

IAF SYMPOSIUM ON EMERGING SPACE ECOSYSTEMS (E11)  
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EXPANDING THE SPACE INNOVATION ECOSYSTEM MATURITY RUBRIC: INTEGRATING THE  
NASCENT LEVEL TO ENHANCE GLOBAL PARTICIPATION

**Abstract**

Our research aims to refine and extend the space innovation ecosystem maturity rubric that was presented at the 74th International Astronautical Congress in Baku. The initial three-level rubric was designed to assess and guide nations in developing their space capabilities according to three defined levels: Aspiring, Emerging and Developed. However, feedback we received from delegates at the 30th Workshop on Space Technology for Socio-Economic Benefits hosted by the United Nations Office for Outer Space Affairs (UNOOSA) and the International Astronautical Federation (IAF), highlighted the need for a more inclusive framework that accurately represents the early stages of national space capability development. In order to address this, our paper proposes the addition of a new indicator level, termed Nascent, positioned below the previously established levels. This addition aims to more accurately categorise countries in the very early stages of developing a space innovation ecosystem, as well as recognise the unique contributions of nations at all stages of space engagement.

This paper reviews the current challenges that face nascent space nations from entering the marketplace, whilst simultaneously reviewing how access and allocation of space across the existing levels is managed. In addition this paper will propose recommendations to bridge the gap between our Nascent and other staged space nations, ensuring that nations are not only receiving equitable access, but are encouraged to seek further collaborative and cooperative activities, uniting capabilities to address global challenges.

The refined maturity rubric, with its inclusion of the Nascent level, serves as a vital tool for governments, NGOs, space enthusiasts, and the private sector, guiding strategic planning and investment in space innovation ecosystems. This framework is designed to support the sustainable and profitable growth of the global space industry, in alignment with the United Nations' Sustainable Development Goals (SDGs), by facilitating a broader and more inclusive participation across the spectrum of space capabilities.