VCDNP Vienna Center for Disarmament and Non-Proliferation

October 2025

Unlocking Progress on PAROS: Innovative Proposals Towards a Global Space Security Regime

Louis Reitmann

Vienna Center for Disarmament and Non-Proliferation | vcdnp.org

Author

Louis Reitmann is a Research Fellow at the VCDNP, working on outer space security and multilateral nuclear disarmament. His work has been published in *Arms Control Today*, *The Bulletin of the Atomic Scientists*, by the UN Institute for Disarmament Research (UNIDIR), the European Leadership Network, and others. He serves on the Field Building Advisory Committee of Ploughshares Fund.

Previously, he served as an Export Control Support Officer at Imperial College London, where he helped to boost compliance with export control and investment security regulations and create structures to protect research from misuse for WMD and military purposes. Prior to this, he supported the EU Special Envoy for Disarmament and Non-Proliferation as a Blue Book Trainee at the European External Action Service (EEAS) in Brussels.

He holds an MSc International Relations from the London School of Economics (LSE) and a BA Political Science from the University of Vienna.

About the VCDNP

The Vienna Center for Disarmament and Non-Proliferation (VCDNP) promotes international peace and security by conducting research, facilitating dialogue, and building capacity on nuclear non-proliferation and disarmament.

The VCDNP is an international non-governmental organisation, established in 2010 by the Federal Ministry for European and International Affairs of Austria and the James Martin Center for Nonproliferation Studies at the Middlebury Institute of International Studies at Monterey.

Our research and analysis provide policy recommendations for decision-makers. We host public events and facilitate constructive, results-oriented dialogue among governments, multilateral institutions, and civil society. Through in-person courses and online resources on nuclear non-proliferation and disarmament, we train diplomats and practitioners working in Vienna and around the world.

Acknowledgements

This report and the workshop that informed it were made possible thanks to financial support by the **UK Foreign, Commonwealth & Development Office**.

The author thanks all participants in the workshop **The Next Chapter in PAROS: Taking Action to Protect the Peaceful Uses of Space** for their valuable contributions.

VCDNP
Vienna Center for Disarmament and Non-Proliferation

Andromeda Tower, 13/1
Donau-City-Strasse 6
1220 Vienna
Austria

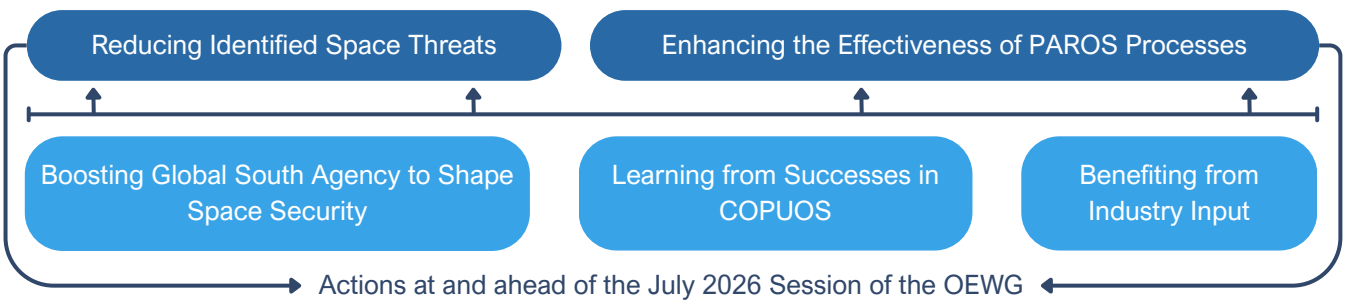
vcdnp.org
info@vcdnp.org
@VCDNP
VCDNP

View of the Palais des Nations in Geneva from the Pregny Gate.

Unlocking Progress on PAROS

This report presents proposals for concrete measures that States can take to advance their shared goal of creating effective rules and mechanisms for space security. As shown below, they focus on two goals: 1) Reducing identified space threats, and 2) Enhancing the effectiveness of PAROS processes. The report also explores three priorities that can support States in achieving these goals: a) Boosting Global South agency to shape space security, b) Learning from successes in COPUOS, and c) Benefiting from industry input. Throughout, it identifies specific actions that States can take towards these goals at and ahead of the July 2026 session of the OEWG on PAROS in All its Aspects.

