

Center for Strategic and International Studies

TRANSCRIPT

Event

**“Emerging Security Issues in Space Policy”
The State of Space Security: Fireside Chat with the
Honorable John F. Plumb, Ph.D.**

DATE

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FEATURING

John F. Plumb

Assistant Secretary of Defense for Space Policy

CSIS EXPERTS

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Kari A. Bingen: Welcome, everybody. This is our event today on emerging space security issues. Welcome to our guests both here in person as well as online. I'm Karin Bingen, the director of the Aerospace Security Project here at the Center for International – for Strategic and International Studies – I should know my own organization – CSIS here in Washington, D.C.

It is a privilege to welcome the Honorable John Plumb, the assistant secretary of defense for space policy, the first ASD space policy, for what I believe is his first public discussion on space issues other than having to appear before Congress. So I think the event today is also timely with next week's third birthday of the Space Force.

This is a multipart event this afternoon. First, my chat with Dr. Plumb, which I think will be a tour de force across national security space. Then, we'll take a short break and then welcome a distinguished panel of experts to discuss the topic of low-Earth orbit – LEO – broadband communications, the impact of which we're seeing daily in Ukraine and the subject of a CSIS report that was just released this afternoon. Finally, we welcome those that are joining us in person to a reception in our foyer afterwards. This panel discussion is made possible by the generous support of Amazon Kuiper and SpaceX.

So Dr. Plumb is the rare breed of – breed of leaders who operates at the nexus of policy, technology, and operations, and genuinely has the bona fides and the experience across all three. So he's a Ph.D. aerospace engineer and physicist. He started his career as a naval submarine officer and remains a Navy reservist. He served as a congressional staffer, I think ran for Congress as well, right?

John F. Plumb: Unsuccessfully, as you know. (Laughter.)

Ms. Bingen: That loss, our gain. (Laughter.)

Was the principal director of nuclear and missile defense policy, the deputy assistant secretary of defense for space policy, and he went on to become the director of defense policy and strategy at the National Security Council. Prior to returning to government, he led The Aerospace Corporation's relationship with government, which is a space powerhouse for those of us in this business.

John has a huge job. Again, he is the first assistant secretary of defense for space policy, a position created by Congress to elevate the department's focus on space and bring greater cohesion to DOD policy for space warfighting. He is also responsible for the department's portfolio of strategic capabilities – space, missile defense, cyber, nuclear, counter-WMD, and

electronic warfare. He is serving at a very consequential time and what I think is a historic period in the national security space.

So I have several questions for Dr. Plumb this afternoon and then I'll turn to the audience for questions, both in person and online. So think about questions. If you'd like to submit one, please go to our webpage and click on the event page, and there's a button there, "ask live questions here." And then, for the folks in person, there's a QR code here that you can also scan and get to the question page.

So, John, I want to start. You know, when you and I first met, you were at the Pentagon working nuclear and missile defense issues. I was on the Hill. We spent a lot of time interacting specifically on the threat and understanding how it shaped policy and investments in those areas of nuclear and missile defense. You left government in 2015. You came back earlier this year. You're getting intel briefings again. You're reading – you've been read into all of the government's space programs and activities. So I want to start with: Did you have a holy cow moment?

And maybe more broadly, you are the first ASD for space policy, a position that Congress specifically created to increase senior-level attention on space. So talk to us a little bit about that role, maybe what's different or maybe how it's being treated differently.

Dr. Plumb:

Well, first of all, thank you, Kari, for having me here. Thanks to CSIS for sponsoring this event and to everyone joining in person or online. I appreciate that as well.

Let's start with your holy cow question. So, yes, there are some holy cow moments, which I think speaks to how fast the space environment is evolving.

The first one, as you just noted, is the threat. So over the last 10 years, the threat has evolved significantly. I don't think that's a shock, but China and Russia both pursuing counter-space capabilities to hold our space constellations or space assets at risk. And they're doing it aggressively and they're doing more of it. But at the same time, there's a flipside to that that really wasn't true or didn't feel true 10 years ago, which is and China in particular has aggressively been building constellations to leverage their own combat power and enhance their own combat power coming for us. So when you think of space threats, I think the natural way to think about space threats is the threat to other things in space. But space threats are also threats to our men and women on the ground in harm's way. And China's clearly learned from us. We use space to our great advantage and they are

seeking to use space to their advantage as well. And that contributes as a whole new layer. So that's holy cow moment number one.

Holy cow moment number two is probably that in the Obama administration, at least when I was doing space policy, space was still kind of a quirky hobby shop. And everyone that's a space nerd already knows that that's true, and that's why you're probably laughing, but that is no longer the case. Space has always been really part of the way we fight war, but it is now clearly engrained in every aspect of our warfighting. And the awareness of it throughout the department and really throughout the national security enterprise is now in a place where it has never been before. And what that means inside the Pentagon in particular is really incredible because it goes from having to kind of fight your way into a meeting – bureaucratically, not with weapons – to being in meetings where others – different COCOMs, different parts of the building not just policy – are arguing about the value of space and things we need to do. That is a sea change in the approach to how space is considered and understanding the value of it.

