

Agenda

Tuesday Unclassified

Time	Event	Speaker	Moderator
8:00am-8:25am	Opening Remarks	Steve Jacques and Joe Dodd	
8:25am-9:05am	Keynote	Hon Frank Calvelli, ASAF for Space Acquisition and Integration	Doug Loverro
9:05am-9:50am	Keynote	Lt Gen John Shaw, Deputy Commander, USSPACECOM	Lt Gen (ret) Kevin McLaughlin
Transcript Part 2			
10:15am-11:00am	Keynote	Hon Bill Evanina, Former Director, National Counterintelligence and Security Center	Chris Williams
11:00am-11:45am	Celebrations	SIFU, Rep Cooper, Marty Faga	Steve Jacques
Transcript Part 3			
1:00pm-1:45pm	Keynote	Hon Ron Moultrie, Undersecretary of Defense for Intelligence	Jennifer Walsmith
1:45pm-2:15pm	Keynote	AVM Paul Godfrey, Commander, UK Space Command	Joe Dodd
2:15pm-3:00pm	Keynote	Maj Gen Gregory Gagnon, Deputy Chief of Space Operations for Intelligence	J.R. Riordan
Transcript Part 4			
3:15pm-4:00pm	Keynote	Dr Stacey Dixon, Principal Deputy Director of National Intelligence	Robert Cardillo
4:00pm-4:45pm	Keynote	Senator Mark Warner, Chairman, Select Committee on Intelligence	JP Parker
4:45pm-5:00pm	Wrap Up	Steve Jacques and Joe Dodd	



Speaker 1:

Please take your seats, our program is about to begin. Please take your seats, our program is about to begin. Please take your seats, our program is about to begin. Please take your seats, our program is about to begin. Please rise for the presentation of our colors by the Arlington Career Center Space Force Junior ROTC, and performance of our national anthem by DC Washington.

Speaker 2:

(singing)

Speaker 3:

The world is rapidly changing. Our nation's competitive advantage in space is being undermined. Adversaries are challenging America's leadership position, closing the gap and preparing to overtake us this decade. The role of space and international relations and warfare is now more evident than ever before. The questions are no longer why or will conflict in space occur, the questions are, will we be ready and able to prevail?

Speaker 4:

We choose to go to the moon in this decade and do the other thing. Not because they are easy, but because they are hard.

Speaker 3:

We've always been a nation of investors, innovators, and inventors. In the new space race, we must think creatively and outside the box. We must cleverly leverage our human, scientific, technological, industrial, and financial resources to maintain America's leadership position in space.

Now, more than ever, the public and private sectors must align and collaborate to protect and advance America's national interest in space. We must work together to deliver the space capabilities needed to win the competition. It was American spirit and bold actions that overcame the challenges of the past, that will enable us to prevail over today's challenge.

Speaker 1:

Please welcome chairman of the board for NSSA, Joe Dod.

Joe Dod:

Well, good morning, everyone. Welcome to DISK 2. I want to immediately go off script and thank DC Washington for that rousing version of our national anthem. Let's give DC a...

Well, again, I'm Joe Dod. I'm privileged to serve as chairman of the National Security Space Association, aka, NSSA. A year ago, in the face of Omicron, we held the inaugural Defense and Intelligence Space Conference. Over 400 participants from industry and government joined in that gathering, including many of you. This year we have nearly 700 registered for what I'm confident will be another two jam packed days of substantive programming and dialogue. And certainly, yesterday evening, Secretary Kendall got us off to it. Just a tremendous start with substance and dialogue and a great time of interaction.

We designed the conference today and tomorrow, with an agenda that will touch all the bases from policy to programs to operations to discussions of a threat environment. We've even included an ally

dimension. This afternoon, Air Vice-Marshal Paul Godfrey, commander of the UK Space Command will join us to share his perspectives and priorities.

I want to begin by recognizing a few of the senior leaders who are with us here today. Frank Calvelli, the assistant secretary of Air Force for space acquisition and integration. General John Shaw, the vice commander of US Space Command. Many members of our board of advisors who are former agency directors and other senior government leaders. We are privileged to have all of you with us today, and thank you for the commitment that you've made to this. I'm pleased also to see we have a large cadre of future leaders that will have that responsibility going forward. And this kind of interaction with one another is what prepares us for that kind of leadership.

Please enjoy this time together, reconnect with old friends and colleagues, find some new ones. We've integrated plenty of time for networking and dialogue. And lastly, please visit our exhibitors who are outside the area here around the atrium. And I'm sure you'll enjoy the innovation that you'll see in their displays, in their exhibits. Now to get us going, I'll turn it over to my friend and colleague, Steve Jacques.

Steve Jacques:

Wow, we got a crowd this morning. Good morning, everyone.

Audience:

Morning.

Steve Jacques:

Oh, come on. Good morning, everyone.

Audience:

Good morning.

Steve Jacques:

That's what you're supposed to do this time of day, right? Yes. Well, very good. Welcome. Echoing Joe's welcome to you all. Indeed, I am Steve Jacques, the executive director of the National Security Space Association. And on behalf of our member companies, our board of directors, our board of advisors, and our staff, we're really, really, really grateful that you've all chosen to take your time to be with us today, and tomorrow in most cases, for the second annual Defense and Intelligence Space Conference, also known as DISK 23.

Many of y'all attended last night's welcome reception. Heard the important remarks given to us by the Honorable Frank Kendall. Today and tomorrow we're meeting for unclassified and highly classified discussions with numerous government and private sector leaders across the national security enterprise. An information packed two days is promised to be.

So this year's theme, as you see here, is called call to action the need to secure the freedom of space. Say it again, the call to action the need to secure the freedom of space. Let's think about that through the course of these next two days. We use these words every day in our professional lives. We discuss, we debate, we design systems with these keywords in mind. And here we are today, facing these very threats we're talking about. With Russia's invasion in Ukraine, coupled with what we see and face with China, both today and tomorrow. So in addition to Secretary Kendall's important comments from last night, our stage today and tomorrow is redesigned with these messages in mind, both within, people

coming from within the national security space domain, and importantly and holistically, outside our bubble of the national security space world.

So many of you have heard this sense of urgency and the need to act on this stage last year, from leaders like General Dickinson and General Gutlein, and many others. So hopefully the outcome of this year's conference will be to further increase that flame, that flame of the fire and the need for speed needed ahead to overcome these threats.

So let's get going. With that, I'm pleased to introduce our mc for the morning session, Mr. Chris Long. As many of you know, Chris Long is General Dynamics mission system's vice president and general manager for space and intelligence systems. Chris's extensive career dates back to Motorola days. Everybody remember Motorola? Later to become General Dynamics advanced information systems, now known as GDMS. And before returning to GDMS a couple years ago, Chris worked at Northrop Grumman and some of his legacy companies in the space sector. Leading space programs across the DOD and intelligence community world. A heck of a leader and a very good friend, ladies and gentlemen, I'm pleased to give you Mr. Chris Long.

Chris Long:

Well, thank you all. It's an honor to be here. When I look out at this crowd and think about what has happened over the last couple years, it's really amazing. And I'd like to thank Joe and Steve for putting together NSSA and bringing everybody together. Because over the last couple years, as we know, the environment has continuing to change and it's changing rapidly.

We've got a great set of speakers today, and we're proud to bring those to you. Before I introduce the first session, the moderator, I'd like to go over a little bit of a video from General Dynamics. If we could roll that please.

Well, as Steve said, it's a call to action. And we've known for some time that we no longer have the ability to operate in space as a sovereign nation. We now have a lot of competition. And over the last 15, 20 years, we've really seen space evolve. There's a significant amount of y'all out here that participated in that over this time. But as we look forward, one of the things that we must recognize as an industry and as government, is that it's really about having all of the industrial base and the government working together to make sure that we remain sovereign in space, and control that domain that is so important to the war fighter and to the intelligence community.

So it's my pleasure to bring the first moderator up to the stage. I really don't need to do an introduction for this gentleman, but let me just kind of highlight. Doug Loverro has served this country in many capacities as a great patriot, as a scholar. And really, as one of those people that, for those of you who's had the chance to work with him or work for him, his deep understanding and strategic thinking is just amazing. And he has worked as a Air Force Colonel, then in his policy he supported NASA, and now in the private sector supports a lot of the companies that are here today. But it is with my great pleasure that I would like to announce, Doug Loverro.

Doug Loverro:

Oh, good morning. We only have about six more introductions before we actually can go ahead and get to the main stage. Seriously, we are now ready to begin the main program and it's really my pleasure to go ahead and sit here and moderate for a great friend and a great leader, Frank Calvelli. Now I'm going to go ahead and challenge you all to figure out the answer to this question. Frank Calvelli and I were both born at the same hospital. Who can figure out what hospital that was and how many years

between us and who's the older one? That's the easy part of the question. So Frank and I, we didn't actually know each other back in the crib, but it feels like that sometimes.

Frank Calvelli is the assistant secretary of the Air Force for space acquisition integration. You all know that. He's spent almost 35 years in government. He was at the NRO for most of that time. He served as my deputy, which was a absolute pleasure to have him on the Future Imagery Architecture program. Even though the program wasn't a pleasure, having Frank there with me to ride that wild horse was fantastic. He served for eight years as the principal deputy director at the National Reconnaissance Office. Went to private industry, and now we are lucky enough to have him back in government, leading our space acquisition work for the Space Force. Without further ado, let me bring out Frank Calvelli.

Frank Calvelli:

All right. Good morning, everyone.

Audience:

Good morning.

Speaker 5:

What hospital?

Frank Calvelli:

Westchester Square in the Bronx. Right, Doug? That's the one? I forget, myself. I don't know. I was young at the time, but I think that's right.

Speaker 5:

I would never guess.

Frank Calvelli:

All right, so let's talk about space acquisition. Right? There is a real need to go fast, and I'd like to share with you some ideas about going fast. So we all know there's threats, so I'm not going to reiterate that. We all know that our adversaries want to deny us the advantage we get from space during a conflict. They've seen us. They've seen the enabler space has provided to the American troops and the joint force, and they'd like to take that away from us. Our current space architecture was designed though when space was not a contested environment. We have very large satellites, traditionally built on very long development cycles. Usually as we developed them, we invented new technologies as we went along. Usually did these on cost-plus contracts that could be 7, 10 years in duration to get to the first spacecraft. And that was a key in shaping our architecture.

But because of the threat, we are transforming from what's been called big, juicy targets of the past, to a more proliferated and more resilient architecture that can be counted on during times of crisis and conflict. Now I will tell you, United States Space Force is making outstanding progress and outstanding steps in the right direction. And the Department of the Air Force's operational imperatives will drive critical capabilities that we need. But the traditional ways of doing space acquisition must be reformed in order to add speed to our acquisitions, to meet our priorities of the department. To gain speed, we must shorten development timelines by building smaller systems. By acquiring ground and software intensive system and smaller, more manageable pieces that we could deliver faster. By using existing technology and design to reduce non-recurring engineering to enable speed. By taking advantage of

commercial systems and commercial capabilities. And most importantly, by delivering programs on cost and schedule through solid program management.

To enable this space operation philosophy, I came out with nine space acquisition tenants a couple months ago. They were simply, one, built smaller and reduce your non-recurring engineering. Two, get the acquisition strategy correct, which really means starting the process off right. Getting a good ac strategy up front is the key to any success. Three, enabled teamwork between the contracting officer and program manager. That teamwork is really key to success. Four, award execute executable contracts. Five, maintain program stability. Six, avoid SAPs and over-classification. Seven, deliver ground before a launch. Eight, hold industry accountable for result. And nine, execute. Deliver your programs at work, and deliver them on cost and on schedule.

Today I want to talk more about this philosophy. In order to reshape the architecture and go as fast as possible, I believe we need to drive satellite acquisition timelines to be no more than three years from contract award to first launch. Now, using these tenants, we're able to derive a very simple formula to actually achieve that. That formula to go fast in space acquisition is, one, built smaller. Add that with two, use existing technology. Three, drive the contract scope or length to be no more than three years at most. And then four, use fixed-price contracting. I think when you add these four variables together, we could deliver mission capabilities much faster and reshape our architecture. So let's talk about this.

