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codified, elaborated upon, and expanded on the principles contained in the 1963 Declaration. The Outer Space Treaty, the *magna carta* for outer space activities and the cornerstone treaty for later space law treaties and sets of principles,⁶³⁷ was essentially elaborated on by the next four: Articles V and VIII into the ARRA, Article VII into the LIAB, Articles V and VIII into the REG, and the 1979 Moon Agreement with respect to celestial bodies (as opposed to the vacuum void around them). UNCOPUOS then became embroiled in extended discussion regarding the Moon's claimed status as CHM and the consequences thereof for prospective mineral exploitation. The result was that no major spacefaring nation ultimately ratified.⁶³⁸ Partly due to the expanding range of states becoming interested in spaceflight and joining UNCOPUOS, it was surmised that the period in which more or less global agreement on binding international space law instruments was now over, with the fate of the Moon Agreement considered ultimate proof.

The second phase involves *soft law*. Not one multilateral international agreement was successfully negotiated and concluded during this period.⁶³⁹ An alternative form to legally regulate pressing problems relating to the use of outer space had to be found, which led to a significant softening of international space law in the sense of less binding legal commitments. In this phase UNCOPUOS largely aimed at further developing international space law by means again of essentially non-legally binding UN Resolutions, hoping that through practice and experience major parts of it would become customary international law.⁶⁴⁰ The adoption of declarations of Principles by UNGA was chosen as the optimal solution to further develop space law. Principles adopted by the UNGA are on Direct Television

⁶³⁷ CoCoSL I, *supra* note 61, at para 50 Historical Background; CoCoSL II, *supra* note 153, at para 9 ARRA Historical Background and Context, para 14 LIAB Historical Background and Context, para 9 REG Context; paras 49-150 MOON Article 1 (Scope of Application).

⁶³⁸ Note there were 16 ratifications when von der Dunk wrote Chapter 2 in F. von der Dunk and F. Tronchetti (eds.), *Handbook of Space Law* (2015), 29-126; updated from A/AC.105/C.2/2019/CRP.3*, *supra* note 114.

⁶³⁹ Hobe, *supra* note 290, at 875-876.

⁶⁴⁰ von der Dunk, *supra* note 630, at 41-43.

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Broadcasting ('DBS'),⁶⁴¹ Remote Sensing,⁶⁴² Nuclear Power Sources ('NPS'),⁶⁴³ and Needs of Developing Countries.⁶⁴⁴

There was also a drastic increase in US domestic law-making and policies, which triggered an increase in space commercialization and participation by private corporations.⁶⁴⁵ Space law-making shifted from the international to the domestic arena. Around 1980 the Reagan era ushered in profound changes with increased privatization and commercialization. Space became perceived as a new marketplace, wherein new products and services could be produced at a lower cost and more efficiently by private industry rather than by the government. A common pattern was joint cooperation between business entities and Governments to pool resources and cut costs. Thus, new actors and new activities became involved in outer space development.

Since the middle of 20th century there is a non-ending discussion in international law in general, and in the space law arena in particular, on the definition of soft law in contrast to hard or black-letter law.⁶⁴⁶ Soft law, as opposed to hard law which makes up international law proper, is a body of standards, commitments, joint statements, or declarations of policy or intention, and resolutions adopted by the UNGA or other multilateral bodies.⁶⁴⁷ IGOs create or promote soft law. From a law-making perspective, 'soft law' is simply a convenient description for a variety of non-legally binding instruments used in contemporary international relations by states and IGOs.⁶⁴⁸ The most important distinction under international law is that the violation of a hard law obligation represents an internationally wrongful act which entails state responsibility, while the violation of soft law does not.⁶⁴⁹ Thus,

⁶⁴¹ UNGA Res. 37/92, *supra* note 107.

⁶⁴² UNGA Res. 41/65 Principles Relating to Remote Sensing of the Earth From Outer Space, 3 December 1986.

⁶⁴³ UNGA Res. 47/68, *supra* note 150.

⁶⁴⁴ UNGA Res. 51/122 Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interests of All States, Taking into Particular Account the Needs of Developing Countries, 13 December 1996.

⁶⁴⁵ Weeks, *supra* note 7, at 20.

⁶⁴⁶ Hafner, 'The Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States', in I. Marboe (ed.) *Soft Law in Outer Space: The Function of Non-binding Norms in International Space Law* (2012), 267-288, at 282.

⁶⁴⁷ Cassese, *supra* note 2, at 196-197.

⁶⁴⁸ Evans, *supra* note 2, at 118.

⁶⁴⁹ Marboe, *supra* note 214, at 119-121; note author relied on the Articles of the ILC on the Responsibility of States for Internationally Wrongful Acts of 2001.

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soft law is an antonym of hard law.⁶⁵⁰ Hard law is binding and enforceable, its development follows specific formal rules, cannot be amended easily, is binding so long as it is not repealed, and violations can be filed at court and can result in legal sanctions. Soft law are regulations which intend to steer human behaviour and conduct, but can be changed more easily, cannot be filed at court and not result in specifically legally defined sanctions, are non-binding, their content is dependent on compliance rather than enforcement, and are usually not adopted under strict and formal rules. Some refused to utilise 'soft law' as it is imprecise. Either a normative instrument is binding, then it is law, or it is not binding thus the law of the excluded middle according to which a statement is either true or false and there is no third option.⁶⁵¹ Hobe saw the development of increasingly avoiding binding commitments as being inclined to arrive at 'softer' solutions. This period lasted until the middle 1990's.⁶⁵²

The UNIDROIT Space Protocol originated in the last years of the UNCOPUOS soft law period, and contains legally binding commitments for these new actors and a more solid base for asset-based financing of space infrastructure.⁶⁵³

The third phase in space law development is characterized by *the assessment or review of the existing outer space legal regime* to discern its shortcomings, suggesting possible ways forward, and resulting in the formulation of non-binding documents based upon the rights and obligations provided for in the outer space treaties.⁶⁵⁴ The LSC undertook efforts to broaden the acceptance of the UN space treaties and to evaluate their implementation. From 1996 Resolutions were adopted that interpreted binding international law.⁶⁵⁵ UNGA Res. 51/122 of 13 December 1996 dealt with the interpretation of Article 1 Para 1 of the Outer Space Treaty on how to distribute benefits derived from space activities. It reiterated the freedom of

⁶⁵⁰ Brünner and Königsberger, 'Regulatory Impact Assessment – A Tool to Strengthen Soft Law Regulation', in I. Marboe (ed.) *Soft Law in Outer Space: The Function of Non-binding Norms in International Space Law* (2012), 87-98, at 88.

⁶⁵¹ Hobe, *supra* note 6, at 47 and FN29 at 27; note in terms of the dictum *tertium non datur*.

⁶⁵² Tronchetti, *supra* note 629, at 5-7.

⁶⁵³ Hobe, *supra* note 290, at 876; presumably once it enters into force.

⁶⁵⁴ Tronchetti, *supra* note 629, at 18-19.

⁶⁵⁵ CoCoSL I, *supra* note 629, at para 52 Historical Background; 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; Application of the Concept of "Launching States"; Recommendation on Enhancing the Practice of States in International Intergovernmental Organisations in Registering Space Objects'.

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states to determine which states would like to cooperate with whom and how they would distribute the benefits and results gained by their own space activities. UNGA Res. 59/115 of 10 December 2004 where the concept of 'Launching State' as contained in the REG and LIAB was interpreted, in order to make the concept more powerful; UNGA Res. 62/101 of 17 December 2007 Recommendations on enhancing the practice of States and international intergovernmental organisations in registering space objects, became necessary because states parties had ignored one of the major obligations of international space law, to register each of their objects launched into outer space in national and international registers. These resolutions were not meant to be authoritative interpretations or proposed amendments to the LIAB or REG, but merely suggested certain practices to ensure a coherent application of these conventions.⁶⁵⁶ Other law-creating UN Documents were the SDM Guidelines,⁶⁵⁷ Safety framework for NPS,⁶⁵⁸ and the LTS Guidelines.

The SDM Guidelines is seen as proof of the 'softening' of international space law. A clear development from hard international law towards non-binding international UNGA Resolutions for specific uses of outer space, plus 'unofficial' negotiation fora that bypass the UN and UNCOPUOS such as the IADC, the Committee on Earth Observation Satellites ('CEOS'), the International Committee on Global Navigations Satellite Systems ('ICG'), the Global Exploration Strategy ('GES'),⁶⁵⁹ and the ISO development of international standards on the basis of the work of the IADC.⁶⁶⁰ Thus, a serious problem like environmental protection of outer space, and the possible consequences of accidents caused by space debris was tackled on an interagency basis with the explicit requirement of being not legally binding on states.⁶⁶¹ The old consensus, where the main superpowers made the law within the UN with a view to securing broad support for an international legal order for space activities, was being challenged. Non-binding agreements are sought to give the main space powers maximum leeway in their space activities.

⁶⁵⁶ Tronchetti, *supra* note 629, at 19.

⁶⁵⁷ ST/SPACE/49, *supra* note 32.

⁶⁵⁸ Endorsed by UNCOPUOS 52nd Session Doc. A/AC.105/934 Annex Safety Framework for Nuclear Power Sources Application in Outer Space.

⁶⁵⁹ CoCoSL I, *supra* note 61, at para 56 Future Perspectives; Hobe, *supra* note 290, at 878.

⁶⁶⁰ Viikari, *supra* note 207, at 741.

⁶⁶¹ Hobe, *supra* note 290, at 878.

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Von der Dunk persuasively argued that a *fourth phase* should be discerned, namely the redefining of space law *lato sensu*. This would not necessarily be distinguishable in time from the others but providing a more fundamental paradigm change and closely related to the changing role of UNCOPUOS over the last decades in terms of law-making and codification.⁶⁶² Essentially it involved moving beyond the core of the *corpus* of international space law generally recognized, substantially changing its remit, and occasionally even threatening its relevance. Thus, where space activities move beyond their pure Cold-War-era, government-focused, politico-military and scientific origins, and taking space law with them. Space law is starting to encompass more focused regimes on specific ventures or sectors, and to broaden even further as a consequence of increasing practical applications of a terrestrial nature. The result was an overall lessening of the coherence of all international law relevant to space, and thus space law of today should for comprehensiveness' sake not just refer to those global treaties, resolutions and other legal, para-legal, or soft-law developments which originated from the bosom of UNCOPUOS; or more precisely from the cooperation between most of the major spacefaring states in that context. The first part of this process started in the late 1960's, but this fourth phase has in recent decades slowly yet visibly outgrown the processes and results of the third phase, at least in terms of practical relevance. This is the origin of the increasing debate on the viability of UNCOPUOS as the central platform for developing international space law.

The first three phases had in common that states were the dominant, often exclusive, actors in outer space, and that the space law regime developed by them established globally applicable rules, whether legally binding treaties or via UN Resolutions giving rise to customary international law.⁶⁶³ In contrast the fourth phase was ushered in with the advent of a few IGOs of an operational character established as early as the 1970's and pooling quasi-regulatory resources and especially financial and technical resources. This was broadened with the involvement of private entities interested in the potential commercial benefits.

⁶⁶² von der Dunk, *supra* note 29, at 106, 29.

⁶⁶³ von der Dunk, *ibid.*, at 107.

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Should von der Dunk's redefinition be accepted, possibly the Space Protocol still has to be differentiated from traditionally understood space law as advanced by Lyall and Larsen, which originally had described the Space Protocol as the first private international law treaty relating to outer space activities.⁶⁶⁴ Later, when investigating the relationship between the Space Protocol and UN outer space treaties, they amended this statement slightly to describe the Space Protocol as the first multilateral private international law treaty relating to outer space activities.⁶⁶⁵ Zheng advanced that it is more acceptable to describe the Space Protocol as the first international space law treaty created for unifying private law related to space equipment financing.⁶⁶⁶ Arguably, this may work, by accepting the redefining of space law *lato sensu* and the resultant new regimes, including the Space Protocol, being included. Possibly the Space Protocol may also be referred to as a relevant multilateral private international treaty forming part of the law of outer space, so long as the following warnings are observed. First, the Space Protocol as delimited by the Outer Space Treaty can function within its limits, just as financing arrangements not falling within the scope of the Space Protocol currently function within the constraints of the outer space treaties. Secondly, the Cape Town regime only creates an optional private international law regime to facilitate a method through which securities over space assets can be recognized and internationally enforced.

Accepting von der Dunk's radical analysis of the phases of the development of space law to define space law *lato sensu* also provides an explanation for the role of UNIDROIT in modern international space law legislation and the Space Protocol with a proper classification in an international space law regime. This new definition of space law is wide enough to cover work done in space law by even ESA and the EU. Notably von der Dunk did not allege that the UNCOPUOS can no longer make treaties, but merely that its so-called golden age of treaty-making had passed. His broadening of the space law definition *lato sensu* provides a Realpolitik solution to a continuing role in the outer space legislation process for UNCOPUOS; and one which can be described as simple and elegant, and simply

⁶⁶⁴ Lyall and Larsen, *supra* note 36, at 361-362.

⁶⁶⁵ Lyall and Larsen, *ibid.*, at 392.

⁶⁶⁶ Zheng, *supra* note 535, at p 11: Lyall and Larsen, *ibid.*, at 390, 392, 406.

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elegant. That space law and contracts are exposed to various influences extending beyond public international space law to include private and international private aspects of the law, may not signify anything more than the interdependencies between the various disciplines of the law where different actors are involved, and it should not be taken to imply a fragmentation of international space law, but merely as the interaction between the international and the domestic level.⁶⁶⁷

It should thus come as no surprise that von der Dunk categorized UNIDROIT is a regulatory IGO which recently became involved in space activities and space law.⁶⁶⁸ To him, UNIDROIT's focus on private international law which undertakes efforts to harmonize and/or streamline national legal regimes involved in the space sector, constitutes another illustration of the growing measure of privatization and commercialization even though confined to the special realm of space project financing.

Can UNIDROIT fulfil UNCOPUOS' space law-making task? UNIDROIT's actions concerned some.⁶⁶⁹ The Space Protocol was seen as proof of the perceived natural tendency of new IGO entrants into the field of space law to extend their prospective regulatory and legislative activities beyond the original point of departure in order to preserve the effectiveness of their original contribution stemming from their inherent institutional focus. Moreover, there was a fear that the inevitable coherence of private space activities and the particular legal regimes applicable to them and international public international space, might cause the Space Protocol to somehow interfere with the UN space treaties negatively regarding rights of holders of security interests in satellites versus the Liability Convention regime. Also, UNIDROIT efforts to address the complex issue of liability for GNSS signals and services should rather have emanated from the public international realm due to the participation of key sovereign players. These efforts of UNIDROIT were predicted to fail as it interferes in the public international realm and issues of safety, security, and general economic purposes.

⁶⁶⁷ Smith, *supra* note 56, at 55.

⁶⁶⁸ von der Dunk, *supra* note 286, at 280-281.

⁶⁶⁹ von der Dunk, *ibid.*, at 281 and FN 45; his argument was based on the definitional issues of 'space assets' vis-à-vis 'space objects'.

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Several authors vigorously defended the Space Protocol from the allegation of negatively influencing the five outer space treaties.⁶⁷⁰ Larsen, who had worked on the early aerospace group, took what he termed the 'outside view' regarding the point of Space Protocol's compatibility with existing space law.⁶⁷¹ According to him Goode took the 'inside view' from the commercial law point of view, and in his *Official Commentary* described how the parties can contract within those limitations. Larsen considered these views as compatible by keeping in mind the basic principle that public law always supersedes private law. Thus, it will be the space lawyers' role to advise their clients of the Space Protocol's limitations and its operations.

Conceivably UNIDROIT's preparatory work had adequately addressed concerns regarding this IGO entering the public international law realm, plus UNIDROIT has done an excellent job in ensuring that its Space Protocol, which is in essence a debt-collection treaty, fits with existing outer space treaties. In any event, UNIDROIT is now playing an increasing role in space law initiatives, as its Deputy Secretary-General was a member of the HWG which prepared the influential Building Blocks,⁶⁷² and it has become a Permanent Observer in UNCOPUOS.

Regrettably, even though UNIDROIT's Space Protocol was the catalyst for undertaking this research, UNIDROIT to make outer space law norms in general is not a feasible option. UNIDROIT as a private law IGO does not primarily concentrate on outer space issues, and is unsuitable as a permanent vehicle for outer space legislation. In any event, UNIDROIT's space law making endeavours were not met with conspicuous success: Its Space Protocol may still fail due to big satellite operators' continuing opposition, and the EUC dragging its feet on the GNSS project also did not assist UNIDROIT's liability project.⁶⁷³

⁶⁷⁰ Stanford, *supra* note 375 (2012 Symposium), at 3; repeated in Stanford, 'The UNIDROIT Protocol to the Cape Town Convention on Matters Specific to Space Assets', *Paper delivered at the 63rd International Astronautical Congress, Naples, 1/5 Oct 2012 (55th IISL Colloquium on the Law of Outer Space: Session 2 – the interactions between international private law and space law and its impact on commercial space activities)*, Copy provided by MJ. Stanford, Immediate Past Deputy Secretary-General UNIDROIT ('Stanford (2012 IISL)'); Sundahl, *supra* note 5, at Chapter II in general, and specifically 119-120, and 123.

