

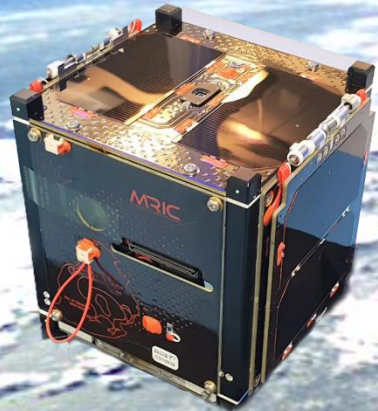


Mauritius Research and Innovation Council

mric.mu

spacemauritius.com

#MIRSAT1



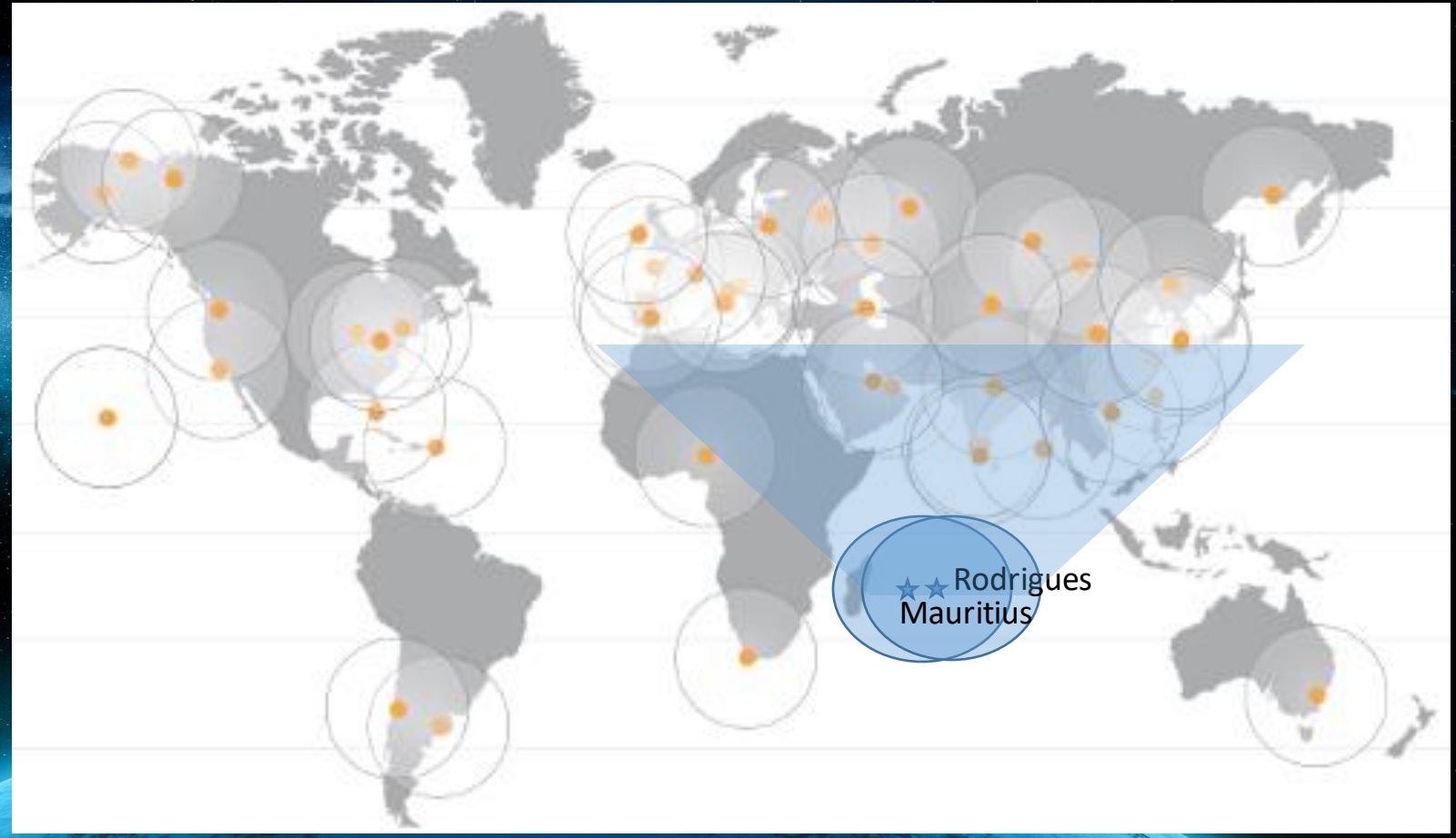
The First Mauritian Nanosatellite Paving the way for a Space Program for the Republic of Mauritius

