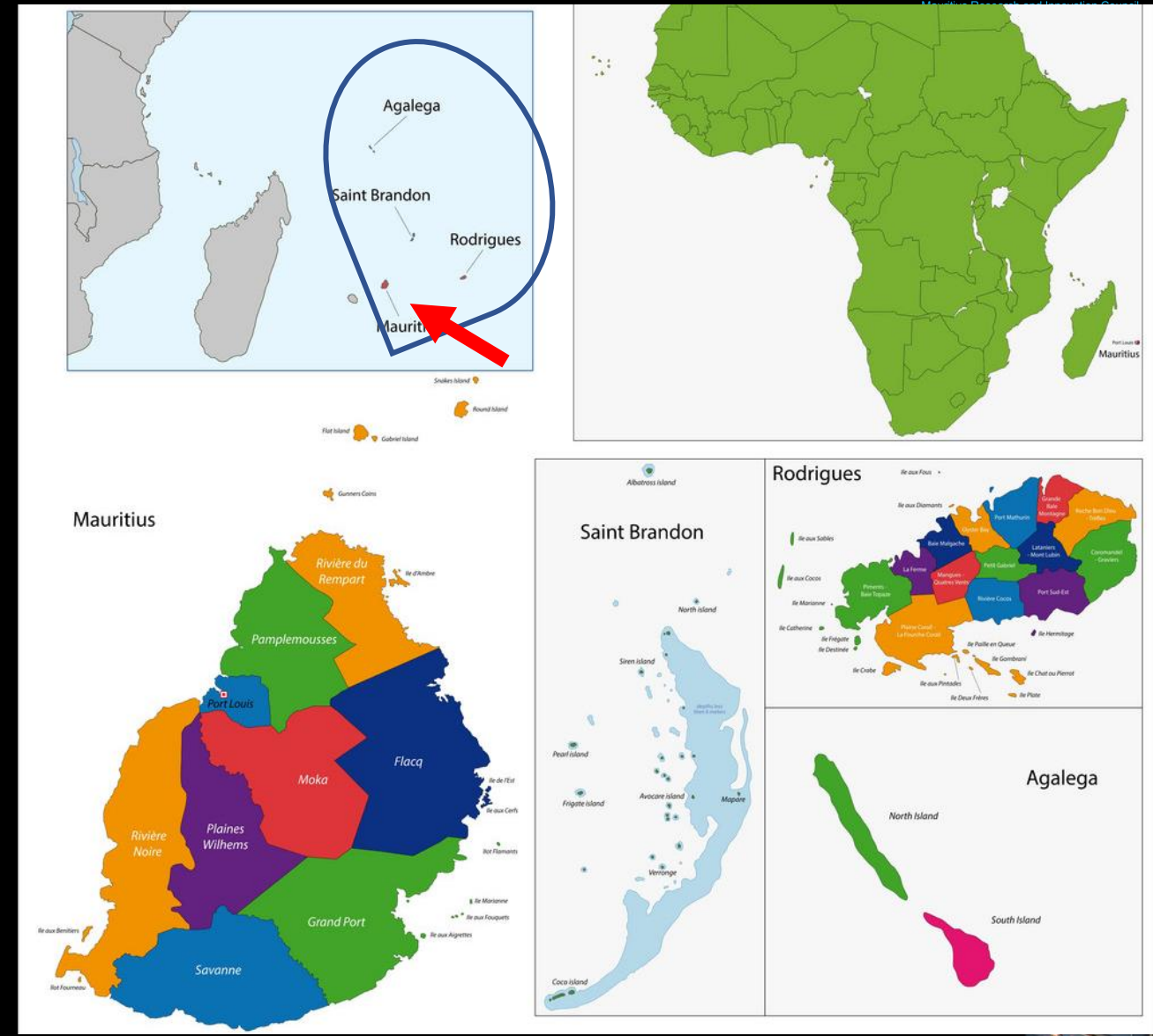
DR VICKRAM BISSONAUTH

RESEARCH COORDINATOR

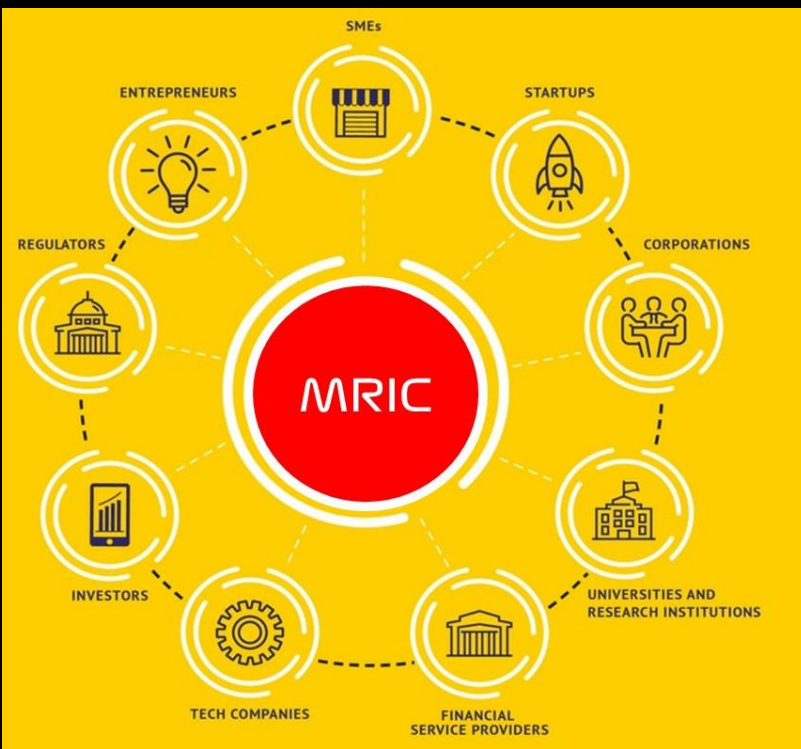


Mauritius

- Total Area – 2040 sq Km
- Population – 1,265,475 (Estimated in 2019)
- GDP – USD 25,029
- Exclusive Economic Zone (EEZ) – 2.4 million sq km



Mauritius Research and Innovation Council (MRIC)



Apex body, advisor to Government of Mauritius on all matters pertaining to Science Research and Innovation

