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Assuring a Safe, Secure and Sustainable Environment for Space Activities (4)

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SUSTAINABLE DEVELOPMENT IN SPACE: EXPLORING THE TECHNICAL, LEGAL AND  
POLITICAL MEANS FOR A GLOBAL SPACE SITUATIONAL AWARENESS ARCHITECTURE

**Abstract**

Space activities provide an array of benefits to people on earth and hence it is imperative that the environment of space be safe, secure and sustainable. As space benefits rise, so does the demand for space capabilities causing increased launches, increased space objects and debris. Concurrently, with rising space objects the possibility of collisions and interference also rises. The surge in small satellites adds to the problem and yet the means of maintaining a safe, secure and sustainable environment in space remain stagnant. A credible Space Situational Awareness (SSA) architecture is essential to keeping space safe, secure and sustainable. However, at present, the only credible SSA system enabling awareness to mitigate threats and enhance space safety is that of the US. The collisions of the recent past indicate the US system is neither comprehensive nor fool-proof. The Russian, European and Chinese systems are only part systems with huge surveillance, detection and identification gaps. It would be beyond the means of any single agency to provide the requisite technological, geographical and economic resources for a comprehensive SSA system. To resolve the issue, this paper explores the technical, legal and political means to establish an international SSA mechanism that acts as a nodal centre for space operations, information exchange and notification procedures. The technical means in terms of optical, radar sensors, network and dissemination would be explored as also the political means particularly in terms of the geo-politics involved. For legal foundations, this paper draws on the international general obligations of the UN contained in Article-1 of the UN charter on maintaining International Security as also the specific provision of Article-24, clause (i) (ii) related to the primary responsibility of the UN in maintaining International peace and security. These provisions impose a duty on the UN to initiate measures for SSA to maintain international security. This paper also specifically invokes the provisions of Article-39 to obtain an SSA system under the aegis of the UN. Secondly, it explores the possibility of organising the SSA system under the UN since the threat is common to all, it demands collective efforts and the UN is the singular agency entrusted by 193/196 nations of the world to take effective collective measures for prevention and removal of threats to international peace and security.