Paper ID: 27118
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SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Enabling the Future - Developing the Space Workforce (5)

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GAIATRI EXPANDING THE HORIZONS OF AEROSPACE ROBOTICS AND ROCKET LAUNCHING IN COSTA RICA

Abstract

In recent years, Costa Rica through government incentives, academia and nonprofit organizations encouragement have develop a platform for the country to go into the aerospace career development generating directed research, project innovation and supporting university students in the design of prototypes that contributes in the creation of an aerospace scientific community.

Gaiatri is the name of the team formed by two students of Electronic Engineering and a Geologist that in 2013 focused on developing an autonomous terrestrial navigation robot, differential wheeled type, with which we obtained the first participation of a Latin-American country in *A Rocket Launching for International Students Satellites* (ARLISS) comeback competition. ARLISS took place in the Black Rock Desert, Nevada, USA and consist in a rocket launching with the robot as a payload that reached 4000 meters of altitude and at that point releases the payload so the robot turn back to a specific GPS coordinate through autonomous navigation.

This experience created a selfless need to transfer the knowledge and the experience obtained in order to promote a practical and experimental way the lessons learned in this contest for those students that dream to get involved in the aerospace-robotics career.

That is why in order to promote the reuse of resources and motivate from a green perspective to the Costa Rican youth to get involved with aerospace initiatives, Gaiatri proposes to design, develop, build and share a recycled material rocket with water as fuel to be able to carry as payload a Robot that complies with ARLISS contest restrictions.

This document explains how the team Gaiatri selflessly plans to build this rocket for people to design their own robot and in that sense they can perform tests in a real rocket scenario. Taking into account that the legal framework of our country only permit us to reach a dozens of meters but with a strong sustainable and scientific component we tend to achieve the greatest number of students who wish to engage in an aerospace experience.