And then the third part would just be, since I do have three holy cow moments, is the cooperation between the IC and DOD on our space enterprise is so tight and so good, and it is really a very different situation than I recall in the – in the Obama administration, where I think maybe resources were scarce, things weren't as aligned. I really think that the main – one of the main driving functions there is, you know, Secretary Austin has tasked us to look at China as our pacing challenge. And when you focus on China, I think the threat becomes apparent, and the need move forward and cooperate certainly becomes a driver. So it's really, really interesting and really beneficial, and it also makes this job more interesting because it means how can we get after the true challenges the nation faces as opposed to bureaucratic challenges inside the building.

You asked about ASD for space and how that position is maybe being defined or how maybe – it's a really interesting position. I think everyone here knows this is a very interesting time to be in the national security space. Things are evolving quickly. Commercial access to space is really kind of exploding. There's just so much, so much more every day, so many more entrants. And so there's a lot to coordinate and a lot to do: the standup of Space Force; the standup of – well, the re-standup of Space Command, once again a combatant command. These issues and space being at the forefront, I kind of find myself at the nexus of all of this – and how do we use space for our integrated-deterrence approach, and how do we use it not just for right now but to shape the future.

Ms. Bingen:

And that's great because I think over the course of our discussion here we'll have an opportunity to dive into all of those different areas that you just talked about.

If I can start, though, on the National Defense Strategy, so the missile defense, the nuclear communities, each of them had a posture review that they were directed in law to do, and those came out alongside the National Defense Strategy. Such a space review was not directed by Congress, although I understand there's a Space Policy Review that they've directed that is in work. So can you highlight some of those key space themes that were in the NDS, perhaps areas of continuity or points of departure across administrations? Which issues really elicited a healthy debate? Maybe put us in that room that you fought so hard to get in. And then if there were to have been more of a – of a fulsome, I'll say, standalone look at space, what additional points or decisions would we have seen in a more comprehensive discussion on national security space?

Dr. Plumb:

So let me start with the part about healthy debate. So I was not there for the debate about the National Defense Strategy. I didn't get confirmed until March of this year, which is maybe a week before the classified version came out. And so I will just say I feel like we've ended up in a very good place, but I can't really speak to what was going on. Even if I was authorized to speak about what was going on, I couldn't speak because I don't know.

But there's just – I'd just like to address the National Defense Strategy head on here. The National Defense Strategy lays out four priorities: defend the homeland, deter strategic attack, deter aggression, and build a resilient joint force. And so what's really interesting is every single one of those objectives cannot be accomplished without space.

When I say that space is integrated into the way – U.S. way of war, it is integrated. It is in there like an old advertisement for spaghetti sauce. You know, it's in there. I hope someone gets that joke. But there is – that's a joke from my old nuclear power class. At any rate, there is – just defend the homeland. Let's just think about that for a second. To defend the homeland, let's just use missile defense as an example. I only know a missile's coming from North Korea if I can see it with my overhead, right? I got radars, but I also have overhead for signature, and I use this as a way to help defend the homeland. I require space for that. I also, of course, use space every day for intelligence collection. And we've seen some examples of that in Ukraine where the president has declassified some things, but that provides senior leaders decision space to help defend the homeland.

Detering a strategic attack. We have an entire constellation literally devoted to detecting nuclear missile launches at the United States, but that's

only one part of deterrence of strategic attack. The other is being able to project credible combat forces, and our power projection relies on space.

As far as building a resilient force, you know, we build a resilient joint force by enabling them and expanding their combat effectiveness through space, and also by allowing them to protect and defend themselves with information gathered through space.

So it just – no matter how you look at it, every single mission relies on space. And so I think space is kind of key and interwoven throughout the whole of the National Defense Strategy. I don't think any of the objectives can be accomplished without it.

Ms. Bingen: So is that kind of integration what is meant by integrated deterrence or how you apply integrated deterrence to space?

Dr. Plumb: So I think that's part of it. I think this is kind of a new field to talk about space and deterrence. Not new for some, I'm sure, but as a whole-of-government approach. And so I think integrated deterrence means a few different things to different people.

Kind of at the macro level we think about it as integrating whole of government, right – diplomatic, information, military, economic, whole dime. From my position – ASD space policy, kind of over these functional offices – it's how do you integrate different functional strategic capabilities, nuclear and non-nuclear capabilities, to achieve a sum that is greater than the parts. And I think what's interesting is there's this metric – some of you may know about throw weight where there's this kind of this old-school version of who's got the upper hand in a conflict. Well, how much – how many pieces of metal can I throw over the border, right? Well, if one person can throw X tons and the other side can throw X+10 tons, then the X+10 tons has this – that's a very rudimentary concept that is not integrated at all. What if I have less metal I can throw over the border but I have precision and you don't? Suddenly, I'm using space to integrate my effectiveness. And I think this is kind of the idea: How can I integrate these things to get more than a – than the individual parts?

