

## PATRICK NICOLET

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Let us start this session about space governance, which is part of the technology agenda of the World Policy Conference that we started in 2015 around the geopolitical impact of data. Since then, the technology agenda has developed further at IFRI, with the creation of a dedicated program led by Thomas Gomart and Alice Pannier. During this 15<sup>th</sup> edition, you heard yesterday talks about technology around the circular economy, tomorrow you will hear about technology and energy, technology and healthcare and today, we'll focus on technology and space. When I discussed what would be a good topic with Thierry, we rapidly zoomed in on space. Unfortunately, you have seen this year the impact, the importance of space technology during the Ukraine conflict, which has been visible to us all and certainly not the application we would like to see. In fact, space is going through a profound transformation, one that we have not seen since the inception of space, and it is profoundly driven by technology. As always with technology it is about cost — but the new technologies, be it electronics, materials, or information technology have made it possible to reduce the weight, which is very important in space, and thus democratize the applications of space. Now, we talk about microsattellites, which are about the thickness of the two of us and you can send up 5 000 of them a year, when we used to send five big satellites into space per year. That represents a major transformation and, as such, it permits this reduction in cost and the multiplicity of the capacity not only that is sent into space but as a result, on the operations on the ground. That allows for the creation of new applications, as I mentioned before, and it also allows the exploitation of space images. You have seen how optics have improved and that provides a level of granularity that opens new markets and opportunities in space. That is just one example, and you will hear more.

From a business standpoint, which is where I come from, if you look at what space means today, I refer to and recommend the McKinsey report on space from August 2022. It states that this is a 1 trillion-dollar market today and the expected corrected annual growth rate is about 15% up to 2030 which, believe it or not, remains a respectable number and there are 1,400 companies globally active in that market, with a lot of new entrants thanks to the possibilities I mentioned before. These new entrants continue to work on cost reduction, again that is what drives the adoption of technologies and opens new fields. It allows for the development of new business models, and you will hear some examples from our panel today, and what we will probably see is that everything in infrastructure will go towards software defined. That means, a satellite is a piece of hardware, and you will equip it with the necessary capacities so that you can manage it from your software and then that allows you to extract more value and have more flexibility, and further reduce the cost of your operations.

That is the context. Obviously, space — and its conquest — started with the public sector, so there is a geopolitical aspect to it. Every country is equipping itself with space command, including France recently — and we will address that partially on this panel. Then, you have civil operators coming in hence creating a governance question that we will address. Another major issue is the substantial amount of waste that's being generated in space — and we will also address this concern. It shows the evolution of that industry and the importance, the relevance of the World Policy Conference.

To address this theme today, I think we have a fantastic panel, and we will start with an introduction from Amer Al Ghafri. He is Senior Director of the Space Engineering Department at the Mohamed bin Rashid Space Center in Dubai. As the host, he will tell us about the position of the UAE regarding space and its evolution, which is quite radical for the Emirates. Then we will address the governance question, starting with Professor Kazuto Suzuki, Professor of Science and Technology Policy at the Graduate School of Public Policy at the University of Tokyo, Japan, and Senior Fellow of Asia-Pacific Initiative. Then, this context setting will be complemented by Professor Daniel Andler, Professor Emeritus at Sorbonne University and member of the Académie des Sciences Morales et Politiques. He will complement the governance issue with more of an ethics perspective because space is a technology and where there is a technology there are ethical questions.

That will be the context-setting, the governance part linked directly to the agenda of the World Policy Conference. Then we will move in a second and third section into defense and cybersecurity. Obviously, for defense it will be our friend Meir Sheerit, former member of the Israeli Knesset, well-known at the World Policy Conference, who held numerous ministerial positions in Israel. This will be complemented by Patrick Trinkler, Founder and CEO of CYSEC, which is a cybersecurity company active in confidential computing. For full disclosure at the World Policy Conference, Karista is linked to the CNES, a sponsor of the World Policy Conference, and an investor and Board member in CYSEC, which is also my case. I want to make this full disclosure since this is a rule.

Then we will move to the civil applications of space technologies, which will be addressed by Geoffrey Bouquot, CTO and Group Vice President Corporate Strategy & External Relations at Valeo, a very well-known large French company working with automobile OEMs. Then Francois Barrault will conclude the panel, he is the Chairman of DigiWorld, a leading European thinktank in digital transformation, and a well-known friend of the World Policy Conference.