

CREATING AN INTERNATIONAL REGIME FOR SPACE TRAFFIC MANAGEMENT - MOVING FROM GENERAL PRINCIPLES TOWARDS PRACTICABLE RULES

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Abstract

This paper examines the possibilities of negotiating practicable rules for the management of space traffic. The findings should also apply more generally to the future development of space law because the analysis draws on experiences from a variety of multilateral treaty negotiations. A central starting point is an analysis of the framework convention-protocol approach commonly applied in current global environmental diplomacy. This basis for comparison is chosen because the UN space treaties from the 1960s and 1970s substantially resemble framework conventions in their non-specific nature, i.e., in providing only general principles and vague guidelines. Today, the needs of the space faring community are far more complex and the existing law of outer space is often unable to give sufficient guidance in the concrete situations that emerge in current space utilization. The world community has not been able to fill this legal vacuum other than by sets of principles

adopted by the UN General Assembly and a few other recommendatory instruments. This is again a development resembling experiences from the application of the convention-protocol approach: although it has been relatively easy for countries to agree that something "should be done", disagreements flare up when it comes to drafting more specific and binding obligations.

INTRODUCTION

It is very difficult to achieve international agreement on anything, let alone issues regarding the use of outer space, which combine a high degree of scientific and technological complexity with politics, economics and the activism of various stakeholder groups. Additionally, the question how to manage a common resource and minimize the "free rider" problem intrinsically relates to all space activities, making problems related to the use of outer space even more complicated and difficult to resolve.

Traditionally, international legal standards, rules and regimes have been established

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through the adoption of treaties by states. Space issues are no exception. Consequently, the recent proposals for combating problems related to the management of space activities have most often envisaged the establishment of new treaties (or at least amendments improving the effectiveness of existing ones).

Unfortunately, the traditional approach to international norm-setting has severe weaknesses. In keeping with the doctrine of state sovereignty, international norms cannot, as a rule, be forced on states. Accordingly, conventional diplomacy is based on consensus or unanimity of all participants in treaty negotiations (excluding those who decide to opt out completely at some point, as a result of voting or otherwise). There may, however, be major differences in the needs and priorities of the negotiating parties, and in practice countries may be unwilling to make sufficient commitments to the intended objectives. In order to avoid voting and/or the withdrawal of important states, the measures adopted easily become limited to those acceptable to the least enthusiastic party, resulting in "halfway agreements" too poorly designed to achieve the objectives set (regardless of the number of ratifications the treaty gains). This problem is commonly referred to as the lowest-common-denominator approach.¹

Such avoidance of conflicting positions through vagueness and ambiguity is by no means unfamiliar in space law either. Space activities are inherently international, which necessitates wide acceptance among the global community for any rules to be

effective. However, broadening the scope of an international regime usually also means lowering its common denominator. It is obvious that the legal standards agreed upon for space activities to date have been based on the lowest common denominator and the compromise approach, resulting in no more than general principles. Indeed, traditional treaty-making techniques do not seem very suitable for the governance of space activities today. While these tools allow declaratory standards and suggestions to be adopted quite easily, they are likely to fail when it comes to creating effective rules that produce tangible positive results.

Effective solutions to current questions in the utilization of outer space would obviously necessitate new, innovative mechanisms for international standard-setting. Considering the fundamental status of the doctrine of state sovereignty and the institutionalized nature of international law and the international law-making system, the traditional treaty process can hardly be altered comprehensively; rather, it needs to be made receptive to modifications which help overcome some of its major shortcomings. Such modifications would include abatement measures such as those taken in other fields of international law that enable the negotiators of global treaties to overcome the lowest-common-denominator problem and better take into consideration the needs of all countries regardless of their state of technological development, for instance.

¹ Susskind 1994, p. 14.

