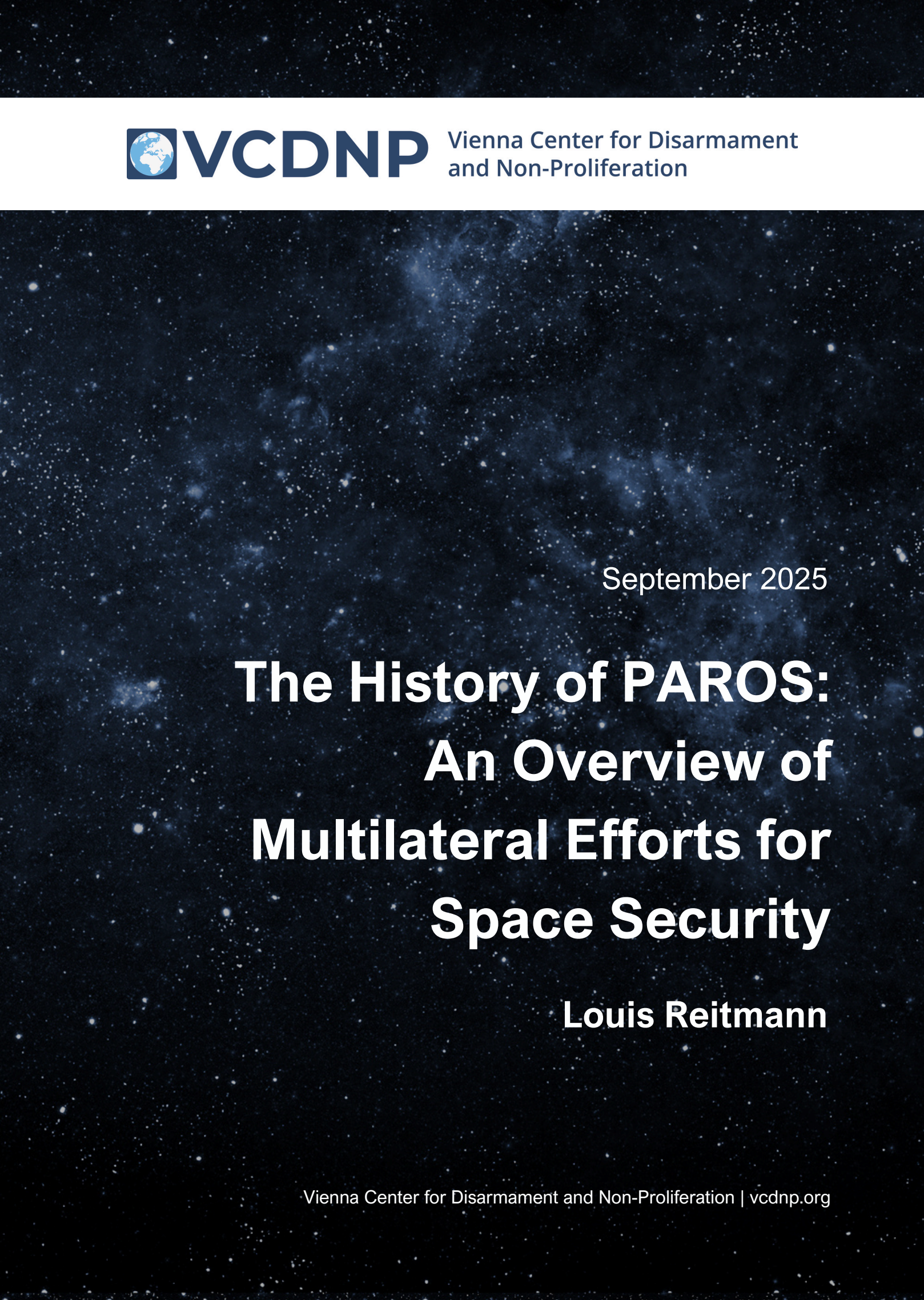

September 2025

The History of PAROS: An Overview of Multilateral Efforts for Space Security

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View of the Sun and the Earth from space. Credit: NASA.

Introduction

The beginning of modern space exploration with the launch of Sputnik 1 in October 1957 also sparked concerns over strategic competition and military conflict in space. While staggering plans for space-based weapons like a solar energy "gun" or laser-armed satellites were not realised, outer space has been a civil and military domain since the dawn of the space age, supporting armed forces on Earth with increasingly sophisticated missions, from communication and navigation to precision targeting and missile defence.[1]

Military ambitions during the Space Race between the Soviet Union and the United States, including nuclear tests in space by both countries in the 1950s and 1960s, illustrated the grave threat that an arms race, or worse, war in space pose to the civil uses of space and security on Earth. Aware of this danger, the world community created a legal framework to mandate and govern the peaceful use of outer space, including the Outer Space Treaty, the Rescue Agreement, the Liability and Registration Conventions, and the Moon Agreement.

While the Outer Space Treaty banned the placement, stationing, and installation of WMDs in space, States have since struggled to agree on further rules and mechanisms to ensure strategic stability and peace in space. Efforts to this effect have been housed in several UN bodies and multilateral initiatives. These have sometimes been disjointed, partly contradictory, and in recent years, increasingly competitive. This paper is a first comprehensive summary of the multilateral processes for PAROS until June 2025, explaining their progression and relationships to each other, identifying key achievements, and highlighting remaining gaps between national positions.

1 Xavier Pasco, "Evolution of the strategies of use of space for military purposes", March 2025, https://www.irsem.fr/storage/file_manager_files/2025/03/7-evolution-of-the-strategies-of-use-of-space-for-military-purposes.pdf.

2023-2024

GGE on Further Practical Measures for PAROS

2025-2028

OEWG on PAROS in All its Aspects

2023

UN Disarmament Commission Report

2022-2023

OEWG on Reducing Space Threats

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International Code of Conduct for Outer Space Activities (ICoC)

1985-1994

Conference on Disarmament Ad Hoc Committee on PAROS

since 2008

Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT)

The Conference on Disarmament in 2015. Credit: UN Photo/Jean-Marc Ferré.

