

Legal Considerations Affecting Commercial Space Launches
From International Territory¹

Edward A. Frankle, Esq.²

E. Jason Steptoe, Esq.³

National Aeronautics and Space Administration
Washington, DC⁴

At the outset, I want to thank Dr. Karl-Heinz Böckstiegel, Director of the University of Cologne's Institute of Air and Space Law, for inviting me to participate in this IISL session on international launch issues as a member of the Institute's "Project 2001" Working Group on Launch and Associated Services. As many IISL members know, Project 2001 represents a comprehensive and ambitious European effort to identify and recommend approaches to resolving the myriad legal issues thought to impede commercial development of space. As the only non-European asked to participate in this session on the Project's behalf, I may hold a viewpoint not entirely shared by the Project's organizers nor, perhaps, by other members of the Launch Services Working Group. Therefore, I welcome this opportunity to offer my perspective on certain launch-related issues that are frequent topics in international space law discussions.

**I. Growth Of The U.S.
Commercial Launch Industry:
The Importance of Perspective**

In the interest of full disclosure, I want to acknowledge that my positions on the immediate issues under discussion as well as on the need for comprehensive international legal standards to govern national activities in space are, like everyone's, colored by experience. If we are to have a genuine dialogue concerning important matters affecting real interests, we should try to understand the forces that have shaped each position. So I'll go first. I've had 25 years of legal experience, including 7 years as a contracts litigator, 3 years as Chief Counsel at a NASA Field Center, and over 11 years as General Counsel of NASA. In this time, I've dealt with the entire range of legal matters affecting a rather active national space program. This experience includes extensive involvement with efforts to help transfer major segments of NASA's

¹ Copyright © 1999 by the American Institute of Aeronautics and Astronautics, Inc. No copyright is asserted in the United States under Title 17 U.S. Code. The U.S. Government has a royalty-free license to exercise all rights under the copyright for governmental purposes. All other rights are reserved by the copyright owner.

² General Counsel, National Aeronautics and Space Administration, Washington, DC.

³ Associate General Counsel, Commercial and International Law Division, NASA, Washington, DC.

⁴ The views expressed herein are those of the authors and may not reflect the views of the National Aeronautics and Space Administration or of the United States.

program to the U.S. private sector. My co-author, prior to coming to NASA 10 years ago, spent 6 years involved in regulatory, international law, and trade issues affecting the commercial launch industry, working as counsel to the Office of Commercial Space Transportation in the U.S. Department of Transportation. As a result, we are vitally concerned not only with legal impediments to the conduct of NASA activities but also to the commercial viability of private space endeavors.

It is now clear to all spacefaring nations that any successful national space program must rest upon the twin pillars of governmental and commercial activities. Indeed, statistics indicating that last year's revenues from space commerce actually surpassed Government procurement totals are being repeated like mantras. For NASA, efforts to stimulate growth of a U.S. commercial space sector are hardly new. As early as the mid-1960's, even before the moon landing, NASA transferred its first space capability with high commercial potential – space-based telecommunications – to a private U.S. entity known as Comsat. Soon after I arrived at NASA, the Landsat remote sensing program was spun off to a private entity, with notably mixed results. In the mid-1980's, NASA as well as the Defense Department transferred ownership of U.S. ELV technology to private launch firms such as McDonnell Douglas, General Dynamics, and Martin Marietta. In 1996, NASA transferred Space Shuttle operations to the United Space Alliance, a joint venture of Lockheed Martin and the Boeing Company, and last year completed initial arrangements for Lockheed Martin to operate most NASA space and ground communications systems on a privatized basis. In addition, the Agency is exploring potential partnerships with both aerospace and non-aerospace companies in order to

leverage NASA assets, such as the U.S. share of International Space Station research facilities and resources.

From this large range of activity, I have become a dedicated pragmatist and have drawn one, perhaps useful, conclusion concerning efforts to privatize or commercialize space activity. People in governments and legislatures are not very good at predicting the commercial success of ventures they are trying to encourage. They are not helped by the fact that many of the arguments they hear over commercialization seem more ideological than focused on the realistic needs of either the industry, its customers, or spacefaring nations. Despite this, the effort to commercialize space activity is real and here to stay. NASA is working to end its operational role in low earth orbit and refocus on the Agency's original mission of research, development, and exploration. Thus, for NASA, the existence of a robust commercial space sector represents far more than merely a welcome dividend of taxpayer investment in America's space program. NASA is increasingly dependent upon commercial providers for the services needed to conduct its core missions. As a result, we are hardly indifferent to the obstacles that private ventures encounter in their efforts to achieve commercial success.

