United Nations/Austria

World Space Forum

13 - 15 December 2022

2022 WSF WORLD SPACE FORUM

ORGANIZED JOINTLY BY:

Federal Ministry
Republic of Austria
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology

UNITED NATIONS
Office for Outer Space Affairs

Federal Ministry
Republic of Austria
European and International
Affairs

United Nations Activities for Enhancing Access to Space

Access to Space for All initiative

World Space Forum 2022

UNITED NATIONS
Office for Outer Space Affairs

13 December 2022

Hazuki Mori

Expert, Space Applications Section

UNOOSA and Space for Sustainable Development

Space for Women

Space Law for New Space Actors

UN-SPIDER

Access to Space for All

Space for Persons with Disabilities

Space Economy

Space for Climate Action

International Committee on GNSS

Space for Youth

Space Sustainability

Space for Water

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Access to Space for All

Space Technology Capacity Building

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The goal of the Access to Space 4 All initiative is to provide research and orbital opportunities for UN Member States **to access space and to ensure that the benefits of space, in particular for sustainable development, are truly accessible to all**

Acquire cutting-edge skills for jobs and other opportunities and **develop hands-on capabilities** from A-Z

Access to unique ground and space infrastructure, technology, and information

Gain international cooperation experience through working with the UN and space-faring partners

Visibility to of the R&D and space activities already done in the country/region

Motivate the young generation and **boost interest in STEM**

Access to Space for All in Numbers

- **9** Hands on Opportunities
- **1** Annual Fellowship
- **27** Awardees involving **42** Entities from **30** countries
- **4** CubeSats launched
- **7** Microgravity Experiments performed
- **16** projects in development
- **62** Scholarships granted
- **70+** Hours of educational content on YouTube

4 QUALITY EDUCATION

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

SPACE AGENCIES

CMS DLR esa JAXA مركز محمد بن راشد للفضاء MOHAMMED BIN RASHID SPACE CENTRE

RESEARCH INSTITUTIONS AND UNIVERSITIES

Keldysh Institute of Applied Mathematics RAS Kyutech Kyushu Institute of Technology ZARM

PRIVATE SECTOR

AIRBUS AVIO SIERRA SPACE

Access to Space for All

Impact of the initiative

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Buena Vida
#GuateVaAlEspacio

Ellas construyen el satélite guatemalteco

Conozca a las siete estudiantes que participan en el proyecto del CubeSat.

"Estamos haciendo historia"

"He aprendido de todos"

"Hay campo en el país"

"No debemos envidiarle nada a los hombres"

"Aprendemos a trabajar en equipo y cumplir metas"

"Somos capaces de hacer un excelente trabajo"

"Confían en mí"

PIONERAS

Siete estudiantes de la Universidad del Valle de Guatemala, que cursan diversas carreras, forman parte del equipo de 67 participantes que


ASU News

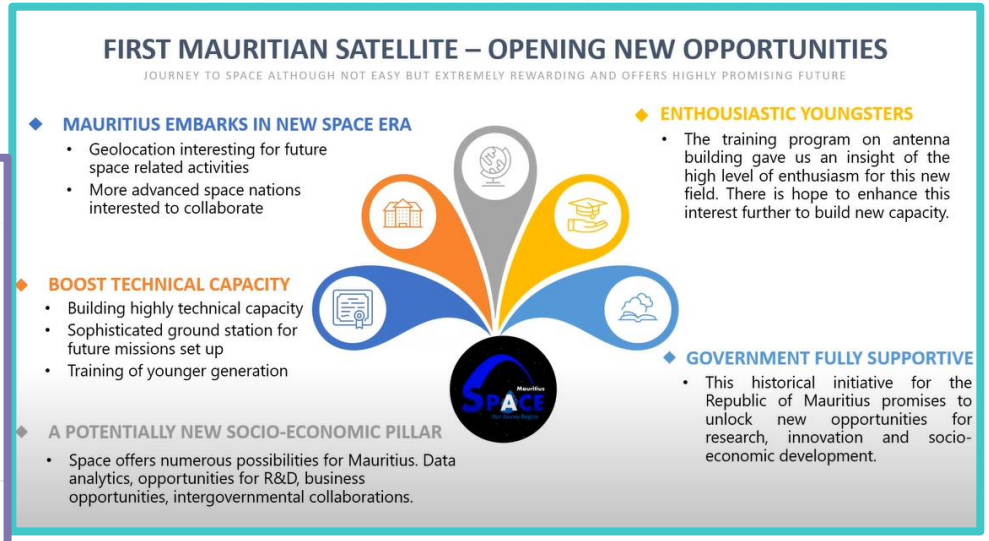
Guatemalan team launches nation's 1st CubeSat, wins Interplanetary Initiative prize