Conference on Disarmament Ad Hoc Committee on PAROS (1985-1994)

After multilateral successes in protecting and promoting the peaceful use of outer space,[2] the UN General Assembly's 1978 Special Session agreed that States should take further measures to prevent an arms race in outer space (PAROS).[3] Building on this, the Soviet-led UN resolution 36/99 (1981) requested the Conference on Disarmament (CD) to negotiate a "treaty on the prohibition of the stationing of weapons of any kind in outer space", on the basis of a draft treaty which the Soviet Union had submitted the same year.[4]

A key driver behind this proposal were US plans for space-based missile defence during the Reagan administration, culminating in the 1983 Strategic Defense Initiative, a large-scale research programme to develop technologies that could protect the United States from missile and nuclear attacks. Ever since, Moscow has been concerned that such defences would reduce the effectiveness of its nuclear deterrent, which could lead to an arms race in space with severe implications for strategic stability on Earth.[5]

2 On early considerations of banning military activities in space within the UN, see Pericles Gasparini Alves, "Prevention of an Arms Race in Outer Space: A Guide to the Discussions in the Conference on Disarmament", UNIDIR, 1991, https://unidir.org/files/publication/pdfs/prevention-of-an-arms-race-in-outer-space-a-guide-to-the-discussions-in-the-cd-en-451.pdf.

3 United Nations, "Final Document of the Tenth Special Session of the General Assembly", June 1978, https://docs.un.org/en/A/RES/S-10/2.

4 United Nations, "Conclusion of a Treaty on the Prohibition of the Stationing of Weapons of Any Kind in Outer Space", August 1981, https://docs.un.org/en/A/36/192.

5 Aaron Bateman, "The Enduring Impact of Reagan's Strategic Defense Initiative", *Arms Control Today*, September 2023, https://www.armscontrol.org/act/2023-09/features/enduring-impact-reagans-strategic-defense-initiative.

Also in 1981, in UN resolution 36/97/C, a group of Western countries requested the CD to negotiate an "effective and verifiable agreement" on PAROS with a special focus on banning anti-satellite (ASAT) weapons – in contrast to the Soviet Union's interest in banning weapons that could target its strategic missiles on Earth. The interest in addressing ASAT weapons stemmed from intensive development and testing of ground and space-based ASAT weapons by both superpowers. US-Soviet arms control talks in 1978 and 1979 had also touched on ASAT weapons, which the international community saw as an opportunity to aim for commitments at the global level.[6]

In 1982, States adopted the now annual UN resolution on the "Prevention of an arms race in outer space".[7] Sponsored by NAM countries, the resolution mandated negotiations on an agreement to "prevent an arms race in all its aspects in outer space", but did not reference the Soviet draft treaty. Ever since, this resolution has provided the CD's mandate for considering PAROS, though, alongside other changes, the explicit mandate to negotiate a treaty was removed from future iterations. In 1983, the Soviet Union presented a new draft treaty, including a ban on the use and threat of force in space, seeking to renew momentum for negotiations on a treaty.[8] It also aimed to address the interest in banning ASAT weapons and doubled down on the perceived threat from US plans for missile defence by proposing a ban on the use of force from space against targets on Earth.

After a three-year debate on whether discussion should be focused on general considerations or concrete negotiations, given the diverging mandates in UN resolutions, in 1985, an Ad Hoc Committee on PAROS was established with a compromise to begin with general considerations as a first step.[9] Discussions in the Committee continued to be marked by the two different preferences on format but allowed for rich diplomatic and technical exchanges with diverse proposals for PAROS instruments, for example, agreements on the immunity of satellites or a treaty banning anti-satellite weapons.[10] The Committee considered three main topics: issues relevant to PAROS, existing agreements relevant to PAROS, and proposals and future initiatives on PAROS. Specific issues considered included confidence-building measures, verification, terminology, and legal issues. Contrary to nuclear arms reductions, PAROS did not benefit significantly from post-Cold War détente; States tended to present their national perspectives with little convergence on common positions. Indeed, by the end of the Committee's work, States could not, at a minimum, agree that an arms race in outer space was looming.

While China, Russia, and several developing countries continued to press for a treaty, some Western countries contended that there was no arms race in outer space or significant development of space weapons.[11] They also argued that the existing legal framework on space sufficiently addressed security concerns.[12] Instead of negotiating a new treaty, they favoured promoting the universalisation and implementation of existing agreements. Discussions in the Committee opened several still prevalent disagreements over a PAROS treaty, including the definition of "space weapons", the dual-purpose nature of some space objects, and verification of potential agreements. Great power relations have also been a concern, sometimes linking multilateral negotiations to progress in US-Soviet/Russian arms control negotiations.[13] The Committee's renewal in 1995 was tied to consensus on a comprehensive programme of work for the CD, which has not been achieved since. Yet, PAROS has continued as a core topic of the CD, especially in Subsidiary Body 3 on PAROS, created in 2018.

6 US Congress, Office of Technology Assessment, "Anti-Satellite Weapons, Countermeasures, and Arms Control", September 1985, https://aerospace.csis.org/wp-content/uploads/2018/09/OTA-Report-on-ASAT-Weapons-and-Countermeasures-1985.pdf, 91-102.

7 United Nations, "Prevention of an arms race in outer space", December 1982, https://docs.un.org/en/A/RES/37/83.

8 United Nations, "Letter dated 19 August 1983", August 1983, https://docs.un.org/en/A/38/194.

9 Paul Meyer, "The CD and PAROS: A Short History", UNIDIR, April 2011, https://unidir.org/files/publication/pdfs/the-conference-on-disarmament-and-the-prevention-of-an-arms-race-in-outer-space-370.pdf.

10 Pericles Gasparini Alves, "Prevention of an Arms Race in Outer Space: A Guide to the Discussions in the Conference on Disarmament", UNIDIR, 1991, https://unidir.org/files/publication/pdfs/prevention-of-an-arms-race-in-outer-space-a-guide-to-the-discussions-in-the-cd-en-451.pdf, 5.

11 Paul Meyer, "The CD and PAROS: A Short History", UNIDIR, April 2011, https://unidir.org/files/publication/pdfs/the-conference-on-disarmament-and-the-prevention-of-an-arms-race-in-outer-space-370.pdf.

12 United Nations, "Report of the Ad Hoc Committee on Prevention of an Arms Race in Outer Space", August 1985, https://digitallibrary.un.org/record/100589?ln=en&v=pdf.

