CHAPTER 7

LEGAL FOUNDATIONS AND ESSENTIAL TREATY ELEMENTS FOR A SYSTEM OF COMMON SECURITY IN OUTER SPACE

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INTRODUCTION

In this paper, I present the concept and the essential elements for a treaty of common (cooperative) security in outer space. Both are based on extensive research, which I published in June 2003 in Germany in a monograph entitled *Common Security in Outer Space and International Law*; the United Nations Institute for Disarmament Research has published an English version. I began my research in 1983 as an intern in the Department for Disarmament Affairs when US President Ronald Reagan made his Strategic Defense Initiative (SDI) speech.

There is an urgent need for a comprehensive space security order that starts with a space arms control regime and also encompasses positive elements of cooperative space security such as confidence-building measures, rules of the road, international verification as well as institutional structures. The need for such a preventive arms control regime cannot be overemphasized. As Jonathan Dean, former ambassador and adviser on international security issues for the Union of Concerned Scientists, puts it in his endorsement of my forthcoming book:

> … humanity is on the verge of an irreversible shift to active, destructive, military use of outer space, a global revolution in human security which will almost certainly surpass in significance the introduction of nuclear weapons.

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FOUNDATIONS OF COMMON SECURITY IN OUTER SPACE (CSO)

INTERNATIONAL LAW: OUTER SPACE TREATY (OST) AND UNITED NATIONS GENERAL ASSEMBLY RESOLUTIONS ON THE PREVENTION OF AN ARMS RACE IN OUTER SPACE (PAROS)

Both the OST and PAROS contain several essential principles that could serve as the foundation for a CSO treaty.

Use of outer space exclusively for peaceful purposes and in the common interest of all states and mankind as a whole

Outer space is a common territory beyond national jurisdiction, the global commons *par excellence*. In addition, the OST provides for cooperation and consultation principles. Hence, security cannot be pursued in the interest of one state or a group of states. Instead, it must be common or cooperative security.

The legal order for outer space that exists today was developed in close cooperation with the international community's efforts to prevent the space powers from entering into an arms race in space. From the beginning of the space age, the international community raised the claim that the exploration and use of outer space shall be used exclusively for peaceful purposes in the interest, and for the benefit, of mankind as a whole. The United States and the Soviet Union introduced the principle of peaceful use in proposals aimed toward developing a legal order that would limit the military use of outer space. In its first memorandum devoted to arms control in outer space to the General Assembly in 1957, the United States proposed that the United Nations should establish a multilateral control system with "international inspection and participation" as "the first step toward the objective of assuring that future developments in outer space would be devoted exclusively for peaceful and scientific purposes".

The obligation to prevent the weaponization of space

The deployment of space weapons would clearly not be in the "interest of all states" and would thus violate Article I of the OST. While the international community has accepted passive military uses of outer space,

such as reconnaissance and communication satellites, it clearly opposes the transgression of the threshold toward active uses of outer space of a destructive nature. Since 1981, the annual resolutions of the General Assembly regarding outer space and the prevention of an arms race in outer space have repeatedly requested that the nuclear powers actively participate in the prevention of an arms race in outer space "with a view to reaching agreement" as well as to restart or speed up parallel bilateral arms control negotiations concerning outer space and refrain from any contrary activities.

At the 59th First Committee meeting of the United Nations in 2004, Sri Lanka declared the PAROS resolution, in substance, to be customary international law. In addition, the General Assembly in several PAROS resolutions stated explicitly that the Nuclear Non-Proliferation Treaty (NPT) disarmament obligation also applies to outer space. As the International Court of Justice has stated in its Advisory Opinion in 1996, there is an obligation to conclude and not only to negotiate a disarmament agreement.