International student team recognized for its success through adversity

June 6, 2022

When members of the team that built the Quetzal-1 CubeSat watched their satellite take off on a SpaceX Falcon 9 rocket in 2020, it was the culmination of six years of hard work, overcoming financial and personnel hurdles, and challenging cultural barriers.

That hard work and ingenuity has garnered the team the CubeSat Delivery Prize award through Arizona State University's Interplanetary Initiative. The award is just the latest step in the team's remarkable journey.


FIRST MAURITIAN SATELLITE – OPENING NEW OPPORTUNITIES

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

MAURITIUS EMBARKS IN NEW SPACE ERA
- Geolocation interesting for future space related activities
- More advanced space nations interested to collaborate

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

A POTENTIALLY NEW SOCIO-ECONOMIC PILLAR
- Space offers numerous possibilities for Mauritius. Data analytics, opportunities for R&D, business opportunities, intergovernmental collaborations.

ENTHOUSIASTIC 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.

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


3.How has participating in DropTES changed the environment around you?

CIDIMEC

State-of-the-Art Research

Know our work and impact

Research Areas

Last Publications

RESEARCH CENTER

MECHATRONICS DEPARTMENT


Aerospace, AI and Digital Center

ESPITA was able to grow ,to expand by inauguration **AEROSPACE, AI AND DIGITAL CENTER** on July 2022

Aerospace AI Digital Center

Access to Space for All
Hypergravity/Microgravity Track

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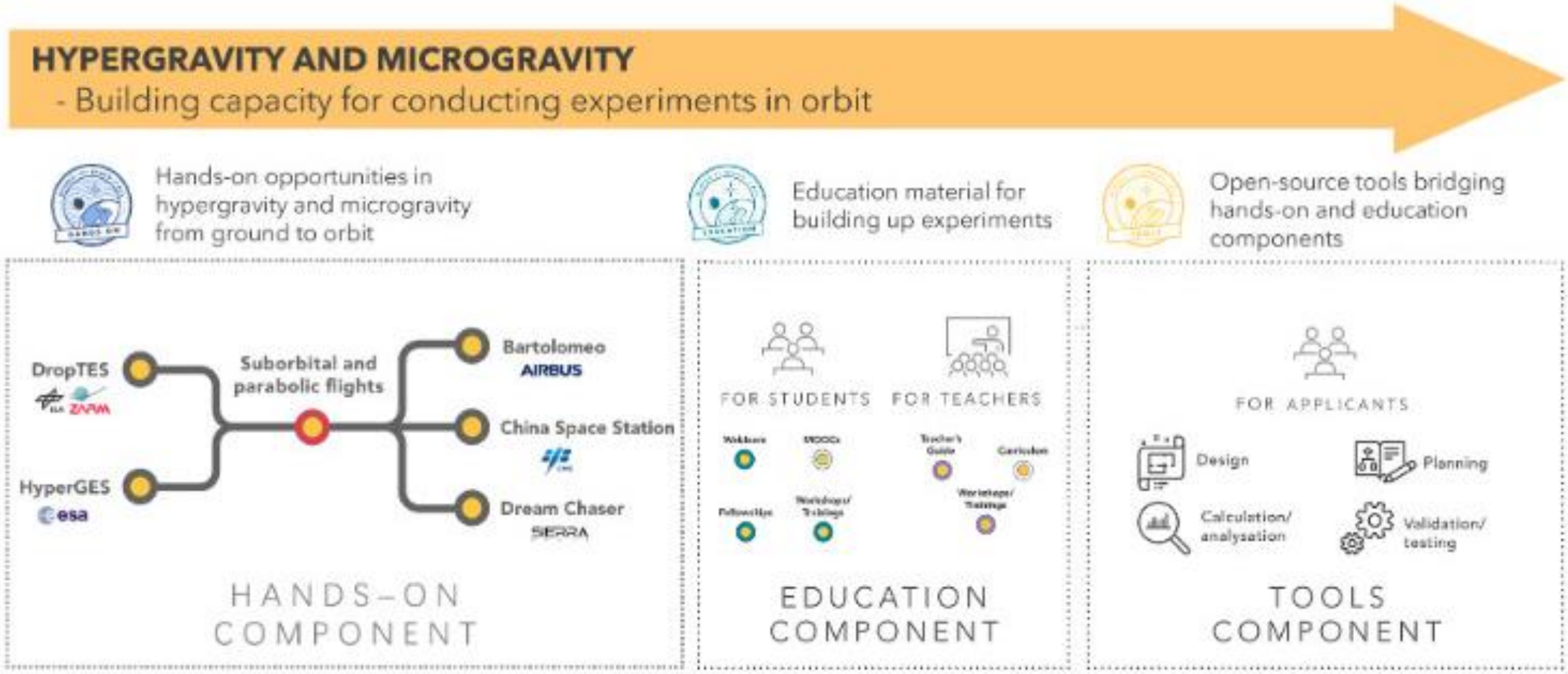
- **<u>Achievable entry point</u>** to acquire knowledge and skills through conducting various experiments in many different scientific fields
- **<u>Beneficial first step to start capacity-building</u>** for space activities