Dr Vickram Bissonauth

9th June 2022

[65th session of the United Nations Committee on the Peaceful Uses of Outer Space \(COPUOS\)](#)

A blind spot over the Indian Ocean Region



Mauritius – now a Space Player – KiboCube 3rd Round Winner in 2018

- First ever spacecraft for Mauritius
- Went through all the key steps :
 - Registration to the ITU through our local Agency responsible for Telecommunications – ICTA: www.icta.mu
 - Registration of Radioamateur frequency with IARU
 - Help received from International expert RadioAmateur – Chris Thompson and Daniel Estevez
 - Informed ITU through ICTA once the Spacecraft phased out in April 2022
- Looking forward now to consolidating the Space Initiative – Development of a longer term and sustainable Space Program for Mauritius

Our Journey in Space



3rd Round
Winner
Kibocube in
July 2018

July
2018

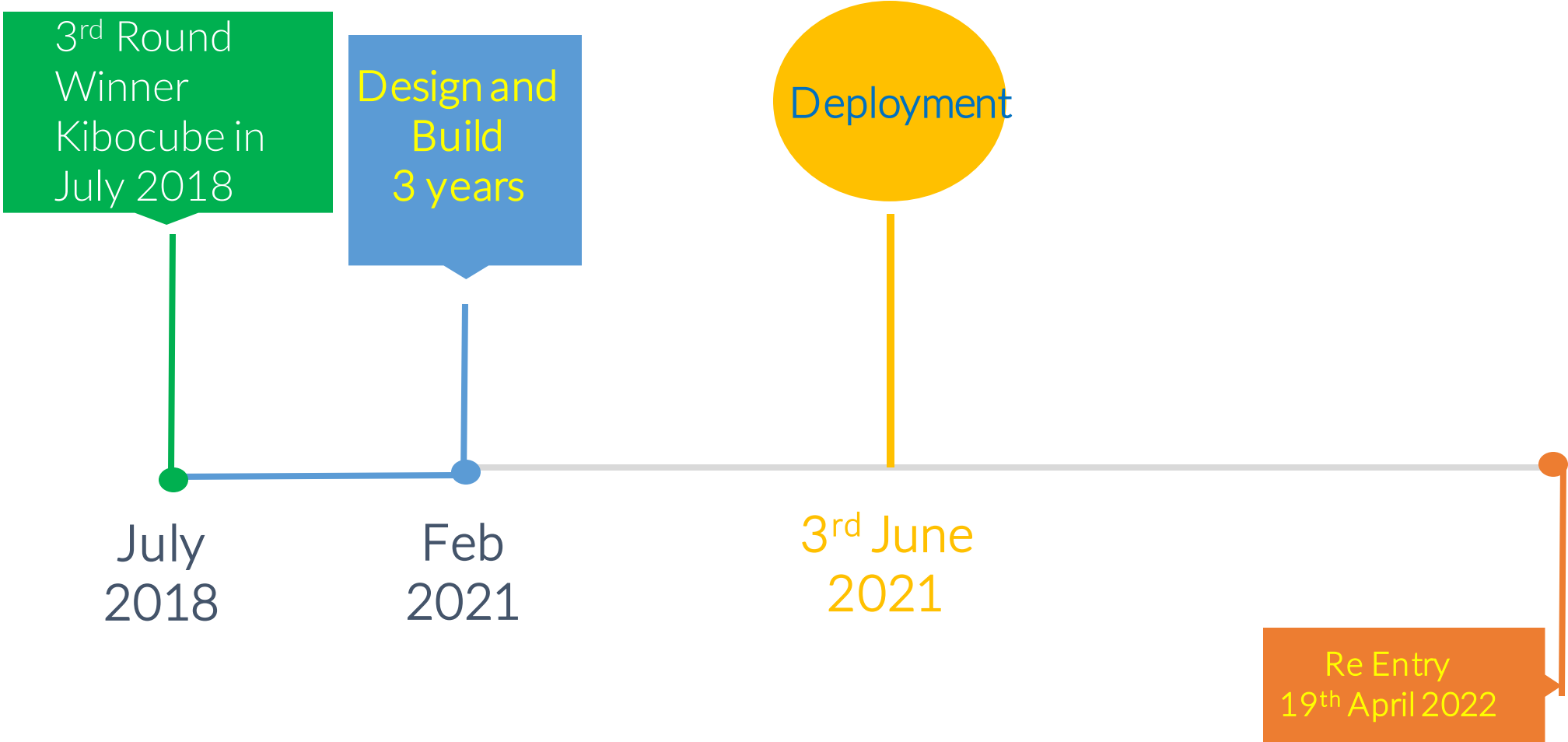
Design and
Build
3 years

Feb
2021

Deployment

3rd June
2021

Re Entry
19th April 2022



MIR-SAT1 – Mauritius Radiocommunication and Imagery Satellite 1

1. Acquire knowledge and skills in satellite technology,

2. Build capacity in satellite/space technology

**3. Satellite Communication
Once in space**



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

