

IAF SYMPOSIUM ON EMERGING SPACE ECOSYSTEMS (E11)
Connecting Emerging Space ecoSystems (1)

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BRINGING SPACE CLOSER TO EMERGING SPACE COUNTRIES: THE EQUATORIAL GROUND
STATION NETWORK AND ITS ROLE IN CONNECTING THE GLOBAL SOUTH TO LOW EARTH
ORBIT AND BEYOND

Abstract

The Equatorial Ground Station Network (EGSN) stands as a testament to the transformative power of space technology, serving as a pivotal link between emerging space nations and their assets in space. This paper explores the profound impact of EGSN in connecting the Global South to space, bringing forth new opportunities for scientific exploration, technological advancements, and international collaboration. With a focus on equatorial regions, EGSN strategically positions ground stations to leverage the Earth's geometry and rotation, optimizing satellite communication and observation capabilities. This paper delves into the technical architecture of EGSN, elucidating its role in enhancing data transfer efficiency, reducing latency, and expanding the accessibility of space resources. Furthermore, the study investigates how EGSN, initially implemented in the Maldives, Costa Rica, Ecuador, Ghana, and Tanzania serves as a catalyst for the development of space programs in emerging nations, fostering innovation and enabling them to actively participate in the global space community. The socio-economic implications of EGSN are also examined, shedding light on how enhanced access to space resources can drive economic growth, support disaster management efforts, and address critical issues such as climate change and resource monitoring. The paper highlights success stories from emerging space ecosystems that have harnessed the capabilities of EGSN to address local challenges and elevate their standing in the global space landscape. Consequently, this paper contends that the Equatorial Ground Station Network is a key enabler, forging a celestial bridge that not only connects the Global South to outer space but also paves the way for a more equitable and collaborative future in space exploration and utilization.