Access to Space for All

Hypergravity/Microgravity Track

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DropTES

- Partners: ZARM (Center of Applied Space Technology and Microgravity) and DLR (German Aerospace Center)
- Established: 2014
- Aims to provide educational or research institutions with opportunities to conduct a series of **<u>microgravity experiments</u>** at the Bremen Drop Tower in Germany.
- The drop tower experiment series consists of **<u>5 drops or catapult launches</u>** to be conducted within one week. Each experiment series is accompanied by an on-site experiment integration taking place one week prior to the campaign.
- 7 experiments have successfully been conducted with the programme.
- **<u>Currently open for applications until 22 January 2023.</u>**

2014 German Jordanian University

2015 & 2020 Universidad Católica Boliviana "San Pablo"

2016 Universidad de Costa Rica

2017 Warsaw University of Technology

2018 University of Bucharest Politehnica

2019 Politecnico de Milano "Polimi"

Photo credit: ZARM

Access to Space for All

Hypergravity/Microgravity Track: **DropTES**

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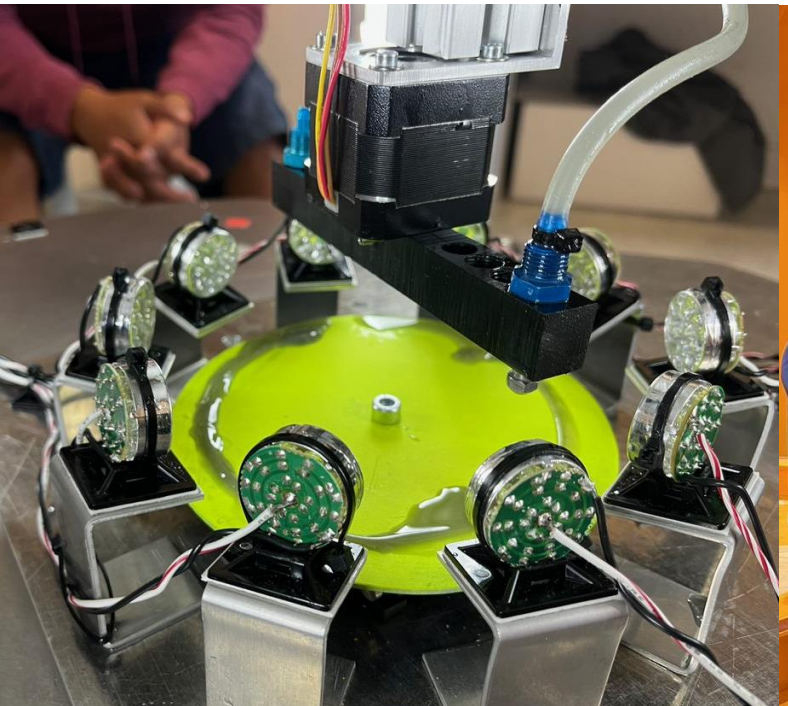
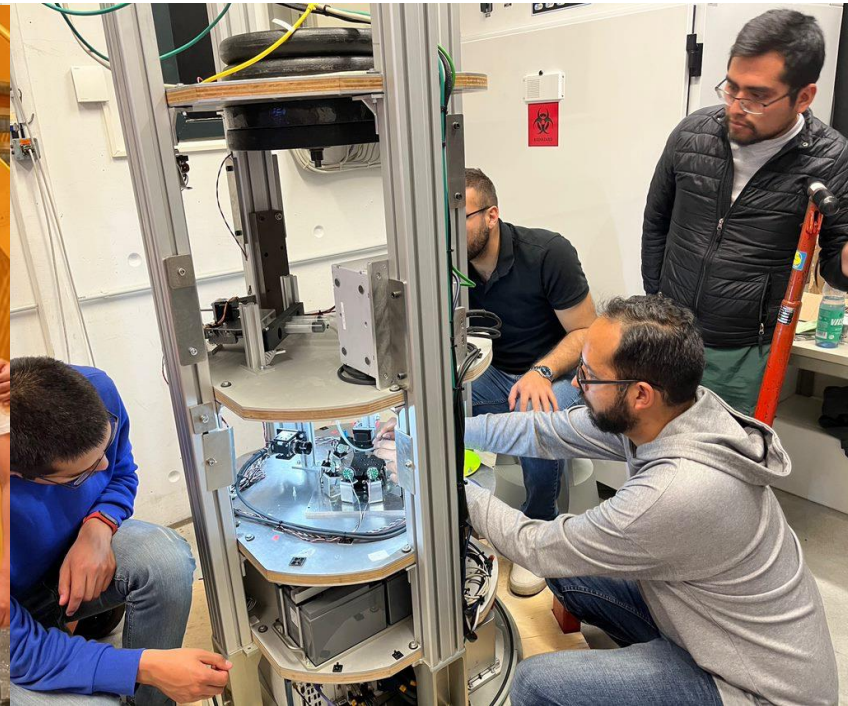
Universidad Católica Boliviana "San Pablo" awardee of DropTES 2nd & 7th round

