

# International Code of Conduct for Outer Space Activities - Perspectives for India (\*)

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## **Background**

Over the past four years, an International Code of Conduct for Outer Space Activities, which owes its origin to an initiative by the EU, had been undergoing a process of international consultations. The original draft has seen several modifications to give it greater acceptance among the community of world nations. The most recent draft, ‘Version 16 September 2013’, resulting from the Open-Ended Consultations held in May 2013 in Kiev, Ukraine, represents tremendous progress in building support of the international community but it has yet to gain the complete support of some of the key space players. This Code ([http://eeas.europa.eu/non-proliferation-and-disarmament/pdf/space\\_code\\_conduct\\_draft\\_vers\\_16\\_sept\\_2013\\_en.pdf](http://eeas.europa.eu/non-proliferation-and-disarmament/pdf/space_code_conduct_draft_vers_16_sept_2013_en.pdf) - we refer to the paras and boxes in this document) is intended to form a regime of transparency and confidence-building measures, a complement to the normative framework regulating outer space activities. A key characteristic of the code, which is also central to the backing it enjoys from some of its staunch supporters, is that it is open to subscription by all states but it is not legally binding. Nevertheless, the code is a significant effort to promote the responsible use of space for common benefit, preserving the principle of freedom of access to space by all. While the code aims at enhancing safety, security, and sustainability of Outer Space activities, the question remains as to whether it will be an adequate step for ensuring these in totality.

In an earlier discussion on the subject, it has been argued that, in order for the code to emerge as a stepping stone to further development of international law relating to Outer Space, the code should satisfy the following principles:

- consistently reinforce and further evolve the equity principle of freedom of activities in Outer Space, as enshrined in relevant UN treaties; this would essentially dove-tail the code to existing laws and legal principles.
- promote rules that can avoid mutual interference and conflicts, while respecting the pre-existing international mechanisms/institutions (for example ITU).
- create limits to space activities that have negative consequences and cause damage to the environment (like space debris);

These would, of-course, affect the voluntary nature of the code but it may be essential to embed these three principles.

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(\*) The views expressed by the authors are based on a continuous study and careful observance of the developments in Indian space activities and in the international arena on the Code of Conduct. The authors hope that the views expressed here will help in founding an Indian “national” position on the Code – which the authors feels is important and critical.

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National space activities have a duality – on one hand, national interests and aspirations drive nations to take up space activities and veil it in national “right or pride” but, on other hand, international cooperation (either commercial or otherwise) necessarily forms a critical component of most space activities - requiring transparency, openness and sharing. A balance is most essential - a good Space Policy can help bring the balance and meet both requirements – within and outside. We feel that it is extremely important that nations take a bold step to have a National Space Policy that not just defines and states national goals and aims needs BUT also brings in as much of alignment and consistency to the international code – otherwise, the principles of the code may be lacking national approval and national activities could become in-consistent and un-aligned to the international regime. We feel that a process of a national Space Policy may make nations open and transparent in developing their own national interests in space without any fear or concern of biases or limitations to access space BUT will, at the same time, also enable sharing and cooperation as an effective mechanism for compliance at international level.

Naturally, the issue then will be whether it is a just a “code” or starts moving into a more rigid frame. We also recognize that, presently, attaining binding status for the code is not a realistic option (because of technical and geopolitical reasons) and that any mechanism that is non-binding in nature would be more acceptable. But is it enough just to ask nations to provide information about their ongoing and proposed space activities and future plans? Does it serve a purpose even to bring technical transparency and guard against space militarization without some “national binding” rules? This, of course, needs to be debated by each nation.

We think over time, this exercise will be seen as important and may drive the nations of the world to address these issues from the point of view of the code.

### **Code of conduct and multiple facets of Outer Space**

Just in 50 odd years, outer space has become increasingly congested, contested, and competitive and is driving the aspirations of every generation. More than 10 nations have space launch capabilities and over fifty-odd nations own and operate approximately 1,000+ active satellites – and the way space is playing an increasingly direct role in our lives has become clearly evident. The growing amount of space debris is, therefore, a clear driver for some sort of a “self-regulation” and thus, for the international discussions on the code.