There have been many such obstacles. Consider, for example, the short history of the commercial launch industry, whose activities are a focus of particular interest at IISL meetings and, soon, the United Nations. When a launch services industry first emerged in the United States, around 1982, the obstacles it then faced appeared to result primarily from the fact that numerous U.S. Government agencies had competing jurisdictional interests in its activities. Most of these interests involved health and

operational safety issues, but one arose from a concern on the part of the State Department that was grounded in certain obligations the U.S. had assumed under Article 6 of the Outer Space Treaty. As you well know, this central requirement of the Treaty requires authorization and continuing supervision of “national activities in outer space” carried out by non-governmental entities. In addition, under the Liability Convention, the United States could itself be held strictly liable in tort for damages resulting from activities these private entities planned to conduct. Enactment of the Commercial Space Launch Act of 1984 (CSLA) resolved these jurisdictional conflicts by designating the Department of Transportation as a “one stop shop” for U.S. commercial launch licensing. The Act also provided a mechanism for enabling several other agencies, including NASA, to comment on licensing actions.

With the CSLA in place, the commercial launch industry seemed poised to prosper. After all, as President Reagan was fond of saying, the government had “cut the red tape so that U.S. industry could reach blue sky.” But what happened? Not much at first. All the Government debate and policy was fine, but it apparently didn’t address the range of real problems the private industry faced. One of those was asserted to be Government competition from the Space Shuttle. The Space Shuttle had become fully operational in 1982 and, together with the Ariane family of launch vehicles, had succeeded in capturing the entire international market for satellite launches, and at rates U.S. industry said it could not match. This commercial environment changed suddenly and tragically, when the Challenger was lost. A few months later, in August 1986, President Reagan issued a new commercial space policy decreeing that NASA would launch only those payloads requiring the unique

capabilities of the Space Shuttle—a requirement later enacted into law. Almost immediately, the U.S. launch industry became more viable.

With the prospect of Space Shuttle competition eliminated, launch firms encountered a new and unexpected barrier to commercial success: their own corporate boards. Corporate directors, understandably, were proving to be rather cautious about exposing their companies to “excess liability,” above the limits of their liability insurance coverage, that might result from a catastrophic launch accident. Most of these aerospace firms were indemnified against such risk when they conducted launches under U.S. Government contracts. The launch firms’ customers harbored similar concerns about these risks, to which they could also be exposed, as Congress had authorized NASA to require third party liability insurance and provide indemnification for commercial customers when NASA space vehicles launched their payloads. Again Congress responded to launch industry concerns, this time by expanding the CSLA, in 1989, to establish a process for expediting consideration of excess liability claims. This assurance was sufficient to enable launch firms to continue signing up customers. Once again, a national regulatory response eliminated a demonstrable barrier and the industry moved forward.

After the 1989 expansion of the CSLA, the U.S. launch industry, like its worldwide cousins, literally, “took off.” It was helped by the fact that in 1990, the U.S. Congress directed NASA to purchase launch services from commercial providers for the majority of its launches. Other barriers have been identified, such as complaints of unfair competition and use of excess missile assets as launchers, but they, like the earlier

barriers, have been addressed, one by one, through national means and bilateral negotiations, not through changes to the international legal regime. The result is a vibrant, growing space launch industry that is proving to be efficient, effective and innovative.

II. Legal Complexities of New Launch Ventures

I wanted to recall a bit of this history because I think it affords some important insights that should be considered carefully in discussions about a new or expanded international legal framework for private commercial launch activities. At a minimum, these experiences will greatly influence my own approach – and probably that of many other Government and industry officials in the United States – when evaluating proposals for adjustments to that framework.

One particularly striking aspect of the story of the U.S. commercial launch industry is that it is almost completely devoid of reference to the apprehensions over space launch liability and damage that characterized the debate leading to the space treaties and, indeed, animate space law discussions to this day. It is particularly noteworthy that during the CSLA debate, the international legal regime was used to demonstrate the need for government controls, but neither the U.S. Government nor the launch industry cited that regime as a major barrier. The principal concern cited was the prospect of negligence awards by juries in U.S. federal and state courts. Overall, I suspect that the international legal framework had equally limited effects upon the development of launch systems by the European Space Agency, by Russia and Ukraine, by China, by India, or on the

systems currently being developed by Japan, Brazil, Israel and others.