These ideas were generated during a workshop, convened by the VCDNP and the Geneva Centre for Security Policy in September 2025. The workshop brought together policy-makers and diplomats from 18 countries on all continents, leading experts, and space industry under the Chatham House Rule. Rather than securing consensus from all participants, the workshop aimed to generate fresh thinking, exchange, and identify overlapping and differing perspectives.



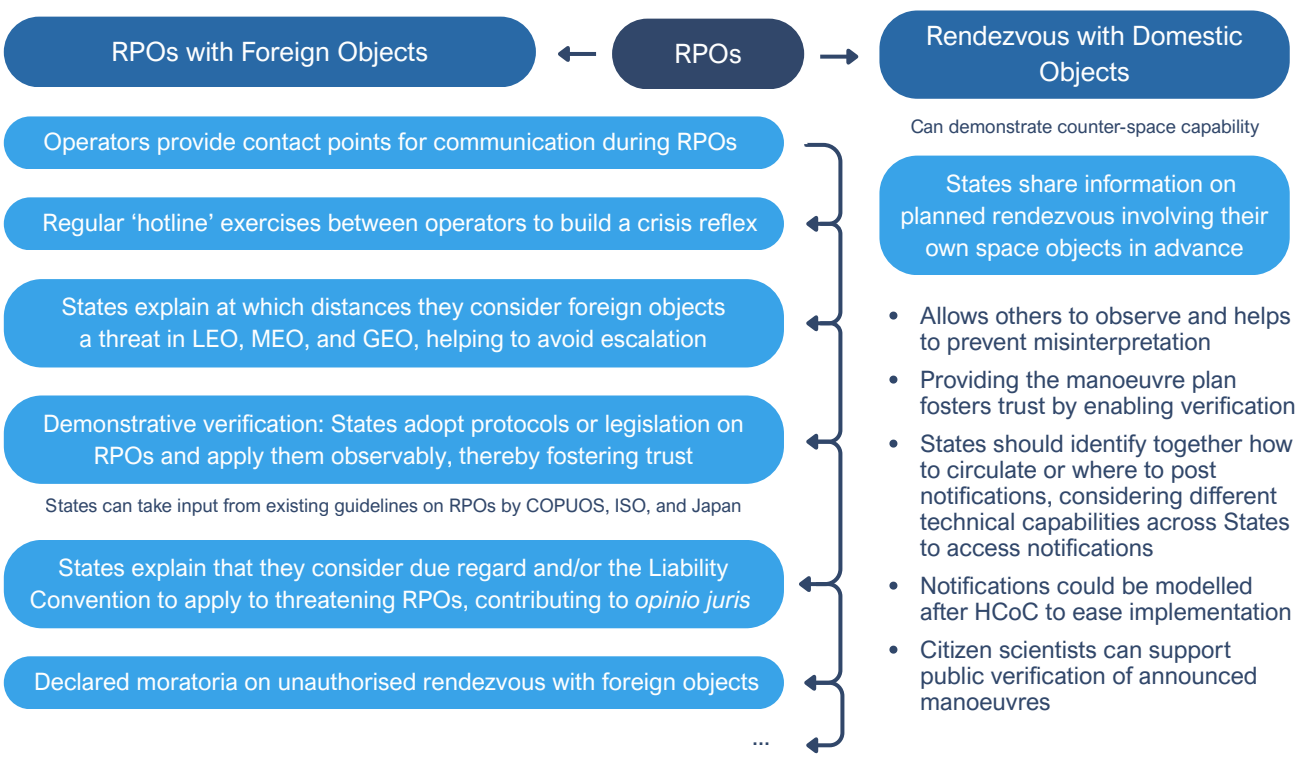
Reducing Identified Space Threats

Threats in space are diverse and complex. They range from temporary interference with radio transmissions to kinetic attacks that can leave satellites permanently disabled or destroyed. Different threats present different challenges regarding the type and severity of damage they can cause, whether intentional actions can be discerned from accidents, whether the perpetrator can be identified, and whether the absence of certain behaviours that undermine space security can be verified.