Ms. Bingen: That's really helpful.

I want to shift to resilience. So the NDS states that the department will field diverse, resilient, and redundant satellite constellations. Every space leader that talks about – every space leader is talking about resilience these days, but there is no silver bullet here. So can you unpack it for us? How is the department thinking about resilience? How are you thinking about the different options, the tradeoffs? How do you see it being implemented?

Dr. Plumb: That's a great question and I agree with this idea people – there is this one train of thought that says the department has been saying they'll be resilient

for years and maybe you're not yet. So I will say that the buck has stopped. We are – resilience is in every single conversation about future space architectures that I'm part of. And that's not just the space piece; it's also the ground piece, the user equipment piece even. But we have this – we have made this kind of fundamental shift in how we think about things from it would be great to be resilient to we have to be resilient, and we have to be resilient because the adversary is coming for us.

And so what I need is a constellation that allows me to fight through, take a punch, fight through, and we can build something like a deterrence threshold by being able to absorb a blow and kind of degrade the ability of an adversary to take a shot in the first place.

So, it is in every conversation, which is somewhat remarkable. I'm kind of proud of it. It's not just me but, like, the fact that it's just built in, and we have specific direction, as you said, in the NDS, specific direction from the president through the space priorities framework to build resilient national security architectures.

So it's a fascinating time and it really makes some interesting choices.

Ms. Bingen: I heard somebody use the analogy recently of it's like, what, the old Timex watches; you know, it takes a licking and keeps on ticking.

Dr. Plumb: Very good. Very good.

Ms. Bingen: Sort of similar.

OK. The other piece that the NDS talked about related to space is norms of behavior, and there's an interesting point there on the lack of norms of behavior in space and how that could create a greater risk of escalation.

For our audience here, can you explain this a bit? Why are norms needed, what makes them hard, and then where do you start, especially when you have, you know, the biggest targets of concern here, China and Russia, aren't really participating and, really, are the biggest violators.

Dr. Plumb: A lot to unpack in that question. So let's just start with the idea of norms in general. So, I mean, whether you know it or not or think about it or not,

norms shape all of our interactions on a daily basis and for the military they shape all of our interactions as well, right.

We have established, over long periods of time, norms at sea to avoid collisions, norms in the air to avoid collisions, norms undersea to – all sorts

of – ground, surface, air, subsurface. Any operational domain, over time, there are norms of behavior that are established. Some are more focused on the military. Some are just for any type of craft operating in that space, right, to avoid collisions and also, of course, to give you an understanding of if someone is accidentally or, frankly, intentionally violating those norms it gives that trigger or, you know, we call INW to let you know something is amiss here – I need to be on guard and be careful what’s happening.

Now, we’ve had thousands of years on some of these other domains, a hundred years, perhaps, on submarines. Really not that many years on space and part of it is we can say, oh, we’ve been operating in space for years. Sort of. I mean, it’s true, we have, but it is now available to the world. There are all sorts of commercial companies operating all sorts of craft, right – the number of going up.

And so these pieces are changing as well. I think the more we can develop norms that make sense for protection of a safe, secure, stable space environment, the better it is for all spacefaring nations. Lowers the risk of miscalculation and potential escalation, accidental escalation, right. This thing you are doing, if someone – if an adversary’s spacecraft is doing something you don’t like, I mean, where do I start to think there may be something really wrong here – this may be a hostile act? If you have norms that are generally agreed to, then when those are violated that gives an indication that there’s something else going on.

So this is really important. I will just say China and Russia don’t have to sign up to a norm at the U.N. to comply with a norm. That’s not really how norms work. I think it’s really interesting. We had this really great result at the U.N. with this fantastic vote on the direct-ascent ASAT testing ban. But I think the fact is it’s evidenced by behavior, and over time norms can become stronger and stronger forms of a behavior modification.

Ms. Bingen: Notably, that vote happened last week at the U.N. and both of them voted against it.

Dr. Plumb: They did, right. But voting against it could be for all sorts of reasons. I’m not giving them an excuse. Like, you don’t have to vote for it to comply with it, right. You don’t have to vote for it to have some version of it that you might enforce.

I think it’s become very clear that testing destructive direct-ascent ASAT is problematic for any spacefaring nation and I think there is, you know, general outrage anytime this happens, and my hope is that we can reduce the number of occurrences of that to zero because there’s no need to do that and I think it, you know, puts things at risk.

And so I think this idea of having a norm for that is super, and the norm can be established with or without a vote. But we have made tremendous progress and that, and that's to be applauded.

Ms. Bingen: Thanks. Thanks for that.

And I want to shift to, really, the impetus with the Space Force and then the impetus with the job that Congress created that you are in. Your job description, which Congress wrote into law, starts with, quote, "The senior official responsible for the overall supervision of DOD policy for space warfighting," end quote.

