IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
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A HOLISTIC APPROACH TO SPACE SECTOR EDUCATION: A CASE STUDY OF A SPACE SECTOR COURSE

Abstract

This paper reflects a state-of-the-art approach to Space Sector education applied at Skoltech. Such framework is based on holistic approach to Space sector, considering it from multiple viewpoints: from technological aspects based on technology readiness level to business perspectives based on Porter's five forces. The approach is tested on the unique course entitled Space Sector Course held at Skolkovo Institute of Science and Technology (Skoltech). The Space Sector Course is a way to understand how the value is created in global and national Space industries through a consideration of Space Sector as a system that is decomposed into subsystems each one of which places a special role in the value chain. The students get a necessary knowledge and skills allowing them to define the Space sector's dynamics, the stakeholders, the exchanged resources and limitations. We demonstrate that system architecture/system engineering principles can and should be applied to Space industry not only from industrial perspectives, but also from educational ones. We advocate that the proposed approach could be used in a variety of industries in order to get the answers on the questions "who are the main stakeholders in this sector?", "how profit is achieved in this sector?", "which resources are critical for each stakeholder and how the process of resources' exchange is organized?", and "who are the most successful commercially actors in this sector?" This approach would allow students to develop such important skills as system thinking and critical thinking.