

UNITED NATIONS  
INSTITUTE  
FOR DISARMAMENT  
RESEARCH

**NORMS OF BEHAVIOUR**

***A POSSIBLE OPTION TO MAINTAIN THE  
GROWTH OF ASIA–PACIFIC SPACE ACTIVITIES***

Facilitating the Process  
for the Development of an  
International Code of Conduct  
for Outer Space Activities



UNITED NATIONS

## **Note**

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views expressed in this document are the sole responsibility of the author.

They do not necessarily reflect the views or opinions of the United Nations or of UNIDIR's sponsors.

## **About UNIDIR**

The United Nations Institute for Disarmament Research (UNIDIR)—an autonomous institute within the United Nations—conducts research on disarmament and security. UNIDIR is based in Geneva, Switzerland, the centre for bilateral and multilateral disarmament and non-proliferation negotiations, and home of the Conference on Disarmament. The Institute explores current issues pertaining to the variety of existing and future armaments, as well as global diplomacy and local tensions and conflicts. Working with researchers, diplomats, government officials, NGOs and other institutions since 1980, UNIDIR acts as a bridge between the research community and governments. UNIDIR's activities are funded by contributions from governments and donor foundations.

Learn more at [www.unidir.org](http://www.unidir.org).

# Norms of Behaviour: a Possible Option to Maintain the Growth of Asia–Pacific Space Activities

## Introduction

In recent years, the Asia–Pacific region has emerged as one of the fastest growing markets for space-based services, becoming the second largest market for fixed satellite services (used for telephone and television broadcast signals), second only to North America.<sup>1</sup> The Futron Space Competitiveness Index ranked four Asian-Pacific states among the top 10 leaders in global space activities.<sup>2</sup> Whether it be the launching of satellites—as in the case of China, India, Japan, and, very recently, the Democratic People’s Republic of Korea—or the innovative use of hosted payloads<sup>3</sup> to acquire low-cost telecommunication services—as in the case of the Australian Defense Force’s telecommunication payload on board the Intelsat 22 satellite<sup>4</sup>—states across this region are availing themselves of the transformative benefits of space-based services.

As end-user technology, such as smart phones and navigation devices, becomes increasingly accessible to the Asia–Pacific population, it is expected that the region will overtake other regions of the world in the next few years in its demand for space-based services.<sup>5</sup> The infrastructure that supports these services will, necessarily, have to be adapted to accommodate this significant surge in users. This infrastructure will play a critical role in supporting Asia–Pacific growth and development in the economic, social, and technological sectors. However, as Asia-Pacific states become increasingly dependent on space-based services, their vulnerability to threats in outer space increases.

Policymakers and key stakeholders, at the national and the international level, have taken note of the emerging threats in outer space and are seeking a variety of ostensibly complementary solutions in various fora, such as the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and the Conference on Disarmament (CD), to mitigate or prevent conflict in the space domain. One approach that has emerged is the establishment of norms of behaviour for outer space activities. Such norms would act as voluntary “rules of the road”, providing actors with an understanding of the acceptable parameters for responsible space activities. Such understandings would preserve and enhance stability in outer space. In the particular case of the Asia–Pacific region, norms of behaviour could work towards assuring that space-based services can contribute to sustaining the economic development of the most highly populated region of the world.

## Risks to sustainability in outer space

There are more than one thousand satellites in outer space, operated by over 60 states and entities.<sup>6</sup> With increasingly cheaper solutions for space-based needs, such as nano-satellites and hosted payloads, it is clear that there will be significantly more orbital traffic in coming years. This will increase the potential for collisions and interference between satellites; however, the greatest threat to space security will likely come from all the man-made objects that cannot be controlled, including dead satellites, fragments of old rockets, and other types of space debris.<sup>7</sup> Space-situational awareness systems presently track more than 21,000 pieces of debris larger than 10cm; the number of pieces between 1cm and 10cm is perhaps 450,000.<sup>8</sup> Added to this are millions of fragments too small to track. It is estimated that the amount of space debris in low Earth orbit has increased by 50 per cent in the last five years alone.<sup>9</sup> The rate at which debris

---

1 Wei L., “Trends and prospects of FSS capacity supply and demand in Asia-Pacific”, *APSCC Newsletter*, vol. 18, no. 3, 2012, p. 4.