First, build smaller. To get capabilities faster, we have to build smaller. You simply can't build a big system, fast. Even if you have minimal or no design changes or no non-recurring engineering, big satellites take time. They require big bus structures. They require big tanks, big payloads, big components. Will all take time to develop. So building big does not go fast. Building smallest satellites will allow us to go significantly faster. And from what I have seen from a mission perspective, there's very little, if any, missions the DOD needs that drive us to build big.

Next, to get capabilities faster, we must use existing technology and designs to minimize non-recurring engineering. So we have a culture we have to break. It's a culture of new, it's a culture of technology. Where the government industry, we both like to drive new technologies as part of a acquisition contract. We do, right? We like to build new focal plans, whether we need it or not. We'd like to build new comm subsystems. We like to build new. New is cool. But we have to stop building new and we have to take advantage of existing designs if we really want to drive schedules to be faster on accuracy contracts. It's a very common practice today to build new. Right? It drives a large amount of entry on contract, it prolongs the schedule, and traditionally, it prompts you to go cost-plus. Because of, apparently, there's so much risk because we're building new.

There is nothing wrong with this approach when in the past we didn't have threats against our systems. When there wasn't an operational imperative to drive fundamental change to our architecture. There was nothing wrong with taking 7, 10, 12 years to build a spacecraft. But we can't do that today...

PART 1 OF 4 ENDS [00:28:04]

Frank Calvelli:

10, 12 years to build a spacecraft. But we can't do that today. So instead we need to count on government research and development, and there's a lot of it, industry, internal research and development, and corporate investments to create the new technologies for innovation rather than developing new on every time we build the spacecraft contract. Next, to deliver capabilities faster, we need program baseline stability. And we get baseline stability by simply shortening the length of our contracts and using fixed price, and let me explain. Instability of a program baseline kill speed. And it can

be very common on very long development contracts, five years, seven year, 10 years. Things like rethinking and modifying the program scope each budget season. I mean, we all want to think through things and every year we think about the budget and we say, "Let's add a vehicle, take a vehicle off. Let's move the schedule out two years to the right."

But we cause a lot of instability every budget year on our programs. We cause disability by changing requirements, by having long undefinitized contract actions where we don't actually know a baseline, by annual cost re-estimating, by constantly re-estimating the program, and then adding scope, or taking scope away. And then there's an approach that I really haven't seen before until I got to the department, which is using multiple contract actions to develop something. And what I mean by that is, I've seen examples where we'll go under contract from STAR to PDR, then a separate contract action from PDR to CDR, then a separate contract action from CDR to Vehicle One, and then a separate contract action for Vehicles Two and L. That's four separate negotiations and contract actions for a single satellite acquisition. Something that I don't quite understand or appreciate, but it's something that adds instability to a program that we need to stop.

So the way to fix program baseline instability is shorten the contract timelines to three years or less from authority to proceed to launch, and use fixed price. Let me talk about the fixed price piece. If you're building fixed price contracting, it's going to add a level of discipline; investing on a three-year contract it prevents the constant rethinking of programs and scope changes with each annual budget build. And it avoids the changes that come from either requirements changes, or constant cost re-estimating. And so having a stable program baseline is a key. So I think if you take these four things, build smaller, use existing technology, drive contract scope to be less than three years and use fixed price, you really can go faster. Now, the government needs to do its part, government needs to have clear request for proposals, the government needs to have source selection criteria based upon this formula. And the government needs strong program and discipline to help execute and deliver on costs and schedule.

So you might say, "What about existing programs?" Well, for existing large programs that have already started, this formula may not apply, but the philosophy of the nine tenants does apply. And for those programs, the best thing we could do is stay the course, be stable with those program baselines and execute on cost and on schedule. We lose so much time by simply not executing on schedule. And that has to change. So then you might say, "Well, what if I need new technology? You're inventing new things in space, so what if I need new technology?" Well, you could always try to drive R&D to reduce risk to your programs, but if you need some new tech, that's okay, keep that development focused on the payload. Do not create new buses. We love building new buses. We love building new bus components, we love doing new things that are already out there. Use existing components and subsystems. If you need to do some tech development, do some tech development, but keep it minimal.

So before I wrap up, I want to talk about another key area, which is commercial services. I think if you really want to go fast, that's what you do. You take advantage of commercial. We need to continue to take advantage of commercial space communications, space domain awareness services, commercial launch and other commercial services. Leveraging commercial services add speed, diversifies the architecture, and add resiliency, and is really a key. So I think when you take the nine tenants, the simple formula, I mean, it's a really simple formula, and take advantage of commercial, we'll get much needed capabilities into the hands of the war fighters faster, we'll transform our architecture to be more resilient and more capable, we'll achieve our operational imperatives and we'll counter the growing threats to our space systems. I will say that our adversaries had figured out how to go fast, and as time we do the same.

Doug Loverro:

Frank, thanks for those great comments. I've got obviously some questions here for you. And I'd like to step back from the acquisition side for just a second and then get more of a big picture principles for you. You spent 30 years at the NRO, and obviously that's a different kind of organization than where you are today. And you've been your current job, I think maybe about six months or so?

Frank Calvelli:

About seven.

Doug Loverro:

Seven, who's counting? What are some of your initial thoughts about what do you see as the major differences between the organizations? And are there things that each could learn from the other?

Frank Calvelli:

Yeah, I think they are both outstanding organizations. I will tell you both jobs are awesome. Being at the NRO was awesome, being in the Department is really awesome, it's a lot of fun. I actually wake up every morning and I don't mind driving an hour to the Pentagon because the job is so awesome. But there are some differences. I think the NOR is a much more demanding customer when dealing with industry. For example, if there's a problem with a subcontract or a supplier, the NRO PMs aren't afraid to get on the plane and go to the lowest level possible. And it seems like on the Department side, we tend to rely more on the primes to do that, and we know sometimes the primes really don't do that.

Doug Loverro:

We know that.

Frank Calvelli:

And so the NRO seems to be a much more demanding customer, which I really, really like, and I'm trying to change that culture at the Pentagon with my program executive officer, is that we need to be more demanding customers.

I think another thing is the relationship between a contracting officer and a program manager. Growing up in the CIA and at the NRO, the program manager was the star, and the contracting officer supported the program manager. And it doesn't seem to be the same on the DOD side. I think there's good relationships, but there seems to be some sort of, I'll say, a barrier in between the two, and it seems like there's a little bit more over the wall kinds of things that occur, and we need to fix that culture, which is why that ended up one of the tenants. And I think in the IC, the IC, and particularly the D&I got really great at helping us have more stability in our programs. So once we baselined a program at the NRO, which was a major system acquisition, we didn't change it. Our job was to really go execute that. We didn't every year rethink the cost of that program. We didn't [inaudible 00:35:08] it every year.

And so I think the program stability in the department in the IC was a lot better than what I'm seeing in a DOD, and I want to bring that culture.

Another piece that's interesting is that five or six years ago we got frustrated at the NRO awarding, what I'll call unexecutable contracts. It's where you all like to low bid, right? We compete programs and you all like to low bid and then it's a cost plus contracts, so why the hell no. And then you hope we ECP it. And so we put out guidance where we started really evaluating cost and schedule realism as part of

competitive RFPs for space at the NRO. And I'm working with actually Chris Golis's team, and the Chief of Contracts of NRO to gave me some data to help try to institutionalize doing a similar thing in the department.

Doug Loverro:

Excellent, excellent. Fantastic. Let me move on to one of your acquisition principles. And you talked about trying to avoid SAPs and trying to avoid over classifying programs. And coming from the NRO, I think a lot of us find that strange because the NRO itself was a SAP for 30 years of its existence. But clearly this is something that we've heard many seniors talk about. Can you explain for you what the strategic rationale is for avoiding over classification of programs?

Frank Calvelli:

Sure. So 30 years ago, the NRO learned a lesson after Desert Storm that having programs in individual stovepipe SAPs was a bad thing from an integration perspective. So we broke down those barriers. 99, 95% of all systems are in a single classification compartment. That means we can share across programs, that means we could integrate our architecture easily. That's not the case on the DOD. DOD is about 30 years behind where the NRO and the IC are in terms of classification. So in a DOD, every single program, either going to be unclassified, or you go into a SAP. And once you're in a SAP, just that program's in the SAP. We're making some progress on having umbrellas, but for the most part you had individual programs in the SAP. That makes it really, really hard to operate and integrate as a single architecture. I mean, it really does.

And so to me, space is a great enabler. And we need to integrate our space architecture, we integrate that with our air architecture, with our ground architecture, with our sea architecture. And having each individual program reminds me of the NRO back in the 1970s and 80s. And we have to break that paradigm. We are. We are collapsing SAPs as we speak. We're consolidating down, but having each program individual still pipe only hurts integration, which doesn't help us.

Doug Loverro:

Excellent. Excellent. Thank you. One of the things that you talked about on the stage, and you obviously figures prominently in your principles is awarding executable contracts. And you and I lived through the most unexecutable contract in the world under a fee, well, about two decades ago. So in that principle though, you don't just talk about the need to award executable contracts, you talk about the need for program managers and program leaders to keep up with the industrial base, to understand the space industrial base, to understand what contractors can do and what contractors can't do. How are you going ahead in operationalizing that? How are you getting people to understand the need to stay close to industry? What's your strategy on that?

Frank Calvelli:

I think it's really important that every program manager who's working in an area understands what industry can and can't do. And there's lots of ways to do that. I mean, industry's awesome. You all like to come in and tell us what you're working on, so that's actually a major part of learning what's going on. There's visits to factories, there's reading some of the great trade press that's out there in terms of about space activities that are going on. And so to me, it's just a natural part of any program manager's job to keep up with the industry. And what I try to do is I try to avoid what I call Taco Bell Syndrome. Now, let me explain that. Some folks have heard me talk about Taco Bell Syndrome. And when you get to the mode where you're just reviewing the proposal and you don't take into account anything you

know or knowledge about the company or don't know about the company, you can end up awarding a significant space program to a part of a company, or to a company that has absolutely no experience with no chance of actually executing the program.

And I call that the Taco Bell Syndrome, cost of Taco Bell was the bid, they have a chance of actually winning a satellite. So you really have to understand what industry can and can't do. We don't have time to have programs where we just missed the boat, and we spend years and years sinking money into a cost plus contract only to figure out later on we have to stop the program. No different than FIA. That was a Taco Bell program. So we need to just have knowledge of industry and industry's abilities. And so I would encourage you all to, for my government team that's out there across SSC, Space RCO SDA, is I encourage you to go see them, go tell them what you're working on, go tell us all your great projects and things so we understand better what companies like you can do.

Doug Loverro:

Great, thank you. So you've said from the stage here, obviously that size matters, that we really should go ahead and avoid larger satellites. But as you know, and you've lived through this and I've lived through this, physics is physics, small satellites have less power, usually smaller apertures, so they have to be closer to the earth to go ahead and do what they need to do. Do you see that move to small satellites, meaning that we're going to move out of GEO into more systems in LEO and MEO, or is there still going to be a balance? How do you see that all maturing?

Frank Calvelli:

I see us building small everywhere regardless of orbit, whether it's LEO, MEO or GEO. If you look at in GEO, we built big structures and put lots of payloads on them. AHF, UOs, other things. You could break apart those systems and make it more distributed and have them on smaller systems and have more of them. That's going to add resiliency. So from a physics perspective, I haven't seen too much where we have to stay big, unlike my friends in the IC, right? But I do believe that we can break apart the big behemoths GEO, and bank them into smaller bite size chunks at GEO, which is going to diversify the architecture and protect us more.

Doug Loverro:

Okay, fantastic. Fantastic. You've talked about holding contractors accountable. Again, something else you said from the stage there. And when you and I were at the NOR, we canceled FIA and I think that sent a message to the contractors that you're going to get canceled if you don't perform. But in the Air Force now, the Space Force, we've had programs like SBIRS, which go on for two decades and don't produce, or eventually produce, but at a great cost. GPS OCX, which is a personal albatross of mine. How do you go ahead and convince contractors who are serious on executing on time, on schedule? You don't have to name any names, but is the Air Force willing to take the hard line that the NRO took?