The priorities and context for making strides of progress in the regulation of outer space activities, in rallying the motivation for revitalized ethics of humanity’s future steps of space exploration and averting dire threats against continuing beneficial role of outer space have been voiced time and again. For the past few decades, the progress on further developments in international space law has been severely impeded, even as changes in the environment and new challenges in outer space have created a need for new advances in international space law. This resulted in uncoordinated developments in policy and legal aspects in different countries across the globe, compounding security problems in space. More importantly, there has been stalemate in progress on various issues in the Conference on Disarmament, particularly in matters of preventing an arms race in outer space and prevention of weaponisation of space which poses a threat to international peace and security. Needs for legal developments in areas such as exploitation of extra terrestrial resources, liability regimes and risk mitigation measures, private sector collaboration at the international level and establishing national space legislations is still relevant. In this milieu, the evolution

of the code of conduct is a welcome step but it has to effectively address the three major facets of Outer Space, namely, (i) the cooperative space (ii) the competitive space and (iii) the security space. Voluntary subscription to the code and the non binding nature of the code is a broad brush treatment that is inadequate and would underserve effective solutions to problems, particularly in respect of ‘competitive space’ and ‘security space’.

### **Progress in commercialisation and the code**

Since the end of the cold war, the global nature of space has been increasingly manifest in terms of the number and diversity of actors, in both government and private sectors. These actors drive the development of space systems and deploy them in earth’s orbit for a variety of reasons, including gaining access to specialized technologies and realizing innovative applications that provide economic, social, scientific or strategic benefits. An increasingly successful capability of space is to serve consumers directly through various applications, such as Direct to Home Television, broadband, mobile multimedia communications and precise positioning related services. These have been the major growth engine for commercial applications involving space. Thus billions among the global populations directly depend on space systems for certain services that vitally touch their livelihoods and lifestyles. Expanding market opportunities and the unfulfilled needs of development across the globe have been dictating the need for wider and greater access to resources in space such as GSO and spectrum. The congestion of GSO and competing claims are a reality now given the limited nature of such space resources, as well as the technological and political environment that is prevailing. The commercialisation of a variety of space based services has also accelerated competition for accessing space resources and mastering the technologies. There is also much clamor for wider access to markets across the globe in view of large investments that space activities entail. Space is thus becoming increasingly competitive.

Commercial systems in space, such as privately owned and operated high resolution remote sensing satellites and new breeds of commercial communications satellites have driven another important trend – namely, a trend for common use of space systems for both civilian and military applications. This is facilitated by the strong economic rationale they can bring through economies of scale and scope, and innovations in technologies. While this development is highly desirable, it would also warrant a strong code of conduct that will assure continuity of services, and resilience against vulnerabilities. Since commercial space revenues has already been exceeding the government expenditures globally, should the code not address commercial space? It may be argued that the code addresses commercial activities through States, who are liable and therefore legally responsible for the activities of their citizens or entities under their jurisdiction. However, since commercial activities in space have certain natural advantage for globalisation, and their international ramifications are many, the code should recognize and encourage effective fora at international levels for promoting cooperation, consultation and engagement of stakeholders for commercial activities.

### **Space for national and international security**

Space is also increasingly integrated into military strategies of an increasing number of countries, and this dimension of application of space is a major driver for investments in space infrastructure by governments in different parts of the globe. It is also a major factor in the policies that influence trade in and access to space related technologies. In addition, by

its contribution to increased transparency and its ability to address major global concerns, space is an effective tool for diplomacy and an important instrument of Transparency and Confidence Building Measures.

