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SUSTAINABLE SPACE HUMAN RESOURCE DEVELOPMENT PROGRAM REALIZED BY  
HEPTA-SAT

**Abstract**

In this paper, we report the activity of the HEPTA-Sat Training, a space human resource development program using a micro satellite education kit, and show the potential for realizing space2020 and achieving the Sustainable Development Goals (SDGs).

Recently, the maturity of reusable rockets and satellite technology has reduced the cost of launching satellites, which has reduced the barriers to entry into the space business. As a result, new entrants for business purposes in developed countries and new entrants in emerging nations are increasing in order to strengthen their own technological capabilities and competitiveness. However, it is a few opportunities for these countries to get space technology education. Thus, it is important to prepare educational package.

UNISEC-Global is an international nonprofit body, consisting of local-chapters across the world. their primary object is to create a world where university students can participate in practical space projects in all countries. It conducted HEPTA-Sat Training a part of their activities.

HEPTA-Sat Training is a hands-on type educational program on the theme of CubeSat. Participants can learn basic knowledge of space engineering and how to think about things as systems thorough developing (learning, assembly, integration and test) classroom CubeSat kit from scratch level to system level. After building it, they try to design and implement their own satellite mission. This training is aimed to all those who want to know / learn / develop space systems regardless of background, such as country or specialty. The training consists Kit, Textbook, and Instructors. Kit can return feedback to participants. Textbook has very small steps. Instructor can support participants. That is why, they make it possible that not only engineers but non-engineers understand contents. During the training, instructors gather feedback from participants and new topics which we couldn't put into textbook. After the training, we update our contents according to it. Thus, our contents are updated sustainably.

We conduct annual workshop and OnDemand workshop. Last year, we were offered by University of Rwanda, Kenya Space Agency, International Space University and so on. Since 2017, over 400 people from 35 countries participate this training through UNISEC-Global community. And we are making HEPTA-Sat Community and plan to make branch other country. If it realizes, we can spread this activity and space technology all over the world.