Frank Calvelli:

I think so. The NRO did some wonderful things or something called the Contractor Responsibility Watch List, or the CRWL. We have the authority in the department to use the CRWL and we are starting to use that. That's a good authority to have. I think the CRWL holds people accountable. Typically, at the NRO when somebody didn't perform, we would put them on the CRWL and we would notify Congress and all the committees that they weren't performing as well. And we're taking a similar approach in the department.

Now, I will tell you, there are some long-standing troubled programs that have been around a long, long time that this is our year. It is time we get these programs complete. We need to deliver OCX this year and get it done. We need to deliver the ATLAS program, which helps replace spay dock and get that done. We deliver the MGUE Increment One set of cards, and get that done to take advantage of some of the GPS capabilities. There are key programs that we need, these albatrosses that have been on the departments, dragging the department down for decades. We have got to get out of the way. And this is the year we're going to get those programs delivered.

Doug Loverro:

Excellent. I do have to share that we began the MGUE program in 1996, so we're almost three decades into this right now.

Frank Calvelli:

That should not be the norm.

Doug Loverro:

Please get it done. We shouldn't have all the satellites up there and haven't been able to develop a handset yet. So let's talk a little bit about commercial. You just talked about commercial appear, and clearly the NRO, and I and you have talked about this, the NRO did a masterful job on the EOCL contracts, I think Pete Moon did fantastic in getting that contract out. And I believe all of commercial industry has benefited it from it. We haven't done as well on the DOD side on really accessing commercial space services. We're doing great on commercial launch. All of launch now is commercial, but space domain awareness for a lot of the communications, especially LEO Communications, we don't seem to be able to go ahead and put together a strategy for how we access this, access those things yet. What's your thoughts on that? How are we doing? Do we have a path forward? How do you think that's looking?

Frank Calvelli:

I think we're actually starting to make some really great progress in the department. Something that the NRO did that we're going to try is, what the NRO did for imagery was they took all the requirements and put them together and said, "How much can I satisfy with commercial?" And then they pulled those off to the side and allocated in the commercial. And the rest they allocated the programs they had to go build. I think we need to take the same approach, and I know the team over in CSRO and other, S5, are actually looking at that where we take all the requirements and stack, and then figure out, can we allocate a chunk of these to commercial? And I think that's a really good approach that's similar to what the NRO did.

Doug Loverro:

Okay. A little bit of follow up for you, do you have a sense of how do you balance, when should something be outsourced to commercial? When should you keep it in the government? When should you go ahead and have a combination of the two? Is there any kind of indications that you have about how that should work?

Frank Calvelli:

I'd say I think if we can get it commercially as a commercial service, we probably should. I think it adds significant resiliency. I mean, to our architecture. I mean, I would love our adversaries to think that every COMSAT, and LEO, GEO and MEO, that's commercial, we're on. Because that makes their targeting a lot more difficult.

Doug Loverro:

Yeah. Great. Last question on your acquisition tenants, and this is one you and I talked about Backstage, is getting the acquisition strategy right. You and I had many discussions late at night about getting acquisition strategies right back when we were at the NRO, and it's one of the key things that I have always focused on. Part of that at the NRO was always doing peer reviews or independent reviews of programs, and for a while the Air Force was doing that as well, under both the Secretary Teets, when he was both the DNRO and the Under-secretary of the Air Force, and Under-secretary Peyton, they had that independent assessment process. That seems to have gone away. How are you thinking of helping program managers and making sure they have the acquisition strategy right?

Frank Calvelli:

So what I'm doing so far is actually take another page out of the NRO. The NRO had something called an acquisition strategy council that we held like every other Friday. And it didn't matter whether you're bringing a facilities RFP, or satellite RFP, or a ground RFP, it came in front of basically a board of your peers. We had all of our program executive officer, or tower chiefs, and they would help review that strategy, and we talked about how we're going to contract out for, what type of contract we're going to use, what are the incentives. And I used to love that when I ran that meeting, because I got amazing advice from some of the best PEOs out there.

So I've taken that same approach. And when I came on board last summer, I had someone called, we have a process called an Action Strategy Panel, which is when they come to me for approval for a strategy, and I realized my other PEOs weren't on it. And I've got great PEOs out at SSC, and I've got Derek at SDA, and I've got Kelly Ham at SPARCO. I mean, these are really exceptional individuals. So now when I have my asks, I started having each of those seven PEOs on there giving me advice and counsel, to see if we could strengthen our strategies. That's how I'm tackling it right now.

Doug Loverro:

Excellent. Now, it's harder for them to come across the country than it is to...

Frank Calvelli:

Oh, we do virtual.

Doug Loverro:

So let's see, finally, or not finally, because we've got some time left, but at least the last of our prepared questions. In the 2023 NDAA, the Congress gave two pieces of direction to you. Number one, they said the department must put in place requirements for resiliency and protection of satellites, with every major satellite acquisition. The other thing they did was say, SDA doesn't operate under the [inaudible 00:47:21] process right now, we think they should. What do you guys think? Secretary of Defense, give us a report on that. Where do you stand on those two things? What do you think about what the Congress has told us to do?

Frank Calvelli:

I think Congress has been an exceptional supporter of space, so I actually like the thing about making sure that when we start a new program, we actually have thought through defense and resilience. I think it's actually a really healthy thing for us to do that, and an important thing. So I fully support that. SDA so far is really doing a great job. I think they are the role model for us all to sort of emulate in terms of their abilities to get things done quickly, and the way they do their contracting. I'm excited about the launch in March, the Tranche 0, the first satellite scope of March. We'll see the second set of Tranche 0 satellite scope in June. And then Tranche 1 is right behind that in early September 24. This spring we'll be studying our strategy and getting ready for Tranche 2, and we'll be going through the requirements process and so on. I'm going to defer and see how we do through that process, through the Space War Fighter Council that we have set up, and see how that process goes.

Doug Loverro:

Okay, great. Let me ask you a little bit about SDA since you brought it up. So I think, certainly for myself, I believe SDA is doing a great job, I agree with you 100%. But obviously, this first tranche of satellites is somewhat delayed, not terribly so from where we would be, but we're already into building Tranche 1, and we're getting the strategy for Tranche 2. How much do we need to go ahead and learn from prior tranches as we go forward? Or should we just continue to move forward and learn as we go? Is there some sort of leverage that we should get from one to another?

Frank Calvelli:

I think we keep moving forward, even though I know we had a slight delay from September to March, it's still about 30 months from when we launch in March from contract award to launch, which is two and a half years, which is not bad. And so I'm very happy with that progress that they're making.

Doug Loverro:

Yeah, I think we're all very impressed, and I'm excited to see when those satellites come up. Can I turn to launch for a second? We haven't spoken about launch very much, and then of course that's always the big question on everybody's mind in space. We're coming up to the next phase of the national security space launch capabilities. There are a lot more players and a lot more different differentiated players than there were in past acquisitions. We now have at least four or five successful launch providers in the US and more on the way. How do you see that dynamic changing, what the strategy might be? Sure, you don't have a strategy set yet, or you're not ready to expose the industry, but how do you see the dynamics of the launch situation?

Frank Calvelli:

I think it's great for the country having opportunities across a variety of providers. The teams are working really hard for several months now on a strategy. We're close. You should start to see sort of draft RFPs I think in the next couple of months. And I think it's a really outstanding strategy that everyone will be supportive of, so we'll see.

Doug Loverro:

Excellent. All right, good. I couldn't get anything, I tried. You heard me try. Let me talk about space domain awareness if I could for a while. So about three or four months ago when MGUE was signed between US Space Command and the Department of Commerce to turn over space domain awareness

capabilities, clearly as you just said, the ATLAS program still needs to go ahead and perform and do what they need to do. And there's going to be some sort of remaining DOD capability along with the capability of the Department of Commerce has. How do you think about the things that the DOD will still need to do, what the Department of Commerce needs to do? What kind of interaction do we have with them? Are we likely to see, for example, what I would call another failed program and pose where we tried to put together the two agencies within the government to try to build a single system? Do you think they're completely separate systems? Do they work together? How do you see that all evolving?

Frank Calvelli:

Yeah, I honestly have not been too involved with that whole process. I mean, clearly there's great folks in Commerce, great folks in Space Force, and any kind of partnership or teamwork is going to be something that we really need to drive forward. I like the idea of Commerce taking on that role, I think it's important for them to do that. And I know the Space Force has been really supportive of them, so I'll leave it at that.

Doug Loverro:

All right, fantastic. One of the things that you talked about earlier is the differences that you've seen, the things that the NRO does well that maybe the Space Force can learn from. Does more interaction need to happen between the NRO and the Space Force? Do we need to have more movement of people back and forth? How do you see us really going ahead and learning the lessons from one organization to the other? For example, like we talked about on the EOC contract.

Frank Calvelli:

Well, we do move people back and forth. I mean, NRO about a third of its workforce was Space Force people, which is really outstanding. General Povac, Chris Povac is out there now. I mean, he just come from as a deputy of this Space War Fighting Assessment Center. He's back at the NRO now as a deputy. And we see the people go back... It's amazing where I work, and at the Pentagon, I've got probably a dozen people underneath me that were former NRO people, from the military. And so I see a really great deal of back and forth, and I think it's really important that we continue to do that across the organizations. Coming from the NRO, probably not, a couple of days go by without me emailing Chris or Troy. And so there's a lot of connection there. Secretary mentioned last night, he's very close to the NRO, he does monthly meetings with Chris and the team, and I think it's a great partnership and I can see you continuing down into the future.

Doug Loverro:

Excellent. In your crystal ball, as you look out into the future, I asked Secretary Kendall last night about the budget, I'm not going to ask you about the budget here today. But in your crystal ball, as we look out to what will the Space Force be doing in the future, there are new missions that the Space Force can undertake. What do you see as some of the more important areas that the Space Force will be working on as we move forward?

Frank Calvelli:

I think we need to stay focused on our current missions, and get those done really well. [inaudible 00:53:27], space domain awareness, precision navigation and timing. Next OPIR, missile warning, missile tracking. There are fundamental changes to the architects that we are making across all those key mission areas, that the focus for the short term is executing those. It really has to be right. I mean,

General Hyten is right, we do have just a bunch of big fat juicy targets up there. We have really got to take our core mission areas and transform that. And right now, that's really the focus. There's been talk of what's our role in Cislunar, and to me that's important down the road. But right now what's important is ticking our core mission areas, and making sure the architecture is resilient, making sure the architecture is integrated, so that General Shaw and the Space Command team could actually use it effectively. And then making sure that the architecture's integrated in with air, integrated in the ground, integrated in with sea, so that we give an advantage and we can protect our joint forces.

Doug Loverro:

One of the core missionaries you were just talking about was PNT, of course is the most important and most favorite missionary that I have.

Frank Calvelli:

Doug was the former GPS program manager, so that's why.

Doug Loverro:

So we've heard a lot about alt PNT as something that the SDA will be working on. Do you have an idea yet of when we'll see something come out really asking for a system? Is that still something that's not soup yet? How is that going?

Frank Calvelli:

It's probably a couple of years away.

Doug Loverro:

Okay. All right. Yeah, fair enough. So let me go back to executability of programs, because you just reminded me of the fact when you said that we seem to always want to start new programs before the old ones are executed. You've just said that you think that what we really have to do is to go ahead and get these things done. What do you see as when we will be ready to go ahead and think about new things versus how soon are we going to get these right? Or do we expect to see real progress in the next four or five years? Should I be looking at the end of the decade? What do you think is the timeframe?

Frank Calvelli:

Oh, I expect to see progress pretty quick. I expect to see us starting to make a difference in over the next couple of years. I mean, we will alone just with SDA, right? I mean, launching their stuff. There's some other great programs out of SSC that are delivering the next few years. Some great programs out of Space RCO. And so I expect us to start to make a difference. Now, we're always thinking about new things. Don't get me wrong, right? I like to stay focused on our core missions in making our space architecture more resilient, but we are nonstop always thinking about what that next thing is, and what we should do with it...

