



Mechanisms for the Development of International Norms regarding Space Activities

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Executive Summary

The world today is changing rapidly and technological advancements make it highly unpredictable. In this situation, legal order and binding rules are essential for consistency and stability. Hence, hard law norms are of vital importance, particularly in the areas dominated by the development of technology, such as space law.

Following this line of thought, this report analyses legal mechanisms for the creation of hard law norms in the space domain, and beyond. The objective is to examine the various ways of creating normative instruments, which is relevant not only for the space community but for the wider international community as well.

At the beginning of every analytical endeavour, the subject matter must be defined, and in this case that involves a definition of "international law".

International law is a set of binding rules that govern relations and dealings between states. There are three primary sources of international law (hard law): treaties, customary international laws and general principles of law. In the period between the late 1960s and late 1970s five treaties were created that govern the use of outer space. These treaties were the result of careful deliberations and long discussions. However, they could not anticipate all the technological developments and the new legal issues that have come about. So further legal development is required. For this reason, this report makes a comprehensive analysis of different legal mechanism for the creation of hard law norms and evaluates the degree of their possible success, relative also to the achievements of soft law (non-binding) instruments in the space field.

The Cape Town Convention, created by the International Institute for the Unification of Private Law (UNIDROIT), is taken as the point of departure. In line with its purpose, to create uniform private law instruments, UNIDROIT decided to harmonize private asset financing internationally, by adopting the Cape Town Convention. This Convention is an umbrella convention that gave birth to three different protocols that deal in detail with matters specific to Aircraft Equipment, to

Railway Rolling Stock and, of particular relevance, with matters specific to Space Assets. The first part of the report explains how the convention was created, the circumstances surrounding it and why the convention provided for three different protocols rather than regulating everything in one instrument.

The Governing Council of UNIDROIT approved the first draft of the space assets protocol in 2001. This draft was elaborated by a working group composed of representatives from the industrial and financial sectors, the users and operators of space property, as well as representatives from international organisations like the UN, ESA and the International Bar Association. In the following years five sessions were held in Rome, discussing diverse point of views on critical issues. Considerable progress was made in the period from 2009 – 2011 and the final version was adopted at the Berlin Diplomatic Conference in 2012, although industry representatives expressed serious opposition.

So far, only four states have signed the Space Asset Protocol and none has ratified it. The content and the purpose of the Space Asset Protocol were to allow creditors to secure rights in space assets through an international registry. The idea was to make access to credit easier for space actors through this system. However, perceptions of the protocol by industry, governments and academia have varied greatly. Established industry has tended to see only additional administrative, financial and legal burdens, whereas academia and some governments have found this to be a better way of sourcing financing for start-up companies.

There are a several lessons to be learned from the two-step approach of the Cape Town Process. For example, it is crucial to involve experts from industry and other stakeholders in drafting the detailed provisions of the Protocols. Also, industry plays a further, vital, role in terms of pushing governments to ratify – or not! The report contends that these lessons can be as useful for the space law community in the further adoption of hard law norms as for the general international law community. The great advantage of the Cape Town approach of pre-



paring an umbrella convention from which specific-discipline protocols emerge is that the umbrella can contain general norms applicable across the board, leaving detailed regulation pertinent to a specific sector or protocols. Through this, a degree of communality is achieved, which might be helpful in various ways, including consensus finding, whilst flexibility is given to take proper account of sector specific issues.

The second part of the report turns to the existing space treaties and other hard and soft law norms. First, it looks at the history of treaty creation in the space field. From the very beginning the UN has been a key actor in the creation of law in this new area. In 1959, a committee was established within the framework of the UN, with the task of, *inter alia*, elaborating future legal provisions. The work was heavily influenced by the space race and the only two space faring nations then – the U.S. and USSR. Following lengthy negotiations and deliberations, initial progress was made in 1963 when the UN General Assembly adopted a declaration laying down the fundamental space norms. Even though this declaration is not legally binding, it is significant because, for the first time, the international community agreed on basic principles that should govern outer space. Four years later the Outer Space Treaty was created, the *Magna Carta* of space law. Other treaties followed: The Rescue Agreement in 1968, the Liability Convention in 1972, the Registration Convention in 1975 and the Moon Treaty in 1979. The Moon Treaty achieved only a small number of ratifications and, since then, no new treaty has emerged.

Having in mind this outcome, the report examines whether this treaty was the reason why it has been impossible to create new hard law since the seventies. However, this is probably too simplistic a view. The political situation of the 1950s and 60s, with its high degree of political tension between two superpowers, was possibly the catalyst for the creation of the space law treaties of that time. Because of the great mistrust between the two protagonists, and the need to have rules that could be relied on, hard law was probably found to be the only way for effective governance.

However, since the early seventies, when the basic rules were established, many more players have entered the space field making negotiations more difficult and the distrust less monolithic. Peer pressure can be relied on more extensively, and distrust is not so pervasive that hard law is assumed to be necessary in order for community values to be adhered to. And, of course, the five space

treaties do provide a solid foundation for space activities.

Apart from the binding treaties, this report examines the non-binding United Nations General Assembly (UNGA) Resolutions that were adopted with regard to aspects of space - to some extent as proxies for hard law. There are three different features of the non-binding resolutions: 1) quasi-legal rules for specific space aspects, 2) interpretation of existing binding space treaties and 3) strengthening existing space principles.

Furthermore, this report examines other UN bodies and their norm creation methods. The UN initiative to create, through the Conference on Disarmament (CD), binding norms for arms control and disarmament relevant for space, has failed. On the other hand, a different body of the UN, the International Telecommunication Union (ITU), has so far been very successful when it comes to hard law. The ITU is a specialized agency dealing with frequency management. The Agency successfully manages to allocate in an equitable manner the limited natural resource of radio frequencies and to adjust to emerging new issues by adopting new rules. This is of fundamental importance for space activities, since the ITU determines the frequencies that can be used by individual spacecraft – and the associated orbital slots. The ITU convention and associated legal instruments should properly be understood as 'the sixth space treaty'.

Of a completely different nature, but still operationally focused, is the set of provisions governing the International Space Station (ISS). Major space faring nations concluded among themselves the ISS Intergovernmental Agreement, four Memoranda of Understanding and a number of diverse Implementing Agreements. The advantage of the three-tier structure, and the essentially contractual formula, is that it does not necessarily require any amendments to national laws or a ratification process, yet creates a coherent legal regime for a multiplicity of actors.

The International Code of Conduct (ICoC) for Outer Space Activities is intended to be broader based and embodies a different approach. This Code started out as a project by the European Union - with other states only commenting on it. The approach has evolved to become more inclusive with the third version being considered and commented upon by states more generally. However, even if finalized, this Code would only contain non-binding norms. This trend of seeking soft law norms in the space field has become pervasive, as the Inter-Agency Space Debris Coordination Committee (IADC) space debris mit-

igation guidelines demonstrate. The guidelines are not legally binding even though it is in the interest of humanity as a whole to preserve space as a unique natural resource.

In view of the tendency towards weaker normativity this report poses the following question: is soft law all that can be realistically achieved currently – and is soft law enough? Soft law is not one of the formal sources of international law so what role do such instruments have? As the law has lagged behind technological development, a number of “grey areas” concerning the use of outer space have arisen. This report notes that provisions contained in soft law can have various impacts depending on the form they take – resolution, declaration, code, standard etc. Soft law norms may in some cases represent *opinio juris* that may lead to the creation of customary international law when combined with practice. Customary and soft law norms share certain characteristics (e.g. they both do not need to go through a domestic ratification process, and they cost very little or nothing to generate). Moreover, and customary law creation finds its roots in non-binding norms. By their very presence, non-binding norms promote a trend towards the “hardening” of desirable ways of conduct.

When it comes to soft law in relation to space activities there is a complication, as nowadays activities are often undertaken by the private sector and the actions of private sector actors do not *ipso facto* constitute state practice, even if state responsibility is often engaged in a space context. However, private industry behaviour could form an independent legal order in analogy to *lex mercatoria*. *Lex mercatoria* is a standard form of trade arrangements, used internationally by trade communities, and has been argued to constitute a non-traditional sector of law, in the twilight zone between national and international law. So if the space private sector adopts homogenized behaviour, then this continued repetition could transform itself into *lex mercatoria* in the space field. So far, the existence of *lex mercatoria* in regard to space activities has not been confirmed or much discussed.

This very special case apart, it should be recalled that if relevant aspects of soft law are being applied by states generally through national legislation (i.e. as licence requirements) then this would represent enough state practice to create customary international law. However, this report draws attention to two dangers involved in soft law. First, there is a real risk that soft law may downgrade pre-existing hard rules to being just soft, and, second, that soft law is misunderstood as the end of the norm creation pro-

cess even if this is not necessarily so. In other legal areas soft law rules have been only the first step forward, which then have led to a truly binding regime such as, for example, the nuclear Non-Proliferation Treaty. Therefore, states should be encouraged to adopt national space legislation so as to get from soft to hard law, and they should adopt international rules that do not hinder the evolution from non-binding to binding norms.

In the third part of this report, different ways of creating binding regulations in other areas, especially by secondary law creation, are examined. As shown in the earlier sections of this report, multilateral treaties require not only consensus, but also signature and ratification, and as praxis has testified, this has not been an auspicious route in the last thirty years. Therefore, there is a need to look into the systems of institutions such as the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO), the International Atomic Energy Agency (IAEA), the Organisation for the Prohibition of Chemical Weapons (OPCW), and the European Space Agency (ESA) to see how they have succeeded in achieving hard law norms on an international level.

The CTBTO is the international organisation that will be established in Vienna upon the entry into force of the Comprehensive Nuclear Test Ban Treaty (CTBT). For this reason a Preparatory Commission has been established to make the necessary preparations for the implementation of the CTBT. The mechanism used in this field for creating norms is very specific. On one hand there is a hard approach concerning the conditions for the entry into force of the CTBT, which is accompanied by a very flexible way of implementing the CTBT before its official entry into force - by the establishment of a Preparatory Commission. On the other hand, there is a system of Inspection Manuals as a way of creating secondary legal norms for the long term. These Inspection Manuals are used in connection with specific elements, such as those related to the administrative procedures for conducting on-site inspections. By allowing Inspection Manuals to be adopted as secondary law, states parties do not have to go through national ratification processes again.

The IAEA is an international organisation that promotes the peaceful use of nuclear energy and fosters the exchange of scientific and technical information on peaceful uses of atomic energy. Under the IAEA Statute, a special safeguards system has been created to enable the Agency to fulfil its task and assure the peaceful use of atomic energy. In order to operate more efficiently in state territories, the Agency uses Additional Protocols



to implement the safeguards system. The IAEA signs these Additional Protocols with willing states individually and they come into force after the Board of Governors has adopted them by a majority of votes. The template protocol, which is in fact highly normative, was approved by the Board of Governors with a majority vote. States that sign Additional Protocols must amend their domestic nuclear laws and regulations so that they are in conformity with the protocols. Currently, Additional Protocols are in force in 121 States.

The OPCW is an organisation that promotes the Chemical Weapons Convention and tries to eliminate chemical weapons worldwide. In the fight against chemical weapons, law must be in step with technological development, so the OPCW Convention itself foresees amendments. In order to enact amendments, there are two possible procedures: one for administrative and technical changes and changes to the Annex on Chemicals, and one for amendments to "Sections A and C of the Confidentiality Annex and Part X of the Verification Annex which relate exclusively to challenge inspections", the latter being the simpler procedure. The OPCW is thus a paragon of the ability to create 'secondary law' in a practical manner.

On the regional level there is ESA with 22 Member States. At ESA, programmes in which the States participate are divided into mandatory and optional ones. Optional programmes are coordinated by programme directorates and are subject to special decision procedures laid down in special Programme Declarations and associated Implementing Rules. Most importantly, there is no need for ratification for any State that decides to participate in a programme, and Declarations and Implementing Rules will often allow the creation of further binding rules without even the need for unanimity, let alone ratification.

All these organisations show that it is possible to create secondary norms in many different areas, including space. They are vivid examples of how the creation of secondary provisions is less complicated when there is no need for ratification. Without this approach, many international organisations would not be able to operate. There appears to be no reason why this method could not be applied more widely in the space sector, as well as more generally in international law. The key is to create the right frame and the right boundaries for the exercise of secondary norm creation.

The report concludes that in areas that are dominated by technical development and that have high national security implications, soft law is often attractive. Yet, the space law community should not stop at soft law. Some issues are neither technically dynamic nor highly security-relevant, and at least when this is the case hard law creation should be the ultimate aim. But even when rapid technical development is involved and security sensitivity is present, it should not be assumed that soft law is the only tool available. Hard law instruments can be remarkably flexible and can take care of security concerns when designed correctly, as the examples of the OPCW, CTBTO and IAEA demonstrate. How secondary law is created within such flexible instruments is the central question.

The Cape Town approach also demonstrates considerable flexibility in the manner in which it distinguishes between common elements in the umbrella convention and specificities in discipline specific protocols. This approach could also be deployed more widely, within and outside the space domain, although experience with the space assets protocol is less encouraging. However, this last element has more to do with failed negotiation approaches than with the Cape Town approach in general. One should be careful not to flush the baby with the bathwater in this domain!

1. Introduction

While at the beginning of the space age, space activities were conducted exclusively by states, in the past few decades there has been an evident growth of commercialisation and private actor participation. This situation has created new challenges for space lawyers and policy makers. In order to assist meeting the new needs of the commercial space sector, in 2001 UNIDROIT adopted the Cape Town Convention on International Interests in Mobile Equipment and three Protocols¹ relating to different types of assets. As an international organization in charge of harmonizing private law norms, UNIDROIT intended in this way to formulate uniform law instruments for asset based financing for three chosen sectors. Of particular relevance here is the Space Assets Protocol, which is a joint attempt of governments and private actors to transform asset-based financing into a more accessible instrument for private industry. This is of great relevance for private industry, as it is currently searching for innovative ways to obtain start-up capital for space-based services. By introducing a uniform regime to govern the creation and enforcement of international interests in space assets, the cost of financing might be reduced as a result of the increased level of transparency and predictability for financiers. The new international regime provides enforcement rules by laying down a set of basic default and interim remedies. In addition to the important role that the Cape Town Convention and its Protocols play in harmonizing law and encouraging investment in capital-intensive sectors, the unique structure embodied in the Convention points to possible new legal mechanisms for adopting international binding norms.

This report investigates the potential effect that this new technique for structuring treaties may have on the future of international law in a general, broader sense and on the

future of legal regimes addressing space activities in particular. The report will then review the creation of other international regulations for space affairs and their development, in order to describe and analyze their main characteristics. First it will look at the history of UN treaty creation in the space field from the very beginning and will continue by examining non-binding UN Resolutions and the norm creation methods of other UN bodies. Issues arising from the tendency towards soft-law normativity in space domain will also be addressed. In the final part of the report, different ways of creating binding norms in other areas of law, especially by secondary law creation, are examined. This may serve as inspiration and reference for further initiatives in the space domain and beyond.

¹ Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Aircraft Equipment (the „Aircraft Protocol“); Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Railway Rolling Stock (the “Rail Protocol”); Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space assets (the “Space Assets Protocol”)



2. The Cape Town Convention and Its Three Protocols: New Form of a Treaty

2.1 Towards the Idea of UNIDROIT Regulations

The Cape Town Convention on International Interest in Mobile Equipment was adopted and opened for signature in Cape Town on 16 November 2001.² However, the idea to create such a Convention was formed already in 1988, when the plan to draft an international convention to govern secured transactions involving high-value mobile assets was proposed after a diplomatic conference convened in Ottawa for the signing of the UNIDROIT Convention on International Factoring and the UNIDROIT Convention on International Financial Leasing.³ There was a pressing need to create a uniform international regime to govern asset-backed transactions, as there were no clear rules for the creation of an international interest, the problem of *lex sitae* was not possible to resolve, and the priority of competing claimants could not be clearly determined.⁴ Furthermore, domestic laws varied and the legal ambiguity that followed from all of this resulted in increased transactional costs. Hence, a new convention was predicted to bring considerable economic benefits as it would both modernize and unify the law of secured transactions and it would eliminate all the uncertainties.⁵ The three asset groups that were selected for regulation had two distinct characteristics in common: "first, these assets require enormous levels of capital investment, and second, they are mobile and tend to move through multiple jurisdictions in the ordinary course of busi-

ness".⁶ Moreover, the collateral to be covered by the convention was not assets that would be held by consumers or small businesses, which made it possible to avoid complicated and contentious public policy issues, which normally arise when a security interest is being enforced against vulnerable parties.⁷ The importance of having such a regulated and secure legal framework was that it would enhance investment and development of such capital-intensive sectors. For this reason, the Cape Town Convention was a significant development as it is an international treaty and therefore promises the highest level of harmonization and security in relation to asset based financing among the signatory states. States party to the Treaty would no longer have to navigate through a complex network of domestic laws, the efficiency of which was questionable, but would rely on a single set of binding norms governing transactions. A further innovation of the Cape Town Convention and the three Protocols was its unique structure which provided the necessary flexibility to respond to the particular requirements of the different industries involved in the creation of the Convention and the Protocols.⁸

2.1.1 The Cape Town Convention

The Cape Town Convention and its norms serve as a regulatory umbrella. In order to facilitate investment, the convention stipulates the basic legal framework for registration of ownership and security interests and provides legal remedies for default. On the one hand, this enables financial institutions to have resort to a debtor's assets more easily in the event of default, and on the other hand

² Currently 59 contracting states. 29 Jan 2014 <>.

³ UNIDROIT Convention on International Factoring and UNIDROIT Convention on International Financial Leasing. 29 Jan 2014 <>.

⁴ Mark J. Sundahl, "The Cape Town Convention", p. 21

⁵ Mark J. Sundahl, "The Cape Town Convention", p. 24

⁶ Mark J. Sundahl, "The Cape Town Approach" in HeinOnline -- 44 Colum. J. Transnat'l L. 341 2005-2006, p. 349

⁷ Mark J. Sundahl, "The Cape Town Approach" in HeinOnline -- 44 Colum. J. Transnat'l L. 341 2005-2006, p. 349

⁸ Mark J. Sundahl, "The Cape Town Convention", p. 22

it enables developing countries and start-up companies with limited assets and weak creditworthiness to seek the benefits of asset-backed finance which will, in turn, reduce the cost of borrowing money and might sometimes even be the only way to make debt financing possible.⁹ Without the convention entry barriers abound.

The general legal framework laid down in the Cape Town Convention calls for specification of the different industry sectors involved and the different types of assets that they are dealing with. Consequently, the elaboration of three industry specific protocols followed, which provide for creditor remedies that are tailored according to the special nature of the assets in question. This unusual structure is supported by three innovative provisions in the convention. The first is Article 6.2 which states that, with respect to a particular type of asset, in the case of any inconsistency between the provisions of the protocol relating to such asset and the umbrella convention, the articles in the protocols shall prevail.¹⁰ The second is Article 49 which provides that the convention will only be binding on a particular state when that state has acceded to both the umbrella convention and a protocol, and that the general provisions of the umbrella convention will be applicable only in relation to the category of assets covered by such protocol.¹¹ The third is again Article 6, but Section 1, which states that the umbrella convention and an individual protocol "shall be read and interpreted together as a single instrument."¹² Together, these three provisions create an unprecedented type of international convention, as, for the first time in history, the convention itself has no life of its own, but is dependent on the additional ratification of protocols.¹³

2.1.2 Protocols to the Convention on International Interest in Mobile Equipment

Protocol on Matters Specific to Aircraft Equipment

The first sector-specific Protocol to the Cape Town Convention that was adopted on 16 November 2001, was the Protocol on Matters Specific to Aircraft Equipment (Aircraft Proto-

col).¹⁴ The Convention and the Aircraft Protocol were both opened for signature at the diplomatic conference in Cape Town. They were widely accepted, with ratifications by 63 States, and came into force five years after their adoption.¹⁵ To date, this is the sole Protocol to the Cape Town Convention to have entered into effect. The Aircraft Protocol shows how the extensive involvement of private industry in the drafting process, placing primacy on commercial expediency, combining common and civil law concepts, and the broad use of opt-in and opt-out clauses can significantly contribute to rapid and wide ratification.¹⁶ An additional key element for the success of this Protocol was the very nature of the aircraft assets, as they are of a relatively uniform class, whereas on the contrary, satellites are designed for specific applications/missions. Also, aircraft can have a very long operational lifetime and during this time they are often sold on and many will have a number of different owners and operators.¹⁷ Furthermore, there was a pure economic interest for the two co-chairs of the Aviation Working Group (AWG), Boeing and Airbus, as they were eager to "put the convention in place in order to enable their customers to more easily raise the funds needed to purchase the new generation of passenger aircrafts that were coming onto the market"¹⁸. For all these reasons, the aircraft industry was very supportive and interested in the adoption of the Protocol.

Protocol on Matters Specific to Railway Rolling Stock

In contrast to the Aircraft Protocol, the second sector-specific Protocol on Matters Specific to Railway Rolling Stock (Rail Protocol)¹⁹, adopted on 23 February 2007 in Luxem-

¹⁴ Protocol to the Convention on International Interest in Mobile Equipment on Matters Specific to Aircraft Equipment, signed on 16 November 2001. UNIDROIT. 22 Jan 2014

<http://www.UNIDROIT.org/english/conventions/mobile-equipment/aircraftprotocol.pdf>.

¹⁵ For the current list see "Status – Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Aircraft Equipment. UNIDROIT 13 May 2014 <<http://www.unidroit.org/status-2001capetown-aircraft>>.

¹⁶ Mark J. Sundahl, "The Cape Town Convention", p. 23

¹⁷ <http://www.hfw.com/UNIDROIT-Draft-Space-Assets-Protoco>

¹⁸ Mark J. Sundahl, "The Cape Town Approach" in HeinOnline -- 44 Colum. J. Transnat'l L. 341 2005-2006, p. 350

¹⁹ Protocol to the Convention on International Interest in Mobile Equipment on Matters Specific to Railway Rolling Stock, signed on 23 February 2007. UNIDROIT 22 Jan 2014

<<http://www.UNIDROIT.org/english/conventions/mobile-equipment/railprotocol.pdf>>.