⁶⁷¹ Larsen, *supra* note 199 (2012), at 206.

⁶⁷² Bittencourt Neto, *supra* note 380, at 118 Appendix 1.

⁶⁷³ See Appendix A: Participation Observation.

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3.6 Reorganize the UNCOPUOS Working Methodology?

It is in particular the LSC working method that deserves addressing since any draft treaty on outer space issues is supposed to originate in the LSC. Its agenda is problematic, as it has been described as neither reactive nor dynamic.⁶⁷⁴ The current agenda structure and working mechanisms were adopted in 1999 and were only elaborated on then under pressure of serious inactivity which almost led to an implosion of the LSC due to the strong resistance of the member states to put new items on the agenda. This was achieved, in particular, through the establishment of work plans and a more flexible way of having single issues/items for discussion. Since then, workplans with associated working groups under specified duration as well as single issue items with limited duration have provided a more lively and productive setting. This reorganisation has reached its limits by 2014 with no urgent and relevant issues of space law identified for workplans, increased bypassing of the LSC, and new flexible mechanisms introduced such as the LTS working group and its expert groups set-up outside the LSC. The existing agenda structure and working mechanisms of the LSC needs examination, and even more so member states should debate what they expect from this forum and how they see its role.

Probably a more drastic proposal for traditionalists in UNCOPUOS is the suggestion by *Nature* magazine that commercial perspectives should be included through national delegations and external observers.⁶⁷⁵ This can be traced back to its somewhat aspirational understanding of UNCOPUOS working methods as mainly happening through two subsidiary bodies, with UNCOPUOS working groups start meeting in January to continue developing best practices for protecting the space environment with new proposals to be presented to the Committee in June. However, this suggestion cannot be ignored as it hails from an influential publication read by opinion-makers and delegates to UNCOPUOS meetings, and appears to be a serious attempt to propose that UNCOPUOS should (just like the ITU) allow technical proposals plus direct commercial perspective input.

⁶⁷⁴ Schrogl, *supra* note 248, at 102; A/AC.105/C.2/L.293/Rev.1, *supra* note 341, at para 4.

⁶⁷⁵ Johnson-Freese 'Build on the Outer Space Treaty', *Nature*, Vol 550 (12 October 2017), 182-184, at 184.

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According to the ESPI the organizational lessons to be learnt from UNIDROIT's Cape Town Process are first its crucial ability to involve experts from industry and other stakeholders to draft the particularly detailed provisions of the protocols, and secondly in allowing industry to play a vital role when it comes to pressing governments to ratify a treaty.⁶⁷⁶ Notably ESPI does not even mention the possibility of UNCOPUOS treaty-making. The counterargument is that space law not only envisaged but is mature enough to deal with NewSpace.⁶⁷⁷ Still, *Nature* is correct, and it is time for industry to be allowed to take a more active role in UNCOPUOS activities in particular through working group participation.

UNCOPUOS as a forum for the discussion of space governance issues has been described as extremely limited and specifically in its ability to implement collective-choice arrangements.⁶⁷⁸ Thus, consensus decision-making may have to be reconsidered. The argument goes that the Cape Town approach has the great advantage that the umbrella convention can contain general norms applicable across the board, leaving detailed regulation pertinent to a specific sector to protocols.⁶⁷⁹ By this, a degree of communality is achieved, which might be helpful in various ways, including consensus finding, whilst freedom is given to take proper account of sector specific issues. It should be noted that in treaty law the act of adoption of a treaty does not amount to consent to be bound. Instead, it is a reference to Article 9 VCLT the adoption of the text of a treaty. Article 9(2) VCLT requires the vote of two-thirds of the states, present and voting and excluding abstentions, at the international (diplomatic) conference organised to adopt the treaty for example the 2012 Berlin Diplomatic Conference for the Space Protocol. Drafts of UNCOPUOS instruments are burdened by the consensus rule during its whole process from the Subcommittee to the UNGA. Bearing in mind that the DBS Principles, the one instance where voting and not consensus was utilised in negotiating space law, is not considered to be successful or legally binding,⁶⁸⁰ calls for consensus decision-making in the UN to be replaced should be supported in line with the assertion by

⁶⁷⁶ Pecujlic, *supra* note 292, at 148.

⁶⁷⁷ Smith, *supra* note 56, at 45-46.

⁶⁷⁸ Johnson-Freese and Weeden, *supra* note 320, at 77.

⁶⁷⁹ Pecujlic, *supra* note 292, at 148.

⁶⁸⁰ CoCoSL III, *supra* note 153, at paras 1 and 210-212 DBS Principles.

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Schermers and Blokker in the context of IGOs in general of the principal advantage of majority voting as the increased chance that decisions will be adopted.⁶⁸¹ The recommendation is that the ability to have a majority vote, should there not be consensus, is to be legally entrenched in a set of formal rules of procedure.

Not surprisingly, there are authors making strong arguments for the retention of the consensus-based UN decision-making system, and providing suggestions as to how the consensus system is to be used.⁶⁸² Resorting to voting in a multipolar international community is considered a risky strategy as no state relishes being placed in the position of having to vote against a new development in the law. Consensus adoption procedure is accordingly key to the successfully functioning of the contemporary international law-making process. Although rarely, in the UN system votes are sometimes taken at the final stage of the adoption of a treaty, and at interim stages of the negotiating process for example voting to ascertain the inclination of the room. The use of outer space as an international global common means that states must do more than just insist on their sovereignty.⁶⁸³ The consensus-based mechanism of international space law that grants more or less the right of a veto to all members of UNCOPUOS should be considered more in the sense of an enlightened sovereignty so that for the preservation of outer space as a common and global good, compromises are necessary and binding commitments must be made in order for all countries to be able to contribute and receive benefits proportionally to their economic and technological strength.

In the end though, any decision to change the decision-making method on text negotiations, will obviously require consensus in UNCOPUOS and that simply cannot be expected to ever realise. No wonder then that consensus has been described quite derogatively as a state of non-objection, a resigned let-it-go.⁶⁸⁴

⁶⁸¹ Schermers and Blokker, *supra* note 21, at para 839.

⁶⁸² Pronto, *supra* note 599, at 607-609.

⁶⁸³ Hobe, *supra* note 6, at 211-212; and relying on Chayes Abram/Hader, Chayes, Antionoa, *The New Sovereignty* (1995) which was unfortunately unavailable.

⁶⁸⁴ Pescatore, 'The GATT Dispute Settlement Mechanism: Its Present Situation and Its Prospects', *JWT* (1993/2), 5-20, at 13.

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In sharp contrast to UNIDROIT, UNCOPUOS was not provided with formal rules of procedure at its creation.⁶⁸⁵ Thus, delegates tend to look for guidance on procedure to those delegation members that have been attending UNCOPUOS session for a long time but unfortunately, they are either retiring or passing on.⁶⁸⁶

At its 58th session held in June 2015 the UNCOPUOS requested the Secretariat to make available for the sessions of the Committee and its Subcommittees, in 2016, a compendium containing the rules, procedures and practices, including the processing of documentation, of the Committee and its subsidiary bodies.⁶⁸⁷ The Secretariat produced in time for the 55th LSC an extremely useful document summarizing the rules of procedure and methods of work of the UNCOPUOS and its subsidiary bodies.⁶⁸⁸ As background the Secretariat explained that UNGA in the founding and subsequent Resolutions related to the work of the UNCOPUOS did not provide for Committee rules of procedure. Neither has it made any request or recommendation to the Committee to adopt its specific rules of procedure. As a result, the Committee has not adopted any formal set of its own rules of procedure, and instead has taken decisions on its procedures as needed and has applied the Rules of Procedure of the UNGA with flexibility. Throughout the years, the Committee and its Subcommittees reiterated that a flexible and inclusive approach to the conduct of business greatly facilitated their work, whilst allowing to take into due consideration various views and opinions of member states.⁶⁸⁹ A legal opinion of the Office of Legal Affairs determined that an UNGA subsidiary organ is a master of its own procedures and free to depart from the Rules of Procedure of the UNGA under Rule 16, and the standard practice of UN bodies is that each may interpret the rules of procedure applicable to it, to the extent such interpretation does not constitute an amendment or suspension of the rules, which may only be

⁶⁸⁵ Ironically, UNCOPUOS demands copies of constitutive instruments plus rules of procedure from the SKAO and other IGOs for observership applications; See A/AC.105/C.2/2021/CRP.15, Request for observer status with the United Nations Committee on the Peaceful Uses of Outer Space: application of the Square Kilometre Array Observatory, 27 May 2021; see Appendix A: Participation Observation, and Introduction to Research.

⁶⁸⁶ See Appendix A: Participation Observation.

⁶⁸⁷ A/70/20, *supra* note 353, at para 359.

⁶⁸⁸ A/AC.105/C.2/2016/CRP.5, 29 March 2016, Compendium on rules of procedure and methods of work related to the United Nations Committee on the Peaceful Uses of Outer Space and its subsidiary bodies ('Compendium RoP').

⁶⁸⁹ Compendium RoP, *ibid.*, at paras 2, 3 and FN 7, 4 Background Information.

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done pursuant to relevant rules. The Secretariat then proceeded to provide guidelines on the rules of procedure and methods of work of UNCOPUOS and its subsidiary bodies. Unfortunately a full discussion of this fascinating development falls outside the research questions, but in short it deals with the agenda of the UNCOPUOS and its Subcommittees,⁶⁹⁰ retains the consensus method for decision-making,⁶⁹¹ sets the pattern of meetings⁶⁹² and report procedural terminology,⁶⁹³ addresses records of the UNCOPUOS and Subcommittees,⁶⁹⁴ sets out the length of reports on national activities in outer space⁶⁹⁵ and of statements and scientific and technical presentations,⁶⁹⁶ composition of the Bureaux of the Committee and its Subsidiary Bodies,⁶⁹⁷ membership of the UNCOPUOS⁶⁹⁸ and NGOs may request observer status with the Committee but should be concerned with matters falling within the competence of the Committee,⁶⁹⁹ obligates each of the regional groups with responsibility to actively promote the participation in the work of the Committee and its subsidiary bodies of the member states also members of the respective regional group,⁷⁰⁰ and obligates the Secretariat to provide briefings for all interested member states on issues to be discussed at sessions.⁷⁰¹

⁶⁹⁰ Compendium RoP, *Ibid.*, at paras 1-7, and the documents referenced in FNs 9-20.

⁶⁹¹ Compendium RoP, *Ibid.*, at para 1 Decision-Making and documents referenced in FN21.

⁶⁹² Compendium RoP, *Ibid.*, at paras 1-3 Pattern of Meetings and documents referenced in FNs 22-26, note two weeks each for the STSC and LSC in February and March, and one and a half weeks for the main June Committee meeting but UNCOPUOS may decide on an *ad hoc* basis to extend or shorten.

⁶⁹³ Compendium RoP, *Ibid.*, at paras 1 and 2 Procedural Terminology and the documents referenced in FNs 27-31; note that the LSC determined the meaning of this terminology.

⁶⁹⁴ Compendium RoP, *Ibid.*, at paras 1-2 Records of the Committee and Sub-Committee and sources referenced in FNs 32-40, digital recordings are now used on a permanent basis.

⁶⁹⁵ Not more than three pages: Compendium RoP, *Ibid.*, at para 1 Reports on National Activities in Outer Space and sources referenced FNs 41-42.

⁶⁹⁶ Compendium RoP, *Ibid.*, at paras 1-2 Statements and Scientific and Technical Presentations and sources referenced FNs 43-47, and also the administration around inscribing statements.

⁶⁹⁷ Compendium RoP, *Ibid.*, at para 1 Composition of the Bureaux of the Committee and its Subsidiary Bodies and sources referenced in FNs 48-50.

⁶⁹⁸ Compendium RoP, *Ibid.*, at paras 1-2 Membership of the Committee and the sources referenced in FNs 52 and 53. Note states considering applying for membership in the Committee are encouraged to consider the possibility of acceding to the five UN treaties on outer space, or at least some of them. Interested states participate in the work of the Committee as observers.

⁶⁹⁹ Compendium RoP, *Ibid.*, at para 1 Observer Status and the sources referenced in FNs 54-60. NGOs are defined as international non-profit organizations, with an established headquarters, an executive officer and a constitution or statutes.

⁷⁰⁰ Compendium RoP, *Ibid.*, at para 1 Participants in the Work of the Committee and the sources referenced in FNs 61 & 6.2.

⁷⁰¹ Compendium RoP, *Ibid.*, at para 1 Briefings by the Secretariat and the sources referenced in FN 63.

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This first edition Compendium setting out the way in which the main Committee and its two Subcommittees operate can only be applauded, as for the first time there is one document to consult in order to determine procedure. Nevertheless, the Compendium demonstrated the rigidity of its multilateral bureaucracy, for example briefings are provided to the Missions in Vienna of member states accredited to the UN and not all from the developing world are represented;⁷⁰² and the procedural terminology in Section 1(d) and the determination of the length of statements in Section 1(g), cannot be typified as rules of procedure when compared with those applicable to UNIDROIT (Statute, Provisions of the Statute Concerning the Functions of the Governing Council, and Financial Regulations). Moreover, UNCOPUOS and its Subcommittees are not in charge of their own agenda (Section 1(a)) or their own work/research, nor of their own budget. It is a good start, but more work needs to be done to detail further formal rules of procedure, and to get it approved by all member states.

3.7 An *Ad Hoc* Legal Sub-Committee?

In theory, all international space legislation is prepared in the LSC of UNCOPUOS, and after adoption by the main Committee, is channelled to the UNGA for adoption. UNGA can, at the initiative of the UNCOPUOS, decide on whether a document shall evolve into a treaty or shall remain an UNGA Resolution.⁷⁰³

Analysis indicated that the progressive development and codification of the law of space has moved through several stages, of which only the first one produced a number of binding legal instruments in the form of the five classic outer space treaties, which together with the 1963 Partial Test Ban Treaty can be considered as part of this core *corpus juris spatialis*.⁷⁰⁴ Subsequently the history of space law displays an increasing number of less-binding norms of varying origins. The main developments of space law today happen in the field of soft(er) law, a proliferation of various non-binding rules many of which shows a tendency to develop into customary law. The best example is the slow ascendancy of rules for space debris

⁷⁰² See Appendix A: Participation Observation.

⁷⁰³ Hobe, *supra* note 6, at 41-42.

⁷⁰⁴ Jankowitsch, *supra* note 249, at 26-27.

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mitigation from an essentially non-legal agreement between major space agencies to a status of soft-law regulation blessed by the 2007 UNGA Res. The SDM Guidelines were seen as a contribution to space law making by a non-UN forum, the IADC, consisting of the representatives of 12 states and ESA.⁷⁰⁵ UNGA Res. 62/217 thus merely updated and endorsed the earlier work done by the IADC. In addition, the STSC, in spite of being part of UNCOPUOS, is described as one of the *other* fora involved in creating rules for human activities in outer space via its so-called Rex Report of 1999, which laid the basis of the Spatial Data Processing Grid technical report on Space Debris. Arguably thus, even one of the recent so-called soft law successes of UNCOPUOS cannot really be considered an UNCOPUOS norm-making initiative. Similarly, and just like the SDM Guidelines again without the benefit of much LSC participation, the STSC further produced and the UNGA endorsed, the non-binding LTS Guidelines. Furthermore, the LSC was criticized as still not having responded to the development that UNIDROIT had negotiated a (potentially) binding international space-law related agreement with its Space Protocol, whilst none had been created in UNCOPUOS since 1979, and which is obviously eroding its role as the highest body in space law making.⁷⁰⁶

Are the member states of UNCOPUOS willing and able to secure the LSC role which it has been created for? The debate following the German Proposal in 2014 to reorganize the LSC's working method may have led to a thorough reflection on the role of the LSC, but in the view of the German delegation it also showed that the expectations of the delegations did not converge at this point in time and that the initiative has limited chances of getting agreed upon.⁷⁰⁷ The prediction in 2014 was that with this result, the LSC will enter into a difficult period, characterized by the understanding for the need of change but no emerging consensus on how to accomplish this. A broad set of concrete points for improvement has been worked out and concise expectations were formulated regarding the role and output of the LSC also in view of (competing) activities in other organizations and fora. If none of these are implemented or fulfilled, the LSC will become marginalized with regard to the current main issues of regulating space activities which are the

⁷⁰⁵ Hobe, *supra* note 6, at 46-47.

⁷⁰⁶ Schrogl, *supra* note 248, at 101-102.

⁷⁰⁷ Schrogl, *ibid.*, at 104.

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sustainable use of the space environment (space debris mitigation and removal), the regulation of space activities and operations (STM including STA), and the growth of commercial and private space activities (including commercial human spaceflight and the proliferation of small satellites operated by growing number of different and diverse actors). In 1999, the Subcommittees were able to change their working methods at the right time and received considerable new impetus. The LSC should repeat this in the near future, but the prospects are not bright in spite of the fact that the discussion in 2014 indicated that UNCOPUOS member states understood the urgency to reshape their Subcommittee.