So I'm struck by this emphasis on space warfighting as core to your job. So what does space warfare look like now? And with the trends that we're seeing and what you outlined earlier, is there a shift occurring in your portfolio, whereas a previous, you know, DASD for space policy may be looking at certain things and now, as this has been elevated to an assistant secretary level, is there a shift? You know, how do you look at it and what are you thinking about as you go forward in this area?

Dr. Plumb: Great. So, first of all, that is correct. The law says it's principal advisor for space warfighting, right, space warfighting policy. So let me just tell you how I think about that and how I'm taking that charge.

So, first of all, as I've kind of already mentioned here, but space is just one more operational domain. People don't want to say that maybe, but I think that it is. There is air, there's ground, there's, you know, the surface of the sea, the subsurface. I like to make a distinction of the submarine officer. Some people would just say there's just the sea, but I think they look different. And there's space. And maybe space sounds a little bit newer because now there's many more civilian craft, there's many more people who have access to space. But it's one more operational domain.

And every operational domain has civilian transports. It's got commercial transports. It's got merchant transports. And it has military transports, right? So space warfighting, to me, this is one more operational domain.

We've talked about how warfare for the United States way of war runs through space. All of our national defense strategy priorities cannot be accomplished without space. Space enables our joint force. It protects our joint force. It protects the homeland. And so all of these pieces of warfighting, space is part of warfighting. So how do we ensure that we can continue to rely on our access to space in a conflict, with the ultimate goal being deter conflict in the first place because the adversary knows they can't gain an advantage of space?

Ms. Bingen: Now we're going to get into some tough questions, as if those weren't tough already. But, you know, we've heard the department conducted a space strategic review. It's been framed as needing more than just space resiliency, but also a strategy for offensive and defensive space capabilities. What can you tell us about that space strategic review? And, to the extent you can, how is the department thinking through those offensive and defensive capabilities, and the balance between them? And going back to the comment you just made, how do you start to normalize this discussion? Not just how do we defend, but how do we potentially deny our adversaries the use of space to close their kill chains?

Dr. Plumb: So the space strategic review, we have completed that. That was tasked by the national security advisor to both DNI and the secretary of defense. Very classified review, just to be straight up. So I'm not going to say a whole lot about it. It's an internal classified review about our overall space posture and where we should be headed from a national security standpoint.

That said, you know, the results are very consistent with previous administration and current administration guidance. And so I think I'd like to just focus on existing public guidance. And the Space Partners Framework from December 2021 is actually an excellent place to look. And so let me just tell you a few things that it tells the department to do – it tells the United States government to do, and by implication also the department.

So, one, it tells us to protect and defend our national security interests from space and counterspace threats. Number two, it says protect the joint force from space-enabled threats. Three, it says build a resilient national security space architecture. And then it goes on to say, and you should also lead in the responsible, peaceful use of space, which includes, of course, you know, developing and exercising norms. And part of that, it tells us to be able to detect and attribute hostile acts in space, which is part of that norms conversation. You know, if the tree falls in the woods kind of a thing, right? You have to know something is happening and be aware of your domain to be able to say, hey, this is a hostile act.

So I think that guidance is pretty consistent. And I think to be able to address all these problems the department's pursuing a range of solutions across multiple domains, to make sure that we can execute our mission.

Ms. Bingen: So it's a great segue then to how are we doing on tackling that issue of overclassification of space? (Laughs.)

Dr. Plumb: That's a great question. Thank you. I'm really glad you asked that, I am, because I was – I'm really glad we're getting into this. So I want to make a couple statements about over classification. First of all, I've developed three

priorities for my space team as ASD space. Space control, which is what we're talking about here. How do I make sure that I can still use space? And how can I, you know, deny adversary hostages in space? Space cooperation – cooperation with allies, cooperation with industry – you know, we often say – you know, I like to say, frankly, our allies are an asymmetric advantage that neither China nor Russia can hope to match. Well, that's only true if we actually find a way to train and fight with them at the operational level. So that's the advantage we need to exercise. And then space classification or possibly space overclassification. So there are three Cs mostly: control, classification, cooperation.

With overclassification, I think there's this hope probably among folks in unclassified forums who are talking about this, that the response to overclassification is to declassify things so that they are unclassified. But there are many things you can declassify and still remain classified.

And so I ran a couple-of-day summit for internal DOD space stakeholders and IC stakeholders, focused on what are those things that are limiting our ability to do deeper operational cooperation with our spacefaring allies? And it turned out that most of the problems there are related to overclassification, because some classification – some things are classified in a way that I cannot share them with allies even if they're highly capable.

And so really working in my office and with the IC on reducing some of those classification issues to the point where we can share them with allies cooperation. So that is a huge, huge problem for us that we're really starting to dig into. And when I talk about that DOD-IC cooperation, this is one of those things that is – it's the right time, it's the right place, it's the right window of opportunity to fix it.

Ms. Bingen: That's positive to hear, because oftentimes you hear the operator and they're the ones that are demanding, and we need to be able to operate and collaborate with our allies and partners, but the folks that actually own the policies and the programs, it's a lot harder.