2 *Futron’s 2011 Space Competitiveness Index*, Futron Corporation, 2010, p. 8. It should be noted that Europe is counted as a single entity. The Space Competitiveness Index provides annual statistical benchmarks, analysis, and business intelligence on national space activities.

3 A hosted payload is a module carried on board a satellite but operating independently of the main spacecraft.

4 J. Foust, “An opening door for hosted payloads”, *The Space Review*, 29 October 2012.

5 P. Galace, “Strong demand driving the Asia-Pacific satellite market”, *Satellite Markets and Research*, 4 June 2012.

6 See the Union of Concerned Scientists Satellite Database at [www.ucsusa.org/nuclear\\_weapons\\_and\\_global\\_security/space\\_weapons/technical\\_issues/ucs-satellite-database.html/](http://www.ucsusa.org/nuclear_weapons_and_global_security/space_weapons/technical_issues/ucs-satellite-database.html/).

7 See C. Mathieu, EU Relations Office, European Space Agency, “Space debris: an on-going challenge for all space actors”, presented at the UNIDIR conference The Role of Norms of Behaviour for African Space Activities, Addis Ababa, 7–8 March 2013, available at <http://unidir.org/files/medias/pdfs/space-debris-an-on-going-challenge-for-all-space-actors-charlotte-mathieu-eng-0-436.pdf/>; and J. Robinson, “TCBMs in support of space safety and sustainability”, presented at the European Space Policy Institute conference 2012 Space Security Index Launch in Europe, 29 November 2012, Brussels, available at [http://swfound.org/media/96606/2012\\_SSI\\_Jana%20Robinson.pdf/](http://swfound.org/media/96606/2012_SSI_Jana%20Robinson.pdf/).

8 NASA Orbital Debris Program Office, “Orbital debris frequently asked questions”, March 2012, <http://orbitaldebris.jsc.nasa.gov/faqs.html#3/>.

9 S. Cruddas, “ESA plans to clear up space junk”, *Sen*, 3 October 2012, [www.sen.com/news/esa-plans-to-clear-up-space-junk.html/](http://www.sen.com/news/esa-plans-to-clear-up-space-junk.html/).

is increasing means that the risk of collision of space assets is increasing rapidly and will present a growing threat to all existing and future assets in space.<sup>10</sup>

Along with advances in civil and commercial space-based services, technology has also emerged that could be used to interfere with the functions of a satellite (such as signal jamming)<sup>11</sup> or outright destroy it (by kinetic or physical means).<sup>12</sup> Both of these capabilities are destabilizing factors that would, should they become prevalent, greatly reduce the reliability of space-based services. However, within the present international legal frameworks, the rules regarding the use of such technologies are unclear.

Space security risks are of particular concern in that, unlike most other domains, the actions of any single actor can have significant consequences for the activities of others. As a result, there is a demonstrable need for states to engage in multilateral dialogue in order to find cooperative international solutions for mitigating these challenges.

### **Non-legally binding instruments: a more flexible approach**

No significant steps have been made towards the adoption of new public space law treaties within the United Nations for over three decades.<sup>13</sup> Similarly, the CD, the single multilateral disarmament negotiating forum of the international community, has found it difficult to make progress on issues regarding outer space for several years.<sup>14</sup> As a result of the lack of progress on legally binding instruments, combined with a sense of urgency on the part of the international community to address stability and sustainability in outer space, alternatives are being sought by policymakers, in particular non-legally binding tools and frameworks that could “help establish norms for responsible space-faring nations in the near term ... [while] a space treaty could take many years to negotiate, and decades to enter into force”.<sup>15</sup> As the fastest growing region in terms of space activities, the Asia-Pacific states should play a significant role in discussions on ways to develop such norms of behaviour.