As, unlike the Moon Agreement, the SDM and LTS Guidelines evolved from the STSC and not the LSC, apparently thus scientists and not lawyers are currently the driving force in outer space norm-making. If the Artemis Accords is a demonstration of major spacefaring nations losing patience with UNCOPUOS, then how much more would their ire be directed towards the LSC?

Arguably the LSC has fulfilled its original mandate to build a functioning space law system. Moreover, the LSC is no longer practicing law as engineering, and it cannot even solve the delimitation question on its books since 1968. The inescapable conclusion is that the need for a permanent LSC has lapsed, and it is time to consider changing its status to that of an *ad hoc* committee to be convened whenever the main UNCOPUOS requires it. At this stage, the LSC sits annually for a longer period than the main Committee yet is not producing much. Thus, changing its status from permanent to when required would free much needed scarce resources. This is after all the system the very successful Legal Committee of ICAO follows. Again, it is hard to see UNCOPUOS reaching consensus on such a suggestion.

3.8 Transfer UNCOPUOS Functions to other United Nations Agencies?

Some did not even consider UNCOPUOS as having any future role in space norm-making and wondered as to whether a multinational/international model is likely to strengthen the stability and sustainability of outer space activities?⁷⁰⁸ One of the main reasons of the failure to create a STM system is the persistent mistrust in addressing the lack of transparency on the nature of some payloads and the missions

⁷⁰⁸ Plattard, *supra* note 161, at 60.

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they are assigned to. No legal texts require the owner of such payloads to disclose these characteristics, in particular national or private proprietary rights can rule against that. Launching an undisclosed payload in accordance with international law is considered as a sovereign right. Thus, it would be a stillborn attempt to start negotiating an international agreement on payloads transparency, subject to means of verification accepted by all space-faring nations. Instead, a different approach is proposed based on the implementation of appropriate measures based on a Space Situational Awareness ('SSA') System ('SSAS') working on a continuous basis, using ground and space-based means, having the liberty to act independently. The collected monitoring information by this system would then be available to space-faring nations and other nations requesting access. As the possibility of pooling resources from existing or planned deployment of inspecting satellites belong to major space-faring nations, the concerned nations may decide through a multinational body that it is their vested interest to share capacities to achieve the common objective of sustainable space activities. This proposed multinational entity will have the capacity to monitor satellite orbits and, if necessary, use relevant means to move in the vicinity of one or several satellites.

The international law system is horizontal in nature,⁷⁰⁹ and lacking an identifiable constitutional structure.⁷¹⁰ Yet at the same time international law-making often proceeds within the constitutional structure of IGOs. The international law-making system has been described as eclectic, unsystematic, overlapping, and often poorly coordinated. The central element is the UN, but it is not the principal one in certain specialized international law contexts. The UN is not a coherent whole but comprises multiple organs, Specialized Agencies, working groups, and programmes.

It was obvious for the UN to become the first and primary source of space law in view of the global reach of space activities.⁷¹¹ From the onset space law required a high degree of international cooperation that by its nature could only be found and practiced in the only universal IGO. Whilst the UN has performed well in the past

⁷⁰⁹ See *inter alia* Bin Cheng, *supra* note 69, at 178-181; Aust, *supra* note 2, at 5; Boyle and Chinkin, *supra* note 384, at 100.

⁷¹⁰ Boyle and Chinkin, *ibid.*, at 100-101.

⁷¹¹ Jankowitsch, *supra* note 249, at 10.

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in establishing a legal regime for space activities, after the Moon Agreement it faced an even more arduous task in shaping a body of law that must grow with the increased space activity.⁷¹² UNCOPUOS failed in this task mainly because neither the UN nor its Specialized Agencies were conceived as a legislative body and do not have the authority to adopt binding resolutions.⁷¹³ In practice though the UN has assumed the role of principal promoter of international law-making, and it is potentially well-suited for this role as it has legitimacy in the eyes of many members. As an IGO with universal membership, all states have in theory an equal voice and an equal vote in the UNGA where their right to participate in law-making activity is assured. Furthermore, the UN is a political organization, and deliberation, negotiation and compromise are its working currency and the principal rationale of its existence. If greater inclusivity and consensus are thereby facilitated, then global law-making is more likely to succeed. The UN's universal competence, and the powers it possesses under the UN Charter, embrace potentially all areas of political, economic, and social affairs. Human rights law-making was explicitly envisaged, whilst others such as the suppression of international crime have emerged through subsequent interpretation to meet the evolving needs of international society. The UN Charter thus proved a flexible instrument for accommodating such needs. It is the centrepiece of a heterogeneous system of Specialized Agencies, programmes, commissions, councils, and other bodies with responsibility for law-making in specific areas. Arguably, a committee such as UNCOPUOS is included.

The Specialized Agencies' most significant contributions to the law-making process are as the principal repositories and disseminators of technical expertise.⁷¹⁴ NGOs and national experts often influence the decisions of Specialized Agencies. This may be crucial for the development of new treaties as aptly demonstrated by the participation of outside experts and commerce in the development of the UNIDROIT's Space Protocol. Multilateral treaties from UN Specialized Agencies often provide the legal framework for international regulatory regimes with

⁷¹² Jasentuliyana and Lee, *supra* note 612, at vii; note written two years after the Moon Agreement was opened for signature (and three years before it entered into force).

⁷¹³ Boyle and Chinkin, *supra* note 384, at 108-109; note the implied powers theory not covered, and for a good exposition thereon see Gadewski, 'The doctrine of implied powers of international organizations in the case law of on international tribunals', *Adam Michiewicz University Law Review* (2016), 46-59.

⁷¹⁴ Boyle and Chinkin, *Ibid.*, at 125-126.

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standard setting, monitoring processes and compliance mechanisms, adopting new treaties and treaty amendments, revising or adding annexes, and setting additional soft law standards on related matters. In effect, each constitute a standing diplomatic forum, with ongoing oversight to enable law-making to evolve relatively quickly in response to new problems, priorities and opportunities. They do allow member states to exercise some degree of oversight over implementation and compliance. However, UNCOPUOS is not an independent Agency of the UN, but merely a committee that reports into the UNGA.

Based on the total lack of ratifications of the Space Protocol, and the successful delaying tactics from major spacefaring nations at the ITU Council meetings to allow the ITU to become the Supervisory Authority,⁷¹⁵ what the Space Protocol has arguably demonstrated is that any attempt outside of the UN system to make space law, is doomed for failure. Ideally, the legislation of outer space should stay within the UN as the only universal IGO⁷¹⁶ which has overseen the peaceful uses of outer space since the time of Sputnik I.⁷¹⁷ Two UN Agencies, the ITU and ICAO, spring to mind as possibly being appropriate, both in structure and function, to take over the UNCOPUOS responsibilities. Both are regulatory IGOs to a certain extent already involved in international space law.

3.8.1 Moving UNCOPUOS Functions to the ITU⁷¹⁸

Radio is fundamental to the use of space, and it was inevitable that the ITU got involved in outer space issues.⁷¹⁹ Without radio, most tracking, and all telemetry, which monitors the health and performance of a satellite through diagnostic information supplied by radio by the satellite itself, and telecommand of the satellite from the ground, as well as telecommunications links, would be impossible. Unfortunately, a radio link degraded by interference is useless. Radio supports the

⁷¹⁵ See Appendix A: Participation Observation.

⁷¹⁶ C. Ku, *Global Institutions: International Law, International Relations and Global Governance* (2012), at 167.

⁷¹⁷ Boyle and Chinkin, *supra* note 384, at 126.

⁷¹⁸ For historical development of the ITU see von der Dunk, *supra* note 286, at 275-276.

⁷¹⁹ Lyall and Larsen, *supra* note 36, at 189 and FN2.

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whole space programme, and international arrangements were required so that the best use can be made of the natural resource which is the radio spectrum.

The ITU is a periodic IGO seeking to achieve international consensus through decisions of member states entered into at treaty conferences convened on a periodic basis.⁷²⁰ The governing body is the Plenipotentiary Conference which meets every four years and is empowered to adopt and amend the ITU's basic instruments the ITU Constitution and the Convention. The ITU also convenes World Administrative Radio Conferences ('WARCs') every three to four years to adopt or revise the international Radio Regulations, which is a treaty with technical, operational, regulatory, and procedural provisions governing access to radiofrequency spectra and associated orbital resources. Each country has one vote to cast at treaty conferences, but in most cases (except for elections) decisions are made by consensus rather than voting. Apart from periodic conferences, the ITU is composed of several permanent features namely the Secretary-General (the legal representative of the ITU), its Council (a board of directors that meets annually and governs between PP's), and the three substantive sectors of the Union which undertake technical studies, approve standards known as 'Recommendations', develop handbooks, and prepare for treaty conferences. These are Radiocommunication ('ITU-R'), Telecommunication and Standardization ('ITU-T'), and Telecommunication Development ('ITU-D').

ITU Law exists on three levels.⁷²¹ In the first place, all ITU law is subordinated to the Constitution, which is the basic instrument of the ITU setting out the core principles of the ITU, criteria for membership, basic organizational structure, voting rights and procedures, basic financial arrangements, and dispute resolution. The Constitution and the Convention together sets out the mission, structure, and working methods of the ITU. Secondly, the ITU Convention supplements the Constitution and establishes the procedures for the organization's operations. It prevails over the next level. Thirdly, Administrative Regulations (Radio Regulations and the International Telecommunications Regulations) which have

⁷²⁰ A. Allison, *The ITU and Managing Satellite Orbital and Spectrum Resources in the 21st Century* (2014), at 10-11.

⁷²¹ von der Dunk, 'Legal Aspects of Satellite Communications', in F. von der Dunk and F. Tronchetti, *Handbook of Space Law* (2015), 456-500, at 463.

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international treaty status.⁷²² Administrative Regulations, based on the ITU Constitution and the Convention, are binding.⁷²³ This hierarchy of treaty law is in line with sub-Article 4(1) read in particular with sub-Article 4(4) of the ITU Constitution. Nonetheless, a fourth and softer level of ITU law was identified, namely all non-binding instruments such as recommendations, resolutions and opinions, for example telecommunications standards passed by the World Telecommunications Conferences.⁷²⁴ These expert opinions are a form of ITU soft-law which exert strong influence. The 2000 World Telecommunication Standardisation Assembly ('WTSA') adopted an alternative approval system of non-binding standardisations, as opposed to standards adopted as part of ITU Administrative Regulations which are legal rulings.⁷²⁵ This fast-track system allows for the ITU-T to react quickly to swiftly developing technologies.

The ITU Constitution sets forth the core principles of the ITU, whilst the ITU Convention sets the details for running the ITU. The relationship between the Constitution and the Convention was described as the separation of detail and principle.⁷²⁶ The Administrative Guidelines are the operative guidelines for ensuring the smooth functioning of the telecommunications system and radio transmitting around the world, and are developed and amended by world and regional conferences hosted by the various Sectors via the periodic meetings of the ITU-D, ITU-R and ITU-T. These are generally binding on member states if that Administrative Regulation is adopted by the PP by means of a Final Act.

Membership of the ITU is characterized by a blend of government and private sector actors.⁷²⁷ However, only member states have the right to vote and to actively participate in treaty conferences. A distinctive feature of the ITU as an IGO is that private sector companies and academia are encouraged to join and to actively participate in the Union's working-level substantive activities as 'Sector Members'. This requires a sizable annual financial contribution. They may join any or all of the Union's three sectors as Sector Members, but only on approval of their national

⁷²² Lyall and Larsen, *supra* note 36, at 207.

⁷²³ Hobe, *supra* note 6, at 211.

⁷²⁴ C. Koenig *et al*, *EC Competition and Telecommunications Law* (2nd ed. 2009), at 24-25.

⁷²⁵ Lyall and Larsen, *supra* note 36, at 206.

⁷²⁶ Koenig, *supra* note 724, at 21-22; ITU Constitution, *supra* note 296, sub-Articles 4(3), and 54(1) read with 4(1) and (3).

⁷²⁷ Allison, *supra* note 720, at 11-12.

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administrations. Many satellite operators participate in the ITU-R Sector, and many satellite IGOs participate in sector activities, for example ARABSAT, International Telecommunications Satellite Organization ('ITSO'), and INTERSPUTNIK. The ITU-R Sector is responsible for technical standards, managing the satellite coordination process, and maintenance of the Master International Frequency Register ('MIFR'). Thus, commercial satellite operators consider it worthwhile to invest in membership to this UN body in order to attend and actively participate in ITU technical activities including in the Study Groups and their Working Parties, working side by side with the world's regulators, where they can launch studies and introduce contributions leading to formulations of standards and technical reports that establish the basis for treaty conference decisions on spectrum allocation and associated orbital use. As the satellite operators develop new technologies and services and seek access to expanded spectra and orbital resources, they can drive the changes to the international regulatory landscape needed to accommodate their business plans by essentially drafting the regulations that will be applied to their operations and to those of neighbouring spectrum users. Such international standards are often implemented by national regulators in their domestic regulations to serve as a basis for national licensing. Sector Members also have the opportunity to learn what their competitors are planning and to impact the plans of others which could have a harmful effect on their operations. Sector Members may fully participate in the adoption of questions for study and recommendations and to provide chairs and vice-chairs for study groups and assemblies, and may also attend treaty conferences including WARCs, but as observers only with more limited participatory rights.⁷²⁸ Many states though allow satellite operators to serve on their national delegations to treaty conferences as technical experts, providing an opportunity for them to draft proposals and contribute to national positions.⁷²⁹ The US Congress has approved this unique arrangement by passing a law to enable corporate participants on US delegations.

⁷²⁸ ITU Constitution, *supra* note 296, Article 3; Final Acts of the Plenipotentiary Conference (Antalya, 2006), Resolution 14, available at <https://search.itu.int/history/HistoryDigitalCollectionDocLibrary/4.18.43.en.100.pdf> (last visited 30 May 2022).

⁷²⁹ Allison, *supra* note 720, at 8-12.

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There would be advantages in transferring UNCOPUOS legislation duties to the ITU. Firstly, the ITU is, just like UNCOPUOS, part of the UN system, but as a UN Specialized Agency it has the necessary international legal status and independence to create treaties on its own, unlike the UNCOPUOS which has to forward draft treaty texts to the UNGA for approval and adoption. Secondly, for satellite operators the ITU is the organization that oversees access to the Geostationary-Satellite Orbit ('GSO') and other orbits through management of the coordination process, maintenance of the MIFR, development of global standards, and allocation of radio frequency spectra to radio services. The ITU thus deals with orbit and frequencies, the two physical 'assets' indispensable for satellite communications.⁷³⁰ This includes the up-link and down-link frequencies to be utilized relating to the satellite occupying a certain slot or orbit. Successful completion of the ITU's regulatory processes results in a frequency assignment and associated orbital position for GSO satellites that are recorded with a favourable finding in the MIFR.⁷³¹ This status affords the satellite operator with international recognition of its operation, priority over other potential users of those resources, plus protection from harmful interference from other operators with lesser rights. Such international protection in addition to national licensing afford the satellite operator with assurance necessary to support the great investment necessary to construct, launch and operate a satellite network. Thirdly, the ITU has a very long history as an IGO, and its success can be attributed to its reputation as a technical and historically non-political body driven by the rapid progress of technology and its importance to society, and the key role played by its private sector participants which develop and implement so many of the world's technological advances. It is driven by competitive forces to grow and make the most effective and efficient use of available resources. In addition, relations between the ITU and UNCOPUOS were effective in assuring that no undue incompatibilities arose between telecommunications law and space law in the overlapping area of satellite communications.⁷³²

⁷³⁰ von der Dunk, 'Space for Celestial Symphonies? Towards the Establishment of International Radio Quiet Zones', 17 *Space Policy* (2001), 265-74, at 272.

⁷³¹ Allison, *supra* note 720, at 9, 13.

⁷³² von der Dunk, *supra* note 721, at 492.

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Would the ITU, an established UN Agency, already involved in outer space issues through its regulation of the allocation of orbital slots and the use of radio frequencies for satellites, be suitable to fix the UNCOPUOS problems? Unfortunately, this cannot be unreservedly advocated. Firstly, the ITU is focused on frequency interference, insofar as it addresses space law issues, and as such does not have a wide enough constitutive scope. As it is, the ITU's system for allocation, allotment and assignment of frequency resources, and of orbital positions, is already criticized as competency creep.⁷³³ Outer space is not subject to national appropriation, and initially the ITU was charged only with allocating, allotting and registering frequencies but due to the inevitable relationship between orbital positions and the risk of interference tied to certain positions, those orbital positions also came to be allocated, allotted and assigned through the same mechanisms. This happened unchallenged and can now be said to have become public international law *per se*. Secondly, its record was challenged.⁷³⁴ The ITU regulatory framework has its foundations in the Cold War geopolitical world of the 1960's. In recent times it has become over-involved in discussions which has limited its efficacy, such as on the regulation of the Internet, lack of competency of bandwidth, orbital issues relating to military activities, and dealing with the paper satellites issue. The ITU's areas of responsibility are crucial to the ongoing sustainable development of the space economy, and fundamentally it is an organization that depends on international cooperation, yet its Constitution does not cater for an effective internal dispute resolution mechanism which can handle orbital and radio spectrum congestion and radio frequency interference. There is also a general failure to embed long term planning to ensure that all states have equitable access to and use of orbital slots and the radio spectrum, which presents a major threat to the very stability that the framers of the Cold War arrangements craved and pose a serious threat to space security. Thirdly, the ITU is the world's second oldest IGO⁷³⁵ and saddled with an antiquated and incredibly complex decision-taking and law-making structure, which is precisely not what space law needs at this stage as it would

⁷³³ von der Dunk, *supra* note 286, at 275-276.