THE CONCEPT OF COMMON SECURITY ("GEMEINSAME SICHERHEIT"– EGON BAHR/HANS DIETER LUTZ)/COOPERATIVE SECURITY (BROOKINGS INSTITUTION)

The origins of the concept of "common security"

Given the capability of mutually assured destruction, security can no longer be achieved against, but rather with, opponents. In this sense, common security is already a reality. The recognition that in the atomic era peace and security can only be guaranteed cooperatively, and that war as the continuation of politics by other means has been replaced by the absolute "futility of war" lies at the heart of the concept of "common" or cooperative security. In his speech before the United Nations First Special Session on Disarmament in 1978, German Chancellor Helmut Schmidt marked the starting point of the development of common security by introducing the notion of "security partnership". The concept received international recognition with the Palme Commission's report in 1982 on common security stating: "Security in the nuclear age is common security". The report was welcomed in the same year through Resolution 37/99 of the General Assembly, which emphasized the central role of the United Nations "in furthering common security", and mandated the Disarmament

Commission to examine the recommendations with a view to its efficient implementation.

In a similar vein, German Foreign Minister Joschka Fischer spoke before the General Assembly on 14 September 2002 under the *Leitmotiv* of the need to establish a "system of global co-operative security", declaring it to be a "central political task of the twenty-first century".

The structural elements of "common security"

The main elements of "common security" were developed by Hans Dieter Lutz and Egon Bahr, former minister of state of the German Foreign Ministry, as well by the Brookings Institution under the notion of "cooperative security" in the following five categories:

1. Cooperative de-nuclearization

The defensive reorientation of military–strategic forces allows for the drastic reduction and eventual abolishment of nuclear weapons. Thus, the concept contributes to the fulfilment of the nuclear powers' disarmament obligation according to Article VI of the NPT, as reaffirmed by the International Court of Justice.

2. Structural non-provocation and defensive configurations

Structural non-provocation implies that military forces should be organized and equipped in a way that would not permit a successful military attack. Cooperative de-nuclearization is strengthened in a mutually reinforcing way by establishing force postures that are structurally incapable of supporting a nuclear attack.

3. Internationalization of the response to an aggression

While the restructuring of the military capabilities toward an exclusively defensive configuration, buttressed by arms control regulations, would offer a maximum degree of international security, it could not be excluded that in circumventing the agreed rules a particular state would secretly develop an offensive capability. Therefore, as part of a reassurance system, the right to self-defence in the framework of a collective security system remains necessary.

4. Restraints on military investment and proliferation

5. Transparency and confidence-building measures

A central part of common security, which has to be understood as a process, is the multilateralization and possible institutionalization of transparency and confidence-building measures.

A MULTILATERAL AGREEMENT FOR A CSO TREATY

PRECURSORS

The proposal for a CSO treaty builds on the numerous treaty proposals of Member States, the work of the PAROS Ad Hoc Committee (before it was discontinued) and the UN group of government experts in 1990 (Argentina, Brazil, Bulgaria, Canada, China, Egypt, France, India, Pakistan, the Russian Federation, the United States and Zimbabwe) on confidence building in outer space, as well as on the important academic and non-governmental organization contributions regarding PAROS.

The most comprehensive suggestions for an encompassing security order to safeguard the peaceful uses of outer space come from the group of government experts mandated by the General Assembly to work out proposals for confidence-building measures in outer space. In its report, the group suggests, inter alia, the following measures to be agreed by the Conference on Disarmament (CD) and the Committee on the Peaceful Uses of Outer Space:

- transparency measures concerning dual-use technology to secure its use for exclusively peaceful purposes;
- multilateral use of satellite remote sensing in the interest of the international community, as well as the creation of an international early warning system concerning accidents in outer space;
- "rules of the road" including safety margins between space objects;
- use of space technology for preventive diplomacy, crisis management and peaceful settlement of conflicts; and
- establishment of an International Satellite Monitoring Agency, an International Space Monitoring Agency and a world space organization to promote confidence building and cooperation in outer space in such

issues as remote sensing, environmental monitoring, crisis prevention and forecasts of natural catastrophes.