This is not a surprising conclusion. Launch activities are hazardous and the main hazard has been shown to be immediate. Poorly conducted and supervised launches do much more damage to their launch sites and people in the immediate vicinity than anywhere else. Thus, it is in a nation's interest to ensure its launchers are safe and reliable. Not only does that cost less in the long run, it protects the nation's citizens and has the added commercial benefit of not scaring away paying customers. Viewed from this perspective, the international regulatory responsibilities established by the treaties provide only a bare outline of the dimensions of state responsibility for launch activities, and the outline is even less clear where private launches are involved. Thus, in a given nation, these international concerns may get subsumed in the more immediate focus on making a vehicle work. If that is true, perhaps the role of international space lawmaking bodies should only be to ensure that this outline remains bare.

In short, I think past experience indicates that the behavior of industry and government is motivated more by national commercial and economic self-interest than by international legal requirements. This is no less true for the innovative new firms seeking entry into the launch services industry. What is new are the unique operational profiles presented by several of these firms, and more complex structures of ownership, control, and territorial nexus than we have seen before. They may strain the reach of the current space law treaties, but that does not necessarily translate into a need for expansion of those treaties.

Perhaps the best current example is the SeaLaunch venture now preparing for its first fully commercial launch this autumn. The operational characteristics of SeaLaunch are well known to those involved with space industries, and especially to members of this forum, so I will summarize them only briefly. Under the CSLA, the SeaLaunch Limited Liability Partnership is considered a foreign entity, incorporated in the Cayman Islands (a territory of the United Kingdom) and is comprised of U.S., Russian, Ukrainian and – until recently – Norwegian partners. The partners each hold minority shares in the venture, with the U.S. partner's 40 percent stake representing the largest of these. The venture has developed and tested a launch vehicle consisting of Ukrainian Zenit stages and a Russian Block-DM upper stage, and conducts launches from international waters in the Pacific Ocean. The launch vehicle stages are manufactured in Russia and Ukraine. Vehicle integration occurs at SeaLaunch's homeport of Long Beach, California. Nationals of several countries perform launch operations. The space launch platform and support ship are Liberian flag vessels; Liberia is not party to the Liability Convention. The U.S. Department of Transportation/Federal Aviation Administration has required SeaLaunch to obtain a launch license due to the degree of control exercised by the Boeing Company, the U.S. venture partner. The United Kingdom has also asserted licensing jurisdiction under its own launch licensing statute, due to the venture's Cayman Islands domicile.

Given the unique factual circumstances presented by SeaLaunch, there is no clear-cut answer to the question of which state (or states) would be deemed a "launching state" under Article 1 of the Liability Convention. Indeed, it seems highly likely that several

states could be deemed jointly and severally liable for third party damage resulting from a SeaLaunch mishap, depending upon the facts of a specific incident. While the legal uncertainties raised by SeaLaunch are fascinating to international lawyers, what interests me more is that these uncertainties seem not to have prevented either the commercial parties or their respective governmental overseers from proceeding with launches. It seems to me that these facts raise a critically important question: If treaty ambiguities relative to SeaLaunch have not deterred either the companies or the governments that are potentially at risk, how critical is the need for a new or revised international legal regime?

I think the answers lie more in the national laws that do apply than on the treaty obligations that may or may not be clear. In a CSLA launch license, the FAA imposes financial responsibility requirements upon its licensees, requiring them either to purchase insurance against third party claims and damage to Government property, or otherwise demonstrate financial responsibility for damage resulting from a launch. In the event of an accident in which third party claims exceed the financial responsibility requirement imposed by the FAA, the CSLA provides procedures that anticipate potential U.S. Government payment of these excess claims up to a statutory ceiling. In other words, at least as applied to SeaLaunch, the CSLA provides detailed evidence of how the United States is implementing its space treaty obligations. Not only does the U.S. authorize and supervise launches conducted by this multinational venture, but it also provides concrete procedures for bearing potential international responsibility for space activities conducted from international territory by a non-U.S. juridical entity in which U.S. nationals hold only a minority

share. Why does the U.S. do this? Because it is in its economic and legal self-interest to do so. Benefit flows from having a successful operation based and operated in the United States and it has been shown that the risk imposed by the treaties is minimal compared to that benefit. In other words, when the U.S. acts to take care of its national interests, it also fulfills its international duties.

