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INSTITUTE
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RESEARCH

**REPORT ON EURASIAN REGIONAL SEMINAR AND
OUTREACH INITIATIVES FOR THE FACILITATION OF
THE DEVELOPMENT OF AN INTERNATIONAL CODE OF
CONDUCT FOR OUTER SPACE ACTIVITIES**

***BUILDING CONFIDENCE FOR EURASIAN SPACE
ACTIVITIES THROUGH NORMS OF BEHAVIOUR***

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



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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.

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Report on Eurasian Regional Seminar and Outreach Initiatives for the Facilitation of the Development of an International Code of Conduct for Outer Space Activities: “Building Confidence for Eurasian Space Activities through Norms of Behaviour”

Introduction

The United Nations Institute for Disarmament Research (UNIDIR) held a fourth regional seminar¹ as part of its ongoing project *Facilitating the Process for the Development of an International Code of Conduct for Outer Space Activities*. The seminar—entitled “Building Confidence for Eurasian Space Activities Through Norms of Behaviour”—was held in Astana, Kazakhstan, on 2–3 October 2013. The purpose of the seminar was to examine the role of outer space in social, economic, and security development across Eurasia as well as the emerging space security threats that may jeopardize future access to space-based services for countries in the region. In particular, experts discussed the existing regulatory framework for space activities and how norms of behaviour might be able to complement this framework and provide pragmatic solutions that are responsive to the evolving needs of space actors in Eurasia as well as around the world.

Proceedings

The seminar was opened by Ben Baseley-Walker, Programme Lead for the Emerging Security Threats Programme at UNIDIR, who thanked the Government of Kazakhstan, and in particular the National Space Agency of the Republic of Kazakhstan (Kazcosmos), for hosting this event in Astana. He explained the role of UNIDIR in facilitating discussions on the development of various options for addressing emerging security threats to stability in outer space, a role which involves bringing together experts from all over the world so that they might openly and freely exchange their views. Baseley-Walker acknowledged the success of the previous seminars and expressed his confidence that this instalment could yield equally successful results.

Zhanna Karipbayeva, Foreign Relations Management Expert from the Department of International Cooperation for Kazcosmos, welcomed the participants to Astana on behalf of her organization. She noted the importance given to space activities and space development by the Government of Kazakhstan and, in particular, by President Nursultan Nazarbayev. Karipbayeva gave a synopsis of the extensive work being carried out by Kazcosmos as an illustration of the high priority given to space activities by Kazakh policymakers. The work has included several scientific missions carried out by Kazakh astronauts on board the International Space Station and the deployment of several national telecommunication and remote-sensing satellites.

Panel I: Space activities in a Eurasian context

Outer space: a regional context (Ben Baseley-Walker, Programme Lead, Emerging Security Threats, UNIDIR)

The role of the United Nations Office for Outer Space Affairs in facilitating international cooperation in the Eurasia region (Sergiy Negoda, Legal Officer, Committee, Policy and Legal Affairs Section, United Nations Office for Outer Space Affairs)

Baseley-Walker sought to put outer space and security into a regional context by analysing the link between space activities and emerging security threats for states in Eurasia. He identified two of the primary objectives of space security as the long-term sustainability of space activities in certain critical orbits, and the freedom of access and use of space for the socioeconomic benefit of all. Baseley-Walker noted that the resurgence of space security as a topic of discussion at the multilateral level is an indication of the importance of space-based services to all states, including developing countries that possess few domestic space capabilities but nevertheless rely heavily on space services. He indicated that one of the biggest challenges facing multilateral dialogue on space security is balancing the interests of established space actors, such as the Russian Federation or India, with those of emerging space actors, such as Pakistan or Sri Lanka. Baseley-Walker stated

1 Three previous regional seminars were held as part of the same project in Kuala Lumpur, Malaysia (12 December 2013), Addis Ababa, Ethiopia (7–8 March 2013), and Mexico City, Mexico (1–2 July 2013). The reports of these seminars are available at <http://unidir.org/programmes/emerging-security-threats>.

that the extensive use of space throughout Eurasia—for applications such as telecommunications, disaster mitigation, and disarmament verification—underlines the need to ensure stability in space through cooperative international efforts.