THE FRAMEWORK - PROTOCOL APPROACH

Multilateral negotiations are typically initiated by international organizations (such as the United Nations, including its Committee on the Peaceful Uses of Outer Space). Procedural rules are usually formulated at the beginning of the treaty-making process. Global agreements are negotiated mainly in accordance with the formal rules and informal practices developed within the United Nations and its sister organizations, although these rules and practices do not necessarily always accommodate the particulars of multi-issue, multiparty negotiation as well as they might^{2,3}.

Certain “trends” can be observed in the process of creating international legal arrangements. These include special area status, the convention-plus-annex, the protocol-plus-declaration and the convention-plus-protocol approaches.⁴ In particular, the (framework) convention-protocol approach has been commonly applied in international environmental treaty

negotiations lately. Most of these negotiations have been organized such that meetings are first held to review scientific evidence and draft a framework convention as a basis for the preparation of more detailed protocols by all or some States Parties⁵, a procedure resembling that for the adoption of space agreements and subsequent sets of space principles, albeit not legally binding ones.

Although framework conventions may serve as reassuring proof that further action is required, this approach also allows countries to join conventions at a stage where there is not yet any agreement on the specific actions (timetables, procedures, etc.) which should eventually be taken. In some cases, such action may be carried out relatively easily (for instance, when scientific evidence is convincing enough to show that abatement measures are absolutely essential, or when world or domestic opinion necessitates such action). Most often, however, the convention-protocol process is very time-consuming and can easily lead to a situation where countries find it very difficult to reach agreement on the more specific follow-up protocols. In the meanwhile, the problems which the convention aims at curbing usually

² Susskind 1994, p. 6.

³ Susskind 1994, p. 25. The Vienna Convention on the Law of Treaties (8 ILM 679) does not specify who should initiate treaty-making efforts, which countries should participate and how the process should proceed; it only says that adoption of the text of a treaty requires “a vote of two-thirds of the states present and voting, unless by the same majority they decide to apply a different rule” (Art. 9.2).

⁴ Kütting 2000, p. 16.

⁵ Such an approach has been applied, *inter alia*, in the Vienna Convention on Substances that Deplete the Ozone Layer 1985 [26 ILM 1529 (1987)], in the subsequent Montreal Protocol on Substances that Deplete the Ozone Layer (26 ILM 1550) and the four adjustments to the Protocol adopted in London (1990), Copenhagen (1992), Vienna (1995), Montreal (1997) and Beijing (1999).

only worsen.⁶

Clearly, the framework-protocol approach tends to yield only lowest-common-denominator agreements that incorporate (excessively) vague language and provide too little in substance. The great generality at the convention-writing level guarantees that the parties are at least able to agree that a problem exists and “something should be done”, and makes it possible for even reluctant countries to sign. However, the vagueness in terminology and criteria undermines chances of successful implementation.⁷

Moreover, political considerations sometimes overshadow available scientific and technical information to the extent that the resulting instruments turn out to be infeasible, internally inconsistent or counterproductive. Countries tend to rely on scientific evidence which justifies the policies they prefer; this is particularly the case with the convention-protocol approach, where the implications of the policies adopted when drafting the framework convention need only be confronted later, in the subsequent protocol design phase. At worst, a framework convention may set terms which get in the way of producing technically appropriate agreements.

Furthermore, the ad hoc convention-protocol approach may encourage countries to resort to “hard-bargaining” strategies (including exaggerating or misrepresenting their real needs) and to focus on short-term interests. In practice, the convention-protocol process

easily enables those negotiators that are most powerful (in terms of financial, military or research resources, for instance) to dominate the negotiation process, starting from setting the agenda, writing the rules of procedure and controlling the dissemination of technical information. Even less powerful states (developing countries, for instance) can play a significant role in treaty negotiations, provided that they are able to maintain sufficient coherence within their ranks. If not, the agreements that emerge may well be no more than a compromise among the few powerful parties. Moreover, the negotiators of these powerful few easily fail to explore the full range of possibilities, often locking into a battle over a small number of (not necessarily optimal) options instead. In such a setting, the results typically reflect rather little creative brain-storming and resolution of real differences.⁸

LESSONS FOR SPACE LAW

Given the similarities between the convention-protocol approach and developments within the law of outer space, an examination of the strategies applied in combating problems related to the convention-protocol approach may yield beneficial lessons for the future of space law negotiations. Of major interest is the question how to overcome the lowest-common-denominator problem and enable more nations to be involved in the negotiations and assume roles which are truly meaningful. This is vital since the generality of current space agreements and the failure of the international community to

⁶ Susskind 1994, p. 31.

