Mission Concept Review of an International Cooperative Space Project

a Mesoamerican CubeSat

Background

Two Central American countries joined the current development of satellites in the region.
Both teams seek to develop more missions to support necessities: in:

- Remote Sensing
- Communications
- Illegal Fishing monitoring.
- Assessing the impact and preparing for climate change

Among others

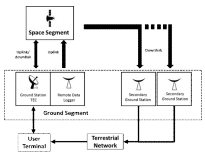
Objective

Become the cornerstone of this cooperation and to propose a solution for a common necessity: frequent forest monitoring. At the same time, this project has been expanded to include more stakeholders with complementary capabilities who share similar interests

Experienced teams

Two satellites developed in Central America
No satellites in the region before 2018!

Irazú



Started in 2013: Cubesat 1U
First Costarrican satellite

Mission: Store and forward of data from tree growing in remote locations.
Current status: in operation

Quetzal-1

Started in 2014: Cubesat 1U
First Guatemalan satellite

Mission: Monochromatic sensor with motorized carrousel for water color monitoring
Current status: Assembly and test currently in execution.

Opportunity

- Two trained teams
- Two operating CubeSats by 2019.
- Same language/ culture
- Geographical closeness
- Same necessities to be solved

Limitation

- Small countries = small budgets
- No space government organization in Central America

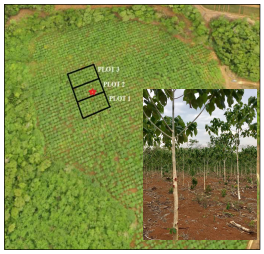
Take advantage of the opportunities Overcome limitations

cooperate!

- Use joint capacity: two teams + students and researchers from all the area!
- Use local partners: cooperate with Mesoamerica and Latin America partners to strength cooperation. UNAM is onboard now!
- UNAM: years of experience, test facilities.
- Create a structure for cooperation: research, development and education

The mission: Forest Mapping. Why?

- 41% of the Central American territory covered by forests
- Differentiate land use – forest vs. agroindustry, cities
- Enable prompt reaction to illegal deforestation and conservation
- Other possible applications: agriculture monitoring /volcanic monitoring



How?

- Mission was defined via a methodology developed in UdV
- Makes use of developments from Irazú and Quetzal
- High potential of international support

What is next?

- Add stakeholders and partners internationally, with special focus on Latin America
- Complete the process where the possible users of the technology help shape the mission:
  - Environmental organizations
  - Agricultural organizations
  - Emergency committees

Do you want to help or have questions? Talk to us!

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