13 Pericles Gasparini Alves, "Prevention of an Arms Race in Outer Space: A Guide to the Discussions in the Conference on Disarmament", UNIDIR, 1991, https://unidir.org/files/publication/pdfs/prevention-of-an-arms-race-in-outer-space-a-guide-to-the-discussions-in-the-cd-en-451.pdf, 7-8.

3D model of a damaged satellite.

Draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (since 2008)

Building on the 1981 and 1983 Soviet proposals, China and Russia submitted a working paper, presenting a concept for a treaty to prevent an arms race in outer space by banning the placement of weapons and the use or threat of force in space, or PPWT, to the CD in 2002.[14] The proposal was described as the result of discussions in the Ad Hoc Committee on PAROS but also cited the collapse of the Anti-Ballistic Missile (ABM) Treaty[15] as raising the urgency of legally binding prohibitions of the weaponisation of space.[16] While aiming to prevent States from seeking "superiority in force", the proposal acknowledged military uses of space for navigation and communication, the legitimacy of "space activities which are defense-related", and the right to self-defence in the UN Charter.[17]

14 United Nations, "Letter dated 2002/06/27 […]", June 2002, https://digitallibrary.un.org/record/473291?ln=en&v=pdf.

15 The ABM Treaty was a US-Soviet arms control agreement, concluded in 1972, which placed mutual restrictions on missile defence systems, including space-based missile interceptors, to maintain mutual vulnerability, ensure strategic stability, and prevent an escalating arms race. The United States announced its intention to withdraw from the Treaty in 2001, concerned that once desirable limits on missile defence under the Cold War paradigm were preventing stronger protection against terrorism and missile threats from other countries in the 21st century. The United States withdrew in June 2002. See: Arms Control Association, "The Anti-Ballistic Missile (ABM) Treaty at a Glance", December 2020, https://www.armscontrol.org/factsheets/anti-ballistic-missile-abm-treaty-glance.

16 The Acronym Institute, "China and Russia Introduce Draft Treaty on Space Weapons", *Disarmament Diplomacy*, No. 66, September 2002, https://www.acronym.org.uk/old/archive/dd/dd66/66nr07.htm.

17 The Acronym Institute, "Russia-China CD Working Paper on New Space Treaty, June 27", 2002, https://www.acronym.org.uk/old/archive/docs/0206/doc10.htm.

This was followed by a draft treaty in 2008[18] and a revised draft in 2014.[19]

The PPWT reflects international consensus on the dangers of armed conflict in space and proposes straightforward obligations intended to preserve peace and stability. However, the United States, EU Member States, and other countries have continuously voiced reservations about fundamental aspects. While both drafts have broad definitions of "space weapons" as devices or components produced or converted to disrupt or damage other space objects, critics point out that even space objects not designed for military purposes could use force.[20] One example are active debris removal systems whose robotic arms could displace, damage, or destroy other space objects although they were not designed with that in mind. A simpler example would be the intentional crash of a satellite with another space object.[21]

Therefore, controlling capabilities alone could leave grey-zone actions that may not rise to the threshold of use of force – such as disrupting signals or dazzling sensors – unaddressed, despite being particularly attractive as they can be difficult to attribute while providing military advantages and causing economic and civilian harm. The threat posed by such actions was illustrated by the Russian cyberattack on ViaSat's KA-SAT GEO satellite network in February 2022, which interrupted control of 5,800 wind turbines in Germany and left tens of thousands of people across Europe without internet access.[22]

The PPWT also leaves open the question of verification, stating that compliance "may be the subject of an additional protocol."[23] The United States and other countries have not been comfortable with postponing agreement on a verification regime, in line with historical US-Soviet/Russian arms control practice.[24] Moreover, it has been noted that verification in the remote and hostile space environment could be costly and demanding to implement. This concerns verification of the absence of space weapons and of use and threat of force:

While some objects, such as space-based missile interceptors, could be confidently identified as weapons, others, such as satellites able to disrupt the signals to and from other space objects – as operated by China, Russia, and the United States – are more difficult to classify. Verifying the absence of use of force can be even more challenging. For instance, would there be agreement among States that damage from debris created through the intentional destruction of a State's own satellite constitutes use of force? The dangers that debris poses to space objects were highlighted by Russia's 2021 ASAT weapon test, which created 1,500+ debris pieces, causing tens of thousands of close approaches with other satellites still months later.[25] Verification is becoming even more difficult with the growing integration of commercial satellites into military space strategies, e.g., in China and the United States, further blurring the distinction between weapons and non-weapons.[26] This poses additional challenges for the creation and implementation of the proposed treaty.

18 United Nations, "Letter dated 2008/02/12", February 2008, https://digitallibrary.un.org/record/633470?ln=en&v=pdf.

19 Conference on Disarmament, "Letter dated 10 June 2014 […]", June 2014, https://docs.un.org/en/cd/1985.

20 EU Delegation Geneva, "Conference on Disarmament, EU Statement in Subsidiary Body 3: Prevention of an Arms Race in Outer Space", June 2022, https://www.eeas.europa.eu/delegations/un-geneva/conference-disarmament-eu-statement-subsidiary-body-3-prevention-arms-race-outer-space_en.

21 Almudena Azcárate Ortega, "Not a Rose by Any Other Name: Dual-Use and Dual-Purpose Space Systems", *Lawfare*, June 2023, https://www.lawfaremedia.org/article/not-a-rose-by-any-other-name-dual-use-and-dual-purpose-space-systems.

22 European Space Policy Institute, "The war in Ukraine from a space cybersecurity perspective", October 2022, https://www.espi.or.at/wp-content/uploads/2022/10/ESPI-Short-1-Final-Report.pdf, 6.

23 Conference on Disarmament, "Letter dated 10 June 2014 […]", June 2014, https://docs.un.org/en/cd/1985.

24 US Department of State, "Continuing Progress on Ensuring the Long-Term Sustainability and Security of the Space Environment", June 2014, https://2009-2017.state.gov/t/avc/rls/2014/227370.htm.

25 COMSPOC, "Russian ASAT Debris Creating "Squalls" Of Close Approaches With Satellites", February 2022, https://www.comspoc.com/post/details/russian-asat-debris-creating-squalls-of-close-approaches-with-satellites.

