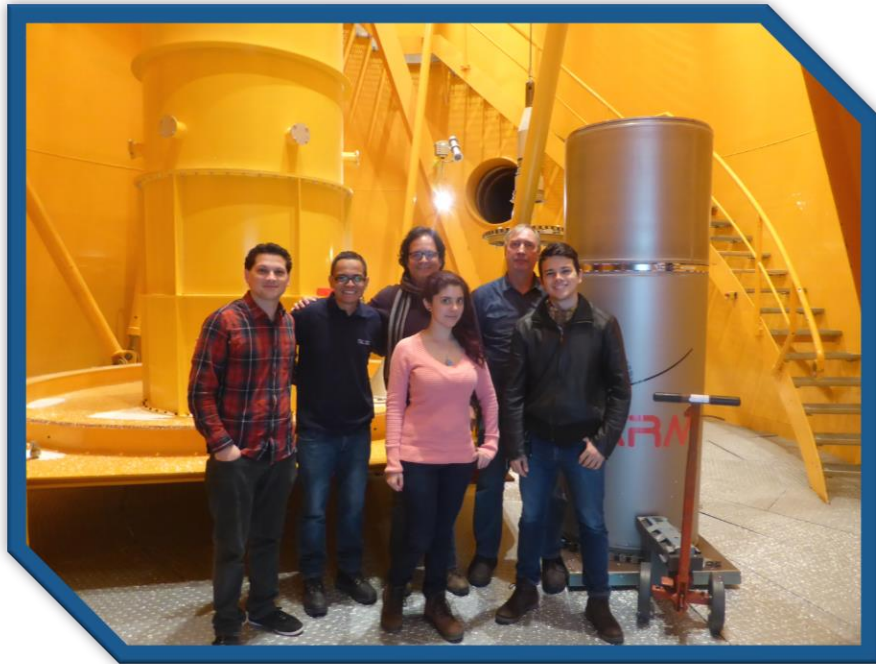


Ask a Winner – UNOOSA Webinar

DropTES 3rd Round

*Analysis of Scaled Robotic Arm
Manipulators under “Artificial”
Gravity Conditions*



*Presented by:
**Moacir
Fonseca
Becker***

KiboCube 5th Round

*Morazán Satellite
Project*



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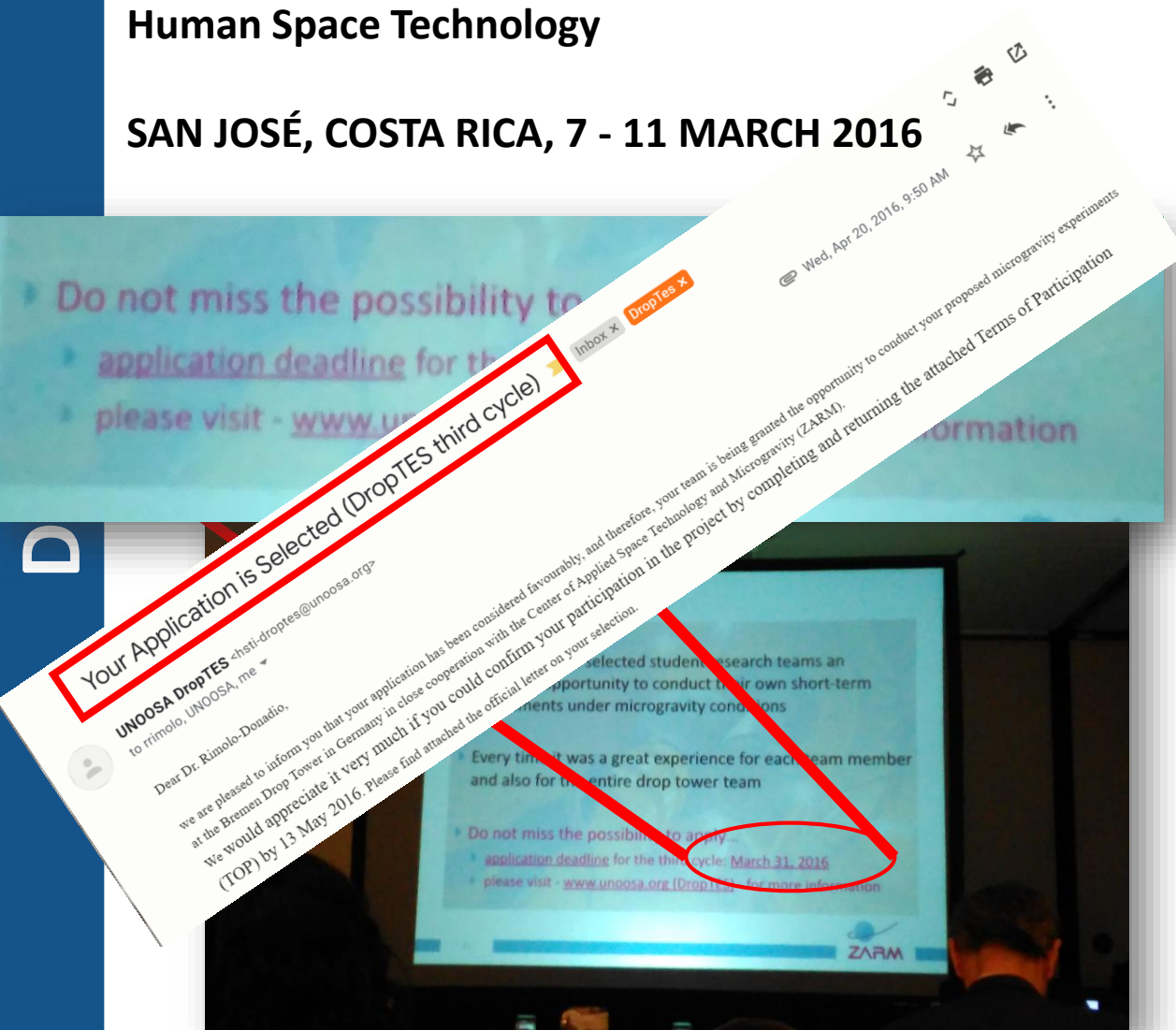
SICA
Sistema de la Integración
Centroamericana