Dr. Plumb: Right.

Ms. Bingen: And so it's really refreshing.

Dr. Plumb: And I think there's – I mean, there's clearly industry ramifications too, especially, you know, companies that might have to build entire architectures of classified information handling that can't talk to other parts of their company. We have to solve these problems so we can have our industrial base be able to move faster and really more affordable.

Ms. Bingen: And you hit on international. You have the lead within the department on international space cooperation; would love for you to spend a moment here talking about, you know, where your focus is there, what some of the topics are in terms of those international discussions, and where you see that going.

Dr. Plumb: Well, so fascinatingly, last week I was actually in New Zealand, along with General Dickinson and General Saltzman, for the Combined Space Operations initiative principals – that’s a mouthful. We call it CSpO. But really air chiefs, Space Command commanders and policy-level my equivalents from Canada, from Australia, from New Zealand, from France, from Germany, from the U.K. and the United States; massive meeting. And also New Zealand is a long way from here, I’m just telling you; is a long way from here.

Really, really important meeting, though, where we’re really trying to figure out how to knock down these barriers to better operational cooperation and find a way forward for all of us. And so to me that has fantastic ramifications for deterrence. It also has good ramifications for things like building norms and establishing – you know, the more folks together working in space that can become aligned through conversations, I think, the better chance we have of maintaining that secure, stable environment we want.

Ms. Bingen: Appreciate that.

Let me pivot to commercial space and start with Ukraine. And Ukraine is being called the first commercial space war. I’d be interested in your observations on the role of commercial space capabilities and the lessons that we’re learning in Ukraine and maybe what that might portend for the Indo-Pacific.

Dr. Plumb: Oh, interesting. So been thinking about this kind of concept. I don’t think anyone except you has called it a commercial space war to me, but I will buy your premise. But I will say this. You know, the kind of rapid acceleration of commercial presence in space has really been happening just over the last 10, 15 years. And this is the first major conflict where this is coming into play. And so it’s not an accident. It wasn’t available before.

The thing that’s new is now there is all sorts of commercial space. And we talk about it publicly, and people can buy access to images and things. And so I think that that piece in particular, it appears to me to be this is the way of the future. Commercial space will be integrated into these kind of places.

And your second question was what?

Ms. Bingen: Any lessons learned from –

Dr. Plumb: Oh, lessons learned.

Ms. Bingen: – from it and then what that might portend for the Indo-Pacific.

Dr. Plumb: I think – I mean, to me the lessons learned is this is part of the future architecture. There's a lot of extra capacity that comes from commercial networks. Getting back to the idea of resilience, which we had discussed a little bit earlier, it's pretty clear now that the Department of Defense doesn't have to build its own constellation for every mission set to introduce resilience, right? I know you guys are having a LEO broadband discussion, right, but there's a lot of broadband capacity available now and more coming. So does the department really need to build its own when so much is available at the commercial level? I think – I think these are all pieces that are going to – going to be incorporated into future architecture decisions.

Ms. Bingen: And that's a great segue into LEO broadband. And following our chat here, we'll have a superb panel to discuss a new CSIS report on the competition in LEO broadband services. You think Starlink, Hyper, OneWeb, growing competition from Chinese competitors in this area. You know, these constellations would together add almost, what, 100,000 satellites to an orbit today that is an order of magnitude – you know, less than 10,000 in that low-Earth orbit. So how's the – how are you, how is the department thinking about these large LEO constellations, you know, what they mean, whether it's from an acquisition, policy, operational perspective? What do you think some of the issues are that policymakers like yourselves might be wrestling with?

Dr. Plumb: Yeah. I think, first of all, we're just on the cusp of understanding what we might be able to do both from a military standpoint but really just from a commercial standpoint with these kind of largely proliferated low-Earth orbit constellations. It's a really new and interesting change, and I think we're going to learn a lot more over time as commercial – as industry figures out other ways to make this a market. But it's just a fascinating time to be seeing it and it's very interesting.

Now, the issue about number of things in orbit should be a concern to all, right? We have to make sure that folks can operate these large constellations safely, minimize or hopefully eliminate the risk of unintentional collisions. And part of that, of course, is going to require more active and debris-removal pieces, right? I mean, if you remember, no matter what orbit you're in everything is crossing at the nodes. And so every piece that's up there has, you know, multiple opportunities if something goes awry to have a collision. So how do we make sure that as satellites hit end of life they are safely de-orbited to preserve access to these – to space in the first place?

I know, you know, Commerce is becoming tasked with this SSA mission and the space traffic management mission, and that handoff will take some time. But what's interesting is even over the course of the few years that might take the number of satellites just sort of keep going up, keep going up, keep going up, so we have to really get a handle on this.

Ms. Bingen: On commercial, the NDS describes DOD as a fast follower in commercial space, and you hit at that we're just really on the cusp of what the commercial sector – whether it be LEO broadband or other areas that are being commercialized in space – what they can do. What's your sense of the urgency, the speed of movement within DOD to leverage these commercial capabilities? And then on the speed, how do you tackle that speed mismatch?