⁷ Susskind 1994, p. 32.

⁸ Susskind 1994, pp. 33-35.

produce more detailed legal obligations severely hamper current possibilities to manage space activities.

In general, reluctant negotiating parties can be persuaded to modify their positions through side-payments or political pressure. Negotiating experience has shown that, apart from outright political coercion, the most successful tools for making more demanding options attractive to parties include selective incentives, differential obligations, and the promotion of “over-achievement” by lead countries.⁹

“**Selective incentives**” refer to fringe benefits or special favors that may persuade a party to participate in collective action that it would otherwise find unattractive. Such clauses to accommodate special interests are common in international agreements, often allowing, for instance, technologically less developed countries to adhere to the instruments by postponing compliance with standards they otherwise find too stringent or providing them with benefits and aid from industrialized states. Such compromises may detract from the effectiveness of the instruments but are often essential in alluring important signatories. Moreover, without such clauses, agreement might have only been possible on a much lower level of collective commitment, whereby the selective incentives approach may even improve the overall standard of obligations (above the predictable lowest common denominator).¹⁰

Commonly used selective incentives relate to

⁹ See, e.g., Sand 1990, p. 6.

¹⁰ Ibid.

access to funding, resources, markets and technology¹¹. In space activities, at least access to technical or financial assistance and clauses for the preferential acquisition of new technology might prove feasible. They could enable the construction of safer space objects (safer power supplies, for instance) and encourage more sustainable general patterns in space policies.

However, the Space Benefits Declaration of 1996¹² affirmed in practice that no requirements of a legal nature can be derived from the fundamental Art. I of the Outer Space Treaty (OST)¹³, according to which exploration and utilization of outer space is to be for the benefit and in the interests of all countries. In establishing that states are free to determine all aspects of their participation in international cooperation in space activities (para.2), the Declaration’s authoritative, current interpretation of the cooperation principle of OST Art. I eliminated hopes of obligatory transfer of financial and technological resources from the industrialized states to technologically

¹¹ On the selective incentives used in international environmental instruments in particular, see Sand 1990, pp. 6-8.

¹² Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interests of All States, Taking Particular Account of the Needs of Developing Countries; UNGA Res. 51/122 (Dec 13, 1996).

¹³ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space Including the Moon and Celestial Bodies (610 UNTS 205).

less developed countries.¹⁴

The selective incentives approach purports to treat states more or less equally and is based on a system of reciprocal rights and obligations: in practice it results in special treatment for selected parties. Such discrimination can seriously undermine the credibility (or acceptability) of an agreement. A more straightforward approach is to have an asymmetrical regime from the very outset with different treaty obligations being applied according to each party's special (economic, technological, etc.) circumstances. Such a **differential**

¹⁴ Viikari 2002, pp. 124-130.

Moreover, it should be remembered that provisions to facilitate technology transfer were also adopted for the deep seabed mining regime established by the "original" 1982 United Nations Convention on the Law of the Sea [21 ILM 1245 (1982)]. This regime would have guaranteed substantial technology transfer benefits from industrialized world to less developed countries. In 1994, however, the system was altered dramatically by modifications introduced by the so-called New York Agreement [Agreement on the Implementation of Part XI of the 1982 Law of the Sea Convention; 33 ILM 1309 (1994)], which, i.a., abandoned all mandatory technology transfer obligations (Annex, Section 5). For a more detailed account, see, e.g., Viikari 2002. Considering this development and the 1996 Space Benefits Declaration together, it does not seem very likely that industrialized countries will acquire far-reaching technology transfer obligations in the very near future in the field of space activities either.