MULTILATERAL AGREEMENT ON A CSO TREATY AS A SPECIALIZED AGREEMENT TO IMPLEMENT THE OST IN THE FIELD OF SECURITY

Principles of a CSO treaty

Taking into account the recommendations of the report of the Palme Commission on common security and the report of the United Nations group of government experts on confidence-building measures in outer space, a CSO treaty should contain the following principles:

1. Common/cooperative security

A CSO treaty is based on the concept of "common security" in outer space. It implements the obligation of the OST on the use of outer space in the area of security in the interest of mankind. At the same time, it buttresses the necessary nuclear strategic transition toward mutually assured security in an adequate multilateral framework, which the nuclear powers have to set in place in order to fulfil their disarmament obligation under Article VI of the NPT. The concept of common security must be complemented by specific strategic elements going beyond the classic confidence-building measures. In particular, the multilateralization of the American–Russian "cooperative threat reduction" programmes would lay the groundwork for a global system of cooperative threat reduction and an effective non-proliferation regime.

2. Delimitation between general provisions on cooperative security and specific nuclear–strategic questions

It is necessary to distinguish between general provisions on cooperative security and specific issues of nuclear strategy, where the main responsibility for filling the cooperative security structures lies undoubtedly with the three major nuclear powers and potential opponents: China, the Russian Federation and the United States. Therefore, with regard to a "new strategic framework" and a "cooperative strategic transition", it would be difficult to regulate these issues in detail in a multilateral CSO treaty. Such a far-fledged multilateralization of nuclear–strategic questions would hardly be acceptable to the nuclear powers. As a beginning, it should suffice to provide the general principles and procedures regarding the necessary

interface of these issues with the general security interests of the international community, including a flexible institutional arrangement, for example, limited membership in a standing consultative committee.

3. Transparency, confidence building and strategic confidence measures ("strategic reassurance measures")

A CSO treaty is based on the principles of transparency and confidence building in the use of common space with the security interests of mankind as a whole. It thus complements existing confidence-building provisions in the OST and the Registration Convention in particular by introducing a "pre-launch registration" and on-site inspection of launch sites as well as new strategic confidence-building measures such as "strategic reassurance measures" and further cooperative security elements for outer space in the form of immunity and traffic rules for satellites.

4. Structurally non-offensive force configurations, cooperative strategic transition and nuclear disarmament

Structurally non-offensive force configurations, whereby armed forces are organized and equipped in such a way that does not permit military offensive actions in outer space, means that no active military uses of space could be permitted. A structurally non-offensive force configuration in outer space is thus best achieved by an explicit prohibition of active military uses of a destructive nature, that is, a space weapons ban. It would also contribute to structurally non-defensive force configurations and nuclear disarmament on Earth by facilitating the effort to overcome the strategy of nuclear deterrence.

A CSO treaty creates the necessary conditions for a cooperative nuclear strategic transition. The strategic change would thus be implemented in accordance with the clause of the OST that affirms the creation of common security for all states in the interest of mankind and guarantees at the same time that outer space will remain free of weapons. By limiting the number of intercontinental ballistic missiles in accordance with Article VI of the NPT, the risk of unauthorized and accidental attacks would be considerably restrained, and thus the necessity of space-based defence systems further reduced. The treaty, therefore, leads in the long term to complete nuclear disarmament, to be monitored by cooperative verification including reliable on-site inspections in particular.

5. Preventive arms control through a ban on active military uses of outer space

According to an expert report submitted to the German Bundestag, the creation of cooperative structures and political cooperation alone would not suffice to prevent an arms race if they were not complemented by preventive arms control measures for technological development, which are of particular importance regarding space technology. The development of space weapons would trigger both a quantitative and especially a qualitative arms race. Completely new and unforeseeable arms control and non-proliferation problems would arise with the continuous advancement of new technologies and applied physics principles, which preventive arms control could effectively shut off. By creating legal clarity as to the prohibition of the development, production and deployment of space weapons, the treaty would prevent a new arms spiral in both variants in keeping with the objectives of preventive arms control. Although a ban of development and production of space weapons might be too ambitious, an explicit prohibition of the deployment of space weapons in a multilateral treaty would be very effective in slowing down, if not stopping altogether, the development of space weapons.

