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**Frans von der Dunk**  
A Space Law Consultant and a  
Professor of Space Law at the  
University of Nebraska



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## Space Lawyer Frans von der Dunk: Current International Space Law Is Far Too Vague and Broad

We have already talked (https://lawless.tech/space-lawyer-ian-perry-u-s-law-treats-space-resources-like-fish-in-the-ocean/) with a few space lawyers, which seems to be a profession (https://lawless.tech/elsbeth-magilton-j-d-we-need-more-attorneys-trained-to-think-critically-about-technology-deployment-and-oversight/) that most probably think belongs to the world of science fiction or some 22nd century world. Still, as we slowly head towards the 22nd century and already consider using the asteroid belt as a production field, and the Moon as a great exotic spot for a vacation and arguably a mind-blowing location

for showing off on Instagram, it all faces not only technological but also legal challenges. That is where space lawyers come in to settle things and come up with inventive solutions. Today, we talked with Frans von der Dunk, a space law consultant and a professor of space law at the University of Nebraska-Lincoln, about the ways one could become a space lawyer, the job they have to do, and some ways we could take in order to reach beyond the sky someday.

*This is the first part of the interview. In the second part (<https://lawless.tech/space-lawyer-frans-von-der-dunk-a-less-strict-form-of-the-law-of-the-sea-might-be-the-way-to-go-for-asteroid-mining/>), we will cover more practical issues related to the peaceful exploitation of outer space for the benefit of businesses and the humankind as a whole.*

**lawless.tech: Could you tell us about yourself and your background? Why did you choose to study space law**

**Frans von der Dunk:** As the last part of my studies on modern history I started to study public international law in general. It so happened that there was a relatively small institute on air and space law, part of the Department of Public International Law. That looked like an interesting working environment. The position was in space law and back in 1990s, when I started, space law was less extended and complicated than it is now, so it was possible to become sufficiently engaged in a relatively short time. It also sounded like an interesting adventure, so I became the co-director of the Leiden Institute of Space Law (<https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-for-air-space-law>) dealing with the space law-related part of the institute's activities. Ten years ago I got a very generous offer to become professor of space law at the program (<https://law.unl.edu/areas-expertise/space-cyber-telecommunications-law/>) in Nebraska. So, since 2008 I am the professor of space law there, but only half-time, because I also have my own consultancy company on matters of space law and policy which is called Black Holes (<https://www.black-holes.eu/>).

**lawless.tech:** As far as we know, you have been working in space law since 1990s. What do you like the most about this job now, when you're one of the most experienced people in this field?

**Frans von der Dunk:** I think it's two things. The one thing is that the field of space law and space policy is very international, so you can literally discuss that with people all across the world. These issues have global scope and a global meaning, and I'm fascinated by other countries, travelling there, and talking to people from there. The other nice thing about space law is that so much is happening there, that every other year or every other couple of months there's a new development which requires you to really think. While in the more classical disciplines of law there is already so much law has been developed that there's not much room for creative thinking and development, space law is still somewhat underdeveloped, which means that every time something new happens you get a chance to think about it and to actually help create a better legal system by thinking about it. It is a very creative challenge, let me put it that way.

**lawless.tech:** Your company **Black Holes** (<https://www.black-holes.eu/>) has been providing space law consulting services to governments, space agencies, and companies for over a decade now. Can you tell a bit about it? What are the most notable cases or clients you'd highlight? What would you tell about the market for such services?

**Frans von der Dunk:** If I start with the end of your question, it is a very interesting, but small market. I don't think there are many people in the world who can call themselves space law consultants. Because, obviously, a consultant is an external advisor, which means that when a company, a government, or an organization feels it has a need for certain advice because there is a legal or a practical development they want to analyze and to be aware of legal consequences, they would tend to prefer internal advice. Unless, of course, they would prefer to have someone from the outside, either because of neutrality and impartiality and being able to get a frank answer, or because they don't have such

capability in-house. It is not a very big market, but the nice thing about that is that although my company is very small, I can still cover it all and still have a lot of different types of contracts.