- In 2015, the team **examined and evaluated the property of Nitinol**, which is a metal alloy often used in medical devices.
- In 2022, the team tested **3D printing techniques using liquid resin**, which could lead to new applications in various fields.

The **technical expertise and skills acquired through the experiments** helped develop ventilators during the COVID19 pandemic.





Access to Space for All
Satellite Development Track

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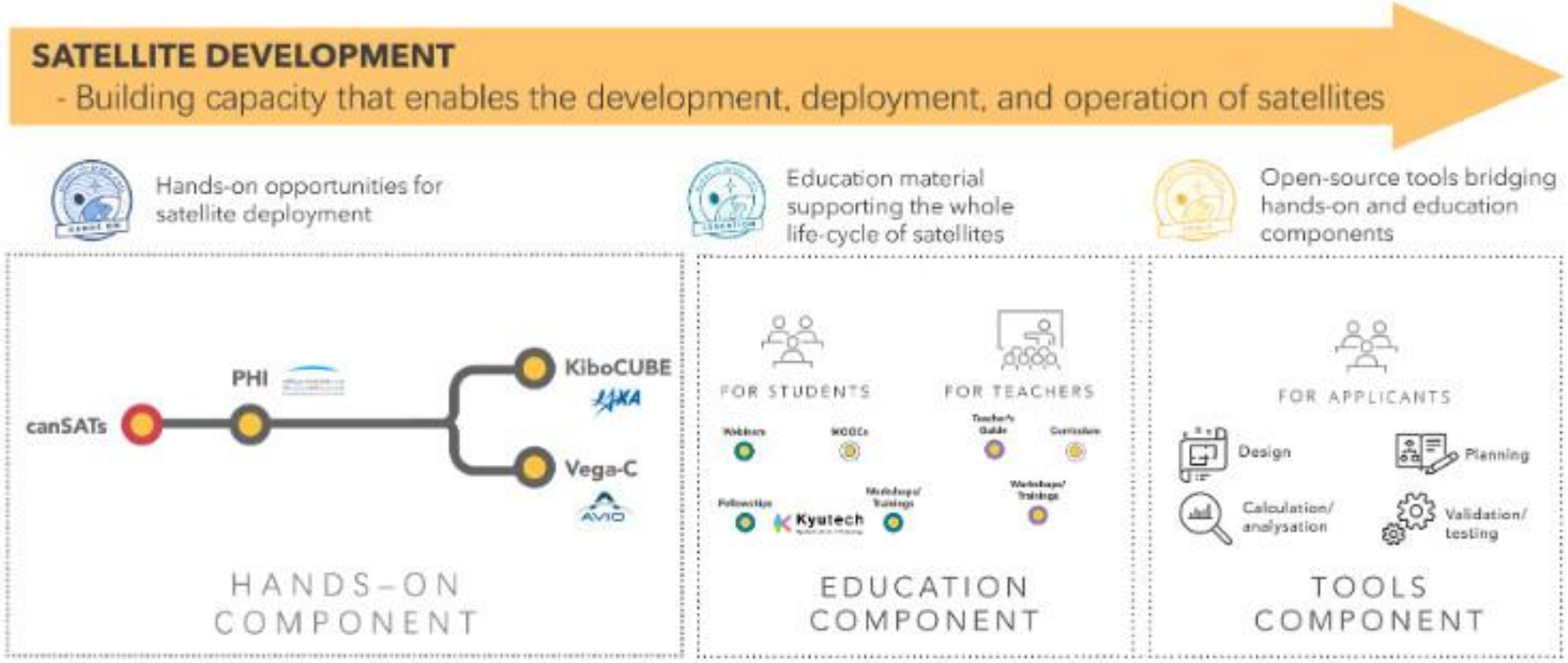
- CubeSats offer a **large variety of applications**
- CubeSat development can be the **first step for a country in the acquisition of the skills and know-how needed to develop a space programme**
- CubeSats are **affordable to develop** and represent an **achievable entry point to space activities**.