⁹ Mark J. Sundahl, "The Cape Town Convention", p. 19-21

¹⁰ Art 6, Section 2, The Cape Town Convention

¹¹ Art 49, Section 1, The Cape Town Convention

¹² Art 6, section 1, The Cape Town Convention

¹³ Mark J. Sundahl, "The Cape Town Approach" in HeinOnline -- 44 Colum. J. Transnat'l L. 341 2005-2006, p. 358



bourg, has still not entered into force. Despite the positive expectations of the Rail Working Group (RWG), a not-for-profit group established at the request of UNIDROIT to help draft the protocol, that States would ratify it immediately, so far only five states (Gabon, Germany, Italy, Luxembourg, Switzerland) and the European Union (in respect of its competences) have signed. Currently, Luxembourg is the only state to have ratified. Taking into account that 42 States and 12 international organisations attended the Diplomatic Conference in Luxembourg in 2007, the overall response can be interpreted as a failure of the Protocol. It is, however, interesting to note that the Rail Protocol is designed to resolve the same issues as the Aircraft Protocol, such as the lack of an international registry system for security interests in goods of a transboundary nature, and the need for a new world wide legal framework to recognise and regulate the security interests of lenders, lessors and vendors selling under conditional sale agreements.²⁰

Protocol on Matters Specific to Space Assets

The last elaborated protocol to the Cape Town Convention is the Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space Assets (the "Space Assets Protocol")²¹ which will be analyzed in the following chapters.

2.1.3 From Preliminary Draft Space Protocol to Diplomatic Conference for Adoption

Preliminary Draft of the Space Assets Protocol

Even before the Cape Town Convention had been finalized, work on the draft Protocol on Space Assets had begun. The Governing Council of the International Institute for the Unification of Private Law (UNIDROIT) decided at its 80th session (Rome, 17-19 September 2001) that a preliminary draft of the Space Protocol, elaborated by a working group which consisted of representatives from all relevant sectors (manufacturers, financing sector, users/operators of space

²⁰ The Rail Working Group, "The Luxembourg Rail Protocol – in a nutshell"

²¹ Protocol to the Convention on International Interest in Mobile Equipment on Matters Specific to Space Assets, signed on 9 March 2012. UNIDROIT 22 Jan 2014 <<http://www.UNIDROIT.org/english/conventions/mobile-equipment/spaceassets-protocol-e.pdf>>.

assets, international organisations²², the International Bar Association) should be transferred to governments.²³ In the aftermath of the Cape Town Diplomatic Conference UNCOPUOS established an ad hoc joint consultative mechanism to review the draft Protocol, and the Steering and Revision Committee of UNIDROIT was put in charge of revising the draft. The two Committees analyzed the potential consequences of changes made to the Convention and the Aircraft Protocol and their future impact. Subsequently two sessions of governmental experts were convened for the further preparation of the draft.

First Session: 15-19 Dec 2003, Rome

The first session of the UNIDROIT Committee of Governmental Experts for the preparation of a draft Protocol on Space Assets was held in Rome on 15-19 December 2003. Representatives of 39 governments, four intergovernmental organisations and six international non-governmental organisations attended.²⁴ Two main modifications were made by the Committee. First, it was agreed to replace the term "associated rights" with two new terms "debtor's rights" and "related rights".²⁵ This was done to distinguish them from the terms used in the Cape Town Convention. Second, it was decided to introduce a new provision clarifying that the Cape Town Convention and the Protocol as applied to space assets shall not have any effect on States Parties' rights and obligations under existing United Nations Outer Space Treaties or instruments of the International Telecommunication Union.²⁶ The key question of the Supervisory Authority of the international registration system was not settled and was left open for further deliberation.

²² The Space Working Group brought together representatives of major players such as Alcatel, Alenia Spazio, ANZ Investment Bank, Argent Group, Arianespace, Assicurazioni Generali, Astrium, BNP Paribas, the Boeing Company, Crédit Lyonnais, Deutsche Morgan Grenfell, DIRECTV, EADS, FiatAvio, GE American Communications, Hughes Electronics Corporation, Hughes Space & Communications Company, ING Lease International Equipment Finance, Lockheed Martin Finance Corporation, Lockheed Martin Global Telecommunications, the Long Term Credit Bank of Japan, the Mitsubishi Trust and Banking Corporation, Motorola Satellite Communications Group, PanamSat, La Réunion Spatiale, Space Systems/Loral, SpaceVest and TelecomItalia

²³ M.J. Stanford, "The availability of a new form of financing for commercial space activities: the extension of the Cape Town Convention to space assets", the Cape Town Convention Journal, 2012, p. 114

²⁴ UNIDROIT 2004 – C.G.E. Space Pr./1/Report rev.

²⁵ UNIDROIT 2004, Annual Report 2003 – C.D. (83) 2, p. 10

²⁶ UNIDROIT 2004, Annual Report 2003 – C.D. (83) 2, p. 10

Second Session: 26-28 Oct 2004, Rome

The second meeting of the Committee of Governmental Experts took place in Rome from 26-28 October 2004 and was attended by 97 representatives of 29 governments, five intergovernmental organisations and eight non-governmental international organisations.²⁷ During the second session considerable progress was made on all the remaining key policy issues, being: "firstly, the concept of space assets, secondly, the issues involved in the application of the Convention and the preliminary draft Space Protocol to "debtor's rights" and "related rights", thirdly, the criteria for the identification of space assets and, fourthly, the application and modification of default remedies..".²⁸ The representatives of both governments and industry were given the opportunity to state and discuss their different points of view on these critical issues, and in this way the Space Working Group successfully attracted a broader range of participation from the different sectors of the space community.

With respect to the Supervisory Authority, it was decided to set up a sub-committee, which would conduct an in-depth examination of a number of key issues on the registration system. The sub-committee was to report back to the Committee of Governmental Experts at its third session. In addition, it was agreed to organize two meetings between government and industry. The first took place in London, on 24 April 2006 under the supervision of the Royal Bank of Scotland, the second in New York from 19 to 20 June 2007 under the auspices of the law firm Milbank Tweed Hadley & McCloy. At the meeting in New York, it was recommended that the sphere of application of the draft Protocol be "narrowed down to concentrate essentially on the satellite in its entirety – considered to represent the category of space asset covered by 80% of the transactions subject to asset-based financing of the kind contemplated by the... Cape Town Convention".²⁹ In the aftermath of the New York meeting, the Steering Committee was in charge of building a consensus around the provisional conclusions that had been reached. Therefore, the Steering Committee continued to discuss the matter of the identification of space assets and decided that the criteria should be included in the Protocol and that these could be supplemented by regulations adopted by the

²⁷ UNIDROIT 2005 Annual Report 2004 – C.D. (84) 2, p. 11

²⁸ UNIDROIT 2004 – C.G.E. Space Pr./2/Report.

²⁹ UNIDROIT, Annual Report – 2009 (Rome, 2009), p. 9

Supervisory Authority when the Protocol came into force.³⁰

Three Following Sessions: 2009- 2011, Rome

From 2009 to 2011, considerable further progress was made during the three Committee of Governmental Experts sessions held in Rome.³¹ Alternative versions of the preliminary draft Protocol were discussed and several important obstacles were overcome. The primary issue was the sphere of application of the definition "space assets". On the one hand, it was difficult to imagine that a "universally-accepted definition of such terms in the industry could be reached and on the other hand, they were concerned that such a definition would preclude the possibility of seeking financing for high-value components, such as transponders".³² The problem here was that transponders had become increasingly attractive as bankable assets, particularly in the form of "hosted payloads". Therefore, an Informal Working Group, established by the Committee of Governmental Experts created a new definition of "space assets. The Working Group concentrated on default remedies in relation to components and finally, together with the Committee of Governmental Experts, decided to include both high-value components (such as transponders, and, by extension, hosted payloads) as well as space assets as a whole (such as a satellite and all its relevant components) in the definition.³³

Several other issues were also addressed, such as the priority of competing rights in components when exercising default remedies, the question of the public service exemption from default remedies, the issue of salvage rights for insurers, and the problem of finding the most appropriate identification criteria for the purposes of the registration of interests.³⁴ It is interesting to note with regard to the public service exemption that governments wanted to create a "step-in right" for themselves and that the representatives of the space industry were strongly against any limitations on remedies arising

³⁰ UNIDROIT 2004 – C.G.E./Space Pr./3/W.P. 7 rev. 3.

³¹ Third session (7-11 December 2009), fourth session (3-7 May 2010) and fifth session (21-25 February 2011).

³² UNIDROIT, Annual Report – 2011, UNIDROIT 2012 C.D. (91) 2, p. 7-8

³³ UNIDROIT, Annual Report – 2011, UNIDROIT 2012 C.D. (91) 2, p. 8

³⁴ For details see: Protocol to the Convention on International Interest in Mobile Equipment on Matters Specific to Space Assets. UNIDROIT 7 Feb. 2014

<<http://www.unidroit.org/overview-2012-space-assets#a1>>
; UNIDROIT, Annual Report – 2011, UNIDROIT 2012 C.D. (91) 2, p. 9-10



from the public service nature of the satellite. In the light of these opposing viewpoints, the Committee of Governmental Experts decided that a debtor and the state authorities would have liberty to determine whether that service was “public” in character and, if so, would register a notice to this effect in the future International Registry for space assets.³⁵ This notice alerts potential creditors to the possibility that any subsequently-registered interests will be subject to the public service rule of the future Protocol.³⁶ In this way, creditors that register their rights prior to the public service notice would not be subject to the limitations on default remedies. Instead of entitling states to limit remedies, a margin of time for state authorities was also created. Before a creditor can exercise default remedies he must give to the state a six-month grace period in which it can find alternative means of maintaining the service concerned before its interruption.

After seven years of thorough deliberations the draft Protocol to Space Assets finally reached the last stage. The governing bodies of the ITU were invited to consider if they wished the ITU to become Supervisory Authority upon the entry into force of the Protocol and, if so, to take all the necessary actions in this regard.³⁷ Although, there were still a few issues that needed to be resolved, the text of the draft Protocol was considered to be at such a stage of maturity that, in the opinion of the UNIDROIT Committee of Governmental Experts, it could be put forward for adoption at a diplomatic conference. At its 90th session, held in Rome from 9 to 11 May 2011, the UNIDROIT Governing Council endorsed this recommendation.³⁸

Adoption and Ratification Status

At the invitation of the Government of the Federal Republic of Germany, the Diplomatic Conference to adopt the Protocol was held under the supervision of UNIDROIT in Berlin from 27 February to 9 March 2012. The Protocol to the Convention was finalized and finally adopted in English and French. In Article XLVIII (1) UNIDROIT was designated as the Depository.³⁹ Forty states and ten inter-

national organisations participated in the Diplomatic Conference. More than half the participating states (25 states⁴⁰) signed the Final Act and three states (Burkina Faso, Saudi Arabia and Zimbabwe) signed the Space Protocol at the closing ceremony of the diplomatic conference, with Germany signing later that year. Currently, only these 4 states have signed the Space Protocol, but so far none of them has ratified.⁴¹ Possible entry into force thus seems some way off, as this requires at least 5 ratifications. It is interesting to note that Indonesia is currently conducting consultations with a team of legal experts as it considers signing and ratifying the Protocol. The opinion of the legal experts is that the Space Protocol offers reasonable protection to developing states who wish to increase their presence in the space domain, as the exercise of remedies by a creditor can be limited. It is argued that although the creditor has rights to a satellite as an asset, this does not necessarily mean that national authorities will grant transfer or modification of the licence to use orbits and radio frequencies.⁴² The ITU frequency management scheme and related domestic licensing laws are of high relevance as the use of orbital slots and frequencies remains under domestic authority and the regulatory regime of the Protocol does not interfere.⁴³ The debtor might thus be protected by national means and this might encourage developing countries such as Indonesia, that has a growing economy and increasing involvement in space activities, to ratify the Protocol. However, this line of argument seems to be circular. If capital is sought from creditors wanting to base credit on assets then it defeats the purpose if national measures can hinder the creditor from valorizing the asset. Any sensible creditor would seek pre-agreement from the national authorities to license transfer in case of default or would have alternative licensing

³⁵ Cf. C.G.E./Space Pr./5/Report, §§ 62-66, 84-87, 98-102 and 110-115.

³⁶ Cf. C.G.E./Space Pr./5/Report, §§ 62-66, 84-87, 98-102 and 110-115.

³⁷ UNIDROIT 2012 – DCME-SP – Doc. 43, Resolution 2, Annex III, “Relating to the Establishment of the Supervisory Authority of the International Registry for Space Assets”

³⁸ UNIDROIT, Annual Report – 2011, UNIDROIT 2012 C.D. (91) 2, p. 11

³⁹ UNIDROIT. Status - UNIDROIT Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space Assets (Berlin, 2012).

UNIDROIT 13 May 2014 <<http://www.unidroit.org/status-2012-space>>.

⁴⁰ Brazil, Burkina Faso, Canada, the Czech Republic, France, Germany, Ghana, India, Iraq, Ireland, Italy, Japan, Luxembourg, Madagascar, Pakistan, the People’s Republic of China, the Republic of Korea, the Russian Federation, Saudi Arabia, Senegal, South Africa, Spain, Turkey, the United States of America, and Zimbabwe. Moreover, the European Union signed it as a regional economic integration organisation. UNIDROIT. Overview Space Protocol. UNIDROIT 13 May 2014

<http://www.unidroit.org/overview-2012-space-assets#a3>.
⁴¹ <http://www.unidroit.org/status-2012-space>, STATUS - UNIDROIT PROTOCOL TO THE CONVENTION ON INTERNATIONAL INTERESTS IN MOBILE EQUIPMENT ON MATTERS SPECIFIC TO SPACE ASSETS (BERLIN, 2012)

⁴² M.J. Sundahl, „The Cape Town Convention“ (2013), p. 183-185

⁴³ Art XXVI, the Space Asset Protocol

available from a different jurisdiction as a back-up.

In the run-up to the Berlin Diplomatic Conference the satellite industry expressed its strong opposition to the adoption of the UNIDROIT Space Assets Protocol as it claimed that the Protocol had been drafted by lawyers, governmental experts, and academics, independent from the business of satellite finance.⁴⁴ Therefore the whole process was seen as a purely academic exercise⁴⁵ with no practical use for industry because the matter is already appropriately regulated under existing national legal regimes. In the opinion of big satellite companies, space assets are subject to national registration and jurisdiction in accordance with Article VIII of the Outer Space Treaty and this provision already gives sufficient protection for creditors. Therefore, any new UNIDROIT regulations that pose obligations without abolishing existing national law could be considered as an interference, overlap or even contradiction with existing national dispositions. It was thus argued that the new scheme would only carry with it additional financial burdens.⁴⁶ A similar situation applied during discussions of the draft of the Aircraft Protocol, where representatives of the major airlines complained about the extra costs of that regime. It was, not surprisingly, the start-up airlines, such as JetBlue, that recognized its full benefits.⁴⁷ The same is hoped for in terms of the Space Protocol, as the prediction is that "the next generation of space activity will include non-traditional stakeholders, sometimes referred to as the 'NewSpace community': small private companies, new entrepreneurial space ventures, and non-profit organisations".⁴⁸ However, even after the adoption of the Space Protocol, the global satellite sector continued to express its strong opposition⁴⁹

and showed its dissatisfaction that the Protocol had been adopted despite "the clear and unified opposition of those involved in the actual business of constructing, launching, operating, insuring and financing communications satellites".⁵⁰ Hence, states were urged by their industrial actors to take into consideration these concerns and abstain from signing and ratifying the Protocol in order to avoid "unnecessary regulatory burdens on satellite operators" as these could only raise the expense of financing and consequently make it "extremely difficult also for developing nations to benefit from the delivery of satellite services".⁵¹

2.2 Legal Novelties in the Space Asset Protocol

To explain the novelties that the Space Asset Protocol has brought it is necessary to look in more detail at the legal techniques and approaches that came with the Cape Town Convention.

First, UNIDROIT normally has the task of harmonizing national laws on a given matter and through that process promoting international commercial intercourse in the field. The Cape Town Convention is a radical departure from that pattern as its role is to promote and expand the availability of a particular financing technique, asset-based financing, in respect of a particular class of asset through the creation of a system with an international overlay, the international register. This change of course by UNIDROIT can be justified by the necessity to reduce the cost of financing such assets.⁵² In addition, until the

⁴⁴ ESOA, Satellite operators oppose new protocol on Satellite Financing, FAQs about the Draft Space Assets Protocol. ESOA 13 May 2014 <<http://www.esoa.net/news-info-23.htm>>.

⁴⁵ Oberst, Gerry. UNIDROIT Space Asset Protocol, 1 December 2011. Satellitetoday 23 Jan 2014 <<http://www.satellitetoday.com/telecom/2011/12/01/UNIDROIT-space-asset-protocol/>>.

⁴⁶ Hughes, Nick. Briefings, UNIDROIT Draft Space Assets Protocol. HFW 31 Jan 2014 <<http://www.hfw.com/UNIDROIT-Draft-Space-Assets-Protocol>>.

⁴⁷ M.J. Stanford, "The Preliminary Draft Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space Assets", United Nations/Thailand Workshop on Space Law: "Activities of States in Outer Space in Light of New Developments: Meeting International Responsibilities and Establishing National Legal and Policy Frameworks", 2010, p. 5

⁴⁸ Cf. Futron's 2010 Space Competitiveness Index: A Comparative Analysis of How Countries Invest In and Benefit from Space Industry, p. 107.

⁴⁹ ESOA. Press release "Global Satellite Industry denounces UNIDROIT Protocol, Brussels 9 March 2012.

ESOA 13 May 2014, <http://www.esoa.net/upload/files/news/20120309_PR_UNIDROIT.pdf>.

⁵⁰ Cooper, Patricia. President of SIA (Satellite Industry Association) ESOA. Press release "Global Satellite Industry denounces UNIDROIT Protocol, Brussels 9 March 2012. ESOA 13 May 2014,

<http://www.esoa.net/upload/files/news/20120309_PR_UNIDROIT.pdf>.

⁵¹ Hartshorn, David. Secretary General of the Global VSAT Forum. ESOA. Press release "Global Satellite Industry denounces UNIDROIT Protocol, Brussels 9 March 2012. ESOA 13 May 2014,

<http://www.esoa.net/upload/files/news/20120309_PR_UNIDROIT.pdf>.

⁵² M.J. Stanford, "The Preliminary Draft Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space Assets", United Nations/Thailand Workshop on Space Law: "Activities of States in Outer Space in Light of New Developments: Meeting International Responsibilities and Establishing National Legal and Policy Frameworks", 2010



Cape Town Convention, UNIDROIT had never been involved in regulating matters related to space activities.

Second, the Cape Town Convention broke new ground in relation to the use of protocols. Before the Cape Town Convention protocols associated with treaties were divided into one of four traditional categories: protocols of signature, protocols of amendment, optional protocols, and protocols to a framework convention.⁵³ The Cape Town Convention is akin to a framework convention. However, a previously unseen situation arose, namely that the umbrella convention itself could not enter into force until one of its protocols did. In other words, all framework conventions created before the Cape Town Convention were independent and could have operated without a subsequent protocol. Furthermore, the anticipation of the Cape Town Convention that its protocols might contain provisions that contradict the convention itself and have supremacy over it is an additionally unique element. Another particularity related only to the Protocol on Space Assets is that it is the first time that an internationally binding space instrument is of a civil law nature. In this context it should be noted, however, that even if the instrument focuses on private actors, it was nevertheless formulated in coherence with international (public) law related rules. There should be no conflict between this UNIDROIT instrument and existing higher-ranking international law provisions.

Thirdly, the new definitions that have been created for the purposes of the Protocol have brought much more clarity to the legal community in relation to:

- a. a "space asset"
- b. debtor's rights,
- c. the definition of default remedies, that consist of taking possession of, or control over a space asset, as in this way the creditor will have access to the economic value of the space asset as represented by its revenue stream,
- d. limitations of remedies i.e. resolution of what will happen in the case where two separately financed assets are physically linked and a creditor holding an international interest in only one asset wants to exercise his convention default remedies
- e. the dual-use nature of space assets i.e. what happens with the transfer of controlled goods, technology, data or services,
- f. public service, meaning that exercise of the creditor's remedies could be postponed where the space asset operated by the debtor in default is performing a public service.⁵⁴

Furthermore, as the Protocol's main objective is to provide the space industry with a new innovative financing instrument, the establishment of an international registry of rights is an important new aspect as well. National credit security provisions such as liens or rights of retention often might not go far enough since they might not be recognized in other countries. The new security interest will be entered into an international register, will thus have international validity and should have domestic enforceability. Financiers, debtors and manufacturers are intended to benefit in equal measure.⁵⁵ Creditors can trust recorded rights of the international registry and in the event that there are any other prior notices on an asset, the rule of temporal priority is respected.

2.3 The Two-Instrument Approach of the Cape Town Process

2.3.1 Positive Features

The Cape Town process is a unique mechanism to create binding international law. For the first time a two-instrument structure has been used. An umbrella convention with general provisions exists beneath which stand three protocols with equipment specific provisions. This gives flexibility for governments to opt in to a specific protocol if they wish to.⁵⁶ As opposed to having stand-alone conventions for specific types of equipment, this structure provides uniformity of interpretation and also prevents duplication and incon-

⁵³ Mark J. Sundahl, „The Cape Town Approach”, p. 359

⁵⁴ M.J. Stanford, "The Preliminary Draft Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space Assets", United Nations/Thailand Workshop on Space Law: "Activities of States in Outer Space in Light of New Developments: Meeting International Responsibilities and Establishing National Legal and Policy Frameworks", 2010, p. 5-9

⁵⁵ Leutheusser-Schnarrenberger, Sabine. Quoted by Schmidt-Tedd, Bernhard in The Berlin Protocol, A New Loan Securing Facility for Space Assets. DLR Countdown 18, 38.