⁷³⁴ Newman, 'Regulation of Artificial Satellites', in Y. Failat and A. Ferreira-Snyman (eds.), *Outer Space Law Legal Policy and Practice* (2017), 163-177, at 173.

⁷³⁵ The ITU was established in 1865 with a permanent bureau; Bowett's, *supra* note 24, at para 1-013.

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further complicate the reaching of consensus on new space law treaties. In the fourth place, the ITU legal regime is labouring under some constraint as the ITU is still unsuccessful in agreeing to a so-called 'Stable Constitution'. The switch to a constitutional system at the 1992 Geneva PP made the ITU Constitution subject to the common rules on the amendment of international treaties, with the result that different versions of the ITU Constitution may apply and might be in force for different member states at the same time.⁷³⁶ The PP of Guadalajara, 2010, adopted Resolution COM5/1 recognizing that consensus has emerged among the ITU member states to work towards a Stable Constitution for the ITU, and established a Council Working Group ('CWG') to produce a draft Stable ITU Constitution. The PP as the supreme organ of the ITU has among its responsibilities the consideration and adoption of proposals for the amendment of the ITU Convention and Constitution.⁷³⁷ Organising a Diplomatic Conference for the adoption of a new Stable ITU Constitution will be expensive and time-consuming. Fortunately, there is in place a specific non-automatic amendment procedure (Sub-Article 55(6) ITU Constitution and sub-Article 42(6) ITU Convention) to be followed at a scheduled PP, and thus any member state can recommend an amendment but it will enter into force only by those formally accepting it.⁷³⁸ The Stable ITU Constitution was supposed to have been created via an amendment to the current ITU Constitution at PP-14, with no need for a totally new treaty to be drafted. Unfortunately, the CWG took the decision that no proposals for such an amendment was to be entertained during PP-14, in the main as there was not enough support for such a constitutional amendment and because the majority appeared to be satisfied with the four-year PP Conference cycle ensuring that the major decision-making organ of the ITU will meet every four years. There is no indication that this was solved at PP-18, as planned, either.⁷³⁹ Fifthly, the main space-faring countries have already

⁷³⁶ Koenig, *supra* note 724, at 21-22; see Appendix A: Participation Observation.

⁷³⁷ Lyall and Larsen, *supra* note 36, at 200; this amendment is competent and permissible in terms of the ITU Constitution, *supra* note 296, Article 55, and Article 42 of Convention of the International Telecommunications Union, available at <https://search.itu.int/history/HistoryDigitalCollectionDocLibrary/5.22.61.en.100.pdf> (last visited 30 May 2022).

⁷³⁸ Aust, *supra* note 460, at 240.

⁷³⁹ See Document C20/58-E of 3 March 2020, Report by the Secretary-General Compilation of decisions captured in PP-18 summary records, available at www.itu.int (last visited 4 March 2020).

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demonstrated an apparent deep-seated opposition to the ITU taking more responsibility in the outer space arena as evidenced by their opposition to the proposed role of the ITU as Supervisory Authority of the International Registration System for Space Assets. This originated in the opposition of the established satellite industry at the Berlin Diplomatic Conference in 2012, and subsequently in the ITU's Council and PP's. As a result, it is hard to see the established satellite industry allowing their countries to consent to the ITU to take an even more responsible role for the UNCOPUOS norm-making function. That is a great pity indeed, because should the ITU take up this new task, although rather different from its core activities so far, it would at least be able to ensure not just continued compliance, but likely even consistency (in terms of technical details) of registrations in the Space Protocol's International Registry with its own MIFR.⁷⁴⁰ In sixth place, the ITU was discarded, due to concerns about the overcrowding of orbits, as the institutional structure best suited for the development and establishment of a STM system in order to track space objects, prevent collisions and interference and deal with debris.⁷⁴¹ Arguably only a cooperative global body will be able to manage space efficiently and fairly,⁷⁴² and the initial preference was for the ITU, which has to a certain extent managed the traffic of satellites in GEO virtually since the beginning of the use of the orbit in the 1960s, but the ITU's work is limited to some aspects of telecommunications programmes and does not encompass many of the tasks required for space traffic control (satellite collision prevention services, a re-orbiting and re-entering regime for non-functioning space objects, and a general space debris regime). ITU rules, aimed at the avoidance of radio-frequency interference, are far more advanced than rules aimed at the avoidance of physical interference,⁷⁴³ and the IADC's SDM Guidelines would be more preferable which although not a legally binding agreement does encompass elements of STM such as the use of disposal orbits and notification in case of controlled re-entry (but with the addition of environmental protection provisions to

⁷⁴⁰ von der Dunk, *supra* note 721, at 493.

⁷⁴¹ For a general technical explanation see Pelton, *supra* note 234.

⁷⁴² Monserrat Filho, 'Which Institutions for Space Traffic Management?', 18 *SPACE PoL'Y* (2003), 179-182, at 180; note written before the SDM and LTS Guidelines.

⁷⁴³ Contant-Jorgenson *et al*, 'The IAA Cosmic Study on Space Traffic Management', 22 *SPACE PoL'Y* (2006), 283-288, at 283; note written before the SDM and LTS Guidelines.

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avoid pollution of the atmosphere or troposphere). In seventh place, although decision by vote is possible within the ITU structures, the attainment of consensus is the major avenue through which agreement on the regulation of international communications is obtained. Consensus can be perilous precisely because the hope is that all in the ITU will concur in consensus, and an intransigent participant can paralyze the process or demand exorbitant or unwise concessions from others.⁷⁴⁴ The drive for consensus may result in a compromise that weakens the eventual result or be expressed in vague words causing ambiguity and permitting or masking contradictory views as to the exact meaning. Lastly, the ITU does not possess competence comparable to that of the ICAO, as it is highly doubtful that the ITU can determine, independently from individual member states, binding legal rights and obligations of a sufficiently far-reaching and substantial nature, let alone enforce regulations *vis-à-vis* specific states and their private entities.⁷⁴⁵

3.8.2 Moving UNCOPUOS Functions to the ICAO

ICAO is the global forum of status for international civil aviation.⁷⁴⁶ The Assembly is the sovereign body and main policy-setting body of ICAO where each member has a seat and one vote.⁷⁴⁷ It meets in ordinary session once every three years, and may meet in extraordinary session at any time upon call of its Council or at the request of at least one-fifth of the membership.⁷⁴⁸ Decisions require a simple majority of votes cast, but in practice most decisions are taken by consensus and the taking of formal votes is rare.⁷⁴⁹ Most decisions on substantive matters are taken in the form of a resolution, many of whom are detailed policy-setting documents, but may also contain instructions to ICAO organs, or principles, policies or

⁷⁴⁴ Lyall, *supra* note 427, at 33-35.

⁷⁴⁵ von der Dunk, *supra* note 730, at 272-3; note that this article dealt with the protection of the radio-astronomy spectrum to allow radio astronomy observations to continue, and von der Dunk suggested the creation of international radio quiet zones, and discussed an 'ICAO-approach' and an 'ITU-approach' to this issue; Appendix A: Participation Observation.

⁷⁴⁶ Available at <https://www.icao.int/about-icao/Pages/default.aspx> (last visited 26 December 2019); L. Weber, *International Civil Aviation Organization (ICAO)* (3rd ed. 2017), at para 56.

⁷⁴⁷ Convention on International Civil Aviation 1944, available at <https://www.icao.int/publications/pages/doc7300.aspx> (last visited 30 May 2022), Art 48(b) ('Chicago Convention'); Rules 3 and 43 Standing Rules of Procedure of the Assembly of the International Civil Aviation Organisation 7th ed. (2012) ('ICAO Rule(s)').

⁷⁴⁸ Art 48(a) Chicago Convention, *Ibid.*, ICAO Rules, *Ibid.*, Rules 1 and 2.

⁷⁴⁹ Art 48(c) Chicago Convention, *Ibid.*, ICAO Rule 28, *Ibid.*

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guidance to be followed by members.⁷⁵⁰ Assembly Resolutions are published after each session and disseminated as 'Assembly Resolutions in Force'. The Assembly elects states to be members of the Council for three years, vote annual budgets, review expenditures, delegate to the Council the powers and authority necessary or desirable, consider proposals for amendment of the Convention, and deal with any matter not specifically assigned to the Council.⁷⁵¹ For the discharge of these responsibilities the Assembly establish subsidiary bodies for the duration of its ordinary triennial session, namely an Executive Committee to co-ordinate the work of all its subsidiary bodies,⁷⁵² a Coordinating Committee in case of two or more commissions during a session, a Technical Commission responsible for air navigation matters,⁷⁵³ an Economic Commission on air transport matters, a Legal Commission responsible for legal matters, an Administrative Commission responsible for budget and finances,⁷⁵⁴ and lastly a Budget Working Group that normally assists with the triennial budget.

The Council is the executive governing body of ICAO which is elected by the Assembly for a three-year term, and is composed of 36 states selected by the Assembly, each with one seat and one vote.⁷⁵⁵ The Assembly shall give adequate representation to the states of chief importance in air transport. Decisions require approval by a two-thirds majority, and 25 votes are required when adopting Annexes to the Convention or amendments. The Council's functions are divided into mandatory functions and permissive functions.⁷⁵⁶ In the first place *legislative functions*.⁷⁵⁷ The adoption of Technical standards and recommended practices ('SARPs') in the form of Annexes to the Convention, and amendments thereto, to which all member states adhere to and applicable to all flights in their air space and to their own aircraft through national implementing legislation.⁷⁵⁸ Secondly the

⁷⁵⁰ Weber, *supra* note 746, at paras 58, 59 and 63.

⁷⁵¹ Art 49 Chicago Convention, *supra* note 747.

⁷⁵² Weber, *supra* note 746, at para 61; ICAO Rules, *supra* note 747, Rules 14(a) and (b), and 15.

⁷⁵³ The Technical and Legal Commissions are not mentioned by name, and are established by ICAO Rules 14 and 18, *ibid*; See Weber, *ibid.*, at FN 116 & 117.

⁷⁵⁴ ICAO Rule 14(c).

⁷⁵⁵ ICAO Webpage, *supra* note 746; Articles 50(a) and (b), 54 and 90 Chicago Convention, *supra* note 747; Weber, *supra* note 746, at para 64.

⁷⁵⁶ Weber, *ibid.*, at para 67; Articles 54 and 55 Chicago Convention, *supra* note 747.

⁷⁵⁷ Weber, *ibid.* at para 67, note author's emphasis; Art. 90 and 54(1) Chicago Convention, *ibid.*

⁷⁵⁸ Van Fenema, 'Legal Aspects of Launch Services and Space Transportation', in F. von der Dunk and F. Tronchetti (eds.), *Handbook of Space Law* (2015), 382-455, at 409-410.

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*administrative functions*⁷⁵⁹ which includes the administration of the ICAO finances, appointment of the Secretary General and other Secretariat personnel, collection and dissemination of information on air navigation and air transport services, reporting of infractions of the Convention, submission of annual reports to the Assembly, and carrying out the directions of the Assembly which includes the administration and supervision of the Universal Safety Oversight Audit Programme and the Universal Security Audit Programme. Thirdly the *judicial functions*⁷⁶⁰ such as the adjudication of disputes between Contracting States on the interpretation or application of the Convention or its Annexes, and between Contracting States on the interpretation or application of the International Air Services Transit Agreement. In practice and in terms of the *ICAO Rules for the Settlement of Differences* the Council can act as a mediator between the parties that brought complaints to the Council.

The Committees and Commissions of Council are composed of Representatives of the Council or their Alternates, normally between 11 and 15. These usually meet during the first phase of each Council session ('Committee Phase') in order to prepare the discussion in full Council during the second phase ('Council Phase'). All Committees report to the Council through the respective Committee Chairman, who is elected by the Council. The main Commissions/Committee are first the *Air Navigation Commission* as the main technical body of ICAO with a principal function to consider amendments or modifications to the Annexes and to recommend them to the Council,⁷⁶¹ but it also advises the Council on the collection and dissemination of information it considers necessary and useful for the advancement of air navigation. It consists of 19 Members appointed by the Council in their personal capacity as experts, not as representatives, from among persons nominated by Contracting States. Secondly, *the Legal Committee* created by Assembly Resolution A1-46 during the very first ICAO session, with the task to advise the Council and the Assembly on legal questions and to prepare drafts for

⁷⁵⁹ Chapters XII and XV Chicago Convention, *supra* note 747, and sub-Articles 55(a), (b), (h), (j), and (k); Weber, *supra* note 746, at paras 67-68.

⁷⁶⁰ Articles 53, 54(b), 66 and 84 Chicago Convention, *ibid.*; Weber, *ibid.*, at paras 69-70.

⁷⁶¹ Articles 57 (a), (c) and (e), 58(a) Chicago Convention, *ibid.*; Weber, *ibid.*, at paras 77-81.

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international Conventions or Protocols in the field of air law.⁷⁶² It comprises of all Contracting States and each member has one vote. Decisions are taken on a simple majority of votes cast, but in practice works by consensus. The elaboration of a draft text is first entrusted to the Secretariat, assisted by a Secretariat Study Group, or to a Sub-Committee of the Legal Sub-Committee. The first draft text will then be submitted to the Legal Committee, which will review the draft in the light of the views of all its member states. The Legal Committee adopts the text and submits it to the Council for consideration, together with a report thereon. The Council may take any action it deems fit, including circulation of the draft to Contracting States and IGOs for comment, but such comment period may not last for longer than four months. Should the text not be considered mature, it may be referred back to the Committee or to a Special Group for further consideration. If considered sufficiently mature, it will proceed to a Diplomatic Conference.

Air Navigation Conferences and Divisional Meetings may be convened by the Council from time to time as circumstances require.⁷⁶³ All Contracting States are entitled to attend. Although the ICAO Rules of Procedure allow each state one vote, recommendations and conclusions are usually adopted by consensus. Divisional Meetings are meetings of worldwide scope dealing with one or a few specific subject matters in the air navigation or air transport fields for example aircraft accident investigation and/or aviation meteorology.

Panels and Working Groups may be set up by the Air Navigation Commission or by the Council, when necessary to advance the solution of problems requiring expert advice including technical problems which cannot be solved adequately or expeditiously by the Air Navigation Commission.⁷⁶⁴ An example is the Airworthiness and the Aviation Security Panels, which are deliberately of limited size and staffed by experts in their personal capacity and not as representatives of states. Their reports are presented as the advice of a group of experts, and not as representing the view of Contracting States. Panels may set up Working Groups to advance their work, and which will have a specific task set out in their terms of

⁷⁶² Weber, *Ibid.*, at paras 82-83; the procedure for the taking of decisions in the preparation of drafts for instruments of international air law are laid down in the Rules of Procedure for the Legal Committee.

⁷⁶³ Weber, *Ibid.*, at para 85-87.

⁷⁶⁴ Directives for the Panels of the Air Navigation Commission, ICAO Doc. 798/4/4, Section 1-3; Weber, *Ibid.*, at paras 90-94.

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reference, and a limited membership. ICAO general practice is that states member to the parent body may not be represented on a Working Group, but they may participate as observers.

The Secretariat is headed by the Secretary-General, the chief executive officer of ICAO, and appointed by the Council.⁷⁶⁵ The Council must also appoint such other personnel as may be necessary. Secretariat Study Groups differ from Working Groups and are set up by the Secretariat and composed of experts from Contracting States, moderated by an officer of the Secretariat, and with the specific task to advance the work of the Secretariat in developing proposals or draft texts, for example draft international air law instruments for the Legal Committee to consider. The Secretariat is divided into five Bureaux⁷⁶⁶ (Air Navigation, Air Transport, Legal, Administrative and Technical Cooperation) each headed by a Director reporting to the Secretary General.

The following in ICAO appears most attractive to advocate extending its mandate to initiate and manage regulatory and safety issues for civil- and commercial spaceflight.⁷⁶⁷ Firstly, ICAO's established and recognised competence as an IGO. Secondly, the advantage of having a founding treaty/constitution is that procedures are certain and that there are established rules of procedure. On the one hand there aren't pointless annual meetings, yet they can meet more when required. Thirdly, decision-taking in the Assembly requires a simple majority of votes cast, but in practice most decisions are taken by consensus and the taking of formal votes is rare. Still the option is there to vote in order to break deadlocks. Fourthly, the advantage of being a UN Specialized Agency in that decisions on substantive matters are taken in the form of a Resolution, and there is no need to have it approved by the UNGA. Fifthly, the exemplary and established ICAO practice whereby Assembly decisions are published after each session and disseminated to all Member states as *Assembly Resolutions in Force*, the Committees meeting during the first Committee Phase in order to prepare the discussion in full Council during the second Council Phase,⁷⁶⁸ the Air Navigation Council as the main

⁷⁶⁵ Sub-Article 54(h), Chapter XI Chicago Convention, *supra* note 747; L. Weber, *Ibid.*, at para 95.