Access to Space for All
Satellite Development Track

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KiboCUBE 1st Round Awardee: Kenya

- Institute: University of Nairobi
- Satellite: 1KUNS-PF
- Objective: To monitor agriculture and coastal areas
- Partnership: University of Rome (Italy)
- Deployed from ISS: 11 May 2018
- Re-entered atmosphere: June 2020

Achievements

- More than 300 images downloaded, surpassing initial expectations
- **Accelerated the creation of the Kenya Space Agency,** which led to more KSA participation in other Access to Space for All opportunities such as the Bartolomeo and ISONscope programme

Photo credit: JAXA

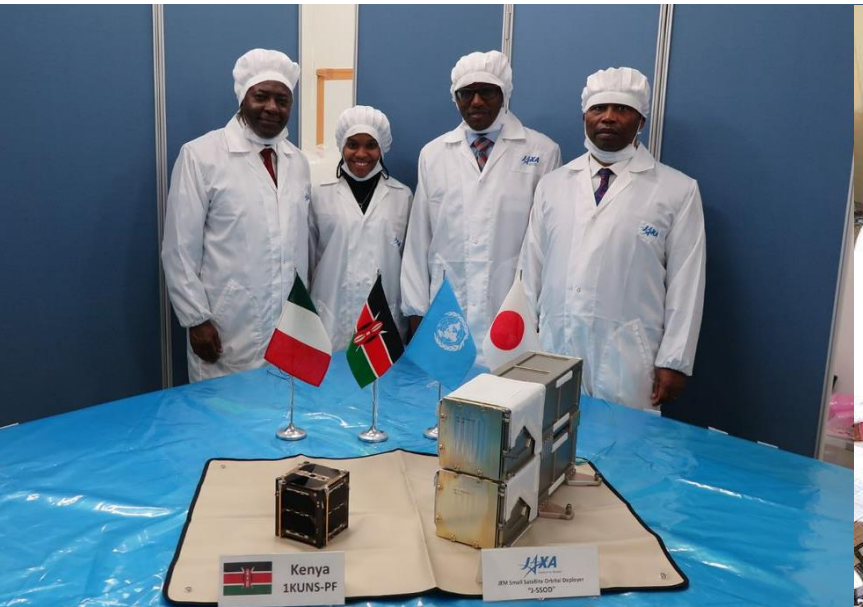

Photo credit: JAXA/NASA

Access to Space for All
Satellite Development Track

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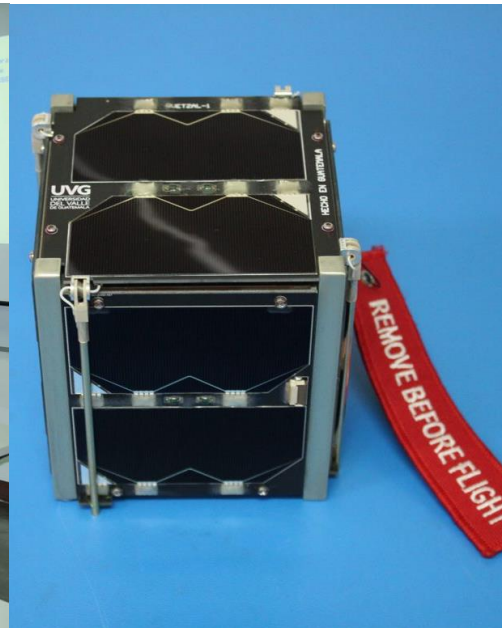
KiboCUBE 2nd Round Awardee: Guatemala