PART 2 OF 4 ENDS [00:56:04]

Frank Calvelli:

... nonstop, always thinking about what that next thing is and what should we do with this. It's just a matter of the priorities right now are making architecture more resilient and supporting those

operational imperatives, right? Getting the space order battle right. Operational imperative one. And then there's some aspects of things we're doing in terms of supporting, Secretary mentioned last night, moving target indications. And so those are, I would say, sort of in the bailiwick of new that we're doing, but make our architecture more resilient, support our OIs is really our key.

Doug Loverro:

You talked about proliferation as one of the resiliency characteristics that you're working on. You've also talked about distribution as one of the characteristics and disaggregation as one of the characteristics. When we put together the thinking on resiliency many years ago, one of the things that we put in there as well is deceptive techniques, and part of that is, you just mentioned, having the adversary think that every satellite that's up there is a DoD satellite. As you think about future architectures, as you think about how you integrate in all of these different resiliency characteristics, is proliferation where we should focus, is aggregation where we should focus, or a mixture of all of them? What do you think?

Frank Calvelli:

All the above.

Doug Loverro:

All the above. All right. Well, that's what I would have said. Well, look, [inaudible 00:57:26]-

Frank Calvelli:

Do you want to take an audience question?

Doug Loverro:

Yeah. Well, if anybody in the audience... I don't know if we've got folks with microphones out there. I can't even see out there. Is there anybody with microphones? Sir, you've got a question?

John Hart:

Sure. Yeah. Sorry, I don't have a microphone. I'll try to speak loudly.

Doug Loverro:

Stand up.

John Hart:

Thank you. I'm John Hart. I'm a reporter with Defense [inaudible 00:57:45]. You mentioned that you don't want industry really to build new buses, but in some cases perhaps new payloads or modifying payloads. What types of payloads specifically are you looking for new innovations from industry?

Frank Calvelli:

Oh, anything that fits our core mission areas, right? I mean, our core mission areas are military satellite communications. Our core mission area is missile warning, missile tracking, space domain awareness, precision, navigating time, anything that fits sort of our core mission areas. That gentleman there has a question.

Doug Loverro:

All right.

Michael Marrow:

Hi, I'm Michael Marrow. I'm a reporter with Inside Defense. I want to ask about the contractor watch list, because my understanding is that was something that the Air Force was required to create as part of the 2018 NBA, and I was wondering if you think it just hasn't been used enough. What are your thoughts for using that contractor watch list and how can be used differently from in the past?

Frank Calvelli:

No, I think you're right. I think A team was the timeframe it got put in. I think they kind of barred it from the NRO, and I think it's a really useful tool. I'll be honest, Michael, I don't know how often we have used it in the past, but I know we're stepping up our game now.

Doug Loverro:

One more. Here.

Fred Irkfreed:

Fred Irkfreed. Same topic. On the opposite of inspector to the contractor watch list, how do you get your POs to communicate companies that are realistic in cost and schedule?

Frank Calvelli:

Well, I guess those would be the companies that actually deliver on cost and schedule. It's pretty common to know which programs are late. Doug mentioned OCX. And it's pretty common to know which programs are delivered on time. The community is not that big, so folks know Company X delivered this program on cost and on schedule. As long as it's not classified, people usually have a pretty good understanding of that. And we tend to tout our successes and so we'll make sure that when a company actually does execute on plan that we make sure everyone knows.

Doug Loverro:

Frank, thank you so much. This has been really entertaining for me. It's great to be up here on stage with you again. I just want to share with the audience, and I said this a little bit in my introduction, but I want to say it more right now, this guy is a fantastic leader. I enjoyed every moment I spent with him at the NRO, even though we were working under an unenjoyable situation. I think the Space Force is absolutely blessed to have Frank Calvelli in charge of acquisition for it. Let's give a round of applause.

Speaker 1:

Thank you, sir. Great job.

Chris Long:

All right. Well thank you, Mr. Calvelli and Mr. Loverro. I'd like to now introduce Lieutenant General (retired), Kevin McLaughlin. General McLaughlin has an extensive background in national security space and in particular spent a lot of time working in the cyber command leading that area. He's a member of the NSSA Board of Advisors and a vocal advocate for NSSA and everything that we are doing. He

supports a variety of initiatives and he comes to us from the great state of Texas. He is a Dallas Cowboys fan, so he's in a little bit of a mourning right now, but let's give him a round of applause. General.

Kevin McLaughlin:

Good morning, everybody. It's great to see you.

Audience:

Good morning.

Kevin McLaughlin:

Although I can't see this paper without these glasses. Yeah, I'm in mourning just a little bit, but I did burn most of my ties when I got to Texas, so forgive me for not having one on. It's my distinct honor and pleasure to introduce our next speaker, Lieutenant General John Shaw, the deputy commander at US Space Command. If you don't know us, US Space Command is the unified combatant command responsible for conducting operations in, from, and to space to deter conflict and if necessary, defeat aggression, deliver space combat power for the Joint Combined Force and defend US vital interests with allies and partners. A big mission and one that's active today, because you all know about the threats that we face.

General Shaw entered the Air Force in 1990 as a distinguished graduate of the US Air Force Academy, go Falcons, with a degree in astronomical engineering and a minor in Russian language. He spent his entire career as a space officer, which is awesome, but he's also done it in two services, like many guardians today. He's served out and deeply understands every facet of national security, space war fighting operations at both combat and command levels, as well as at service levels. He's been a key leader in the education, training and development of space personnel in the field, as well as in important headquarters related jobs, both Air Force officers and leaders, guardians, as well as in the Joint Force where he's leading today.

He served in the National Reconnaissance Office and he's a trusted leader and partner to the intelligence community today, which is also very important. As you hear throughout the remarks from last night from Secretary Kendall and others, that partnership is active and important and John is a key leader in that. He's a plank owner in the US Space Force. He played a critical role as a senior leader in the formation of our newest service, and now he's applying his deep experience, along with General Dickinson, and leading our combatant command for space. We're fortunate to have John serving as a senior leader in this capacity and to have him with us today. Ladies and gentlemen, please join me in welcoming Lieutenant General John Shaw to the stage.

John E. Shaw:

Good morning, and thanks, General McLaughlin. By the way, I've known General McLaughlin since the last century, and thanks for your leadership and mentorship over all those years. Some of you know him as a space guy, as he spent most of his career in government service, some of you know him as a cyber guy, as he did the last few years. He's both. He can do both. Cyber and space, as I like to say, are BFFs. They fit together really well, and you got an expert in both right here. Thank you, sir. And thanks to NSSA for putting on this forum here today.

I'm really pleased to be here today, honored to be on the stage, and honored actually also to follow Mr. Calvelli. I think you'll find a lot of things I want to talk about are very complimentary and synergistic with a lot of the things that Mr. Calvelli had to say. So I think it's actually worked out pretty well that you're

going to hear from both of us here in this first session of this forum. What I wanted to do with my remarks before I get grilled here by Jim McLaughlin is I just wanted to share three really big idea kinds of thoughts that we're thinking about at US Space Command as we kind of survey the environment that we're in.

The first is what is this new environment with regard to the space domain that we're seeing and how can we characterize that? Second thing I want to talk about is as we've grown as a combatant command here in the last three years, how do we see our mission set fitting within the broader Department Of Defense and the nation and the set of nations that includes our allies and partners? And then the third thing I'll share with you and we'll get to it, is a new kind of fresh operational concept we're thinking about that I think, again, is synergistic with some things that Mr. Calvelli had to talk about and I think will be a way that will define a lot of the requirements coming out of US Space Command in the days to come.

So first, the general environment. Some of you may have heard me talk about this already. I gave a lecture at the Air Force Academy a couple of months ago on this, and it said, I think that we are in what I would call the third Space Age, and it's a different one. And the reason that it's different is it's putting actually a lot of responsibility on all of us, no matter what we do in space, to work together more than we ever have before. Now, the first Space Age, Cold War. Dominated mostly by embryonic national security activities, intelligence collection from space, and civil space, with the first space race that we all know and still resonates with us today. The Race to the Moon. That was the first Space Age.

Commercial, not a lot of that, right up to the end of the Cold War. In the eighties, we saw some development of initial satellite communications and such, but not a lot. It was mostly national security and civil. Second Space Age starts with the end of the Cold War and is what I would describe linear growth across all the sectors. So commercial really kind of started to pick up its pace and GPS was a big piece of that. We got to remember, up until the end of the Cold War, we didn't have GPS as a society. We didn't have it as a Department of Defense.

We first started using it in the first Gulf War, barely. And now, all of human society relies on it to such a degree, it's amazing. But what else happened in that second Space Age, civil space? Well, we didn't go to back to the moon, we stopped doing the moon, but what we did is we routinized travel to lower Earth orbit, pretty much least amount you can go to get to space, but we routinized it with space shuttle and we partnered with our former Cold War foe in space. And on the national security side, we continued to develop our capabilities, driving them down to the tactical level for joint war fighters. That was GPS, missile warning, that used to be strategic, but now used across all the entire spectrum of conflict and at all levels.

But the most defining characteristic of the second Space Age is, as we developed those capabilities, as we got better at it and across all the sectors, it was a benign domain. It was almost an exception to the rule of most domains. We didn't build our capabilities to react to possibly being under threat. We built them for efficiency and we built them to optimize their effects down into the terrestrial domains. Now, folks, we're in a third Space Age. Now we can talk about history doesn't like bright lines. We can talk about when it began.

We saw the inklings of it in 2007 when China conducted its first ASAT test. But you know what? They could have stopped. Don't forget, we conducted an ASAT test in 1985, an intercepted satellite, put lots of debris in space. But you know what? We realized, "That's a bad idea," and we stopped. Did the Chinese stop? They did not. I like to think that the third Space Age probably started right around the middle of the last decade, in 2015, and that's happened on a number of fronts. On the national security side at the time is really when we realized, "Hey, space is a threat. We need to start thinking about this as a possible operational war fighting domain."

It's when we first started thinking about it and a lot of the activities we've done since then, the standing up in the National Space Defense Center in 2016, and ultimately the standup of United States Space Command's US Space Force in 2019, were the progression of that thinking. On the civil side, we've entered a new age. We're going back to the moon, but we're doing a little bit differently than we did in the First Space Age. We're going to do it with a lot more international partners, and the idea is it's going to be permanent this time. This isn't just a touch and go, and come back. We're going to do it permanently.

And on the commercial side, man, has it really taken off? Right now we're seeing... It was also in 2015, by the way, that we saw SpaceX demonstrate the first return to launchpad of a core stage. Pretty remarkable achievement that I'm sure our adversaries are still jealous of and want to get there. It's also that same year that that same company, SpaceX, said that they were going to start the Starlink Constellation, which was the beginning, but we're going to see a lot more of these of proliferated low earth orbit constellations that are different, non-linear development, in the way that we do space, both in national security and in the commercial side.

And what else have we seen in the third Space Age? Just recently in the last year, we're seeing commercial space systems potentially under threat. Did any commercial space company in the second Space Age build their systems with the possibility and realization they might be under threat, from any vector, from cyber, from electromagnetic attack or from physical attack? I'm thinking not. If there was someone out there that that was part of the design spec, at least in the second Space Age, come talk to me. Even today, I think most of commercial companies that they created did not think about that, did not build their systems with that in mind.

Folks, this is the future and we need to be thinking about that. What this means, this third Space Age, is there's a conjunction of all these space sectors together, and whether you're commercial or civil, you have to consider the fact that there may be threats in space. So we in the national security side are going to work with NASA as they go back to the moon to make sure that that's done safely and transparently. I think it was an article just this past weekend that came out and said in the next decade, expecting over 100 missions to the lunar environment in the next decade. Now most of those non crewed, of course, but that's an idea that even the lunar environment is not going to be what it was in 1969 to 1972.

We're going to have to have good awareness of what's going on there, and anytime there's human activity anywhere of any kind of size, there's often mischief that follows. And so there'll be collaboration between the civil and national security sectors in ways moving forward that is greater than it's ever been before. There's already, and we've seen collaboration between the civil and the commercial sectors in the third Space Age in ways we never saw before. I mean, who would have thought at the turn of the century that NASA would actually contract out taking astronauts to the International Space Station? It just wasn't something that you ever really thought would happen and now it's routine, folks. It's routine. And from then a spinoff of space tourism into space.