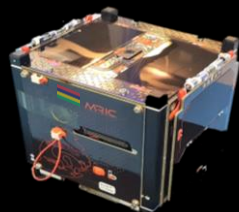


Mauritius now a space faring small island developing state

3rd Round Kibocube Program winner in 2018



Republic of Mauritius Winner KiboCUBE - 2018



MIR-SAT1 – Mauritius Imagery Radiocommunication Satellite 1

**Build capacity in satellite/space
technology**

**Satellite Communication Once
in space**



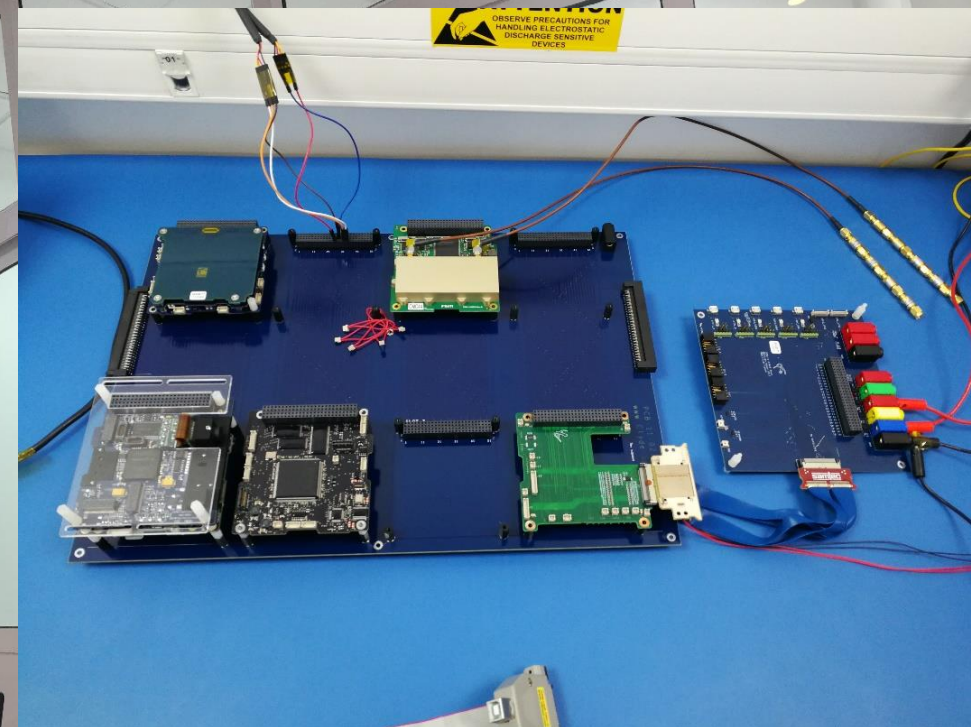
**Use on-board payload to
capture images of
Mauritius and its EEZ**

