

Schriever Spacepower Forum: Dr. Chris Scolese

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SPEAKERS

Brian Everstine, Lt Gen (Ret.) Dave Deptula, Dr. Chris Scolese, Frank Wolfe, Courtney Alban

L Lt Gen (Ret.) Dave Deptula 00:48

Good morning ladies and gentlemen. I'm Dave Deptula, Dean of the Mitchell Institute of Aerospace Studies, and welcome to our Schriever space power forum series. We're really pleased today to have the director of the National Reconnaissance Office. Dr. Chris Scalise with us. As the NRO Director Dr. Scalise is responsible for providing direction, guidance and supervision on all matters pertaining to the NRO. He has decades of experience in civil national security and intelligence space programs. Back at NASA, he served in many senior program management positions, became NASA's chief engineer and later became the top civil servant NASA as its Associate Administrator. Prior to becoming the NRO director, Chris served for seven years as director of NASA's Goddard Space Flight Center. So welcome, Chris. And thanks very much for taking the time to be here today. Really appreciate it. And what I'd like to do is offer you some time to sort of give our audience a little bit of an overview of what NRO's is all about. Well,

D Dr. Chris Scolese 01:54

thanks, David. It's a pleasure to be here. And thanks for the Mitchell Institute. Give me the opportunity to talk today. You know, the NRO has been around for more than 60 years. And for about half of that. We were a secret. Nobody knew who we were. And that was a good thing. So oftentimes, you know, people don't really know what the NRO does. So just briefly, the NRO, throughout its entire 60 years plus of existence, is focused on delivering ISR, from space, intelligence, surveillance and reconnaissance and delivering that information to a broad range of users all the way from the policy makers, to the warfighter, to first responders and scientists who are looking to understand what's going on and in areas that are denied to us, for whatever reason, either for political reasons, or because they're, they're inaccessible for geographic reasons. And that information helps us to understand what intentions are to help a warfighter on the battlefield to know what to do, and where to focus their efforts. And to help in responding to natural disasters. Before you get there, you want to know what the situation is on the ground as well. So provides information there as we work with those those fields. And

then even our data has been used to support efforts and understanding our Earth in terms of, of climate change. So it's a wide ranging set of responsibilities that the NRO does. And of course, over time, our challenges have changed the world changes. If you think about the 1960s, we could drop film from from the satellites, and in parachutes and pick them up with an aircraft, and that met the objectives that we're needed. That won't work anymore. And it hasn't worked really since the 1960s. So we've had to adapt and we continue to have to adapt. So the NRO is really focused on understanding what the environment is working with our our colleagues in the intelligence community and the DOD to understand what our threats are, what the requirements are for our information. And then being innovative and taking advantage of new technologies in terms of developing technologies for the future, in working with partnerships, as we work with clearly the ones that we all understand and no Space Force, Space Command, and our other partners in the DOD and the IC, but also with commercial and academia, to go off and and focus our activities so that we can address those challenges. And of course, the absolute ingredient that allows us to be as innovative and creative as we want to be is our workforce Having an absolutely incredible workforce that that is very dedicated and very innovative, to lead us into the future and to address today's problems as well. So that's sort of a brief overview of the NRO. And I turn it over to you for

L Lt Gen (Ret.) Dave Deptula 05:16

questions. Okay, great. No, thanks for that. rundown. Let's jump into into some specifics, if you will. Recently, I understand that you and Secretary Kendall came up with a informal agreement, if you will, to rapidly supplied timely ISR, to folks in the battlespace and Mr. Kendall indicated that this might lead to some co funded projects. Could you elaborate a little bit on on just what this is all about?

D Dr. Chris Scolese 05:46

Certainly, yeah, Secretary Kendall, and I talk regularly. And I would say we we've had a long standing relationship with Space Force and, and Space Command, as we've been going forward and have already been doing and are already doing some projects together with the Secretary and I talked about it's expanding that, to recognize that, again, the world is changing. We need information faster, and we need to deliver a quicker, and we have even more denied areas, we've been operating in a more permissive environment. And that has gone away. So as we discussed, and as the Secretary said, we're going to tighten that relationship. We're going to work more closely together, and and we're going to find ways so that we can be efficient from a government stamp. We can we can make that happen. You know, very effectively.

L Lt Gen (Ret.) Dave Deptula 06:42

How about the CO funded piece? Yes. And CO funding things were in fact doing that today. And we'll continue to go off and do that second, and complicate any of the the the congressional authorization and appropriations challenges that the the organization's federal organization Sometimes, however, or not, I think that's not that big a deal.

D Dr. Chris Scolese 07:09

That hasn't so far. And I think the reason it hasn't is we tell people what we're going to do. And as long as we keep oversight and Toram, Congress informed OMB informed the department and the IC as to what we're doing and why we're doing it. We've had the support, and I think we'll continue to have that so great.