26 Xiaodan Wu and Jie Long, "Assessing the Particularity and Potentiality of Civil–Military Integration Strategy for Space Activities in China", *Space Policy*, Vol. 62, November 2022, https://www.sciencedirect.com/science/article/abs/pii/S0265964622000406; US Department of Defense, "Commercial Space Integration Strategy", April 2024, https://media.defense.gov/2024/Apr/02/2003427610/-1/-1/1/2024-DOD-COMMERCIAL-SPACE-INTEGRATION-STRATEGY.PDF.

States have also voiced concern that the PPWT does not address ground-based ASAT weapons, which have been successfully tested by China, India, Russia, and the United States, and already pose a significant threat to space objects.[27] China and Russia have responded that the proposed prohibition of use of force against space objects would also ban ground-launched ASAT attacks.[28]

Russia accompanied the 2014 draft with a call to the international community to commit to no first placement of weapons in outer space, an initiative that Russia first launched in 2004.[29] 35 States have since joined this pledge.[30] The UN General Assembly has regularly adopted resolutions to this effect since 2014, which also repeat calls for negotiations on a treaty banning the placement of weapons and the use and threat of force in space in the CD. This should be contextualised with existing reports that Russia, China, and the United States have already deployed space objects capable of aggressive military operations, such as jamming and kinetic attacks, which could be considered as weapons under the PPWT's definitions.[31]

The PPWT continues to be a topic in UN forums. While the 2014 revised draft incorporated some feedback from the international community, including edited definitions of key terms, fundamental disagreements remain over the effectiveness and verifiability of a PAROS treaty.[32]

27 United Nations, "Review of the Analyses Submitted to the Conference on Disarmament of the 2014 Russian - PRC draft …]", December 2023, https://docs-library.unoda.org/Group_of_governmental_experts_on_further_practical_measures_for_the_prevention_of_an_arms_race_in_outer_space_-_(2023)/WP.7.pdf.

28 Permanent Missions of China and Russia in Geneva, "Letter dated 18 August 2009", August 2009, https://digitallibrary.un.org/record/670202?v=pdf.

29 Russian Ministry of Foreign Affairs, "Press release on the UN General Assembly's adoption of Russia's resolution, No First Placement of Arms in Outer Space", December 2014, https://www.mid.ru/en/foreign_policy/news/1720268/?TSPD_101_R0=08765fb817ab20006986749608890e407f4ba6d817eac478f515e7a35f14dcd4d380e80e2ecf2310086846585514300bda6750fd3fb32e8503160d356fc85a5d2468d711527369e49c38897a9235a1d9866485aec2d5281a5baa62fc484b837.

30 United Nations, "No first placement of weapons in outer space", December 2024, https://digitallibrary.un.org/record/4070620?ln=en&v=pdf.

31 Secure World Foundation, "2025 Global Counterspace Capabilities Report", June 2025, https://www.swfound.org/publications-and-reports/%202025-global-counterspace-capabilities-report.

32 For a list of changes introduced by the 2014 revised draft PPWT, see United Nations, "Explanatory Note on the updated draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects", 2014, https://docs-library.unoda.org/Conference_on_Disarmament_(2014)/1319%2BRussian%2BFederation%2BExplanatory%2Bnote%2Bupdated%2Bdraft%2BPPWT.pdf.

Uncoordinated operations in proximity to a foreign satellite can suggest malicious activities, such as intelligence gathering or sabotage. Credit: Astroscale Japan.

International Code of Conduct for Outer Space Activities (2008-2015)

In December 2008, the European Union and its Member States suggested to develop an international code of conduct (ICoC) with principles and guidelines to govern States' conduct in space, based on UN resolution 61/75 (2006), which called for confidence-building initiatives towards PAROS. The idea of a code of conduct had already featured prominently throughout the Ad Hoc Committee.[33] It was intended as a global standard for State and commercial space operations.[34] Without legally binding commitments and enforcement mechanisms, the ICoC was also seen to have a lower 'barrier to entry' that may deliver results faster. Yet, the initiative did not secure widespread support or agree on a set of guidelines that States could then sign up to.[35]

Nevertheless, deliberations on the Code were helpful groundwork for current efforts to shape norms of responsible behaviour in space and for promoting understanding of the connections between space safety, security, and sustainability. The ICoC particularly advanced the idea that showing respect for the safety of other space objects and the sustainability of outer space can demonstrate States' peaceful, non-aggressive intentions.

33 United Nations, "Report of the Ad Hoc Committee on Prevention of an Arms Race in Outer Space", August 1987, https://digitallibrary.un.org/record/143129?ln=en&v=pdf.

34 Reaching Critical Will, "Outer space", Unknown date, https://www.reachingcriticalwill.org/resources/fact-sheets/critical-issues/5448-outer-space#CoC.

35 Gabriella Irsten, "The consultation process for the International Code of Conduct for Outer Space Activities ends", Reaching Critical Will, Unknown date, https://www.reachingcriticalwill.org/news/latest-news/8907-the-consultation-process-for-the-international-code-of-conduct-for-outer-space-activities-ends.

The ICoC comprised four principles on the free and equal use of space for peaceful purposes, respecting space sustainability and the UN Charter, as well as many other guidelines on compliance with international space law, space debris mitigation, mutual consultation, notifications, and other practices that contribute to transparency, predictability, and stability among State and commerical actors in space.

The initiative faced a significant setback when the Obama administration announced that it would not sign on to the Code in early 2012, though it continued to work with EU Member States and others to finetune the ICoC proposal. In withdrawing support, the administration yielded to political pressure from within the US Senate that highlighted deep-rooted concerns that imposing any restrictions on military capabilities in space would undermine US national security.[36]

The EU hosted consultations on an evolving series of drafts between 2013 and 2015 with no follow-up after fundamental disagreements could not be overcome. Criticism reflected other States' interests, for example, in maintaining focus exclusively on legally binding measures for PAROS. It was also criticised that the EU consulted a wider range of States only later in the ICoC's development.[37]

Despite parallels to the PPWT's prohibition on the use of force against space objects – the ICoC included a commitment to "refrain from any action which brings about, directly or indirectly, damage, or destruction, of space objects unless such action is justified […][38] – China, Russia, and other States opposed the Code, citing a number of reasons, including the Code being discussed outside the formal UN framework.[39]

36 Jack Beard, "Soft Law's Failure on the Horizon: The International Code of Conduct for Outer Space Activities", *University of Pennsylvania Journal of International Law*, 2017, https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1936&context=jil, 400-404.