III. Launch Licensing and State Responsibility

While large, the amount available under the CSLA claims process is not unlimited. But, is it a problem for SeaLaunch that no one can say with certainty, in advance of a loss giving rise to claims that might exceed CSLA limits, which state or states may be a launching state? I doubt it. Given the uncertainty, does it follow that international law should be changed to provide those answers? I don't think so. Before we rush to provide answers to the myriad legal hypotheticals that will surely arise in any discussion of the merits or deficiencies of the current legal framework, we might first consider whether we are confronting a legal problem that needs or would even benefit from international resolution. Generally, I am not an advocate of developing a cure before there is a disease. If potential solutions lie within the national authority of state parties to the international space treaties, then it is fair to ask whether treaty revision or interpretation is worth the extended effort that will surely be required to achieve it.

I know I tread on dangerous ground to try to condense the basic requirements of the international space treaties before an audience such as this, but I think I need to do so. The space treaties were concluded in an era where national activities in space

meant activities by governments. As a result, they tell us very little about the rights and obligations of private parties to conduct space activities. Article 6 of the Outer Space Treaty provides that States Parties to the Treaty shall bear "international responsibility" for national activities in outer space whether performed by governments or by non-governmental entities. It further states the activities of non-governmental entities in outer space require authorization and continuing supervision by the appropriate State Party.

International responsibility is not defined, but the provision clearly suggests that a state's failure to authorize and supervise – which in the U.S. means to license – private entities conducting "national activities" attributable to the state itself could give rise to an international claim for breach of that responsibility. But the treaty does not equate Article 6 responsibility with legal liability. Article 7 of the Outer Space Treaty and the Liability Convention both attach liability, whether absolute or based upon negligence, only to "Launching States."

The treaties are far more specific about the legal elements required to confer launching state status than about those necessary to discharge state responsibility for national activities. To be a launching state, the state must either launch or "procure" the launching, or the launching must occur from the state's territory or facility. Thus, for launching activities conducted by entities like SeaLaunch that take place in no state's territory, state liability would not necessarily attach unless the state – or non-governmental entity carrying out national activities in space – actually launches or procures a launching, or the launch occurs from state facilities. The Article 6 exercise of responsibility by licensing the launch does not itself confer Article 7 or Liability

Convention liability upon the licensing state. This result seems reasonable, as the act of licensing would seem to imply considerably less state involvement in the actual conduct of launch activities. Further, the opposite interpretation risks creating a strong disincentive for states to license, potentially denying injured parties access to immediate and adequate compensation mechanisms available as part of state licensing regimes.

IV. Alternative Mechanisms for Discharging State Responsibility

There are alternatives to lengthy and arduous negotiations aimed at defining the precise scope of state responsibility under the current treaties. One approach might be to acknowledge the inherent limits of state responsibility and focus instead on encouraging states to maintain active licensing programs and adequate compensation arrangements. An advantage of this approach is that it utilizes commercial mechanisms to resolve a problem that is essentially commercial in nature. It recognizes, in particular, the critical role of private insurance in a comprehensive liability regime for launch activities.

The space treaties were developed at a time when the risks of launch activities were not well understood, space activities and hardware were shrouded in secrecy, and, understandably, apprehensions ran high. Because Government activities almost completely occupied the field, ways and means for sharing the inherent risk, such as commercial insurance, were given little attention. More than 30 years of experience, however, reveal some highly relevant facts that surely would have astonished the drafters. First, only a tiny number of claims have ever been paid under the Liability Convention or otherwise. Second, while

private insurers have paid substantial claims for payload loss or damage resulting from launch failures, I am aware of none that have had to pay third party liability claims. This record permits the conclusion that while launch accidents do occur, they tend to occur safely, and generally without causing personal injury or third party property damage.

This record has substantially altered the commercial and regulatory environment for space launches. Today, private insurers play a far more significant role in launch activities than simply paying claims. They are actively involved in promoting and monitoring operational safety and mission success. They have also become increasingly important in risk assessment. Indeed, private insurance has become so integral to the success of commercial launch ventures that national compensation systems now essentially represent sources of secondary coverage. These developments could outline the broad contours of a customary international liability regime for launch services that could protect third parties within existing legal frameworks.