Therefore, different space threats require different, tailored strategies to be mitigated successfully. States have made important progress in identifying threats that require urgent action, such as rendezvous and proximity operations (RPOs), intentional debris creation, and the development and testing of counter-space capabilities. Most States also support a flexible approach to space security that combines legally binding and voluntary measures. Still, discussions in UN bodies on PAROS often focus on agreeing on one comprehensive approach to all space threats, for example, through a treaty to ban the placement of weapons and the use and threat of force in space. However, consensus on any one, singular solution is not in sight despite over 40 years of dialogue.

The workshop served as encouraging proof of concept that an issue-focused, results-oriented approach is key for making progress on PAROS. Rather than tackling all aspects of space security at once, participants focused on one identified threat, breaking down the larger PAROS goal into more manageable issues. In small groups, participants developed threat reduction pathways to address RPOs, combining different instruments, such as national statements, domestic regulation, de-escalation mechanisms, etc. Threat reduction pathways are vertical sequences of steps, each entailing a greater level of commitment and assurance, for example, a declaration of principles by a group of States, which guides the development and implementation of norms and standards for space operations, followed by their codification in a treaty. Threat reduction pathways can also be horizontal, with several measures at the same level of commitment, addressing one threat from different angles.

The graphic below illustrates initial ideas for a threat reduction pathway on RPOs. In developing these, the groups benefited from the mix of expertise offered by the officials, diplomats, experts, and commercial actors in each group. Further work in such agile, mixed groups could expand these ideas, and repeat this exercise with other space threats. This could help States better understand which steps in which order are necessary to effectively mitigate space threats.



Participants noted that States had achieved convergence around RPOs with foreign objects during the OEWG on Reducing Space Threats, and that States were ready to consider concrete action. Participants considered that the OEWG on PAROS in All its Aspects could task a panel of technical experts with developing objective operational criteria to identify RPOs that undermine space security. States could then adopt these as political commitments or legislation. Alternatively, participants considered that the OEWG could be informed by the work of the Expert Group on Space Situational Awareness in COPUOS. The Expert Group could be better placed to answer technical questions, for example, on the minimum safe distance between satellites in different orbital regions. Their agreed outcome could then be applied from a security perspective via the OEWG. Nevertheless, information on the distance at which States consider foreign objects to present a threat would still help to prevent misunderstanding and escalation, even if those distances differed between countries.

It was also noted that, in some countries' defence establishments, thinking on red lines around RPOs may already exist and could inform the threat perception of RPOs that States should articulate to each other. Additionally, the situation in one jurisdiction, where commercial operators must clear planned RPOs with a government agency, was highlighted; these notifications could be passed on internationally to enhance predictability. Such a model could be an attractive information sharing mechanism for many countries.

Participants explored the development of threat reduction pathways, as on RPOs, as a critical next step, in and beyond UN bodies on PAROS. In an anonymous survey after the workshop, 82% of respondents confirmed that "identifying threat reduction pathways could contribute to a clearer vision for achieving space security". While States know the threats they need to address and the instruments available, a clear understanding of which measures should be taken to address each identified threat, in which order, and by whom is lacking. States would benefit from clarity about the steps, resources, and stakeholders needed to tangibly reduce space threats.

Participants also discussed the ability of the PAROS concept to effectively guide space security efforts in today's space environment. Stemming from 1978, the PAROS concept does not entirely reflect today's situation in space and the security challenges flowing from it. Space is no longer dominated by a few government assets, owned by a handful of countries. It is home to many countries and is mostly populated by commercial satellites with expanding capabilities and more integrated civil and military uses. Participants considered that the shared understanding of PAROS could be updated without abandoning the commitment to such long-standing language.

A modern understanding of the PAROS goal could focus on the preservation of peaceful uses of space by all countries and space sustainability. Not only is this in line with a trend across space governance to orientate strategies towards space sustainability, but it could also help States adopt an operator's perspective on space threats, which, participants highlighted, does not differentiate between strategic threats, such as the placement of certain weapons in space, and other threats, such as RPOs, but identifies capabilities and behaviours as being of concern based on their (potential) disruption of civil applications in space.