⁷⁶⁶ L. Weber, *Ibid.*, at para 98.

⁷⁶⁷ Jakhu, Sgoba and Paul, *supra* note 299, at 11-12.

⁷⁶⁸ This is in essence what the German delegation at the UNCOPUOS Legal Sub-Committee suggested; see discussions in 1.11 and 3.6 *supra*.

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technical body consists of Panels staffed by 19 non-political experts in their personal capacity and not as representatives of states, the Legal Committee deals with treaties on an *ad hoc* basis when required and its elaborate and established procedure has resulted in the widespread acceptance and ratification of virtually all international air law instruments developed, and the Chicago Convention obliges Contracting States to collaborate in securing the highest practicable degree of uniformity concerning regulations, standards, and procedures.⁷⁶⁹

Thus, ICAO is a fully experienced and operational legislative and implementing intergovernmental body, with detailed rules, regulations, guidelines, and operational procedures for aviation that could be gradually extended to space with the necessary modifications.

Thus, ICAO is the most plausible solution for UNCOPUS norm-making problems.

3.9 Methodology to effect Recommendations

How can this be effected? A two-step process is recommended, first preparing ICAO for Space issues, and secondly UNCOPUOS to transfer its functions to ICAO. These can be approached simultaneously.

Preparing ICAO. Amendment of the ICAO constitutive documents is considered a viable option.⁷⁷⁰ The Chicago Convention provisions were amended over the years in 14 instances to bring institutional and procedural provisions up to date, but in only two instances were amendments required to substantive provisions,⁷⁷¹ namely Article *3bis* that every state must refrain from using weapons against civil aircraft in flight, and Article *83bis* to cater for the possibility of oversight transfer to another state. The suggested procedure is first for the ICAO Council to amend relevant ICAO Annexes and/or adopt new ones to address issues such as licensing of spaceports, human space flight, safety of personnel and astronauts, and security. Secondly to amend the Chicago Convention to fully establish ICAO's jurisdiction over relevant space activities. Possibly also required is a regulatory model outlining the structure of an 'ICAO for Space Organization', and to assist in this it would be

⁷⁶⁹ Hailbronne, 'International Civil Aviation Organization' in B. Bernard (ed.), *Encyclopaedia of Public International Law Instalment 5* (1981), 68-70, at 69.

⁷⁷⁰ Weber, *supra* note 746, at paras 16-26.

⁷⁷¹ Jakhu, Sgoba and Paul, *supra* note 299, at paras 16-26.

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necessary to undertake a study of the experience gained by those countries which have already established a national licensing system for commercial space operation, and to find a better method of linking/merging the ITU information/notification system with an improved UN registration system.

The second half of the solution would be the UNCOPUOS internal process to be undertaken. Academia provides no insight into the nuts-and-bolts of such an operation, in other words how to practically go about changing a UN Committee such as UNCOPUOS to the extent suggested. Thus, it is necessary to go back to first principles and examine how the LSC was created as a permanent organ. The relevant UNGA Resolutions are somewhat sparsely worded. UNGA first created an *Ad Hoc* committee via UNGA Resolution 1348 (XIII) (13 December 1958) 'Question of the Peaceful Uses of Outer Space', and with one of its purposes to report on the nature of the legal problems that might arise in carrying our programmes to explore Outer Space. It should be noted that the *Ad Hoc* committee was further instructed to report back on the 'future organizational arrangements to facilitate international co-operation in this field' within the UN. Although a substantive report came out from the one session of the *Ad Hoc* Committee, including an assessment of the legal aspects involved, it did not serve as a basis for further endeavours into this field due to the fact that some members states refused to participate.⁷⁷² Secondly, UNGA Res. 1472 (XIV) (12 December 1959) 'International co-operation in the peaceful uses of outer space' again instructed a study of the nature of the legal problems which may arise from the exploration of outer space. Third, UNGA Res. 1721(XVI) of 10 December 1961 'International co-operation in the peaceful uses of outer space' stipulated that international law will apply to outer space and celestial bodies, which are free for exploration and not subject to national appropriation.

Hobe *et al* simply mentioned that the *Ad Hoc* Committee, convened in May 1958, decided to further establish the legal and technical Subcommittees. Jasentuliyana and Lee claimed that the *Ad Hoc* Committee divided itself into two

⁷⁷² Kopal, 'United Nations and the Progressive Development of International Space Law', *Finnish Yearbook of International Law* (1996), 1-58, at 2.

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Subcommittees.⁷⁷³ According to Kopal, one of the original LSC delegates and a former Chief of UN Outer Space Affairs Division, the organizational structure for international cooperation in space activities crystallized and two Subcommittees the LSC and STSC were created, each composed of the same member states as the parent body, for detailed consideration of specific and suggestions concerning scientific, technical and legal questions. Lachs, the very first chairman of the LSC, explained that it was obvious from the start that the law-making process could not be left to be shaped solely by practice.⁷⁷⁴ The UN was entrusted with this task and had to make a choice of procedures. Developments were occurring too quickly and the leisurely pace of development of international law chapters such as that of the law of the sea could not be afforded. Hence the early initiative to embark on the elaboration of the written law. It was realized that the task was not one which could feasibly be accomplished by the adoption of a single instrument, but rather lent itself to a continuous process of adopting and gradually choosing principles and rules of law. A special committee was set up and one of its two Subcommittees was to concentrate exclusively on the drafting of legal principles and rules for outer space.

Article 22 of the UN Charter allows the UNGA to establish 'such subsidiary organs as it deems necessary for the performance of its functions'. Per the UNGA Rules of Procedure, each Main Committee is a master of its own procedures and may establish committees 'as it deems necessary for the performance of its functions', and which may in turn set up Subcommittees.⁷⁷⁵ In this sense, the establishment of the LSC was a sole prerogative of the UNCOPUOS, and they did it to have a more specialized approach to certain important matters.⁷⁷⁶ Thus, UNCOPUOS may revise that decision and decide to close it down, like with any working group.

⁷⁷³ CoCoSL I, *supra* note 61, at para 13 Historical Background; and in general Jasentuliyana and Lee, *supra* note 612.

⁷⁷⁴ Masson-Zwaan and Hobe, *supra* note 75, at 126.

⁷⁷⁵ See Rules 96 and 102 Rules of Procedure of the General Assembly (2021), A/520/Rev.19, at Part XII Committees; ANNEX III Resolution 1898 (XVIII) Adopted by the General Assembly at its 1256th plenary meeting, on 11 November 1963, at para (e).

⁷⁷⁶ Correspondence with Sergiy Negoda, former Legal Liaison Officer, Committee, Policy and Legal Affairs Section, UNOOSA, on 7 July 2021.

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Such major changes should be effected via the UNGA's Fourth Committee as part of the annual Peaceful Uses of Outer Space Resolution, alternatively in terms of Article 22 of the UN Charter. A real-world example of such a procedure was the creation of the United Nations Office for Project Services ('UNOPS') from the United Nations Development Programme ('UNDP').⁷⁷⁷ The Secretary-General of the UN proposed, on the recommendation of the UNDP Executive Board pursuant to its decision 94/12 of 9 June 1995, to separate the then Office for Project Services ('OPS') from the UNDP. The UNGA, acting under Article 22 of the UN Charter, designated the UNOPS as a separate and identifiable entity.⁷⁷⁸ This had the effect that UNOPS is a subsidiary organ of the UNGA and accordingly an integral part of the UN itself such as the UNDP,⁷⁷⁹ and UNOPS enjoys the legal status and capacity of the UN itself (full juridical personality, capacity to contract, and immunity from every form of legal process except insofar as expressly waived by the UN Secretary-General). Both suggested methods would require consensus from UNCOPUOS, perhaps not feasible in the past, but the time may be ripe to try and obtain consensus from the members on such drastic steps.

3.10 Conclusion to Chapter 3

But will a move to ICAO be feasible? This is by no means a given. The severe practical difficulties in amending multilateral instruments were touched on.⁷⁸⁰ This can be assumed to be even more so for a constitutive treaty. One of the amendment examples provided on the ease of amendment of ICAO constitutive documents also does not inspire confidence. In 1984, as a result of the shoot-down of Korean Airline Flight 007, the ICAO Assembly introduced Article 3*bis* which entered into force only fourteen years later upon the receipt of its 102nd ratification in 1998.⁷⁸¹

⁷⁷⁷ UNOPS is an operational arm of the United Nations, supporting the successful implementation of its partners' peacebuilding, humanitarian and development projects around the world; available at <https://www.unops.org/english/About/Pages/default.aspx#sthash.SiYeUv4b.dpuf> (last visited on 2 October 2015).

⁷⁷⁸ UNGA decision 48/501 of 19 September 1994.

⁷⁷⁹ 2 October 2015 email correspondence with Ms Anna Charles, Legal Analyst, Integrated Practice Advice and Support of UNOPS.

⁷⁸⁰ See 1.11 discussion on the possible amendment of outer space treaties.

⁷⁸¹ Contant Jurgens, *supra* note 743.

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Unfortunately, not all expect a switch to ICAO to proceed smoothly. ICAO's discussion of an international legal framework for sub-orbital spaceflight in the context of the UNIDROIT Space Protocol, led to the following warning.⁷⁸² Aviation applications making use of space infrastructure and assessing whether an essentially hybrid activity should be regulated as part of air law, highlight the complexity of interaction of non-space law with space law *strictu sensu*, and often led to approaches for solving issues ignoring the broader aspects of the involvement of outer space and space activities in the particular area at hand. In the second place there are significant differences between the regimes covering air navigation and space activities, and there may be problems if a hybrid vehicle encounters a problem on the way to space but is still in airspace.⁷⁸³ Thirdly, it is not clear whether SARPs are automatically binding international legal instruments as military aircraft are not automatically subject to this regime. Moreover, the Chicago Convention utilises aspirational and thus non-mandatory treaty language and allows deviation by implication in setting out a specific communication procedure when impractical to comply. There is also a marked difference between a Standard and a Recommended Practice, which utilises exactly the same definition but requires only 'the uniform application of which is recognized as desirable and to which Contracting States will endeavour to conform'. Fourthly, the regulation of safety aspects of spacecraft travelling through space may entail a transition to a 'new aerospace law'.⁷⁸⁴ This is criticized as unworkable, as more than 50 years of discussions in the UNCOPUOS could not solve the apparently intractable problem of the delimitation of outer space, and the safety aspect is regulated as liability under space flight. Possibly the biggest concern is the inconclusive debate regarding ICAO to deal with STM. It was suggested that jurisdiction over Suborbital Aerospace Transportation Vehicles ('SATVs') flights be given to ICAO for safety and air traffic control purposes, as the design of ICAO gives it the ability to regulate SATV activities in ways that UNCOPUOS cannot.⁷⁸⁵ For this UNCOPUOS's half-century inability to set the boundary between air and space has to be addressed, and it was suggested

⁷⁸² von der Dunk, *supra* note 286, at 278-279.

⁷⁸³ Jakhu, Sgoba and Paul, *supra* note 299, at 11-12; Sub-Articles 3(a) and (b), 37, 38 Chicago Convention, *supra* note 747.

⁷⁸⁴ Jakhu, Sgoba and Paul, *ibid.*, at 12.

⁷⁸⁵ Fitzgerald, *supra* note 254, at 3-4 and 23; note author relied on Sreejith, *supra* note 95.

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ICAO could simply define the upper limit of airspace in one of the Annexes, leaving inter-planetary and outer-space activities to UNCOPUOS. As both UNCOPUOS and ICAO are UN bodies perhaps the UNGA would be the appropriate body to mediate disputes.⁷⁸⁶ UNCOPUOS members already agreed that if a space object is launched into outer space for peaceful purposes, the permissions of countries that are overflown during the launch do not have to be obtained, as long as the launching state is a party to the Outer Space Treaty.⁷⁸⁷ A planet-wide integrated administration is much more secure and efficient if it can count on global space management to assure the safe and orderly functioning of all the space tools linked to the system. For STM it is likely that at least three international bodies, working closely together, would be necessary.⁷⁸⁸ A database body holding real-time information about the situation of all spacecraft, a regulatory body in charge of the creation of operational rules, standards and recommended practices, and a permanent coordinating body in charge of monitoring and evaluating the accomplishment and efficacy of the rules adopted. These STM bodies should be essentially technical and autonomous, their membership chosen by and accountable to the UNCOPUOS, but on the basis of the model established by the 1944 Chicago Convention as the best international institutional experience. The Conference on the Regulation of Emerging Modes of Aerospace Transportation ('REMAT') recognized ICAO as having structured SARPs on air traffic management, personnel licensing, rules of the air and airport planning, which could be extended to encompass principles that could be applied to the regulation of commercial space transport.⁷⁸⁹ ICAO is in any event already active in space and cooperating with UNOOSA on aerospace issues, such as the planning and development of a new satellite-based system to facilitate and improve communications, air navigation, surveillance and air traffic management.⁷⁹⁰ ICAO

⁷⁸⁶ Fitzgerald, *Ibid.*, at 4-6; his argument appears to be that ICAO action is possible as the term 'airspace above its territory' in Articles 1 and 87 Chicago Convention, *supra* note 747, is not defined, but the Tables of Cruising Levels in Appendix 3 of Annex 2, Rules of the Air, lists 51,000 feet as an altitude and then lists 'etc.,' allowing suggestions for higher altitudes in future.

⁷⁸⁷ Fitzgerald, *Ibid.*, 3-34, at 13-14, and FN 71; this argument rests on author's definition of 'inner space' as a zone located between 80 kilometres and 110 kilometres in altitude, and 'upper airspace' includes the zone traversed by suborbital and low-Earth-orbit activities.

⁷⁸⁸ Monserrat Filho, *supra* note 742, at 179-182.

⁷⁸⁹ REMAT was held on 24-25 May 2013 in Montreal and discussed *inter alia* the subject of ICAO for space, with special focus on commercial space transportation; see Abeyratne, 'Bringing a Commercial Space Transport Regulatory Regime ICAO - is it Feasible?', 62 ZLW (2013), 387-397, at 389-390.

⁷⁹⁰ Weber, *supra* note 919, at para 15.

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as the STM organization was not universally accepted, as STM is criticized as limiting the freedom of use of outer space,⁷⁹¹ contrary to popular belief ICAO is allegedly not a legislative body,⁷⁹² the 19 Annexes to the Chicago Convention are entirely on civil aviation and cannot be amended (or new Annexes adopted to cover such areas as licensing of spaceports, human space flight, space traffic management, safety of personnel and astronauts and security), spacecraft often traverses air space prior to its entering outer space vertically and in a trajectory that may not pass over much of state-to-state airspace whereas international civil aviation is exclusively involved with country-to-country air transportation, air-space delimitation will have to be settled, a convention solely dedicated to international civil aviation cannot include 'space standards' pertaining to navigation in outer space, and the Assembly Resolution recommending adoption of an amendment to cater for space issues could provide that any state that does not ratify within a specified time would cease to be a member of ICAO and a party to the Convention. Would states jeopardize their membership of ICAO for issues of space regulation? ICAO would have to be renamed as the International Aerospace Organization and a new wing added to ICAO comprising experts in space safety, security and the establishment and running of spaceports. This would require a new multilateral treaty covering commercial space transport regulations, plus separate Annexes to this new Convention pertaining to safety, environmental control and security. Lastly it is suggested that a more practicable solution is that the UNCOPUOS, ITU, and ICAO should each approach specific problems, as these organizations will be building blocks for a future STM.⁷⁹³

Such criticism does not surprise as the development of the two legal regimes, air and outer space took totally different paths and each has its own system of treaties, soft law and rules and regulations. The interests in ICAO were and still are mainly commercial, whilst commercial spaceflight is only now taking off. In spite of the large amounts involved in outer space activities, it is not near that in commercial aviation. Lastly, simply transferring UNCOPUOS functions to ICAO might

⁷⁹¹ See Contant-Jorgenson, *supra* note 743, at 282.

⁷⁹² Abeyratne, *supra* note 789, at 388, 396-397; author, then an ICAO legal advisor, unfortunately did not elaborate on this statement.

⁷⁹³ Contant-Jorgenson, *supra* note 743, at 283.

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perhaps institute the same problems in ICAO, as ICAO functions admirably whilst UNCOPUOS does not.