obligations approach has been adopted in many environmental instruments, for instance, with these incorporating country-by-country time plans, differential assessment scales and weighted contributions; it is also found within the UN system, which includes various UN trust funds to finance joint programs.¹⁵

For space activities, a differential obligations approach might propose, for instance, a trust fund (based on weighted contributions) to compensate for the financial burden of the additional costs required to ensure safer operation of space objects. Also worth considering is some sort of an intergovernmental space management authority, the formation and operation of which could be financed through an international fund (with substantial economic responsibility on the major users of outer space). In light of the principle of equality and the idea of space being the province of all mankind (Outer Space Treaty Art. I, etc.), a suitable criterion for dividing countries into groups (in this case) could be their level of technological and economic development.

One additional strategy for avoiding the lowest-common-denominator problem is the **promotion of over-achievement**. Many environmental agreements, for instance, expressly confirm the right of parties to take (individually or collectively) measures more stringent than those required by the agreement itself. Even where treaties do not give explicit permission to over-achieve the goals set by them, they usually do not prevent additional action or stricter

¹⁵ Sand 1990, p. 8.

requirements, provided that these are non-discriminatory.¹⁶

The willingness of countries to take action unilaterally and adopt timetables and targets that affect only themselves is hardly enough to combat wide-scale adverse effects, but over-achievement provisions may, for instance, provide incentive and a starting point for subsequent negotiations in wider international arenas. Such initiative taken by only some countries within a larger group of nations has indeed often “played a pilot role” in more general target-setting and encouraged other states to do likewise, if possible.¹⁷ At the same time, however, unilateral standards may give the countries who first apply them a dominating position in subsequent negotiations, where they might demand, for example, that those standards be made the norm.¹⁸

¹⁶ Sand 1990, p. 12.

¹⁷ Ibid.

¹⁸ Susskind 1994, p. 31. In addition to a genuine will to alleviate harmful effects of their activities and to create a possibility to affect (to some extent) future developments in international target-setting, a distinct reason for states to “over-achieve” their goals (in cases where the price to be paid for that is relatively low) is also the simple fact that it often pays political dividends in terms of public attention and recognition. With many international accords, national achievements and pledges are recorded and compared annually; media coverage and international publicity should not be underestimated as influential incentives for states to act in a certain manner. Sand 1990,

Framework conventions, which are originally meant as a framework for further action with additional but optional protocols then frequently concluded between (usually only some) parties, constitute a specific case in this respect.¹⁹ Similarly, the sets of principles for the management of space activities adopted by the UN General Assembly can be seen as promoting over fulfilment of the vague obligations provided by the original space treaties and encouraging subsequent legally binding agreement on these issues. The same applies to the numerous non-binding instruments adopted by the International Telecommunication Union (ITU) in relation to both UN space treaties and the ITU Convention and Constitution²⁰, which aim at guaranteeing undisturbed space telecommunications.

Even declaratory instruments by prestigious non-governmental expert groups may gain influential status, such as the work of the International Law Association (ILA) on several legal issues²¹, which includes the ILA Draft Convention on Space Debris from 1994. In compliance with this draft, many space actors have voluntarily taken such important steps as removing inactive satellites from the geostationary satellite

p. 13.

¹⁹ Sand 1990, p. 12.

²⁰ These instruments can be found at <http://www.itu.int/aboutitu/basic-texts/convention.html> and <http://www.itu.int/aboutitu/basic-texts/constitution.html> [10AUG03].

²¹ See Sand 1990, p. 16.

orbit²². On the other hand, some satellite operators had carried out such procedures even before the ILA Draft Convention and a recommendation issued by the ITU in the same year, both of which specifically recommended the removal of satellites at the end of their lifetime²³. These unilateral measures can be considered as encouragement for the adoption of the later instruments urging such procedures.