6. Principle of equality

Respecting the principle of equal security according to the UN Charter (Article 2, Paragraph 1) would mean more than merely adhering to a formal legal aspect of a CSO treaty. The main purpose of the treaty would be to prevent the sharpening of inequalities in security, which would arise by a transgression to active military uses of outer space, by setting up a system of common, that is, equal security.

Main elements of a CSO treaty

Most of the essential elements of a cooperative security system in outer space have already been proposed in one form or another to the CD or in bilateral American–Soviet/Russian arms control treaties. Therefore, the main task ahead is to combine the individual elements in a mutually reinforcing manner to build a coherent cooperative security system. In particular, the principles of a CSO have to be developed in terms of both substance and procedure with regard to the destruction of existing anti-satellite (ASAT) capabilities/arsenals, the protection of civil space objects and passive military uses of a non-destructive nature and monitoring and verification as mechanisms of implementation control.

State parties should commit to being guided in all of their military space activities by the principles of transparency and confidence building as proposed by the UN group of government experts. A CSO treaty would also facilitate strengthening and possibly extending the various control regimes for missile technologies and weapons of mass destruction, including regulating the transfer of sensitive technologies by, inter alia, enhancing and extending the current Missile Technology Control Regime and the International Code of Conduct against the Ballistic Missile Proliferation (ICOC). The use of multilateral satellite monitoring could encourage those states that might acquire ballistic missile technology to join such control regimes. An incentive to do so would be the prospect of possible access to space technology for civil space activities offered under the common security regime.

State parties should commit to conducting space activities in a way that is compatible with the principle of structurally non-provocative and non-offensive force configurations. A consultative committee could be set up to further develop procedural details. In addition, the state parties should commit to conforming all military activities in outer space to the objectives of non-proliferation and disarmament according to Article VI of the NPT.

Under the cooperative framework, the development of a limited (land- and air-based) National Missile Defense (NMD) system to combat ballistic missiles in the boost phase ("boost-phase NMD") that would renounce the deployment of any space weapons could be considered, ideally under international control. The tasks of such a system should be enumerated and thus limited to protecting against unauthorized and accidental missile launches and against missile attacks in violation of the non-proliferation regime for ballistic missile technology and weapons of mass destruction. The implementation of the system would have to be secured by a multilateral monitoring and verification mechanism. In addition, a standing consultative committee should work out the details of such a consensual NMD deployment.

A central provision of a CSO treaty should be the explicit prohibition of active and destructive military uses in outer space in order to achieve the necessary legal clarity with regard to the implementation of the principle of the peaceful uses of outer space. This principle would thus be confirmed and specified through a ban on space weapons, namely by explicitly banning space-based ASAT and Ballistic Missile Defense (BMD) weapons.

Canada has rightly stated that without a general space weapons ban, the prohibition of the use of force would also protect the deployment of space weapons. Such an outcome would run counter to the community purpose of the peaceful use of the common space.

Concerning a prohibition of space weapons, in particular a ban on space-based ASAT and BMD systems, five issues need to be tackled:

1. Definition: the issue of so-called "non-dedicated systems", that is, the delimitation between prohibited ASAT systems from permitted civil space objects that could be misused, such as through collision or docking, in an ASAT function.
2. Verification: especially given the possible residual ASAT capability of "non-dedicated systems", an effective international verification is necessary including of missile launch pads *in situ*.
3. Applicability of the prohibition in the case of conflict.
4. Verifiable destruction of existing ASAT capabilities, which should also be complemented by limiting the number of military satellite launches.
5. Immunity of satellites: an explicit prohibition of ASATs should also ban non-space-based ASAT systems and thus guarantee the complete protection of all peaceful satellites.