Thus, until the above is satisfactorily addressed, for the time being it is recommended that the easiest route is the one of least resistance and to work with the *status quo*. There are after all abundant arguments that space law had actually predicted and catered for the regulation of the private or commercial space sector, or NewSpace, from the outset.⁷⁹⁴ Firstly, commercial activities are described in Article VI Outer Space Treaty as ‘the activities of non-governmental entities in outer space’, and owe their existence and legitimacy to public international law (in other words space law), although it was decided that it should be rather general in character and leave special points to be defined by the more specialised legislation. Secondly, Article VI Outer Space Treaty imposed a clear duty on the state to license, monitor and otherwise supervise the space activities of its private commercial sector. Thirdly, Article XI Outer Space Treaty foresaw notification of the need for warning of activities that are planned in outer space. In fourth place, space-age legal entities or IGOs are recognized under the Article III Outer Space Treaty.⁷⁹⁵ IGOs may declare that they accept the rights and obligations of the treaties (REG Art VII(1), MOON Art 16, LIAB Art XXII(1), ARRA Art 6), and state parties to the treaties who are members of such an IGO are obliged to ensure that the organization makes this declaration. References to states in the treaties are deemed applicable to IGOs that make the required declaration (OST Art XIV, REG Art VII, MOON Art 16, LIAB Art XXII(2), ARRA Art 6). Regarding questions of liability, an IGO must be presented with a claim before it is presented to the state parties to the Liability Convention that are also members of the IGO (Article XXII(3)(a) LIAB). Only if the IGO itself does not pay the compensation due can the claimant state ‘invoke the liability’ of the IGO's member nations (LIAB Art XXII(3)(a)). Lastly, Principle 5 of UNGA Res 1962 (XXVIII) (13 December 63) provided for the possibility for private entities to carry out outer space activities subject to governmental authorisation and supervision, and thus codified the

⁷⁹⁴ Smith, *supra* note 56, at 50; CoCoSL I, *supra* note 61, at para 44; Hobe, *supra* note 6, at 209.

⁷⁹⁵ Gabrynowicz, *supra* note 243, at 1044-1045; such innovations add to overall debate on legal status of emerging supranational entities, a hallmark of international law in the last decades of the 1900's.

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attempt of the international community to enact legal principles for outer space activities in a formalised manner.⁷⁹⁶

In order to continue with UNCOPUOS as it is, and following the philosophy of law-as-engineering (clients are interested in products solving problems and the risks associated with such but not really in the detail), and the concept of the international space law regime (a body of key actors, norms, laws, policies, industries, and activities, as well as social, behavioural and institutional practices),⁷⁹⁷ the following two maxims are proposed as a minimum to be followed:

A. We need to accept a fourth stage of development and redefining of space law lato sensu, in order for soft law rules no longer to be ignored

The significance of soft law is a frequently misunderstood phenomenon, in spite of the abundant evidence of the importance of soft law as an element in modern international law-making, especially in declarations or resolutions adopted by states in international conferences or in the UNGA.⁷⁹⁸ Significantly, the stalling of UNCOPUOS legislation activities did not stop the formulation of 'new space-related rules' demanded by technological progress, or an increase in the number of space activities, or an increase in the number of space participants.⁷⁹⁹ Thus, new norms addressing specific issues, for example the reduction of orbital space debris, were developed in the context of NGOs or on a bilateral or regional basis, and in an alternative process to UNCOPUOS. The SDM Guidelines were described to be in the first place proof that the practice of soft law in space activities is a generally recognized system resulting from common interests and goals,⁸⁰⁰ and secondly as a virtuous system that is flexible, corresponding to the needs of the space community, yet limited to the international relations coordinating and preparing space activities.

⁷⁹⁶ CoCoSL I, *supra* note 61, at paras 40, 44.

⁷⁹⁷ See Introduction to Research on theoretical approaches relied on.

⁷⁹⁸ Boyle and Chinkin, *supra* note 384, at 211.

⁷⁹⁹ Tronchetti, *supra* note 629, at 4-5.

⁸⁰⁰ Ferrazzani, *supra* note 453 174, at 117.

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Soft law instruments have three major features in common.⁸⁰¹ Firstly, they are indicative of the modern trends emerging in the world community where IGO's or other collective bodies have the task of promoting action on matters of general concern. Secondly, they deal with matters that reflect new concern of the international community to which previously it was not sensitive or not sufficiently alert. Thirdly, where for political reasons it is hard for states to reach full convergence of views and standards on these matters so as to agree upon legally binding commitments. Although legally unregulated, they become the object of agreed guidelines or statements of common position or policies. Arguably these may lay the ground for the gradual formation of customary rules or treaty provisions.

The subtlety of the processes by which contemporary international law can be created is no longer adequately captured by reference to the orthodox categories of custom and treaty.⁸⁰² Arguably soft law instruments may represent an attractive alternative to law-making by treaty. It may be easier to reach agreement when the form is non-binding, as the use of soft law instruments enables states to agree to more detailed and precise provisions because their legal commitment and the consequence of non-compliance are more limited. It may be easier for some states to adhere to non-binding instruments because they can avoid the domestic treaty ratification process (and escape democratic accountability for the policy to which they have agreed), but this may also make it harder to implement such policies if funding, legislation, or public support, are necessary. Soft law instruments are easier to amend or replace than treaties, in particular when all that is required is the adoption of a new resolution by an international institution. Soft law instruments may provide more immediate evidence of international support and consensus than a treaty whose impact is heavily qualified by reservations and the need to wait for ratification and entry into force.⁸⁰³ An instrument does not need to constitute a binding treaty before it can exercise an influence in international politics, in spite of

⁸⁰¹ Cassese, *supra* note 2, at 196-197.

⁸⁰² Boyle, 'Some Reflections on the Relationship of Treaties and Soft Law in Multilateral Treaty-making', in V. Gowlland-Debbas (ed.), *Multilateral Treaty-making: The Current Status of Challenges to and Reforms Needed in the International Legislative Process* (2000), 25-38, at 25 and 27.

⁸⁰³ A practical example is the Convention Establishing the Square Kilometre Array Observatory took four years to progress to signature and the required five ratifications took another 18 months, whilst the non-binding MoUs with each operating entity in the host countries only a few weeks; see Appendix A: Participation Observation.

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the more conventional argument that soft law is not law.⁸⁰⁴ Non-binding instruments, whether called recommendations, guidelines, codes of practice or standards, are significant in signalling the evolution and establishment of guidelines which may ultimately be converted into legally binding rules.

Notably, each soft law instrument in space law was developed to best address one specific space activity and thus its effectiveness depends on that activity.⁸⁰⁵ Soft law functions in space law as substitution for a treaty to harmonize national laws, for example the Application of the Concept of the 'Launching State'. It also functions for the development of an international regime (for example the Remote Sensing Principles), as a choice and preference (for example the SDM Guidelines), as *Lex ferenda* to avoid North-South confrontation (for example the Space Benefits Declaration), and lastly as an important step in the creation of international custom.⁸⁰⁶ Non-binding declarations or resolutions of the UNGA or any other soft law instrument are not invariable law *per se*, but may be evidence of existing law, or formative of *opinio juris*, or state practice that generate new law.⁸⁰⁷ Soft law can also be a part of the multilateral treaty-making process.⁸⁰⁸ Some non-binding soft law instruments are the first step in a process of negotiation eventually leading up to conclusion of a treaty, for example the early UNGA Resolutions on outer space were precursors to later treaties.

The use of soft law is so widely recognized that certain multilateral treaties now contain reference to 'international recognized norms and standards' and 'established principles of international law', for example Article 54(1) Convention of ICAO has express authority to adopt international standards and recommended practices.⁸⁰⁹

⁸⁰⁴ Shaw, *supra* note 2, at 87-88; Author relied on 1975 Helsinki Final Act on international human rights.

⁸⁰⁵ Aoki, 'The Function of "Soft Law"' in the Development of International Space Law" in I. Marboe (ed.) *Soft Law in Outer Space: The Function of Non-binding Norms in International Space Law* (2012), 57-86; Author was the penultimate LSC chair.

⁸⁰⁶ Boyle and Chinkin, *supra* note 384, at 215.

⁸⁰⁷ Boyle and Chinkin, *ibid.*, at 212 FN 3 relied on the decisive catalytic effect of certain UNGA Res.; see also Brownlie, 'The Legal Status of Natural Resources', 162 *Recueil des Cours* (1979), 245-318, at 261.

⁸⁰⁸ Boyle and Chinkin, *ibid.*, at 213-214.

⁸⁰⁹ Kwakwa, *supra* note 326, at 188 and 190; however a member state may opt out, plus author's reliance on the legal status of ICAO Standards and Recommended Practices is debatable.

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Soft law may acquire binding legal character as elements of a treaty-based regulatory regime (for example the 1994 Nuclear Safety Convention),⁸¹⁰ can constitute a 'subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions, or assist in the development and application of general international law.'⁸¹¹

Identified advantages in utilizing soft law are to avoid the need to go through the process in treaty form and once adopted no ratification is necessary, to allow states to participate in the creation of new rules without the necessity of implementing them into national law,⁸¹² and soft law can be considered as emerging law⁸¹³ thereby allowing non-state actors such as IGOs, NGOs and international private associations/corporations to participate in the elaboration and implementation of soft law. That could include UNCOPUOS.

Arguably it is a fallacy to dismiss soft law as not law, and properly understood it can and does contribute to the corpus of international law.⁸¹⁴ Nonetheless, it has to be accepted with caveats. Reliance on soft law is not to be confused with the application of *lex ferenda* or 'evolving law'. Some soft law instruments are, just like treaties, part of the process by which international law evolved, but in the evolutionary stage they have not yet generated actual law. Soft law principles are not an alternative to treaty amendment or implementation agreements, or that the need for consensus law among states is diminished. On the contrary, while amendments to treaties or implementing agreements may limp into force with only partial participation, adopting soft law principles without consensus support has little if any impact on the law-making process. Non-binding recommendations, guidelines, codes of practice or standards, although important and influential, do not in themselves constitute legal terms:⁸¹⁵ What is determinative as to their status is not

⁸¹⁰ Boyle and Chinkin, *supra* note 384, at 213; Article 31(3)(a) VCLT.

⁸¹¹ Boyle and Chinkin, *Ibid.*, at 212-213, and relying on *Gabčíkovo-Nagymaros Case (Hungary v. Slovakia)* (1997) ICJ Reports 7 (or ILM (1998)) para 140; *Gabčíkovo-Nagymaros Case* (OSPA Arbitration) (2003) PCA.

⁸¹² A. Kaczorowska, *Public International Law* (4th ed. 2010), at 65; note this author specifically relied on environmental protection, where most states are not yet ready to accept binding obligations but gradually take measures to conform with international standards.

⁸¹³ M. Dixon, *Textbook on International Law* (2007), at 52.

⁸¹⁴ Boyle and Chinkin, *supra* note 384, at 212-213.

⁸¹⁵ Shaw, *supra* note 2, at 88.

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the title given to the document in question, but the intention of the parties as inferred from all the relevant circumstances as to whether they intended to create binding legal relations between themselves on the matter in question.⁸¹⁶

B. Although multilateral treaty-making is no longer the most appropriate tool for meeting the new needs and requirements of the current international law society, treaties cannot be ignored in international space legislation

The Forum Geneva on May 16, 1998, addressed the question as to whether multilateral treaty-making is still the most appropriate tool for meeting the new needs and requirements of the current international society?⁸¹⁷ The rules relating to forms and procedures of treaty-making were investigated, with the focus on the *instrumentum*, the instrument in which the international obligations are expressed, and not on the *negotium* or content thereof. To some the public international law treaty-making process has become so fraught with contentiousness as to be virtually a non-starter for many important causes.⁸¹⁸ This mess was caused in the first place by the proliferation of nation-states players, and secondly by the political cacophony that inevitably arises in a community of close to 200 predominantly democratic states and which is not designed to promote efficiency in international law-making. Thirdly, the post-Cold War spread of strife among ethnic, regional, tribal, religious and other groupings within states or across boundaries led to domestic political pressures that weakened national Governments' ability to act decisively in international affairs. Fourthly, the increasing international regulation of more issues once typically seen as part of state domestic jurisdiction, for example the Internet. Fifthly, the rise of NGOs and other non-state actors as influential

⁸¹⁶ See also Cassese, *supra* note 3, at 196-197.

⁸¹⁷ Gowlland-Debbas, 'Introductory Remarks', in V. Gowlland-Debbas (ed.), *Multilateral Treaty-making: The Current Status of Challenges to and Reforms Needed in the International Legislative Process* (2000), 1-9, at 3.

⁸¹⁸ Brower, 'The International Treaty-Making Process: Paradise Lost, or Humpty Dumpty?', in V. Gowlland-Debbas (ed.), *Multilateral Treaty-making: The Current Status of Challenges to and Reforms Needed in the International Legislative Process* (2000), 75-80, at 75-78; author relied on the 1969 VCLT which was pushed by US and signed but never ratified, although they had to recognize that it largely restated customary international law that the US accepts and thus US Courts do apply the VCLT.

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participants in the international law-making process, for example the creation of the International Criminal Court.⁸¹⁹ As a result private industry was advised in general to privatize the international law-making process to the maximum extent possible, and to push more elaboration of custom as conventions to which a major power does not become a party to nevertheless can be brought to bind that state as custom.⁸²⁰ There are identified limits to these alternatives though: Some attachment to the power of states inevitably will be required to secure enforcement, and custom is evolutionary and thus uncertain and contentious.

Some questioned, specifically in space law, as to whether we should not accept that the international treaty-making system is forever gone. The multilateral treaty-making process was able to reach agreement on a number of treaties establishing basic principles for outer space law, but subsequent multilateral negotiations aimed at resolving the more specific legal issues posed by rapidly developing space activities have failed to produce satisfactory results.⁸²¹ The need for adequate space law-making is as urgent as ever, but the international community has discovered that it is far more difficult to reach consensus on new legal rules today. Thus, it is time to reassess existing legislative techniques. The outer space treaties are still appreciated, but the interpretation of its provisions is increasingly being influenced by commercial interests and politics.⁸²² In an era in which international cooperation on treaties is tenuous, there is a preference for informal agreements and resolutions. It is no longer the case that international law is 'made' by a finite number of states through a handful of intergovernmental processes.⁸²³ Today, international law is made in a large number of *fora*, including multilateral processes, tribunals, and the organs of IGOs. Although states remain the primary makers of international law, they are joined by other participants such as IGO's and judges as well as entities which are influential in the making of international law. These activities are

⁸¹⁹ For a more detailed discussion hereon, see Oswald-Beck, 'Participation of Non-Governmental Entities in Treaty-Making: the Case of Conventional Weapons' in V. Gowlland-Debbas (ed.), *Multilateral Treaty-making: The Current Status of Challenges to and Reforms Needed in the International Legislative Process* (2000), 41-44.

⁸²⁰ Brower, *supra* note 818, at 79.

⁸²¹ Danilenko, 'Outer Space and the Multilateral Treaty-Making process', *High Technology Law Journal* Vol. 4, No. 2 (1989), 217-248, at 218.

⁸²² Johnson-Freese, *supra* note 675, at 182.

⁸²³ Pronto, *supra* note 599, at 606 and 616.

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increasingly disparate, with different rules and practices being developed in different areas, by a number of entities, with little by way of coordination, and reflect a decentralized approach to the making of international law. As a result, lawmakers feel increasingly less constrained by existing practices and procedures, allowing greater space for innovation. Thus, evolution and change in procedures and processes has become relatively common.

Others accentuated the opposite. Treaties remain a major feature of international relations, and their defining function is to impose agreed duties on the parties to them.⁸²⁴ The binding force of treaties rests on the principle what has been agreed to is to be respected (*pacta sunt servanda*), and this principle has been codified in the VCLT in Article 26. The invocation of state consent is the ultimate basis for the creation of law, and consent of course is the foundation for law deriving from treaties. The whole point of making binding agreements is that each of the parties should be able to rely on the performance of the treaty by the other, even when such performance may have become onerous or unwelcome. A treaty remains one of the most evident ways in which rules binding on two or more states may come into existence. Recognized limitations on treaty law are that it is created only for those who accept it, primarily the parties. Thus, the principle of no benefit is conferred, and no obligation imposed, by a transaction between third parties (*res inter alios acta nec nocet nec prodest*), is codified in Article 34 VCLT. Treaties are *res inter alios acta*, and thus without effect for non-parties. There are two apparent exceptions hereto. First, when an obligation stated in a treaty becomes an obligation of general customary law, in which case the non-party state may be bound by the same substantive obligation but as a matter of customary law and not via the effect of the treaty. Secondly, when a state not a party to a treaty accepts an obligation in the treaty, or to derive a benefit from the treaty, should all states concerned so agree. There are some principles or rules of international law of such overriding importance that compliance with them cannot be escaped or excused even by the consent of other states affected or potentially affected. These peremptory norms are classified as *jus cogens* and codified in Article 48 VCLT. The way multilateralism is currently practised in UNCOPUOS, and in particular the LSC, prevents treaty-

⁸²⁴ H. Thirlway, *The Sources of International Law* (2014), at 7 and 31, 35-37.