Actions at and ahead of the July 2026 Session of the OEWG

- States can consult across government to communicate their perceptions of the threats to be discussed at the July 2026 session, such as RPOs and intentional debris creation. For example, States can explain at which distances they consider an approaching foreign object to present a threat. States can consider how to involve technical experts in developing solutions to threats posed by RPOs, i.e., a dedicated expert panel or via the Expert Group on SSA in COPUOS.
- States can prepare concrete proposals, unilaterally and with partners, for space threat reduction measures that they support, for example, declaring that a State will not conduct unauthorised rendezvous with foreign objects. For this, cross-government consultations will be essential.
- States can communicate an updated understanding of PAROS, informed by space sustainability.
- States and non-governmental experts can convene further track-1.5 groups to develop threat reduction pathways for identified space threats as input for the July 2026 session.

Enhancing the Effectiveness of PAROS Processes

Participants discussed which functions, in addition to negotiating consensus outcomes, UN processes on PAROS could serve for the benefit of Member States and the PAROS goal. As elsewhere, on PAROS, success is often equated with the adoption of outcome documents by consensus, though this has been rarely achieved, including because of tense relations between the space powers, competing approaches to PAROS, and an emphasis on unanimity. The workshop examined how our understanding of success and the functions of PAROS processes could be expanded to ensure that States 'get the most' out of their important meetings.

Consensus vs. Unanimity

Participants heard that PAROS processes would benefit from a focus on consensus, not unanimity. While unanimity is an outcome, consensus is a process. Unanimity implies that an outcome can only come about if all agree to it. Consensus means that all States can make their views heard and that the outcome reflects them fairly. Consensus is about achieving procedural justice, which can support acceptance of outcomes, not because of unanimity on content, but because the process is perceived as fair and transparent. One example is the report of the GGE on Further Practical Measures for PAROS (2023-2024), which was adopted with the minor caveat that "experts did not seek a common view on all elements in this report". In line with a fair representation of the discussions, the report also captures differing views.

Participants heard that rather than applying the high bar of unanimity, States should focus on ensuring a high quality of PAROS processes. This can include setting objectives and milestones for the scheduled discussions, focusing on concrete proposals for space threat reduction measures, diversifying the range of countries engaged on PAROS, or ensuring that meetings make best use of expertise from civil society and industry. Participants underlined that a shared understanding of success and the desired outcomes for the OEWG would enhance its effectiveness. Currently, there is also no concrete idea of the form or focus of the OEWG's outcome. Given the open wording in the establishing resolution, States have flexibility to imagine different configurations.

It was stressed that success should also be judged by whether States implemented their recommendations. This speaks to a larger deficit; few if any transparency and confidence-building measures (TCBMs) have been actualised in national regulations or operations, despite enjoying broad support, for example, in the 2013 report of the GGE on Transparency and Confidence-Building Measures in Outer Space Activities. A concrete TCBM that participants felt would strengthen PAROS processes is information sharing on national space laws and policies as well as information on how States developing counter-space capabilities intend to deploy them with restraint.

Capacity-Building and Regional Dialogue

A strong focus of the discussions was on the benefits of capacity-building and regional dialogue, including in Global South countries. Due to resource limitations, capital-based officials and experts from many Global South countries cannot participate in sessions hosted in Geneva or New York. Participants noted the palpable negative effect this has on substantive discussions. The workshop explored regional meetings as a way to address this. States and NGOs could collaborate to convene regional meetings with capital-based officials in the Global South and experts on space law and technology. Participants stressed that these meetings would both enhance knowledge among officials crafting space policy and facilitate dialogue.

Regional meetings could strengthen mutual understanding of views on space security and help develop joint positions and initiatives to take forward in PAROS processes. This could be a natural continuation of the practice of joint statements by some regions in PAROS processes, which participants said supports convergence and time efficiency during sessions. It was suggested to hold one meeting ahead of the July 2026 session, developing shared expectations, positions, and proposals to feed into the OEWG, and one meeting after the session to ensure continuity of these ideas and their further exploration in capitals. An example of regional capacity-building on PAROS are meetings convened in Oceania by Australia and Singapore, with expert input.

Providing capacity-building to capital-based officials, in turn, benefits PAROS processes. Participants heard one example, in which capacity-building for capital-based officials opened the government's view on space security and allowed support for a wider variety of proposals. This illustrates the situation in other governments, which may not yet have detailed positions on space security amid competing priorities. Capacity-building by NGOs is a crucial resource to support these governments in developing well-informed approaches to PAROS.