⁵⁶ A broader or a narrower band of beneficiaries for the proposed new international regimen? : Some reflections on the merits of the Convention / Protocol structure in facilitating the former, Martin J. Stanford

sistency when all non-equipment-specific provisions are unified in the umbrella convention. Cluttering up the text of the Convention with specific equipment details is avoided.⁵⁷ In such a process, provisions are drafted with the help of industry experts because specific knowledge is required. Protocols allow the particular needs of an industry sector to be met. Furthermore, protocols allow the elaboration of different protocols at their own pace so that different industries do not block each other.

2.3.2 Negative Features

Notwithstanding its virtues, the convention raises a question of legitimacy, as the opponents of the two-instrument approach emphasized in Cape Town.⁵⁸ The Cape Town Convention and Protocol on Matters specific to Aircraft Equipment were worked on and adopted at the same time, so the majority of the base provisions in the convention were developed by the aviation sector. Does the superstructure have the acquired legitimacy to be applicable for different industries if one sector was dominant in creating it? Furthermore, if we look at the fact that it took 13 years to conclude the convention⁵⁹ and the Aircraft Protocol, it may be argued that the process is not time efficient, since the other protocols still had to be elaborated. In addition to this, the ratification process also poses a problem. Two steps of ratifications are required, one of the Convention and then as well of each of the protocols. This might take a lot of time if it is done sequentially.⁶⁰ Furthermore, though the way of financing is the same, the markets are completely different for the 3 types of equipment. This might make it difficult to create effective and optimized umbrella provisions.

⁵⁷ Convention On International Interests In Mobile Equipment And Draft Protocol Thereto On Matters Specific To Space Assets: Explanatory Note, prepared By Professor Sir Roy Goode (United Kingdom): An Overview Of The Convention On International Interests In Mobile Equipment

⁵⁸ UNIDROIT Committee of governmental experts for the preparation of a draft Convention on International Interests in Mobile Equipment and a draft Protocol thereto on Matters specific to Aircraft Equipment SECOND JOINT SESSION (Montreal, 24 August - 3 September 1999), p. 4-1

⁵⁹ R. Goode, "From Acorn To Oak Tree: The Development Of The Cape Town Convention And Protocols"; Convention On International Interests In Mobile Equipment And Draft Protocol Thereto On Matters Specific To Space Assets: Explanatory Note, prepared By Professor Sir Roy Goode (United Kingdom): An Overview Of The Convention On International Interests In Mobile Equipment

⁶⁰ Convention On International Interests In Mobile Equipment And Draft Protocol Thereto On Matters Specific To Space Assets: Explanatory Note, prepared By Professor Sir Roy Goode (United Kingdom): An Overview Of The Convention On International Interests In Mobile Equipment

2.4 What Can the International Law Community Learn from the Cape Town Process

The reason why the two-instrument approach was adopted in the first place is because the regulation of aircraft objects, railway rolling stock and space assets were being elaborated in different working groups operating at different speeds. Hence, the framework convention approach was adopted, allowing working groups to develop their protocols according to their own time schedules. There are lessons to be learned for the international law community from this. First, it is of crucial importance to involve industry experts in drafting the detailed provisions, particularly of the protocols. Without the active participation of the various industry sectors affected, as well as government and academic experts, and bodies such as the AWG, IATA and, the co-sponsor ICAO, the protocols would never have been adopted and hence the Convention would not have progressed either.⁶¹ Second, adoption is only half the story - industry plays a further role in pushing governments to sign and ratify. Third, the approach is particularly appropriate when an international instrument has to deal with heterogeneous issues.

However, the two-step ratification process, first convention and then protocols, could be improved. As the discussions on both the space protocol and on rolling stock (as elaborated above) show, not everything is resolved and having an overarching umbrella does not constitute a sufficient consensus for all the underlying protocols to become easier to negotiate. General provisions cannot be used in regards to any category of equipment unless a protocol has been adopted. Moreover even after entry into force, benefits apply only to states party to the treaty. Hence, a contracting state will not achieve economic benefits unless it properly implements the convention and, in particular, makes the declarations that will maximize the economic advantages.⁶² Therefore, even with the ratified convention, agreeing on equipment specific protocols is not any simpler than if they were negotiated one by one within the gen-

⁶¹ From Acorn to Oak Tree: the Development of the Cape Town Convention and Protocols, Roy Goode

⁶² Summary Report (prepared by the UNIDROIT Secretariat), DC9/DEP – Doc. 8, 2009, p.3



eral UNIDROIT framework. For all of these reasons, while the Cape Town Convention process shed light on a new way of making internationally binding law norms, it proved not to be the most efficient way to do so. A simplified procedure is possible, e.g. if the

protocols were made as executive agreements then ratification would only be needed once, and the second step of agreeing to the protocols would be done under delegated executive authority.

3. Creation of International Regulations in Space Affairs

The regulation of space activities is one of the newest legal domains. The first initiatives for “law creation” to regulate activities in space were taken within the United Nations. Over time, new topics have arisen and with them new ways of regulating, such as through soft law and, of course, using the Cape Town approach. This chapter will analyze in more depth these various instruments

3.1 Existing International Binding Regulations in Space Affairs

Even if the necessity to regulate space activities is a relatively recent subject, a wide range of diverse space related norms already exists. In order to properly analyze possible new ways to create international norms for space activities, the current state-of-play should be examined first. How were instruments drafted and implemented, were they hard law norms, and under the supervision of which organization were they adopted? This current chapter addresses these issues, starting with those elaborated within the United Nations, continuing onto soft law trends, comparing space norms adopted by other international organisations, and concluding with norms endorsed at inter-agency level.

3.1.1 The United Nations: the Importance of the Traditional International Space Law Creator

The history of space law began shortly after the successful launch of the Sputnik satellite in 1957. This event was a clear demonstration of the possibility of launching intercontinental ballistic missiles passing through outer space. For this and other reasons it became evident that the use of space would benefit from normative regulations. Already one

month after the successful launch of Sputnik 1 this emerging subject was brought to the United Nations and hence from the very beginning the United Nations was a prime actor in space law norm creation. The Soviet Union proposed a “United Nations Agency for International Co-operation and Research in Cosmic Space” serving as a clearing house and coordination body for national research, while the United States asked for an ad hoc committee to further study the issue. Both proposals were included in the Agenda of the United Nations General Assembly under the title “Question of the Peaceful Uses of Outer Space”.⁶³

In the end, the General Assembly decided to establish an ad hoc Committee on the Peaceful Uses of Outer Space⁶⁴ with 18 states as members. Indeed, special norms for outer space were necessary because of its specific nature so that regulations had to be created independently from air law and sea law and required specialized expertise. And already in 1959 the ad hoc Committee became a permanent body, which in 1962 established two subcommittees to help its work, the technical and scientific, and legal subcommittees.⁶⁵ Even though members of the Committee had the same ideas on the most critical issues, like the question of the common interest of mankind in the peaceful uses and exploration of outer space by avoiding national rivalries, there were still three crucial questions that hindered progress in norm creation. The issues that impeded progress were: unanimity versus majority voting, the designation of officers of the committee, and international scientific conferences.⁶⁶ The voting mechanism is highly important in order to understand the way that the Committee created

⁶³ United Nations General Assembly. Resolution 1348 (XIII) (13 December 1958) “Question of the Peaceful Use of Outer Space”.

⁶⁴ United Nations General Assembly. Resolution 1348 (XIII) (13 December 1958) “Question of the Peaceful Use of Outer Space”.

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<http://www.unoosa.org/oosa/en/ourwork/copuos/history.html>; 1472 GA Resolution (XIV)

⁶⁶ E. Galloway, “Consensus Decisionmaking By The United Nations Committee On The Peaceful Uses of Outer Space”, *Journal of Space Law* vol.7, nr. 1, 1979, p. 4-7



law. With unanimous voting there is, of course, a possibility to veto a proposal in a rather passive fashion. Hence unanimity was unacceptable to many nations, which preferred achievement of agreement by consensus; consensus being a non-voting method of decision. Conversely, the danger of majority voting lay in the fact that with such a method non-space countries could hold the deciding votes in the face of the operational necessities of the only two space-faring nations at the time, the United States and the Soviet Union.⁶⁷ Finally, it was agreed that decisions would be adopted by consensus, i.e., without voting, but if voting was required, the decision would be made by majority voting. This agreement on the consensus procedure was adopted by a unanimous vote in resolution 1721 in 1961, a very important resolution for the development of space law, as it contains many of the main principles that were later included in space treaties.⁶⁸

The Committee was actually the first UN body that decided to use consensus as the procedure for its work. It was a wise choice when several factors are taken into consideration. As it was at the beginning of the space age, there was a strong and dominant desire to lay ground rules for international cooperation and agreement because it was clear that space science and technology are often dual-use and thus could be used for both peace and war. This motivation was used to create a common approach that was amenable to consensus. The key players responsible for planning the guidelines for the future were unified in emphasizing peaceful purposes and avoiding any possible conflicts. In the following years, the texts of the space treaties were drafted by consensus among the members of the committee. In this way monopolization of the development of the space activities by the two space faring nations was avoided and an agreement was achieved on international cooperation and the participation of all nations.

Resolutions

At the beginning of the law creating process for outer space there were non-binding resolutions. A number of fundamental space principles that were seen as the basis for the further activities were laid down in UNGA Resolution 1721 (XVI) of 20 December

⁶⁷ E. Galloway, "Consensus Decisionmaking By The United Nations Committee On The Peaceful Uses of Outer Space", *Journal of Space Law* vol.7, nr. 1, 1979, p. 4-7

⁶⁸ 1721 GA Resolution (XVI)

1961.⁶⁹ Two basic principles in particular were laid down in the Resolution, namely that general international law (including the Charter of the United Nations), applies to outer space and celestial bodies, and that outer space and celestial bodies are free for exploration and use by all states and not subject to national appropriation. Already then, "it was understood that the rule of law in outer space should be developed step by step in harmony with the actual needs of international cooperation in this new area of human activity".⁷⁰ It is interesting to note that already at this very first stage states that wished to launch objects into space were asked "to furnish information promptly to the Committee on the Peaceful Uses of Outer Space (...) for the registration of launchings".⁷¹ In addition, based on the Resolution, the committee had a role to investigate and report on any legal problems that could arise from the exploration and use of outer space.⁷²

However, since space law creation was taking place against the background of the cold war and the incipient space race that was influenced by the East-West clash, the further norm creating process was hindered by diverging opinions especially between the two existing space powers, the United States and the Soviet Union. In fact, the Soviet Union favored a comprehensive document containing the basic legal principles governing states activities in outer space and a further separate document on assistance and return of astronauts, while the United States advocated a set of principles but without adoption as a binding instrument. The United States preferred an UNGA Resolution because space technology is a changing and evolving technology and therefore fixing binding legal rules was considered as premature, or even counterproductive in these very first years. As no consensus could be reached on this fundamental aspect, the General Assembly mandated the committee to work further on the topic. As a first step this work resulted in the drafting of a set of principles that were adopted by UNGA by consensus as Resolution 1962 (XVIII) on 13 December 1963.⁷³ "The

⁶⁹ United Nations General Assembly. Resolution 1721 (XVI) of 20 December 1961 "International co-operation in the peaceful uses of outer space".

⁷⁰ V. Kopal, "History of OST", <http://legal.un.org/avl/ha/tos/tos.html>

⁷¹ Art B.1, UNGA Resolution 1721 (XVI), "International co-operation in the peaceful uses of outer space", 1085th plenary meeting, 20. December 1961

⁷² Art A.2, UNGA Resolution 1721 (XVI), "International co-operation in the peaceful uses of outer space", 1085th plenary meeting, 20. December 1961

⁷³ United Nations General Assembly. Resolution 1962 (XVIII) of 13 December 1963 "Declaration of Legal Principles Governing the Activities of States in the Exploration and Uses of Outer Space".

1963 Declaration included a set of general principles which characterized the legal status of outer space and celestial bodies and outlined the scope of legality for activities of States in the space environment".⁷⁴ It was considered to be the basis for a future legally binding treaty:

1. The exploration and use of outer space shall be carried on for the benefit and in the interests of all mankind.
2. Outer space and celestial bodies are free for exploration and use by all States on a basis of equality and in accordance with international law.
3. Outer space and celestial bodies are not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.
4. The activities of States in the exploration and use of outer space shall be carried on in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding.
5. States bear international responsibility for national activities in outer space, whether carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried on in conformity with the principles set forth in the Declaration. The activities of non-governmental entities in outer space shall require authorization and continuing supervision by the State concerned. When activities are carried on in outer space by an international organisation, responsibility for compliance with the principles set forth in the Declaration shall be borne by the international organisation and by the States participating in it.
6. In the exploration and use of outer space, States shall be guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space with due regard for the corresponding interests of other States. If a State has reason to believe that an outer space activity or experiment planned by it or its nationals would cause potentially harmful interference with activities of other States in the peaceful exploration and use of outer space, it shall undertake appropriate international consultations before proceeding with any such activity

or experiment. A State which has reason to believe that an outer space activity or experiment planned by another State would cause potentially harmful interference with activities in the peaceful exploration and use of outer space may request consultation concerning the activity or experiment.

7. The State on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and any personnel thereon, while in outer space. Ownership of objects launched into outer space, and of their component parts, is not affected by their passage through outer space or by their return to the earth. Such objects or component parts found beyond the limits of the State of registry shall be returned to that State, which shall furnish identifying data upon request prior to return.
8. Each State which launches or procures the launching of an object into outer space, and each State from whose territory or facility an object is launched, is internationally liable for damage to a foreign State or to its natural or juridical persons by such object or its component parts on the earth, in air space, or in outer space.
9. States shall regard astronauts as envoys of mankind in outer space, and shall render to them all possible assistance in the event of accident, distress, or emergency landing on the territory of a foreign State or on the high seas. Astronauts who make such a landing shall be safely and promptly returned to the State of registry of their space vehicle.

Here it is important to underline that even this important fundamental Declaration did not have binding status. However, for the first time the international community agreed on a number of fundamental principles that should govern this new area. Therefore these principles can be seen as the birth of space law, which in the following years developed quite rapidly due to technological advancement. However, to stop at non-binding norms was not possible. Hence, the state community saw the need to bring these non-binding principles into treaty form. Just over three years later, the elements of the Declaration formed the core for the 1967 Outer Space Treaty, which remains "the foundation of the international legal framework for space activities".⁷⁵ However, once again the two space powers, the Soviet Union and the United

⁷⁴ V. Kopal, History of OST", <http://legal.un.org/avl/ha/tos/tos.html>

⁷⁵ Eberhardt, Jeffrey. A Milestone in Space Governance. Space News 25 Feb. 2013, 19-21.



States each had a proposal for a draft treaty.⁷⁶ With these two different starting points, an agreement was difficult to reach. However, the topic of regulating activities in outer space was so critical for both nations that the consultations finished with an agreed text of the “Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies”, adopted by the General Assembly on 19 December, 1966.⁷⁷ This is the first international space instrument that was binding for states and it has a significant function as it demonstrates:

- a common understanding of the need and importance of normative rules for space
- that rules were elaborated, drafted and agreed not on a bilateral (between the two sole space faring nations at this time) but on a multilateral level (United Nations)
- the willingness to consider the Outer Space Treaty as the *Magna Carta* of space containing the fundamental rights and obligations, whereas special aspects of space activities should be regulated in specific regulations⁷⁸

The “Four Core” Treaties/Five UN-Treaties

The Outer Space Treaty has been one of the most significant achievements in the progressive development of international law attained so far in the framework of the United Nations. This is due to the fact that in laying down the foundations of international regulation of space activities, it established the framework of a legal regime that governs outer space activities even today, whilst receiving a high number of ratifications (more than one hundred states). It is interesting to note that because fundamental principles had already been negotiated during the preliminary discussions on the 1963 Declaration, it was easy for states to agree on these, whereas some other more specific new questions led to controversial and long discus-

sions.⁷⁹ These issues were resolved only during the final stages of the negotiations with the help of the United Nations Secretary-General, U Thant, the COPUOS Chairman, Kurt Waldheim, and the Chairman of the COPUOS Legal Subcommittee, Manfred Lachs.⁸⁰ Given the conditions of the world at the time, the principles of the Outer Space Treaty were the maximum result. By insisting that space exploration and international cooperation should be peaceful, the treaty helped avoid an arms race in outer space. Furthermore, the emphasis on international cooperation in both the scientific and legal fields as well as the invitation to develop mutual understanding and strengthen friendly relations between states and peoples made the Outer Space Treaty a key instrument for a more harmonious world.⁸¹

In parallel to the preparation of the Outer Space Treaty, the Legal Subcommittee also discussed two other topics – Assistance to and Rescue of Astronauts, and Liability for Damage Caused by Space Objects. It was expected that more detailed negotiations on these items would continue after the finalization of the draft Outer Space Treaty, and indeed four more UN treaties were adopted in the period from 1968 to 1979 (see table 1).

The Rescue Agreement was adopted only a year after the Outer Space Treaty due to the fact that its provisions were based on Art V and VIII OST and on Principles 7 and 9 of the 1963 Declaration. Hence it was easy to reach agreement.⁸² The General Assembly approved the Rescue Agreement with a 115 to 0 vote, which assured that the humanitarian and scientific objectives of the rescue of astronauts in distress, their return, and the return of space objects were recognized and respected by all parties.⁸³ The following treaty, the Liability Convention, was adopted a decade after the 1963 Declaration, although the declaration contained the basic principles regulating the international liability of launching states. Various drafts of the treaty text were submitted to UNCOPUOS by delegations

⁷⁶ UN Doc A/6352 of 16 June 1966, UN Doc A/AC.105/32 of 17 June 1966.

⁷⁷ United Nations General Assembly. Resolution 2222 (XXI) of 19 December 1966 “Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies”.

⁷⁸ See Cologne Commentary on Space Law (CoCoSL). Eds. Stephan Hobe, Bernhard Schmidt-Tedd, and Kai-Uwe Schrogl. Cologne. Carl Heymanns 2009, Vol. 1, p. 14, pt. 44.

⁷⁹ V. Kopal, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, New York, 19 December 1966.

⁸⁰ <http://legal.un.org/avl/ha/tos/tos.html>

⁸¹ V. Kopal, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, New York, 19 December 1966.

⁸² Marboe, Neumann, Schrogl, “The 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space” in Cologne Commentary on Space Law (eds. Hobe/Schmidt-Tedd/Schrogl), p.9

⁸³ P. Dembling, D. Arons, “The Treaty on Rescue and Return of Astronauts and Space Objects”, William and Mary Law Review (9) 1968, p.630

and it took nine years of discussions until agreement was finally reached.⁸⁴

“The establishment of procedures for the international disclosure of specific launch and/or orbital information about rockets and space objects can be traced back to the pre-launch disclosure practices which were utilized during the International Geophysical Year 1957-1958”.⁸⁵ However, it was not until 1975 that the Registration Convention was adopted. This Convention has a number of links to the previous three treaties with regard to jurisdiction and control, return of objects and liability but it uses a novel term

⁸⁴ UNGA Resolution 2777 (XXVI), 29.11.1972

⁸⁵ Schmidt-Tedd, Tennen, “The 1975 Convention on Registration of Objects Launched into Outer Space” in Cologne Commentary on Space Law (eds. Hobe/Schmidt-Tedd/Schrogl), p.234



Treaty	Year of Entering Into Force	Number of Ratifications	Number of Signatories
Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (the "Rescue Agreement")	1968	94	24
Convention on International Liability for Damage Caused by Space Objects (the "Liability Convention")	1972	92	21
Convention on Registration of Objects Launched into Outer Space (the "Registration Convention")	1976	62	4
Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the "Moon Treaty")	1984	16	4

Table 1

as a connecting factor – “the State of registry”. For this reason, the Registration Convention has been criticized for being inconsistent with other established principles.⁸⁶

The fifth and last treaty that was been negotiated under the auspices of the UN concerning human activities in outer space is the Moon Agreement. It was adopted by consensus in COPUOS in 1979 and then through a resolution in the UN General Assembly. However, up to now it has not gained widespread acceptance.⁸⁷ Only 16 states have ratified it none of which are the main space faring nations. However, it is possible that the Moon Agreement will gain relevance again, as it is the only treaty up to now that seeks to regulate exploration and use of celestial resources.

3.1.2 Creation of the Treaties at a Period of High Geopolitical Tension

It is highly relevant for the purposes of this Report to examine the reasons why it was possible to adopt treaties 30 years ago and now it is not, or at least very, very hard, as the UNIDROIT experience shows. In the mid-

1950s when the space age began, the two main space actors, the U.S. and USSR, were engaged in a space race. They were working on satellites that were going to be launched for the first time in history but at the same time they were developing intercontinental ballistic missiles.⁸⁸ After the launch of Sputnik in 1957⁸⁹, the U.S. started to push heavily to ban the use of outer space for military purposes. However, it took one more event to get the two superpowers to work on solidifying outer space as a peaceful arena. The 1962 Cuban Missile Crisis demonstrated indirectly the real danger of not having any binding rules concerning the peaceful uses of space.⁹⁰ With this impetus the U.S. and USSR signed the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water in 1963⁹¹ and then in 1966 they started converging on a proposal for an Outer Space Treaty. The fact that space technology was driven by military requirements, that outer space could become a new place for East-West conflict, that there was a race for “firsts”, and that financing was public rather than private, forced the two spacefaring nations to work together on establishing an

⁸⁶ G. Zhukov, “Registration and Jurisdiction Aspects of the International Space Station”, in: IISL, Proceedings of the 42nd Colloquium on the Law of Outer Space, 2000, p.77

⁸⁷ Hobe, Stubbe, Tronchetti, “The 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies” in Cologne Commentary on Space Law (eds. Hobe/Schmidt-Tedd/Schrogl), p.336

⁸⁸ History of Space, The Outer Space Treaty Promises Peace in Space, <http://news.discovery.com/space/history-of-space/the-outer-space-treaty-promised-peaceful-exploration-of-space-131010.htm>

⁸⁹ <http://history.nasa.gov/sputnik/>

⁹⁰ <https://history.state.gov/milestones/1961-1968/cuban-missile-crisis>

⁹¹ http://disarmament.un.org/treaties/t/test_ban

international legal regime for outer space.⁹² As in the case of the Antarctica Treaty, the OST was drafted to emphasize principles of freedom for exploration and scientific investigation and exclusive peaceful use of an area that was not inhabited by people.