**Digipeater (2-way
Communication)**

**MIR-SAT1 deployed in Space in June 2021 and phased out in April 2022
10 months orbiting in space**

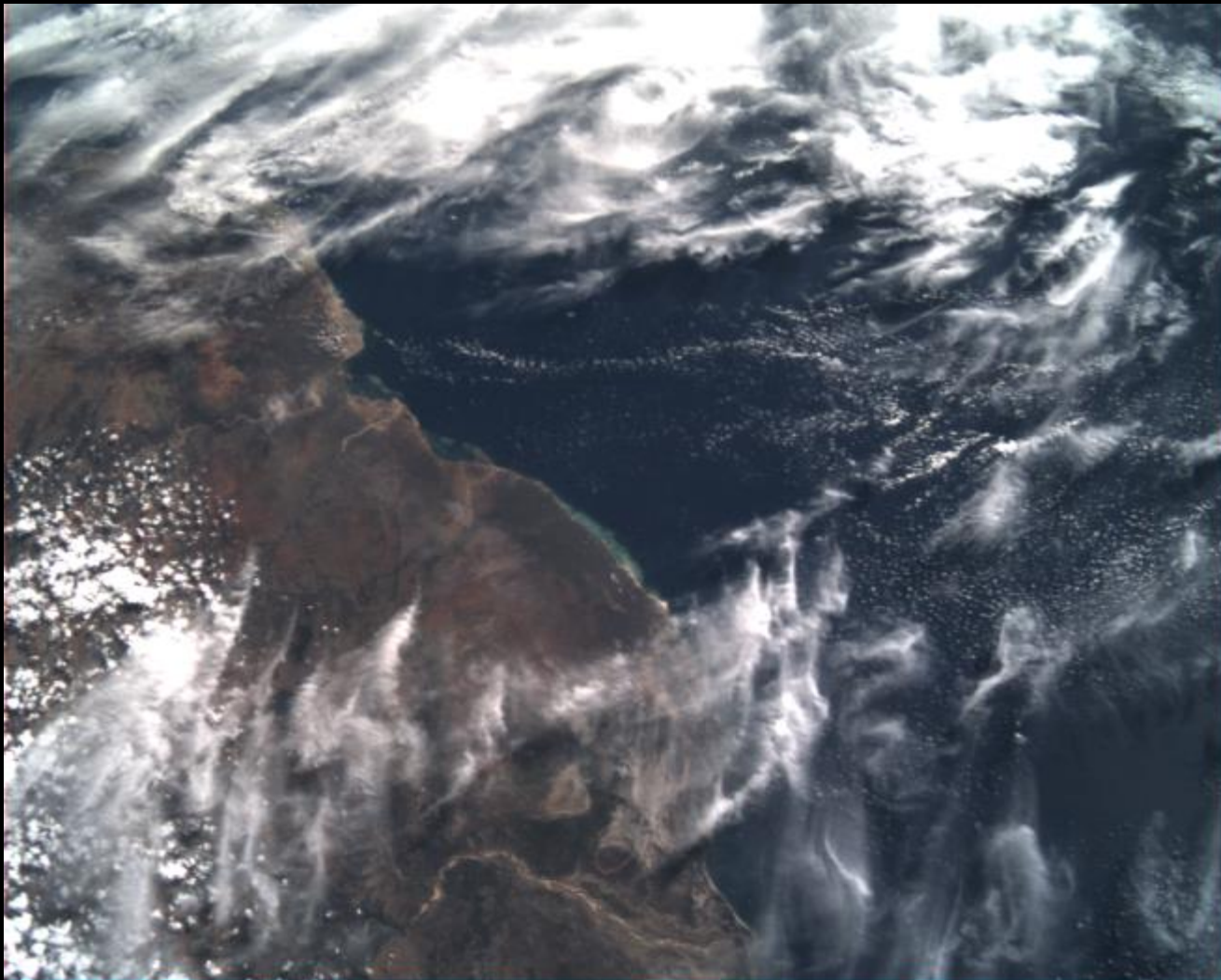


MRIC Ground Station





Photos Taken by MIR-SAT1



Photos Taken by MIR-SAT1



OUTREACH

Incentivising young Mauritians to consider Space and Satellite Technologies as a future career