And then there'll have to be better collaboration between the commercial sector and the national security sector to understand potential threats in space. And I can't go any further than to look at what we're seeing in Ukraine today. And so if you're operating a satellite communications capability that might be somehow supporting the Ukrainian effort, you can bet the Russians don't like that. If you're operating a commercial ISR capability that's somehow contributing to the Ukraine war effort, we know Russia doesn't like your capability. And so we need to be, again, working collaboratively as we go forward in this third Space Age.

Okay, so then let me move to the second kind of idea here, and that is where does US Space Command, Space Force fit in this? Well, that actually means there's a lot of responsibility now on these two

organizations to characterize a threat environment, to work with all the actors in space and try to make that domain as safe as possible to operate in. And one thing that we're kind of coming to realization is, I should say that it's been amazing in the current job I'm in just over two years now to have watched both Space Command and Space Force grow.

I'm a Massachusetts native and I grew up on a small farm and had a fairly large garden during the summer. That's where we got most of our vegetables from. And I just remember as a kid, it was just amazing when, because I had to work the garden too, to see the growth every season, and those first tomatoes or pieces of corn that ended up on the dinner table for that first little bit of harvest that began was really a special thing. In some ways, I see that same sort of thing with Space Force and Space Command as Space Force stands up new and starts delivering products and new capabilities, or as US Space Command, we start delivering new plans that never existed before and how we're going to integrate into the broader joint war fighting arena.

So it's just been wonderful to watch this happen. As we've grown, I think our sense of our responsibility as a combatant command has grown. We're actually assigned an AOR, an area of responsibility in the Unified Command Plan, 100 kilometers above mean sea level and extending outward indefinitely. Huge AOR, actually. The relevant operational space for us will grow over time. Right now it's pictured in the... I don't know if that's showing up anywhere here. I see it in front of me. There's what I've got in front of me. I don't know if we can put that slide. There we go.

This is the way we look at our operational space that's relevant to us today. And you notice that the perspectives are reversed from what one might normally expect to see. So the moon looking back at the earth, that's our relevant battle space, our relevant AOR. And we're starting to realize, that actually is meaningful in a physical way in a lot of ways that doesn't occur to the average person and maybe sometimes doesn't even occur to us that work in the space arena on a daily basis. I feel like sometimes because we don't see it and we're not there all the time, we think of space in the same way we think of an alternate universe or a cyberspace. It's just this other place. No, it is a physical region that we are responsible for.

And it's not geographic like the other AORs that the other combatant commands have on the planet. It's in space. So we call it an astrographic AOR. And understanding what it takes to do our job in that AOR against all natures of possible threats. They could be simply debris. They could be accidental electromagnetic interference. It could be purposeful electromagnetic interference. It could be physical threats. It could be anything. And understanding what it takes to understand that AOR. And then the dependence on which the joint war fighter and human society have on what goes on in that AOR is a tremendous responsibility that we're dialing in on.

That'll take me to my third point and I wanted to introduce a concept that we're working on at US Space Command that is, as we look at where we think our mission areas are going and the kinds of platforms and capabilities that we're going to need, we're doing some good thinking along those lines and it's going to eventually inform requirements that we would put on Mr. Calvelli and the Space Force and any other service that can bring these capabilities to bear. And we're calling it dynamic space operations. Now, let me describe what I mean. Almost all of us that have worked in the space arena have worked on systems that are earth facing. The purpose of those systems was to do a mission that contributed to something in the terrestrial domains directly. Could be communications, could be ISR, could be missile warning.

There's a new category of platform that's emerging that is not earth facing. Its job is to do things within the space domain itself. And this actually really puts a fine point on the kinds of things that Mr. Calvelli was talking about on why we need to go fast and why smaller is probably better. Let me describe to you in terms of analogy. Our earth facing missions have had the benefit really of being able to exploit

Kepler's laws to do their mission sets. What do I mean by that? A geosynchronous platform, at least through the first and second Space Age, was actually leveraging Kepler, in a rather static way, to do its mission. Even constellations in lower earth orbit aren't maneuvering all the time. They're basically in relatively static orbits and that's how they've been designed and they do their earth facing mission from those orbits.

Now, as Mr. Calvelli was talking about, and you've heard, we've got to evolve that kind of thinking, evolve for those earth facing missions to be more resilient and that'll come with new designs and new ways of taking care of those capabilities. But what about a platform that doesn't need to be earth facing? In fact, you want it to be able to maneuver without regret. You want it to be as free of constraints of Kepler as possible. Let me give you an analogy of what I'm talking about here.

Imagine that you're going to go out and buy an RV. Now, some of you own rv, so you know what I'm talking about, right? Because your family wants to get into that, and you want to go on RV camping regular intervals throughout the year. And you go out and you go shopping for an RV. And the salesperson says, "I've got the perfect RV for you. This here, has all these features. It's going to meet all of your needs. There's just a couple things you should know about it. It has a huge gas tank and gets great mileage, but you can't refill the gas tank." Okay, imagine that was the only RV you could buy. How does that constrain your camping planning?

And by the way, your family decides and figures out, "This RV we buy has got to last us eight, ten years. Probably can't afford another one for that long." How's that going to constrain your planning? You have to think very carefully about that. You're going to have to really budget that fuel for your trip and where you're going to go and how far you can go, and think about over the lifetime of that RV that you've got to have make last eight years. That's really going to constrain your options. You can't be that spontaneous and you can't be that aggressive.

Folks, our geosynchronous space situation awareness platforms that we have in space are that kind of RV. It's what we've evolved to. It's not a surprise, but I'm just pointing out to you that at US Space Command, we'd like to be pretty aggressive with those things. We'd like to move around and look at many things in the geosynchronous spheres much as we possibly can, but Space Force has given to us and they've got to last a certain amount of time. That's their lifetime, and they've got a finite amount of fuel on board. That's constraining us in a significant way. It's more constraining than any of the earth facing platforms, and it's not enabling us to do dynamic space operations the way they'd like.

How do we fix that? How do I establish a requirement and hand it to Mr. Calvelli and say, "Hey, I need to do something better?" What are the solution areas for that? Now, some of you are already converging on solutions in your head, "Well, we just got to have refueling stations on orbit. You're good to go, right?" Well, maybe. It's one solution, on orbit servicing. Another solution said is commoditization, right? If you could give me... Let's go back to the RV example. The RV salesman says, Well, this thing's actually pretty cheap. Yeah, it's got a gas tank that's that you can't refill, but I'll sell you another one next month and I can show you how you're going to be able to afford that over the next eight years. Every month you get one." That works too.

What I'm trying to establish for you is, we have this new kind of platform requirement emerging that we haven't really thought through on the requirements, and I believe it's actually going to drive and be synergistic with a lot of things that Space Force is trying to do. It will naturally force us to get into smaller platforms. Whether it's commoditization or servicing or such, we're going to get there. And I think it'll be a virtuous cycle.

I think as we get after these requirements, it'll actually make all of our space acquisition more responsive and move faster, but [inaudible 01:23:05] is a new way of thinking about where I think we're

headed with some of our requirements in the space domain moving forward. And I'll be interested in your ideas on this too, as we continue to evolve the thinking on this, to make sure that we sustain space superiority in the domain for the years to come.

So those are my introductory remarks. I hope I gave you a little bit something to think about and now I'll be prepared for whatever devilish questions that General McLaughlin has prepared for me. So thank you.

Kevin McLaughlin:

Great. General Shaw, thanks for those remarks. They've helped me adjust and make a few more devilish questions out of that. But the very first thing I'd like to talk to you about, you did touch on, but I'd like to see if you could put a little bit more prioritization and a little bit more shape to it. We do know that the United States Space Command is focused...

PART 3 OF 4 ENDS [01:24:04]

Kevin McLaughlin:

... that the United States Space Command is focused on the threats. Last night, Secretary Kendall talked about the fact the threats today are not ... maybe in the Cold War when I was a young officer, we were preparing against a threat. We really never did it, but today the threat is active all the time. With that as a backdrop ... and I know this sounds a little bit like the "What keeps you up at night" type of question, what would you say are the top two threats in space that require the focus of the Command the most day to day?

John E. Shaw:

Rather than talk about specific threats, I think, again, from a combatant command perspective, I think I would talk about what maybe failure modes we would want to avoid, is another way to look at it. When it comes to what are we really focused on and what has us greatly concerned, the dependence of the joint warfighter on space continues to increase on a daily basis. It's not going away. It's not diminishing. If anything, it's accelerating.

One of the failure modes is somehow we fail the joint warfighter because we are unable to either protect and defend in space or we're unable to sustain space superiority against other space capabilities being used against us. There are analogs to this, clearly, in the air domain and in the maritime domain. I think an Air Force professional would tell you that one of their concerns would be I don't maintain air superiority, and so the terrestrial warfighters below me in the land and maritime domains lose the fight. That's one thing we're really focused on, and I think you'll find that General Dickinson will certainly talk about this in his posture testimony this year, is how do we continue to integrate with the other combatant commands, integrate into the campaign planning for fights in all domains across the globe, and make sure that we're there when we're needed to do what we need to do.

A second failure mode would go back to, again, this I think imperative of the third space age, that we have to work together across all the sectors as much as we possibly can. Failure would be to not engage in and grow those partnerships across civil, across commercial, across allies ... and frankly, across everyone in the executive branch as well ... as much as we possibly can. If we continue to operate the same ways we had in the past, in stovepipes, in any of those potential relationships and don't further them to the extent we can, then that failure risks the failure that I mentioned before, and that's failing our warfighters and our society from a space perspective.

Again, you were probably looking for something more particular or specific there, sir, but I would say that those are the macro things that we're concerned about and that we're focused on making sure we do well, integrating across the Department of Defense in all modes of warfighting and leveraging the partnerships as much as we possibly can.

I'd like to just mention, I do think just the organizing principle of Space Command and Space Force, I have observed, has actually increased the integration and cooperation, at least across the U.S. government, in ways that I had never seen before in my career. Just an example last week, I attended your Space Acquisition Council last week, and even we even talked about dynamic space operations in that. That never happened in any of my previous experiences working in a combatant command on space issues before we had U.S. Space Command.

I'd just point out the glass is pretty full in a lot of ways. We're making a lot of progress. We just need to keep this momentum going, the partnerships going, and working together to, again, further our objectives.

Kevin McLaughlin:

Great. I think that that's a fantastic way to think about the answer to a tactical question in a strategic way. I think that's an awesome answer. I'd like to talk a little bit about some recent remarks that the administrator of NASA, Bill Nelson, has made. You talked about the first space age, and so we were alive during the first space age but younger, with a little more hair. Something that had happened in that time was a national competition between the United States and the Soviet Union to get to the Moon. Administrator Nelson has said he believes such a race today is ongoing to the Moon, but with China and the United States perhaps competing. I wanted to ask, do you think we are in a second race to the Moon, and if so, from your perch at U.S. Space Command, what's the Command doing? What's its role in making sure that we were to win such a race?

John E. Shaw:

I think the way I'd like to answer that question is, again, I'm a Massachusetts native, and a former speaker of the house from Massachusetts, Tip O'Neill, was famous for saying all politics is local. Some of you maybe have heard that. I'd like to riff on that and suggest that all astropolitics are terrestrial. That may seem like that's inconsistent, but my point is if there is a space race, it's because we're having a geopolitical competition, and that is just one manifestation. It's not happening in isolation, by itself, I think most scholars would say. I don't know if we've got any of the space policy folks from GW here, which is the center of good thinking along those lines. I don't think any of them would say that the first-stage space race was, as you said, all by itself. It was a manifestation of something much bigger going on, in terms of competition between societies and ideologies.

I would say that if we would conclude that there's a space race to the Moon and such, it's only a facet of a much broader competition between nations that's going on, and it shouldn't surprise us. That's the other thing. Just imagine. Just take us in a parallel universe, that there's two nations competing with each other on a planet. Wouldn't you expect that competition to extend into the space domain? Why wouldn't it? If you say it's because space is somehow special or set apart, I would say no. I would say it's actually part of that society, and it's just an extension of that.