L Lt Gen (Ret.) Dave Deptula 07:29

Speaking of our friends in Congress, Senator King, a member of the Senate Armed Services Committee, spoke recently about the importance of synergy between the Space Force and in our we all understand that importance. In addition to this recent agreement, and Secretary Kendall, how else are you collaborating with the new Space Force?

D Dr. Chris Scolese 07:51

Well, of course, I think many people know that the NRO has a significant military component, as as part of the workforce. It's roughly about 1/3. Military, and the largest percentage of that is face force. So that's one area where we have, you know, a very tight coupling. And the good thing about that is, those same folks, as they rotate out, will go to space, Space Systems Command, they'll go out into operations, and they'll do that, and then I'll come back to the NRO. And, and so we're exchanging a lot of information and understanding how everybody works and builds our relationship even closer, the same time we, we we work closely, we've talked about collaborations we're working closely with, with Space Force on those collaborations. As I said, we've started it. And we're looking to make that even tighter as we work at the Department of the Air Force level as well.

L Lt Gen (Ret.) Dave Deptula 08:50

I think that Chris is an important piece, a lot of people don't understand that there's so much that that so many folks from the Space Force are, you know, the critical elements, that National Reconnaissance Office. So it's important now to switch gears a little bit to talk about Space Command, as opposed to Space Force. In the last year, there have been several agreements and guidance documents between NRO and US Space Command that had been made public and one of them is the protecting defense strategic framework. Could you describe that documents about a little bit and maybe describe the architecture that's involved?

D Dr. Chris Scolese 09:31

Certainly, Space Command has existed for a long time, of course, it's been elevated. So there's always been a relationship there. Because the Space Command is integral to many of the things that we do in space as a nation, and understanding what's what's going on. They're tracking objects and what have you. So we've had a long standing relationship. We're trying to now formalize it and clarify certain things in this particular document the To protect and defend, as we call it establishes the framework for how we're going to operate under various conditions, because it will be necessary for us to coordinate. And in some cases take direction. And we have agreed to do that. We're in the process of developing the strategies and how that happens. And when it happens, and under what situations it happens, but the most important

part of it is the formalization of the of the tight structure that we have to understand what's going on in space. So that we operate in a consistent manner, manner at all times. We have to remember though, that the NRO sits both in the IC, and the DOD, and we have to address all of those sets of requirements. So for the most part, it's a coordination effort, but sometimes it will be, hey, you need to do this and we will do that.

L Lt Gen (Ret.) Dave Deptula 10:59

Okay, no, that's great to hear just a bit of elaboration again, mainly for our audience. I mean, you understand as you you describe a bit of it already, but in the past NRO operator does its own separate entity, independent of the combatant commands. When I say independent, I'm talking about overall organizational constraints. But now USPS comm has responsibility for national security interest, 100 kilometers and up. The question is, and you talked a little bit about it, but how will the NRO operate during conflict? Will it respond to the direction of the space calm commander? Or more in a coordination role? Could you elaborate a bit? I

D Dr. Chris Scolese 11:49

mean, that's something we're working through, because as as I think it certainly you understand, the NRO gets its direction from what to look at and listen to, from our functional managers, which are the National Security Agency and the National Geospatial intelligence Agency. They collect all the requirements from the combatant commands from the broader DOD and from the intelligence community. And and then let us know where the priorities are. And then we go off and, and manage the constellation to deliver what's what's needed, and and where it is. Space Command plays a role in that. And Space Command certainly has, as you said, responsibility for 100 kilometers and above, and they're looking at what are the threats in space, either in space or from the ground is face? And that has to play a factor into into what we do and, and how we schedule our systems. So we're working out how do we balance all of those different different activities. Now part of what we're doing going forward is we're we're proliferating our architecture to develop a more resilient architecture, something that is that is resilient to a lot of things, but principally to the activities that Russia and China are doing. We all know that Russia and China are becoming very aggressive with with space weapons, they want to take away our advantage in space. So we have to deal with that. And Space Command is focusing on that, and we're working on that. But the other thing that that resilient proliferated, architecture gives us is faster revisit times, a more responsive system. So it gives us greater capability. So it gives us more options to deliver what is needed to whoever is needed. And, you know, in this case, to the question to the combatant command, so we'll have more capability to deliver a more flexibility among our systems to get the information that's needed. Very good.

L Lt Gen (Ret.) Dave Deptula 13:51

Pretty sure let's switch topics a bit. Prior to the run up here, you were talking that did a successful launch Yes, yesterday or today. Forgive me today

D Dr. Chris Scolese 14:04

at 1am to 1am.

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Lt Gen (Ret.) Dave Deptula 14:07

In what we're talking about is in the past NRO used to launch only from either the Eastern or Western ranges, and now they've launched from the New Zealand and soon are going to launch from an airborne platform out of the UK. So could you talk a bit about the reason for this expansion of launch modes? And is this new model going to become the norm?