- Institute: Universidad del Valle de Guatemala
- Satellite: Quetzal-1
- Objective: To test the acquisition of EO data
- Partnership: Universitat Wurzburg, University of Alabama, University of Colorado Boulder, LASP, NASA, ESAC, UKSA, ASTROSAT, and more
- Deployed from ISS: 29 April 2020
- Re-entered atmosphere: August 2021

Achievements

- In operation for 211 days with 84,976 data packages received globally, **involved more than 100 students in the project, developed 70% of the CubeSat in-house.**
- **Conducted successful outreach activities** involving the media, workshops for young students (especially girls) & publishing books/documentaries

Photo credit: Ivan Castro



Access to Space for All
Satellite Development Track

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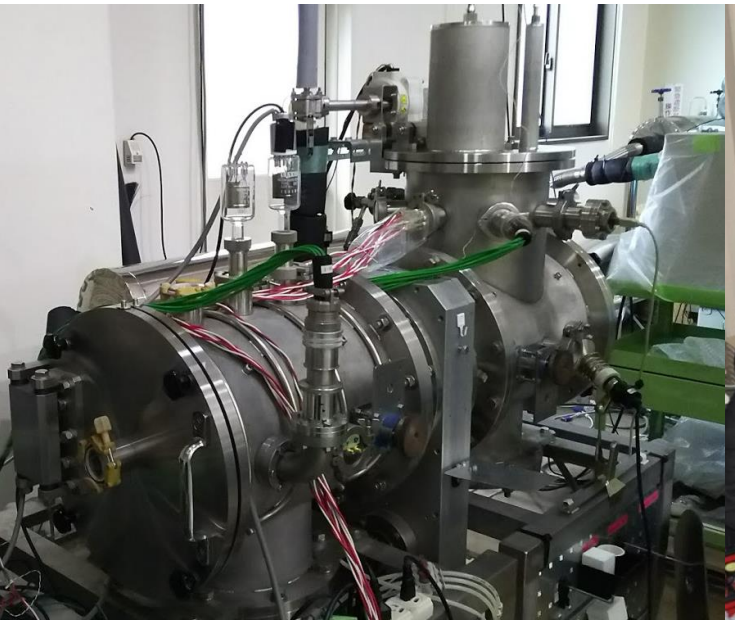
Post-graduate Study on Nano-Satellite Technology (PNST)

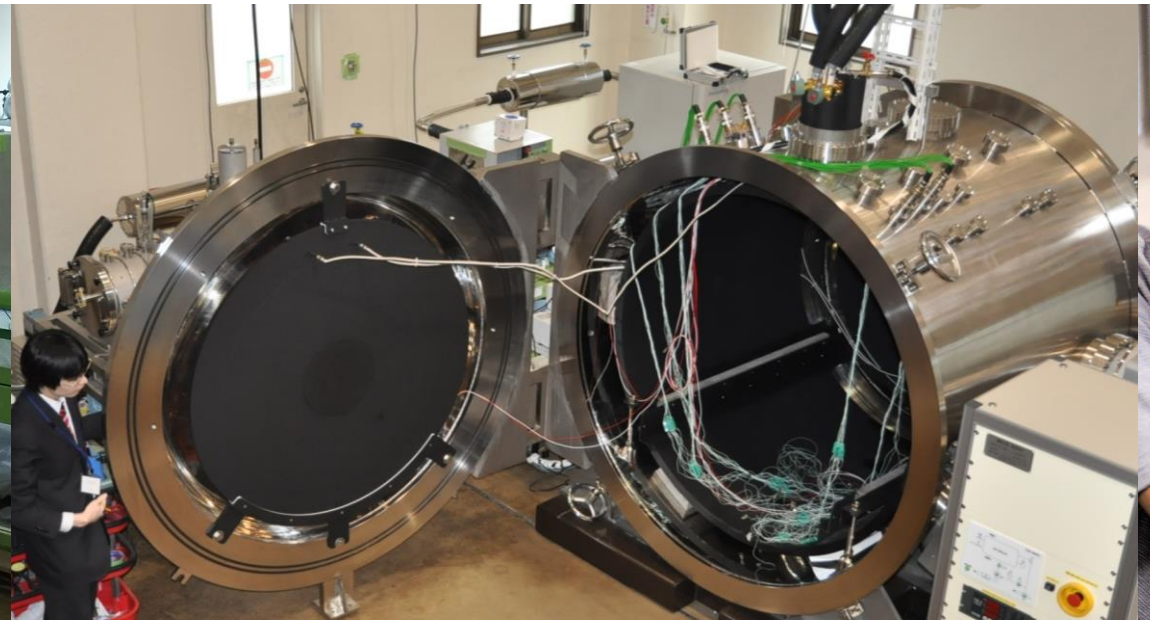
MEXT MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