I don't know if that's an answer to your question in a roundabout way, but I think what I'm saying is we should not be surprised if we end up seeing some competition in space in any sector. We're already seeing it in the national security sector, and we're seeing it to some degree in the commercial sector. If we see it in the civil sector in terms of what happens with Lunar exploration, it shouldn't surprise us.

Kevin McLaughlin:

Great, thank you. You also mentioned in your comments the trajectory we are on through the first, second and third space ages with regard to the growth of commercial space capabilities, and it's remarkable. In my mind, as an old launch person, I used to think there's nothing more inherently governmental than launching astronauts to a space station, launching any set of astronauts, and watching SpaceX launch astronauts to it just to me was not only cool, but it was just a tipping point in terms of commercial potentially doing inherently governmental things.

From your perspective, do you think the best strategy going forward with regard to commercial is the strategy that we're pursuing, and what do you think the right mix would be for the integration of commercial with other national security-related forces and operations, should we find ourselves in a conflict and the balloon's gone up and now we're about to fight? What's your thought about that?

John E. Shaw:

Again, absolutely, failure mode is not leveraging commercial to the greatest extent we possibly could, and there's a lot of reasons for it. I'll probably miss some obvious ones. I would say that commercial in some ways can go a whole lot faster than the government can go. I think Mr. Cavelli talked to a lot of really compelling thoughts on how the government can be a better customer in that regard, and leveraging the strength of commercial to be able to go faster and leverage the innovation that exists in the commercial sector, leverage the R&D investment that's going on in the commercial sector.

I would also add that I think another challenge that we will realize to a great greater degree in the days moving forward is how do we get enough capacity to do what we want in our various space missions, and commercial will provide that augmented capacity. We absolutely need to partner there. Then with that comes a lot of other additional arguments about why we need to partner with commercial to share the threat environment, and making sure that we see that homogeneously together to optimize everyone's performance and capabilities and operations.

When it comes to a right mix, I think it'll be an iterative process, and the right mix will be the right mix that we end up with. I think at the start of World War II, did we know what the right mix of merchant vessels to naval vessels was for a convoy? I don't think we did. In fact, we probably had it wrong at the beginning, and we had to get it to the right way where we could get capacity in terms of what could be delivered as well as security. It may not be the perfect analogy, but I would just say I think we will see that moving forward, it will be a mix. It won't be stovepiped and won't be 0-100. It's going to be some optimized partnership.

On the subject of commercial, this I'm sure is on a lot of folks' minds, as I alluded to before, as we're seeing potential threats to even purely commercial systems like Starlink ... I mean not systems that were built by industry for the Department of Defense, but purely commercial systems ... come under potential threat. If we need those capabilities for our own national security interests, how do we partner with commercials so that we don't have another failure mode, which would be we have reliance on commercial systems, but as soon as a war begins to start and they come under threat, commercial just says, "Okay, we're done"? We're going like, "No."

That's bad for a lot of reasons. It's bad for operational reasons, it's bad for deterrence, and so that would be a failure mode we'd want to avoid. We have to have a continual dialogue about realizing these things may happen, and what are the solutions to those. I'm not going to propose those solutions. I just laid out that challenge that I think we'll have and we need to talk about collectively.

Kevin McLaughlin:

Great, thank you very much. The United States Space Command has placed a huge amount of emphasis on partnerships, collaborative efforts, both with other countries as well as with academia and industry. This conference itself, representatives of those groups are in the room today. We'll have Air Vice-Marshall Godfrey here later today, who I know that you see and work with often.

Within that, and then to the degree that you could talk about it, is there a set of sort of partnership gone right examples, behaviors that you could point out in that broad sense that are remarkable to you and maybe a sign of where we should go? Are there some things that you think we should be careful to make sure that we don't go off the rails in partnerships, but we continue to achieve your goals to broaden and deepen those relationships?

John E. Shaw:

Actually, I think there is a really, really good example, and that would be the Space Surveillance Telescope that just went operational I think last fall in Australia. I have a little bit of personal history with the Space Surveillance Telescope. When I was the commander of the 21st Space Wing at Peterson as a colonel, that telescope fell under my command. It was actually in New Mexico. Then we embarked on a journey to pick it up, package it up and send it to Australia and put it there in Western Australia, and it finally went operational again last fall.

Why is that a terrific example? Well, first of all, it's effective. We now have a very capable sensor in the Southern Hemisphere, capable of looking up at geo and beyond, that provides us a vantage point that we did not have in New Mexico, and it's in great partnership with the Australians and working with that. Another facet of that in terms of partnership is that telescope's a pretty capable piece of equipment, and not just for national security purposes. I mean, it can detect asteroids and other natural phenomena out in the solar system. We're actually collecting that, and we're sharing that with NASA. Just in this one package, it's a great example of partnerships both internationally and within our government.

How do we keep after that? I feel like I may be missing some other great examples of where. For example, we're having more allies integrated into our Combined Space Operations Center than ever before. The deputy director of that is an Australian colonel that used to be a UK colonel. We have a UK one-star at our headquarters at U.S. Space Command. I think we're making progress in a lot of ways. By the way, none of those pieces of progress are a mistake. We haven't said, "Oh, that was a bad idea." No, they've all been great, so how do we keep it going? That's worth noting.

The last part of your question is about things gone wrong or challenges or such. I'll just keep flogging the horse that everybody else flogs, and that is classification. It's real. It just happened again this past week. I can't talk about it, unfortunately, here, but I was like, "That's not releasable? You just showed me something. Why isn't that releasable to the UK and Australia and Canada and maybe even France and Germany? That should be releasable. Why isn't it?" The answers I get back aren't very satisfied. Like, "Well, they've got to do the paperwork, and the security classification guide needs to be rewritten," and I'm like, "Okay. Guys."

Back to failure mode. Shame on us if we end up failing in a future conflict because we can't communicate with our allies and partners as we should. That doesn't mean we open the doors wide open. We've got to go through this in a systematic and smart way, but I'm telling you, where we are is not at the optimal point on our ability to share information. Again, you hear that from everybody, but it's real. It's real, and it's something we've just got to keep poking at. I urge all of you, if you come across this, to keep poking at those kinds of questions. What's the right balance point? We're not at it. We are not at it.

Kevin McLaughlin:

Wow. Even that makes my blood pressure go up. Everyone in the room has history with that last set of comments. Yeah, thanks for everything you're doing. I'm glad it's your blood pressure going up versus mine most of the time. Now, the last question I have for you as we get near the end of our time is something that I think you said something provocative earlier, and that was about whether space is special or not, I think in a certain context. You have said in the past ... and I think the people in the room are here because of this ... that space is cool. It is a very cool mission, and it's engaged many of the human beings in here for lots of decades because of how cool it is.

You had made a comment that it's not special or necessarily different. Could you just go a little deeper into what you mean by that? If you had to come up with a way to characterize certain aspects of space as different from other types of warfighting, how would you say? How would you characterize that in ways where there are some things that are different or special? I'm just teasing out a little bit about the comments you've made about it not being, and then we can argue about it later if you'd like to. We could arm wrestle over it.

John E. Shaw:

No, I appreciate the question. Well, first of all, let's start with the fact that space is cool. Why is that? It's the next frontier, I guess. It just excites our imagination as humans, probably in the same way that centuries ago there was excitement about the seas and finding out what lay beyond the ocean and that excitement that drove a lot of exploration and then economic development, by the way. Then similar with the air domain, right? Wow, this is a whole new domain for us. I think space excites us as humans. It's just the next frontier, and there's new things to be found.

By the way, as some of you are aware, the services struggled a bit with recruiting last year and had to adapt to that. There's one service that did not have a recruiting problem. That was Space Force. We had to turn away a whole lot of folks, actually. I'm disappointed we had to, but why is that? There was interest in it. I often tell a story about, right as Space Force was about to happen, having dinner with three college students up in Boulder in Colorado, and all three of them ... and they're all aerospace engineering students ... all three of them said these things. They said this. They said, "We don't think we would join the military, but we'd join a space force." There I am. I'm a two-star at the time, thinking, "Do I tell them?" I'll just leave that with you. There's excitement about it, so it is cool.

I have said space is cool but not special, and there's two edges to that sword and you actually alluded to them. Thanks for giving me the opening. The first is realizing that, as I mentioned earlier, it's not an exclusive domain and somehow set apart from other human activity. Anytime that we've viewed it that way, it's probably been a little pollyannish, right? Anywhere that humans have gone, there has been excitement, there's been development, but there's also been security issues. That's just what happens with humans. I usually say, in the context of why is space now a warfighting domain, why should we be surprised? It's become so important to our warfighting and to our society that naturally a potential adversary is going to look at how do I now hold that at risk, how do I work that into my calculus for warfighting.

You know, U.S. Space Command's number one goal is to deter that from ever being a problem in the first place, to be ready for that, because it is under threat. We call that normalization, and it's just how do we, again, not treat it as special, particularly as I go back to one of our big objectives in U.S. Space Command this year will be integrating even more and more into the trusted domains and their plans and operations and being prepared, being prepared, for threats in space that could threaten success in the terrestrial domains.

I also will say that there is another piece to this that I don't want to not address, and that is that the space domain is not the air domain or the maritime domain or the land domain. It has its own unique physics, and that means it's going to have its own unique capabilities, its own tactics, techniques and procedures, its own warfighting expertise. Now, we can learn from the other domains, and there are examples from all of them that have some kind of applicability from the tactical level to the strategic level, and how we are looking at how do we maintain superiority in our area of responsibility ... that one you see, that picture, the picture's not showing what I see in front of me ... in that growing relevant operational battle space that encompasses the Earth-Moon gravity well today, and who knows what it'll encompass in the future.

By the way, some of you that think U.S. Space Command is the only command that made the astrographic, I would challenge that. A good thought experiment would be, will there be other astrographic commands? Will there be a subunified command for the Lunar environment someday? Will there be a separate combat and command for the Martian gravity well?

I just offer it to you to think about space as a physical AOR a little bit differently than we tend to, as just this abstract beyond the earth. We're thinking it more about an actual physical AOR and how that operates one day, how we need to organize against for security success. To be a chief success in that physical space, in that AOR, is going to require leveraging what we know about the other domains, but also a lot of independent thinking on how we can be successful.

I guess yet another failure mode to end on, a good one to end on, another failure mode would be someone else does the better thinking, and that costs us success in a conflict. There's nothing more expensive than losing a conflict. There's a great responsibility on U.S. Space Command, on U.S. Space Force and on this generation, to make sure that the next generation of space experts makes sure that we have the dominance of thinking in that particular domain.

Kevin McLaughlin:

Thank you. You know what, your answer is great, but some of you in the room have been on the other end of the phone call when the assignment team calls you and says, "You're going remote to Tuley, or you're going remote to Wilmer." What if they said, "You're going remote to the Moon"? I'd be like, "Sweetheart, I'm going to be ... " anyway, that's someday.

John E. Shaw:

Someday.

Kevin McLaughlin:

Someday. That's right.

John E. Shaw:

That's going to happen.

Kevin McLaughlin:

Well, General Shaw, thank you very much. Your comments and your answers to our questions were very thoughtful and I think everyone in the room learned a lot, and we're glad that you're doing what you're doing. Thanks for taking the time to come with us today and educate us a little bit. We look forward to seeing where U.S. Space Command goes in the future. Thank you.

This transcript was exported on Feb 23, 2023 - view latest version [here](#).

John E. Shaw:

Okay, thank you sir.

Kevin McLaughlin:

Thanks, sir.

John E. Shaw:

Thanks.

Kevin McLaughlin:

Always good to see you.

Speaker 6:

All right. Thank you, General Shaw, General McLaughlin. We're going to take a break. We will start again sharp at 10:15, so please, everybody, be in your seats at 10:15 for the next session.

PART 4 OF 4 ENDS [01:49:13]

Transcript

Part 2



Speaker 1:

Please take your seats. Our program will begin shortly. As a courtesy to our guests, please silence all electronic devices. Please take your seats. Our program is about to begin.