It is worth noting the decisive impact of the Cold War atmosphere and the mistrust the two protagonists had on the development of legal regimes to govern areas that had not been conquered but posed a threat to global peace. Even though the geopolitical situation currently is fraught, with states having diverse ideologies and a lack of trust, these conditions apparently do not provide for a treaty-making environment. The reason might lie in the fact that there is nothing fundamental that is not regulated, there are only specific details and no state feels the danger of not having binding norms for those – on the contrary the system provides for suitable freedom of behaviour, and the influence of the private sector, the so-called “new driving force” of space activities.

3.1.3 Treaty-Making Environment

Moon Treaty, First Sign of Decline of UN Importance for Space Law Drafting?

Discussions regarding the potential decline of UN importance as a binding space law norm creator started already with the Moon Treaty. While the Outer Space Treaty is the most widely adopted of the five UN space treaties, the instruments that followed, such as the Rescue Agreement, the Liability Convention and the Registration Convention, attracted weaker acceptance by states (as can be seen from the table above). The last agreement, the Moon Treaty, received very few signatures and ratifications⁹³ and is therefore often criticised as a failed treaty. In addition, in its statements at UNCOPUOS sessions, the U.S. even officially distinguishes between the first four treaties and the Moon Treaty, implying that the latter does not belong to the “core” UN space treaties. However, the Moon Treaty is not the reason why it is impossible to cre-

ate new hard law in space, it was only a sign of future problems. The failure of the Moon Treaty showed that with a growing number of involved states it was more difficult to reach a consensus on provisions, and even more importantly, that space activities nowadays need to involve industry representatives in the treaty drafting process whenever there is a commercial impact. The controversial Art. 11 of the Moon Treaty is living proof of this. This Article states that natural resources are the common heritage of mankind and that the harvesting of those resources is forbidden except through an international regime established to govern the exploitation of such resources when it becomes feasible to do so.⁹⁴ A regime such as this gives precedence to community aspects and downplays the encouragement of private sector investments in space mining activities, and has resulted in a situation where none of the major space faring nations have wanted to join the treaty.

This might thus be taken to mean that new comprehensive space agreements or amendments to the Outer Space Treaty will not be undertaken. It is supposed that when the time comes to exploit the Moon or another celestial body, the leading space nations will insist on the creation of a new treaty text more adequate for the requirements of that period.⁹⁵ This time may have moved closer with the U.S. introduction of national legislation on extraterrestrial mining. The assumption on timeliness might, however, also signal that the problem of the Moon Treaty lies in its substance, rather than in its genesis. It is possibly dangerous to conclude from the problems of the Moon Treaty that new hard law on space matters is not possible, since, perhaps, the conclusion should be that in order to create hard law one needs to get the substantive provisions right.

A Cape Town-like Umbrella for Space Law

As elaborated above, the international law community might be able to use the experience of the Cape Town Process to further develop international law. And the space community might use this two-instrument approach to create new international space law. This would have a great advantage in space sector, as it would create on one level general, uniform provisions, and on the other level, detailed provisions, making it easier for states to agree on and be able to work on protocols at different speeds.

⁹² M. Benkö, Kai-Uwe, Schrogl, Article I of the Outer Space Treaty Reconsidered after 30 Years, Outlook on Space Law Over the Next 30 Years: Essays Published for the 30th Anniversary of the Outer Space Treaty, 1997, (ed. G. Lafferranderie, co-ed. D. Crowther), 68

⁹³ Only 15 parties Treaty (as at 1 January 2014). UNOOSA 14 May 2014. Since then ... ratified. <<http://www.unoosa.org/oosa/en/SpaceLaw/treatystatus/index.html>>

⁹⁴ Art 11, Moon Treaty

⁹⁵ Aust, Anthony. Handbook of International Law, 2005: 368.



In order to embark on a project to create any kind of uniform international law, three questions must be answered in the positive. First, is there a problem? Second, is there a feasible solution? And last, is the project likely to receive a substantial measure of support not only from governments but from industry and other interested sectors?¹ Taking space debris as an example, the answer to the first two questions is yes, and to the third ambiguous. 1) Space debris is an almost existential problem in space and at the moment only recommendations and guidelines exist. 2) There is a feasible solution. A hard law obligation could oblige states to reduce debris very significantly. 3) Whether there would be enough support from stakeholders might be doubtful, but could be sought through a survey of the involved parties (as UNIDROIT did with industry in the case of the Cape Town Convention).

A possible solution to the lack of hard law regarding space debris could be an umbrella convention with a number of detail specific protocols. The convention would have general provisions that would provide for a uniform way of interpretation, and protocols could be divided into more specific instruments e.g. mitigation protocol, active removal protocol, re-entry protocol, graveyard protocol etc.

This type of umbrella convention would be very narrow, it would concern only one sector and this would most likely make it easier to be adopted. However, a convention with different protocols could also be wider. It could be applicable to several space sectors and thus, for instance, cover all the ground of current sustainability initiatives. Furthermore, similar to the Cape Town Convention, there could be a new convention dealing with international environmental protection issues of a certain nature and then specific protocols for different types of sectors (one of which would be the space sector).

Based on previous experience it might be difficult to imagine that a two-instrument convention on space debris with protocols would be supported sufficiently by all actors and survive a double ratification process (even if the states have agreed on the content of the provisions). A lesson of the Cape Town process could, however, be that what is needed is a two-step process, but not double ratification. If a convention was to be ratified and acknowledged as a superstructure, then protocols should perhaps not require further ratification. Approval of the protocols could take the form of executive agreements.

Such an approach is much better than creating several stand-alone conventions because protocols would be approved at government level only, meaning that much more flexibility would be introduced in terms of approval and possible subsequent modification. The dynamic nature of the space field would be served by a foundational treaty supplemented by executive-level protocols, the latter being living documents to a much larger extent than are ratified instruments.

3.1.4 Current Trends in Space Law Norm Development

Interestingly enough, in the early period of space activities, the majority of participating states exhibited a strong will to establish binding international law norms for space activities against the background setting of the upcoming space race and the potentially dangerous effects this could have for humanity. The causes of this have been analysed above. The purpose of binding regulation was to ensure that these newly emerging activities would not get out of control. That is why fundamental rules, a *Magna Carta* for space, universally binding on all mankind, were considered as a common need. In the next 45 years, since the Outer Space Treaty, the use of space has increased tremendously and new types of activities have arisen or are being planned – space tourism and possible asteroid mining come to mind. Moreover, the effects of space activities, such as space debris, were not taken fully into account in the early years. A need to cover these emerging topics was felt, but hard law was considered not to be feasible. Taking all these facts into account, two general tendencies in space law making can be identified:

- from binding to non-binding space rules
- from fundamental principles to specific aspects

3.1.5 United Nation General Assembly Resolutions on Space Aspects

In the decades following the negotiation of the Moon Treaty only non-binding UNGA resolutions were adopted. In contrast to the UN treaties, the UNGA resolutions lack legally binding force even when they are adopted by a consensus of Member States in the General Assembly. The adoption of recommendations and resolutions by the UN marks a transition in developing international space law from hard to soft law. The agreed texts of resolu-

tions can be seen as “problem indicators”. Altogether, seven resolutions have been adopted. They can be divided into three different categories. In the first category are UNGA resolutions that seek to create quasi legal rules for dedicated specific space aspects. In the second category the aim of the UNGA resolutions is to serve as a means of interpretation of existing space treaties; and in the last category UNGA resolutions were found to be needed in order to underline and emphasize existing space principles. Apart from the seven non-binding resolutions, every year the UN General Assembly adopts a resolution called “International cooperation for the peaceful uses of outer space”.⁹⁶ However, here a distinction must be made, as the latter resolutions are binding but do not form part of the *corpus iuris spatialis*, as they relate only to the organisation and work of the UNCOPUOS and its Subcommittees.⁹⁷

UNGA Resolutions: Quasi Legal Rules for Specific Space Aspects

As elaborated above, the 1963 Declaration was adopted before the OST and served as its base. All other UNGA resolutions were adopted only after the UN space treaties. The following three Resolutions, even though non-binding, tried to regulate some specific areas of space activities.

- 1982: The Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (DBS Principles)⁹⁸
- 1986: The Principles Relating to Remote Sensing of the Earth from Outer Space (RS Principles)⁹⁹
- 1992: The Principles Relevant to the Use of Nuclear Power Sources in Outer Space (NPS Principles)¹⁰⁰

The DBS Principles are important as they mark not only a change in the trend regarding the legal status of subsequent space law rules but they also changed the way of space

law-making. For the first time a space instrument was not adopted by a consensus but by a majority vote.¹⁰¹ The absence of consensus shows that the states could not reconcile different views on state sovereignty and the freedom of information, resulting in overall negative effects in terms of acceptance of the DBS Principles. In the following resolution, the RS Principles, states managed to reach a consensus on the draft but only after fifteen years of negotiation. Both resolutions were adopted in the annex style.¹⁰² This means, that after the drafting period, the principles in the final paper were published in a separate annex text attached to a preamble. The last resolution in this category, the NPS Principles, is the only instrument negotiated due to a real-life event, namely the Cosmos 954 incident. This incident deeply influenced the elaboration of the NPS Principles.¹⁰³ It served as a blueprint in structuring principles regarding settlement of claims, notification and information, and emergency assistance.¹⁰⁴ It adopted by consensus and it also influenced a number of other instruments and standards, such as the Safety Framework for Nuclear Power Source Applications in Outer Space (developed by the Scientific and Technical Subcommittee of the COPUOS and the IAEA).¹⁰⁵

It can be noted that with the adoption of simple UNGA resolutions the wish to keep flexibility was preserved. Precise obligations were avoided in a period of quickly changing technology, that could possibly make legal rules obsolete.¹⁰⁶

⁹⁶ e.g. UNGA Res. 69/85, International cooperation in the peaceful uses of outer space, 16.12.2014

⁹⁷ F. Lyall, P.B. Larsen, „Space Law – A Treatise”, Ashgate, Farnham, 2009, p. 45

⁹⁸ United Nations General Assembly. Resolution 37/92 of 10 December 1982 “Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting”.

⁹⁹ United Nations General Assembly. Resolution 41/65 of 3 December 1986 “Principles Relating to Remote Sensing of the Earth from Outer Space”.

¹⁰⁰ United Nations General Assembly. Resolution 47/68 of 14 December 1992 “The Principles relevant to the Use of Nuclear Power Sources in Outer Space”.

¹⁰¹ N. Jansentuliyana, „International Space Law and the United Nations”, Kluwer Law International, The Hague, 1999, p. 42

¹⁰² Smith, Reynders, „The 1986 Principles Relating to Remote Sensing of the Earth from Outer Space, Cologne Commentary vol. 3, p. 87

¹⁰³ Escolar, Reynders, „The 1992 Principles Relevant to the Use of Nuclear Power Sources in Outer Space”, in Cologne Commentary vol. 3, p. 197

¹⁰⁴ UN Doc. A/AC.105/218, 04.04.1978; UN Doc.

A/AC.105/271, 10.04.1980

¹⁰⁵ Un Doc. A/AC.105/934, 19.05.2009

¹⁰⁶ Pocar, Faustino. The normative role of UNCOPUOS, Outlook on Space Law over the Next 30 Years, Essays published for the 30th Anniversary of the Outer Space Treaty, 1997, pp. 415.



UNGA Resolution	Year of Adoption	Category
The Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting (DBS Principles)	1982	quasi legal rules for specific space aspects
The Principles Relating to Remote Sensing of the Earth from Outer Space (RS Principles)	1986	quasi legal rules for specific space aspects
The Principles relevant to the Use of Nuclear Power Sources in Outer Space (NPS Principles)	1992	quasi legal rules for specific space aspects/ interpretation of existing binding space treaties
Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries	1996	interpretation of existing binding space treaties
Resolution on the Application of the Concept of 'Launching State' (LS)	2004	interpretation of existing binding space treaties
Recommendations on enhancing the practice of States and international intergovernmental organisations in registering space objects (RegPract Resolution)	2007	strengthening existing space principles

Table 2

UNGA Resolutions: Interpretation of Existing Binding Space Treaties

In the second phase, UNGA resolutions were adopted with the goal of serving as a means of interpretation for existing space treaties. This tendency had already slowly begun with the previously mentioned NPS Principles. In Art XII of the Liability Convention it is stipulated that “the compensation which the launching State shall be liable to pay for damage under this Convention shall be determined in accordance with international law and the principles of justice and equity, in order to provide such reparation in respect of the damage as will restore the person, natural or juridical, State or international organisation on whose behalf the claim is presented to the condition which would have existed if the damage had not occurred”. These general conditions apply as well to damages caused by a space object with nuclear power sources on board. However, in Art. XII it is left open the question of whether the compensation covers also the reimbursement of the expenses for search, recovery and clean-up operations. It is only the NPS Principles that help clarify these conditions by stating that the “compensation shall include reimbursement of the duly substantiated expenses for

search, recovery and clean-up operations, including expenses for assistance received from third parties” (Art.9.3).

Furthermore, the “Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries” (1996)¹⁰⁷ is seen as an interpretation of Art I (1) of the Outer Space Treaty. It tries to give more precise answers to how to implement the provision that regulates the distribution of the benefits from outer space. Next, the Resolution on the Application of the Concept of ‘Launching State’ (LS) (2004)¹⁰⁸ gives more detail and content to the concept of “Launching State”. This notion is of great relevance for the Liability and Registration Conventions. Indeed, with emerging commercialization and the rise of private actors, especially those engaging in private launching initiatives, it was obvious that the backbone provisions on responsibility and liability with

¹⁰⁷ United Nations General Assembly. Resolution 51/122 of 13 December 1996 “Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All states, taking into Particular Account the Needs of Developing Countries”, UN Doc A/RES/51/122.

¹⁰⁸ United Nations General Assembly. Resolution 59/115 of 10 December 2004 “Application of the Concept of ‘Launching State’, UN Doc A/RES/59/115.

regard to the "launching state" were no longer precise enough.¹⁰⁹

UNGA Resolutions: Strengthening Existing Space Principles

The UN General Assembly adopted in 2007 the Resolution "Recommendations on enhancing the practice of States and international intergovernmental organisations in registering space objects" (RegPract Resolution).¹¹⁰ The aim of this resolution was to strengthen existing principles and to contribute to the broader acceptance of the Registration Convention. It was seen as necessary as the provisions of the Registration Convention on registering objects launched into space in a national and an international register were not sufficiently respected.¹¹¹ After the adoption of the RegPract Resolution, UNOOSA developed a template for a more harmonized registration practice among member states.¹¹² This template assists parties registering in that very process.

3.1.6 International Telecommunication Union: Successful Space Rule Creator within the UN

The ITU is a specialized agency of the United Nations for information and communication technologies.¹¹³ It currently has 193 member states¹¹⁴ and is one of the oldest international organisations as it was founded in 1865 by the International Telegraph Convention, which serves as its founding document and

has been amended several times, especially in 1992 during the restructuring of the ITU. The ITU is nowadays based on two documents, the "Basic Instrument of the Union" (Constitution) and the "Convention". These fundamental texts are complemented by the so-called "Administrative Regulations", the International Telecommunication Regulations and the Radio Regulations. These legal instruments constitute the legal framework of the ITU and they all have treaty status.¹¹⁵ Ratification or accession to the Constitution and the Convention also constitutes consent to be bound by the Administrative Regulations adopted by competent World Conferences prior to the date of signature. Nonetheless, reservations in regards to the Administrative Regulations or revisions thereof are possible as long as they are indicated at the time of deposit of the instrument of ratification or accession.¹¹⁶

Furthermore, amendments are also possible. Amendments of the Constitution and the Convention are adopted by a decision of the International Conference.¹¹⁷ Amendments have to be adopted by a two-thirds majority if they relate to the Constitution¹¹⁸ and a simple majority for amendments to the Convention.¹¹⁹ Any amendments adopted at the conference shall, "as a whole and in the form of one single amending instrument, enter into force at a date fixed by the conference" for all the Member States that are already parties to the Constitution and the Convention, and that have already before the set date deposited their instrument of ratification, acceptance or approval of, or accession to, the amending instrument.¹²⁰ Partial ratification of the amending instrument shall be excluded.

The competent organs for amending regulations are the International Conferences which are convened for all member states periodically: the World Radio Communication Conference, which is in charge of revisions concerning radio communication¹²¹; and the World Conference on International Telecommunications, which is in charge of international telecommunication services.¹²² Telecommunication is a broader term and encompasses "any transmission, emission or reception of signs, signals, writings, images and sounds or intelligence of any nature by

¹⁰⁹ The discussions emerged from the activities of the private launch provider "Sea Launch" which operated from a platform on the high seas. Additionally the company was composed of companies of different countries with its headquarters at this time in the Cayman Islands. There was therefore some doubt about the application of the "traditional" Launching State criteria.

¹¹⁰ United Nations General Assembly. Resolution 62/101 of 17 December 2007 "Recommendations on enhancing the practice of States and international intergovernmental organisations in registering space objects", UN Doc A/RES/62/101.

¹¹¹ Subsequently the Office of Outer Space Affairs developed a model registration form to support member states in their registration obligations. For further information, see "United Nations Register of Objects Launched into Outer Space: Model Registration Form". UNOOSA 14 May 2014 <<http://www.ootsa.unvienna.org/ootsa/SORRegister/resource.s.html>>.

¹¹² Schmidt-Tedd, Hedman, Hertz, !"The 2007 Resolution on Recommendations on Enhancing the Practice of States and International Intergovernmental Organisations in Registering Space Objects", Cologne Commentary vol. 3, p. 414

¹¹³ International Telecommunication Union 9 Jan 2014 <<http://www.itu.int/en/about/Pages/default.aspx>>.

¹¹⁴ <http://www.itu.int/online/mm/scripts/mm.list>

¹¹⁵ <http://www.itu.int/net/about/legal.aspx>

¹¹⁶ Art 54 (2), Constitution

¹¹⁷ Art. 8 para. 2 lit. I Administrative Regulations

¹¹⁸ Art. 55 para 4 of the Constitution

¹¹⁹ Art. 42 para. 4 Convention

¹²⁰

http://www.ris.bka.gv.at/Dokumente/RegV/REGV_COO_2026_100_2_544422/COO_2026_100_2_563246.pdf; Art 55 (6), Constitution

¹²¹ Art. 13, para. 1-1 nr. 89

¹²² Art. 25, para. 1, nr. 146, ITU-CS



wire, radio, optical or other electromagnetic systems”, as opposed to radio communication, which only relates to telecommunication by means of radio waves.¹²³ Hence, The ITU Radiocommunication Sector (ITU-R) is responsible for managing the international radio-frequency spectrum and satellite orbit resources and developing standards for radiocommunication systems with the objective of ensuring the effective use of the spectrum.¹²⁴ On the other side, the mission of the ITU Telecommunication Standardization Sector (ITU-T) is to ensure the efficient and timely production of standards covering all fields of telecommunications on a worldwide basis, as well to define tariff and accounting principles for international telecommunication services.¹²⁵

Even though different bodies are in charge, the same procedure applies. For all instruments, proposals for amendments have to be justified and submitted four months in advance. All resolutions have to be agreed by a majority of the attending delegations and are then comprised in a final act. This final act has to be adopted as a whole once again by the agreed majority in the second step. Thereafter the final act is submitted for final signature to the delegations.¹²⁶

Concerning the Administrative Regulations themselves, a further particularity of the ITU can be noted. Even though administrative regulations are considered as “binding international instruments”¹²⁷; the amendments are not directly binding for ITU member states.¹²⁸ In order for them to become binding, a special mechanism has been developed.¹²⁹ By ratifying the Constitution, the state accepts also the binding mechanism of the Administrative Regulations. However, revisions of the Administrative Regulations by the World Conferences are only binding for those states which accept them in an explicit way. A member state is only bound if it sends its notification of acceptance to the Secretary General.¹³⁰

In this context it is interesting to analyse also the cases in which member states do not agree to the revisions. In the past, the old version continued to be applicable to them. However, with the ITU reform a new system

was established to limit different applicable systems. According to Art 54, the revision is applicable in a provisional manner to all member states that have signed the final act of the conference except if they have explicitly rejected it.¹³¹ Art 54 para. 4 (no. 218) continues in the same manner and states that “such provisional application shall continue for a Member State until it notifies the Secretary-General of its decision concerning its consent to be bound by any such revision”.¹³² It is important to note that “if a Member State fails to notify the Secretary-General of its decision concerning its consent to be bound under no. 218 within thirty-six months following the date or dates of entry into force of the revision, that Member State shall be deemed to have consented to be bound by that revision”.¹³³ Therefore, there are three possible outcomes beyond provisional application. First, a member state has given its explicit consent and hence the revision has the character of an international agreement. Second, a member state has signed the final act, and is bound to the revision after a period of 3 years even without explicitly consenting to it. Third, a member state has not signed the final act, and is not bound by the revision but the Administrative Regulations remain, having the character of international agreements. This system constitutes a sophisticated secondary hard law norms creation mechanism and it has proven to be very successful in getting member states to follow regulations in a binding manner (which is not an easy task, as the ITU *inter alia* deals with the equitable distribution of satellite slots, which are a limited natural resource). Accordingly, it could be beneficial to implement this method in other areas, especially in a highly technical domain such as the space sector.

3.1.7 Conference on Disarmament (CD) and Prevention of an Arms Race in Outer Space (PAROS)

The Conference on Disarmament (CD) is the world's only permanent multilateral disarmament negotiating body, which consists of 65 participating states and more than 40 observers.¹³⁴ Even though it is an independent body, it is part of the UN. The CD conducts its work and adopts its decisions by consensus.¹³⁵ The work can be negotiated in

¹²³ ITU Radio Regulations, Article 1, Definitions of Radio Services

¹²⁴ “Radiocommunication Sector”, International Telecommunication Union, <http://www.itu.int/en/ITU-R/Pages/default.aspx>, last viewed 2011-03-20

¹²⁵ <http://www.itu.int/en/ITU-T/Pages/default.aspx>

¹²⁶ Art. 31, para. 3, nr. 328-331) ITU-CV.