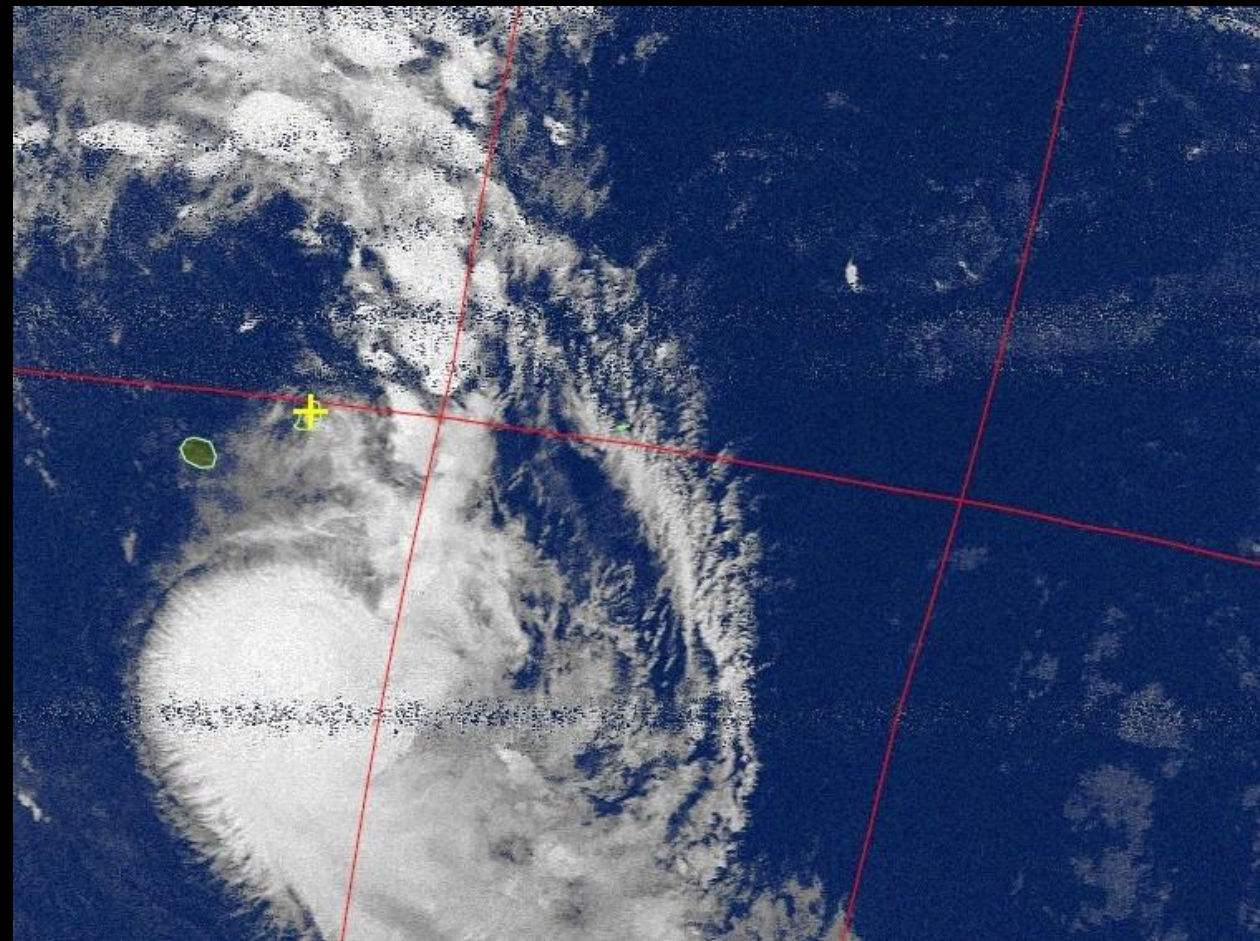
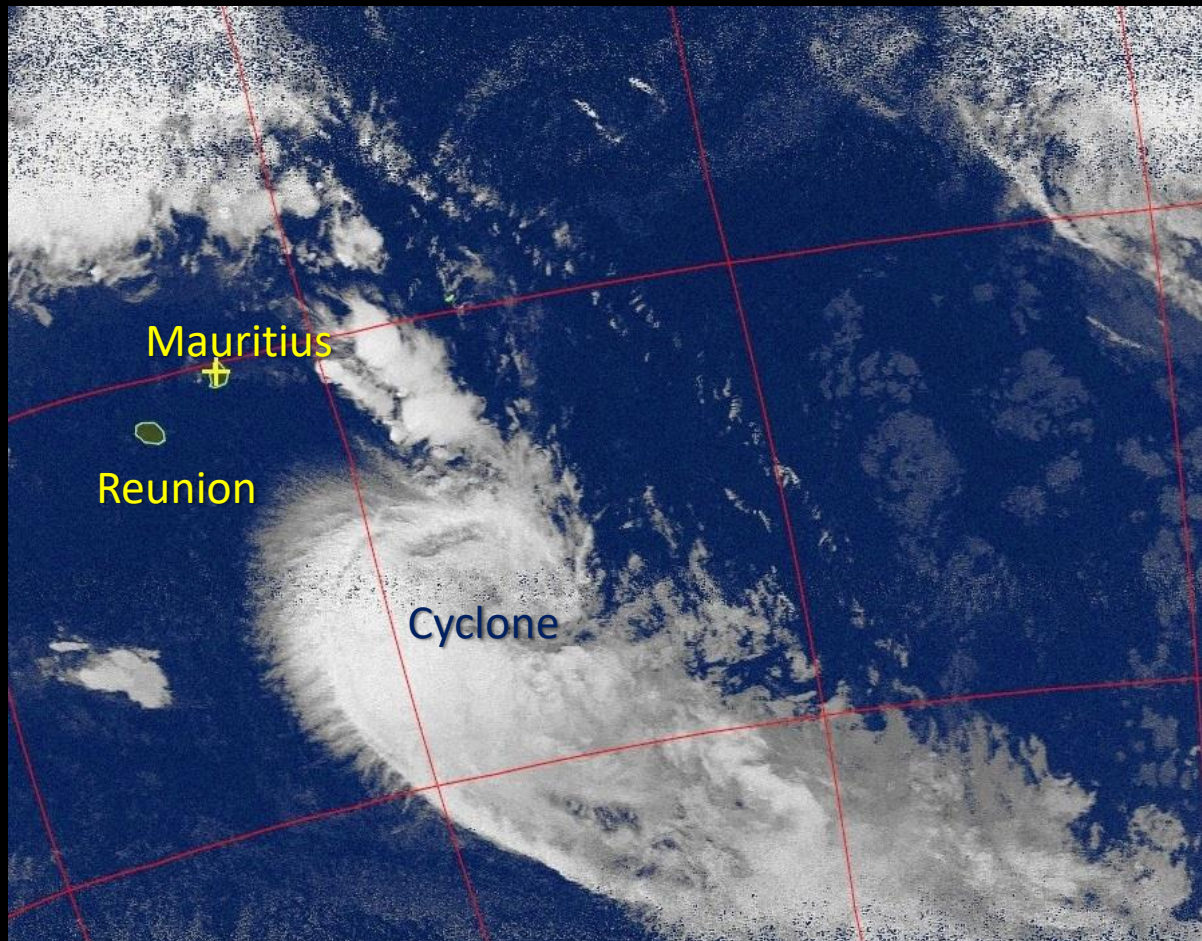