Chris:

Welcome back. Let's see, we're going to go ahead and get started with the next session. But first of all, I'd like to thank Northrop Grumman for sponsoring the breaks that we've had. So appreciate that, they've done that for all of the breaks today. And again, appreciate their sponsorship and their support.

So I'd like to introduce Chris Williams, he is our next moderator. Chris is the Chair of The Moorman Center or Space Studies, which really is, is the NSSA's think tank that is really helping lead both industry and government in terms of understanding and driving change within the larger organization. And he really is at the core of what NSSA is about. He brings the best companies. There's over 80 companies that are participate in NSSA and are growing, and he's the center of that, putting it together to solve some of our most challenging missions. Chris has extensive background on the Hill and in various other capacities and is really thought of as the thought leader in a lot of these areas, so I'm pleased to welcome Chris to the forum.

Christopher A. Williams:

Hello everyone. Thank you again for being here. As Chris mentioned, my name is Chris Williams and I have the great honor and privilege of serving as Chair of The Moorman Center or Space Studies within NSSA. The center was named in honor of the late great general Tom Moorman, who as many in this audience know as a central figure in US national security space matters for many decades and a friend and mentor to many, myself included. I am thrilled to serve as moderator of a keynote address by my friend and colleague, William Bill Evanina. Mr. Evanina was the first Senate-confirmed Director of the National Counterintelligence and Security Center. He served as the director of NCSC beginning in June of 2014. In that position, he was responsible for leading and supporting the counterintelligence and security activities of the US intelligence community, the US government as a whole and the US private sector and especially those at risk of attack from foreign adversaries.

Under NCSC, he oversaw major national level programs and activities such as the National Insider Threat Task Force, personnel security and background investigations, information technology protection, standards and compliance, counterintelligence related cyber operations, supply chain management, threat awareness for sectors of the US critical infrastructure, national level damage assessments from espionage or unauthorized disclosures, counterintelligence mission management and national counterintelligence and security training and programs, it's a mouthful. Under Bill's outstanding leadership, NCSC produced the first ever national counterintelligence strategy of the United States in 2020, which has been instrumental in raising foreign intelligence threat awareness to critical infrastructure sectors, and the private sector executives regarding supply chain, economic security, cyber and malign foreign influence. Bill chaired the National Counterintelligence Policy Board and the Allied Security and Counterintelligence Forum comprised of senior CI and security leaders from Australia, Canada, New Zealand, and the UK. He also served as chair of the NATO Counterintelligence Panel.

Prior to his selection as director of NCSC, Bill served as the chief of the CIA's counter espionage group, which is where I first got to know Bill many years ago. He had a long and distinguished career in the FBI as well, and Bill currently serves as founder and CEO of the Evanina Group LLC, which advises CEOs and boards of directors on strategic corporate risk. In fact, nobody does it better than Bill. He will speak to us

today about various emerging threats and what can and should be done to mitigate those threats. Bill, we're very glad you could join us today and the floor is yours. Please welcome Bill Evanina.

Speaker X:

[inaudible 00:08:40].

Hon. William Evanina:

Good morning. That was a very humbling and long introduction. Thanks, Chris. We need to create a shortened version of that, but very humbling indeed. First, foremost, very humbling to be here, honored to be here, part of an amazing agenda for two days that I believe is a pinnacle for where we are right now in the whole mindset and ecosystem of protecting our nation and protecting the world.

Growing up in the '70s and '80s, there was a phrase that I used to love on Saturday mornings, it was called, "Space, the final frontier." Raise your hand if remember that, that means you're old like me. But I don't know if it's the final frontier, but it is the now frontier and I want to go through a couple ideological and practical applications of where we are, not only in the security ecosystem, but the counterintelligence ecosystem as it applies to today's word of space and what that means to you and to me and the folks that are sitting to your left and to your right.

I want to take you back to when I first started my last job in 2014. I was told that I had to go to the Senate and the House and provide every six months a state of counterintelligence, what that state of counterintelligence was. So I remember very vividly, it was January of 2015, sitting in front of the Senate Intelligence Committee talking about where are your main threats of counterintelligence to the United States of America.

So January of 2015, we had just come through a summer of briefing, not only the Senate and the House, but the White House on threats to space, specifically because we saw every single day the Chinese building methodically an island in the South China Sea, and we saw through amazing collection and analysis the weaponization of space, and we had very little traction at the time, explaining to policy makers and the administration that the Chinese are weaponizing space. And what we found was a difficulty of explaining what does that mean outside the people who lived literally in the satellite world.

Let's fast-forward to January of 2021. My last month on the job as I said six months before that I was going to retire, I had a State of Counterintelligence with the Senate. And as I left, laying out the foundations of where our country faces the greatest vulnerabilities and threats from nation-state threat actors and others in the counterintelligence arena, I listed two specific areas that I thought that we needed to corral years ago. The first was the Department of Energy, very clear to everyone in my business, the security business, due to the economic aspects, what the Department of Energy does across their platforms and portfolios, and more importantly, the collaborative nature of how they do it causes significant counterintelligence concern from every aspect of nuclear weapons, to hypersonics, to dual use technology around the world, our adversaries were in their nickers trying to steal all that. That continues today.

The second aspect, I told [inaudible 00:12:24], which I thought was more emerging but yet more complicated to tell the story, was space. And I said, "Listen, here's the aspect of space that we need to consider when we talk about counterintelligence," and as I talk about space, I want to just back up a little bit with respect to what counterintelligence is and what it isn't. If you've been following the fall in the news the last year or so, there's been a lot of conversation, and I'm on board with this, the changing landscape of counterintelligence. Counterintelligence is not counterespionage, it's not catching spies, that's part of it, but counterintelligence has grown in the last 15 years to be so complicated and so

ubiquitous in terms of how we live. It's countering the intelligence collection of our adversaries, which means all the non-traditional collectors that we live with and see every day that work with us, that work cyber, that are insider threats, businessmen, engineers, scientists, academics, researchers that are working on behalf of a foreign entity or they're not sure they're going to be in the future, but they will be.

The strategic impact, and I'm going to really, really concentrate on the Communist Party of China here, because there are greatest most important existential threat in space. Yes, the Russians can do some things to us, but long term the Chinese and their military apparatus and their collaboration with their economic and the oneness of China is our biggest and most now threat. Let's take a look about the counterintelligence strategy that Chris referenced that was signed out by the president in January of 2020. I just want to walk through briefly the five pillars of that strategy. And I want you to think about how they manifest themselves for you personally, where you sit in your government organization or your company. I want you to think about that as letter A, and letter B, what can you do about it?

This conference has manifested itself in a call to action, a call to action for who? For the Air Force? For Space Force? For the Senate, for the administration? For Department of Defense? For NRO, NGA, for who? Or for the hundreds of [inaudible 00:15:04] of corporations, industries, and the really amazing ecosystem of the companies that support this apparatus, all the way down to you sitting in this room today is a call to action. So let's go through these pillars and think about you, where you sit, physically, the cubicle you sit in, the vertical that you sit in your organization and how these pillars manifest what you do every day and how you could be part of the solution moving forward into protection of space and the protection of our adversaries trying to prevent us from being competitive in space.

The first pillar of that strategy was protecting our critical infrastructure. I would argue, and we'll talk more about this later in our conversation, it's baffling to me how space is not part of critical infrastructure. It's just a lack of futuristic thinking of how important space is. We'll talk about that later. Now, protecting our critical infrastructure and what space and satellites do to that infrastructure and what part of our critical infrastructure today isn't reliable on satellites?

The second pillar was ensuring the protection of our supply chain. The supply chain is very, very, very critical to our resiliency, redundancy and our ability to stay current in everything that we do in the world today, and I would proffer even more importantly as we build that resiliency and redundancy in space.

The third was protecting our economic security. Let's just, I'll stay vague on this one here, but just think about the money that is spent from DOD and other agencies promulgating capabilities in space, and as we heard this morning, that integration between the government and the commercial satellite world. There's not enough numbers and zeros on this wall to talk about the billions of dollars and trillions of dollars that are invested in space. And the more we become effective and efficient in spending the monies in space, working collaboratively with the government and the commercial side, the more that is a threat to our adversaries, specifically the Communist Party of China.

The fourth pillar, malign foreign influence. That's very vague, right? But think about that in this space. Just think about in the 5G space right now, the 5G arena around the world and what the Communist Party of China is trying to do. You just Google what they're trying to do in Europe right now in Lichtenstein and in Germany and get licenses so they could promulgate their hypersonic capabilities around the world. You in this room understand that 5G is not just terrestrial, but the rest of the world doesn't understand that. So not only they're trying to use all their tools in their toolkit to facilitate winning the 5G space race, but they're really, really being aggressive in the malign foreign influence around the world to get from point A to point B.

The last pillar, cyber, all things cyber. I don't need to explain to this room what that means, mostly close access and cyber operations. I would proffer to you that all five of those pillars are germane to you today for what you do in your job. So I'll ask you, when you go back to work, think about what you can do from where you sit. I don't care if you're an operations person, if you're an engineer, if you're a congressional affairs person, if you're a manager of business development, if you're a liaison between your company and the Air Force, you all have a role to play, not only in protecting what you do in your company's ecosystem, your government organization, but a role to play in protecting our nation from the last frontier and the ability of our adversaries, specifically the Communist Party of China, of winning that frontier.

You've heard this morning, and you're going to hear more in the rest of today and tomorrow about the criticality of space. I'm going to profit to you from my perspective on counterintelligence security the only two things that matter going forward are economic viability and survivability and our ability to be competitive and at least be equal in space. Both of those two things are doable with a combined effort, with an ability for us to truly work together. If you think about where we are in the commercial space space, no pun intended, it's flabbergasting. We lead the world in this area, and that partnership with commercialized space capabilities and Department of Defense and the Air Force has never been more important than it is now. Whether you are the Air Force, whether you are NRO, NGA or any other three letter agency who relies on your capabilities or you are a commercial entity, you need not to look very far than the current events in Ukraine.

Not only are we able to see the Russians capabilities, but an intent to affect our intelligence collection specifically in the commercial world. China is tenfold that. The Russians have proven themselves to be mundane, neanderthalic and some other really, the fairest words, I'll be careful here, but they've been proven to not be the big bear that we thought they were. That is not the case with the Communist Party of China. Not only do they have the capabilities that dwarf what Russia has, but they have the intent beyond what the Russians do. They have a holistic view of how they can attack and facilitate us at all corners from propaganda to working in the global ecosystem, as they are right now in Europe, but to facilitating insider threats and cyber capabilities in your companies, in your organizations.

I remember when I had my old job, we used to sit and we would watch a launch at Vandenberg, and we would watch a launch somewhere else and then something bad would go, and then it wouldn't launch or it would launch and some... And then people would come to us and say, "What happened? What happened?" "Well, what do you want me to tell you?" So that what happened was that that satellite didn't launch, that rocket didn't launch. Well, why not? Was it because of a bad piece here, a bad filter project, a bad O-ring, or was it a supply chain interruption?

To me, space is the first part we need to make sure that our offensive capabilities teach our defensive capabilities because we're in an unclassified world here in this room, you know what I know about our offensive capabilities of the nation. Never has there been a more effect effective and efficient and successful country felt militarily in the IC and economically where we could facilitate offensive capabilities around the world and not get caught. The men and women of the intelligence community and the women and men of the defense community have never ever been more awesome than they are today, but those individuals who are awesome in those communities are supporting a partnership with the women and men who work in corporate America, the defense industrial base, and all those organizations that are sitting here today and partner with them today, which is why my last piece here is the most important.

Because you who sit here and work in partnership with the Department of Defense are the weakest link in the chain. And what do I mean by that? Because the Communist Party of China and when they come to interrupt our capabilities and our successes and our ideation to launch, they're coming to the

organizations, the companies, the vendors who were the weakest link in that chain. If we've learned anything in the last decade, we've learned that they will come at the end product through a third and fourth order of vendors. You can find any breach you want, you can just Google it, OPM, just name it, those organizations were never the ones that were breached. It was a vendor or contractor somewhere in the process.