According to a report sponsored by the Satellite Industry Association, there were 1015 active satellites in space as of May 2012. Of these, 175 were military satellites meant for surveillance and military communications while the rest of the 840 were civilian satellites meant for various purposes such as commercial communications (381), navigation (87), meteorology (36), remote sensing (95), space science (75), civil government communications (113) and technology demonstration (53). This spectrum of satellite segmentation serves to illustrate that satellites form part of vital national infrastructure, which are critical to maintain national services and ensure national security. The national security dimension of space applications dictates a need for certain binding obligations on states for technology, safeguards, and cooperation. The code envisages the subscribing parties sharing information [box numbers 70-78] on strategies, policies (including security related) and programmes, exposure to facilities and centres, which can increase transparency and mutual trust. However, in view of varying levels of capacity and diversity of security interests and also different stages of development in national policies and regulations, balancing information flow is extremely difficult and would need further definition of standards. In the provisions relating to the consultation mechanism, the code permits subscribing parties to set up fact finding missions to analyse specific incidents affecting space objects. It is necessary that such missions are formed at the request of and with consent of affected subscribing parties to avoid actions which are seen as intrusive by the affected party.

### **Debris environment**

The space environment has been increasingly threatened by growing debris population in widely used earth orbits, increasing the probability of collisions with active space systems. For instance, the manmade objects tracked by the Department of Defense of the USA have increased since 1990 from 6900 to some 22,000 in 2010, a threefold increase. The population of non-tracked debris in the range of 1 to 10 cm size is estimated at half a million pieces and that smaller than 1cm comprise several millions in number. All these pose even graver threat. A single event like an ASAT test causes a further steep degradation in debris environment, as has been observed in the wake of the Chinese ASAT test in 2007. It is also obvious that such events can evoke chain reactions to the further detriment of the environment. By the law of nature, it is clear that if nations are creating this debris, they must be responsible to remove this space debris – of course, overcoming many expensive, technical hurdles will require unprecedented international collaboration. One can recall the movie “Gravity” that intelligently focused on the problem of debris and what could happen in the future in space.

Adoption by the United Nations of a set of Debris mitigation guidelines in 2007 is a laudable development. In view of a steadily worsening space debris environment, commitment to vigorously pursue adoption of a set of binding regulations for checking growth of orbital debris should be integral to the agreement on adoption of the code. For example, in already worsened segments of space, contribution to a further steep degradation should place higher stakes on those contributors. It may be recalled that India has argued in the UN Committee on Peaceful Uses of Outer Space for a regime of common but differentiated responsibility for debris pollutions in space. In relation to provision in the code (box 48 and 49) that subscribing states resolving to refrain from any action which brings about, directly or indirectly, damage, or destruction, of space objects that can permanently damage the space

environment, the code specifies the exceptional circumstances under which this could be permitted. Since even such exceptions could irreparably damage the interests of all countries, such a drastic provision for exception is not logical without establishing strong regime for responsibility or a regime prohibiting abnormal degradation of space environment. Right of self defence should exclude possibilities of weaponisation of Outer Space.

### **Other provisions in the code**

It is interesting to note that the code does not define key terms that drive its objectives such as “safety”, “security” and “sustainability”. There could be varied interpretations on the scope and applicability of these terms. Again, turning to the aspect of scope, the code addresses outer space activities, as per Paragraph 1.2 (or box number 18), involving space objects launched into earth orbit or beyond. It is not clear whether it covers suborbital flights, which are emerging as an important form of space tourism.

The code rightly emphasizes one of the key tenets of Outer Space endeavours of humankind – namely the freedom for all states in accordance with international law and obligations to access, to explore and to use Outer Space [box 23]. In this box, both the binding rights and obligations and the desirable principles, such as being consistent with international practices, are combined together. The international law and international obligations, in their applicability, should be absolute and should not be further qualified by attributes such as international practices, which are subject to varied interpretations. Hence it would be appropriate to separate these two different categories, namely binding principles (of international law and obligations), and principles or objectives of a desirable nature.

The code requires the subscribing states to reaffirm their commitment to the charter of the UN and the existing treaties, principles and guidelines to which they are parties or to which they subscribe. The code further provides a fairly long (inclusive) list in box numbers 30 through 43. It is pertinent to observe that this omits to mention some sets of the principles adopted by the United Nations General Assembly relating to Outer Space, for example, the Principles relating to Remote Sensing of Earth by satellites. Remote sensing is an important field having both civilian and military applications and it has a bearing on sustainability aspects.