Capacity Building – LEO Receiving Antenna

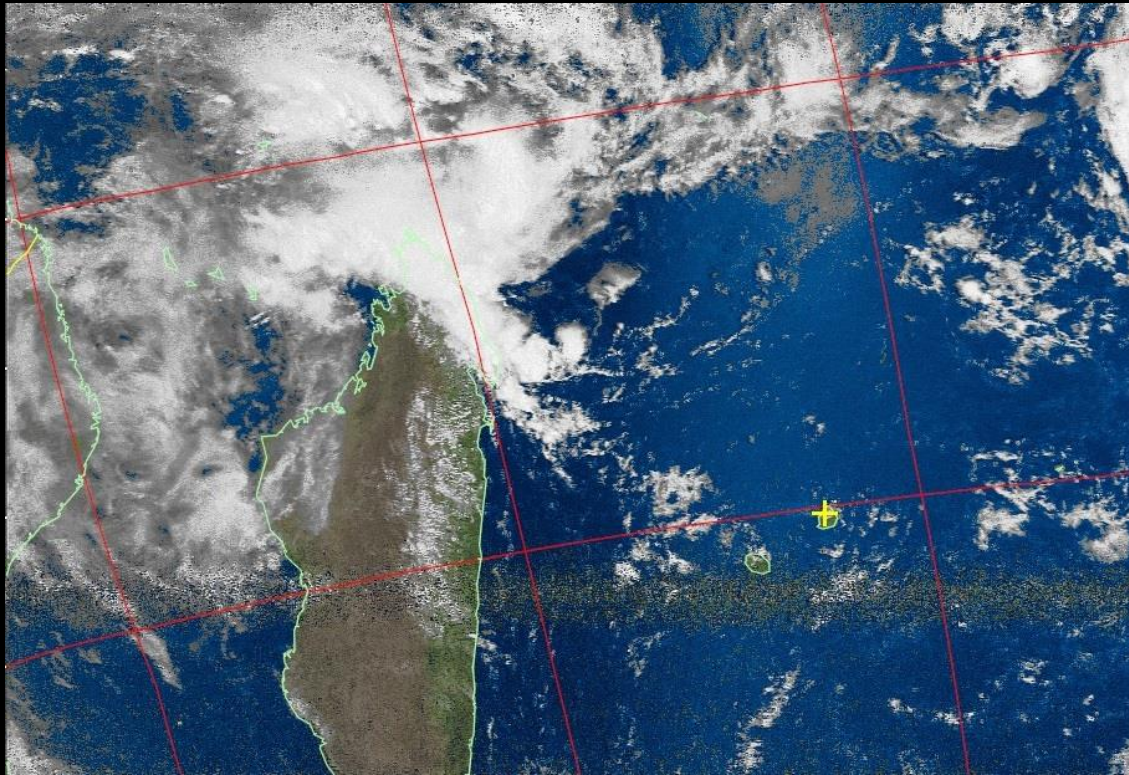
- 100 Students from 12 schools and 5 Universities trained
- 17 teachers/lecturers trained
- Each of participating school given the antenna for free



Images Captured with the simplified Antenna by secondary school students in Mauritius



Images Captured with the simplified Antenna



LIVE Conversation with Emirati Astronaut Dr Sultan AlNeyadi on the ISS





ISS CALLING MAURITIUS

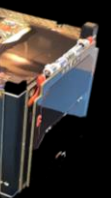


Dr Sultan AlNeyadi

Emirati astronaut,
on board of the
International Space
Station talks LIVE
with Students of
Republic of Mauritius