Under such a regime, a central objective of launch licensing is to establish levels of foreseeable risk and impose reasonable insurance requirements or other evidence of financial responsibility. States remain liable under the existing legal framework, notwithstanding its inherent ambiguities and uncertainties. Mandatory insurance and financial responsibility requirements obviate any immediate need to resolve, at least from a treaty standpoint, the issue of state responsibility for problematic ventures like SeaLaunch. State compensation is made available, from a licensing state, to satisfy claims above the amounts of required coverage. Moreover, licensing states with limited space interests that are nonetheless

implicated in launching activities – for example, by virtue of a territorial nexus – might even decide to avail themselves of “excess liability” coverage that is available at very low cost.

This approach may not resolve all the legal uncertainties, but it does place them in a context that can lessen their potential consequences. I don’t know if all states, lawyers or academics will feel comfortable with this result. The answer may depend upon their ultimate objective. If the primary goal is to define in advance the full scope of state liability for damage caused by multinational or other commercial launch services, then the approach I have outlined will likely be unsatisfactory. If, however, the goal is to protect third parties by ensuring launches are conducted safely and that adequate compensation is available should mishaps occur, then it may just work.

V. The Limits of “Procurement”

As a final matter, I want to discuss briefly the three alternative bases the Liability Convention established for determining launching state status: participation in a launching activity, procurement of a launching, or use of launch facilities. Liability exposure on these alternative bases exists whether a launch occurs from national or international territory. The treaties define none of these concepts and, unfortunately, none is as intuitively obvious as the concept of state territory. It is difficult to say, for example, what level of involvement by a state’s nationals in a particular launching activity, or which use of launch facilities owned by or registered in another state may render that state potentially liable. Yet the notion that states incur exposure when they “procure” launchings is by far the least clear and most troublesome of the three bases of liability.

Again, the language we are struggling with comes from an era when space activities, and space law, were in their infancies. It was and still is clear that the United States, for example, would have potential treaty liability for claims arising from NASA launches from U.S., foreign or international territory, whether conducted by NASA or its contractor employees. The basic premise is that if a state, by whatever means, obtains launch services from another state, then the first state has “procured” the launch because it has provided the very reason for it. This premise would seem to include transactions in which a government itself may simply be acquiring “off the shelf” launch services from commercial providers like any private customer. At some point, however, perhaps where a state provides a payload for launch as a minor element of a much larger launch project of another state, the concept does not fit well. For example, has the U.S. “procured” a launch when NASA enters into an international cooperative science agreement to provide an instrument that is integrated into a Japanese remote sensing satellite and launched on an H-2 vehicle from NASDA’s Tanegashima launch complex? Have ESA and its member states procured a launch when ESA agrees to contribute a science experiment to the Neurolab (Shuttle Spacelab) mission or arranges for a European astronaut to be a Shuttle crewmember?

This uncertainty is aggravated when states are considered to be potentially liable for launches procured by their nationals or non-governmental entities. Should liability be imputed to a “procuring” state simply because a limited liability company, incorporated under a state’s laws, has obtained a launch to be conducted by and from a third country? Such questions seem rarely to be discussed, but they would need

to be before any consideration could be given to changing the current regime. The first question to be asked just might be: Does the existence of a 30-year record lacking any claims based upon the act of procuring a launching suggest the concept is obsolete?

Because the answers to these questions could have broad implications for NASA and others with active and multifaceted space programs, we decided recently to take a closer look at the treaties' negotiating record to see if it could provide any insights into the use and meaning of the term "procurement." We found significant indications that, as used in the original U.N. General Assembly Declaration of Legal Principles (1963), the Outer Space Treaty, and the Liability Convention, the term "procure" was apparently intended to mean active and substantial participation in launch activity. However, it may be no surprise to the people in this room that the debates in the Legal Subcommittee of the U.N. Committee on the Peaceful Uses of Outer Space during the period indicate both the delegates' strong desire to provide definitional certainty on this point and their manifest inability to do so. Nonetheless, I believe that there is ample support in the record for the proposition that the term "procures a launching" was essentially intended to mean:

1. exceptional arrangements in which a state might induce another state to conduct a launch from the first state's territory or from international territory, presumably with the first state's active participation in launching decisions; or
2. typical cases in which the state arranging the launch

plays a "substantial" role in the project.