The code rightly emphasizes commitment for compliance with existing treaties, conventions etc (box numbers 28-43) and also promotion of their adherence. However, the emphasis on their further development is somewhat inadequate. It is noteworthy that certain vital issues underpinning sustainable, safe and secure use of space in the common interest of all countries depend on more vigorous efforts and binding regulations when it comes to issues like sharing of limited natural resources (like orbit- spectrum resources) or taking preventive steps for the creation of space debris. The code does not dwell on consequences for wrongful actions by subscribers. The code should redress this lacuna.

The conduct of space activities by different states is subject to their varying capabilities and capacities and there may be efforts on the part of these states to enhance their capabilities at any point of time in future. The space environment has to be conducive for that. Furthermore, the capability to monitor the space environment and space situation is highly limited among world nations. The code needs to address in greater detail the responsibility of those who have such capacity to monitor activities in Outer Space and how they could provide access to information to all potentially affected states. Both chapters 5 and 6 in the code on notification

and information sections should address the gap between the need for information and the capacity to provide that.

### **Indian Space – National Interest and the Code**

The Indian Space programme is primarily built for civilian, scientific, and environmental activities – but at the same time, India should never give away its right to use space, if required, for any national or security interest that it determines rightful. Thus, assured access to space is important for the 1.25 billion people in this planet residing in India – to manage its land, forests, water and the environment; provide education, health and connectivity to remote and rural areas; facilitate TV broadcasting to each home; manage disasters better; develop the knowledge quotient of its young population in space science and also wind aspirations to planetary explorations and answer life-questions and quest for our own existence. At the same time, India should use imagery to extract intelligence; use encrypted and personalized satellite communications as part of a secure information infrastructure; power national “information systems” that can bring any advanced knowledge of national security threats. India is a nation of high ambitions for its large hard-working and intelligent population – who struggle and aspire to be way ahead in life and “be second to none” - fortunately, space provides that mechanism for the Indian people to look far ahead in time.

Though its global role is increasing and has tremendous potential, India remains a leader among all spacefaring nations – planning to invest INR equivalent of nearly 6 billion USD in the five year period of 2012-2017. Of course, the government owns and operates all of India’s space systems and has quite a few operational space objects. India participates in the UN efforts and other international efforts at debris monitoring and addresses the threat posed by space debris.

India needs to take a position on the code – and more so BUILD A NATIONAL SPACE POLICY. Space has long-term implications – decisions taken in one eco-system today may have severe impacts many years later when the eco-systems may be very different. A position has to be made politically, bringing the Indian administration to understand and address the space policy and code “in tandem”. Briefing the Indian Parliament and the elected representatives is extremely essential on this issue. While the code could lend order and predictability to the space domain by promoting norms of responsible behaviour, facilitating the dissemination of best practices, and increasing transparency, the elected representatives must understand the implications to society, international ramifications and discipline, commercial impacts and even the possible military and defense mechanism of outer space. Indian administration must debate whether to endorse the code based on a careful assessment as to whether it would have an operational impact on the India’s access and uses of space.

It must be borne in mind that many spacefaring countries, including Australia, Canada, and Japan, have already endorsed the code and nations like China, Russia, and US are intensely engaged in internal and international debate on the code – India must not have a ring-side view.

### **Conclusions**

The need to ensure safety, security, and sustainability of space activities has become an urgent need for humanity. However, this demands a holistic system of (a) regulatory

developments to prevent any irreparable damage through use of precautionary principles, (b) a widely accepted and practised code of conduct which can enhance values of cooperation and common benefit; and, (c) a binding framework of rules which stipulates the sharing and use of any common resource of limited nature. Free access to Space cannot go without binding commitments for avoiding damage that steeply increases risks for all users of space, both in the present and in the future. Without a serious commitment to ensure progress on certain binding regulations relating to the space environment or space security, the code will have a very limited impact. On the other hand, there has been apprehensions that it may slow down or divert efforts to build binding commitments that are essential for assuring the safety, security and sustainability of space activities.

India has a definitive and long-term interest in Space – it must also exercise its interest in defining the rules of the road for interstate behaviour in space and it must pro-actively be involved in any development efforts of an international code of conduct on outer space activities. India is uniquely positioned as a developing nation to lead and be a balancing voice to bring about a stronger foundation for its own programme along with being a part of a more widely accepted international code.

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