37 Reaching Critical Will, "Outer space", Unknown date, https://www.reachingcriticalwill.org/resources/fact-sheets/critical-issues/5448-outer-space#CoC.

38 EEAS, "Draft International Code of Conduct for Outer Space Activities", March 2014, https://www.eeas.europa.eu/sites/default/files/space_code_conduct_draft_vers_31-march-2014_en.pdf.

39 Gabriella Irsten, "The consultation process for the International Code of Conduct for Outer Space Activities ends", Reaching Critical Will, Unknown date, https://www.reachingcriticalwill.org/news/latest-news/8907-the-consultation-process-for-the-international-code-of-conduct-for-outer-space-activities-ends.

The UN headquarters in New York City, where the GGE held its meetings.

GGE on Transparency and Confidence-Building Measures in Outer Space Activities (2012-2013)

The first space security governance effort under UN auspices after the Ad Hoc Committee in the CD was a Group of Governmental Experts, established by UN resolution 65/68 (2011). Its focus on transparency and confidence-building measures (TCBMs) was an attempt to break the impasse between the approaches favoured by China and Russia and Western countries respectively, since TCBMs could contribute directly to both, but also to an improvement of the wider environment by promoting understanding and predictability in space operations. This moved beyond opposing views still held during the Ad Hoc Committee that TCBMs were either an end in themselves or solely an interim step towards a treaty.[40]

Thus, it was sponsored by a broad coalition of States, including China and Russia as well as the United Kingdom, EU Member States, and several developing countries. The United States later supported the effort too.[41] Convening 15 experts, mostly from spacefaring nations, the GGE intended to deepen discussions among States after a 2010 report by the Secretary-General had collected national views on TCBMs.

40 Paul Meyer, "The CD and PAROS: A Short History", UNIDIR, April 2011, https://unidir.org/files/publication/pdfs/the-conference-on-disarmament-and-the-prevention-of-an-arms-race-in-outer-space-370.pdf.

41 Christopher Johnson, "The UN Group of Governmental Experts on Space TCBMs", Secure World Foundation, April 2014, https://cdn.prod.website-files.com/66dcc6872f6ed23bce1db235/6859b22aeecc939d0f4c6f0d_gge-space-tcbms-fact-sheet-april-2014.pdf.

The produced consensus report took up proposals from a more comprehensive, earlier study, conducted by a GGE between 1991 and 1993.[42] The 1993 study was commissioned by the UN General Assembly to flesh out discussions of TCBMs in the CD Ad Hoc Committee, which had seen some convergence on the topic. This effort was also inspired by resolutions in 1988 and 1989, highlighting the benefits of TCBMs for disarmament negotiations.[43]

The 2013 report recommended that States implement TCBMs, including bilateral and regional measures as well as multilateral codes of conduct, all of which can feed into the development of legally binding measures.[44] The report also developed criteria for TCBMs to be clear, effective, and demonstrably practicable. Key TCBMs explored in the report include:

- Transparency and information exchange on national space programmes and military activities in space
- Providing ample information on the characteristics, orbital parameters, and activities of space objects, including their registration with the UN Office for Outer Space Affairs (UNOOSA)
- Notification of planned spacecraft launches
- Notifications of planned and unforeseen events that could affect the safety of other space objects or Earth, such as high-risk re-entry events
- Mutual visits and demonstrations of launch sites, control centres, etc.

The GGE report continues to enjoy broad acceptance and is still mentioned in national statements as a key reference point for steps towards PAROS. By taking up insights from the COPUOS Working Group on the Long-Term Sustainability of Space Activities, the report furthered understanding of the complementarity of space safety, security, and sustainability practices.[45]

At the same time, it could be criticised that much of the report reproduced findings from other processes, including the Ad Hoc Committee and the ICoC process, and that little has since been achieved in implementing the Group's recommendations.

42 United Nations, "Study on the Application of Confidence-building Measures in Outer Space", July 1993, https://digitallibrary.un.org/record/3964708.

43 United Nations, "Prevention of an arms race in outer space", December 1990, https://digitallibrary.un.org/record/192889?v=pdf.

44 United Nations, "Group of Governmental Experts on Transparency and Confidence-Building Measures in Outer Space Activities", July 2013, https://docs.un.org/en/A/68/189.

45 Almudena Azcarate Ortega and Sarah Erickson, "To Space Security and Beyond: Exploring Space Security, Safety, and Sustainability Governance and Implementation Efforts", UNIDIR, 23 August 2023, https://unidir.org/publication/to-space-security-and-beyond-exploring-space-security-safety-and-sustainability-governance-and-implementation-efforts-space-dossier-9/.

UN Secretary-General António Guterres at the General Assembly in New York City. Credit: UN Photo/Loey Felipe.

UN Secretary-General's Report on Transparency and Confidence-Building Measures in Outer Space Activities (2017)

In 2015, the UN General Assembly asked the Secretary-General to report on the "coordination of transparency and confidence-building measures in outer space activities in the United Nations system" and to collect States' views on the topic.[46]

The report combined the 2016 special report by the Inter-Agency Meeting on Outer Space Activities (UN-Space) that had been commissioned by COPUOS, with summaries of the 10 replies received from Member States and the European Union.[47] The report's goal was to highlight further work needed to implement the recommendations made by the previous GGE (2012-2013).

The report identified several ways, in which UN entities help to build trust among spacefaring and non-spacefaring States, contributing to mutual understanding and providing services with benefits for space safety, security, and sustainability. Key examples include:

46 United Nations, "Transparency and confidence-building measures in outer space activities", December 2015, https://docs.un.org/en/A/RES/70/53.

47 United Nations, "Transparency and confidence-building measures in outer space activities", February 2017, https://www.unoosa.org/res/oosadoc/data/documents/2017/a/a7265_0_html/A_72_065E.pdf.