And now I go back to the first part of your question. So these contracts range from very small to very large ones. Take, for example, a contract where an operator who is developing piggyback launches wants me to explain to him what the international liability regime of space law means for secondary payloads and piggyback launches, so that he is aware how he should draft his contracts. This is a relatively small task, so I write a report of a number of pages and then I get some questions back, answer them and that's it. At the other end of the scale there are the huge projects. I did a lot of huge projects with the European Commission, on Galileo ([https://en.wikipedia.org/wiki/Galileo\\_\(satellite\\_navigation\)](https://en.wikipedia.org/wiki/Galileo_(satellite_navigation))) in particular. Galileo, if you are aware, is the sort of European second-generation GNSS system, so it's going to compete with GLONASS and GPS, and the European Commission is very interested in making that a success. For many years they spent millions on large contracts doing research in order to make Galileo happen. And most of the money went to operators and people developing the markets and the technologies, but almost always there is also a legal component involved.

So I worked with many of those projects as the legal advisor or leading a small legal team in the larger context. Those projects were multi-year projects, they sometimes comprised up to 20-30 people on a regular basis, we had project meetings every three months somewhere in Europe where everybody came together presenting their results and then you went home and did your next bit of work.

Some of them are obviously more fascinating and interesting than others. One of the most recent contracts I was very pleased with was with the United Arab Emirates (UAE). They wanted a national space law and a number of national space regulations in order to allow certain types of private space activities to be undertaken in the UAE, but with due regard for the international obligations of the UAE under international space law. That was a very interesting assignment,

because I hadn't done much work in the Arab world before and I was also very closely involved with actually writing the first drafts of those laws.

**lawless.tech:** If you are, for example, an experience space lawyer and you've come up with a brilliant idea about some part of the future space regulations, how is it possible to get idea through to the government and the respective authorities? How does it work?

**Frans von der Dunk:** The best way is if you are simply lucky and they ask you to help them out, which happened in the cases of Luxembourg and Emirates. But, of course, if you are doing it on your own initiative, it becomes very complicated. I have the incredible luck to enjoy an academic position as a professor in an established program of education and research at the University of Nebraska, which allows me to make my point in academic articles. So, if I see a particular legal issue or a particular problem, and I think that I have a solution which would be interesting and good, I can already start writing an article on it as an academic, explaining what the problem is, what I think would be the best solution and why.

Because space law is a relatively small field, as you can imagine there's not many space lawyers in the world, if you get your article published and start sharing it on the internet, it gives you a chance that the people you really want to read that will start reading it or they hear you talk about it at a major conference. Beyond that, of course, you can directly approach certain governments and say "well, I think you should do this, that, and the other," but, to be honest, so far I've had enough work not to actually go out and need to do that. I mean, If I wouldn't have anything on my hands for six months maybe I would start thinking "maybe I should generate my own work". But so far that has not been really necessary.

**lawless.tech:** Is there enough dedicated specialists who can participate in peer reviews of academic articles on the topics related to space law? How is the situation with publishing in space law

different from that in other more established fields such as biology or physics?

**Frans von der Dunk:** That is difficult for me to judge. There are sufficient space lawyers around the world for the purpose of peer reviews. I usually write in English (no one is interested in academic articles on space law in Dutch), so, as long as there is someone else, some other space law professor who is able to read and write in English, peer review can happen. And there is enough of those people to constitute a peer review community.

In addition, with all the online publishing it is also possible just to put your article online immediately. I do not prefer to do that, precisely because I prefer to have this peer review process, as in the end your article can only get better, if experts take a look at it and point out some irregularities, or inconsistencies, or some things that they don't understand. If you look at the online repository (<http://digitalcommons.unl.edu/spacelaw/>) of over 90 of my articles at the University of Nebraska — where everybody can access them for free, read them, and download them — all of those articles were initially published in publications following at least some form of peer review.

I really can't tell, whether that works different than in other disciplines. I consider myself fortunate that I have the impression that many of my articles are read widely. I get more requests from journals to publish with them than I can honour, because I obviously have other things to do. I'm in the fortunate position that I can select the ones that I think are really important, or which suggest the topic where I'm thinking "oh, I already wanted to write about that," but it's difficult for me to compare.

## **The Future of Space Exploration and Space Law**

**lawless.tech:** Let's imagine humans have started colonizing Mars or the Moon. How, in your opinion, people and nation states should regulate their space colonies out there? Is it necessary to create new international or national laws specifically for space colonies, or the existing international legislation would be enough for such issues? How to define the jurisdiction of colonies?

**Frans von der Dunk:** It is a very complex issue. But we do need a new law, there's no question about that, because the current international space law is far too vague and broad and short to deal appropriately with this issue. The basic thing you could say now is that whatever you colonize, you can't create state territory in outer space, so it can't become a colony in a legal sense, such as many Western European countries did back in history on different parts of the globe. That is, creating colonies subject to the motherland is legally impossible. And that means also that you can't create another 51st state of the US on the Moon, for example.