¹²⁷ Art. 54, para. 1 nr. 215

¹²⁸ Art. 4, para. 3, nr. 31, ITU-CS

¹²⁹ Art. 54, nr 215-223 ITU-CS

¹³⁰ Art 54 (3 bis), nr. 217A, Constitution

¹³¹ Art 54 (3 penter, nr. 217D, sentence 1)

¹³² Art. 54 para. 4 nr. 218, CS

¹³³ Art. 54 para 5 bis, CS

¹³⁴ <http://www.reachingcriticalwill.org/disarmament-fora/cd>

¹³⁵ Art VII (19), RULES OF PROCEDURE OF THE CONFERENCE ON DISARMAMENT

plenary meetings but also under any additional arrangements agreed by the CD, such as informal meetings with or without experts. Indeed, most topics are discussed in *ad hoc* committees that are held in private. The greatest recent progress was made in the years 1994 - 1996, when four *ad hoc* committees were established: Nuclear Test Ban, Outer Space, Negative Security Assurances and Transparency in Armaments.¹³⁶ However, since the CTBT was opened for signature, it has remained in a stalemate. It has neither been able to reach consensus on an agenda of work nor to engage in any substantive deliberations.¹³⁷ Thus the main items under deliberation remain the same every year: a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices (FMCT), nuclear disarmament, prevention of an arms race in outer space (PAROS), and negative security assurances.

The PAROS is the main space related topic of the CD that bases its work in this field on two resolutions adopted by the UN General Assembly in 1981:

- A/RES/36/97, which aimed at reaching an agreement to prohibit anti-satellite systems¹³⁸
- A/RES/36/99, which called for a treaty prohibiting the stationing of any weapons in outer space¹³⁹

Unfortunately East-West differences hardened after these two resolutions and no major PAROS results were achieved. Initiatives were seen in 2008 when Russia and China submitted a treaty proposal on the Prevention of the Placement of Weapons in Outer Space (PPWT) and in 2011 and 2012 when, on behalf of Member States of the G-21, Nigeria and Syria presented a working paper concerning the "Prevention of an arms race in outer space".¹⁴⁰ However, these initiatives remain without any tangible result, as most

other member states abstained from contributing.

The reasons behind the failure of traditional multilateral fora such as the CD to adopt any kind of binding space law norms in the past three decades lies largely in the fact that international discussions tend to apply the consensus rule and insist on the idea that all governments need to be fully onboard before agreements can be made. However, this is in discord with the current situation of many actors of completely different political views who disagree even on what the priority issues are for the agenda. Attempts to combine progress in one area with parallel progress in other areas have been unsuccessful. A way forward may be to engage an even broader spectrum of stakeholders thus ensuring that "all states, those with advanced space capacity, those that are emerging space powers and those that could be future users of space technology all have a voice at the table".¹⁴¹ This is currently not the case in the CD. Furthermore, space is a global common and it is therefore a concern also for civil society and international organisations. Civil society can play a crucial role to help ensure that the issue of weaponisation of space gets the attention it needs. International organisations like the ITU, WMO, WHO, and many others use space to achieve their missions. By including these actors in a discussion in a CD-like forum, a more comprehensive view could be gained on what issues the international community needs to resolve first (as is the case with the ITU, where its immediate practicality is self-evident).¹⁴² This could then lead to better understanding of how to deal with space security as a part of the global security environment picture.

But there may also be a reason to question the consensus rule. After 30 years of dysfunction perhaps resort should be had to majority voting as a backup to consensus. This is not in disagreement with the conclusions drawn above on the Moon Treaty. If a substantial part of the international community can agree on ways forward, and consensus has proven ineffective, perhaps this substantial part of the international community should be allowed to move forward. The real risk of the CD stalemate is probably not that nothing moves, but that things start to move outside this common forum. Majority voting would appear to be a small price to pay for system integrity!

¹³⁶ <http://www.reachingcriticalwill.org/disarmament-fora/cd>

¹³⁷ <http://www.nti.org/treaties-and-regimes/conference-on-disarmament/>

¹³⁸ United Nations. Prohibition of weapons and prevention of an arms race in outer space, in: UN Yearbook 1981. 7 Jan 2014

<<http://unyearbook.un.org/unyearbook.html?name=1981index.html>>.

¹³⁹ United Nations. Prohibition of weapons and prevention of an arms race in outer space, in: UN Yearbook 1981. 7 Jan 2014

<<http://unyearbook.un.org/unyearbook.html?name=1981index.html>>.

¹⁴⁰ G-21 stands for the Non-Aligned Movement. At the CD the following groupings exist: the Western Group, the Non-Aligned Movement/G21, the Group of Eastern European States and Others, the P5 (the 5 permanent members of the Security Council, the 5 declared nuclear weapons states), the P4 (the five minus China) and the Group of One (China).

¹⁴¹ Women's International League for Peace and Freedom (WILPF), Statement to the Informal CD Civil Society Forum on Outer Space, 19 March 2015

¹⁴² Women's International League for Peace and Freedom (WILPF), Statement to the Informal CD Civil Society Forum on Outer Space, 19 March 2015



3.1.8 Space Regulations in Other Settings

In a situation of rapid technological development and lagging law, other modalities for political and economic cooperation have been established. Some of these collaborations are based on a constitutive treaty/agreement, which provides a precise mandate. An agreement can even establish an organisation, where the actors are not the member states per se but their representatives (e.g. their space agencies) to the organisation. These organisations can sign agreements with states, other international organisations or institutions and can develop international law.¹⁴³ Therefore, some of the documents and rules used for cooperative space missions form a certain practice in their specialized dedicated field and need to be further examined.

Inter-Governmental Agreements: the ISS Agreement (1998)

In this context the agreements governing the establishment and operation of the International Space Station (ISS) are of high relevance. The ISS is the most politically complex space activity ever undertaken. It took 10 years of negotiating and over 30 missions to assemble the ISS, however, it resulted in unprecedented scientific and engineering collaboration among five space agencies. Five partners, the USA, Russia, Canada, Japan and a collective of eleven European States, all represented through their space agencies (NASA, JAXA, CSA, Roscosmos and ESA,) built and now operate the ISS.¹⁴⁴ The activity “brings together international flight crews, multiple launch vehicles, globally distributed launch, operations, training, engineering, and development facilities, communications networks, and the international scientific research community”.¹⁴⁵ Each partner contributes its expertise to these different segments, and astronauts from around the world work together to conduct experiments in space.¹⁴⁶ All of this has been successfully managed even though the five participating

partners come from diverse national, political and economic system backgrounds.

The ISS is governed by a unique three-tier structure designed to clarify all legal uncertainties, to provide the necessary security for states to engage in the mission and then in turn encourage their own private sectors to develop the required technology. At the highest level there is the International Space Station Intergovernmental Agreement (IGA), which is an over-arching umbrella for all legal issues. At the second level, there are four Memoranda of Understanding (MoUs) between NASA and each of the four other cooperating space agencies (ESA, CSA, Roscosmos, JAXA) in order to deal with the more practical details of developing and operating the ISS. Lastly, at the third level, there are diverse Implementing Agreements between the space agencies in order to implement these MoUs.¹⁴⁷ The IGA articles contain very specific and detailed legal norms, e.g. Art. 3, which prohibits any claim to national sovereignty over outer space or over any portion of outer space; Art 5., that regulates jurisdiction and control; Art. 11 that contains the ISS Crew Code of Conduct; Art. 15 on funding; Arts. 16 and 17 on liability; and Arts. 19 to 21 on the exchange of data and goods and intellectual property.¹⁴⁸ Cross-waivers of liability, which are regulated under Art. 16, are a vivid example of how states have decided to implement a provision that goes beyond the scope of the space treaties in order to perform the activities on the space station more easily. Furthermore, with regard to the transfer of technology and protection of intellectual property, the IGA model provides for specific marking procedures, especially created for the mission, which protect each partner’s proprietary data and goods and the confidentiality thereof.

The ISS model is just the most prominent example of successful multilateral agreements that are designed for one specific, individual mission and are not intended to provide global solutions. These agreements are in accordance with existing general international law and the five space treaties and are in addition to those; they are developed as purpose-built legal frameworks.

As mentioned above, the specifics of ISS cooperation is that it is regulated by a three-tier structure. However, there is much debate within the space law community concerning the status of these three different legal in-

¹⁴³ M. Ferrazzani, “Soft law in space activities: Outlook on Space Law over the Next 30 Years”, Essays published for the 30th Anniversary of the Outer Space Treaty, (eds. G. Lafferranderie, D. Crowther), The Hague, Kluwer Law International, 1997, pp. 429

¹⁴⁴ F. Claasen, P. Weber, H. Ripken, V. Sobick, „Promotion of Industrial ISS Utilisation by the German Space Agency” in International Space Station, the next Space Marketplace, (eds. G. Haskell, M. Rycroft), 2000, p 156

¹⁴⁵ http://www.nasa.gov/mission_pages/station/cooperation/index.html#.VPNQC3zF-8o

¹⁴⁶ http://www.nasa.gov/mission_pages/station/cooperation/index.html#.VPNQC3zF-8o

¹⁴⁷

http://www.esa.int/Our_Activities/Human_Spaceflight/International_Space_Station/International_Space_Station_legal_framework.

¹⁴⁸ Art 3 – Art 21, IGA;

struments. The IGA is the most fundamental document underlying the ISS project, to which all other legal documents refer. The first question is then, whether the IGA is an international agreement or derives from private international law? The debate here is not a normative one - there is no dilemma about the hard law status of IGA, just about its provenance.

An instrument like the IGA could be useful for future agreements concerning space activities, as it demonstrates that hard law regulations can also be created from international agreements that are arguably private law instruments.

The second tier is the ISS MOUs. There the question arises whether MOUs are international governmental agreements or a type of gentlemen's undertaking?¹⁴⁹ The normativity of the provisions is thus being questioned. The difference between the two different instruments is reflected in the different language used in the texts to express obligation for the partner states. To impose obligations in the IGA the imperative "shall" has been consistently used, which expresses a firm type of obligation, whereas in MOUs the future tense "will" is used to describe an undertaking, which might imply a weaker normativity.¹⁵⁰

At the third level, there are various bilateral Implementing Agreements between the agencies, which have an implementation role. They endorse MOUs and distribute concrete guidelines and tasks among the national agencies. It is arguable that they represent private international hard law instruments. If this is so, a legal sandwich situation might exist, with the IGA and Implementing Agreements containing hard law obligations, and the MOUs something less. However, regardless of the possibly different legal status of the norms, the whole three-level structure is fully respected by the partners and has proven to be a successful way to regulate an important, cooperative space activity.

An advantage of the ISS legal mechanism is that it does not necessarily require a ratification process. It is stated in the IGA that it will

enter into force once the instruments of ratification of the United States, Russia and Japan are deposited, at which time it will replace the preceding 1988 IGA. Thereafter, the IGA will enter into force for the European Partner as a whole after its ratification by four European Partner States and following receipt by the Depository of a formal notification to this effect by the Chairman of the ESA Council.¹⁵¹ However, states have an option to implement such cooperation also through executive agreements.¹⁵² This happened for the ISS in the case of the U.S. where, despite the stated necessity by the IGA to ratify, the U.S. only followed the simplified procedure applicable to executive agreements and in this way met the requirement. The U.S. was probably able to do so because no prior national regulation had to be amended. Contrary to the U.S. approach, in 2005 the IGA entered into force for the European Partner following the receipt by the depository of instruments of ratification from seven European states, although the requirement was only for ratification by four.¹⁵³ The flexibility in ratification processes enables states to adopt hard law norms in an easier way if their domestic system so allows. Yet, the ISS situation demonstrates also the very different national approaches in this respect, and therefore the general lesson to be learned is that reliance on executive agreements to create hard law requires careful scrutiny of the room for manoeuvre of the states involved in a transaction.

The example of the ISS also shows that contractual agreements can work very well for a specific space mission, when all the key aspects are clearly defined at the early stage of negotiations between different nations wishing to be involved in a cooperative project. The regime developed to govern the ISS was specific, but it was also embedded in the pre-constitutive normative and legal environment established by pre-existing outer space regimes.¹⁵⁴ This notwithstanding, it is worth noting also that contractual agreements can be normative relative to general regulatory

¹⁴⁹ M. Ferrazzani, A. Farand, "A European Perspective on Lessons Learned from the Intergovernmental Agreement on International Space Station Cooperation, IAC-14-E7.3.1, 65th International Astronautical Congress, Toronto, Canada

¹⁵⁰ Agreement among the Government of Canada, Governments of the Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America concerning cooperation on the civil international space station; http://www.nasa.gov/mission_pages/station/structure/elements/nasa_esa.html

¹⁵¹ A. Farand, "The Space Station Cooperation Framework", Legal Affairs, ESA, Paris 1998

¹⁵² M. Ferrazzani, A. Farand, "A European Perspective on Lessons Learned from the Intergovernmental Agreement on International Space Station Cooperation, IAC-14-E7.3.1, 65th International Astronautical Congress, Toronto, Canada

¹⁵³ The IGA entered into force for the U.S., Japan, Canada and the Russian Federation on 17 November 1998 and for the European Partner on 28 June 2005 (entered into force following the receipt by the depository of instruments of ratification from European Signatory States: Denmark, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, Swiss)

¹⁵⁴ Regime Theory and the Study of Outer Space Politics, Jill Stuart, Sep 10 2013



issues, if they embody specific prohibitions, such as possible standard clauses on the prohibition of creation of space debris in launch contracts with a state party, and such normativity may in turn ultimately give birth to a new customary law rule.¹⁵⁵

Why can Space Actors agree on a Project Specific Agreement but not at the Level of General Law?

Almost from the dawn of the space age states have cooperated on space activities and therefore entered into a multitude of specific project related agreements, of which the IGA is just the most prominent. According to a report by NASA's Office of International and Interagency Relations in 2014, NASA alone has signed over 3,000 international agreements since its inception.¹ Another example is China, which during the last two decades, maneuver become a participant in a number of bilateral, regional, multilateral and international space agreements and in turn has profited extensively. Indeed, few of the big, challenging space missions (e.g. Hubble telescope, Rosetta mission) would have succeeded without states committing themselves to working together on developing necessary technology as well as governing legal regimes. This kind of space cooperation is "implemented in various forms, from making reciprocal space programmes and exchanges of scholars and specialists, and sponsoring symposiums, to jointly developing satellite or satellite parts, and providing satellite piggyback service and commercial launching service". A possible explanation for why states are willing to cooperate and bind themselves to project-specific agreements, and not at the level of general law, may lie in the fact that in this type of legal commitment, necessity outweighs the risks.

Smaller states are able to take part in advanced space projects by developing niche specializations, which are then utilized by spacefaring nations. Furthermore, developing countries can gain experience and know-how from advanced space countries and the leading spacefaring nations will have larger markets for their products. Additionally, as plans for space research and exploration missions inevitably become more ambitious and more expensive, the need for agencies to work closely together will increase. For all these reasons, states are more inclined to engage in project-specific agreements, which provide them with tangible gains and do not bind them to a certain behaviour and strict rules for an unlimited period.

The International Code of Conduct for Outer Space Activities of the European Union

Due to the lack of success of the CD, as noted above, and with reference to the request by the UN Secretary-General for "concrete proposals" on Transparency and Confidence-Building Measures (TCBMs) for space activities, in 2007 the European Union initiated a process to elaborate a Code of Conduct for Outer Space Activities (ICoC).¹⁵⁶ Under the lead of the European External Action Service the EU drafted a proposal for a voluntary, non-legally binding document. The purpose of this Code of Conduct is to establish safety, security and sustainability of space activities and to support existing international space law. At the present time four drafts have been elaborated and comments have been gathered from countries also outside of Europe.¹⁵⁷ The last meeting to negotiate the ICoC, with over hundred delegates, was held in New York in 2015. However, negotiations were torpedoed from the very beginning. Delegations did not even begin the formal negotiation process due to two procedural objections. The first procedural concern pointed out that the UN had no mandate to negotiate the ICoC. Consequently, this meant that the EU had no legal standing under the auspices of the UN and therefore the Chair was forced to downgrade the purpose of the meeting from a negotiation to a consulta-

¹⁵⁵ On the related issue of *lex mercatoria*, see below ...

¹⁵⁶ United Nations General Assembly Resolutions 61/75 (2006). United Nations General Assembly. Resolutions 62/43 (2007).

¹⁵⁷ Draft of 2008, 2010, 2012 and the latest version was released on 16 September 2013

tion.¹⁵⁸ The second procedural impediment emphasized that even if there was a UN General Assembly mandate, then other countries could not be prevented from proposing alternative texts of the ICoC for discussion.¹⁵⁹

Previously, concerns had been raised about the code's legal status. Given the code's non-legally binding and voluntary status, it was argued that it therefore belonged in the ongoing UN discussion on TCBMs.¹⁶⁰ In this spirit, any reference to the UN Charter or other legal binding treaties was also rejected. It appears that Russia and China were using the ICoC as a "bargaining chip" to promote negotiations at the Conference on Disarmament on a draft PPWT. Since the U.S. is opposed to that step,¹⁶¹ the EU is insisting on further reflection and work in order to consider an international treaty.¹⁶²

The active participation of non-space faring African nations is also worth mentioning. The strong common African position is that the code must in no way be used to limit or make it more difficult for those states that are not yet actors in space to engage in space activities in the future.¹⁶³ Throughout the consultation process, African countries have also continuously called for greater mention of capacity building and technical assistance/sharing of space technology.¹⁶⁴ This demonstrates the fast growing dependence that the world today has on space activities and also highlights that there are still considerable disagreements between states with more advanced space programmes and emerging space actors.

Taking into consideration all of the issues surrounding the ICoC, no tangible, positive outcome is foreseeable in the near future. Not only are there grave disagreements among states concerning the desired normative nature of the ICoC but now it has also been placed in a bureaucratic limbo. Even before procedural complications, the prospects of adoption of the ICoC were doubtful. This proves that nowadays even elaborating

soft law is not an easy task when security issues and a high number of states with different political views and stages of development are involved. Therefore, procedural issues should at least be avoided in order to have a chance to negotiate the substance.

The Space Debris Mitigation Guidelines (SDMG)

Another example of soft law norm development in the space domain is the Space Debris Mitigation Guidelines (SDMG). These rules were designed for the specific and very important issue of space debris¹⁶⁵ as the resolution of problems posed by space debris plays a crucial role in preserving the sustainable use of outer space. The Guidelines are adopted in the form of non-legally binding guidelines, even though it is in the interest of the whole of humanity to preserve space as a unique sustainable environment. This legal nature has not changed even with the subsequent endorsement of guidelines through UNCOPUOS.

The Inter-Agency Debris Coordination Committee was the first to elaborate and publish the "IADC Space Debris Mitigation Guidelines" in 2002. In the next years, they were presented to the Scientific and Technical Subcommittee (STSC) of UNCOPUOS. On the basis of the Guidelines, an expert group of the STSC elaborated the UN Space Debris Mitigation Guidelines, which were approved at the 63rd meeting of the UNCOPUOS STSC and adopted by the UN General Assembly in 2008.¹⁶⁶ Despite the non-binding character of the guidelines, in the course of the following years they have been taken as the baseline for national requirements of a binding nature for the design and operation of space systems as a precondition for obtaining the required licences.

In parallel, the European Code of Conduct for Space Debris Mitigation¹⁶⁷ was elaborated by a number of European space agencies and in 2006 signed by ASI, CNES, DLR, UKSA and ESA.¹⁶⁸ In addition, the International Organi-

¹⁵⁸ Michael J. Listner, "The International Code of Conduct: Comments on changes in the latest draft and post-mortem thought", *The Space Review*, October 26, 2015

¹⁵⁹ Michael J. Listner, "The International Code of Conduct: Comments on changes in the latest draft and post-mortem thought", *The Space Review*, October 26, 2015

¹⁶⁰ <http://www.reachingcriticalwill.org/resources/factsheets/critical-issues/5448-outer-space>

¹⁶¹ <http://www.reachingcriticalwill.org/resources/factsheets/critical-issues/5448-outer-space>

¹⁶² Statement of the European Union on "Prevention of Arms Race in Outer Space" Conference on Disarmament Geneva, 5 June 2012

¹⁶³ <http://www.reachingcriticalwill.org/resources/factsheets/critical-issues/5448-outer-space>

¹⁶⁴ <http://www.reachingcriticalwill.org/resources/factsheets/critical-issues/5448-outer-space>

¹⁶⁵ Space debris are defined as "Space debris are all man-made objects, including their fragments and parts, whether their owners can be identified or not, in Earth orbit or re-entering the dense layers of the atmosphere that are non-functional with no reasonable expectation of their being able to assume or resume their intended functions or any other functions for which they are or can be authorized", UN/COPUOS/Technical Report on Space Debris, United Nations, New York, 1999.

¹⁶⁶ United Nations General Assembly. Resolution 62/217.

¹⁶⁷ European Code of Conduct. 14 May 2014 <http://www.cnsa.gov.cn/n615708/n676979/n676983/n893604/appendix/2008529151013.pdf>.

¹⁶⁸ Agenzia Spaziale Italiana (ASI); Centre National d'Études Spatiales (CNES); Deutsche Zentrum für Luft-



sation for Standardization (ISO) has also developed standards on space debris mitigation (ISO 24113:2011).¹⁶⁹ Like all ISO standards, the standards on space debris mitigation are also non-binding, but may be implemented in a binding fashion in contractual arrangements. So far, they only cover part of debris relevant topics, thus further ISO standards are under development (on collision avoidance¹⁷⁰, survivability of unmanned spacecraft hit by space debris and meteoroids¹⁷¹, standardization of space debris and natural environment models¹⁷² and the elaboration of a design and operation manual for spacecraft operated in a debris environment).¹⁷³

A common approach to space debris mitigation is not only a decisive aspect for the sustainability of outer space, it is also an important element for fair industrial competition and seems to show that international binding rules may be possible even if they impact on business and competition. The current soft law instruments are a good start, but should hardly be the end of the normative quest!