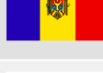



How did you learn about the opportunity?

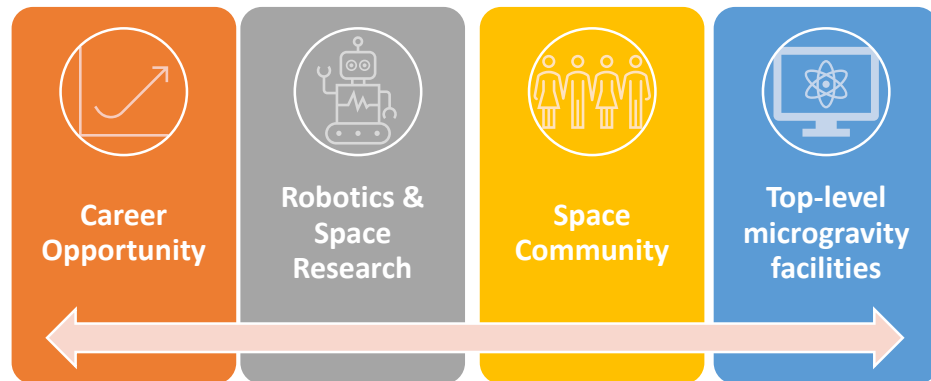
United Nations/Costa Rica Workshop on Human Space Technology

SAN JOSÉ, COSTA RICA, 7 - 11 MARCH 2016



| | Winner | | Objective | Status of Satellite |
|--|--|---|--|--|
| 1 st round Selected in 2016 | KENYA: University of Nairobi "1KUNS-PF" |  | To monitor agriculture and coastal areas | - Deployed from ISS on 11 May 2018 - Re-entered atmosphere in June 2020 |
| 2 nd round Selected in 2017 | GUATEMALA: Universidad de Valle De Guatemala "Quetzal-1" |  | To acquire remote sensing data for natural resource management | - Deployed from ISS on 29 April 2020 - On-orbit, collecting data |
| 3 rd round Selected in 2018 | MAURITIUS: Mauritius Research Council "MIR-SAT 1" |  | To collect thermal infrared images and to test onboard communication | - Currently under development |
| 3 rd round Selected in 2018 | INDONESIA: Surya University "SS-1" |  | To demonstrate remote communication | - Currently under development |
| 4 th round Selected in 2019 | MOLDOVA: Technical University of Moldova "TUMnanoSAT" |  | To demonstrate technology and test various components | - Currently under development |
| 5 th round Selected in 2020 | SISTEMA DE LA INTEGRACIÓN CENTROAMERICANA: "MORAZAN-SAT" |  | To monitor weather variables in remote areas providing early warning during extreme weather events | - Currently under development |

Why did you apply? & How did the project originate?