Currently, the best way to regulate it is to use the registration of the spacecraft from which the colonists come. But that is a temporary solution, because the longer those people would actually live in outer space, the more unlikely they would be to accept the jurisdiction of a country on Earth, just because they used to be its nationals.

I'm always reminded in this case of how the US originated. Originally they were, of course, British settlers in North America who were subject to the authority of the British King and the Parliament in London. But after they've lived some time in North America and they found that the British King had no idea what their problems were and that he was interested not in helping them but in taxing them, they said, "well, we don't think the British King has any right to rule over us anymore, we separate ourselves and create our own country." And that became the US.

The only thing I hope, whereas in the example of the US the British King didn't take this nicely and sent troops to keep the settlements under British rule, I hope that when things like that happen in outer space, the countries back on Earth, whether the US, Russia, or China, will say "ok, go ahead, be you own country." But that then requires some international law to handle all the important aspects of being a separate country out in outer space.

**lawless.tech:** Presume that there are numerous private space exploration companies actively appropriating parts of the Solar System and beyond, and some of these companies make significant discoveries out there. Should those companies share their discoveries with the humanity? How to define when a discovery should be shared with people, and when it should remain a “trade secret” of the company that made it?

**Frans von der Dunk:** The first part, I would say yes, these companies should share their discoveries with humanity. If you read Article 11 of the Outer Space Treaty ([http://www.unoosa.org/pdf/gares/ARES\\_21\\_2222E.pdf](http://www.unoosa.org/pdf/gares/ARES_21_2222E.pdf)), it requires states to inform the UN Secretary General, the public, and the international scientific community to the greatest extent feasible and practicable of nature, conduct, location, and results of space activities. So there is an initial obligation to do so. Now the Article only talks about states, but because those states are also responsible for their own private operators they should make sure that the private operators also comply with this rule. Of course, the general thinking behind it is that space is a global commons that should be used and explored for the benefit of all mankind, and if anyone, whether a state entity or a private entity, discovers some interesting new knowledge about outer space, they should share it with the rest of the world.

The baseline answer is yes, but coming to the second part of the question, when I read the quote from Article 11, I included the reference “to the greatest extent feasible and practicable” and that is where in the future we will have to draw a line. We should separate the discoveries which are scientific and should belong to the rest of the world, and those bits of information that companies will be entitled to keep to themselves in order to be able to make money from that, because that’s how companies work. The dividing line is not clear and that is where I think we should develop something. And if we won’t, it will be more difficult to force companies to actually share anything, as they would simply say “hey, Article 11 says only ‘to the greatest extent feasible and practicable,’ but we don’t think it’s feasible and practicable so sorry, we won’t share anything.” Unless there is a proper



interpretation of what kind of information is actually required to be shared in Article 11, versus the kind of information that a company is entitled to keep, I think we should work towards such a guideline.

**lawless.tech:** The future is coming, and quantum computers and their advanced code-breaking abilities may become available in the nearest future. What will happen if one country hacks a satellite or a spacecraft of another country? How to avoid and effectively prevent the militarization and military conflicts in space? Should the international community create new regulations for such issue?

**Frans von der Dunk:** To start with the last question, I think that should certainly be preferable. If it would be possible for the international community to create new regulations which would be acceptable to all and which are working, that would certainly be a good thing. My worry, however, is that looking at the practice that would be very difficult to achieve.

In particular, if you talk about hacking or other cyber activities, because of the very nature of the internet it is always very difficult to actually pinpoint certain activities to a particular country. That is necessary, because in international law you ultimately still need to be able to point at one country or another and say “well, we have evidence that this particular hacking activity comes from your territory,” in order to be able to say “that means that you, as a country, violated an international rule and as a consequence you are sanctioned and you should stop doing that.”

So, while new regulations are a good thing, we are currently struggling with attributing any violation of such a regulation to a certain state, because that may be the only effective way to make sure that things then stop. If you can’t even find out who hacks a satellite, it doesn’t make much sense to say “it is prohibited to hack a satellite,” because if you can’t find out who did it it’s an empty rule and it only creates frustration, I would say.

But it is a very important issue and colleagues of mine at the University of Nebraska, who are more dabbling with cyber law, are focusing on this as part of their approach, because ultimately it would be great if we could avoid this kind of abuse of outer space for clearly non-peaceful purposes, including by way of legal instruments. But as I indicated, that will not be an easy task, I'm afraid.

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