



Delimitation of Outer Space

1. Introduction

Over decades of devising a detailed regulatory framework for outer space activity, the global space community paradoxically has failed to define the clear delimitation of outer space. This seemingly simple question remains highly debated and has been a regular agenda item for the United Nations Committee on the Peaceful Uses of Outer Space for over half a century: should a clear border between air space (nationally regulated) and outer space (governed by United Nations treaties) be defined and written into law?

Thus far, no consensus has been reached¹. While some argue that a precise line should be drawn to avoid legal ambiguity, others deem it a negligible issue or consider delimitation of outer space a potential constraint to certain airspace- or spaceflight activity in years to come, amongst other reasons for objection. The first question the space community faces is whether such delimitation is in fact necessary to allow for proper functioning of global space activity now and in the future. More specifically for Europe, Denmark's 2016 declaration of national legislation concerning space² – which includes the delimitation of outer space at the so called Kármán line roughly 100 kms above sea level – acts as a trigger for the discussion of the sensibility of a consolidated European legal framework that would include the definition of the boundaries of outer space.

2. Upside and Opportunities

The obvious primary benefit of delimiting space is that it leaves no question about where a sovereign government's airspace, and thus jurisdiction, ends and outer space, governed by UN treaties, begins. Having such an exact, universally accepted, quantitative measure in place to demarcate the end of a nation's airspace would help provide legal clarity, especially so in determining liability in certain cases. While a substantial amount of vehicles and objects already fill the skies above us, the looming presence of space tourism and commercial spaceflight along with a generally increasing reliance on space resources and applications can be expected to add to the traffic above earth, thus giving more incentive to delimitate space in order to avoid a variety of potentially dangerous instances and legal disputes.

¹ The United States for instance does not believe that a delimitation is necessary, stating that the absence of such a law has yet to cause problems, which stands in stark contrast to the views of Russia and China who are adamant about reaching a comprehensively developed international agreement on the matter. European nations like France or Germany for example do not currently support deviation from the status quo.

² <http://ufm.dk/en/legislation/prevailing-laws-and-regulations/outer-space>.

In line with the “Single European Sky” initiative that was put in place to allow for centralized coordination of European airspace by the European Union, it would seem logical to consider the possibility of a similar move towards a mutually agreed upon vertical aerospace regulation in form of the delimitation of outer space. This would certainly allow for more logistical simplicity and if successfully implemented help facilitate the consolidation of forces between space faring European nations. However, reaching agreement between these nations that foster their various national space objectives may prove to be a challenging endeavour.

3. Challenges and Uncertainty

While delimitation on both a national- and international level has plenty of upside, it certainly does not come without concerns. The rapid evolution of space technology – and thus human capability to travel through-, and interact with space, its resources and technology placed there – as well as the increasing prevalence of commercial spaceflight may render the law irrelevant or even an impediment to the future aspirations of space faring nations and perhaps even private entities. As it currently stands, the lack of maneuverability of most of space re-entering vehicles, amongst other challenges, is an exemplary cause for concern revolving around technology if in fact a delimitation law were to be passed and such vehicles were to unlawfully enter foreign airspace for instance.

Furthermore, national security concerns are also of utmost relevance when deciding on an appropriate height for the border to outer space. As a matter of fact, it can be reasonably argued that the ceiling of air space over national territory shall be kept as high as possible in order to allow for appropriate defensive reaction in case of potential military action aimed at a sovereign entity from above. In this respect, the avoidance of legislation setting a clear limit to airspace constitutes a radical preventative measure. This arguably justifies the strong resistance towards a delimitation as practiced by many technologically advanced space faring nations.

As over 50 years of global debate has demonstrated, the delimitation of outer space – as simple of an idea as it seems to be – is a multifaceted issue, and it is unlikely that a widespread consensus can be reached among nations on this sensitive issue in the next few years. So far the absence of a clear delimitation of outer space has not hampered the development of space activities worldwide. However, the current multiplication of applications and services in the “grey zone” around 100 kms above sea level, might lead to additional pressure on the legislator to reduce such legal uncertainty.

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