Participants noted the lack of dedicated legal and technical assistance for space security efforts as a key deficit in contrast to COPUOS, which is supported by UNOOSA. With financial support from States, NGOs can fill this gap. A particular contribution for NGOs could be to study how States with differing spacefaring capabilities, space governance structures, and in different regions have formulated their threat perceptions and identified rules, norms, and principles for space security that they could support. This practical knowledge can support other States in completing the same processes. The VCDNP has conducted similar studies on the adoption of nuclear safeguards and nuclear security instruments by different countries.

Pursuing Outcomes Flexibly

While the default for outcomes of PAROS processes is a consensus-based report, participants supported flexibility on the form and channels through which progress may be achieved. They suggested alternatives, such as a joint declaration by the OEWG, setting out basic principles and commitments. This could serve as a lasting reference document, similar to the P5 Statement on the use of nuclear weapons from January 2022. States could also pursue UN General Assembly resolutions based on discussions in the OEWG to advance proposals for norms, rules, and standards for conduct in space that enjoy broad support.

Other ideas focused on keeping a record of substantive proposals to inform future work, in case a report is not adopted. For example, OEWG participants can submit substantive proposals as working papers. The OEWG Chair(s) can also provide annual updates on the OEWG at First Committee meetings. Participants felt strongly that sharing information on the OEWG's work only at the end of its four-year mandate would be reductive. Another idea was to organise dialogue meetings during First and Fourth Committee meetings.

Coordination between PAROS and COPUOS

A major theme of the workshop was support for more exchange and coordination between Vienna and Geneva to enhance the effectiveness of PAROS processes. The OEWG would benefit from briefings by COPUOS delegates and UNOOSA legal experts on the interpretation of key terms in COPUOS. PAROS processes can build on successes in COPUOS by examining language in guidelines adopted in Vienna for foundations to base space security measures on. The OEWG may also decide that rules and mechanisms on some space threats are better developed in COPUOS and can then be affirmed in Geneva. Another idea was that there could be instructive lessons from a review conference for the Outer Space Treaty, which would, among other things, study the application of security-relevant provisions, e.g., the principles of due regard and avoiding harmful contamination. For all these proposals, better coordination between Vienna and Geneva is essential.

Expert Input

Participants considered that PAROS process have featured less input from experts and space industry. Therefore, part of success in PAROS processes could be measures by how much delegates were able to benefit from relevant expertise. In contrast, there are bodies in COPUOS, such as expert groups, with direct participation by technical experts and space industry 'baked in'.

A particular benefit of expert input are updates on advances in space technology, both in counter-space capabilities and tools that could support the PAROS goal, especially verification technologies. Participants heard, for example, that the capability to analyse the characteristics and status of space objects had improved far beyond the possibilities that diplomats were commonly aware of. Without this input from experts and commercial actors, multilateral efforts for space security may leave critical opportunities untapped.

Participants also recalled the practice of an expert briefing ahead of a thematic discussion during the OEWG on Reducing Space Threats as particularly beneficial. This allowed delegates to better understand complex issues and consider new ideas at the most relevant point in time. However, it was noted that the two-track approach in the OEWG would make it difficult to agree to briefings that would take up time for deliberations on either track. Participants discussed some of the following options for allowing OEWG delegates to benefit more from expert and industry input:

- **Experts can deliver briefings ahead of substantive discussions, while ensuring that expert briefings are equally distributed across both 'tracks'.** Alternatively, expert briefings could be delivered in one go at the start of each week-long session, followed by intergovernmental deliberations.
- **Experts can serve as advisors on OEWG delegations.** This is a common practice across many UN forums and could ensure that technical and space policy expertise is readily available in the room.
- **States, experts, and industry can co-organise side events during the OEWG.** These events can be used to share information about national space activities, launch space threat reduction initiatives, promote policy recommendations, monitor evolving space threats, etc. Especially during lunch hours, side events are a common feature across UN forums and provide the benefits of expert input without any changes to the schedule of intergovernmental discussions.