CONCLUDING REMARKS

The entire field of space law seems to need improved approaches to the negotiation of international agreements if it is to create regimes that are effective both institutionally and in solving the problems they have been designed for. This is a demanding task, for international regimes typically emerge only after complex bargaining processes. Even when there exists a zone of agreement, it

²² See, e.g., Jahku 1991, p. 208.

²³ The ITU Recommendation ITU-R S.1003 (on the environmental protection of the geostationary orbit) from 1994 requires that "a geostationary satellite at the end of its life should be transferred [- - -] to a supersynchronous graveyard orbit that does not intersect the GSO" (point 3). Similar recommendations have been given also i.a. by the Inter-Agency Space Debris Coordination Committee (Inter-Agency Space Debris Coordination Committee space debris mitigation guidelines, UN doc. A/AC.105/C.1/L.260 of 29 November 2002). The removal of inactive satellites is still far from being a standard procedure, however.

tends to be very difficult to identify common preferences, and efforts to reach agreement on a specific point within this zone easily give rise to hard bargaining and coercive diplomacy. Consequently, the negotiations often fail to result in agreements, or they yield less than optimal results, ones generally attributable to the problem of the lowest common denominator.

Due to the similarities between the convention-protocol approach commonly used in international environmental negotiations and the development of international law of outer space, an examination of the two-step approach can provide important lessons for the future of space law. This is particularly true as space activities most obviously are an arena where the same actors need to deal with each other on a continuing basis and in the context of various issues. Consequently, long-term working relationships, necessitating trust among the parties, are crucial, and it would serve all concerned better to avoid positional bargaining, such as that typically generated by the traditional treaty-making process.

One positive factor likely to promote coherent and widely acceptable agreements maximizing the common good in the utilization of outer space is that all spacefaring entities have many potential roles and are likely to be equally affected by the adversities related to space activities. Even here, however, there remain numerous considerations that deserve special attention, particularly those connected to the status of outer space as the province of all mankind: how to guarantee efficient and reasonable management of this global common, how to preserve it as a legacy for future generations, how to secure access also for those parts of

humankind which are not currently space faring nations, etc. "Traffic rules" for outer space are fundamental also for the very reason that as no one can (in principle, at least) be excluded from use, the burden of management and protection falls entirely on restrictions governing that use. The above examination of the traditional treaty process and the problem of the lowest common denominator in particular provides us with some ideas on how to develop these traffic rules and what they might contain.

One prospect, although rejected by recent instruments in the management of the resources of global commons, is that some sort of selective incentives approach could be developed on a more tempting basis for the industrialized countries. For instance, technology transfer could prove acceptable to industrialized states in exchange for some sort of extended access to space resources²⁴. Such solutions obviously require a delicate balancing of interests and are likely to prove highly problematic also in light of the fundamental principles of space law. Nevertheless, they would seem to deserve thorough examination. Another interesting option is the idea of an international fund that could be harnessed to serve a variety of purposes in the management of space activities, including more sustainable space traffic management.

In order to enhance positive attitudes among space utilizers towards international regulation in general, it would also be of the

²⁴ Access to sustainable use of resources is a widely applied incentive in terrestrial surroundings in return for accepting environmental restrictions, for instance. See, e.g., Sand 1990, p. 7.

utmost importance that, instead of applying the common approach in international treaty negotiations of focusing on allocating the losses or costs involved in new regulation, increasing attention would be paid to the gains resulting from wiser management of space activities. Otherwise, treaties are easily seen as merely new instruments of restriction and constraint rather than opportunities, and the economic losses such accords often entail (in the short run) provide excuses for many states to withdraw from the process even before negotiations have begun.

Finally, although legally binding international obligations might seem to provide the most secure basis for space activities, the role of recommendations and other non-binding instruments should not be underestimated. After all, in international law it is not the fear of sanctions but the genuine will of states to avoid outcomes that are rendered inauspicious which drives states to conduct their activities in a certain manner - also in outer space.

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