A CSO treaty stipulation prohibiting space weapons could read as follows:

> The state parties commit themselves to refraining from any deployment or use of any object in space or on Earth *that was designed or modified specifically for the purpose to inflict permanent physical damage on any other object through the projection of mass or energy respectively*. In particular, the deployment of BMD and ASAT systems in outer space are prohibited.

Such a prohibition of active military uses of outer space corresponds to the requirements of a cooperative approach on the NMD issue. Thus, numerous American studies have shown that China and the Russian Federation would view a space-based NMD system to intercept warheads in mid-course in outer space as destabilizing rather than cooperative. An explicit prohibition of space-based BMD systems, with the exception of non-destructive sensor satellites, is indispensable to not only safeguard the principle of the peaceful uses of outer space as a prerequisite for a CSO, but

also to permit the necessary cooperative approach with regard to the nuclear–strategic and arms control questions raised by the NMD.

Existing ASAT systems have the capability to destroy satellites only in near-Earth orbit. The strategically important satellites used for early warning, navigation and precise guidance systems are stationed in the geosynchronous or in other high-Earth orbits, and are thus considered not yet at risk. However, near-Earth orbit satellites fulfil important functions in crisis situations such as photo reconnaissance, ocean surveillance and electronic intelligence. Furthermore, as in the Gulf War, they deliver real-time intelligence to all military operations. In a crisis situation, the fear that an opponent may destroy one's satellites can provoke an "irresistible temptation ... to remove such satellites from the sky". It is, therefore, necessary to encourage the destruction of existing land- and air-based ASAT systems not only as a matter of congruence with the prohibition of space-based ASAT systems, but also to safeguard the security in outer space in crisis situations.

The creation of an immunity regime for civil space objects and satellites with passive military tasks of a non-destructive nature would be an important part of the confidence-building measures. By determining the range of the satellite uses protected under the immunity regime, the necessary legal clarity as to the admissibility of these uses would be achieved. Some believe that the prohibition of the use of force would be sufficient to protect existing satellite uses. This, however, does not take into account the fact that a number of states have voiced doubts as to the admissibility of even the existing passive military uses. This concerns, in particular, the use of satellites as precise guidance systems for nuclear weapons. An immunity regime is all the more necessary as the dual-use capabilities of most satellites may cause civil space objects to become targets of interference or attacks by ASAT weapons in a crisis situation.

An immunity regime for satellites, which would be specified by "rules of the road" in the framework of a "space code of conduct", would be an important contribution to "traffic security" in the near-Earth and geostationary orbit. An important element of such traffic rules would be to respect certain security distances as well as provisions to avoid collisions, which would also become necessary for environmental protection against increasing space debris.

A CSO treaty would contain appropriate mechanisms for implementation control through multilateral monitoring and verification of the protection regime and the ban on space weapons, including the immunity rules for space objects used for peaceful purposes. By having access to satellite reconnaissance, such a space weapons agreement could be reliably verified. The range of possible verification measures spans from the classic "national technical means" (that is, national military reconnaissance satellites) to both "passive cooperative" and "active cooperative" verification such as on-site-inspections in the form of "continuous monitoring", "invitational inspections" or "challenge-inspection" (anytime–anywhere inspection).

In addition to a "space-to-Earth-verification", outer space has a peculiar requirement for "ground-to-space" and "space-to-space" verification methods. To monitor the proposed protection regime for civil space objects such as safety margins, a "space-to-space" verification seems indispensable. "Space-to-space" verification could also be used to monitor a space weapons ban, and for this purpose could be complemented by inspections of missile launch pads *in situ*. The satellites used for this type of verification could, according to Bhupendra Jasani, a renowned military and arms control expert, ideally form "multilateral technical means". In the meantime, civil and commercial satellites have also reached a technical stage capable of supporting verification.

The use of satellites for international verification, whether through an international verification agency's satellites or by having verification data and imagery of national satellites at its disposal, would pave the way for general international verification for bilateral and multilateral arms control, non-proliferation and disarmament treaties. The monitoring and verification mechanism of a CSO treaty could thus also be used for monitoring the compliance of further arms control and non-proliferation treaties, in particular the Comprehensive Nuclear-Test-Ban Treaty and the NPT as well as for crisis prevention purposes.