Actions at and ahead of the July 2026 Session of the OEWG

- States can use the intersessional period to arrive at a clear understanding of their concrete desired outcomes of the OEWG and milestones for the remaining sessions.
- States and NGOs can organise regional meetings between space policy officials in the Global South and experts on space law and technology. These can be opportunities for capacity-building, better mutual understanding, and regional convergence on positions and joint initiatives for space threat reduction. Such meetings can help to ensure that resource limitations do not prevent capital-based input from Global South countries from being heard in Geneva and New York.
- States can include experts in their delegations to enrich OEWG discussions with the technical and policy expertise that COPUOS benefits from.
- States, NGOs, and space industry can organise side events during OEWG sessions to share relevant information and new ideas without reducing the time for intergovernmental talks.
- States can invite expert briefings ahead of thematic discussions to support diplomats in having better-informed discussions, splitting briefings equally between the two 'tracks'.
- States can invite COPUOS delegates and UNOOSA experts to brief the OEWG on the understanding of PAROS-relevant terms and concepts in Vienna, for example, the principle of due regard in the Outer Space Treaty. States can invite a briefing on current practices in space object registration to the July 2026 session to help them explore a potential norm on providing detailed information when registering objects with UNOOSA.
- States can invite a briefing by the Chair of the Expert Group on Space Situational Awareness on discussions in COPUOS that are relevant to regulating RPOs to the July 2026 session.
- Each action requires a 'champion' from a national delegation to be driven forward. States can coordinate on how to share the burden of carrying different initiatives.

The workshop also explored how action in three priority areas can advance the goals of reducing identified space threats and enhancing the effectiveness of PAROS processes. Key outcomes of those discussions are summarised below.

Boosting Global South Agency to Shape Space Security

- **Championing sustainability:** Despite their diversity, Global South countries share an interest in preserving free and equal access to space for scientific, economic, and humanitarian purposes. Participants heard that many base their engagement with PAROS on the goal of keeping space secure for the space-based services their growing economies depend on. Their interest also stems from the disproportionate effects they would suffer from conflict in space because most have no counter-space capabilities and less redundancy in satellites. In short, Global South countries connect PAROS to development, championing a security approach that is largely informed by space sustainability and corresponds to the new threats emerging from today's space environment. It was emphasised that Global South countries reject a siloed approach to space governance. PAROS processes would benefit from closer alignment with the Global South perspective.
- **Honest brokers and accountability:** Because of Global South countries' emphasis on equality and sustainability, they can act as influential honest brokers between the space powers, as shown in the creation of the current OEWG through the 'Core Group'. This is crucial for preventing backsliding into old patterns of competition between approaches to PAROS. Participants also considered that Global South countries could assume an accountability role as some have done lobbying nuclear-weapon States to increase transparency and deliver on their disarmament commitments. On space security, this could aim at information sharing on counter-space capabilities. However, participants also noted ramifications for relations with the space powers and that the responsibility to push for progress must not only be with the Global South.
- **Space as a global commons:** Participants heard that Global South countries are interested in maintaining space as a global commons, similar to the seas. States should explore the legal infrastructure around the global commons and make concrete proposals for space security rules and mechanisms informed by this.
- **Falling space debris and SSA:** Countries around the equator face a national security threat from falling space debris. Participants heard that 13 Global South countries have highlighted this threat in PAROS processes because, as this issue shows, space security and sustainability are connected. Space debris mitigation offers an opportunity to approach an identified space threat in an integrated way, benefiting from space debris mitigation efforts in COPUOS that can inform further commitments via PAROS processes. Discussions highlighted expanded access to space situational awareness data as another area for integrated action that can enhance space safety, transparency of space activities, and verification of security commitments.
- **Engagement and capacity-building:** Participants applauded the greater involvement of Global South countries in PAROS processes in recent years as progress because a future space security regime can only be successful if carried by a broad international majority. However, while formal participation has improved, Global South countries still make far fewer written and verbal contributions, underlining the need for efforts by States and NGOs to provide more capacity-building, including through regional meetings (see above).

Learning from Successes in COPUOS

- **Breaking down the larger goal:** The default in space security has often been to find one comprehensive solution, for example, a singular treaty. Consequently, the scope of work in PAROS bodies has been wide, as in the current OEWG, tasked to "submit recommendations on the prevention of an arms race in outer space in all its aspects". In contrast, COPUOS establishes working groups to elaborate solutions for specific issues in space safety and sustainability, making incremental but tangible progress towards these objectives. This approach should inspire the OEWG to focus on concrete and effective measures to tackle identified space threats, rather than discussing all aspects of space security at a surface level. A key suggestion was to create a group of technical experts to identify technological solutions for verification challenges in space.
- **Allowing sufficient time:** Prior to the current OEWG, most PAROS processes had a duration of one to two years and only a handful of sessions. In contrast, COPUOS bodies often exist for many years, allowing them to complete the detail-oriented work necessary to develop measures with operational detail. Future PAROS bodies should be given adequate time to negotiate effective solutions.