Sergiy Negoda, Legal Officer for the Committee, Policy and Legal Affairs Section of the United Nations Office for Outer Space Affairs (UNOOSA), made a presentation of the current activities being carried out by UNOOSA in Eurasia to promote international cooperation, support capacity building, disseminate information, and provide technical guidance. In particular, he emphasized a number of initiatives intended to spread space expertise in order to assist sustainable development, particularly through university programmes. These initiatives seek to aid developing countries in gaining domestic expertise capable of supporting their own space capabilities. To promote these initiatives, UNOOSA holds regular workshops and seminars all over the world, having invited and sponsored more than 18,000 participants to date. While UNOOSA had not yet conducted a seminar in Kazakhstan, Negoda expressed interest in working with the Kazakh Government to organize an event in the future. He also brought attention to some of the technical services provided by UNOOSA to the international community, such as the operation of the United Nations Register of Space Objects. This Register contains information submitted by Member States regarding the technical details and whereabouts of their space assets. Negoda stressed the importance of the Register for space situational awareness and the mitigation of space debris proliferation.

Panel II: Eurasia, security and emerging space threats

Space arms and counter-space technology: consequences for regional tension (Ajey Lele, Research Fellow at the Institute for Defence Studies and Analyses)

The impact of a conflict involving on-orbit space assets on space debris mitigation efforts (Vladimir Agapov, Keldysh Institute of Applied Mathematics, Russian Academy of Sciences)

Harmful interference: regional security consequences (Ibrahim Oz, Vice President, Turksat)

Ajey Lele, Research Fellow at the Institute for Defence Studies and Analyses in India, examined the impact of space technology on geopolitical tensions across Asia. He noted that seven of the world's current spacefaring states are Asian, four of which are also considered nuclear powers. These states have also openly expressed a desire to use space for strategic purposes. While in the past most of these uses had been strictly for military support systems such as telecommunications and remote sensing, some states are moving towards the "weaponization" of outer space. He stated that these factors have led to an environment where "surprises raise suspicions" among states, in which case even peaceful activities might be misinterpreted as hostile, potentially leading to armed conflict. Lele reasoned that states have four options to respond to increasingly sophisticated space capabilities of other states: demand space arms control, adopt a tit-for-tat strategy of armament, military posturing, or an arms race in space. Given that the last three of these options could significantly destabilize Asia, Lele acknowledged that a legal instrument such as the proposed Treaty on Prevention of the Placement of Weapons in Outer Space and the Threat or Use of Force Against Outer Space Objects (PPWT) would be ideal. However, he added that given the fact that there seems to be little support for a legally binding instrument to regulate space activities, a voluntary political tool is a viable alternative. Lele stressed that such an initiative will need widespread participation by all the major space actors in order to be effective. He further stressed that while major space players will continue to be highly influential in the way space activities are carried out, emerging space actors should seek to further their own interests by participating in multilateral dialogues.

Vladimir Agapov, from the Keldysh Institute of Applied Mathematics at the Russian Academy of Sciences, elaborated on the potential impacts of different types of conflict on space debris mitigation efforts. He recalled that most space activities are carried out in certain specific orbits and that the accumulation of fragments of space assets, or space debris, is making these orbits less useable. Agapov noted that there are several types of conflict in space that could result in the destruction of space assets and, therefore, increased proliferation of space debris: confrontations between states, unfair competition among actors, misunderstandings due to lack of transparency, and others. As examples of debris-creating scenarios, he pointed to the deliberate destruction of a space asset by physical means, as well as to interfering with the operation of a satellite that could result in loss of control and, consequently, a collision of space assets. While acknowledging that preventing the spread of armed conflict into outer space is not likely, he stressed the need to adopt mitigating measures such as the Space Debris Mitigation Guidelines to reduce the consequences of such conflict on debris creation.

Ibrahim Oz, Vice President of Turksat, introduced the emerging threat of satellite jamming, which is happening more and more frequently. Satellite jamming, he explained, is the intentional or unintentional interference with a satellite broadcast signal. This interference is a drain on technical resources and can have significant economic consequences, particularly for commercial operators. While there are numerous cases of accidental interference that occur regularly, Oz indicated that cases of intentional interference have risen four-fold over the last two years alone. He indicated that, most often, cases

of accidental interference can be dealt with through administrative measures, but there are not any practical technical solutions at present to stop jamming. He stated that this made the rise of intentional jamming particularly alarming for the continued safety and security of space-based services. Oz noted a number of solutions that satellite operators, both commercial and governmental, are exploring to deal with jamming at the technical level, including capabilities to locate the source of the interference and identify the offending carrier signal. However, he stressed that the technology to conduct intentional interference is increasingly available, and there are still few technical measures to counter this interference.