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Dr. Chris Scolese 14:30

Well, I'll say the new model will become the norm. And in fact, we have launched several now from New Zealand. And as you said, we'll be launching from the UK air launch, so we'll be doing that year later this year. And we've also launched from from NASA's Wallops Island Flight Facility as well. So we've we've launched from three different places than then we have in the past. The reason we're doing that is partially what what I indicated earlier. So we're proliferating our architecture. So we're letting physics dictate what we need, obviously. So we still need large ones, they'll go from the Eastern Range and the Western Range. But we're also going with smaller systems that, that we can proliferate and improve that revisit time, having the capability to launch pretty much from almost anywhere in the world gives us great flexibility. It adds to our resilience, because we're not relying on just one or two launch basis. So it allows us to reconstitute, if we want to do that, it gives us a greater flexibility, because we now have the opportunity to sort of pick launch bases. Now, again, it's limited because those facilities can't watch, you know, the systems that we can get at Eastern and Western Range. But still, it gives us a much greater flexibility to accomplish our mission. And I think it sends a message to the world that that we really value our partnerships with our international communities

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Lt Gen (Ret.) Dave Deptula 15:58

are very good. Now, one of the other major changes in the NRO is your willingness to purchase commercial ISR services. Given the proliferation of some really outstanding capabilities in both the electro optical and synthetic aperture radar realms is the NRO, looking towards a future that's similar to the direction that NASA has gone, which is more of a service buyer, rather than an owner operator of ISR Constellation's, knowing that you're not going to give that that big, exquisite piece up, but are you looking toward more commercial services,

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Dr. Chris Scolese 16:39

certainly, we are looking for more commercial services, we're we kind of have a motto of by what we can build what we must. But really, what it comes down to is the the commercial market has really grown and, and we're seeing a lot of capability out there that the commercial companies are providing, that gives us an opportunity to acquire data that's needed by you know, the community at a lower cost. Because we're now not the only user of it. It also allows us to focus on those things, as you said, that are critically important that have either no commercial value at all, but have incredible intelligence value that we need to go off and do.

And oftentimes, those are extremely complex systems that would be very expensive to develop, and therefore, you know, the lack of commercial interest in them. So it's a really a very close relationship, a symbiotic relationship, it also gives us additional capacity, as we were talking about before, and we're going to take advantage of that. So we're looking forward to our relationship, we just recently awarded three contracts two companies to expand our, our geospatial imagery. And that's all going very well, and we're very pleased with that. We also are looking to bring new entrants, new capabilities on board. So about yearly, we're going to we're gonna go off and, and ask for commercial companies to come in with their ideas. So that we can engage early prior to having to award a contract so they can understand what the government's needs are. And we can understand what their capabilities are. So that when it comes time to go off and and have a contract, like we have for electro optical imagery, for radar, they'll be ready, and we'll be ready to go off and do that. So we're looking at, you know, additional phenomenologies, the first one we did was focused on radar, and and then we're looking, you know, next year this year, as to what we're gonna go off and do, and we'll announce that in the fall as to what our next next area of interest is.

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Lt Gen (Ret.) Dave Deptula 19:04

So that's great. I think that, again, to the to the public, is the whole issue of access to commercial space, is becoming more and more clear in terms of its value, using the example of what's going on in Ukraine, and what's being released in terms of overhead imagery that's accessible commercially. So I think it's get people to open their eyes a bit in that regard out, speaking to commercial providers, as you just described, NRO and certainly National Geospatial agency are picking up and buying these services and products. Question on with the standup of the Space Force. It'd be interesting to get your perspective understanding you're not this Space Force, CSO. But shouldn't the Space Force also have the opportunity to contract these commercial services directly to be able to ensure that they can provide as a component to a combatant commander, the necessary ISR rapidly? What are your thoughts on that Sunday.

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Dr. Chris Scolese 20:19

So the way it's set up is any organization can come to the NRO, and and acquire commercial services. So we're available as intentionally done, that it's that the NRO will serve as the as the service provider for that. And further, we were trying, we were putting it into our data streams, so that they can pull it so that any organization can pull off that data through their standard, you know, connection to, to ISR data, so it's a it's very quick for anybody that that has access to those systems. If you don't, you know, we work to provide, you know, any access to that. So the mechanism is there already, for organizations that take advantage of the Space Force is looking to make sure that they're doing a study right now, which I think people are aware of, on on ISR, in general, they will find out if we need to expand that. Or if it's fine as is, and then we'll adjust or we'll adjust as a community, as we talked about before, we're going to coordinate will adjust as appropriate as we get the results from that study.

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Lt Gen (Ret.) Dave Deptula 21:40

Well, so it sounds like what you've done is established a push system exactly. Having been involved in desert storms, planning and execution, as well as Operation Enduring Freedom, the very opening stages. It wasn't like that. And yet the delays involved were were significant. So

it's great to hear that you're you're capitalizing on technology to push that information out to the user so that you eliminate that delay. That was a huge problem.