3.2 Emerging Soft Law in Space Affairs

As noted above, since the first phase of drafting legally binding space related norms, which lasted until 1979, no new hard law norms have been adopted. They have been replaced by non-binding forms, as the UNGA resolutions for dedicated specific areas and furthermore by non-binding guidelines and codes of conduct e.g. such as the Space Debris Mitigation Guidelines.¹⁷⁴ The current phase in space law normative development is thus marked by the dominance of soft law.

In 2013 at the UNCOPUOS level, at the fifty-sixth session of the Legal Subcommittee, Japan¹⁷⁵ proposed the introduction of a new agenda item on "General exchange of information on practices in relation to non-legally binding instruments for outer space activities".¹⁷⁶ A high number of delegations endorsed this proposal as they considered it necessary to gain knowledge on how states were putting into practice the non-legally binding United Nations instruments for outer space activities. This compilation of information on the practices of states could serve as a useful tool for other states in the future, when they decide to enact their own national regulatory frameworks for outer space activities.¹⁷⁷ Even though the proposal has not (yet) been adopted, it can still be seen as a

und Raumfahrt (DLR); UK Space Agency (UKSA); European Space Agency (ESA)

¹⁶⁹ International Organisation for Standardization. ISO 24113:2011, Space systems - Space debris mitigation requirements. ISO 13 Jan 2014 <http://www.iso.org/iso/catalogue_detail?csnumber=57239>.

¹⁷⁰ International Organisation for Standardization. ISO/TR 16158:2013, Space systems - Avoiding collisions with orbiting objects. ISO 13 Jan 2014 <http://www.iso.org/iso/catalogue_detail.htm?csnumber=57339>.

¹⁷¹ International Organisation for Standardization. ISO/FDIS 16126, Space systems - Assessment of survivability of unmanned spacecraft against space debris and meteoroid impacts to ensure successful post-mission disposal. ISO 13 Jan 2014 <http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=55720>.

¹⁷² International Organisation for Standardization. ISO 14200:2012, Space environment (natural and artificial) - Guide to process-based implementation of meteoroid and debris environmental models (orbital altitudes below GEO + 2000 km). ISO 13 Jan 2014 <http://www.iso.org/iso/iso_catalogue/catalogue_ics/catalogue_detail_ics.htm?ics1=49&ics2=140&ics3=&csnumber=54506>.

¹⁷³ For further information: International Organisation for Standardization 13 Jan 2014 <http://www.iso.org/iso/home/news_index/news_archive/news.htm?refid=Ref1784>.

¹⁷⁴ Inter-Agency Space Debris Coordination Committee (IADC). IADC Space Debris Mitigation Guidelines (2002). IADC 14 May 2014 <http://www.iadc-online.org/docs_pub/IADC-101502.Mit.Guidelines.pdf/>.

¹⁷⁵ The proposal was made by Japan and co-sponsored by Austria, Canada, France, Nigeria and the United States. United Nations Committee on the Peaceful Uses of Outer Space. Report of the Legal Subcommittee on its Fifty-Second Session, Held in Vienna from 8 to 19 April 2013. UN Doc. A/AC.105/1045, p. 26. UNOOSA 14 May 2014 <<http://www.oosa.unvienna.org/oosa/en/COPUOS/Legal/2013/index.html>>.

¹⁷⁶ United Nations Committee on the Peaceful Uses of Outer Space. Report of the Legal Subcommittee on its Fifty-Second Session, held in Vienna from 8 to 19 April 2013. UN Doc. A/AC.105/C.2/L.291. New agenda item on general exchange of information on practices in relation to non-legally binding instruments for outer space activities, Working paper submitted by Japan, and co-sponsored by Austria, Canada, France, Nigeria and the United States of America. UNOOSA 14 May 2014 <<http://www.oosa.unvienna.org/oosa/en/COPUOS/Legal/2013/docs.html>>.

¹⁷⁷ United Nations Committee on the Peaceful Uses of Outer Space. Report of the Legal Subcommittee on its Fifty-Second Session, Held in Vienna from 8 to 9 April 2013. UN Doc. A/AC.105/1045, p. 26, pt. A.180. UNOOSA 14 May 2014 <<http://www.oosa.unvienna.org/oosa/en/COPUOS/Legal/2013/index.html>>.

sign that at the UN level the question of the nature of soft law instruments and their domestic relevance is drawing considerable attention.

There is a great debate among scholars on how exactly to define soft law. Two opposing views have developed, one denying the very existence of such law, as law, and the other that considers it as a new quasi source of international law. However, it is beyond the scope of this report to come down on one side or the other of the debate. With this caveat, the role, significance and possible future development of soft law as the “normative provisions contained in non-binding texts” will be examined.¹⁷⁸

3.2.1 Role of Soft Law

It is generally accepted by international law scholars that Art 38 of the Statute of the International Court of Justice sets out the sources of international law.¹⁷⁹ According to this article the primary sources are international conventions, customary international law and general principles of law, and subsidiary sources are judicial decisions and the teachings of the most highly qualified publicists.¹⁸⁰ There is no mention of soft law as a source and therefore the question that is raised is: what is the role of instruments developed outside the traditional source system of public international law?

With the failure of the Moon Agreement in 1979, law started to fall behind space technology advancement, thus leaving undefined many “grey areas” concerning exploration and the use of outer space. In this context it was natural for soft law to develop. Declarations, UN General Assembly resolutions, guidelines and standards of conduct were adopted, all representing soft law. Such instruments influence the actions of states but they do not have legal binding force *eo ipso*. However, various roles are attributed to soft law in the literature. For example: specific provisions contained in soft law may ‘codify’ pre-existing customary international law or precede and help form new rules of custom, consolidate political opinion around the need for solving a new problem, fill in gaps in existing treaties in force, form state practice that can be used to interpret treaties, provide

a model for domestic law or substitute for legal obligations when treaties are not feasible.¹⁸¹ This authoritative but flexible legal framework seem to correspond to the current needs of states and the private sector with regard to space activities, as it has simpler procedures, is finalized faster, stimulates development and well addresses narrow or very specific activities.¹⁸² It constitutes a coordinating principle between public interests and commercial and private interests in space activities.

Where technical rules are needed, where commercialization and privatization are in play and where national interests are not directly concerned, soft law dominates.¹⁸³ However, this diminishes the safety and sustainability of future space activities, and it leaves areas of critical national security or interest without binding norms, which gives rise to dangerous legal uncertainty. Only hard law can address and govern the activities of individual states that have significant conflict potential, such as the exploitation of natural resources or new types of threatening space objects.¹⁸⁴ However, for the moment soft law instruments appear to be the only feasible tool in the further development of space law.

3.2.2 Can We Stop at Soft Law from a Normative Standpoint?

But can we stop here or can soft law principles be transformed into hard law rules? As mentioned above, there are several opinions on how soft law can lead to the creation of an internationally binding norm. First, could it create customary international law? *Opinio juris* and state practice are required to form custom. *Opinio juris* is reflected in acts of states or in omissions as states act in a particular way following a belief that they are obliged by law to do so.¹⁸⁵ Soft law is a way of demonstrating consensus on rules and principles and for mobilizing a consistent, general response on the part of states. UN General Assembly resolutions are an instrument of soft law, however a number of specific provisions contained in these soft law norms may subsequently crystallize into cus-

¹⁷⁸ Shelton, Dinah, ed. *Commitment and Compliance: The Role of Non-binding Norms in the International Legal System*. Oxford: Oxford University Press, 2000, p. 292

¹⁷⁹ Georg Schwarzenberger, *International Law*, Vol. 1 (3rd ed. Stevens and Sons Ltd., London 1957) 21-22; Antonio Cassese, *International Law*, (2nd ed., Oxford University Press, Oxford-New York 2005) 156; Shaw, *International Law*

¹⁸⁰ Art 38, ICJ

¹⁸¹ Nicaragua Case, ICJ Report 1986; Steven Freeland, *Soft Law in Outer Space*, 22; Ricky J. Lee, Steven Freeland, *The Crystallisation of General Assembly Space Declarations into Customary International Law*, Proceedings of the 46th Colloquium on the Law of Outer Space (2004) 122; Dinah L. Shelton, *Soft Law, Handbook of International Law* (Routledge Press 2008), 8

¹⁸² Setsuko Aoki, *Soft Law in Outer Space*, 60

¹⁸³ Setsuko Aoki, *Soft Law in Outer Space*, 84-85

¹⁸⁴ Setsuko Aoki, *Soft Law in Outer Space*, 60

¹⁸⁵ Nicaragua Case; Lotus Case



tomary international law.¹⁸⁶ Resolutions may embody both requisite *opinion juris* and the state practice necessary to constitute “hard law” and they are accorded more weight when they are unanimous.¹⁸⁷ Furthermore, custom and soft law share mutual characteristics as there is no need not to go through a domestic ratification process, they receive less attention from domestic interest groups, cost little to generate, are flexible in content, and are able to form international norms without express state consent.¹⁸⁸ Therefore, soft law shapes expectations of future behaviour more strongly than mere political or social obligations and is a valid mechanism for creating customary law provisions. In addition, if relevant aspects of soft law are being applied by states in their national laws as license requirements for private sector operators, then this would represent enough state practice to create customary international law.¹⁸⁹ Regulated conduct of the private sector under domestic law would demonstrate state practice and hence states should be encouraged to adopt national space provisions in order to move from soft to hard law. However, one should bear in mind that the development of national laws is potentially a double-edged sword. On the one hand, national laws could in time lead to the creation of new international norms. On the other hand, they can also undermine already established legal principles and create a “Wild West” situation. Thus we are currently at a crossroads with regard to space resource utilization, considering the adoption of the U.S. Commercial Space Launch Competitiveness Act and the tension this creates with the Moon Agreement.

Secondly, soft law as a form of *opinio juris* may even without state practice be sufficient for the birth of a general principle of law. This source of international law consists of general principles of law recognized by civilized nations¹⁹⁰, in other words it only requires a shared general legal consciousness.¹⁹¹ In the past general principles of law as a source have been understood to only derive procedural norms from *foro domestic*, yet there is

¹⁸⁶ A. Boyle, Reflection on the Treaty as a Law-making Instrument, IV. Soft Law and the further Development of Law-making Treaties, 40 Years of the Vienna Convention on the Law of Treaties, pp. 11-13

¹⁸⁷ S. Freeland, *Soft Law in Outer Space*, 23

¹⁸⁸ L. R. Helfer & I. Wuerth, “Custom in the Age of Soft Law”, p.2

¹⁸⁹ S. Freeland, Matching Detail with Practice: The Essential Elements of National Space Legislation, Proceedings of International Institute of Space Law (2010) 540

¹⁹⁰ Art 38, ICJ

¹⁹¹ P. Hulsroj, „Three Sources – No River: a Hard Look at the Sources of Public International Law with Particular Emphasis on Custom and General Principles of Law”, *Zeitschrift für öffentliches Recht*, 1999, p. 220

no linguistic or substantive reason for such a limitation.¹⁹² Hence soft law might also, in the right circumstances, lead to a hard law general principle of law applicable to space affairs.

Lastly, soft law as an authoritative interpretation of a hard law instrument, can be argued to become an accessory to the hard law norm itself, as it helps to provide greater precision, through the written text, of an already existing binding norm.¹⁹³

Therefore, it is not enough to stop at soft law. In other areas, soft law rules were only the first step forward that then led to a fully binding legal regime. If one looks at evolution of regulations concerning nuclear disarmament, in the 1950s there were only non-binding provisions and today we have the Non-Proliferation Treaty and we are well on our way to the entry into force of the CTBT.¹⁹⁴

3.2.3 Danger of Soft Law

States are inclined to accept “soft” obligations when it comes to space activities. This entails two dangers. Firstly, there is a real risk that soft law downgrades pre-existing hard rules to being just soft. If we look at the issue of space debris, there are hard law obligations enshrined in Article I and Art IX OST, to use space for the benefit of all and to avoid harmful contamination. Space debris hinders free access of states to polluted areas of outer space¹⁹⁵ and can be perceived as a form of contamination.¹⁹⁶ On the latter point, Article IX OST states that appropriate measures shall be adopted to help avoid contamination, which is interpreted by some as an obligation to mitigate space debris.¹⁹⁷ Additionally, Article 21 of the Stockholm Dec-

¹⁹² P. Hulsroj, „Three Sources – No River: a Hard Look at the Sources of Public International Law with Particular Emphasis on Custom and General Principles of Law”, *Zeitschrift für öffentliches Recht*, 1999, p. 244

¹⁹³ M. Ferrazzani, “Soft Law in Space Activities – an Updated View”, *Soft Law in Outer Space*, p.112; the U.S. Court of Appeal for the Second Circuit stated in *Filartiga v. Pena Iraki* that “[These] UN declarations are significant because they specify with great precision the obligations of Member States under the Charter. Since their adoption, members can no longer contend that they do not know what human rights they promised in the Charter to promote.”

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<http://www.un.org/en/events/againstanuclear-testsdays/history.shtml>; <http://www.ctbto.org/nuclear-testing/history-of-nuclear-testing/nuclear-testing-1945-today/>

¹⁹⁵ Art I, Outer Space Treaty; Lyall and Larsen, *Space Law – A Treatise*, p. 307 (2009)

¹⁹⁶ Gerhard, *National Space Legislation*, p. 85 (2005)

¹⁹⁷ Art IX, Outer Space Treaty; UNCOPUOS, Technical Report on Space Debris, p. B.III.12 (2005) *Journal of Space Law*, Volume 26, p 209 (1998)

laration and Article 2 of the Rio Declaration, which are seen by most as customary obligations, state that states have to ensure that activities within their jurisdiction and control do not damage areas beyond national jurisdiction, such as Outer Space.¹⁹⁸ Yet, in the first draft of the ICoC, 2008, it was said in section 1.4 'Adherence to this Code and to the measures contained in it is voluntary and open to all States'. By this the impression could have been gained that the debris mitigation measures mentioned in the Code had no foundation in hard law, although this, as mentioned, would seem to be wrong. Fortunately, this possible misinterpretation has been eliminated in later drafts, yet the example demonstrates how careful one must be not to turn the good intentions of soft law into a prejudice for the hard law that possibly exists in parallel. States should thus be careful to avoid development of soft law norms that preempt the evolution from non-binding to binding norms or even move norms from binding to non-binding status.

3.2.4 Lex Mercatoria in the Space Domain?

With regard to soft law and different ways of transforming it to hard law norms, another peculiarity must be noted. There is a further complication concerning space activities and that is that they are nowadays to a large extent undertaken by non-governmental entities and their behaviour constitutes state practice only indirectly. However, in analogy to *lex mercatoria* the norms that commercial actors establish could form an independent legal order.¹⁹⁹ *Lex mercatoria* is understood to provide normativity to standard forms of international trade arrangements and behaviour, and has been applied by arbitral tribunals in a hard law sense.²⁰⁰ *Lex mercatoria* operates in the twilight zone between domestic law and public international law and alongside private international law, the last only addressing conflicts of domestic laws, rather than creation of truly international private law norms. *Lex mercatoria* is created as a response to the ambiguities flowing from conflict of laws norms and outdated domestic law norms that no longer satisfy the require-

ments of the international business community.²⁰¹ Through repeated international usage, traders have developed their own regulatory framework independent from national legal systems. According to the theory of legal pluralism, social groups such as the community of traders, are also capable of producing legal rules.²⁰² In comparison with national regulations, which are enacted by the legislator and therefore have an immediate binding force, and customary rules, which require *opinio juris*, (the feeling to be bound), trade usages are a product of party autonomy. It seems that *lex mercatoria* can thus be identified as a possible mechanism for the creation of binding norms that supplements the established mechanisms in international and national law. A law that supersedes national and international law, a law beyond the state²⁰³ and thus particularly suitable for regulating the affairs of commercial actors in the inherently non-national domain of space.

A poignant example can be found in the debris domain. To the extent that it could become common practice to include debris avoidance provisions in design, launch, delivery-in-orbit and in-orbit operation contracts, over time it may be possible to argue that even without such explicit provisions any commercial actor is obliged to comply with the common debris avoidance provisions. If debris mitigation guidelines become a standard applicable document in space related contracts, the guidelines themselves could thus morph into *lex mercatoria*. This would be helpful, even if it didn't resolve the overall problem of lack of hard law in this field in inter-state relations. Related to this is the interesting theoretical question of whether the *opinio juris* that may ultimately form with commercial actors as part of *lex mercatoria* would also count as *opinio juris* in a public international law sense, given that commercial actors are a kind of surrogate state actors because of the Outer Space Treaty definition of 'national activities'. Regrettably it goes beyond the scope of this report to give an answer to this, yet the possibility and the doctrinal impact of considering private actors as surrogate state actors are intriguing.

¹⁹⁸ Declaration of the UN Conference on the Human Environment; Rio Declaration

¹⁹⁹ C. Croff, "The Applicable Law in an International Commercial Arbitration: Is It Still a Conflict of Laws Problem?", *The International Lawyer*, Vol. 16, No. 4, 1982, p. 20-24

²⁰⁰ M. L. Rodríguez, "Lex Mercatoria", School of Law, Department of Private Law, University of Aarhus; T. Milenković-Kerković, "Origin, Development and Main Features of the New Lex Mercatoria" UDC:

347.74+658.86/87(4), Faculty of Economics, University of Niš, Trg VJ 11, 18000 Niš, Yugoslavia

²⁰¹ "Lex Mercatoria", Ana M. L. Rodríguez, School of Law, Department of Private Law University of Aarhus; <http://blogs.law.nyu.edu/transnational/2012/11/principles-of-contract-law-a-compilation-of-lex-mercatoria/>

²⁰² "Contemporary Problems in International Commercial Arbitration", Julian D.M. Lew (ed.), 1986, B. Goldman; C. Croff, "The applicable Law in an International Commercial Arbitration: Is It Still a Conflict of Laws Problem? The International Lawyer", Vol. 16, No. 4, 1982, p. 20-24

²⁰³ "The True Lex Mercatoria: Law Beyond the State", R. Michaels



Despite the fact that the existence of *lex mercatoria* in relation to space activities has not been confirmed by any judicial authority²⁰⁴, it nonetheless is a possible alternative way for the private sector to produce legal norms and create among themselves the necessary legal certainty.

3.3 Coalitions of the Willing

The tendency to favor soft law is noticeable not only in the space field, but also as a general trend at an international level. The difficulty of arriving at hard law also encourages states to search for like-minded countries and make non-binding but effective arrangements with them, the so-called coalitions of the willing. However, even if a consensus may be more easily reached among like-minded countries, such coalitions of the willing can fall apart quickly as they are based on communality of interest of the states at the time of the creation of the coalition. Disappearance of communality of interest might be just an election away, however. In addition, such coalitions carry an unappreciated danger in the sense that they tend to make it even more difficult to develop and adopt hard law in parallel.

The "Proliferation Security Initiative" (PSI) is a prominent example of coalitions of the willing. Confronted with the fact that the law of the sea does not allow inspection of third party ships on the high seas, let alone confiscation of weapons of mass destruction,²⁰⁵ making it legally impossible to react to this growing threat, the United States initiated the PSI. It is constituted as a multinational response through international cooperation with the purpose of curtailing the trafficking of weapons of mass destruction (WMD), their components, related materials and delivery systems.²⁰⁶ "It strives to co-ordinate participating states' efforts, consistent with national legal authorities and relevant international law (e. g. UNSCR 1540) (...) [and] is a com-

plement to existing counter proliferation efforts".²⁰⁷ Accords between participants in the PSI allow interdiction and inspection of ships of their nationality and confiscation of WMD when passing through other participants' national airports, ports, and other transshipment points.

The PSI was announced in 2003²⁰⁸ and 10 nations immediately joined the U.S. Within six months over 60 countries expressed their support and at this point 103 states have publicly committed to the initiative.²⁰⁹ The U.S. established itself as the leader of the coalition.²¹⁰ Membership is acquired by endorsing the PSI Statement of Interdiction Principles (a non-binding document that sets out the framework for the PSI activities). However, the initiative does not seek to establish new regulations, only a strengthening of existing national and international laws. Furthermore, it reflects UN Security Council views that the proliferation of all WMD constitutes a threat to international peace and security, and that there is a pressing need for member states of the UN to prevent proliferation.²¹¹ This aim of the PSI is enshrined in the set of principles released by the 11 original PSI members in 2003²¹², which states that "PSI participants are committed to the following interdiction principles to establish a more coordinated and effective basis through which to impede and stop shipments of WMD, delivery systems, and related materials flowing to and from states and non-state actors of proliferation concern, consistent with national legal authorities and relevant international law and frameworks, including the UN Security Council".²¹³

Since the launch of the initiative, around 50 interdiction exercises have been conducted

²⁰⁴ Lex mercatoria has been confirmed in ICC award No. 1472, Doc. No. 410/1636, May 8, 1968

²⁰⁵ A major event that led to the creation of the PSI is the interception of the freighter So San (sailing with no flags from North Korea to Yemen) by the Spanish SPS Navarra as part of Operation Enduring Freedom at high sea. Although 15 Scud B Missiles were discovered on board, the freighter had to be released as international law did not allow confiscating them. 3 Dec 2013
<<http://www.armscontrol.org/print/1579>>

²⁰⁶ Proliferation Security Initiative. 27 Jan. 2014
<<http://www.psi-online.info/Vertretung/psi/en/01-about-psi/0-about-us.html>>

²⁰⁷ Proliferation Security Initiative. 27 Nov. 2013
<<http://www.psi-online.info/Vertretung/psi/en/01-about-psi/0-about-us.html>>

²⁰⁸ Australia, France, Germany, Italy, Japan, the Netherlands, Poland, Portugal, Spain and the United Kingdom.

²⁰⁹ Proliferation Security Initiative, 27 Nov. 2013
<<http://www.psi-online.info/Vertretung/psi/en/01-about-psi/0-about-us.html>>. Pls update FN

²¹⁰ Arms Control Association. The Proliferation Security Initiative (PSI) at a Glance. 2 Dec. 2013
<<http://www.armscontrol.org/factsheets/PSI>>

²¹¹ <<http://www.state.gov/t/isn/c27726.htm>>, accessed 02/12/2013.