- The UN Office for Disarmament Affairs (UNODA) and UNOOSA facilitate information exchange on space and military programmes respectively.
- UNOOSA contributes to transparency, accountability, and cooperation in space by facilitating the registration of space objects (including military and intelligence objects), the recovery of astronauts, rules on nuclear power sources in space and re-entry of space objects, etc. under the relevant treaties.
- UNOOSA, the World Meteorological Congress, and other entities provide capacity-building on space situational awareness, including on space weather that could harm satellites.
- States share pre-launch notifications and national capability reports under the Hage Code of Conduct.

The report also identified options for States to strengthen these mechanisms for TCBMs, e.g., by using UNOOSA and UNODA reporting channels to enhance the transparency of space activities with security implications, or by universalising the registration of space objects and harmonising the types of information shared.

Members of the GGE in Geneva. Credit: Sapienza University of Rome.

GGE on Further Practical Measures for PAROS (2018-2019)

China and Russia reactivated their initiative for a legally binding instrument on PAROS in 2017, leading to the creation of a Group of Governmental Experts, primarily from spacefaring nations, via UN resolution 72/250, mandated to discuss possible elements of a PAROS treaty with a view of beginning negotiations in the CD.[48] The Group also held an informal meeting, open to all UN Member States, to collect a broad range of views, in 2019.

Though consensus was within reach, the GGE did not adopt a report, including because of US concerns that the draft report too closely resembled a treaty and that agreement on the report may have been read as readiness to enter negotiations on the basis of the draft PPWT. Instead, the Chair produced a summary in their own capacity.[49]

The GGE discussed topics with relevance for a legally binding instrument but also norms-based arrangements. They include the application of existing international law in space, how to reflect the right to self-defence in PAROS, monitoring of State conduct in space, TCBMs, etc. Although the GGE did not advance States' readiness to negotiate a treaty, its discussions highlighted areas of agreement that can inform further multilateral action on PAROS, such as:

48 United Nations, "Further practical measures for the prevention of an arms race in outer space", January 2018, https://docs.un.org/en/A/RES/72/250.

49 United Nations, "Report by the Chair of the Group of governmental experts on further practical measures for the prevention of an arms race in outer space", January 2019, https://front.un-arm.org/wp-content/uploads/2019/02/oral-report-chair-gge-paros-2019-01-31.pdf.

- Threats to the peaceful uses of space exist on a low to high-intensity continuum.
- Space security measures, whether legally binding or not, must be effectively verifiable.
- TCBMs, such as enhanced registration of space objects or launch site visits, are vital for regulating State conduct in space, paving the way for a PAROS treaty, and ensuring compliance with such a treaty.
- Space security measures should not interfere with the peaceful uses of space and technological innovation as much as possible.
- There should be capacity-building on national legislation, space situational awareness, and reporting on space activities to promote trust and support compliance with space security measures.

The GGE was notable for its inclusion of civil society expertise. The 2019 informal meeting featured sessions for input from national space agencies, space industry, and civil society. Moreover, China, Russia, and UNODA organised a workshop with NGO briefings ahead of the first GGE meeting to identify priority issues and working methods for the Group.[50] The same countries have been strongly opposed to civil society participation in recent multilateral processes on PAROS.

50 United Nations, "Report by the Chair of the Group of governmental experts on further practical measures for the prevention of an arms race in outer space", January 2019, https://front.un-arm.org/wp-content/uploads/2019/02/oral-report-chair-gge-paros-2019-01-31.pdf.

Participants of the OEWG at the UN headquarters in Geneva. Credit: United Nations.

OEWG on Reducing Space Threats (2022-2023)

A key innovation in PAROS efforts was a new norms-based approach taken in the Open-Ended Working Group on Reducing Space Threats, created by UN resolution 76/231, spearheaded by the United Kingdom. The norms-based approach, first launched in 2020, was based on the premise that regulating capabilities alone had proven technically difficult and insufficiently addressed threatening behaviour – it was important not only to look at States' capabilities but also at how they use them. It shifted the focus from a binary choice between a legally-binding or non-legally-binding approach by promoting the idea that different space threats are best addressed by different measures – some may be best suited to legally-binding measures, others to voluntary measures. Voluntary measures could also build towards and complement legally-binding measures. This generated contributions from a diverse range of States, including from many developing countries that had been frustrated with geopolitical competition hindering progress on space security.[51] While related to the norms-based approach of the ICoC process (2008-2015), the OEWG did not aim to negotiate a concrete code of conduct. Instead, it sought to:

- Map existing legal commitments and prevailing norms relevant to space security;
- Converge on a common understanding of threats in outer space; and
- Generate ideas for the development of rules, principles, and norms to reduce space threats and prevent miscalculation and misunderstanding.[52]

51 Aidan Liddle, "Responsible behaviours in outer space: towards UNGA 76", Foreign, Commonwealth & Development Office, June 2021 https://blogs.fcdo.gov.uk/aidanliddle/2021/06/08/reducing-space-threats-towards-unga-76/.

52 United Nations, "Reducing space threats through norms, rules and principles of responsible behaviours", December 2021, https://docs.un.org/en/a/res/76/231.

Although a consensus report was not achieved due to the disapproval of a few States, the Chair's summary reflected dynamic, constructive, and collegial discussions as attested by observers.[53] The OEWG also generated an unprecedented wealth of analyses, commentary, and policy advice by NGOs.

At the same time, several countries voiced concern that "norms of responsible behaviour" was a term without a clear or fixed definition and that there could be a risk of subjectivity and politicisation in defining and applying this concept. While many initially sceptical countries began to participate in collectively shaping norms of responsible behaviour in the OEWG, especially Russia continues to reject both the concept and term. Other criticism of the OEWG's approach suggested that regulating behaviours and not capabilities allowed for the weaponisation of space, that considerations of space threats with a safety dimension undermined the role of COPUOS, and that the "responsible behaviour" framework undercut the goal of adopting a legally binding instrument.[54]

In contrast, it should be noted that the weaponisation of space would run counter to the objectives set in the OEWG's establishing resolution, that the complementarity of space safety and security has been recognised by COPUOS[55] and the General Assembly,[56] and that convergence on and application of responsible behaviour could support the codification of such behaviour in a treaty.[57] Indeed, middle ground States like Brazil and Pakistan that advocate for a PAROS treaty have underlined that the norms discussed in the OEWG could serve as a useful step towards that goal.[58]

Prior to the first OEWG meeting, the United States announced a commitment not to test direct-ascent, destructive anti-satellite (DA-ASAT) missiles, and urged others to follow suit, aiming to develop this into an international norm of responsible behaviour in outer space.[59] The UN General Assembly adopted a resolution to this effect in the same year, emphasising the long-term, detrimental impact of debris created by such tests for the peaceful uses of space and that moratoria can contribute to legally binding measures for PAROS.[60] 38 countries have since shared in this pledge.[61] While none of the other countries that have tested DA-ASAT weapons – China, India, and Russia – have signed on, some States with a latent DA-ASAT capability, including France and Japan, have done so.