Dr. Plumb: Yeah. So that's a great – that's a great question.

So the first thing I'll say is there is deep awareness of the need to move faster to leverage kind of commercial innovation.

And on the speed thing, I just can't get it into my head. You know, I just spent the whole summer helping build the budget for '24, right, which was going to go to the Congress in February, probably get passed by the Congress, you know, typically sometime in December of '23. So we are – and it's being built over the – it's 18 months lagging. Industry doesn't do navel-gazing for 18 months when they see something they need to do.

And so how are we going to solve that? I'm, happily, not the acquisition official. (Laughter.) But we really need to get on top of that. Part of it will be buying services as opposed to building them, I think. When you can buy a thing, why would you build your own if you can buy these pieces?

Yeah. Tough problem. Clearly, we need to move faster.

Ms. Bingen: Well, let me ask you one more question and then we'll start shifting to audience questions here. So you're the ASD space policy, yet you have this huge portfolio, and I rattled it off, of space, missile defense, nukes, EW, cyber, counter-WMD. Think I hit them all. It does hearken back to a past where there used to be this OSD or ASD for global security affairs, right, global strategic affairs. So how do – how do you balance this really large portfolio and then still give space the intention that Congress intended it to have?

Dr. Plumb: Right. So a couple pieces.

One, it's not just me, right? There are DASD ships and the DASDs are – you know, it's you're – if you come from the Navy or a submarine background, you think, well, there's the commodore and then there's the individual

submarines that have their COs, and that's kind of how I think of it, right? DASDs have their entire offices to focus on their priorities and I can lay my priorities on top of that. So, one, I'd disabuse the notion that it's just me trying to do all these things, tremendously capable number of civil servants and political appointees that are executing the mission every day. You know, there is this kind of level of DASD where you're king of putting out fires and driving a few priorities. And so I think we've got a pretty good rhythm down.

It is hard. But it's also – you know, it's good to be busy. And it's – I think being able to integrate across these different pieces is really important. And it's the thing we need to get to better and better in the Department of Defense is how do you integrate across all these functional capabilities. Stovepipes are not where we want to be. We want to have capabilities integrated so that in a war fight you can deliver integrated fires.

Ms. Bingen: To that point, do you see more of that integration happening? Space and cyber? Space and missile defense?

Dr. Plumb: I mean, I certainly do. And more is happening every day. And I, you know, am doing my part to drive that as well, kind of the beginning of the story. But absolutely. And I think part of the brilliance of directing the department to focus on China as a pacing challenge is it really forces these things to move faster.

Ms. Bingen: OK. So it's – I'm now going to shift to audience questions. And I had some of these questions as well in my mind, but it's actually better for me to ask questions that our participants here have teed up. So I want to go back to commercial space, and specifically commercial space protection. So how is the government thinking through the policy issues and the role that the government should play in protecting commercial space assets?

Dr. Plumb: All right. So I know this is a question out in the ether and people have been talking about it, and so I'll say we're wrestling with it. What the – you know, no decisions have been made on this at any point here, but I'll just say there is one thing that was starting to become more and more clear, which is that the ability to share threat information is going to become a really important part of the way to help make sure that commercial operators are able to protect their systems. And I think, you know, we do some of this already through the CSpOC at Vandenberg. The Ukraine crisis has brought a little bit more of this to the forefront.

But the idea of finding a way to declassify information enough to share with someone at the right level, whether it's unclassified or at a higher level inside, a space operator company, if they have a trusted person, to be able to pass that information through is really important. We find the same thing in cyber as well, right? Sharing threat information, especially specific threat

information, is really helpful. Setting up the architecture to do that successfully across the entire basis can be challenging.

Ms. Bingen: Yeah, it's interesting. So on commercial imagery satellites, we have long had this construct called shutter control, where you could control – basically, buy the take of all the images. There's a question here: How do you throttle back commercial imaging satellites if you – if you don't like the imagery that they're putting out, or maybe providing to the media? You know, are there tools that the government has to maybe curtail what the commercial sector is doing? But then, you know, maybe there's a flipside to that, where even if you could curtail what U.S. operators are doing, can you do that internationally?

Dr. Plumb: Exactly. So obviously it's a hard – it's a hard question. I mean, DOD – or not DOD – the United States commercial sector is kind of at the forefront, but obviously there are many international competitors. And so that problem gets harder and harder over time if that's a thing that you're seeking to do.

Ms. Bingen: So here's a really hard question that I'm going to toss to you because I don't know how to address it. How do you deter attacks against U.S. space assets? It's the million-dollar question.

Dr. Plumb: So I think it's important not to – first of all, it's a great question. But it's important not to constrain any single asset of deterrence to any single domain or any single action, right? I mean, we've talked about deterrence – you fundamentally talk about deterrence against a near-peer adversary. Everything else is a lesser or included case, right? So deterrence thresholds or deterrence architectures are across multiple domains.