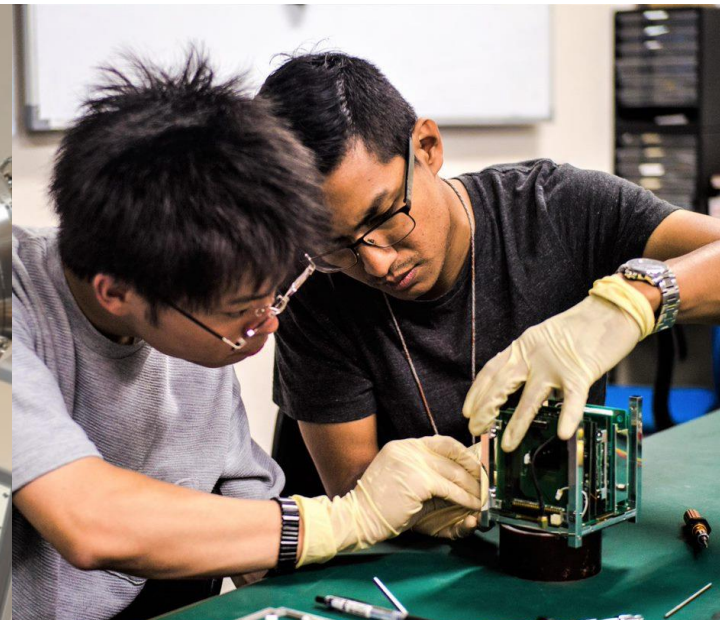
Kyutech
Kyushu Institute of Technology

- Partner: Kyutech (Kyushu Institute of Technology) with the support of the Gov. of Japan (MEXT)
- Established: 2013
- Provides **3 students in the Master's Programme (2 years duration) and 3 students in the Doctoral Programme (3 years duration)** to enroll in Kyutech's **Space Engineering International Course (SEIC)** for a **hands-on, extensive research opportunity in nano-satellite systems through the use of the nano-satellite development and testing facilities** available at Kyutech.
- The selected fellows are expected to return to their home counties upon completion of their studies and contribute to their countries using the experience and knowledge gained from the programme.
- **Currently open for applications until 9 January 2023.**

Photo credit: Kyutech







Access to Space for All
Satellite Development Track

UNITED NATIONS
Office for Outer Space Affairs

Post-graduate Study on Nano-Satellite Technology (PNST)

MEXT MINISTRY OF EDUCATION, CULTURE, SPORTS, SCIENCE AND TECHNOLOGY-JAPAN

Year	Selected Student's Countries of Origin
2022	Egypt, Mexico, Mongolia, South Africa, Turkey, Thailand
2021	Bhutan, Cambodia, Ethiopia, Laos, Trinidad and Tobago, Zimbabwe
2020	Brazil, El Salvador, Indonesia, Nepal, Paraguay, Vietnam
2019	Bhutan, Ethiopia, Laos, Malaysia, Sri Lanka, Trinidad and Tobago
2018	Algeria, Egypt, Nepal, Sudan, Turkey