Some observers have questioned the effectiveness of the initiative since DA-ASAT capabilities are becoming less attractive due to their attributability and the uncontrollable damage they cause.[62] It has also been noted that the moratorium was a "low-hanging fruit" for the United States, as it has already acquired confidence in its DA-ASAT capabilities and last conducted a test in 2008. Critics have also questioned why the pledge only covers the testing but not the use of DA-ASAT weapons and why it does not include weapons in the Earth's orbit.

53 Jessica West, "Missed Opportunity to Curb Security Threats in Space Leaves All More Vulnerable", CIGI, September 2023, https://www.cigionline.org/articles/missed-opportunity-to-curb-security-threats-in-space-leaves-all-more-vulnerable/.

54 Permanent Mission of Russia in Geneva, "Statement by Konstantin Vorontsov on the PAROS issues", September 2023, https://geneva.mid.ru/en/activities/news/04-09-2023_statement-by_b9ae41bc3053999f66acc1b13aba3131/?TSPD_101_R0=08765fb817ab200040e5e920378dfbe60ebbd3cafe97fb02231b1cf08a20542013290b8c29436813089c30cdee143000fc8dca555bc4bd587c3a6c548bf5b67b3e366ff9d4323c4324686d91102069a27709032b8fd1d615c2990702cb0bf263.

55 United Nations, "Report of the Committee on the Peaceful Uses of Outer Space", July 2024, https://www.unoosa.org/res/oosadoc/data/documents/2024/a/a7920_0_html/A_79_020E.pdf.

56 United Nations, "Reducing space threats through norms, rules and principles of responsible behaviours", December 2020, https://docs.un.org/en/A/RES/75/36.

57 United Nations, "Chairperson's Summary", September 2023, https://documents.un.org/doc/undoc/gen/g23/178/26/pdf/g2317826.pdf.

58 Jessica West, "The Open-Ended Working Group on Reducing Space Threats: Final Recap", Centre for International Governance Innovation, January 2024, https://ploughshares.ca/the-open-ended-working-group-on-reducing-space-threats-final-recap/.

59 The White House, "Fact Sheet: Vice President Harris Advances National Security Norms in Space", April 2022, https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2022/04/18/fact-sheet-vice-president-harris-advances-national-security-norms-in-space/.

60 United Nations, "Destructive direct-ascent anti-satellite missile testing", December 2022, https://digitallibrary.un.org/record/3997622?v=pdf.

61 Secure World Foundation, "Multilateral Space Security Initiatives", May 2025, https://www.swfound.org/publications-and-reports/multilateral-space-security-initiatives.

62 Ankit Panda and Benjamin Silverstein, "The U.S. Moratorium on Anti-Satellite Missile Tests Is a Welcome Shift in Space Policy", Carnegie Endowment for International Peace, April 2022, https://carnegieendowment.org/posts/2022/04/the-us-moratorium-on-anti-satellite-missile-tests-is-a-welcome-shift-in-space-policy?lang=en.

Substantive session of the UN Disarmament Commission in April 2023. Credit: UN Photo.

UN Disarmament Commission Report (2023)

Upon the initiative of China, Russia, and the United States, the UN Disarmament Commission began informal discussions on how States could implement transparency and confidence-building measures towards PAROS, building on recommendations of the GGE (2012-2013). The Commission adopted this as a formal agenda item for its 2018-2020 session, which was disrupted by, among other issues, the Covid-19 pandemic. The Commission's 2023 report submitted consensus recommendations to the General Assembly.[63]

The Commission only discussed parts of the GGE report and its recommendations largely repeated its content. Still, their adoption was a notable success; the same could not be achieved for the agenda item on nuclear disarmament and non-proliferation.

The last time the Commission had adopted recommendations was on conventional arms control in 2017, and before that in 1999.[64] This was taken as an indicator for growing momentum in space security governance and confirmation that – unlike in related areas – States could adopt the necessary pragmatism to achieve results in space security discussions.

63 United Nations, "Report of the Disarmament Commission for 2023", https://documents.un.org/doc/undoc/gen/n23/119/82/pdf/n2311982.pdf, 14-15.

64 UNODA, "UN Disarmament Commission adopts by consensus "Practical confidence-building measures in the field of conventional weapons"", April 2017, https://disarmament.unoda.org/update/un-disarmament-commission-adopts-by-consensus-practical-confidence-building-measures-in-the-field-of-conventional-weapons/.

The small additions of the recommendations compared to the GGE (2012-2013) report were:

- Designating national points of contact for notifications of manoeuvres that could affect the safety of other space objects;
- Intensifying discussions in COPUOS on strengthening global space situational awareness capabilities; and
- Strengthening supervision of commercial actors by States to prevent their activities from undermining space security.

In line with the conclusion that "Transparency and confidence-building measures should be aimed at increasing outer space safety, sustainability, [and] security",[65] these additions appear to build on the Guidelines for the Long-term Sustainability of Outer Space Activities, adopted by COPUOS in 2019, which reference these three measures in detail. This underlines that space governance measures should be understood comprehensively by their benefits across the priorities of space safety, security, and sustainability, not by their administrative separation in different UN bodies.

65 United Nations, "Report of the Disarmament Commission for 2023", https://documents.un.org/doc/undoc/gen/n23/119/82/pdf/n2311982.pdf, 13.

The UN headquarters in Geneva, where the GGE held its meetings.

GGE on Further Practical Measures for PAROS (2023-2024)

Given their criticism of the OEWG on Reducing Space Threats, China and Russia initiated a repeat of the GGE on Further Practical Measures for PAROS (2018-2019) with the same mandate as before, provided in UN resolution 77/250. The GGE comprised 24 experts, primarily from spacefaring nations. As with the previous GGE, an informal meeting for broader input was organised.