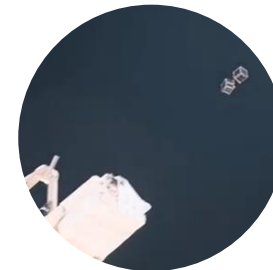


(Image: © NASA)



(Image: © New Atlas)

Background – Irazú Project, the First Central American Satellite



Launch: April
2nd 2018

Project Director: Carlos Enrique Alvarado



USAC
TRICENTENARIA
Universidad de San Carlos de Guatemala



UNAH
UNIVERSIDAD NACIONAL
AUTÓNOMA DE HONDURAS

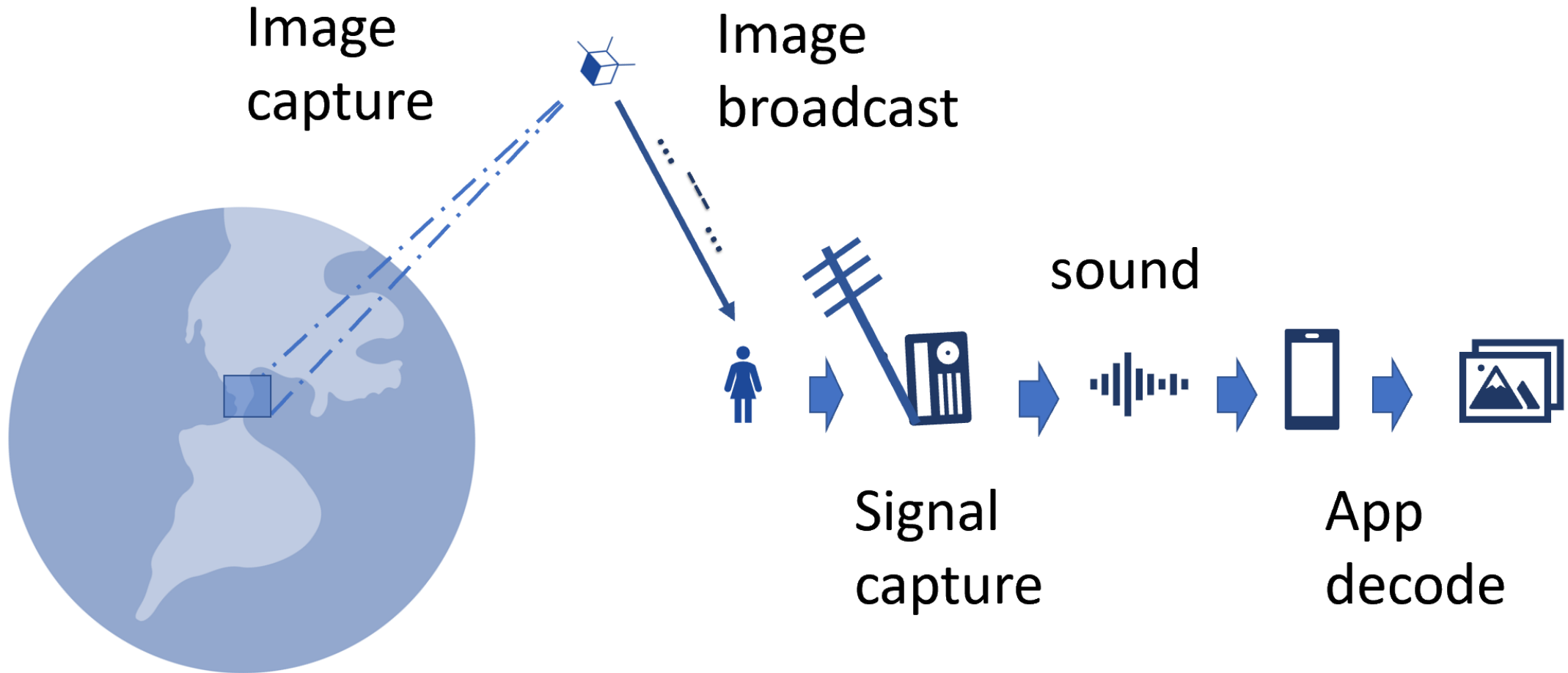


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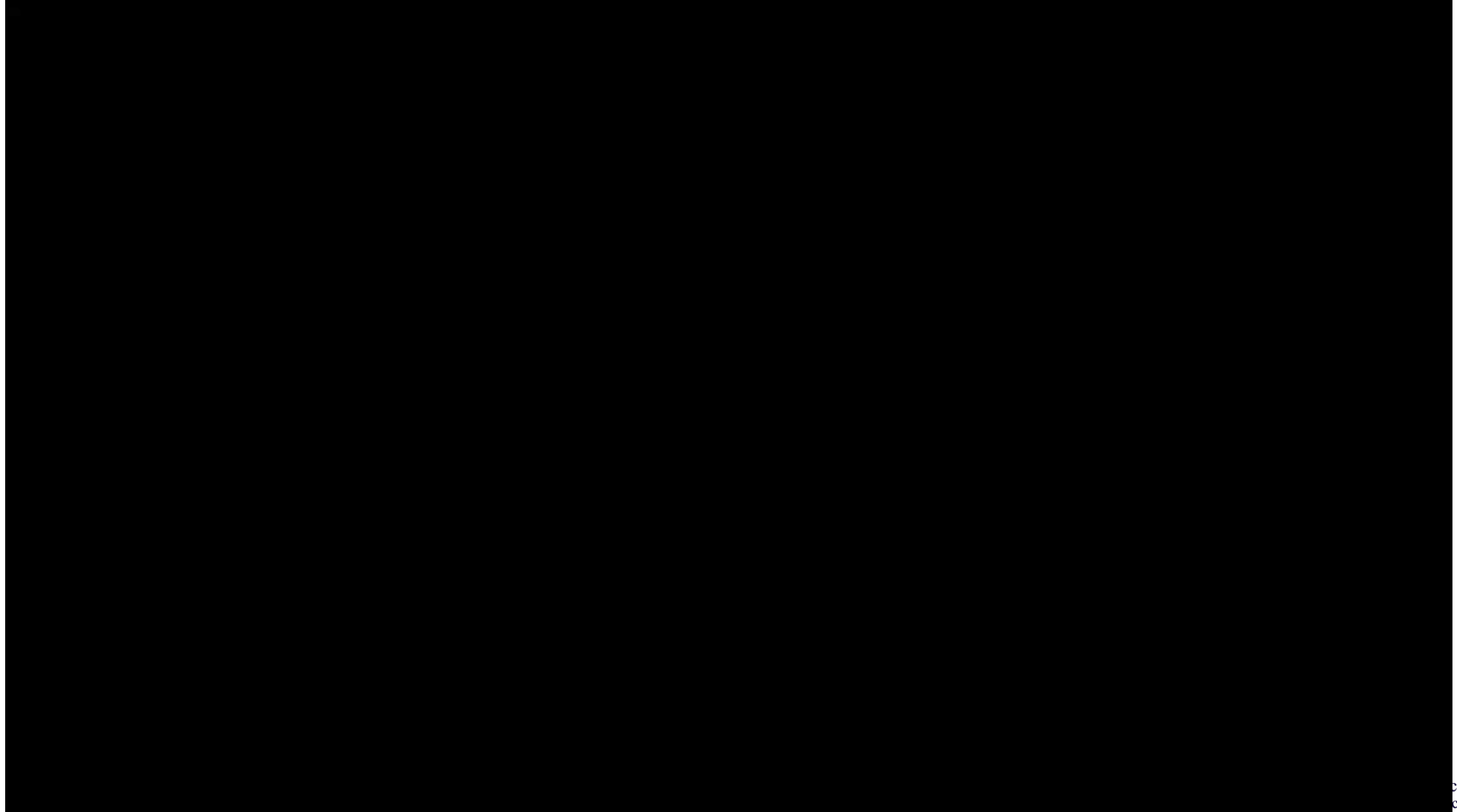


How did the project originate?

Mission 3



Drop video



First team presentation and development phase launch!



Outcomes After?

IAC-17-A2.3.


ANALYSIS OF SCALED ROBOTIC ARM MANIPULATORS UNDER MICROGRAVITY CONDITIONS

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This paper reports the results of a drop-tower experiment series with reduced gravity conditions performed under the United Nations Human Space Technology Initiative (UN-HSTI) (DropTES), at the Center for Applied Space Technology and Microgravity (CASTM). The tested prototype consists of two articulated arm manipulators with three degrees of freedom, installed on a rotating plate in the drop capsule. The forces on the structure, were monitored during the fall through four load cell sensors per arm and an inertial measurement unit (IMU) sensor on the end effector of one arm. The results of the experiment showed that the gravity conditions correlated with analytical model predictions. A clear trend with different gravity conditions could be identified, in consistency with the magnitude of oscillations in the microgravity environment are notably lower than those observed in the experiment. The structures of the manipulators are feasible for future sequences.