D Dr. Chris Scolese 22:14

Absolutely. And you mentioned it earlier, and I think is really important. Commercial gives us the commercial data gives us the ability to share more and faster, right without revealing technical means, but providing the information that the community needs, right. The warfighter may not need the exquisite right imagery, but they need to know what's what's there. And commercial gives us that opportunity. I

L Lt Gen (Ret.) Dave Deptula 22:40

used to try to make that case when you're looking from a battle damage assessment perspective, I don't need near seven, I just need to know whether the weapon hit the target or not, which is a much different level of, of information. Now, Chris, many would argue that this space economy is still maturing, that mixture of private investment venture capital and new suppliers, it makes for a market that's really difficult to predict. Given that reality, what what kind of steps you've taken to ensure that the no fail missions of the NRO are successfully executed?

D Dr. Chris Scolese 23:17

Well, that's the the balance right? By which you can build what you must, and the no fail missions or the build what you must. We have to have that so that policymakers and warfighters can rely on that, that system, we're building the robustness into the system, the resilience into the system to assure that we can deliver that commercial plays a role in that, of course. But, but, but we have to provide that capability. And we're in the process of continuing to do that. Very good.

L Lt Gen (Ret.) Dave Deptula 23:55

Okay, I tell you what, why don't we? I think it's important to get questions from our audience. So let's jump in here and see what you all have on. On your mind. We'll take this first question from Matt Virage. Chris, do you think NRO's adopting commercial space services fast enough? We just kind of talked a bit about that. Any issues that you'd like to identify that need to be overcome from either the government or industry sides?

D Dr. Chris Scolese 24:31

I think from a commercial services side, we're working well together certainly with with the process we've set up where we can now work together early on before we have to go off and establish a contract will help us overcome any of the obstacles and each company is a little bit different. So each relationship is a little bit different. And it sort of depends on the provider and the capabilities that they're providing, certainly want to take advantage of those. But it may

require us to make adjustments. And it may require the provider to make adjustments. And the goal is that it's not onerous to either side. And I think that's one of the things that we have to recognize and utilization of commercial, we trust the commercial provider. And we can't change the way you do business to just satisfy our needs. At the same time, you have to recognize our needs and maybe make some adjustments. So we both have to make some adjustments. And if I can expand it a little bit, when we talk about commercial at NRO, it is definitely services as we were talking about, it's, it's that, but we also look for the commercial buses that are being developed by a number of companies. As we're seeing more proliferative communications architectures, we're seeing very capable buses being developed. And we're going to take advantage of those as well. Because that's going to help us reduce the cost of our constellations and allow us to do what we want to do and the same method applies. Those buses were developed for a certain capability, we need to adapt, and we may need to adapt those a little bit. But the real, the real advantage of working with the commercial community is to recognize that they have a very valuable product, we have a have a very important need. And we need to compromise on how we do it and minimize the amount of disruption to either party in order to go off and take best advantage and to achieve best advantage. Very good.

L Lt Gen (Ret.) Dave Deptula 26:45

Let's I see that Brian ever seen has a question. Go ahead, Brian.

D Dr. Chris Scolese 26:57

Thank you for your talking. We can't hear you.

B Brian Everstine 26:59

Sorry. Just just unmuted. Thank you so much for taking my question. To go back to the discussion about your relationship with Secretary Kendall looking forward. In his discussion of operational imperatives, he focuses on moving target target engagement at scale. And it said that the NRO is doing some interesting things in this area that the Air Force could work on with the NRO. Can you expand a little bit about how the NRO can assist the Air Force with moving target engagement?

D Dr. Chris Scolese 27:26

Well, you know, we, we've been working, as we said, you know, in ISR for over 60 years. So we have a lot of experience that, that that we can bring to bear on that. And and we're working very closely with with the Air Force and the Space Force, and how we go about doing that. How do we take what we've learned and what capabilities we have to solve a very urgent problem. There's a study that's that's going on right now that we're doing jointly, that's going to inform how we move forward on that. That has not yet completed, but it's going well, and as Secretary Kendall said, and, and, and I certainly agree with, we're making, you know, the we're moving in the right direction. And we recognize that we have to work together in order to develop that, that capability at scale that we're going to need as we work in more denied areas.

L Lt Gen (Ret.) Dave Deptula 28:26

Thanks, Brian. How about Justin Pearson. Can you hear me?



Yes. Appreciate it. Thank you for the talk. It's very informative. My question is, is NRO prioritizing offensive capabilities in space power, like radiofrequency jammers lasers so that we can avoid the problems that the hypersonics world is experiencing where we have little to no offensive capability. And we're just now becoming to research that

D Dr. Chris Scolese 28:59

way, of course, we we work to assure our systems are robust and resilient. Our focus is on the ISR portion of the equation. So we work very closely with with Space Force and Space Command as to how we're going to go off and deal with, with, you know, threats, but clearly, we have to have the ability to, to, to be robust against any reasonable threat. Thank you that, that.