11th May 2023 at 15:00hrs (Mauritius Time)
Join us online on #MRIC YouTube

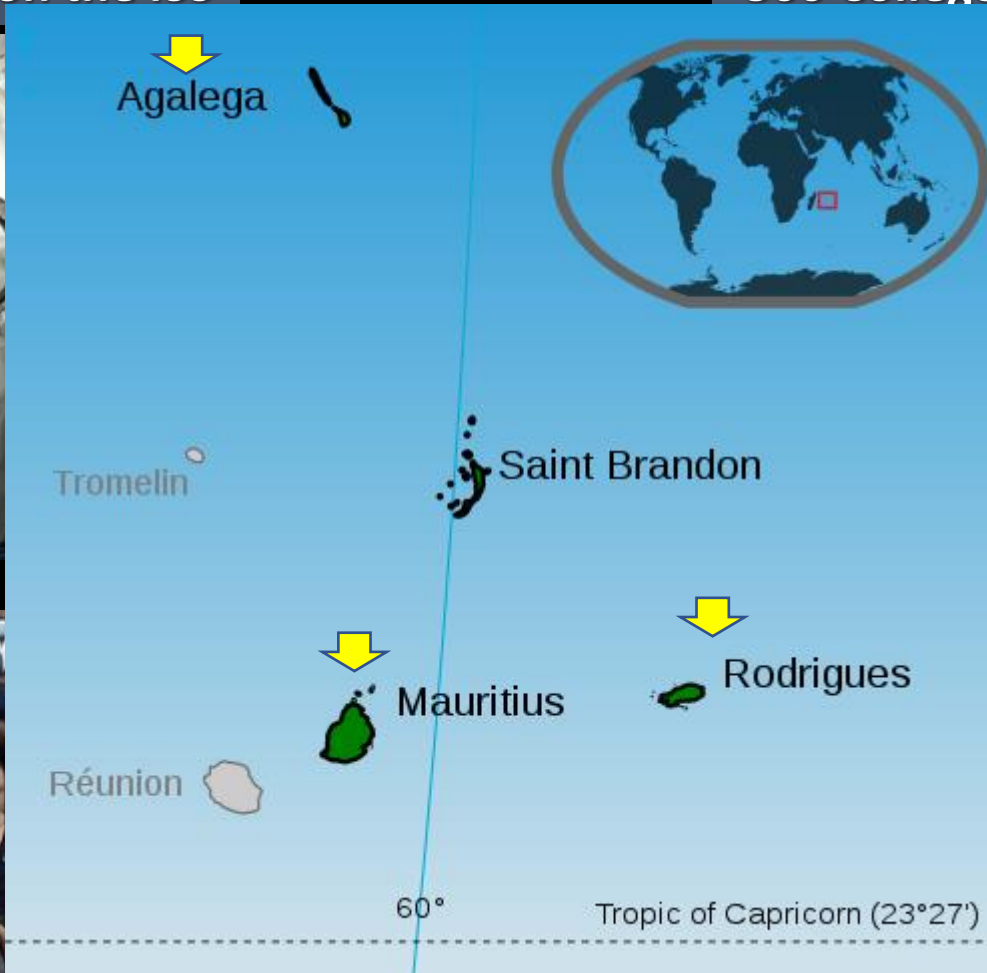


LIVE CONVERSATION WITH EMIRATI ASTRONAUT WITH REPUBLIC OF MAURITIUS

Dr Sultan Al Neyadi on the ISS



300 College Students in Mauritius



80 College Students in Rodrigues



20 College Students in Agalega

Full Support from Government and Collaborators





Support from the Prime Minister of the Republic of Mauritius and Minister of Information Technology, Communication and Innovation

MRIC Collaborators



On-going Collaboration Sp



Gearing towards a Space Agency in Mauritius



Mauritius Space Vision

Space Curriculum

- space faculty in universities
- Initiation of primary and secondary school students to space and satellite tech.