5. Test the Island-to-Island communication module

Launched to ISS 3rd June 2021

Re-entry 19th April 2022

Some 50 pics taken

Island to Island Communication via HAMS successful



High Level Steering Committee setup, chaired by the Minister of ITCI, comprising of several stakeholders.

**MIR-SAT1 – a small satellite which
paves the way for ambitious future
ventures space/Satellite Technologies
for Mauritius**

First Mauritian Satellite MIR-SAT1

Mauritius Imagery Radiocommunication Satellite 1

22nd June 2021 – MIR-SAT1 Deployed from
the International Space Station

31st August 2021 – MIR-SAT1 Commissioning
Completed

6th September 2021 – Registered MIR-SAT1
with UNOOSA

7th October 2021 – Unveiling of MIR-SAT1
Images



MIR-SAT1 Image of the Mauritian EEZ captured on 15th of September 2021 at
16:00

School Decodes MIR-SAT1



Trained

Forest Side SSS (Girls) is the 1st school in Mauritius to have decoded MIR-SAT 1 telemetry on two occasions Saturday 24/07/2021 and uploaded same to Satnogs.

Forest Side SSS (Girls) was the second school to be equipped with a simplified

Antenna and mini ground station training program



The Future!

Ensuring Sustainability
+
Tackling our Challenges –
From data to Solution
(Blue Economy)
+
Socio-economic benefits