And the goal is to prevent conflict, because the adversary does not see a simple way forward, an easy way forward, and says, you know, maybe not today. And so I think deterring space actions is equivalent to deterring actions across the domain. Hostile acts will be met in a time, manner, and domain of our choosing, right? But understanding that and communicating that resolve is a huge part of it.

Ms. Bingen: I think that's a really interesting point that I have seen across administrations, is it may not be in our interest for a space response to a space attack, that – to open up the aperture, that there may be responses in other domains helps contribute to that.

Dr. Plumb: Absolutely. Absolutely. And, you know, there's cross-domain linkages for deterrence and, obviously, there will be cross-domain responses as well.

Ms. Bingen: So sticking on this topic, given that a kinetic or anti-satellite, ASAT, deployment in orbit serves nobody's interests and risks the aggressor state's

own assets, do you think cyberattacks against space assets are more likely in conflict? Kind of interesting; I mean, we're seeing that now in Ukraine with Starlink, Viasat, GPS jamming – you are seeing, whether it's cyber or EW, happening in a conflict now.

Dr. Plumb: Yeah, so I just say there's a lot of different vectors to attack spacecraft, right? Cyber is clearly one. Electronic warfare is one. You know, the co-orbital threat or direct-ascent ASAT – all of these are different types of vectors. Some are easier to develop and cheaper to develop, some are more expensive, some are more attributable, some less, and so I think the goal is to deter all of them. Part of the attribution piece that I talked about earlier, right, being able to attribute helps, I think, prevent hostile action. You know, it doesn't solve everything, but it helps. But yeah, cyber is absolutely a problem and there's several vectors for cyberattacks against any satellite.

Ms. Bingen: On the attribution piece, space domain awareness, you know, there is this space traffic management mission is moving over to the Department of Commerce. How is that going and how is that division of labor starting to work out between what DOD will do vice what Office of Space Commerce will do?

Dr. Plumb: So my team communicates with the Department of Commerce team every week on this, you know, is tracking to make sure – on the same page and they're a good partner. I think DOD is fully invested in making sure that that part of the mission is transferred to Commerce. That will not relieve the Department of Defense from its space domain awareness mission, right? So if the space traffic management for commercial entities, for example, moves to Commerce, that will relieve some of the burden on DOD. Commerce will still use DOD sensor inputs. As far as the timeline, you know, I think the initial stuff I've seen will probably take, you know, maybe about three years. I think some folks are hoping for IOC earlier. But the fact is that you can't really just declare IOC until you're at it, and so the question – initial operating capability. So I think we'll see a methodical movement towards this, but I don't have a definite answer as to when that handover occurs.

Ms. Bingen: OK, thank you for that. You mentioned at the outset the tight cooperation happening between DOD and the IC, which I think is great to hear.

Dr. Plumb: It is.

Ms. Bingen: Talk to us about the relationship with the Space Force in your office. And you mentioned Space Command as well.

Dr. Plumb: I would say just great. I really enjoy working with space professionals. I think Space Force – I've got some folks from Space Force in my office. You

know, they're Space Force, Space Command, three in my office. We're routinely in all sorts of meetings together. I think we have a really good and candid working relationship, which I think is really important. I think Space Force is doing great. I think we've got really dedicated folks there and I think the fact that they're all sort of part of something new gives them a little bit of additional gas in the tank to really see things through. I really have enjoyed – I really enjoy working with General Raymond. I'm really impressed by General Saltzman. But it's not just the top; it's all the way down. I think we're in a good place, only going to get better.

Ms. Bingen: So this is an interesting question. I'm going to – I feel like I'm going to channel former Secretary of Defense Rumsfeld here when I ask it. Because space is a new and developing domain, there are sure to be consequential unknowns. What is an example of a question you have that is yet to be answered? What are your unknowns and where are we in answering them?

Dr. Plumb: Are these my known unknowns or my unknown unknowns? (Laughter.) I can't answer the second. (Laughter.) Let's see, what are my known unknowns? I'd have to think about that one.

You know, a couple things just come to mind are – as I already mentioned, like, the LEO Broadband thing you're going to be talking about. Tip of the iceberg – where is that leading us to, partially just from an economic standpoint but also where is that leading us to in the military domain? I think we're going to see significant changes as that becomes more and more part of the fabric of the environment. And the second part, I think maybe this known unknown is how committed are your peer adversaries to

maintaining a safe, secure, stable space environment? That is a really important question because if someone is not – if a nation is not, that really changes your calculus.

And I think that's a – that's a piece – I would like to be in the place that they all – we all agree. All spacefaring nations should agree that we really need to preserve space as an operating environment. I'm not sure I'm a hundred percent convinced of that.

Ms. Bingen: And others get a vote in this as well.

Dr. Plumb: Right.

Ms. Bingen: Adversary gets a vote. Absolutely.

Let's see. Let me shift gears here. Please discuss the administration's perspective on planetary defense with reference to interagency

responsibilities and cooperation with major spacefaring nations like Russia and China, as well as in the U.N.