That's encouraging, because it's like the, this spectrum of EM spectrum, Dr. GEO up and it's all coming into one it's it's not it's not atmospheric flight and inter atmospheric flight. It's all becoming one. So that's what you guys are working on, is 100%. I believe the direction that we should be going in? Thank you.

L Lt Gen (Ret.) Dave Deptula 29:54

Thanks, Justin. Frank Wolfe.

F Frank Wolfe 30:03

Hello. Oh, yeah, can you hear me? Yeah, we got you. Okay, great. Great. Um, yeah, I just in terms of the, the commercial radar contracts at the NRO, I guess, awarded back in January to Airbus and Capella space, ISI and predecessor and umbra. I just wondered, is that informing the current space-based radar work that you're doing with Space Force? And just in terms of space-based? Where could you just give us some on, you'd already spoke about moving target indicator, but just in terms of your own thoughts on on how much this is needed. Or if you think that there's any other way in terms of the NRO being able and SpaceForce being able to do it with with what you've got up there. Now, obviously, space-based radar could be a fairly expensive program. So I just wondered if you had any thoughts on that. And any thoughts you can give us maybe on how how the development effort is, is going and whether there are any delays or anything like that?

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Dr. Chris Scolese 31:13

Well, certainly space-based radar is critical for anything that we do. The Earth gets cloudy at times, and, and radar, you know, certainly gives us an advantage there. So, so clearly, radar is absolutely critical to any any ISR activity that one would do, or wanting to understand what's going on on the ground. So, commercial plays a role in that national systems play a role in that. And we're evaluating all of them to inform our decisions, as we go forward on MTI or, or any other or moving target indication or any other any other activity that that would involve our understanding of what's what's happening on the surface of the earth.

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Lt Gen (Ret.) Dave Deptula 32:10

Okay, Chris, we've got one here. From Sander Erwin. You mentioned the recent launches from New Zealand with Rocket Lab. These missions were described as responsive space, because they were launched back to back. Why is responsive space important to the NRO? Do you foresee this will be needed in a conflict? And how can you make satellites more standardized, so they can be built faster? Thank you. I know there's three questions. If you forget, I'll get I'll repeat them for you. Okay, thanks.

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Dr. Chris Scolese 32:45

All right. Thanks. Thanks, Sandra for that. So, yes, I mean, I mentioned earlier that we were looking to proliferate our architecture, so that we can have resilience but also provide additional capability. And recognizing that we need to do that you want to have, you have to have systems that are affordable, and released in space terms affordable. That that tends to mean, we need to work with the spacecraft that are, for all intents and purposes in the space, lexicon, commodities. And that's where we have really engaged with the commercial spacecraft, bus developers. And there's a number of those, those companies out there that are developing developing them for these as an example, or developing them for these large communications systems or low Earth orbiting communication systems that, that we're seeing coming, coming online. So we're taking advantage of not only their buses, but what they've learned that in order to go off and do that, so that we can make systems at a reasonable price point, so that we can proliferate those architectures. So we can deliver, you know, more capability, and we can deliver, you know, a more resilient system to protect things. Doing that also results typically and in slightly, or well, not slightly, in smaller satellites that can be launched from a larger set of locations. New Zealand Wallops, the UK, as well as other places in the United States. So taking advantage of that also gives us the opportunity to have the ability to reconstitute, should we lose a capability either due to a mission failure or as you suggested, you know, in a conflict if, if we should lose them, due to some adversary action that would, would take them out. We now have more places to go off and and, and launch from and therefore reconstitute the The constellation. So it all all plays together in how we're working to develop those those constellations and develop the capabilities its nation in the world needs. Hopefully that answers the question I think I got you did

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Lt Gen (Ret.) Dave Deptula 35:14

you might want to touch on the last one. And that's how can you make satellites more standardized they can be built faster?

standardized, they can be built faster.

D Dr. Chris Scolese 35:20

Okay, well, that's taken advantage of the commercial again, that's where, where we're working with commercial industry taking advantage of these, these satellites that are being built in large numbers. We're actually using those and in many cases, or we're learning from those as to how we can adapt some commercial practices to government systems so that we can make all of our systems more efficient, more affordable.

L Lt Gen (Ret.) Dave Deptula 35:47

Great. Here's one from Caitlin Lee, as a former NASA senior leader, what are some of the lessons learned that you've experienced over there, that have proven helpful to moving the NRO forward into new things like proliferated architectures, and multiple launch providers?

