



Opening Remarks

Introduction by Krystal Azelton, Director of Space Applications Programs and Summit for Space Sustainability Chair

[music]

Krystal Azelton: Hello. I'm Krystal Azelton, director of Space Application Programs at the Secure World Foundation. Welcome to the second day of the Summit for Space Sustainability.

We had some great discussions yesterday. In our opening panel on satellite and climate change, our illustrious speakers highlighted the need for better communications between the policy community and scientists, the need for more leadership from NASA and other organizations to address both the short- and long-term needs in this area, and the value of partnerships technology transfer and data sharing.

Yesterday's panel on megaconstellation featured legal, economic, space science, and astronomical perspectives on the challenges posed by large global constellations, especially their effects on ground-based astronomy and their impacts on the health and sustainability of the space domain.

Our discussion on activating active debris removal focused on the next steps to field active debris removal capabilities in light of the increasingly urgent space debris challenge.

These steps include a policy commitment to space environment management, building out international collaboration, developing detailed technical risk analysis and economic assessments to support business planning, and following through on the high-level political leadership statements.

If you missed any of these, we have a full recording available on YouTube. Please check it out and share it with anyone else you think might be interested in.

Next, I want to thank our sponsors for without whom we wouldn't have been able to host this event. Our digital content sponsors are deeply committed to this issue and then provided materials for you to explore regarding their efforts on space sustainability.

These are posted on our Summit website. Further, they've generously supported our young professional outreach including providing mentors for tomorrow's networking sessions. We're also grateful for our media sponsors who helped get the word out about this event and, as always, provide great coverage of space sustainability, and other news for you to follow along.

I also just want to remind all of our young professionals in the audience that we are hosting two mentoring sessions tomorrow, one at 9:00 AM Eastern and one at 7:00 PM or 19:00 Eastern time. If you haven't already registered for these, please do so.

Your invitation is in your inbox. It might be in your spam folder. We've got an exciting lineup of mentors ready for you to engage with, so be sure to sign up if you haven't already.

Finally, I'd like to turn to an announcement from one of our partners, the Space Sustainability Rating Design team. They're here to tell you all about their great project and opportunities for you to get involved. We have a little video, so you can see that.

[Video]

Nikolai Khlystov: *Good afternoon. My name is Nikolai Khlystov, and I'm lead for space and mobility at the World Economic Forum. It was just several years ago that the Global Future Council on space created the concept for the Space Sustainability Rating.*

It was really in response to the growing risk that space debris poses to orbital operations, and the time couldn't be better. The idea is really to encourage better and more sustainable behavior on orbit for this voluntary approach.

Today, we are glad that after several years of development, together with our international partners, to announce the transition of the Rating to its future home organization, the EPFL Space Center.

The decision couldn't come any sooner. We see the risk of debris continuing to grow. We believe that EPFL Space Center will be a terrific organization to operate and grow the Rating into the future.

It was a long process also of selection with a number of very qualified applicants. After several months of discussions, together with the advisory group, this is a decision that was taken, and we couldn't be happier with it. We wish all the best of luck and look forward to continuing working and transitioning the SSR to EPFL Space Center.

Stijn Lemmens: *It will come as no surprise to you when I say that certain orbital regions are currently congested, which space debris and operational object to like. Decades of space surveillance, data analysis, and forecasting have consistently highlighted the need for post-mission disposal and operational collision avoidance processes as a necessary precondition for the long-term sustainability of outer space.*

They've also indicated that slowly but surely, the attitudes of operators can shift from solely being focused on direct mission goals to taking long-term considerations into account. As part of the rating process, we want to take the next step.

Methods have been developed to quantify the risk and the impacts of space missions on the evolutions of the space to be environment, as well as on the collision risk to other active space work. They provide an operator with direct feedback on the risks implied by simply going into or being on orbit.

Indeed, in this context space itself is treated as a limited shared resource, and the risk is just a quantification of how this resource is being consumed.

This quantitative value and impact footprint as known from other environmental issues around the world ensures that we can measure how much emission from a single CubeSat to a large constellation contributes to the goal of long-term sustainability and rated accordingly.

Daniel Wood: *The Space Sustainability Rating has been designed by a five-part design team including the World Economic Forum, the European Space Agency, the University of Texas at Austin, BryceTech, and my own team under my team.*

We work to identify concrete ways that operators of space systems can help reduce collision risk, increase space situational awareness, and make sure that we're reducing the creation of new space debris.

Our documentation and modeling tools now provide an excellent design that EPFL can take forward into an operational system. We're so excited to see them take it forward and continue to support them through our research.

The Space Sustainability Rating will continue to evolve as other rating systems do, and we'll continue to seek your input. It's been wonderful to dialog with many of you through conferences and workshops, virtual, and in-person over the last few years as we designed this process.

There are still more ways for you to get involved. Governments can take some of the recommendations and use them in the regulatory environment. Space operators, please contact EPFL if you're interested in playing a role as one of the early adopters or beta testers as we continue to refine the design of the SSR.

It's going to be a journey for all of us as we work towards space sustainability. We're so proud that EPFL is the key leadership role in the operational SSR.

Emmanuelle David: *Space Sustainability is in EPFL and Switzerland DNA, in particular as one of our research projects led to the creation of clear space by a near spinoff that has been selected by ESA for the first space debris removal mission.*

In addition, we are hosting, starting in 2019, the research initiative on Sustainable Space Logistics, aiming at exploring technologies and solutions to ensure a long-term use of outer space. This is why we felt that at EPFL, we have the expertise, the energy, and the willingness to host and operate the Space Sustainability Rating.

With our partners that will support us at EPFL in Switzerland and at a national level, we aim at launching in 2022 what could be a game-changer and how space missions are carried out.

We want to thank the World Economic Forum, the Space Enabled Research Group at MIT Media Lab, in collaboration with BryceTech, the University of Texas at Austin for the tremendous work and the trust in choosing us. We are working hard to take over from them, so stay tuned for future updates.