36th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)
Interactive Presentations - 36th IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (IP)

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NATIOAL SPACE TECHNOLOGY SCOREBOARD: VISUAL MAPPING OF SPACE TECHNOLOGY CAPABILITIES OF SPACE-FARING NATIONS

Abstract

A framework was devised and presented in 2016 and 2019 to visually present varing degrees of national space technology capabilities of space-faring nations in an internationally comparable manner. Any given nation's demonstrated space technology capability could be broadly assessd using the Space Technology Matrix, which categorized space technology into ten different areas and six levels of technology for each of these areas. The capabilities were largely defined based on two factors: the degree of autonomy and the levels of technology attained. They were also defined using less technical terms so that any general audience without much knowledge in space technology could easily understand. The result of the assessment was then be mapped on a specifically devised chart called the National Space Technology Scoareboard, a circular chart similar to a dart board, whose subsections correspond to particualr area and level of space technology defined by the Space Technology Matrix. This diagram captures the space technology capabilities of a given nation in a nutshell, conveying an extensive amount of information in a simple, intuitive manner, and can be used as a tool of communication for those with no technical expertise, such as politicians and the general public. Using such framework, this interactive presentation visually maps the national space technology capabilities of space-faring nations around the world. Based on publically available data, scoreboad charts are produced for 30+ nations. For some nations, evolution of their capabilities are analyzed and compared with other nations. A few sample nations are chosen for deep-dive analysis to illustrate the usefulness of the framework.