Space Start ups

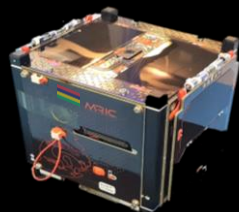
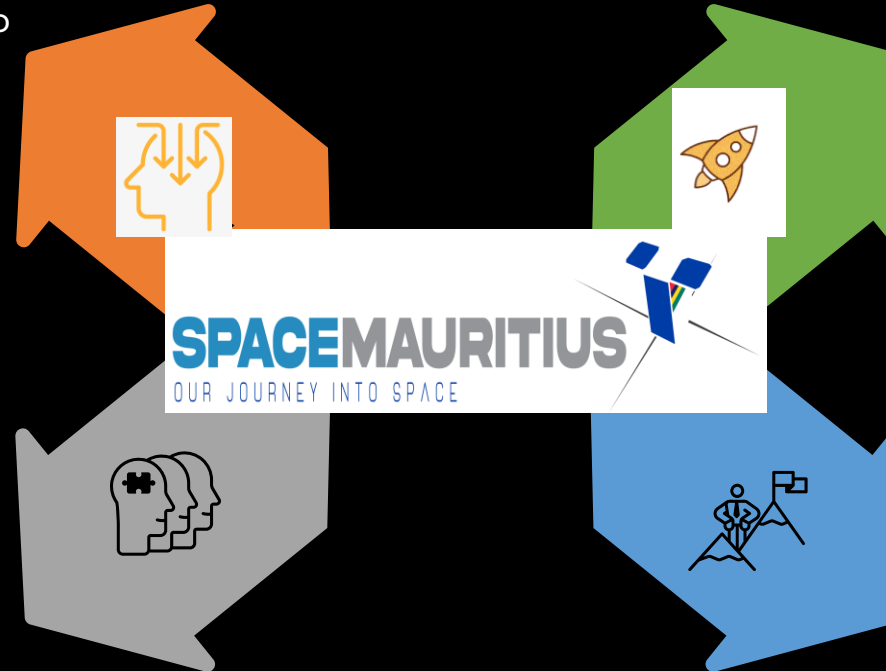
Facilitate startup development in space and satellite tech

International collaboration

Leapfrogging on friend countries' expertise in space

Research and Development

Engaging into R&D in space and satellite technologies
Use of space data to advise policy



MEET THE MIR-SAT1 TEAM



Dr Vickram Bissonauth

Project Coordinator

Overall project management and coordination



Ziyaad Soreefan

Aerospace Engineer



Aerospace Engineer



Koushul Narrain

Research Assistant



Kiran Tatoree

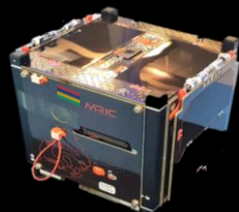
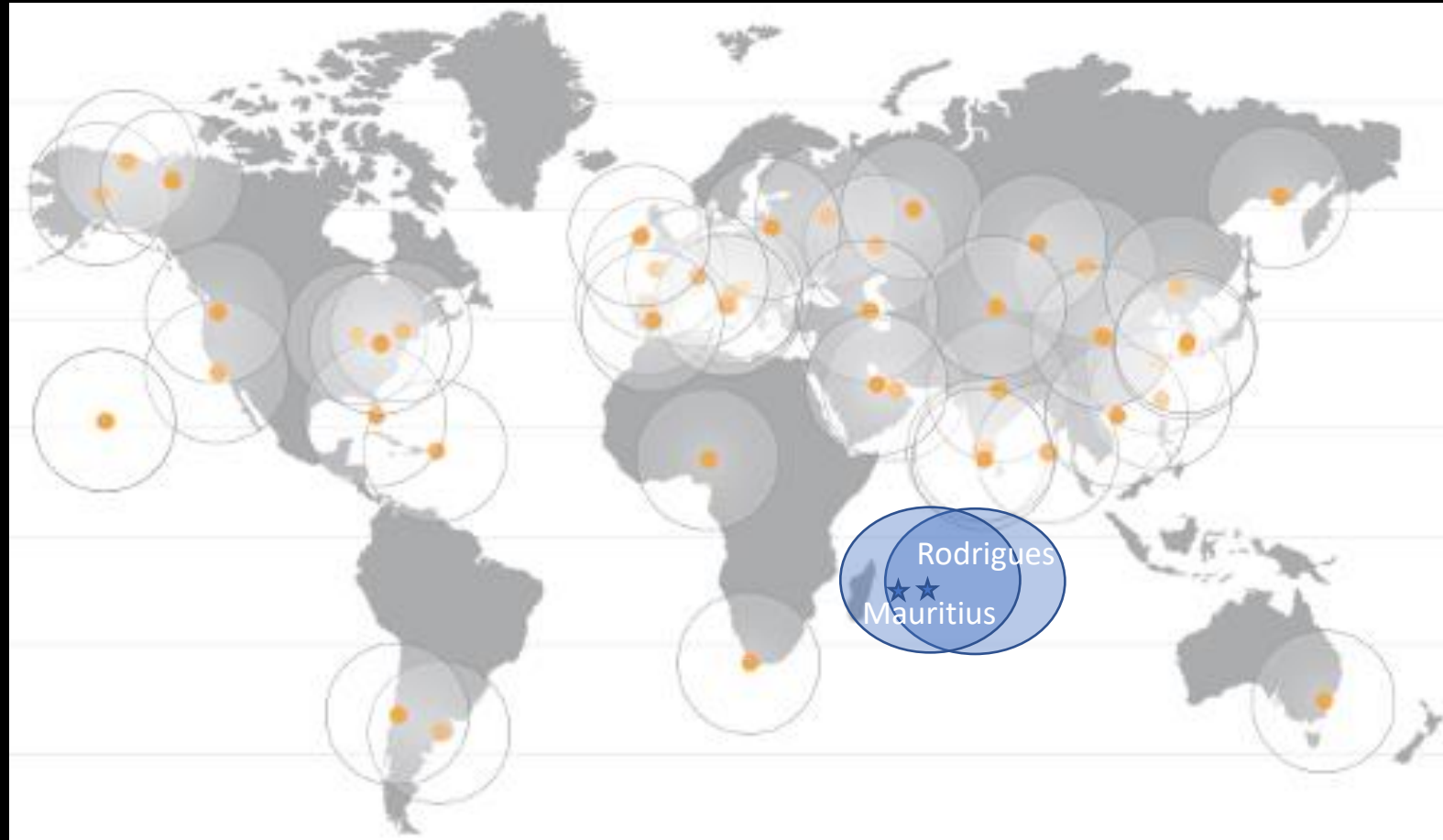
Research Assistant