D Dr. Chris Scolese 36:05

Well, you know, NASA, you know, does it particularly on the science side, you know, launches a number of satellites, that do a whole bunch of things, you know, look at the Earth, look away from the Earth, and go out to the planets. So, launch is certainly an area where there's a lot of experience and, and at NASA that take advantage of a number of international capability. So we brought some of that, I have to say the NRO was already there. But, you know, the NASA experience, does help to enable a lot of those, those capabilities. And we work together to to, to qualify launch vehicles to understand what the launch vehicles are in Launch. Launch capabilities are around the world because we all use, launch clearly. And NASA has a wider portfolio of, of capabilities. Just recently, they launched the James Webb Space Telescope out of Kuru and an Ariane. So, so there's a broader experience, but we can certainly take advantage of that. And we do when it comes to satellites. NASA has typically worked in, in the small to, to medium class. So bringing a lot of that understanding is is helpful. And I would say also experience with the commercial world. NASA started exploring that in the, in the early 90s, really, with with environmental satellites, and has continued to do that. And we're also taking advantage of the lessons that NASA learned. So, you know, the space community is relatively small. We all kind of work together and understand what's going on and we learn from each other. Fortunately, NASA has a has a responsibility and its charter to share that information, you know, broadly. And NRO is a beneficiary of that as well as commercial companies and other spacefaring organizations.

L Lt Gen (Ret.) Dave Deptula 38:11

Super, here's one from Ari verrico. Sorry, if I mispronounced that. But what are the NRO's thoughts about its role in cislunar space and other areas as countries look toward the moon and beyond?

D Dr. Chris Scolese 38:26

Yes, this this lunar space is becoming very important to the nation, particularly as we're seeing other nations that don't necessarily have the best interests of, of our country or the world, in in their objectives. And we're in the process, along with others in working to understand what, but exactly our role is going to be in in cislunar. space. So that's still something that we're working on. I don't have an answer for you right now. But perhaps, in a few months to a year we'll we'll have a much clearer understanding of what the roles and responsibilities will be for the NRO and other organizations in cislunar. Space.

L Lt Gen (Ret.) Dave Deptula 39:09

I see that. We've got another hand up. Courtney Alban Courtney, over to you.

C Courtney Alban 39:19

Hi, yes. Thanks for taking my question. I just wanted to follow up on the earlier discussion of the ongoing study with the Space Force and the Air Force on ISR. I know there's some pending decisions there. And that work is is still happening, but but based on what's been kind of the work that's been done so far. Do you foresee a major change in the NRO's role in this mission? And is there you know, relative agreement among you know, the stakeholders on where this should go? Can you talk a little bit about kind of, of that?

D Dr. Chris Scolese 39:54

Well, I certainly don't see any major shifts in in NRO's role We provide the, you know, the overhead ISR seems I'm using that term an awful lot. The overhead reconnaissance, that's that's used by the nation. And I don't see any fundamental changes in that. And I certainly haven't heard of any indications that there's a fundamental change in that set of responsibilities.

L Lt Gen (Ret.) Dave Deptula 40:25

Okay, here's one from Kathleen Markey. Would you please comment on the ramifications of China and Russia building their own space stations in Russia, leaving the International Space Station? And if NRO has any response?

D Dr. Chris Scolese 40:43

I don't think NRO has any response. That's more. That's more on the Ask a Question. And, you know, all I know, at this stage of the game is probably the same as you what I read in the in, in, in the blogs and the press.

L Lt Gen (Ret.) Dave Deptula 41:01

All right. Now, I normally don't take anonymous questions, but here's a pretty good one. Does

your philosophy of buy what you can build, which you must apply to software acquisition under your purview? Or do you support funding breaking apart COD's God's products? to only take what you want?

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Dr. Chris Scolese 41:26

That's that's a pretty complicated question. So the first part of it, the answer is yes. I mean, if there is a software capability out there that that we can use? Definitely, we're gonna we're gonna buy it. And certainly we, we do, you know, it just depends on where you look in the system. I mean, it can be as trivial as you know, using Microsoft Word, you know, or word processors. But clearly, you're talking about things that are much more complicated than that. And the answer is, yes, we do want to do that. One of the challenges that that I think we all face is large ground system, software development projects. And we face those challenges as well. And it's an area that, that we're really working to, to become better at. Taking advantage of existing systems is really important. Sometimes I recognize that that does mean that that, that Kotzen, God's products, commercial and government, developed products do need to be broken up in order to meet the demands of a capability. But we kind of leave that to developers. But I think you're touching on a really important point, which is, as a community, we need to work to do better in our development, and delivery of large software projects. Because we see lots and lots of places where we have fallen short, delivered late or delivered over cost, and we simply have to do much, much, much, much better in that area.

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Lt Gen (Ret.) Dave Deptula 43:11

Here's another good question from an anonymous attendee. I don't know why you folks don't put your name on here, but I'll ask it anyway. One of the things I've seen in recent years, is the interest of the commercial sector and having protection by the Space Force Space Command. For Space Command, given the vital importance of NRO assets, does NRO fall under that protect and defend umbrella of space comm or does he NRO provide for their own protect and defend capabilities?

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Dr. Chris Scolese 43:42

Well, as with anything, we have to protect and defend framework, as we talked about, we work closely together, we have to provide a certain degree of capability we can't rely entirely on on others for our, our safety of operation. But fundamentally, we work very, very closely with with Space Command for space domain awareness, and for activities that that we will, you know, do in space. So it's a collaborative effort is probably the best way to answer that question.