Access to Space for All

Space Exploration Track

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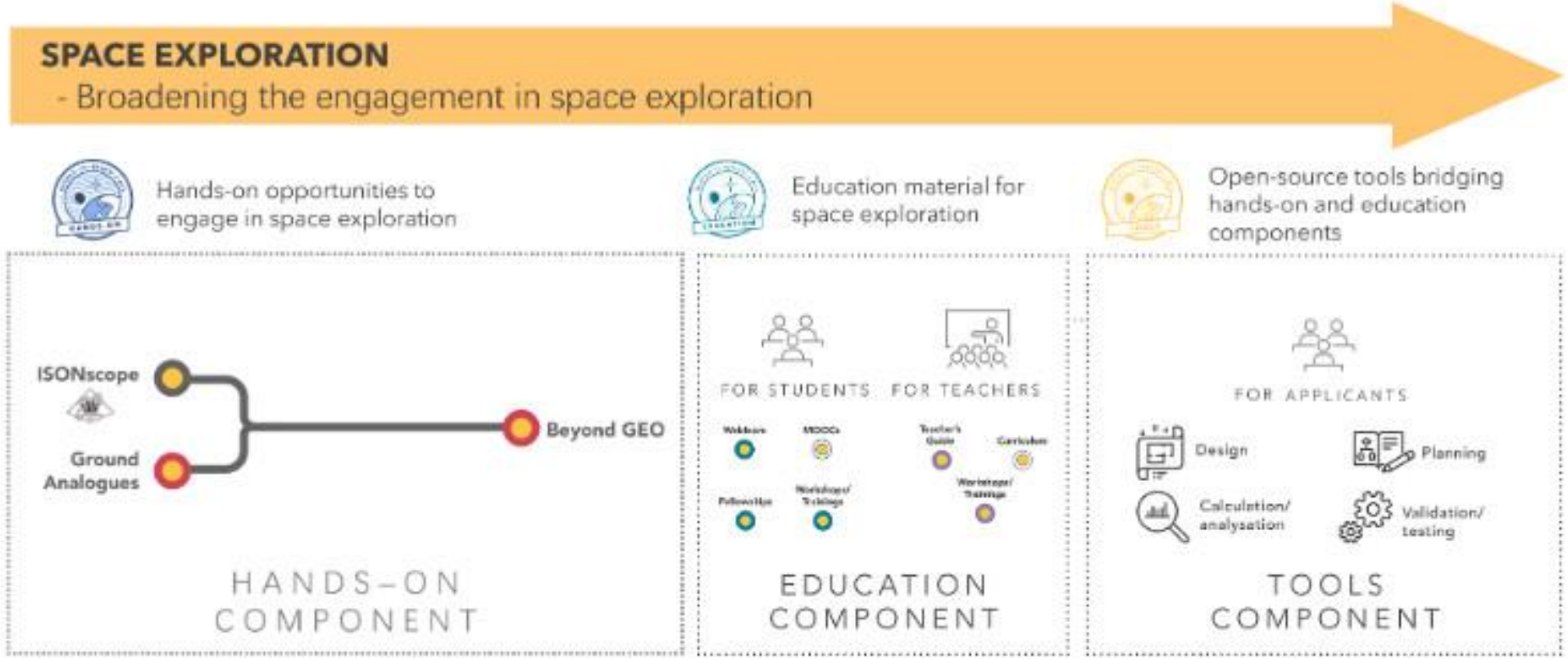
- Increasing capability in astronomy/observation and space data analysis can **deepen scientific knowledge and support necessary technology** for monitoring space debris, managing space traffic, and future exploration beyond GEO
- Space exploration can **motivate the young generation** who are the leaders of tomorrow
- Space exploration is an international effort and it can **foster international cooperation**



Access to Space for All
Partnerships

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Value Propositions for Partners

- Visibility of infrastructure, facilities, and technology
- More impact through being part of an organized initiative
- Bridge the space divide and support the development of cross-cutting skills with a partnership with the United Nations
- Promote the safe and sustainable use of outer space as a responsible space actor

SPACE AGENCIES

CMS · DLR · esa · JAXA · مركز محمد بن راشد للفضاء MOHAMMED BIN RASHID SPACE CENTRE

RESEARCH INSTITUTIONS AND UNIVERSITIES

Орденa Ленина им.М.В.Келдыша РАН · Kyutech Kyushu Institute of Technology · ZARM

PRIVATE SECTOR

AIRBUS · AVIO · SIERRA SPACE

Any questions?
Interested in cooperation ?
Contact us

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Help us help
#AccSpace4All

Download and learn more about us!

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