Appropriate international fora for negotiating the agreement

The issue of military uses of outer space has taken on significance for all future space activities. Active military uses of outer space would have considerable repercussions on the safety of civil and particularly commercial uses of space. Furthermore, the impact of such a transgression

on international security in terms of nuclear strategy, the relationship between defensive and offensive weapons and the entire bilateral and multilateral arms control, non-proliferation and disarmament regimes, makes it necessary to comprehensively treat the issue from all angles. Therefore, the convocation of a separate international state conference under the aegis of the United Nations to negotiate a CSO treaty would seem to be appropriate. Such a multilateral conference of plenipotentiary state representatives could potentially break the impasse at the CD by negotiating the necessarily comprehensive treaty with sufficient authority to offer new advantages of a comprehensive security order that would be, in particular, beneficial to the space powers with regard to their civil space uses. This agreement should, as with the OST and the specialized space agreements, be approved by the General Assembly for its adoption by the international community. National reconnaissance offices and the numerous international scientific organizations dealing with space and disarmament issues should be included at an early stage in the process.

On 5 February 2001, Canada reaffirmed its commitment to convene a review conference on the OST with the objective to negotiate an additional protocol regarding the military use of outer space. The proposal for a CSO treaty, as an implementation agreement of the OST, could be tabled at such a conference.

Common security in outer space as a means to overcome nuclear deterrence

The nuclear–strategic objective of common security is to replace the deterrence strategy of "mutual assured destruction" by "mutual assured security". Thus, it matches President Reagan's goals pursued under SDI, and the goals that are currently linked to the introduction of strategic defence systems in the framework of a "strategic transition". A US national defence against ballistic missile attacks could render nuclear weapons obsolete, thereby causing nuclear offensive weapons to become superfluous. The main difference, however, is that the concept of "common security" attempts to achieve this by cooperation and structural change, whereas the proponents of a space-based missile defence view this as the result of technological developments in the form of new defensive systems in outer space. Yet, the scientific consensus is quite clear: there can be no absolute security by technical means.

Overcoming deterrence through a new relationship between offensive and defensive systems and eventually abolition, however, is only possible in a cooperative environment. The recognition by the nuclear powers of the necessity to cooperate in order to achieve security lies at the heart of the concept of common security; its realization would renounce new armaments in outer space and on Earth.

The concept thus constitutes an ideal basis for a cooperative nuclear strategic transition that would allow the fulfilment of the nuclear disarmament obligations according to Article VI of the NPT, and that would free mankind of the scourge of nuclear terror. Common security opens the perspective for genuine disarmament by establishing non-provocative structures on all sides through defensive configurations. In the words of the late Hans Dieter Lutz:

> Common security requires the replacement of the deterrence strategy by a strategy of prevention renouncing any measures of preemption and retaliation (in particular with weapons of mass destruction).

A strategic transition toward cooperation is also a prerequisite of an active non-proliferation policy. Developing a multilateral CSO treaty could facilitate the cooperative transition from Mutual Assured Destruction to Cooperative Threat Reduction programmes.

US Senator Richard Lugar, one of the co-authors of the cooperative threat reduction programmes, rightly demands a globalization of them. This is only possible in an adequate multilateral framework. Similarly, Europe has strengthened efforts to make the ICOC multilateral by including a greater number of states with missile technology, in particular, China, India, Iran, Israel and Pakistan. An extension of these programmes alone, however, would not suffice to overcome nuclear deterrence since all measures need to be additionally embedded in a comprehensive system of common security.

The interest of mankind clause under international space law demands that common security interests take precedence over national or bilateral security interests, thus opening the chance for the international community to overcome nuclear deterrence by requiring compliance with the principle of cooperation and the nuclear disarmament obligations under Article VI of the NPT, which also applies to outer space.