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Lt Gen (Ret.) Dave Deptula 44:19

Here's another one that's sort of related. The NRO has a reputation of rapid acquisition in the Congress. I guess it's more appropriately stated, the NRO with respect to Congress has a reputation of fairly rapid acquisition. Congress certainly doesn't. What best practices does NRO do. That has led to this success in getting systems up on time?

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Dr. Chris Scolese 44:45

Well, I think one of the things, I would say that what the NRO has, is fortunate to have is it's a small flat organization, so decisions can be made relatively quickly. From a program manager to me typically is 123 at the most levels of difference and seldom do decisions have to come, come to my level they they can often be determined at, at the lowest level. So that's the other is, is we give, you know, a fair amount of flexibility and authority to the, to the program managers to implement their particular mission. I think another area that that really helps the NRO, because we have responsibility really from, from r&d, to concept, to development, to acquisition, to operations, and ultimately to, to end of life. So that gives us the opportunity to see at each phase where there are good things that are happening, that we want to go off and enhance, where there are problems that we need to go off and fix. And it also gives us the opportunity as we're progressing through those various phases, as we learn something, to make an adjustment to make an adjustment very quickly. So we can make it as we're in the process of development, are we in the process of acquisition, or in the process, or even, even perhaps, you know, in the process of build. So that's, that's, you know, certainly an opportunity. We also have a really great workforce. That is, is diverse. It represents our country, but it's also diverse, in terms of thought, clearly, we have what everybody knows we have the military, and we have the civilian workforce, they bring in different ideas of the military rotates out. So it brings in what are the new challenges? What are the new perspectives, and the same happens to some extent with the civilian workforce. So having a highly motivated, very diverse, highly intelligent workforce, that is constantly bringing in new ideas, also helps us to do that. And then I will say that same workforce, because of their focus, has allowed us to demonstrate to Congress and to demonstrate to, to oversight, that, you know, we're good stewards of taxpayer taxpayer dollar. So we have had, you know, one indication of that is, is we have, you know, had a number of clean audits 13 clean audits in a row, that gives people confidence that we're managing the money as well, correctly. So I think those three or four things that I mentioned, are really what allows us to, to be successful in our in our acquisitions and our performance.

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Lt Gen (Ret.) Dave Deptula 47:52

Excellent. Here's one from an old friend, Jim Armour. Does the NRO plan to use commercial benders for ISR data exploitation, similar to the growing use of commercial spacecraft says,

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Dr. Chris Scolese 48:07

well, first, Hi, Jim, nice to hear from you again. The bet that question is more towards NGA. NGA buys those services, not not so much the NRO. So I guess, I will defer to NGA. But great question.

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Lt Gen (Ret.) Dave Deptula 48:26

Here's one from Laura Winter. Do you see any role for the NRO in space traffic management? Yes, I understand that commerce is the lead. But you have the eyes. Thank you.

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Dr. Chris Scolese 48:30

D Dr. Chris Scolese 48:59

Yeah, that's that's that's a very interesting question. And something you know, that you know, certainly we're, we're a participant in because we care very much about what's happening in space and are are very much engaged in that. But whether we'll we'll have a you know, a specific role to monitor space, which was what I think you're getting at is really TBD at this time.

L Lt Gen (Ret.) Dave Deptula 49:06

And from Stan Rosen, are there NRO innovations in acquisition methodology that you think other federal space organization should adopt?

D Dr. Chris Scolese 49:18

I, you know, we we don't really have any anything that's, that's terribly unique, in terms of authorities that we can go off and, and, boy, but what we what we do have is what I said is that flat organization, which I think others can do, to some extent, the the the ability to look from, you know, the very beginnings of an idea to the to the ultimate use and an end of it is definitely useful and having a motivated workforce. I think all of those things are possibilities that can be done. that that each organization can can try and do. And really beyond that, it's really hard to say that, that there's anything, you know, specific that I can give out here. Our contracting mechanisms are largely the same. So that's, that's pretty much what I would say.

L Lt Gen (Ret.) Dave Deptula 50:21

Here's another interesting one, does the NRO address are considered current or potential industrial base issues with key component providers for your space systems?

D Dr. Chris Scolese 50:32

Oh, absolutely. The the, the industrial base and the space industrial base in particular, is something that we think about all the time, you know, where, where is there a possibility for a gap in in capabilities. And, and we work, you know, we work with the Space Force Space Command, the DOD, other government agencies, to understand what the the industrial base sector looks like. Because that, that allows us to do our job. And I think we know we all know, the right now that the pandemic has, has indicated that there are frailties in our supply chain. We're reading about it every day with, you know, with semiconductor chips, right, that that we really need to focus on. And we're really thankful for the chips Act, which is really going to help address you know, the some of the the items that have been identified in our supply chain for for microchips. So, yes, we're working very closely with, with other government agencies, we're very concerned about this. We work with our industry partners on it as well. So yeah, it's a really, really important part of everything that we do