In the debates, the U.S. cited the San Marcos project as an example fitting the first definition. There, NASA was conducting launches with Italy both in the United States and from platforms in international waters of the Indian Ocean. Italy's active participation in these NASA launchings was thought sufficient, apparently by both parties, to constitute procurement from the U.S. The second definition seems, from earlier instruments, to address the common scenario in which one state launched a single payload for another state.

Perhaps the clearest indication of the meaning the term was intended to convey can be found in a statement by the Japanese delegation following subcommittee approval of the draft convention. The statement seems intended to memorialize the content of the debate, especially in light of the fact that the Liability Convention would provide no guidance in the matter. While the statement is neither definitive nor authoritative, I believe it provides a useful background summary of this issue:

The Japanese delegation interprets that 'procure' consists of two requirements mentioned in the United States draft convention (A/AC.105/C.2/L.19), namely 'actively and substantially participate'. The Japanese delegation interprets the [sic] 'actively participates' means participation in the decision of launching through agreement or consultation with the launching state, and 'substantially participate'

meaning participating in the substantial part of the project. The Japanese delegation also interprets that the manufacture of space objects or technical assistance for the manufacture of them or for the drawing up of a plan of space object is not, by itself, included in 'actively and substantially participate'.

I do not mean to suggest that unapproved treaty text should be accorded inordinate interpretive weight. Nonetheless, we are dealing with an undefined term that was incorporated in three separate space law instruments. As such, I believe the Legal Subcommittee record sheds useful light on how the concept of "procurement," as it now exists, might usefully be applied in practice.

VI. Concluding Observations: The Road Ahead

It seems likely that we are about to embark upon a new debate over the meaning and relevance of the existing treaties. Not only has the University of Cologne's Project 2001 sought to frame more clearly the legal questions presented, but the COPUOS Legal Subcommittee will itself consider "the legal concept of 'launching state'" at its session next spring. Coincidentally, this discussion will be occurring at a significant time for the subcommittee, as COPUOS agreed this June to revise substantially the subcommittee's agenda and basic working methodology. The changes encourage hope that the Legal Subcommittee may be about to enter a new phase, one in which states can examine the applicability of the treaties to current operational issues without proceeding immediately to promulgate new treaties, principles, or the like.

These changes in Legal Subcommittee procedures seem especially timely in the context of a discussion of private sector launch activities. I have suggested in these remarks that both the commercial launch industry and governmental approaches to regulating it are entering important transitional phases of their growth to maturity. Strong commercial imperatives may well alter the legal landscape in the near future, driving governments to consider national options before imposing more international requirements. I believe this Legal Subcommittee discussion will be useful. Clearly, the international community must be fully cognizant of the increasingly broad scope of private launch activities, the risks and benefits they present, and the actions of responsible governments to ensure they are conducted safely. Otherwise we risk acting in an environment where we may not fully understand the problem that needs solving or whether international legal experts can best solve it. In such a situation, new international rules – or new interpretations of existing ones – risk hindering attainment of the goals we all share.

In the long run, I believe we need to emphasize state responsibility for licensing, continuing supervision of non-governmental entities, and ensuring that just compensation is readily available. I have tried to suggest that the unique issues raised by the activities of private launch firms, including those operating from international territory, do not necessarily present problems that existing commercial and regulatory mechanisms cannot accommodate. The foremost goal of the international community in this area should be to induce states to implement effective licensing procedures applicable to commercial ventures for which state responsibility may exist and, in particular, whose activities might create exposure for

states pursuant to the Liability Convention. Useful models and precedents can be found in the legal codes and recent experience of the United States, the United Kingdom, Russia, Australia, Sweden, South Africa and Japan, as these countries have sought to create and apply national regulatory procedures to the activities of their nationals or from their territories. The basic requirements of any licensing regime should be to ensure that launches occur safely and that adequate insurance is obtained. If the first requirement is implemented seriously, then the cost of meeting the second is likely to be modest. If a state satisfies only these two requirements, it will have done a great deal to fulfill its international responsibility and more than enough to encompass the

entire range of experience since the original treaties came into force.

To state a preference for national regulatory means over treaty mechanisms is not to suggest that, as the international launch services industry evolves, international law will not need to evolve as well. My concern is that we have not yet reached that point. If we act prematurely to fill perceived or theoretical gaps in the existing international legal framework, we risk complicating the situation unnecessarily. I believe that more effective legal means currently exist for ensuring launches are conducted safely and that compensation is readily available should third party claims arise. Our immediate task should be to see that these mechanisms are utilized.