Non-legally binding tools and frameworks are often useful in that they provide a level of flexibility not possible with binding treaties.<sup>16</sup> As has been seen with norms of behaviour that have developed in other domains, rules of the road can be amended with relative ease as circumstances change. This allows various options to be tested before more formal agreements are sought. Furthermore, non-binding tools can be used as a mechanism for harmonizing national laws and practices, allowing states to move towards adherence while keeping within their economic and technological capacities.<sup>17</sup>

Non-legally binding tools and frameworks would permit incremental movement towards solutions on issues that need to be addressed in a timely manner, especially on those issues where political obstacles can make the negotiation of legal instruments a protracted process.<sup>18</sup> For example, while it has been many years since a formal space law treaty has been adopted, the United Nations General Assembly was successful in adopting the United Nations Space Debris Mitigation Guidelines. Similar steps can be particularly useful in maintaining political momentum.

10 S. Kibe, “Removing space debris: the urgent need to clean up Earth’s orbital environment”, Japan Aerospace Exploration Agency, [www.jaxa.jp/article/interview/vol67/index\\_e.html](http://www.jaxa.jp/article/interview/vol67/index_e.html).

11 “Satellite interference”, Holman Fenwick Willan LLP, 2012, [www.hfw.com/\\_data/assets/pdf\\_file/0016/18052/HFW-and-ID-Article-Satellite-Interference-A4-4pp-February-2012.pdf/](http://www.hfw.com/_data/assets/pdf_file/0016/18052/HFW-and-ID-Article-Satellite-Interference-A4-4pp-February-2012.pdf/).

12 S.A. Kaiser, “Why states should sign the Code of Conduct for Outer Space Activities”, in A. Lele (ed.), *Decoding the International Code of Conduct for Outer Space Activities*, 2012, pp. 91–92; see also M. Kleiman and S. McNeil, “Red lines in outer space”, *The Space Review*, 5 March 2012.

13 S. Aoki, “The function of ‘soft law’ in the development of international space law”, in I. Marboe (ed.), *Soft Law in Outer Space: The Function of Non-Binding Norms in International Space Law*, 2012, p. 57. A commercial space law treaty has recently been adopted, the Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Space Assets, though it has not yet entered into force.

14 T. Caughley, *Breaking the Ice in the Conference on Disarmament: A Wrap-Up*, UNIDIR, 2011.

15 M. Krepon, “Origins of and rationale for a space code of conduct”, in A. Lele (ed.), *Decoding the International Code of Conduct for Outer Space Activities*, 2012, p. 31.

16 C. Brunner and G. Konigsberger, “Regulatory Impact Assessment’—a tool to strengthen soft law regulations”, in I. Marboe (ed.), *Soft Law in Outer Space: The Function of Non-Binding Norms in International Space Law*, 2012, p. 90.

17 S. Aoki, “The function of ‘soft law’ in the development of international space law”, in I. Marboe (ed.), *Soft Law in Outer Space: The Function of Non-Binding Norms in International Space Law*, 2012, p. 61.

18 A. Kerrest, “Treaty vs resolution”, *ibid.*, pp. 85–86.

## Characteristics of effective instruments

Some have argued that non-legally binding tools and frameworks are not effective owing to their lack of enforcement mechanisms.<sup>19</sup> Others however, have argued that the continued expansion of humanity's use of space requires the near-term implementation of norms aimed at specific categories of space activities, such as the Space Debris Mitigation Guidelines, in order to develop norms of behaviour.<sup>20</sup> To bring clarity to this debate, it can be of value to look to the characteristics of tools and frameworks that have been successful in developing norms.

One analysis has identified six characteristics that are needed to ensure the development of norms of behaviour.<sup>21</sup> These tools should be transparent as to their non-binding nature. Widespread awareness-raising should accompany a tool or framework so that the relevant actors understand the importance of bringing their activities into line within the desired framework. Clarity and precision of language is required so that actors will know precisely what is being asked and recommended by a relevant tool or framework. Actors must also be able to rely on the fact that adherence to norms will result in their being viewed as responsible members of the community of actors.

Ownership of the consultation and development process by all relevant actors is particularly important as a tool or framework must take into account the spectrum of needs and interests in order to command broad and meaningful support. Otherwise, these instruments run the risk of being out of touch with the needs and interests of stakeholders, and norms will fail to develop.