L Lt Gen (Ret.) Dave Deptula 51:50

it here's one from Michael Morrow, and your experiences NRO director, how is the recent

it here's one from Michael Morrow, and your experiences NRO director, how is the recent creation of the space Acquisition Council improved space acquisition,

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Dr. Chris Scolese 52:02

well, provides a forum for another forum for us all to get together and see what what's going on. And, you know, from that standpoint, it's, it's a, it's a really great opportunity to coordinate and, and figure out, you know, who is doing what and, and also to share best practices as we, as we develop things, and having you know, Frank Hale Valley in there is, is just great, because he brings a wealth of experience in, in space acquisition and operations. So, so I think it's, it's, it's a good thing and, and it's going to just make the space community better. Here's an

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Lt Gen (Ret.) Dave Deptula 52:45

interesting one from Justin Pearson. A lot of thought is put into preventing space debris. But what would be the challenges facing the NRO, after a modern day space engagement, where debris and LEO has increased significantly?

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Dr. Chris Scolese 53:04

Well, well, of course, we, we have lived that a couple of times, you know, most recently with the, with the irresponsible Russian Act of, you know, shooting one of their own satellites, admittedly out of out of the sky and, and creating a lot of debris. But what it means is that, you know, we have to pay a lot more attention to our constellations, particularly those in the bay area where the debris is that it doesn't just stay in, in in the plane or the, the, the the orbit that that the the, the attack occurred in. So it's something that we really have to worry about, and what in the worst case, what it results in is we have to have a lot more maneuvers in order to deal with with it, because that debris could could be damaging, assuming we can track it for the debris we can't track it could be causing damage to any one of our systems that are on orbit. You know, the Russian act, you know, put the space station at risk. Somebody asked that question earlier. So any any debris causing event is a reason for concern. And, you know, what we want to see is responsible action by everybody that operates in space to to minimize debris and deorbit those things or put them in put but derelict systems before they become derelict in a storage orbit if we can't do it safely. deorbited

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Lt Gen (Ret.) Dave Deptula 54:40

Okay, here's one from Matt Sanchez. Dr. Scalise Delta nine at Schriever. Space Force Base has taken on the role of training in developing guardians in the realm of orbital warfare. What role if any, can the NRO play in streamlining or aiding the Space Forces Roll is an organized train and equip organization?

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Dr. Chris Scolese 55:04

Well, you know, we're working closely together, I think you know, the most obvious way, most obvious ways are our coordination that we're doing on a regular basis. But between the

leadership, and then the exchange of personnel. A large contingent of the NRO workforce is his Space Force for our Space Force guardians, they will be there for a certain amount of time and then rotate out. So that gives an opportunity to share not only what the NRO does with the rest of the Space Force, but as they rotate in to share with the rest of the Space Force does with the NRO. So we really build a lot of interaction there. And then, you know, there's the the war games and the tabletop exercises, since you're talking about tape about delta nine, where we work together to understand various scenarios, and what would our actions be, you know, given those, those conditions, so we have a number of places where we're working very, very closely together. And we have a number of formal ways. The rotation that I mentioned, of Guardians into and out of the the NRO, the coordination at at all levels that were that were working at, and in the war games and tabletop exercises that we routinely participate in.

 Lt Gen (Ret.) Dave Deptula 56:34

Okay, we've got another live question from Jarrell Phoenix, Jarrell.



Good morning. Can you hear me? Outstanding? Well, I thank you for your time. But given recent developments on the international stage to include the ongoing Russia, Ukraine conflict, and Chinese aggression towards Taiwan recently, what current lines of effort, whether it be coordination or acquisition, do you think will most improve the NRO's ability to support its customers and future crises?

 Dr. Chris Scolese 57:07

Well, I mean, the simplest thing is we have to keep on doing our mission, we have to stay in mission and we have to continue to deliver the information that's, that's needed by our partners. Longer term, we need to adapt to the environment and I believe, believe we're doing that we're, we're launching, you know, the proliferated architecture for resilience and capability, we're launching more capable systems employing different phenomenologies to to support denial, either by camouflage or, or other means, so that we can do it, we're diversifying our our capabilities and relying, you know, more heavily on partners, like the commercial industry, that have systems up there that, that allow us to share data, you know, more readily than then one could otherwise but also to enhance our, our capabilities, in terms of providing revisit, as an example, and, you know, increasing our relationships with our international partners, as we demonstrated just this morning with launch. But also, you know, just in general is as we work more closely with our, with our international partners, so all of those things together will are allowing us today to do things but will will allow us to grow into the future and be able to, to continue to deal with the threats as they develop.

 Lt Gen (Ret.) Dave Deptula 58:40

Well, I think that's a great way to to finish up the segment. Unfortunately, we've come to the end of our space power forum. And Chris, a big thanks to you for taking the time out to speak to us and our audience. And so to you and everyone out there and our audiences, I too wish

you a great aerospace power kind of day.



Dr. Chris Scolese 59:01

So thank you very much. Thank you. Thank you