Panel III: Frameworks for the regulation of space activities

The United Nations outer space regime: treaties, principles, and resolutions (Borys Atamanenko, Head, International Relations Department, Ukraine State Space Agency)

PPWT: developments on the proposal for the prevention of the placement of weapons in outer space (Andrey Malov, Head of Division for Multilateral Disarmament, Department for Security and Disarmament Affairs, Ministry of Foreign Affairs, Russian Federation)

The role of political flexibility: building norms of behaviour for greater space security (Jo Beadsworth, Desk Officer for Space Security and Emerging Technologies, Security Policy Department, Foreign and Commonwealth Office, United Kingdom)

Borys Atamanenko, Head of the International Relations Department of the Ukraine State Space Agency, introduced the United Nations treaties, principles, and resolutions related to the conduct of activities in outer space. These instruments, he explained, form the basis of the United Nations legal regime for outer space, laying down such concepts as the freedom of exploration and use of outer space, the prohibition of territorial sovereignty in space and the applicability of international law to space activities. Noting that, under the constitution of Ukraine, international treaties ratified by the government are national legislation, Atamanenko drew attention to the fact that Ukraine had signed four of the United Nations outer space treaties. He stated that the importance of outer space to Ukraine could also be seen in a number of decrees of the Cabinet of Ministers passed over the last few years, intended to encourage the rapid development of Ukraine's space sector.

Andrey Malov, Head of Division for Multilateral Disarmament for the Department for Security and Disarmament Affairs of the Ministry of Foreign Affairs of the Russian Federation, made a presentation on the PPWT, elaborating on some of the amendments that have been made to the text since it was last presented to the international community. Recalling the destabilizing potential of space-based weapons, Malov stated that there is a need to adopt a legal instrument in order to most effectively ensure the long-term sustainability of outer space activities. This is the basis for the Russian and Chinese proposal for a PPWT. According to Malov, the latest version of the PPWT seeks to prohibit the placement or use of anti-satellite technology of any kind in outer space, though it does not prohibit the testing of such technology on air, land, or sea. It also permits the use of anti-satellite technology for defensive purposes. He hoped that these exceptions would make the PPWT sufficiently flexible to command the necessary support among the international community to move discussions forward. Malov also pointed to a special provision in the new text of the PPWT that permitted a state party that has reason to believe that another state party will interfere with its legitimate peaceful space activities to request formal consultations. This feature would provide a mechanism for the potential peaceful resolution of relevant disputes in outer space. He also acknowledged that some states have criticized the PPWT's lack of verifiability, but argued that there were other important accepted legal instruments that cannot be verified, including the United Nations Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space. Malov hoped that the pragmatic approach used to amend the text of the PPWT would be capable of commanding sufficient support to take another step towards making outer space a weapon-free zone. He reported that the text was still under consideration by the sponsors of the PPWT and that a new draft would be presented to the international community in the near future.

Jo Beadsworth, Desk Officer for Space Security and Emerging Technologies of the Security Policy Department of the Foreign and Commonwealth Office of the United Kingdom, made a presentation on norms of behaviour for space activities as an option for the mitigating emerging space security threats. In light of certain clear and present dangers in outer space discussed by previous speakers, and given the difficulties that have been encountered in the development of a legally binding instrument to address such threats, she offered that political measures could be a useful intermediate step towards ensuring safety and stability in space. In particular, she noted that certain transparency and confidence-building measures (TCBMs) could be embodied in high-level political agreements that establish what is considered to be "responsible behaviour" in outer space without having to rely solely on a legally binding instrument. While acknowledging that political agreements do not have the legal weight of a treaty, Beadsworth noted that norms have been successfully employed in the past. She stated that the United Kingdom supported TCBMs and a voluntary norms-based approach as timely, achievable responses to current threats to space, though they did not rule out the possibility of developing a legal instrument in the future. Rather, a voluntary instrument could be used as an interim solution while other alternatives were explored. She drew attention to the European Union's proposed draft International Code of Conduct for Outer Space

Activities as a useful initiative to establish norms of behaviour for space activities. Negotiations on this Code are set to be held from 20–22 November 2013 in Bangkok, Thailand.