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making from being the most appropriate tool for meeting the needs and requirements of space law, but even if the *status quo* is accepted that simply cannot mean that treaty-making can be ignored, as it remains the best form of international legislation and is probably why authors still call for new treaties in space law.⁸²⁵ Thirdly, the conclusion on the ESPI Report (on legal mechanisms for the creation of hard law norms in the space domain) underlined that in areas that are dominated by technical development and that have high national security implications, the space law community should not stop at soft law.⁸²⁶ It is not enough, and it does not provide for sufficient protection of the space environment. Hence, where issues are neither technically dynamic nor highly security-relevant, hard law creation should be the ultimate aim. The ESPI Report warned that 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, as hard law instruments can be remarkably flexible and can take care of security concerns when designed correctly.

Regarding international norm-making in general, the following practical comments on treaty-making may be of assistance to UNCOPUOS. Firstly, the focus should be on the *instrumentum* and not on the *negotium*. Treaty-making is not necessarily a one-off event, rather it is a process.⁸²⁷ Negotiation leads not merely to the adoption of a treaty text *simpliciter* but often an act of *regime-creation*. Thus, the process of treaty-making, or the 'transaction', is relational rather than discrete. Once the text is negotiated the baton is passed from negotiators to implementers. Thus, treaties are to be treated not as one-off events, but as dynamic instruments which evolve over time. Secondly, although the international legislative process as we have known is no more, it is being, and inevitably must be, supplanted by a new one.⁸²⁸ An inter-state legislative that functions is indispensable, and should favour, wherever practicable, so-called 'framework' conventions which establish broad obligations but permit gradual compliance through national adjustment of norms without further resort to the ratification process; or remit the international

⁸²⁵ For example Ferreira-Snyman, 'Environmental responsibility for space debris', in Y. Failat and A. Ferreira-Snyman (eds.), *Outer Space Law Legal Policy and Practice* (2017), 257-283, at 283.

⁸²⁶ Pecujlic, *supra* note 292, at 141.

⁸²⁷ Redgwell, *supra* note 482, at 91; author's emphasis, and based on environmental law treaties.

⁸²⁸ Brower, *supra* note 818, at 80.

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legislative process to specialized, sectoral bodies, and to regional organizations which may be best able to fashion conventions that in fact will clear municipal ratification hurdles; or encourage the development of soft law, the progressive reshaping and modification of which may provide a sound basis for the adoption of viable hard-law conventions. It appears that such compromises advocated are already being entertained. UNIDROIT's Cape Town Convention is a highly successful example of a framework convention (with the innovative addition of a specialised sector Space Protocol); UNIDROIT and UNCOPUOS are examples of specialized, sectoral bodies; And UNCOPUOS' SDM and LTS Guidelines are examples of soft law, or alternatively of Hobe's 'softer law',⁸²⁹ in space law.

⁸²⁹ Hobe, *supra* note 6, at 47.

Conclusions to Research

Born of Cold War forces, the UNCOPUOS space treaties contain both the aspirations and fears of the times.⁸³⁰ It proved to be durable, as both established and newly active spacefaring nations recognize the beginning of a new stage of space law development. Despite existing gaps, which remain in need of closing, space law has achieved enormous maturity in an exceedingly short time. Arguably the international space treaty regime has served its original purpose well. The US and the USSR never undertook any significant militarization of space, the few issues of liability and return were dealt with smoothly, space objects were registered properly with the UN, and most importantly no nation ever put nuclear weapons in orbit, tested nuclear weapons above the atmosphere, or even made serious threats to that effect.⁸³¹

The next 50 years will look very different with falling costs, new technologies, Chinese and Indian ambitions, and a new generation of space entrepreneurs promise a bold era of space development.⁸³² It will almost certainly involve tourism and better communications networks, and in the long run it may involve mineral expropriation and even mass transportation. Space will become ever more like an extension of Earth, thus an area for firms and private individuals and not simply for governments. For this promise to be fulfilled though, the world needs to create a system of laws to govern the heavens.

This research was conducted under the five propositions set out at the start of the thesis, namely there is a space law regime, hard law in the form of treaties is always preferable to non-binding soft law, the UN Committee COPUOS is unable to produce any further outer space treaties or for that fact amend the existing ones and consequently that it has become ineffective in producing hard space law, UNIDROIT's Cape Town Approach is more suitable to modern treaty-making in space law, and the drafting of a treaty is an act of creation, thus a special art of the international lawyer. The first four were addressed mainly in the chapters above. The fifth proposition appears to be unacknowledged by space law academics and by delegations to UNCOPUOS. It is immensely frustrating at UNCOPUOS meetings to hear delegation after delegation calling for new treaties on specific topics, and so obviously not understanding the time and effort required in getting hundreds of delegates to reach consensus on a draft treaty text, arranging a very expensive Diplomatic Convention and shepherding the draft through,

⁸³⁰ Gabrynowicz, *supra* note 243, at 1053.

⁸³¹ See in general: Martinez *et al*, *supra* note 293, at 31-32.

⁸³² *The Economist*, *supra* note 245, at 9.

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and then obtaining the necessary number of ratifications required for entry into force.⁸³³ Even more frustrating, is the sometimes stock suggestion in textbooks for any perceived *lacunae* in space law to be addressed by way of a new treaty.⁸³⁴ Such calls from academics operating in the sphere of international law, demonstrate a lack of understanding of treaty law, and treaties itself. At the heart of this research, was the desire to investigate the treaty-making process relating to space law. UNCOPUOS's failure as a norm-making institution to ensure that the exploration and use of outer space is carried out for the benefit and interests of all countries (to paraphrase Article 1 of the Outer Space Treaty) was examined and addressed. The making of international law is an organic process involving an admixture of the affirmation of existing procedures with a healthy blend of innovation.⁸³⁵ It is essential that space lawyers go back to their roots and re-engage with treaty law and multilateral negotiating practices and techniques, and apply law-as-engineering. Should this advice be ignored, UNCOPUOS and space lawyers could well be replaced by forums such as the Consortium for Execution of Rendezvous and Servicing Operations ('CONFERS'), consisting of a collaboration of carefully chosen industry and government space experts and stakeholders, both domestic and international.⁸³⁶ CONFERS is an independent, self-sustaining industry forum to advocate for and promote on-orbit satellite maintenance, servicing, and rendezvous operations by collaborating to research, develop, and publish voluntary, consensus best practices, guidelines and technical and safety standards, and engaging with governments on policy and oversight of satellite servicing activities. To fulfil its mission, CONFERS intends to recruit a broad array of members from satellite original equipment manufacturers, satellite operators, service providers, insurers and underwriters, and to engage other stakeholders from industry, academia, and governments. The process is intended as fully collaborative and will include dedicated outreach activities to engage the global commercial satellite community. Clearly it is not a legal entity and will operate as an unincorporated collaboration for the benefit of its members, but there is support for the CONFERS endeavour as the future for STM, as international consensus is far away, and a

⁸³³ See Appendix A: Participation Observation.

⁸³⁴ See for example Ferreira-Snyman, *supra* note 211, at 283 calling for a new treaty binding on all UN member states to regulate *all* aspects of the use of outer space; own emphasis.

⁸³⁵ See in general Aust, *supra* note 460, at Chapter 6 Adoption and Authentication.

⁸³⁶ See in general <https://www.satelliteconfers.org/>; plus CONFERS Articles of Collaboration; available at <https://www.satelliteconfers.org/wp-content/uploads/2019/09/CONFERS-AoC-061919- FINAL-1.pdf> (last visited 10 January 2020).

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'bottom up' approach based on best practices and emerging national standards is seen as the first step forward.⁸³⁷

Sreejith launched a stringent attack on academics active in space law.⁸³⁸ All of the textbooks that include space law in their structure has in common that in relation to other branches of international law such as environmental law, human rights, and law of the sea, the discussion on space law is brief. In addition, most of the discussions on space law appear to be doctrinal discourses on, for example, territorial sovereignty or discussing various sectors of state activities. None of the discussions breaks the mould of dogmatism, and all textbooks convey the impression that space law is about five outer space treaties and a few resolutions. Sreejith's harsh criticism is mostly unfounded, but not so Goode's more subtle criticism that almost all writers on international law in general and treaty law in particular focus exclusively on public law treaties.⁸³⁹ Goode made the point, quite correctly, that some private law conventions are capable of making significant innovations in the methods and effects of international law-making, such as with the Cape Town Convention and its associated Space Protocol. These not only involved private law, public international law, and the conflict of laws, but also complex jurisdictional questions involving organisations from public and private law collaborating within their own distinctive working method.⁸⁴⁰ Goode believed the following conclusions can be drawn from these instruments, firstly that no area of private law should any longer be regarded as taboo, secondly it is necessary to think outside the boundaries of national commercial laws in devising new solutions to international problems, and lastly the public interest both in national security and in the continuance of public services means that there are likely to be more areas in what is primarily a private law convention that will also contain public law provisions.

Realpolitik demands treaties as best law, but von der Dunk was willing to accept that the SDM Guidelines led to stronger binding rules than a treaty.⁸⁴¹ This raises the question as to the future of the UNCOPUOS in the development of space law? There is no doubt that the success of the institutions based on soft law had diverted a lot of momentum away from the UN's codification

⁸³⁷ Editorial, 'Introduction to the special issue on Space Situational Awareness and Traffic Management, *Journal of Space Safety Engineering* 6 (2019), 63-64, at 64.

⁸³⁸ Sreejith, *supra* note 95, at 374.

⁸³⁹ Goode, *supra* note 366, at 523; also that it was imperative with the Aircraft Protocol to hold joint sessions of the UNIDROIT committee of governmental experts and a Subcommittee of the Legal Committee of ICAO to ensure both were satisfied with the result, as the Council of ICAO was then supposed to take on the role of Supervising Authority of the Aircraft Registry.

⁸⁴⁰ Goode, *ibid.*, at 540.

⁸⁴¹ von der Dunk, *supra* note 630, at 56.

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efforts. Ferrazzani predicted that soft law-making in space activities will soon face the somewhat delicate dilemma of whether to co-exist in parallel with UNCOPUOS (and possibly come to rescue its future role), or whether to develop separately *in lieu* of it. Should one accept the value of the contribution of soft(er) law in outer space, then arguably it is preferable that such rules and guidance be developed within the UNCOPUOS, which was after all created to produce outer space law. However, the COPUOS65 Chair's recent surprising non-paper detailing major meetings on outer space activities over the next 14 months would indicate that finally UNCOPUOS is willing to engage with its lack of norm-making in outer space legislation.⁸⁴² This document referred to the *Summit of the Future* to take place in September 2023 to set out the UN's purpose and principles and innovate the United Nations' practices. The "Our Common Agenda" report (A/75/982) identifies many of the world's most critical challenges, including maintaining the peaceful, secure and sustainable use of outer space in the face of new risks to security, safety, and sustainability. In addition, the chair of UNCOPUOS, in consultation with the Bureaux of the Committee and its Subcommittees, will present before STSC in 2023 proposed elements for consideration as potential input by the Committee and its Subcommittees to the *Summit of the Future*. This non-paper also referenced the proposed and historic *Joint Panel Discussion of the First and Fourth Committees of the UN General Assembly*, in October 2022, in New York, which will address the *Summit of the Future* and its multi-stakeholder dialogue on outer space. Lastly, mention was made of a potential *UN/Portugal conference on the topic of space traffic management* to be held in the first half of 2023, in providing incentives for further consideration by the Committee in 2023. The non-paper was enthusiastically supported by the delegations of Switzerland, USA, UK, France, Japan, and Russia (in spite of the major differences between these states due to the invasion of Ukraine by Russia). It is evident that this will be the next major developments in outer space, and it is easy to assume that it was the earlier excellent work of the German delegation that pre-empted this renewed energy in COPUOS.⁸⁴³ Apparently though, this development was caused by the steep rise in satellite registrations with 40% of the total of all satellites that ever flew being registered at UNCOPUOS over the last year, and in addition the ITU is struggling with Rwanda's

⁸⁴² Non-Paper by the Chair of the Committee, Item 14 of the provisional agenda, 7 June 2022, available at <https://www.unoosa.org/documents/pdf/copuos/2022/Non-paper-by-the-Chair-of-the-CommitteeE.pdf> (last visited 7 June 2022); Appendix A: Participation Observation.

⁸⁴³ See *supra* 1.11.

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application for frequencies for 330 000 satellites.⁸⁴⁴ Could it be that there is again a felt need for new rules, in a propitious political climate, and with due representation of the interests involved?⁸⁴⁵ That remains to be seen as there have been many false dawns since 1970's Moon Agreement.

What about the future of the Space Protocol? Originally the Space Protocol had generated significant interest from states with emerging economies, which form an important part of the space community.⁸⁴⁶ These countries, many from the Latin American, African and South Asian regions, are currently the fastest growing states in terms of space capabilities and are searching for the means to obtain critical technology that many in established countries take for granted, and have the most to gain from an instrument such as the Space Protocol. The heart of the matter is that the Space Protocol is an instrument intended to facilitate the growth of space activities. Without a doubt many will still need the Space Protocol, even if shunned by the major operators.⁸⁴⁷ The capital markets are fickle and may change as they did during the recent recession, and then the established operators may again have to resort to traditional ways of influence. Many small space operators are unable to obtain financing from capital markets, but can still obtain funding from banks and private financiers. Germany and China appear to have different attitudes about financing than the large satellite companies and apparently continue to be interested in the Space Protocol. Developing countries are increasingly seeking satellite services, whether their own or from commercial providers. Should it ever become operational the Space Protocol will establish a unique international law governing security interests in space assets based on asset-based financing, as it is flexible and allows op-in and opt-outs of many provisions, which would enable the shaping of a legal regime uniquely suited for each country. It is clear that China, an important space power in the world, has a great stake in the success of the space financing industry.⁸⁴⁸ Apparently the Space Protocol is not off the discussion list at all, and UNOOSA is preparing in the background with the ITU for future reengagement with the Space Protocol, as it is expected that the major multilateral meetings on outer space activities over the next 14 months will regenerate intense interest in space activity

⁸⁴⁴ Discussion 9 June 2022 at COPUOS65 with Michael Newman Legal Officer, Committee Policy and Legal Affairs, UNOOSA; Appendix A; Participation Observation; Anonymous, 'Rwanda Files at ITU for nearly 330,000 Satellites', 21 October 2021, available at <https://spacewatch.global/2021/10/rwanda-files-at-itu-for-nearly-330000-satellites/> (last visited 9 June 2022).

⁸⁴⁵ See *supra* 3.3.

⁸⁴⁶ Appendix A: Participation Observation; also Porras, *supra* note 381, at 369-370.

⁸⁴⁷ Lyall and Larsen, *supra* note 36, at 394-395.

⁸⁴⁸ Zhao, *supra* note 529, at 67 and 79; note that this author urged China to accede and at 77-79 provided handy recommendations of the declarations China should make when acceding.

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funding.⁸⁴⁹ It remains to be seen whether the major spacefaring States will drop their objections though.

What remains is Hobe's question as to whether the Space Protocol will ultimately benefit the space industry, and which will only be settled with the passage of time.⁸⁵⁰ Although it has not entered into force, it will be interesting to see whether or not the Space Protocol will make a valuable contribution to the commercialization of outer space activities.⁸⁵¹ UNIDROIT is still promoting the Space Protocol, with its delegate stating at LSC61 'As a Permanent Observer, UNIDROIT will now seek to involve itself further in the activities of the Committee, particularly with a view towards building on the importance of private international law in the space sector, as well as secured financing' and 'UNIDROIT continues its efforts to advance the understanding of the importance of an international system of secured transactions law for the space industry, particularly with the rise of private financing, as well as the fast growth of the NewSpace sector.'⁸⁵² However history will judge the Cape Town Convention and its Space Protocol, it is possible that they have already contributed by implicating multiple aspects of space law and telecommunications law, with potential conflicts and new synergies.⁸⁵³ The practitioner simply cannot analyze and apply these instruments in a vacuum. In this regard Lyall and Larsen argued that, in spite of the Article XXX Space Protocol declaration that the Cape Town Convention as applied to space assets shall not affect state party rights and obligations under the existing outer space treaties or ITU instruments, their relationship will have to be considered as the new private international law treaty cuts across existing public law treaties, necessitating the demarcation of the new private law treaty from the public law space treaties.⁸⁵⁴ The last-mentioned defines the scope and operation of the Space Protocol as it was accepted from the start that public law would prevail over private law, and in any event Article III of the Outer Space Treaty affirms that activities in outer space are subject to international law and the UN Charter. Moreover, there is a difference in scope in that the space law treaties apply only to space objects but none of them fully defines the term, whereas the Space Protocol

⁸⁴⁹ Discussion Michael Newman, see note 844, *supra*.

⁸⁵⁰ Sundahl, *supra* note 360, at 909.

⁸⁵¹ Hobe, *supra* note 6, at 123.

⁸⁵² Statement of UNIDROIT under *Agenda Item 5: Information on the activities of international intergovernmental and non-governmental organizations relating to space law*, available at https://www.unoosa.org/documents/pdf/copuos/lsc/2022/Statements/31MarAM/Item5/5_UNIDROIT_31_March_AM.pdf (last visited 31 March 2022).

⁸⁵³ Sundahl, *supra* note 5, at 130-131.

⁸⁵⁴ Lyall and Larsen, *supra* note 36, at 402-405, FN 84 and FN 86; Appendix D: Comparison Table Space Assets vs Space Objects.