Regarded as an important breakthrough amidst increasing antagonism between proponents of a legally binding and a norms-based approach, the GGE adopted a consensus report on potential elements of negotiations on a PAROS treaty with the caveat that the report does not represent consensus on all of its parts.[66] Indeed, the report was presented as an ideas repository or "reference document" for further efforts towards PAROS, including the two OEWGs established and later merged into the OEWG on PAROS in All its Aspects.[67]

66 United Nations, "Report of the Group of Governmental Experts on further practical measures for the prevention of an arms race in outer space", August 2024, https://docs-library.unoda.org/Group_of_governmental_experts_on_further_practical_measures_for_the_prevention_of_an_arms_race_in_outer_space_-_(2023)/GE-PAROS-2024-CRP.4.pdf, 3.

67 United Nations, "Report of the Group of Governmental Experts on further practical measures for the prevention of an arms race in outer space", August 2024, https://docs-library.unoda.org/Group_of_governmental_experts_on_further_practical_measures_for_the_prevention_of_an_arms_race_in_outer_space_-_(2023)/GE-PAROS-2024-CRP.4.pdf, 13-14.

The adoption of a substantive outcome document, capturing practical discussions and recognising areas of convergence and remaining differences that require further dialogue, was an important achievement towards a more results-oriented PAROS process.

Incorporating and going beyond provisions in the draft treaties presented by China and Russia, the report lists elements of a potential PAROS treaty, including on basic obligations, verification, and dispute settlement. Notable obligations in a potential treaty considered in the report include:

- Avoiding misunderstandings and miscalculations in space by maintaining adequate distance to other space objects and notifying operators in cases of close approaches;
- Not to interfere with or damage satellites that fulfil critical civilian functions, potentially causing civilian casualties on Earth; and
- Not to cause safety risks for other space objects, for example, through intentional debris creation.

While not phrased as potential elements to a treaty, the report intermixes auxiliary elements, such as TCBMs with a nexus to space safety. The GGE also identified areas for States to intensify their efforts in, including to implement TCBMs, to utilise existing space law to enhance space security, and to engage industry and NGOs on space security governance.

Second substantive session of the OEWG in July 2025 in Geneva.

OEWG on PAROS in All its Aspects (2025-2028)

Upon the initiative of Brazil, Egypt, Indonesia, Jordan, Nigeria, Saudi Arabia, and South Africa, the UN General Assembly merged two working groups on space security in December 2024.[68] They had been established through UN resolutions adopted in 2023 and would have continued work on norms of responsible behaviour and further practical measures for PAROS in separate forums.[69]

The merged OEWG has been tasked with making recommendations on PAROS by 2028, using a comprehensive approach that considers legally binding and norms-based measures. Per its mandate, the group's discussions shall be based on all relevant previous UN resolutions, including the 2023 resolutions that had established its 'constituent' working groups.

The start of the OEWG's work was hindered by procedural issues. The February 2025 organisational meeting was drawn into a discussion on the wording and structure of the draft agenda and programme of work, preventing their adoption. Russia argued that States needed to agree on specific issues to discuss and when to discuss them before adopting either document. Russia also insisted on changes to focus the agenda solely on a legally binding instrument.[70] China and Iran made complementary interventions.

68 UN General Assembly Decision 79/512 (2024), https://igov.un.org/a/dec/79/512.

69 UN Resolution 78/20 (2023), https://docs.un.org/en/A/RES/78/20; UN Resolution 78/238 (2023), https://docs.un.org/en/A/RES/78/238.

70 UN Web TV, "3rd Meeting, Organizational Session - Open-ended Working Group on Reducing Space Threats (sic)", United Nations, https://webtv.un.org/en/asset/k1c/k1cbhuq072.

Many other delegations noted that the broad wording of the draft agenda offered flexibility for substantive discussions, in line with UN practice and the draft agendas used by the OEWG (2022-2023) and GGE (2023-2024). Brazil recalled that negotiations towards the merged OEWG had tried to define concrete questions for discussion but failed to reach consensus, concluding that an open-ended approach was more effective.[71]

Despite the Chair's assurances that all views would be considered throughout the OEWG, Russia and China raised the same points at what should have been the first substantive meeting in April 2025. Russia also could not agree to discuss space security in a comprehensive fashion and to have civil society participation in OEWG meetings, as mandated in the establishing resolution.[72] Another sticking point was disagreement over starting concrete negotiations on a treaty in the OEWG. In this way, the OEWG has been affected by the same fundamental controversy that held up the establishment of a PAROS committee in the CD over 40 years ago. Many States stressed the unacceptability of obstructing the OEWG's work, the waste of UN and national resources, and the importance of achieving concrete results to safeguard space for peaceful uses.[73]

In a positive turn, the OEWG achieved consensus on its agenda and programme of work during its second substantive session, held from 21 to 25 July 2025. Although some have criticised this as incongruent with the OEWG's mandate to discuss measures for PAROS in a comprehensive and inclusive fashion, its work is now organised in two tracks, focused on legally binding and voluntary measures respectively, along with general exchanges of views. Although Russia had requested to approve the participation of NGOs for each session, States agreed to approve their participation once for all sessions, in line with language in the establishing UN resolution.

Though States remain sceptical about the outlook for the adoption of a consensus outcome document in 2028, substantive discussions commenced during the July 2025 session, touching on the space threat landscape and existing space security governance elements, and will continue in July 2026.[74]

71 UN Web TV, "3rd Meeting, Organizational Session - Open-ended Working Group on Reducing Space Threats (sic)", United Nations, https://webtv.un.org/en/asset/k1c/k1cbhuq072.

72 Jessica West, "Open in Name Only: the OEWG on PAROS Stumbles Through its First Session", Ploughshares, April 2025, https://ploughshares.ca/open-in-name-only-the-oewg-on-paros-stumbles-through-its-first-session/.

73 Jessica West on X, April 2025, https://x.com/JessicaWestPhD/status/1910713827835920658.

74 United Nations, "Indicative timetable 2025-2028", https://docs-library.unoda.org/Open-ended_Working_Group_on_Prevention_of_an_Arms_Race_in_Outer_Space_-_(2025)/A.AC_.297.2025.CRP_.2.Rev_.5.pdf.

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