Agenda Item 13: General Exchange of views on the application of International Law to small satellite activities

Mr. Chair and Distinguished Delegates,

The emergence of small satellites has revolutionized the space sector allowing better accessibility to space for new entrants. Their affordability, ease of manufacturing and integration, along with rideshare capabilities of launch vehicles make small satellites ideal for testing new technologies. Small satellites also play a key role in the growing shift towards distributed, more resilient space system architectures.

Mr. Chair,

However, the increasing preference towards small satellites gives rise to several challenges for safety and sustainability. Small dimensions make tracking and post-launch identification a difficult task. Despite their short mission lives, these satellites pose non-trivial collision risks to operational assets and human space missions which can have catastrophic consequences. Furthermore, the limitation on accurate positional knowledge and lack of propulsion systems for evasive manoeuvres add complexity to spaceflight safety and collision avoidance. Operational exchanges and coordination are often hindered due to a lack of readily available contact information of small satellite operators as such satellites might be more likely of not being registered due to their short mission lives. Usually built with off-the-shelf components, these satellites are more failure-prone and mostly rely on natural orbital decay for post-mission disposal. Large constellations comprising of numerous small satellites exacerbates these challenges.

Mr. Chair,

In India, post space sector reform, a growing number of private entities and academic institutions have entered the space arena with small satellites. In this regard, India has set up a national agency – the Indian National Space Promotion and Authorization Centre (IN-SPACe) – to authorize space activities, including operations of space objects. Further, the Indian Space Policy 2023 clearly mandates the requirement of registration of space objects. We would like to emphasize herein that these processes - authorization and registration – are followed for all space objects, irrespective of their size, thus including smalls satellites as well.

Further, all India space operators – be it Government Entries or Non-Government Entities – are expected to adopt best practices for protecting their assets against environmental risks and the sustainability of outer space, in accordance with Long Term Sustainability (LTS) guidelines. Such measures include enhancing tracking, identification, and orbital positioning capabilities for better space situational awareness and spaceflight safety. Further, as part of STSC Working Group on LTS, India submitted a proposal to avoid deploying small satellites without tracking and maneuvering capabilities in the vicinity of 400 km altitude to avoid collision risks to crewed space stations.

Mr Chair,

Keeping in mind the rapid increase in space object population, the need of the hour is to have in place a suitable regulatory framework for the safe and sustainable operation of small satellites. Such frameworks need to be carefully balanced to encourage technological innovation without compromising the long-term sustainability goals. National regulations aligned with international guidelines on registration, space debris mitigation and long-term sustainability are imperative to ensure

sustainable operations, while operating small satellites. Collaboration between industry, academia, and regulatory bodies is vital to overcome the associated challenges.

To minimize the creation of space debris, it is desirable to have better reliability and failure tolerance for small satellites. It is also desirable to deploy small, experimental satellites, with potentially higher chances of on-orbit failures, away from the neighborhood of human space missions and the orbital regime already known to be congested with operational satellites.

In this context, ISRO's innovative use of PSLV upper stage as versatile orbital platform in lower Earth orbit, capable of hosting multiple payloads for technology demonstration, is worth mentioning. Three such orbital platforms have been flown so far, operating at lower orbits with a few months of life span. They offer a more sustainable alternative by eliminating the need for flying multiple small satellites individually for experimental purposes.

Mr Chair,

India looks forward to sharing experiences and engaging in further deliberations on international legal instruments applicable to small satellites.

Thank You, Chairperson and Distinguished Delegates.