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applies to space assets and defines exactly what it is in Article 1(2)(k). To Lyall and Larsen, relying on the fact that LIAB Article I(b) includes component parts as space objects, in terms of the UN treaties these are space objects. Also, the absence of a registration of the space object within an appropriate state is irrelevant to the Space Protocol should the security interest be constituted while the space object is in space, but where the space object was registered in a domestic registry the UN Secretary-General has to be informed of particular data as to the space object. The need for registration of a space object in the state registry system may have other effects that could constrain the operation of the Cape Town Convention regime. States party to the Outer Space Treaty are required in terms of Article IV to authorise and supervise the activities of their NGO entities and bear international responsibilities for such activities as well as their own. The state licensing authority may be concerned about the arrangements for the financing of the enterprise including potential asset-based financing. Article VII Outer Space Treaty makes launching states internationally liable for damage caused to states or individuals, on earth or in outer space or on a celestial bodies, irrespective whether they are the state of registry. States will thus be fully liable for damages by both governmental and NGO entities they have licensed. Outer Space Treaty Article VIII reserves the jurisdiction of the state of registry, including jurisdiction of national courts. In the event of default in a security, those space objects may come to be owned and managed by creditors in other states over which the launching state has little control, and irresponsible management may result in substantial liability.

Lee's prophetic words of more than 20 years ago should be the lodestone for space lawyers: As our knowledge of outer space continues to expand and technology continues to progress, the need for new and adapted rules of international space law is rapidly growing.⁸⁵⁵ Developing a new international framework of space law that provides legal clarity, commercial stability and technological adaptability is a vital and necessary step before our next giant leap in space. Arguably, should UNCOPUOS not do so, other IGOs will step in, as UNIDROIT had demonstrated with its Space Protocol.

⁸⁵⁵ Lee, *supra* note 38, at 194-195.

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Appendix A: Participation Observation

Foreign Ministry	<p>Till December 2015:</p> <p>Drafted treaties as part of duties as a State Law Adviser in the South African DIRCO; Liaised directly with UNCOPUOS, UNIDROIT, ITU and ICAO.</p>
SKAO	<p>Since January 2016: In-House Legal Counsel of the then SKA Organisation, with a specific remit to negotiate and draft the treaties required to transition the SKA Organisation, a UK company into an IGO as the legal entity to drive the Square Kilometre Array radio-astronomy project, conceived to be the biggest global scientific project for the next 50 years.</p> <p><i>Convention Establishing the Square Kilometre Array Observatory</i> entered into force on 15 January 2021, and currently has 8 member states.⁸⁵⁶</p> <p>As SKAO Head of Legal assisting multilateral negotiations on new membership and cooperation agreements; Arranging <i>ad hoc</i> and subsequent Permanent Observership of SKAO to UNCOPUOS; Leading SKAO delegations to STSC59, LSC61 and main Committee COPUOS65.</p> <p>Attend ITU Council sessions from 2016.</p>
UNCOPUOS	<p>Till December 2015:</p> <p>Attended and participated in, and provided South African delegations with international law advice at meetings of LSC and main Committee, but also as country representative to Expert Group D,⁸⁵⁷ and later as friend to the South African chair Dr Peter Martinez, of the Working Group on LTS of the STSC.</p>
UNIDROIT	<p>Till December 2015:</p> <p>Part of the South African delegation to the March 2012 Berlin Diplomatic Conference to adopt the Space Protocol.</p> <p>UNIDROIT observer status application in the UNGA.</p> <p>Attended:</p> <ul style="list-style-type: none"> - The Way to the Successful Completion of the Negotiations THE UNIDROIT SPACE PROTOCOL', <i>Symposium organised in Vienna on 8 April 2013 by the International Institute of Space Law and the European Centre for Space Law.</i> - Governing Council elections 2011 to 2015. - UNIDROIT General Assembly, and its Governing Council first as an observer and in 2015 as a replacement member. <p>The South African representative on the Preparatory Committee of the Space Protocol to prepare for the International Registry for Space Assets to be created and its Working Group to develop draft regulations for the International Registry for Space Assets;⁸⁵⁸ the Preparatory Committee of the Rail Protocol to prepare for the International Registry for Rolling Stock to be created.</p>

⁸⁵⁶ Available at

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/818907/MS_27.2019_SKAO_Convention_Square_Kilometre_Array_Telescope.pdf (last visited 5 May 2022).

⁸⁵⁷ A/AC.105/C.1/2014/CRP.16, Working report of expert group D: Regulatory Regimes and Guidance for Actors in the Space Arena. Appendix A: Participation Observation.

⁸⁵⁸ Final Act of the Space Protocol, *supra* note 4, at Resolution 1.

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	Observer on the UNIDROIT Ratification Task Force.
ITU	Till December 2015 on behalf of DIRCO; <ul style="list-style-type: none"> - Council Meetings - ITU Plenipotentiary Conference in Busan ('PP-14')PP14 From 2016 on behalf of the SKAO: <ul style="list-style-type: none"> - Council sessions - Working Group 7D of the ITU-R (radiofrequency interference)
ICAO	On behalf of DIRCO: <ul style="list-style-type: none"> - International law adviser to South African delegation to Legal Committee negotiations re the amendment of the Convention on Offences and Certain Other Acts Committee on Board Aircraft (Tokyo 1963).

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Appendix B: Comparison Table UNCOPUOS vs UNIDROIT

<u>Entity</u>	UNCOPUOS	UNIDROIT
<u>Instruments examined</u>	Moon Agreement, SDM, and LTS Guidelines	Space Protocol
<u>Type of International Organization</u>	UN Committee tasked to review the scope of international cooperation in space activities; And study practical and feasible means that could be undertaken under the UN auspices to give effect to programmes in the peaceful uses of outer space. ⁸⁵⁹	Independent intergovernmental organisation tasked to harmonise and coordinate private and commercial law as between states and groups of states and to formulate uniform law instruments, principles, and rules. ⁸⁶⁰
<u>Constitutive or Foundation Instrument</u>	UNGA Resolution: Resolution 1472 (XIV) of 12 December 1959. ⁸⁶¹	Multilateral Treaty: UNIDROIT Statute.
<u>No of State Parties when instruments examined were created</u>	47 at MOON Agreement, 69 at SDM Guidelines, and 95 at LTS Guidelines. ⁸⁶²	63 at Space Protocol. ⁸⁶³
<u>Purpose</u>	UNCOPUOS was created to govern the exploration and use of space for the benefit of all humanity. ⁸⁶⁴ For peace, security and development. As such it was tasked with (1) Reviewing international cooperation in peaceful uses of outer space; (2) Studying space-related activities that could be undertaken by the UN; (3) Encouraging space research programmes; And (4) studying	UNIDROIT is to examine ways of harmonising and coordinating the private law of states and of groups of states, and to prepare gradually for the adoption by the various states of uniform rules of private law. ⁸⁶⁵ To this end it prepares: (1) Drafts of laws and conventions to establish uniform internal law, and drafts of agreements with a view to facilitating international relations in private law; (2) Undertakes studies in comparative private law; (3) Collaborates with other institutions; And (4) Organises conferences and publishes works.

⁸⁵⁹ CoCoSL I, *supra* note 61, at para 13 Historical Background.

⁸⁶⁰ UNIDROIT website, see *supra* note 382.

⁸⁶¹ See note 63, *supra*.

⁸⁶² Membership, *supra* note 77; note Christol, *supra* note 188, at 846, stated there were 52 Members when the draft MOON Agreement was accepted.

⁸⁶³ UNIDROIT website, see *supra* note 382; See ApKruidjie20Roer20pendix A: Participation Observation.

⁸⁶⁴ Available at <https://www.unoosa.org/oosa/en/ourwork/copuos/index.html> (last visited 23 May 2020).

⁸⁶⁵ UNIDROIT website, see *supra* note 382; Articles 2(1) and 5 Statute, UNIDROIT REGULATIONS, *supra* note 393, at Article 14.

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	<p>legal problems arising from the exploration of outer space.</p>	<p>UNIDROIT occasionally enters the public international law field in areas where hard and fast lines of demarcation are difficult to draw or where transactional law and regulatory law are intertwined.</p>
<p><u>Negotiation or working Method</u></p>	<p>UN multilateral committee that works on the consensus principle without any voting during negotiations, and every Member of UNCOPUOS has a veto right.⁸⁶⁶</p> <p>UNCOPUOS is assisted by its two Sub-Committees the LSC and STSC, and the separate UNOOSA which acts as Secretariat. The MOON Agreement was negotiated in the LSC, but the SDM and LTS were drafted in STSC.</p> <p>At end of its annual deliberations UNCOPUOS drafts a report with recommendations to the Fourth Committee of the UNGA, and also recommends the draft text of treaties to UNGA.</p> <p>The Political Committee of UNGA considers this report before the recommended instrument is adopted by UNGA: Provides hereby opportunity to all Members of UNGA, specifically those not belonging to UNCOPUOS, to study and comment. Following the review of the work in the Political Committee, UNGA adopts a resolution incorporating the text</p>	<p>The Secretariat is the executive organ of the UNIDROIT and carries out its Work Programme. The Governing Council supervises the way in which the Secretariat carries out the Work Programme drawn up by the Governing Council. The Governing Council takes decisions by majority vote. The General Assembly is the ultimate decision-making organ, votes the Institute's budget annually and the work programme as recommended by the Governing Council.</p> <p>UNIDROIT (1) Cooperates with other IGOs, and (2) utilises its network of correspondents; In order to draft its instruments in two stages, namely (1) Preliminary, and (2) Intergovernmental.</p>

⁸⁶⁶ CoCoSL I, *supra* note 61, at paras 10-19 Historical Background.

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	of the recommended treaty or the guidelines in an annex.	
<u>Time took to Negotiate</u>	MOON: 1966-1978 (12 years). SDM: 1993-2007 (14 years). LTS: 2010-2019 (9 years).	1997-2012 (15 years).
<u>Time to enter into force</u>	MOON: 1979-1984 (5 years). ⁸⁶⁷ SDM: Immediately. LTS: Immediately.	Not yet (after 10 years).
<u>Types of Instrument</u>	MOON: Multilateral Treaty. SDM: Soft law guidelines. LTS: Soft law guidelines.	Multilateral Treaty (not yet in effect and thus not legally binding).
<u>Collaboration with other IGOs</u>	UNCOPUOS can draw from expertise of specialized agencies UNESCO, FAO, ITU, WTO, COSPAR, ICSU, IAF, and the IISL and ILA. ⁸⁶⁸ LTS involved an NGO the SFW.	After 1996 UNIDROIT reorganized their drafting process to oversee the drafting of the base convention; Whilst the SWG continued with the Space Protocol with participation from manufacturers, financiers and operators of space assets, plus entities/IGOs UNCOPUOS, ESA, ECSL, and the IBA. ⁸⁶⁹ UNIDROIT participated in LSC meetings as an observer, and gave annual feedback on progress with the Space Protocol.

⁸⁶⁷ A/AC.105/C.2/2019/CRP.3*, *supra* note 114.

⁸⁶⁸ CoCoSL I, *supra* note 61, at Historical Background.

⁸⁶⁹ Sundahl, *supra* note 5, at 25.

Appendix C: Comparison Table Cape Town Convention Protocols

Preamble	<p>The first two Preambular Paragraphs in all three are almost identical, first considering it desirable to implement the Cape Town Convention as it relates to space assets/aircraft equipment/railway rolling stock, and conscious of the need to adapt the Cape Town Convention to meet the particular demand for and the utility of aircraft equipment/railway rolling stock/space assets and the need to finance their acquisition and use. The Aircraft Protocol has one additional Preambular Paragraph, referring to the Chicago Convention of 1944. The Space Protocol in Preambular Paragraph three stresses the benefits to all states to expand space-based services and financing, pays homage in Preambular Paragraph four to the UNCOPUOS and ITU Treaties but then confirms the pre-eminence of state party rights, and in Preambular Paragraph six recognizes the continuing development of the international commercial space industry.</p>
Definitions	<p>In all three Protocols the first sub-Article states that the terms used, except where indicated otherwise, will have the meanings set out in the Cape Town Convention. There are similar definitions for 'guarantee contract', 'guarantor', 'insolvency-related event', and 'primary insolvency jurisdiction'.</p> <p>The rest of the definitions Articles are industry specific.</p>
Industry-specific applications	<p>Article II in all three Protocols, with sub-Article 2 identical (designation), and sub-Article 1 being almost identical in indicating what the specific Protocol will apply to (aircraft objects in Aircraft Protocol, railway rolling stock in Rail Protocol, and space assets and rights assignments and reassignments in the Space Protocol).</p>
Application	<p>Article II in the Aircraft Protocol deals with the application of the Cape Town Convention to sales, and Article IV of the Space Protocol with the application of the Cape Town Convention to sales and <i>salvage</i>.</p> <p>Article III of the Rail Protocol and Article XVI of the Space Protocol deal with <i>derogation</i>.</p> <p>Articles V in both the Aircraft- and the Space Protocols deal with <i>formalities, effects and registration of contracts of sale</i> and are almost identical: A contract of sale for an aircraft object or a space asset must be in writing, relate to an aircraft</p>

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	<p>object or space asset of which the seller has power to dispose, and enable the aircraft object or space asset to be identified in conformity with the relevant Protocol. Sub-Article V(2) in both Protocols determine that a contract of sale transfers the interest of the seller in the aircraft object or space asset to the buyer according to its terms. Article VI in the Aircraft Protocol, Article IV in the Rail Protocol and Article VI in the Space Protocol handle <i>representative capacities</i>. Article VII in the Aircraft Protocol, Article V in the Rail Protocol and Article VII in the Space Protocol handle <i>industry specific object identification</i>. Article VIII in the Aircraft Protocol, Article VI in the Rail Protocol and Article VIII in the Space Protocol deal with <i>choice of law</i> in a similar manner. Article IX in the Aircraft Protocol, Article VII in the Rail Protocol and Article IX in the Space Protocol determine the <i>modification of default remedies towards each industry-specific object</i>. Article X in the Aircraft Protocol, Article VIII in the Rail Protocol, and Article XX in the Space Protocol, deal with the modification of provisions regarding <i>relief pending final determination</i>. <i>Insolvency assistance</i> appears in Article XII in the Aircraft Protocol, Article X in the Rail Protocol and Article XXII in the Space Protocol. Modification of <i>priority provisions</i> is dealt with in Article XIV of the Aircraft Protocol and Article XXIII of the Space Protocol. Modification of <i>assignment provisions</i> are dealt with in Article XV of the Aircraft Protocol and Article XXIV of the Space Protocol. Almost identically, Article XVI in the Aircraft Protocol, Article XI in the Rail Protocol and Article XXV in the Space Protocol handle <i>debtor provisions</i>.</p>
Registry	<p>The <i>identification of industry-specific objects for registration purposes</i> is dealt with in Article XIV of the Rail Protocol and Article XXX of the Space Protocol. <i>Registry provisions</i> are found in Article XX of the Aircraft Protocol, Article XV of the Rail Protocol and Article XXXII of the Space Protocol; <i>International registry fees</i> are dealt with in the same Articles, except Article XVI for the Rail Protocol</p>
Supervisory Authority	<p>Arranged in Article XVII of the Aircraft Protocol, Article XII of the Rail Protocol and Article XXVIII of the Space Protocol.</p>

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Relations	<p>The <i>waiver of sovereign immunity</i> is in Article XXII of the Aircraft Protocol, Article XVIII in the Rail Protocol and Article XXXIII of the Space Protocol.</p> <p>Chapter V Article VI of all three Protocols set out <i>relationships with other Conventions</i>.</p>
Final provisions	<p>Signature, ratification, acceptance, approval or accession, regional economic integration organisations, entry into force, territorial units and declarations, are arranged for all Protocols in Chapter VI.</p> <p>Article XXVI of the Rail Protocol and Article XL of the Space Protocol arrange transitional provisions for those protocols.</p>

Appendix D: Comparison Table Space Assets vs Space Objects

	Space Asset	Space Object
Orientation	Private & Commercial Law: The motive for creating the concept of space asset is rooted in the practical need for asset-based financing of the mobile space equipment; thus, the concept links with private financiers as creditors, which is mainly focused on the protection of the financiers' private security interest.	Public International Law: The undefined term space object is linked to sovereign states and their international obligations, responsibility, and liability.
Value	High-Valued; An asset by definition; Not non-reusable launch vehicle; Not space debris; Data, records, manuals of the related space equipment.	Not Applicable.
Approach	Probably both Spatialism & Functionalism.	Possibly Spatialism only as sub-Articles 5(3) Rescue Agreement, 1(b) Liability Convention and 2(1) Registration Convention require objects to be located in outer space.
Human Involvement	Manmade.	Manmade; Although Article 3(2) Moon Agreement implies the existence of non-manmade Space Objects.
Coverage	Spacecraft & Payload Component Parts of 'spacecraft or payload' Reusable launch vehicle Attachments	Space Object & Launch Vehicle Component Parts of the 'launch vehicle' ('RLV') Not Applicable

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