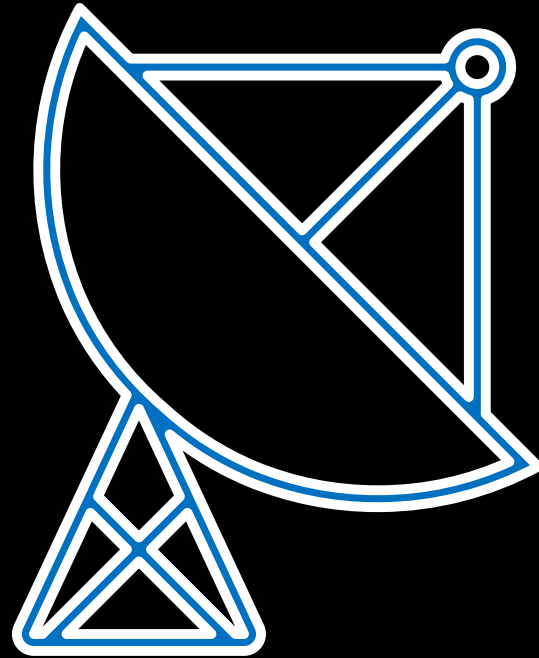
Way forward



Blindspot in Indian Ocean



Satellite
Tracking



Government 2
Government Agreement

NEREUS – A Space-Based Maritime Surveillance System for Fisheries Monitoring and Anomaly Detection

Satellite-based IUU detection tool

Near-Real time operation

Mapping of Spatiotemporal patterns of fishing vessels

Detection of Suspicious Behaviour

Risk threshold for IUU detection

Data Sources

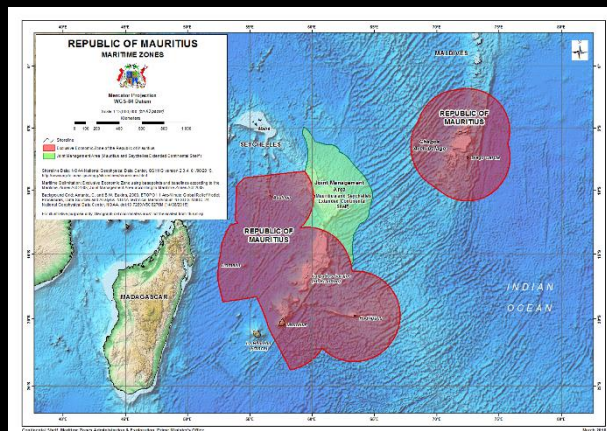
Synthetic Aperture Radar

Automatic Identification System

Vessel Monitoring System


Thermal Infrared

Multispectral



MBRSC - Payload Hosting Initiative (PHI)

Developing a payload which will fly on-board MBRSC 12U Satellite



مركز محمد بن راشد
للفضاء

MOHAMMED BIN RASHID SPACE CENTRE

Vision 2030: Mauritius Space Roadmap

International Collaboration

- Proposal for collaboration with islands of the Indian Ocean
- Space Sector partnership with our International Partners for acquisition of space technology

Policy and Laws

- Drafting a National Space Policy
- Establishing a national space law, in compliance with the International Space Law, for peaceful and sustainable use of the space environment

Space Infrastructure

- Update existing Infrastructure
- Setting of labs to R&D and Testing



Capacity Building

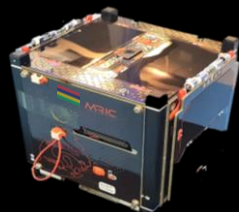
- MRIC Engineers train by International Partners
- Collaboration with educational institutes for capacity building in Mauritius

New Missions

- Initiative to develop space projects in collaboration with International Partners

Space Agency

- Setting up an organisational framework responsible for the activities of the space sector



Collaboration Avenues

- Satellite tracking
- Joint satellite Mission
- Exchange Programme for Engineers and Scientists
- Low Earth Orbit (LEO) Receiving Antenna Programme
- Startups in the Space field

African Space Agency



Thank you

WEBSITE

www.mric.mu

www.spacemauritius.com