Panel IV: What next? Assessing the future of space activities across Eurasia

Space technology proliferation: assessing the impact on space security of increasingly accessible space technology (Rajeswari Pillai Rajagopalan, Senior Fellow in Security Studies, Observer Research Foundation)

Regional prospects: the outlook for space activities across Eurasia from an independent media perspective (Nurlan Asselkan, Editor-in-Chief, Space Research and Technologies)

Rajeswari Pillai Rajagopalan, Senior Fellow in Security Studies for the Observer Research Foundation, examined the impact of increasingly available space technology on space security. Acknowledging the value of international cooperation and technological proliferation that is being seen across Eurasia and the rest of the world, she warned that the rate of growth in space activities is unsustainable without the innovation of some form of regulatory regime. Given that space technology is largely of a dual-use nature (military and civilian), she believed that behaviour in space, rather than space technology, should be the subject of regulation. Rajagopalan stated that the rise of new space powers, particularly those found in Asia, has made the adoption of formal treaties on space activities much more difficult than during the Cold War era, when there were only two space powers. In this context, she indicated that norms of behaviour are a viable option as a means of ensuring the long-term sustainability of space activities, but only as an interim solution. Rajagopalan qualified this option by stressing that the success of norms is dependent on achieving widespread support. Otherwise, she warned that there will not be sufficient political pressure to promote adherence by a meaningful number space actors.

Nurlan Asselkan, the Editor-in-Chief of the journal *Space Research and Technologies*, provided an overview of his publication and the space activities reported therein. In particular, he noted the wide range of ballistic missile and rocket technology that is rapidly evolving throughout the region, particularly medium- and long-range rockets. He also illustrated the wide range of international cooperation throughout the region, noting emerging partnerships among Kazakhstan, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. Asselkan noted that recent launch accidents have been a heavy burden on the entire space industry in the region and that it is important to promote the necessary domestic human and technical resources to ensure safe and sustainable access to space. Furthermore, he stressed the importance of transparency on the part of space actors, not only among space actors but also with respect to the public. Such openness between state actors and the public will promote awareness of the importance of space activities for all.

Panel V: Ongoing multilateral efforts for the enhancement of stability in outer space through norms of behaviour

The United Nations Group of Governmental Experts on TCBMs in Outer Space Activities (Musthafa M. Jaffeer, Ambassador of Sri Lanka to Norway)

United Nations Committee on the Peaceful Uses of Outer Space Scientific and Technical Subcommittee's Working Group on the Long-Term Sustainability of Outer Space Activities (Daniel Porras, Project Manager, Emerging Security Threats Programme, UNIDIR)

An International Code of Conduct for Outer Space Activities (Jacek Bylica, Principal Adviser and Special Envoy, Non-Proliferation and Disarmament, European External Action Service, European Union)

Musthafa M. Jaffeer, Ambassador of Sri Lanka to Norway, made a presentation on the recently concluded work of the United Nations Group of Governmental Experts (GGE) on TCBMs in Outer Space Activities, of which he was a member. The group, he reported, was established by the United Nations Secretary-General, on the basis of equitable geographical representation, for the purpose of conducting a study on TCBMs relating to space activities. The findings of the GGE have recently been presented by the Secretary-General to the First Committee of the General Assembly. The findings were developed over the course of three separate meetings of the 15-member GGE, with input and comments being welcomed from non-member states, international organizations, and non-governmental organizations. Jaffeer stated that the GGE recognized voluntary TCBMs as useful tools for sharing information on space activities and developing mutual understanding among states. In this manner, the safety and stability of outer space can be enhanced by reducing the possibility of misunderstandings in space activities that could potentially lead to military confrontation. He encouraged states, the actors ultimately responsible for all space activities, to adhere to the existing legal and political space regime, promoting responsible behaviour and the long-term sustainability of space activities for all.

Daniel Porras, Project Manager for the Emerging Security Threats Programme of UNIDIR, gave an update on the work of the Working Group of the Scientific and Technical Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space on the Long-Term Sustainability of Space Activities (LTSSA). He outlined that the Working Group had been formed to examine and propose technical measures to ensure the safe and sustainable use of space for peaceful purposes. Porras noted that this work is being carried out in the context of using space-based services to promote sustainable development, particularly taking into account the needs of developing countries. He added that these measures are also voluntary in nature, rather than legally binding. The LTSSA is divided into four Expert Groups that deal with specific themes—sustainable development, space debris and situational awareness, space weather, and regulatory regimes and guidance for space actors. The draft guidelines produced by these Expert Groups have recently been presented to the Committee for comments. Porras reported that the LTSSA plans to meet again next year to finalize the guidelines and the final report.