Awareness of the necessity for adherence, mentioned above, is arguably the most crucial element for adherence and compliance. If stakeholders understand the implications of certain actions, such as abandoning a satellite in an orbit where it is likely to strike another, then it is more likely that actors will self-regulate—which is to say that norms will develop. This is the ultimate goal: to influence group behaviour without formal means of enforcement.

## Initiatives for the development of norms of behaviour

At present, one of the most advanced initiatives for the development of norms of behaviour for outer space activities is the European Union's proposal for an International Code of Conduct for Outer Space Activities. On 5 June 2012, the EU launched a process to "discuss and negotiate its initiative for an International Code of Conduct for Outer Space Activities".<sup>22</sup> The purpose of the Code is to "enhance the security, safety and sustainability of all outer space activities"<sup>23</sup> by encouraging responsible behaviour in space through the introduction of best practice guidelines. The EU plans to hold a series of open-ended consultations, to which representatives from as wide a range of states as possible will be invited to participate in the development of a Code.<sup>24</sup> It is intended that a final version of the Code will be presented at a diplomatic Conference.<sup>25</sup>

This initiative is being carried out in an ad hoc diplomatic process for two reasons. First, the EU does not consider it suitable to "hold substantive multilateral discussions in any existing international fora dealing exclusively with either non-proliferation and disarmament issues or the civilian uses of outer space".<sup>26</sup> This includes the CD and COPUOS. Second, the EU hopes to broaden the participation in this initiative to non-members of these fora and to bring the process to a timely conclusion for presentation to the United Nations General Assembly for endorsement.<sup>27</sup>

The EU hopes that by introducing voluntary guidelines for behaviour in outer space, it will be able to contribute to the enhancement of international space security alongside the work of other bodies, including the United Nations Group of

19 A. Lele, "Space code of conduct: inadequate mechanism", in A. Lele (ed.), *Decoding the International Code of Conduct for Outer Space Activities*, 2012, p. 6.

20 S. Aoki, "The function of 'soft law' in the development of international space law", in I. Marboe (ed.), *Soft Law in Outer Space: The Function of Non-Binding Norms in International Space Law*, 2012, p. 57.

21 C. Brunner and G. Konigsberger, "'Regulatory Impact Assessment'—a tool to strengthen soft law regulations", in I. Marboe (ed.), *Soft Law in Outer Space: The Function of Non-Binding Norms in International Space Law*, 2012, pp. 94–95.

22 European External Action Service, "The EU launches negotiations on an International Code of Conduct for Outer Space Activities", [http://eeas.europa.eu/non-proliferation-and-disarmament/outer-space-activities/index\\_en.htm/](http://eeas.europa.eu/non-proliferation-and-disarmament/outer-space-activities/index_en.htm/).

23 European Union, *Revised Draft: International Code of Conduct for Outer Space Activities*, 5 June 2012, art. 1.1, [www.consilium.europa.eu/media/1696642/12\\_06\\_05\\_coc\\_space\\_eu\\_revised\\_draft\\_working\\_\\_document.pdf/](http://www.consilium.europa.eu/media/1696642/12_06_05_coc_space_eu_revised_draft_working__document.pdf/).

24 European Union, "EU Statement—United Nations 1st Committee: outer space", 22 October 2012, paras. 10, 12, [www.eu-un.europa.eu/articles/en/article\\_12753\\_en.htm/](http://www.eu-un.europa.eu/articles/en/article_12753_en.htm/).

25 *Ibid.*, para. 13.

26 *Ibid.*, para. 10.

27 *Ibid.*

Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities and the COPUOS Working Group on the Long-Term Sustainability of Outer Space Activities.

## **Conclusion**

The success of any initiative to develop norms of behaviour will rest on several factors, but none so important as the widespread understanding among stakeholders of the need for adherence. Those most likely to comply are those that understand what is at stake. In this context, the states of the Asia–Pacific region will necessarily play a critical role in the development of norms of behaviour for space activities—they stand to benefit significantly from a more secure and stable space environment, and will be in a position to exert great influence on the development of norms to that end.





**Facilitating the Process for the Development of an  
International Code of Conduct for Outer Space Activities**  
CFSP/2012/05/COC-UNIDIR, carried out with funding by the European Union