Dr. Plumb: So, happily, that is a little bit outside of my writ. I will say the Department of Defense stands ready to help with that mission. This is, I think, generally speaking, the idea of how do you deflect an asteroid so it doesn't hit the Earth and, as you know, NASA has already conducted a small mission on that, which had some pretty good success.

So I would say we are in a supporting role. We are not the supported command.

Ms. Bingen: OK. I'm going to circle back on the space control, your first C of the three Cs –

Dr. Plumb: Oh, man. Here we go again. All right. Sure.

Ms. Bingen: – because there are several questions here on this.

So, you said one of your three priorities that the team is working on is space control. Can you elaborate on what you have asked them to do and what space control capabilities are needed now that may be different than in the past?

Dr. Plumb: Hmm. Well, I think at the high level what I've – you know, not just me – what I have been tasked to execute and what my team is working on, along with other space stakeholders, is making sure that we can assure – this is a

specific word, assure, which means continue to rely on – our space assets and space infrastructure, even in conflict, right.

So resilience is one of the big ways to address that. If I'm resilient enough that I've reduced or, really, eliminated the adversary's perceived advantage to attacking a satellite that assures my mission. If I'm resilient enough that even if they do attack a satellite I'm either able to fully execute my mission or do it at a slightly degraded level, then that is also assured mission. So that's part of the space control piece.

Ms. Bingen: Well, that also harkens to, you know, we talked a little bit earlier about space deterrence – what does deterrence look like; is there a deterrence theory in the space domain. You know, what do you – as you see, whether it's the think tanks, the academics, the young Guardians coming up through the ranks, what would you encourage them to focus on as we expand and evolve our thinking on space deterrence?

Dr. Plumb: So, just to give a shout out to the National Defense Strategy here, which says something – and don't quote me exactly – something along the lines of our reliance on space creates a number of cross-domain deterrence challenges, but also opportunities, to be totally honest.

So, I think, as, you know, space professionals start wearing their service on their sleeve and grow up through the ranks and have their own kind of approach to war college, et cetera, I think one of the pieces is, really, what types of architectures and what types of communication forms and what other types of solution sets are required to make sure that, you know, one more operational domain – space – that deterrence is part of that piece with the overall goal, again, deterring conflict in the first place.

You know, I think we have the specific mission from the Space Force – really a Space Command, I suppose – but it's kind of this over watch position of protecting and defending the troops, protecting and defending the homeland, making sure that we can continue to use space in a conflict.

Ms. Bingen: OK. Let me close on a question here on – back to Space Force. So next week marks the third birthday of the Space Force. I'm not going to ask you to sing the song.

Dr. Plumb: Thank you.

Ms. Bingen: But how are they doing? I mean, you came in now – you came in at the two-year mark or a little bit after the two-year mark. You know, what do you look at in terms of the key milestones for this three-year-old – toddler

service, I guess – you know, developmental milestones – and what do you think the next year or two will hold for them? What do you think they should focus on?

Dr. Plumb: First of all, happy birthday, Guardians, almost, right. Three is not a whole lot of candles. So I hope I get to see a cake with three candles on it for that.

I will say that I think, you know, there's a lot of new muscle movements to create a new service. This is the first new service since the Air Force split off from the Army, right. So it's a long time since anyone's done this, a lot of time figuring out all the meetings that the new service has to cover down on, which isn't quite the same as, you know, performing your maximum potential in those meetings, which is a thing we're also working on.

But what I'll say is this. I think they've done a great job. I think the fact that the entire department and, frankly, the entire executive branch and, frankly, the Congress on both sides of the aisle invested in making sure Space Force is a success is super helpful, right? So the necessity and the importance of

space is not lost really on anyone in the government, I don't think. And so that kind of gives us extra impetus.

I think – if you'd asked me what are we looking forward for the next couple years, in my opinion, what I'm looking for – and I've touched on it a few times here – is really driving home this idea that space is just one more operational domain. How do we normalize operations in one more domain? And I think that's a really – that's a really good frame to look at it from. And I think that will help draw parallels to other domains. So I'm really looking forward to that. But I don't want to pretend like that's easy. That's hard. But it's important.

Ms. Bingen: So space may not be special but we're all quirky, which I think is a term of endearment for so many of us here.

Dr. Plumb: Yes, fair enough. You're all special, yes. (Laughter.)

Ms. Bingen: Well, as promised, John definitely took us through – this really was a tour de force across national security space. So I do very much want to thank you for coming today, for your willingness to serve, to go back into the fray, and then bringing clearly this passion, knowledge, all the depth of experiences that you've had, and dedication to this – to the service, to the issues, for bringing that into the department and to this broader community. So thank you, again, John.

Dr. Plumb: Well, thank you so much, Kari. It's been a pleasure. (Applause.)

Ms. Bingen: We are going to take about a 10-minute coffee break, and then we will reconvene here at the – at 2:30 for the panel discussion. Thank you.

(END)