²¹² Proliferation Security Initiative: Statement of Interdiction Principles, 4 September 2003.
<<http://www.state.gov/t/isn/c27726.htm>>, accessed 02/12/2013.

²¹³ Proliferation Security Initiative: Statement of Interdiction Principles, 4 September 2003,
<<http://www.state.gov/t/isn/c27726.htm>>, accessed 02/12/2013.

and the shipment of WMD materials has fallen respectably.²¹⁴

Nevertheless the legality of the PSI principles has been questioned. While the members of the PSI consider that the principles do not create new legal rules, countries that are not part of the coalition as e.g. China, Indonesia, India, Iran, North Korea and Malaysia claim that the principles are in violation of international law by allowing interdiction of third party vessels on the high seas.²¹⁵ This is interpreted *inter alia* as a violation of the freedom of the seas, which is also guaranteed to ships carrying nuclear materials even for innocent passage through territorial waters.²¹⁶ The argument of non-participating states is that the PSI "initiative was not initiated through a multilateral process, but only by a group of nations that have a common goal to conduct a certain initiative"²¹⁷ and some states go even further, and see PSI activities as acts of piracy.²¹⁸

²¹⁴ The most famous example of this initiative was the seizure of the freighter BBC China carrying centrifuge parts from Malaysia to Libya. After this detection Libya surrendered its military nuclear programme, cf. <http://www.auswaertiges-amt.de/DE/Aussenpolitik/Friedenspolitik/Abruestung/Nukleares/GremienPj-PSI_node.html>, <http://www.nytimes.com/2004/12/26/international/asia/26nuke.html?pagewanted=4&_r=0>, accessed 02/12/2013; A recent example is the interdiction of the M/V Light in June 2011. The M/V Light was flying under a Belizean flag and was suspected of shipping ballistic missile technology from North Korea to Myanmar. The freighter was forced by U.S. naval forces to return to North Korea. Due to a U.S. agreement with Belize, the U.S. authorities would even have had the authority to inspect the ship (which was not done in this case), cf. Arms Control Association. The Proliferation Security Initiative (PSI) at a Glance. <<http://www.armscontrol.org/factsheets/PSI>>, accessed 02/12/2013.

²¹⁵ Arms Control Association. The Proliferation Security Initiative (PSI) at a Glance. 2 Dec 2013 <<http://www.armscontrol.org/factsheets/PSI>>.

²¹⁶ Art. 23 UNCLOS "Foreign nuclear-powered ships and ships carrying nuclear or other inherently dangerous or noxious substances shall, when exercising the right of innocent passage through the territorial sea, carry documents and observe special precautionary measures established for such ships by international agreements".

²¹⁷ Indonesia's Foreign Minister Hassan Wirajuda, 17 March 2006, Xinhua News Agency, <http://en.wikipedia.org/wiki/Proliferation_Security_Initiative> accessed 03/12/2013.

²¹⁸ "Any attempt to force down planes or board ships, however, would clearly violate existing laws regarding the safe passage of ships on the open seas. In other words, Bush's "Proliferation Security Initiative" aims at instituting a regime of air and sea piracy", Anti-Imperialist News Service, U.S. Practicing Sea and Air Piracy", 16 September 2003, <http://www.anti-imperialist.org/korea-piracy_9-16-03.html> accessed 03/12/2013.

3.3.1 Could Coalitions of the Willing Work in Space?

As mentioned above, PSI has strengthened the political agreement of like-minded states, but *per se* does not constitute hard law. However, it is worth debating whether this type of coalition of the willing could also work in outer space and further whether this could ultimately lead to hard law norms.

Since 1981 there has been a move within the UN's disarmament negotiating forum, the Conference on Disarmament, to potentially adopt a Treaty on Prevention of Arms Race in Outer Space (PAROS).²¹⁹ PAROS has gained near unanimous support year after year, except from the U.S. and with Israel abstaining.²²⁰ This shows that there are many like-minded states when it comes to further developing a legal mechanism for the prevention of arms deployment and use in outer space. This has developed into a 'No first placement of weapons in space' initiative, led by Russia. The idea is that states may make unilateral declarations to the effect that they will not be the first to place weapons in space. These statements may not be legally binding, but are associated with considerable political weight. The initiative is similar to the Cold War initiative on unilateral declarations of no first use of nuclear weapons. The hope may be that if a profusion of unilateral declarations on no first placement of weapons in space occurs then this could ultimately be an impetus for a proper treaty on the topic to be agreed. In a sense this is similar to a coalition of the willing.

An effect of a somewhat similar nature has been experienced in the case of the Missile Technology Control Regime (MTCR). This is a set of voluntary arrangements among 34 partner states who have all committed to applying common export control policy on an agreed-upon list.²²¹ Even though China is outside the MTCR framework, it announced in 2000 that it would not help other states build ballistic missiles capable of delivering nuclear weapons and defined "nuclear-capable missile" in the same fashion as the MTCR. Therefore, a coalition of like-minded states has influenced other states to accept and act in accordance with a set of non-binding provisions without forcing them to officially join. The most prominent example of how a coal-

²¹⁹

<http://fas.org/programs/ssp/nukes/ArmsControl_NEW/nonproliferation/NFZ/NP-NFZ-PAROS.html

²²⁰ <http://ploughshares.ca/pl_publications/in-defence-of-the-ppwt-treaty-toward-a-space-weapons-ban/

²²¹

<<http://www.sipri.org/research/disarmament/dualuse/publications/yearbook/yb9710>



tion of the willing can lead to hard law is the 2007 Resolution endorsing the Space Debris Mitigation Guidelines. This started as space agency-level non-binding provisions for major satellite operators, and the start was thus a sort of coalition of the willing, but because all major spacefaring states are now using them, they can be argued to be in a process of transformation into hard law at a national level. Soon it may be impossible for states that have implemented guidelines into their national legislation to deny state practice and *opinio juris* and, as a consequence, a customary legal obligation will be born at international level.²²²

Among the positive features when states express their common will (also in instruments like the International Code of Conduct) is that this strengthens existing national and international laws (e.g. the peaceful use of outer space as enshrined in OST). Furthermore, it encourages development of national laws, which could ultimately form opinion juris and state practice and lead to the creation of customary law. Another important benefit from coalitions of the willing is that they often lead to the creation of consequential bilateral agreements. However, on the negative side a serious danger is that a number of influential states may *de facto* impose their will as to the type of behaviour that should be followed. There is a lack of transparency (lack of structure and formality) and legitimacy (as has been pointed out by China concerning PSI). Further, there is also a danger of targeting specific states, conducting a common foreign policy of like-minded States aimed specifically against other states. For these reasons, India, China and Russia currently do not want to engage in International Code of Conduct because they consider it is based on a unilateral European initiative and as they were not sufficiently involved originally they feel threatened.²²³

Therefore, in the end it is not likely that coalitions of the willing will lead to significant numbers of binding norms. However, encouraging states to conclude as many bilateral agreements as possible and to implement voluntary commitments in national legislation as well as to influence states that are outside coalition frameworks, helps the international law community. It shapes a type of behaviour that is desirable. This in return forces states to act in this way if they want to keep their reputations intact, which is highly important when it comes to space.

²²² F. Von der Dunk and F. Tronchetti, "Handbook on Space Law", p. 106 ff, 2015

²²³ EU space code of conduct: The solution to space debris? By Keith Moore, BBC News, Science and Environment, 26.03.2012

4. Ways of Creating Binding Regulations in other Areas Esp. through Secondary Law

As space activities increase in number and diversity, new topics and issues that were not foreseeable at the time of the elaboration of the Outer Space Treaty arise. New rules are therefore necessary. Adoption of new multi-lateral treaties requires not only consensus, but also subsequent signature and ratification. As experience has shown, the elaboration and adoption of treaties is very slow and laborious. For this reason, it is necessary to look for other modalities.

Since the end of WWII there has been a clear tendency of governments to establish special departments or agencies to deal with newly perceived problems of national importance. As the problems that called for multinational cooperation increased, so did the number of international institutions that were designed to cope with them. The consequence is that we now have a plethora of specialized international organisations.²²⁴ Over the years, each of these many organisations has developed a relatively large body of law that governs the manner in which the organisation manages its business and exercises its functions. Although specialized international organisations contain many structural and constitutional similarities, each of them has developed an institutional personality or *modus operandi* of its own.²²⁵ This institutional personality is the product of a variety of factors. The most important factors that have an effect on the manner in which an organisation resolves legal problems are: the organisation's history, its functions, its membership composition, and the political or economic power that it possesses.²²⁶ Therefore in the next section, we look at other (successful) fields such as the CTBTO, IAEA or OPCW to see which mechanisms have been created elsewhere at the international level to achieve hard law norms in an easier way. In this context reference has to be made as well to space related mechanism on a regional level, meaning the procedures of ESA.

4.1 Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO)

The first international organisation that will be analysed with regard to its secondary norm- setting rules is the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO).

4.1.1 Overview and Purpose of CTBTO and Its Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organisation

The CTBTO is an international organisation that is to be established in Vienna upon the entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Its purpose is to ban comprehensively nuclear weapon test explosions and any other nuclear explosions. Until the CTBTO becomes operational, the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organisation, which was established in 1996²²⁷, is in charge of necessary preparations for the effective implementation of the CTBTO. The CTBTO Preparatory Commission is an interim organisation and its main goal is to operate the monitoring system and support the Treaty's entry into force.²²⁸ It is interesting to note that, even though the treaty negotiations themselves were long and complex, the time between the Treaty's opening for signature, the establishment of the Commission, and

²²⁴ T. BÜrgenthal, Law-Making in the ICAO, p. 1

²²⁵ T. BÜrgenthal, Law-Making in the ICAO, p. 1

²²⁶ T. BÜrgenthal, Law-Making in the ICAO, p. 1

²²⁷ On 19 November 1996 with its seat in Vienna.

²²⁸ Resolution establishing the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organisation, New York, 19 November 1996, (CTBT/MSS/RES/1).



the commencement of the Provisional Technical Secretariat's (PTS) operations was only six months. This shows that the signatory States found it urgent to establish an efficient and effective CTBTO.²²⁹

Special attention has to be drawn to the decision making process of this Commission, as this shows the *modus operandi* of this institution. According to Art. 6 of the Annex of the resolution establishing the Preparatory Commission, "all decisions of the Commission should be taken by consensus".²³⁰ This is the general rule. Exceptions are made only when a consensus cannot be reached. In that case, the Chairman of the Commission defers the vote for 24 hours. During this period of deferment, the Chairman makes every attempt to achieve consensus, and before the end of the 24 hours period, he reports his results back to the Commission. If consensus was not possible, the Commission shall then take decisions on questions of procedure by a simple majority of the members present and voting and on decisions on matters of substance by a two-thirds majority of the members present and voting. When the issue arises as to whether the question is one of substance or not, that question shall be treated as a matter of substance unless otherwise decided by the Commission by a two-thirds majority.²³¹

4.1.2 Mechanisms for Setting Law

The CTBTO's institutional personality is visible through its norm creation mechanism. It is a very specific dual form of norm creation:

- First, a hard law approach as concerns the necessary conditions for the entry into force of the CTBT, which is followed by a very flexible way of implementing the CTBT before its official entry into force through the establishment of a Preparatory Commission; and
- Second, a system of Inspection Manuals as a means of creating secondary legal norms for the long term.

²²⁹ Comprehensive Nuclear-Test-Ban Treaty Organisation. 14 May 2014 <<http://www.ctbto.org/the-organisation/ctbto-preparatory-commission/establishment-purpose-and-activities/>>.

²³⁰ Art. 6 of the Annex of the Resolution establishing the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organisation.

²³¹ Art. 6 of the Annex of the Resolution establishing the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organisation.

4.1.3 Norms for the Problematic Entry into Force of the CTBT

After complex negotiations on the substantive text of the treaty, the provisions concerning entry into force were also intensely discussed. States expressed diverse opinions. For example, some countries, with reference to the Vienna Convention on the Law of Treaties, proposed that the CTBT should enter into force upon ratification by all states that were party to the negotiations. However, this option did not include all states holding nuclear weapons and therefore the treaty would fail its purpose. Other countries proposed that the treaty should enter into force once the five recognized nuclear power states have ratified it, however, these five states wanted to see all other nuclear capable countries and threshold states also bound. In the end it was agreed to include in an annex the names of 44 states that would have to ratify in order for the treaty to enter into force. These 44 states were those who at the time had nuclear capabilities, be it peaceful or of a military nature.²³²

Currently, the CTBT still has not entered into force. Only 41 of the 44 named states have signed, and 36 have ratified, the treaty. For entry into force Egypt, China, India, Iran, Israel North Korea, Pakistan and the U.S.²³³ must ratify the treaty. In addition, India, Pakistan and North Korea have to sign it first.²³⁴

For this reason, the General Assembly of the UN created a Preparatory Commission by adopting the above-mentioned resolution in 1996. This Preparatory Commission, with the headquarters in Vienna, was created for the purpose of provisional administration and implementation of relevant parts of the provisions of the CTBT even if the treaty had not officially entered into force. With all operations formally transferred to Vienna, the Preparatory Commission began deliberating over policy decisions and standards for the working groups. Working Group A (WGA) focused on legal and administrative issues, while Working Group B (WGB) concentrated on the

²³² CTBTO, Annex 2: Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Democratic People's Republic of Korea, Egypt, Finland, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Romania, Republic of Korea, Russian Federation, Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of -93- America, Viet Nam, Zaire; <http://ctbto.org/map/#status>

²³³ The ratification by the U.S. was refused by its Senate on 13 October 1999.

²³⁴ As of January 2014.

verification regime, both making policy recommendations to the Preparatory Commission.²³⁵ In the next step, the Commission established a global verification regime to monitor compliance with the comprehensive ban on nuclear testing.²³⁶ This regime is unique and comprehensive and it ensures that no nuclear explosion goes undetected. This is possible through two pillars: the International Monitoring System (IMS) and the International Data Center (IDC).²³⁷ The third pillar foreseen in the CTBT, on-site inspections, has not been made operational, but preparatory measures are to be undertaken.

In order to prepare and manage the verification regime, the Preparatory Commission was requested to elaborate operations manuals that will guide CTBTO activities.

4.1.4 Manuals – Systems for Creating Secondary Legal Norms

The manner of creating secondary legal norms that make it possible in the long term to implement and have a functional verification regime is a particularity of the CTBT and the Preparatory Commission. The preparation of manuals (IMS: Seismic, Hydroacoustic, Infrasound (SHI) and Radionuclide (RN) Manuals; IDC Manual; and OSI Manual) is the key.²³⁸ This is a practicable way to create secondary regulations that do not need to undergo the rigours of the national ratification processes. Indeed, with regard to the manuals the treaty states that: “drafts of all Operational Manuals, approved by the Preparatory Commission, are required to be adopted by the initial Conference of the States Parties”²³⁹, which means that they need to be approved by the Member States,

²³⁵ <https://www.ctbto.org/specials/who-we-are/>

²³⁶ Comprehensive Nuclear-Test-Ban Treaty Organisation. 14 May 2014 <<http://www.ctbto.org/the-organisation/ctbto-preparatory-commission/establishment-purpose-and-activities/>>.

²³⁷ Comprehensive Nuclear-Test-Ban Treaty, Art. IV Verification, pt. D. “On-Site Inspections” (OSI). An On-Site Inspection may be conducted in case of concerns about compliance with the basic obligations of the CTBTO (clarification whether a nuclear explosion has been carried out, pt. D.34), but only after entry into force of the Treaty.

²³⁸ <http://foresight.ctbto.org/download/attachments/12189791/T1-006.+IMS-IDC+Operational+Manuals+%E2%80%93+Part+of+the+Frame-work+Governing+the+O+and+M+Activity+in+the+IMS+network.pdf>

²³⁹ Art. II, paragraph 26 (h), of the Treaty; Appendix “Indicative list of verification tasks of the preparatory Commission” of the Resolution establishing the Preparatory Commission for the Comprehensive Nuclear Test-Ban Treaty Organisation, 1996 (CTBT/MSS/RES/1).

but not by their Parliaments. Approval by the Preparatory Commission is, as mentioned, by consensus, and, failing that, a two-thirds majority. Provisional application is attached to the manuals for the IMS and the IDC, which thus have early normative power.

The IMS and IDC manuals are high level documents that govern the functioning of all stations in the IMS network and of the IDC. They are intended for those engaged in the daily operation of IMS stations/laboratories and the IDC. These operational manuals are in accordance with, *inter alia*, Article IV, Sections A and B, of the Treaty and Part I of the Protocol. However, they do not constitute an integral part of the Treaty or its Protocol. In the event of conflict between the Manuals and the Treaty and its Protocol, the provisions of the Treaty and its Protocol prevail. Additionally, it should be emphasized that manuals are not created in order to circumvent any provisions of the Treaty and its Protocol and they may be supplemented by supporting documents that may provide additional details about selected topics.²⁴⁰

This method of using a resolution to create an institutional body that has the power to adopt secondary norms, in a sense constitutes a legal short cut that has made it possible for the CTBTO Preparatory Commission to operate efficiently and to the satisfaction of the international community for the last 18 years.

4.2 The International Atomic Energy Agency (IAEA)

A second area for examination is the norm creation process of the IAEA as it has some particularities in its *modus operandi*.

4.2.1 Overview and Purpose of the IAEA

The IAEA was established in 1957 as an international organisation to promote the peaceful use of nuclear energy and to “foster the exchange of scientific and technical information on peaceful uses of atomic energy”.²⁴¹ Furthermore, the IAEA aims to inhibit

²⁴⁰

https://www.ctbto.org/fileadmin/user_upload/procurement/2011/sds1_-_TOR_Attachment_I_-_IMS_Operational_Manual_.pdf

²⁴¹ The IAEA was “originally intended to be a kind of broker for controlled nuclear assistance and trade”, IAEA, IAEA



the use of nuclear energy for any military purpose, including nuclear weapons. In order to carry out its functions the IAEA can establish and administer safeguards, which are designed to ensure that materials and information made available by the Agency or under its supervision or control are not used in such a way as to support any military purpose. These tasks of the IAEA are operated by five departments: the Department of Nuclear Sciences and Applications, the Department of Nuclear Energy, the Department of Nuclear Safety and Security, the Department of Safeguards, and the Department of Technical Cooperation.

4.2.2 Additional Protocols: a Normative Mechanism Allowing the Setting of Law?

A special safeguards system has been implemented to enable the Agency to operate and to fulfil its task to assure that nuclear material is only used for peaceful nuclear uses.²⁴² The IAEA Safeguards legal framework is many-sided and consists of a number of elements. It includes: the IAEA Statute; the Nuclear Non-Proliferation Treaty (NPT) and other treaties requiring verification; the basic safeguards documents; the safeguards instruments themselves, including safeguards agreements, protocols and secondary arrangements; and the decisions and practices of the IAEA Board of Governors.²⁴³ The Agency can conclude three types of safeguards agreements: comprehensive safeguards agreements, item-specific safeguards agreements, and voluntary offer agreements. Here, special attention is given to the additional protocols accompanying many safeguards agreements, as the adoption of a 'Model Additional Agreement'²⁴⁴ to facilitate the negotiation of actual Additional Protocols (AP) has been highly normative, and can be argued to have been a significant enabler of the creation of crucial hard law norms.

An AP is an agreement concluded between a state and the IAEA, complementary to the state's safeguards agreement with the IAEA, broadening the information to be reported to the IAEA and the access to be given to safeguards inspectors, providing for a better way

to verify a state's safeguards obligations.²⁴⁵ The Model AP was agreed by the IAEA's Board of Governors in 1997 and currently there are 127 AP in force with 126 States and Euratom, while another 20 states have signed an AP but have yet to bring it into force.²⁴⁶ All states party to the non-proliferation regime are expected to do what they can to achieve complete universalization of the AP, as the AP is now established by international practice as the NPT safeguards standard.

The necessity to establish APs in the 1990s arose as a response to the discovery of Iraq's nuclear weapons programme following the first Gulf War. The "traditional" safeguards system, first developed for the NPT in the early 1970s, which verified only declared nuclear material and activities, had proven to be insufficient. The idea was to expand and strengthen safeguards by establishing the technical capabilities and legal authority necessary for detection of undeclared nuclear material and activities. Hence, rather than renegotiating existing safeguards agreements, with the obvious problems this could involve²⁴⁷, it was decided to develop a new instrument that would be additional and complementary to existing agreements, addressing the deficiencies in these - the AP.²⁴⁸ The model Additional Protocol - known as INFCIRC/540 - was approved by the Board of Governors in May 1997 and later that year Australia became the first state to sign and ratify an Additional Protocol.

The Model Additional Protocol, which was adopted by the Board (by a majority vote) and not by the General Assembly, has to be signed by each state-party. Individual adaptations are negotiable and possible. Hence, the AP may differ from one country to another, however it is considered to be highly standardized.²⁴⁹ This demonstrates the highly normative nature of these Additional Protocols as normally a high number of member states accept the Model AP with no further important changes.

Safeguards: Stemming the Spread of Nuclear Weapons, IAEA publication/website; art. II, art. III.A.3. IAEA Statute
²⁴² III.A.5, IAEA Statute

²⁴³ <https://www.iaea.org/safeguards/safeguards-legal-framework>

²⁴⁴ Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards, INFCIRC/540, Printed by the IAEA in Austria September 1997

²⁴⁵ <https://www.iaea.org/safeguards/safeguards-legal-framework/additional-protocol>

²⁴⁶ <https://www.iaea.org/safeguards/safeguards-legal-framework/additional-protocol>

²⁴⁷ (as all NNWSs party to the NPT, as well as States party to the regional nuclear-weapon-free zone treaties (NWFZ Treaties), are required to accept IAEA safeguards on all nuclear material in all peaceful nuclear activities within their territory, under their jurisdiction or carried out under their control anywhere)

<https://www.iaea.org/safeguards/safeguards-legal-framework/safeguards-agreements>

²⁴⁸ IAEA SAFEGUARDS ADDITIONAL PROTOCOL, John Carlson, 20 January 2009

²⁴⁹ Moreover some countries have signed the individual elaborated Additional protocol but have not ratified it. This is the case for approx. 20 countries, among them Belarus, India, Iran, Malaysia, Myanmar and Thailand.

