

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Hands-on Space Education and Outreach (8)

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EMBEDDED SPACE EDUCATION IN MALAYSIA: A CATALYST TOWARDS DIVERSE AND
MULTI-SKILLED GRADUATES**Abstract**

Universities are in serious discussion towards implementing a flexible curriculum that could match their graduates to the employment needs. Nowadays, graduates are expected to be able to follow several career paths, and not directed only by their degree courses. By taking into account the main challenge in Vision 2020 of becoming a developed country, many efforts have been performed by Universiti Teknologi MARA (UiTM) and are presented in this paper. As the biggest public institution in Malaysia, the main vision is to provide study opportunity for all and produce thousands graduates per year. However, recently, it is realized that other than education in general, space programs specifically have tangible impacts on society due to the fact that satellite education can be a tool in shaping the quality of the graduates and research diversity. Realizing how huge the impacts are, the university, in collaboration with the Ministry of Higher Education has agreed to fund the development cost of the university's first satellite, through student attachment and collaboration with Kyushu Institute of Technology in BIRDS-2 project. Here, hands-on technology-transfer is identified as the best mechanism to foster space-related researches in Malaysia so that in future, many satellites can be launched, thus will create high-paid jobs. Apart from that, space awareness activities are currently being conducted in the university to gather public's attention and appreciation towards space technologies and applications. Through student participation in innovation competition, a satellite mission control unit prototype, called Open-platform Space Education Model (OSEM) has been developed. The main aim is to design a low-cost platform, with integrated sensor-modules that can be used for classroom demonstration of satellite engineering concept. This product is proposed to be embedded in any institutions that would like to start their space program through STEM. By using this sensor-ready module, many parties will be able to explore the small-satellite applications. The prototype is being upgraded to allow public outreach mission involving local communities through collaboration with local amateur radio clubs. Other than that, a hands-on demonstration of HF communication has been conducted recently, which has developed huge interests among students to do hands-on activities, and due to that, a new student club related to telecommunication, space and amateur radio is to be established by this year. We hope that this could be the catalyst, which would attract more and more funds towards space-related researches in Malaysia and thus, greater number of multi-skilled graduates can be produced.