- **Expert and industry input:** Some PAROS bodies have been mostly attended by diplomats and defence officials, with limited civil society input and marginal industry participation. COPUOS bodies benefit from regular input from technical experts and industry. This contributes to the technical, operational focus of COPUOS, which is seen as a strength that has allowed Vienna to continue multilateral space governance despite geopolitical tensions, for example, in the Working Group on the Use of Nuclear Power Sources in Outer Space. States have many options for enhancing input from experts and industry to the OEWG (see above). Geneva diplomats can also learn from their counterparts in the COPUOS Scientific and Technical Subcommittee about further options for engaging with experts and industry.
- **Building on language from COPUOS:** Space safety and sustainability instruments adopted by COPUOS contain provisions that offer norms and principles on space security. For example, the Long-Term Sustainability (LTS) Guidelines contain agreed language on collision avoidance, avoiding harmful interference, crisis communication, transparency through registration practices, etc. The OEWG should build concrete standards for space activities on this language to avoid duplication of efforts.
- **Norms, principles, and guidelines work:** Since the 1980s, COPUOS has focused on politically binding principles, such as the five principles of space law, and guidelines, including the 2019 LTS Guidelines and the 2007 Space Debris Mitigation Guidelines. PAROS processes often hear concerns that norms cannot effectively regulate State behaviour. In contrast, norms-based space governance has been an accepted, successful approach in COPUOS that even critics of a norms-based approach to space security engage in. The work in COPUOS shows that adopted guidelines are considered the common standard, with frequent references to them in statements and discussions. As guidelines have been translated into national law, they are given further weight. COPUOS also demonstrates the adaptability that norms offer; States are currently exploring an update to the LTS Guidelines to reflect recent developments in space. States in the OEWG can take assurance from this that norms and principles are a valid approach to space governance.
- **3S integration is the norm:** Examples from different countries illustrate that integrated space governance across space safety, security, and sustainability is the norm, not the exception. Several States combine security and sustainability objectives in the same policy, or link their long-term access to space technologies to the prevention of conflict in space. Based on this integrated approach, participants were interested in using the Registration Convention as a vehicle to promote transparency in space operations, and in developing a norm for providing detailed information when registering space objects with UNOOSA as practices currently differ widely between registering States.

Benefiting from Industry Input

- **Shaping standards for conduct in space:** Given the dominant role of commercial objects in space today, their behaviour significantly influences expectations of what constitutes good practices in space operations. Therefore, involving industry in space governance not only provides valuable input from an operational perspective, but is also key for creating rules and mechanisms that are universally applied. For example, space industry supported the development of Japanese regulations that define responsible behaviour in on-orbit servicing, including RPOs. Industry associations have also developed numerous guidelines that offer useful material for States to design rules, norms, and standards for space security.
- **Promoting TCBM implementation:** Industry can even promote States' implementation of TCBMs. Participants heard about one company that identified numerous TCBMs, including those adopted by PAROS bodies, and implemented most of them at no or a low cost, for example, publishing a point of contact for crisis communication. This illustrates that many space threat reduction measures are actionable; States should pursue their implementation with the same pragmatism as some commercial actors are modelling.
- **EU SST as a role model:** In the EU Space Surveillance and Tracking Partnership, government agencies collaborate with industry to establish a comprehensive regional SSA capability. Public funding supports the construction of additional observation hardware and the generated data benefits public and private satellite operators. This collaboration also helps to bridge differences in data collection and sharing. Participants noted that this could be an attractive model for other regions to crowdsource a reliable regional SSA capability. In turn, this expanded access to SSA data can support monitoring and verification for PAROS.

VCDNP

Vienna Center for Disarmament and Non-Proliferation

The VCDNP is an international non-governmental organisation that promotes peace and security by conducting research, facilitating dialogue, and building capacity on nuclear non-proliferation and disarmament.

vcdnp.org

@VCDNP

info@vcdnp.org

VCDNP