Compared to the CTBTO, which is still in a preparatory phase, the IAEA system has been active for decades. The IAEA is constantly improving its efficiency in accordance with the information that it receives as a result of states applying and allowing the implementation of the legal regime. The AP gives a mandate to the IAEA and its inspectors that goes far beyond the originally envisaged scope of the statute. Like the CTBT Inspection Manuals, the Model AP presents a flexible and supple way of ushering in new norms at the international level.

4.3 The Organisation for the Prohibition of Chemical Weapons (OPCW)

Lastly, the OPCW and its conventions have to be addressed as these have developed specific procedures for amendments.

4.3.1 Overview and Purpose of the OPCW

With the decision of the Nobel Committee to award the 2013 Peace Prize to the OPCW for its extensive efforts to eliminate chemical weapons, this intergovernmental organisation, located in The Hague (NL), became known worldwide.²⁵⁰ In 1997 the Chemical Weapon Convention, which prohibits the use of chemical weapons and demands their destruction²⁵¹, came into force and currently 192 states have acceded to it.²⁵² The common goal of the States Parties to the Convention is to prevent chemical weapons from ever again being used in the time of war and, in that way, to strengthen international security. To this end, four key commitments have been agreed: the destruction of all existing chemical weapons, with international verification by the OPCW; the monitoring of the chemical industry to prevent new weapons from re-emerging; the provision of assistance and protection to States Parties against chemical threats; and the fostering of international cooperation in order to strengthen implementation of the Convention and pro-

mote the peaceful use of chemistry.²⁵³ The unique *modus operandi* of the OPCW lies in the specific structure of the decision-making bodies. At the top level, there is the Conference of the State Parties, which makes recommendations and decides on any issue within the scope of the Convention. Furthermore, it oversees the activities of the Executive Council and the Secretariat, and has a right to issue guidelines in accordance with the Convention to either of them in the exercise of their functions.²⁵⁴ The Conference takes decisions on questions of procedure by a simple majority of members present and voting. Substantive decisions should be taken by consensus, and only if consensus is not attainable, (and the 24-hour period of deferment called by the Chairman of the Conference is unsuccessful), may the Conference make a decision by a two-thirds majority of members present and voting. If the issue arises as to whether or not a question is one of substance, that question is to be treated as a matter of substance, unless the Conference decides otherwise by the majority required for decisions on matters of substance.²⁵⁵

At the second level is the Executive Council, which consists of 41 representatives of the States Members, and whose main objective is to promote the effective implementation of, and compliance with, the Convention. To achieve this goal, considerable executive powers have been given to the Council. Thus, it may (without prior consent of the Conference) conclude agreements with States Parties on behalf of the Organisation in order to provide assistance and help in protection against chemical weapons, and may approve agreements or arrangements relating to the implementation of verification activities. The Executive Council may also conclude agreements or arrangements with third party states and international organisations, yet this requires the prior approval of the Conference.²⁵⁶ With regard to the decision making process of the Council it makes all decisions on matters of substance by a two-thirds majority vote, and on matters of procedure by a simple majority of all its members.²⁵⁷ The one exception is with regard to the Executive Council's power to stop a challenge inspection from proceeding. For this decision it is neces-

²⁵⁰ In 2013, The Nobel Peace Prize was awarded to the OPCW.

²⁵¹ The Geneva Convention of 1925 prohibited the use, but not the production or storage, of chemical weapons.

²⁵² Following countries have still not signed or ratified the convention: Angola, Egypt Israel, Myanmar, North Korea, South Sudan and Syria.

²⁵³ <https://www.opcw.org/about-opcw/>

²⁵⁴ <https://www.opcw.org/about-opcw/conference-of-the-states-parties/about-the-conference-of-the-states-parties/>

²⁵⁵ <https://www.opcw.org/about-opcw/conference-of-the-states-parties/about-the-conference-of-the-states-parties/>

²⁵⁶ <https://www.opcw.org/about-opcw/executive-council/membership-and-functions/>

²⁵⁷ Rules of Procedure, Art VII (voting)



sary to obtain a three-quarter majority of all the Executive Council members.²⁵⁸

4.3.2 Mechanism for Setting Law

Like the other above-mentioned international organisations, the OPCW has to keep up with technological developments to fulfil its objectives. Therefore, some provisions of the treaty can be rendered obsolete and new provisions become necessary. For this reason, Article XV has been enshrined in the convention, which regulates “amendments” to the relevant procedures. Two procedures are foreseen, one for administrative and technical changes to the Annex on Chemicals; and the other for “Sections A and C of the Confidentiality Annex, Part X of the Verification Annex which relate exclusively to challenge inspections”.²⁵⁹ In order to ensure the effectiveness and smooth transition of this process, provisions in the Annexes are subject to changes in accordance with paragraph 5²⁶⁰, if the proposed changes are related only to the first category matters. For the second category, this type of change is not possible, they have

²⁵⁸ <https://www.opcw.org/about-opcw/executive-council/membership-and-functions/>

²⁵⁹ Art XV Convention

²⁶⁰ Art XV para 5: (a) The text of the proposed changes shall be transmitted together with the necessary information to the Director General. Additional information for the evaluation of the proposal may be provided by any State Party and the Director General. The Director General shall promptly communicate any such proposals and information to all States Parties, the Executive Council and the Depositary; (b) Not later than 60 days after its receipt, the Director General shall evaluate the proposal to determine all its possible consequences for the provisions of this Convention and its implementation and shall communicate any such information to all States Parties and the Executive Council; (c) The Executive Council shall examine the proposal in the light of all information available to it, including whether the proposal fulfils the requirements of paragraph 4. Not later than 90 days after its receipt, the Executive Council shall notify its recommendation, with appropriate explanations, to all States Parties for consideration. States Parties shall acknowledge receipt within 10 days; (d) If the Executive Council recommends to all States Parties that the proposal be adopted, it shall be considered approved if no State Party objects to it within 90 days after receipt of the recommendation. If the Executive Council recommends that the proposal be rejected, it shall be considered rejected if no State Party objects to the rejection within 90 days after receipt of the recommendation; (e) If a recommendation of the Executive Council does not meet with the acceptance required under subparagraph (d), a decision on the proposal, including whether it fulfils the requirements of paragraph 4, shall be taken as a matter of substance by the Conference at its next session; (f) The Director General shall notify all States Parties and the Depositary of any decision under this paragraph; (g) Changes approved under this procedure shall enter into force for all States Parties 180 days after the date of notification by the Director General of their approval unless another time period is recommended by the Executive Council or decided by the Conference.

to undergo a specific procedure.²⁶¹ First, the text of the proposed changes shall be transmitted to the Director-General, who then informs all the States Parties, the Executive Council and the Depositary. In the next step, the Council examines the proposal and if it recommends it to all the States Parties that they should adopt the proposal. It is then considered as approved if no State Party objects to it within 90 days after receipt of the Council’s recommendation.²⁶² In the final phase, changes approved in this way enter into force for all States Parties 180 days after the notification of the approval.

Thus, both the OPCW and the CTBTO have developed secondary rules norm creation mechanisms, allowing new provisions to enter into force without the whole process of ratification at State Party level. This has been done to enable more flexible and faster adaptation of hard law norms to the changing world of technology.

4.4 On Regional Level: European Space Agency (ESA)

ESA is an international organisation consisting of 22 European member states, established by a Convention²⁶³ signed by ten European Countries in 1975²⁶⁴ and entering into force on 30 October 1980.²⁶⁵ By coordinating the financial and intellectual resources of the member states, it is possible for ESA to undertake programmes and activities far beyond the scope of any European country individually.

The Convention defines two organs in charge of the ESA: the Council and the Director General. The Council is the organ representing all the member states, and it meets every three months at delegate level and every two to three years at ministerial level. At ministerial

²⁶¹ Organisation for the Prohibition of Chemical Weapons. 14 May 2014 <<http://www.opcw.org/chemical-weapons-convention/about-the-convention/fundamental-provisions/>>.

²⁶² Art 5 para. (d)

²⁶³ Convention for the establishment of a European Space Agency (CSE/CS(73)19, rev.7).

²⁶⁴ Germany, Belgium, Denmark, Spain, France, Italy, Netherlands, United Kingdom of Great Britain and Northern Ireland, Sweden and Switzerland. Ireland signed the Convention on 21 December 1975.

²⁶⁵ European Space Agency. 12 Feb 2014 <http://www.esa.int/About_Us/Law_at_ESA/ESA_Convention>.

level, key decisions are adopted, which determine ESA's direction for the upcoming years, the level of resources allocated, and which programmes will start or be terminated. These decisions are adopted in the form of Resolutions, which provide the first level of legal framework governing the programmes. At delegate level, delegations are composed of a maximum of two persons from a member state and each delegation has one vote. ESA has two types of activities. First, mandatory activities (the space science programme and the general budget), which are funded by a financial contribution from all the Agency's member states, calculated in accordance with each country's gross national product. Second, a number of optional programmes is offered, where each Member State decides freely in which optional programme they wish to participate and the amount they wish to contribute.²⁶⁶ In the optional programmes, only states that are participating have the right to vote. Thus, this represents an alteration to the general rule: every state has one vote. Member states that opt-in to the optional programme draw up a Declaration, which includes a draft version of Implementing Rules, and they submit it to the Council for its approval.²⁶⁷ The Council responds through Programme Resolutions, in which it acknowledges that the optional programme is in the scope of ESA activity and is pursuable. ESA activities are divided into six groups and there are six programme boards²⁶⁸ that are in charge of overseeing the successful execution of the programmes. This method used for adoption of optional programmes represents a secondary norm creating mechanism as all the operational norms for executing a programme are contained in the Declaration and Implementing Rules. Furthermore, no specific ratification is required, as they are adopted in line with the ESA Convention. Declarations describe the general and the financial conditions, and the Implementing Rules define the conditions governing execution by the ESA.²⁶⁹

²⁶⁶

[http://www.esa.int/About_Us/Welcome_to_ESA/What_is_ESA\(print\);](http://www.esa.int/About_Us/Welcome_to_ESA/What_is_ESA(print);) Annex III, art. 1, pt. 2d

²⁶⁷ Art 1 (3), Annex III, ESA Convention

²⁶⁸ Joint Board on Communication Satellite Programme, Launchers Programme Board, Programme Board for Earth Observation, Programme Board for Human Spaceflight, Microgravity and Exploration, Programme Board on Satellite Navigation, Programme Board on Space Situational Awareness

²⁶⁹ PRODEX Programme & ESA, H. Schroeven-Deceuninck, Hellenic Astronomical Conference, Athens, 24 September 2009: "The Agency concludes and manages industrial contracts in cooperation with the respective institutes and universities. The contracts for the development of the selected instruments or experiments are awarded in accordance with the rules and procedures in force, but call for tenders are restricted to the industries of the Participating State that has decided to finance the

Therefore, by also containing further decision-making provisions, these two legal formations allow tertiary norm creation and provide ESA with an effective method to fulfil its purpose.

As in the other examples of international organisations, the ESA Convention stipulates general rules, such as the voting rules, however it cannot foresee all norms that will be needed for the future efficient functioning of the agency. Therefore, a secondary norm creation (with an addition of tertiary) method was adopted also here, operating within clearly defined bounds. Accordingly, norms/declarations can be adopted by member states without going through the whole process of ratification by national parliaments.

4.5 Secondary Law Creation and the General Lessons for Space

The common denominator of the secondary law creation mechanisms investigated is that they all have a 'master'. The mechanisms involve a parent organisation through which secondary law is created. For space it is not straightforward to find such a master. UNOOSA and COPUOS currently do not exercise functions that could be activated for such purposes. And on the global scale no other candidate exists.

Yet, looking at where secondary norm creation in space would be particularly relevant, possibilities appear. The most vexing problem in space currently is debris. As explained earlier, fairly authoritative guidelines on debris have been elaborated and the Inter-Agency Space Debris Coordination Committee (IADC) exists. A next possible step could then be to elaborate a proper hard law instrument on this matter, following one of the methodologies described in earlier chapters. One part of such an instrument could be the introduction of a mechanism for the creation of secondary law, thus accommodating the need to stay abreast of technical developments (as in the cases of CTBTO and OPCW). The authority to create secondary law could be entrusted to a derivative of the IADC. This would not necessitate the creation of a new international organization - the hard law in-

PRODEX Programme and approves the corresponding instrument or experiment"



strument would only have to empower a well-defined entity with the requisite authority. It might, however, be convenient to position a 'Son of the IADC' under the UN umbrella, thus giving it an assured organisational footing. This would be particularly convenient if the hard law instrument had also been elaborated in a UN context.

Other permutations on this theme could be imagined. Proposals have been made for the creation of an ICAO for space, entrusting such an entity with space traffic management powers in general²⁷⁰. Also such an entity could, and should, possess secondary law creation powers in order to be able to keep up with developments in a field of high dynamism.

But in a completely different context secondary law creation authority might equally be appropriate. In fact, the ESA optional programme scheme could be universalized. The master of the process could be UNCOPOUS and UNOOSA, which through optional programmes could offer developing countries in particular a platform for cooperation that would be easy and safe to use. COPUOS and UNOOSA could establish a mechanism that would have engineering and project management expertise on tap (through framework contracts with providers), and which would involve a paradigmatic framework for cooperation, including the process for establishing declarations and associated implementing rules²⁷¹. 'Optional space programmes in the UN' would not necessarily require new treaty provisions, as the function (but not actual programmes) could be established through a General Assembly resolution. The example of the establishment of the Additional Protocols of the IAEA applies²⁷². Actual programmes under the aegis of this new optional programme function could be implemented through contractual arrangements only, although a simpler and more convenient mechanism would be through a treaty that sets out a secondary norm creation scheme as is done in the ESA Convention. However, a treaty is not likely, and therefore actual implementation of programmes would have to go the general route of non-treaty agreements (thus avoiding national ratification requirements for each individual programme, viz. the ISS example). Also the programme agreements could, of course, be largely standardized, which would promote ease and predictability in commitment and execution.

²⁷⁰ ESPI book

²⁷¹ Cf. Peter Hulsroj in the ESPI Yearbook 2011-12, 167.

²⁷² As well as the example of how the Preparatory Commission of the CTBTO was created.

5. Conclusions

The space community is increasingly defeatist with regard to the adoption of new hard space law. At a time when the major governing body in charge of space norm creation, UNCOPUOS, has invariably turned its attention to non-binding guidelines and national legislation to regulate even the most critical issues, it is indeed hardly imaginable that the feat of 1967-79 could be equalled today. Membership of many new countries (83 as at 2015) and the indirect, but growing, influence of the private sector are seen in UNCOPUOS as serious obstacles in reaching the necessary decision making consensus. Yet, the interests of the private sector in terms of hard law might be partly misunderstood. Private actors have a significant interest in hard law norms, as only such provisions provide sufficient protection for their investments.²⁷³

At the beginning of this report the Cape Town Convention and its three protocols were closely examined. Even though the Space Assets Protocol is still not in force, the unique UNIDROIT model of convention and protocols is a valuable lesson and inspiration for the international legal community. A unified, over-arching convention, which avoids diverse interpretations, prevents inconsistencies and is not cluttered-up with specific details, is an important innovation, which could be leveraged in the future. Furthermore, the very idea of having detailed protocols, which are drafted with the help of industry experts, should not be put aside but consistently improved by, *inter alia*, adopting protocols by executive agreement in order to avoid double ratification. The improved method of the Cape Town Convention could be a good way to resolve issues such as space debris and resource utilization.

²⁷³ As can be seen in the example of the U.S. Commercial Space Launch Competitiveness Act, private industry has been the driving force in bringing this national legislation to life, an expression of hard law. However, important issues such as resource utilization should not be dealt with on a country to country basis, as this does not provide uniformity and does not necessarily take into account the interests of the global community of states. In fact, such an approach threatens to weaken already existing principles and create a rule of the strong rather than respecting the rule of law.

Building on this line of thought, a successful example of avoiding double ratification is provided by the ITU. The ITU has developed a very sophisticated secondary norm creation mechanism with its Administrative Regulations and the ways for them to be amended, which has been very efficient in getting member states to follow regulations in a binding manner. The fact that the ITU deals with an equitable distribution of a limited natural resource proves that it is possible for a high number of states at an international level to firmly commit themselves if the right mechanism is in place.

There are also solutions to more specific issues that build on the existing space treaties structure and have been accepted by a number of actors. Examples include project-based agreements, of which the ISS's IGA is the most prominent. Even though these agreements do not offer global solutions, they are new hard law norms that preserve the spirit of space treaties and can help to protect the space environment. Furthermore, they bring a very valuable lesson: states are willing to bind themselves if the benefits outweigh the risks. That should be borne in mind when envisioning more comprehensive approaches.

The difficulty of arriving at hard law has compelled states to focus on smaller scale solutions also, for instance by searching for like-minded states to form coalitions. By creating a coalition, a standard of conduct is being established, at least among the members of a given group. These coalitions are of non-binding nature; however they provide very efficient agreements with visible impact. Therefore, it is worth reflecting on whether states should be encouraged to enter into coalitions with regard to space-related matters, so as that a desirable type of behaviour is shaped, which states follow for a number of reasons, e.g. in order to preserve their reputations. This, in turn, could be of value to the international community on a global level.

The report also looked at other issue-areas that are – like space – trying to make sure that their regulations keep up with technological development. What is worth noting is that this has been an often forgotten avenue. Four successful models and their *modus op-*



erandi have been analyzed, namely CTBTO, IAEA, OPCW and ESA. This has revealed that it is very feasible to still adopt hard law norms in international fora. Here various factors play a role, such as the organisation's history, its functions and subject matter, its membership composition, voting regulations, and the political or economic power that it possesses. However, a common element can be found for all of these organisations. They all have a defining statute/convention/resolution, to which states adhere, and that foresees some type of a secondary norm creation mechanism that does not have to go through ratification again. These mechanisms provide for the flexibility necessary to keep up with technological advancements. In addition, they avoid that the diverse political positions of states hinder progress and prolong stalemate. Of special interest in this regard is the final organisation that was analysed – the ESA – as a regional space organisation. Based on the ESA Convention, this agency has developed secondary and tertiary norm creation methods in order to ensure efficient functioning of its programmes. Given the high sums involved and the voluntary nature of activities, this achievement is remarkable.

All of these ground breaking examples prove that it is possible to fight the current stalemate armed with hard law gloves, and that the space community as well as the general international legal community should not just give up because old mechanisms do not work as in the past. Processes for developing new technology are changing and improving all the time, therefore legal processes to adopt new internationally binding norms should as well. As this report has shown, there are already successful methods that could be used as models. Also, from the less successful examples, there are clear lessons to be learned that cast a light on easy improvements that would contribute to the adoption of binding regulations.

Finally, a warning should be given on the implicit dangers in the ongoing efforts to create soft law only. The inherent risk is that pre-existing hard rules will be downgraded to being just soft. Accordingly, the "soft way" is not necessarily a desirable way forward. Even though it is certainly true that "most nations follow most laws most of the time"²⁷⁴, we are still left with the grave problem of enforcement when it comes to soft law regulations. Constructing hard law instruments is certainly more complex than soft law ones. Yet, awareness of the formidable hurdles that

stand in the way should not lead the space community to put such efforts on the back burner. Space law is at a critical juncture: only by creating hard norms where they are missing can we hope to offer stability and continue to harvest the benefits of space in the best possible manner.

²⁷⁴ L. Henkin, "How Nations Behave", 2d ed. Published for the Council on Foreign Relations by Columbia University Press, 1979, pp. 400

List of Acronyms

Acronym	Explanation
Aircraft Protocol	Protocol on Matters specific to Aircraft Equipment
ASI	Italian Space Agency
Cape Town Convention	Cape Town Convention on International Interest in Mobile Equipment
CD	Conference on Disarmament
CNES	French Space Agency
CSA	Canadian Space Agency
CTBTO	Comprehensive Nuclear-Test-Ban Treaty Organisation
DLR	German Aerospace Agency
ECSS	European Cooperation on Space Standardization
ESA	European Space Agency
ESOA	European Satellite Operators' Association
EU	European Union
G-21	Non-Aligned Movement (at CD)
IADC	Inter-Agency Debris coordination Committee
IAEA	International Atomic Energy Agency
ICANN	Internet Corporation for Assigned Names and Numbers
ICRC	International Committee of the Red Cross
IGA	International Space Station Intergovernmental Agreement
ISO	International Organisation for Standardization
ISS	International Space Station
ITAR	International Traffic in Arms Regulations
ITU	International Telecommunication Union
JAXA	Japan Aerospace Exploration Agency
LS	Launching State
MoU	Memoranda of Understanding
NASA	National Aeronautics and Space Administration
NL	Netherland/Netherlands
NNWS	Non-nuclear-weapon state
NPT	Nuclear Non-Proliferation Treaty
nr.	Number
NSL	National legislation relevant to the peaceful exploration and use of outer space



Acronym	Explanation
NWFZ	Nuclear-weapon-free zone treaties
OPCW	Organisation for the Prohibition of Chemical Weapons
OSCE	Organisation for Security and Co-operation in Europe
p.	Page
PAROS	Prevention of an arms race in outer space
pp.	Pages
PPWT	Prevention of the Placement of Weapons in Outer Space
PSI	Proliferation Security Initiative
pt.	Point
Rail Protocol	Protocol on Matters specific to Railway Rolling Stock
Roscosmos	Russian Federal Space Agency
Space Protocol/Space Assets Protocol	Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Space Assets
STSC	Scientific and Technical Subcommittee
TCBM	Transparency and Confidence-Building Measures
UKSA	United Kingdom Space Agency
UN	United Nations
UNCOPUOS	United Nations Committee on the Peaceful Uses of Outer Space
UNGA	United Nations General Assembly
UNIDROIT	International Institute for the Unification of Private Law
UNOOSA	United Nations Office for Outer Space Affairs
UNSCR	United Nations Security Council Resolutions
U.S.	United States
WMD	Weapons of Mass Destruction

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