FIRST MAURITIAN SATELLITE – UNRAVELS NEW OPPORTUNITIES

JOURNEY TO SPACE ALTHOUGH NOT EASY BUT EXTREMELY REWARDING AND OFFERS HIGHLY PROMISING FUTURE

◆ MAURITIUS NEWEST SIDES IN SPACE

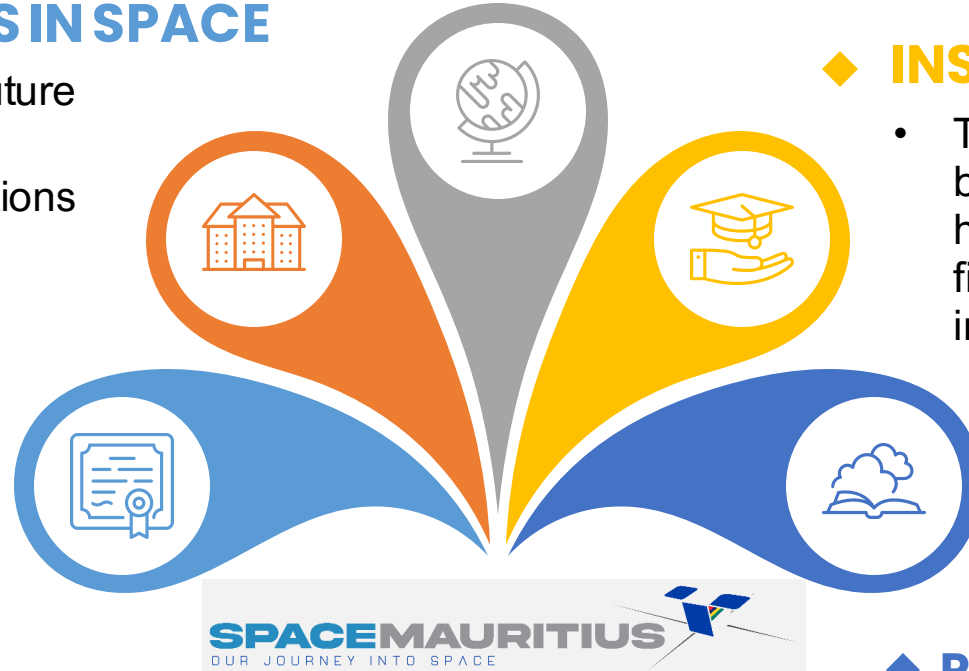
- Geolocation interesting for future space related activities
- More advanced space nations interested to collaborate

◆ NEW 'SPACE-FORCE'

- Building highly technical capacity
- Sophisticated ground station for future missions set up
- Training of younger generation

◆ FUTURE SOCIO-ECONOMIC PILLAR

- Space offers numerous possibilities for Mauritius. Data analytics, opportunities for R&D, business opportunities, intergovernmental collaborations.



◆ INSPIRATION FOR YOUNGSTERS

- The training program on antenna building gave us an insight of the high level of enthusiasm for this new field. There is hope to enhance this interest further to build new capacity.

◆ PULL FACTOR FOR R&D

- This historical initiative for the Republic of Mauritius promises to unlock new opportunities for research, innovation and socio-economic development.

Mauritius in the process of Planning its 'Space Future'



Mauritius contribution for peaceful, sustainable and responsible utilization of space as a Small Island Developing State

- Mitigate Climate Change (preparedness for cyclones, tsunamis, flash floods etc)
- Better management of EEZ (security, fish resources, research, sustainable exploitation of ocean resources)
- contribute and collaborate with the handful of SIDS having a space presence to devise space policies and laws which specifically apply to SIDS
- Engage into collaborative ventures with international stakeholders to engage in research in space/satellite technologies

DREAM IT
THEN
I make it
HAPPEN

The First
Mauritian
Space
Adventure



MEET THE MIR-SAT1 TEAM



Faraaz Shamutally

Aerospace Engineer

Principal Investigator



Dr Vickram Bissonauth

Project Coordinator

Overall project management and coordination



Ziyaad Soreefan

Aerospace Engineer

Co-Principal Investigator



Koushul Narrain

Researcher

Ground Station Implementation
Facilitator & Lead on Awareness Events



Kiran Tatoree

Researcher

Lead on Antenna training program

THANK YOU



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Potential Areas Contributing to Space Exploration

- Ground Station as a Service (GSaaS)