Jacek Bylica, Principal Adviser and Special Envoy for Non-Proliferation and Disarmament of the European External Action Service of the European Union, presented the EU's proposal for an International Code of Conduct for Outer Space Activities. He stated that this initiative is a response to the call by the United Nations Secretary-General for proposals to ensure safety and stability in outer space. In light of the difficulties encountered in the development of a legally-binding instrument, the EU, he noted, proposed a voluntary Code as an intermediate step to address clear and present dangers in outer space, such as debris. Bylica stressed that this proposal is intended to complement the existing United Nations space regime as well as the work of the GGE and the LTSSA and should in no way be seen as prejudicial to these initiatives. He reported that the first round of open-ended consultations on the development of the Code had been held in May 2013 in Kiev, Ukraine, where comments and concerns on the text were expressed by states. The EU has since taken on board some of those comments and produced a new draft text. This text will serve as the working basis of the second round of open-ended consultations, to be held in Bangkok, Thailand on 20–22 November 2013.

Panel VI: Breakout groups

During this session, participants of the seminar were divided into two small groups in order to facilitate open discussion and dialogue. They were each asked to discuss how space security threats are seen from the perspective of established and emerging space actors across Eurasia. They were asked how the perspectives of these actors can be accommodated in the development of future international instruments on space activities and how established space actors in Eurasia might encourage emerging space actors to adopt best practices with limited technical, financial, and human resources. The findings of each of these groups were presented to the plenary.

The first group reported that they saw space debris and a potential space arms race as being the two principal threats in space. This group acknowledged the difficulty in adopting a legally binding instrument on space activities and recognized that voluntary political measures represent an opportunity to take an interim step towards achieving the long-term sustainability of space activities. In order to encourage emerging space actors to participate in such mitigating efforts, the group felt that established actors should encourage a sense of ownership on the part of emerging actors over any new instruments related to outer space activities. It was suggested that this can be achieved by sharing technology that will allow emerging actors to bypass long and arduous development of space capabilities and permit actors to behave responsibly. One example that might be looked at is efforts to mitigate climate change through the curbing of carbon emissions. The group also stressed that in order to have effective norms of behaviour, the support of certain major players and emerging space actors needs to be sought.

The second group also stressed the need of international cooperative efforts to adequately address emerging space security threats, but it was their view that, as a preliminary matter, there needs to be agreement on basic concepts. The group felt that differences of opinion on concepts such as security, sustainability, and safety make discussions on tools such as the EU's proposed International Code of Conduct for Outer Space Activities difficult, potentially risking the same deadlock that has been seen in the development of legally binding instruments. The group proposed that a repository of data could be jointly established, operated under the auspices of the United Nations, which could provide a universal language regarding space activities and facilitate discussions on emerging space security threats and solutions. It was the view of the group that established space actors have more to gain from the establishment of norms of responsible behaviour in space since they are more reliant on space-based services. In this context, it would be in their interest to encourage emerging space actors to act responsibly by adopting agreements on data- and information-sharing. The group felt that workshops, such as this UNIDIR seminar, play a critical role in ensuring a universal understanding of many of the concepts surrounding outer space security and that it is important to ensure continued dialogue among all space actors.

Conclusion

The seminar yielded lengthy exchanges and useful dialogue among participants from all across the Eurasian space community. Participants agreed that the current stability in space, which has facilitated significant development on Earth, is threatened by the rapid increase of space activities. In this context, it was agreed that it is important to enhance the existing regulatory framework for space activities in order to mitigate the negative impacts of emerging security threats, specifically debris and the potential risk of armed conflict. Many participants felt that a legally binding instrument such as the PPWT is a preferred solution but that, in the light of the difficulties encountered in negotiations for such an instrument, a voluntary, non-legally binding tool offers a good interim step. TCBMs, technical guidelines, and codes of conduct are all examples of such tools. However, it was widely felt that all space actors will need to have a sense of ownership over these tools in order to ensure that there will be widespread adherence. To achieve this, it was suggested by participants that established space actors should find ways to encourage greater participation by emerging actors. The UNIDIR seminar was seen by the participants as part of useful outreach efforts to spread awareness of space security threats and facilitate dialogue, setting the foundation for constructive cooperation in the future among a wide array of policymakers and key stakeholders.



**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