Investiga.TEC

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Presentación (página 2)

DropTES, Serie 1B: Experimento en microgravedad con prototipo de brazos (página 14)

Máquinas inteligentes (Smart Machines) (página 14)



Clear timeframes



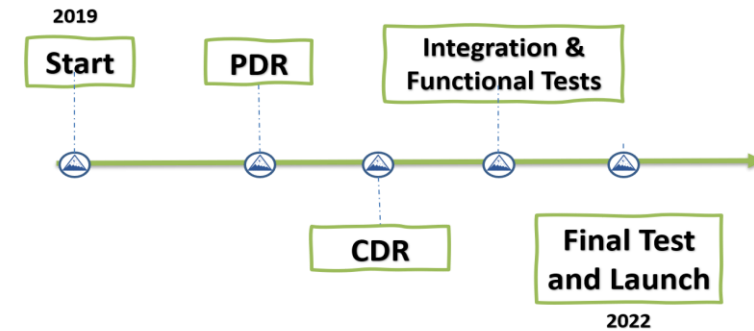
Credibility



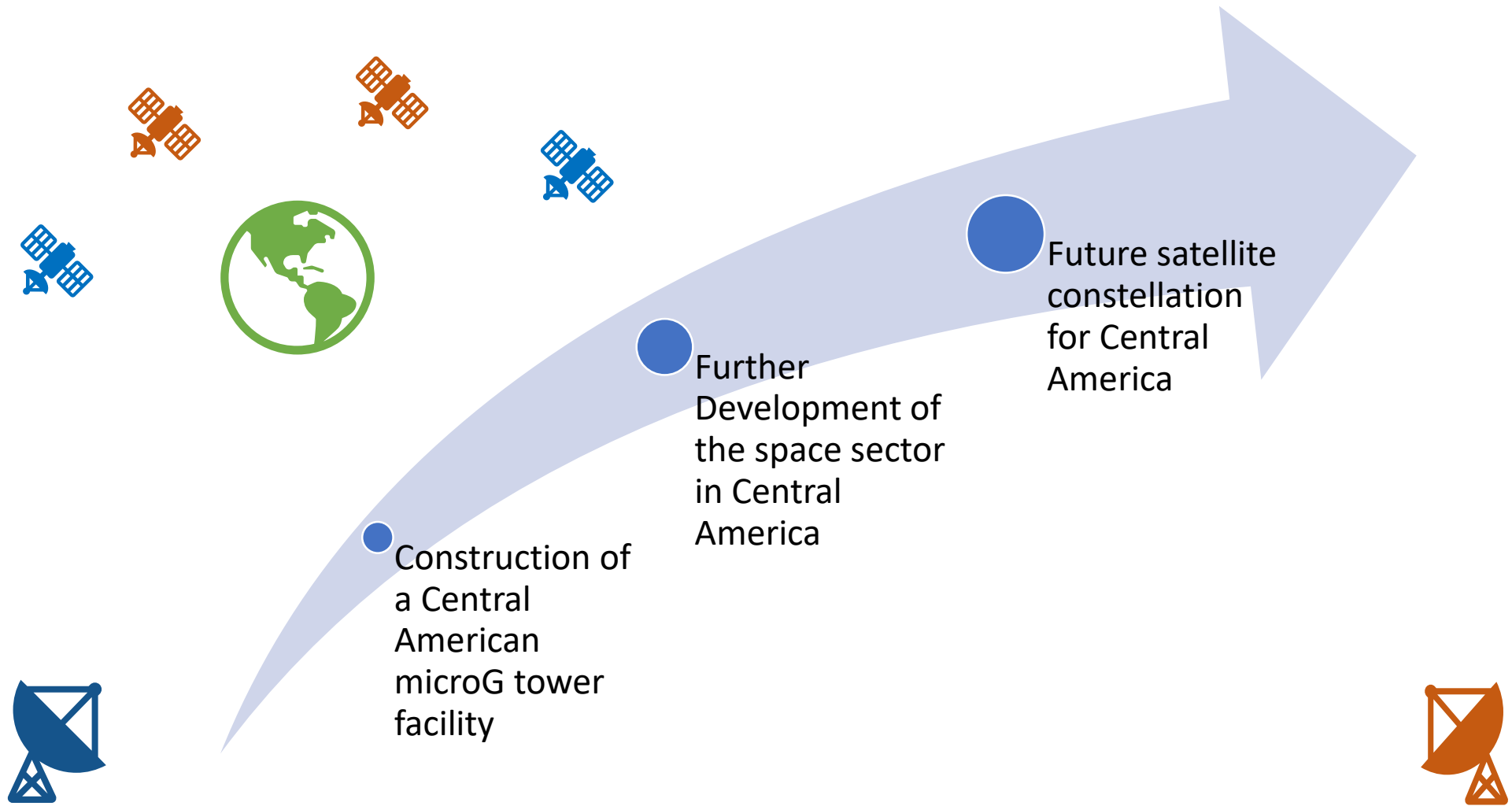
International Cooperation



Inspiring the youth



Hopes for the future?



Special Thanks To



UNITED NATIONS
Office for Outer Space Affairs



Contact Information

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