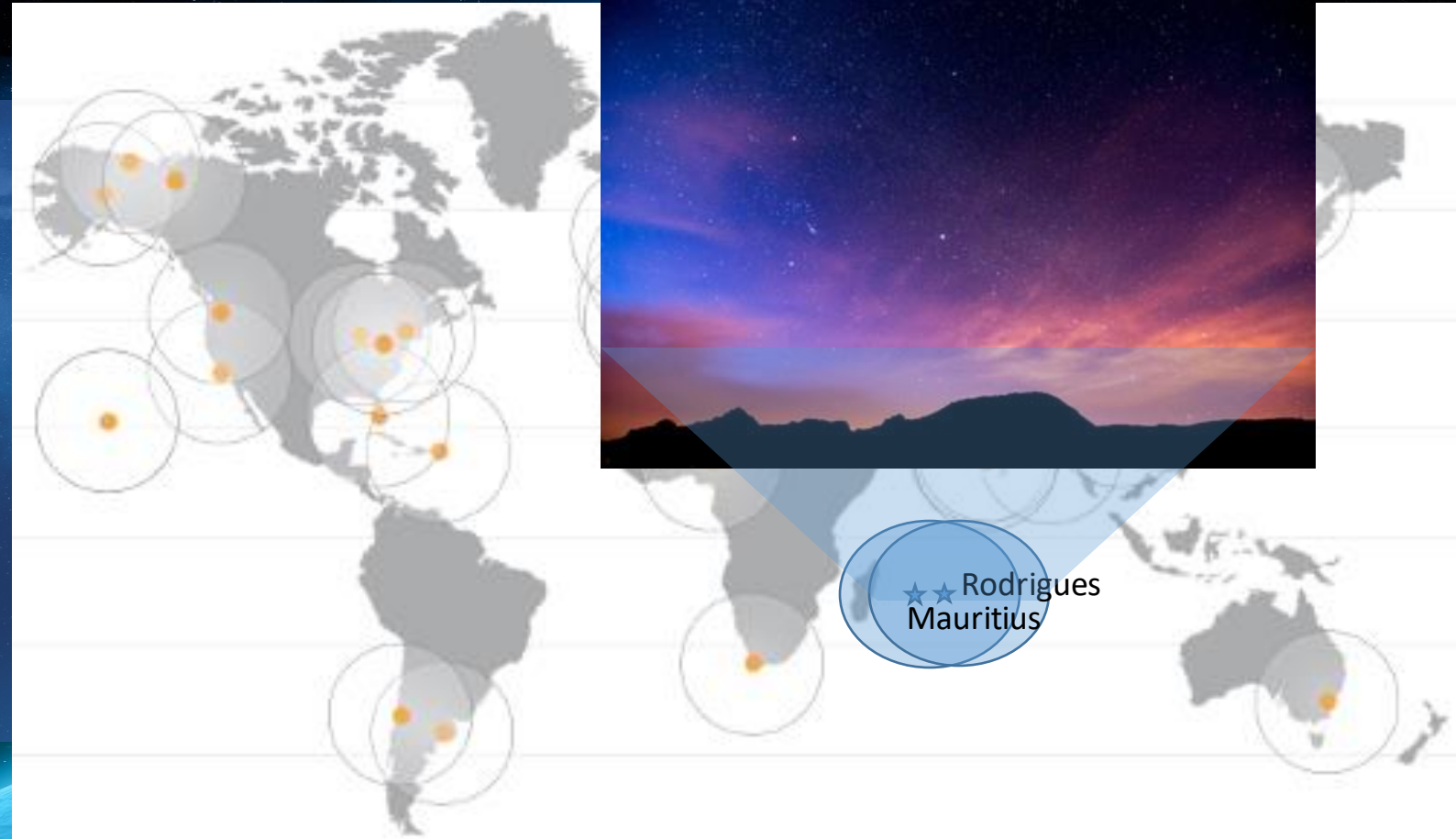
Ground Station as a Service

A blind spot over the
Indian Ocean Region

Use of Existing stations

OR

Set up of ground station
network



Potential Areas Contributing to Space Exploration

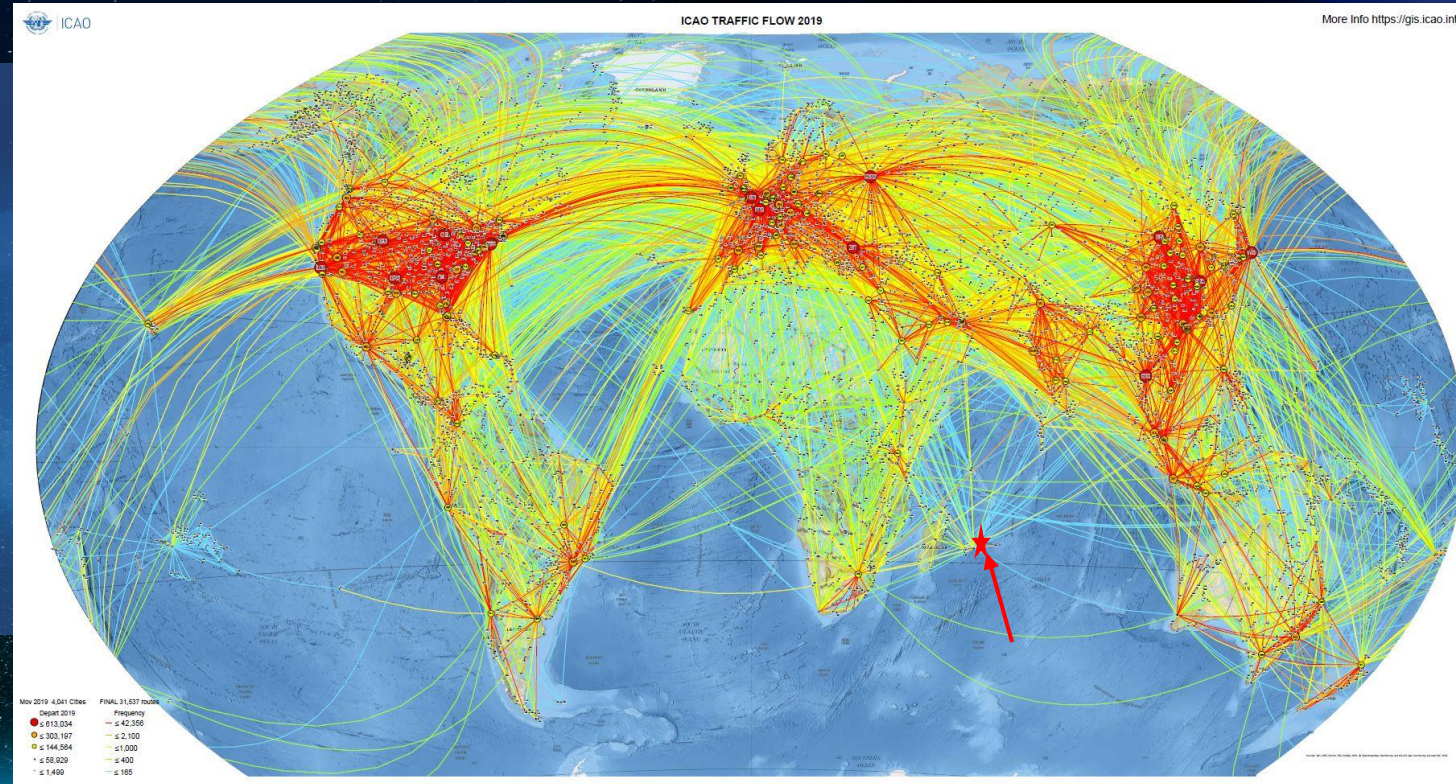
- Ground Station as a Service (GSaaS)
- Spaceport



A potential Spaceport for launching and receiving Spacecrafts

Mauritius - Surrounded by large ocean with and EEZ of 2.4million square km

- No crowded airspace
- Safe downrange distance



Can be a potential spot for

- Horizontal Take-offs
- Horizontal Landings
- Sub-Orbital flights



Potential Areas Contributing to Space Exploration

- Ground Station as a Service (GSaaS)
- Spaceport
- Astronomical Observatory



A Mauritian Astronomical Observatory

- No large cities causing
 - Less air pollution (no smog)
 - Less light pollution (clearer sky)
- Easy access to remote location