So don't be that contractor, don't be that company that supports space. Don't be that company or the individual that supports the ecosystem of putting things in space, facilitating command and control. The things that make it work, when we have a satellite in the air that is supposed to do X and your company is facilitating the effectiveness of X, think about what your role is in preventing that X from not happening. It's not only a pride thing, a national security thing, but it's also a brand thing.

So you work and you're proud of your work for your company or your government organization, which also is you're proud of the brand that the company brings and you facilitate and you partner with an ecosystem that is second to none in the world. Don't be part of the newspaper when something goes bad because when something doesn't happen or something doesn't work, someone's going to get blamed. We all know that. But to me the most important part of success in space is the individual.

And what do I mean by that? I mean the individual that's working for company A or B that's supporting a launch or satellite or command and control or maintenance, it doesn't make a difference. Support administrative support because you are going to be the target of that spearfish or you might be the CIO for that organization who hasn't closed credentials or you're going to be that individual who is not doing due diligence with respect to self-inflicted wounds. You might be that opening of the Communist Party of China or North Korea or Iran or someone else gets into your company. You don't want to be that person. It takes every one of us to be able to be successful in a counterintelligence security manner to allow us as the United States of America to continue to be the leaders of the world in everything, and more importantly, in space because the future of what we do, not only as a nation of national defense, to the DOD, to the IC, but to how...

PART 1 OF 4 ENDS [00:26:04]

Hon. William Evanina:

... the DOD to the IC, but to how we manipulate and facilitate business and commerce is all germane about the reliability, functionality of space. Remember, 5G isn't just a Huawei Tower, and I say that specifically because we built a 5G network on Communist Party China, Huawei Towers. Let's not let the Communist Party of China control our space 5G, because why do they want to do it? Because they want the business acumen, they want to be able to control and shut off and be nefarious in the future. But more importantly, as they drive their hypersonics program, what do they need to facilitate the most effective and efficient hypersonics program? They need that prophylactic and aggressive mindset in space, controlling licenses and functionality at low orbit. Is that a DOD problem? Is that an NRL problem, an NGA problem? No, it's a world problem.

But at the end of the day, we can't solve all the problems, but we can solve the problems that we can solve sitting in our respective seat, in our government organization, in our organization that supports everything that you do support when you're sitting in this room here. If you weren't in this room today, you would not be part of this ecosystem, that I believe, going back to 2014, is one of the most important aspects that we need to protect from a counterintelligence perspective. The threat landscape from counterintelligence has changed dramatically since I came in into this world. The ecosystem, the platform, the landscape is in the private sector. It is no longer spy versus spy. It is no longer the

Communist Party of China and the Russians and Iranians attacking government organizations like they did 20 years ago.

It is the private sector, research, development and the support organizations that help DOD and IC win. So I'll ask you, when you go back to work, figure out where you sit in this space and how you could be a leader from where you sit and ask the right questions in your organization. Hey, do we have an insider threat program? Hey, when's our next cybersecurity training? Hey, are we integrated with the latest updates on A, B and C and D? Hey, what could I do, how could I volunteer to be part of a task force that helps us protect A, B, and C? Be that leader, because if you weren't that leader, you wouldn't be here today. So you're going to hear some great speakers today talking about space, some very, very smart people, as you've already heard this morning, and it's going to continue for two days, that are really going to educate and inform you to how complicated this arena is.

I'm asking you in my world, make it not complicated. Make it personal to you. What can you do? And it's simple as changing your passwords today, when you go back. Don't be that woman, don't be that man that puts your company in the crosshairs because you got breached, which prevented malware from going from your company to the DOD, to the Air Force, to SpaceX, it doesn't matter where, don't be it. You can control where you are and you could spread that gospel to your peers in your organization. At the end of the day, all counterintelligence, like elections, is local, starts with you. So as I conclude my remarks and sit down with Chris and have a conversation, I'll ask you to be a leader, go back to your organization, ask the right questions and volunteer to be part of the solution, because the only way we continue to win in space, is if we protect what we do at the lowest common denominator, and that's us. Thanks. Look forward to your questions.

Christopher A. Williams:

That's what I call a little [inaudible 00:30:14] evangelism, so thank you for that, Bill. Just a handful of questions here. You mentioned that US defense companies are under attack every day by foreign intelligence services seeking to gain sensitive information, intellectual property, personal information that they can use for subsequent attacks. You talked about not being that person who has sloppy cyber hygiene, et cetera. What are some of the other steps that you recommend that companies take? And I know one thing you're very good at in your discussions with the CEOs of Fortune 100 companies, is tabletop exercises of how you would react to breaches and other things like that. So could you tell our audience a little bit about what can be done in this case? What should companies be doing?

Hon. William Evanina:

Sure, Chris. Two aspects here, I think number one is having a viable insider threat program. I got to be honest, I've been really mesmerized the last couple years how many companies don't have a viable insider threat program. After everything we've been through for 15 years, it's still not a kosher thing to do. And sometimes the construct of insider threat, that word needs to manifest and change itself. But to have a human resources organization inside your company that's cross verticals to help identify employees who are at risk, call it what you want to call it, but you have to have that. A lot of companies don't.

Secondarily, I would say that if you don't have an integrated team that can secure what you make, what you sell, what you manufacture, shockingly, they don't have that. And third, I would say 80% of the boards and companies, CEOs I've worked with on crisis management, 80% of them don't have a crisis plan and they probably have already been breached or they're going to be breached soon, and we walk through a tabletop with them. It's shocking to me how much they're not prepared for when the bell rings.

Christopher A. Williams:

Can you explain a little more to some of the audience who may not understand the term insider threat, what what's meant by that? There's different types of insider threats, could you elaborate a little bit on that?

Hon. William Evanina:

Sure. And it's been a definitional problem for 15 years right now, going back to [inaudible 00:32:24] in the beginning. So I would think executive orders have tried to define it. My definition is that human being who works alongside you, who comes to work tomorrow and decides to do something bad and that bad could be a weapon, it could be harm to self, harm to others, it could be pulling a fire alarm causing havoc or it can be a thumb drive or taking information for nefarious activities. And that's why it's important to have human resources a major part of any kind of risk-based program. It's not a security issue, it's not a counterintelligence issue, it's a human issue. And not only should your general consult be part of that, but as well as your human resources folks.

Christopher A. Williams:

You know well how the foreign counterintelligence threat has morphed over time, it's changed dramatically from the old days, as you mentioned, of sort of narrow spy versus spy, to now a much broader attack surface and many other ways that adversaries can gain access to sensitive information. Talk a little bit more about how that change has occurred and where do you see it going? And lastly, again, what can companies do to both anticipate that, try to get as much ahead, at least play good defense to begin with, but maybe even get ahead of some of those threats and concerns?

Hon. William Evanina:

Yeah, Chris, that's a good question and I think I would boil it down to something that happened. And I thought in 2019, we were in a really good space of understanding the surface area of threat, and then something happened called COVID, and it really changed the landscape. And not only did it change the functionality of what we needed to protect, but it also changed that literal attack service from adversaries, we saw them begin to take advantage of that. And what that is the employees working at home. So we were very, very hurrisome in the government and the private sector, to facilitate and allow employees to work and be productive at home. We did that without any security, without providing them any kind of training, giving them a VPN, having secure portal access.

And you think about the millions of people working at home for two strong years, if you look at now, just in my world, you read an article and you read things differently than I read them. If you look at the Googles, the Microsofts, the Facebooks, the Apples laying off a total of 100,000 people, and every single one of those press releases talks about how we hired tens, thousand, 12,000 people, but we never saw them because they never came to work. Holy cow. How do we know who they are? How do we identify that that individual you hired is actually that individual working at home and has secure access to your network? You want to talk about an insider threat issue. And I think we have to get more effective and efficient at providing employees the ability to work remotely, but securing their communications and their capabilities back to the mothership. And I don't think we're anywhere near where we have to be. So that attack surface, those employees working at home, is something I would call and I would refer to the Wild West right now.

Christopher A. Williams:

Yeah, very much so. What roles should defense contractors have in assuring the security of their supply chain? Now you have a number of large prime contractors here and suppliers to those primes in the commercial sector that's budding. How do you go about assuring a safe and secure supply chain, not just from the perspective of can you get a part on time, but making sure that it doesn't have malware or other embeds, for example?

Hon. William Evanina:

This is a difficult question, Chris, and I'm old school and I'm a little hardcore on supply chain, so I'm a zero trust plus guy. And I'm not even sure zero trust is good enough, and we're trying to get there. But the supply chain, it starts with humans working through the supply chain, but also software, the SBOMs, the whole aspect. But at the end of the day, I think it comes down to the primes really driving a hard bargain with their contractors, their vendors, with simple paragraphs in their contracts that lay out the fundamental equalness that, "Hey, our cybersecurity policies and software policies are X. You need to meet or exceed them if you want to be a contractor with us."

And I think that's where we have to be brave enough to get to in a procurement and acquisition world, to have the guts to say, "If you want to contract with me as the prime, you need to meet our security standards in these three areas." And I think that has to happen before we can ... because we'll spend weeks and months and years negotiating on a narrative or a term or lexicon, and that's just going to slow things down.

Christopher A. Williams:

Right. Not a week goes by that we don't see another Department of Justice announcement of an arrest of an individual who facilitated illicit tech transfer to China or Russia or Iran or others. Does the US government have the resources to investigate all of these threat vectors and which kinds of cases should be emphasized and why, given the limited resources that are available? How did you and others inside the government, make those decisions about which targets in a very target rich environment you would actually pursue?

Hon. William Evanina:

Yeah, wow, that's a difficult policy question. And I would say from my experience and my want, yes, there's not enough resources to do any of this stuff. And where I saw success and capabilities is if we put our mind to it, we could do amazing things. So if you look about when we were making the vaccines in 2020 and the counterintelligence arena and security arena really played a part in protecting the creation, from ideation to the actual making the vaccines, to moving them around the country, the manufacturing plants, protecting that supply chain took a lot of different agencies and a lot of mindsets, and we did a lot of creative things to be able to do that, that I don't think are a commonplace in the space right now. We got some waivers to do some really creative stuff, from geofencing, to preventing known bad actors from getting access to the plants, I think that has to become commonplace.

I think we have to get to a place where we know who bad actors are, where they are, and prevent them to have access to capabilities. That goes from for NIH to NSF to FDA, to the CDCs, to anything that's a research and development that has a collaborative mindset, we have to take the known bad actors and prevent them from accessing that place. And that really gets into the sticky wicket space of security versus privacy. And I think we have to find the right narrative there to allow creative tools to prevent bad actors to a location, that also comes with maybe penetrating some privacy issues.

Christopher A. Williams:

What are the cyber attack vectors that worry you the most these days, and in particular, for this audience, for the space community, whether it's inside the government, in the private sector, big companies, commercial companies, other, what worries you most in terms of cyber threats?

Hon. William Evanina:

Wow, I'm going to take this two different buckets, Chris. Number one is the continued lack of increased spending in the cyber world. You'll hear all these companies, "We spend all this money," but I think the Harvard Business Review are an equal organization, came out in 2021 and said that 6% of companies expenditures on cybersecurity in, I think it was 2012 or 2013, it was still 6%. So we haven't increased dramatically. And even if we did, I'm not sure ... we're certainly more effective and efficient, but I would say that we need to concentrate on the lowest level, the self-inflicted wounds. I think we look at the breaches that still occur today, they're occurring due to self-inflicted wounds.

As Americans, we do three things amazingly well. We panic, the best in the world, we do panic really well, and we click on links like no one in the world. So if you're an adversary and you want to get into our system, you need not go further than sending someone a spear phish. We just can't get over that hump. A lot of companies have even stopped testing on that space because of the numbers get down. So I would say spear phishing, business email compromise, credentials that are languishing and just poor cyber hygiene, people at work and as well working at home. So if we can control the controllables, if we can get really, really sophisticatedly successful on the common denominator of self-inflicted wounds, I think the big cyber stuff will take care of itself.

Christopher A. Williams:

Would you share with our audience your thoughts on how China targets research and development activities in the US, both in industry and in the government? What are some of the prime methodologies that they use? And obviously it ranges, there's a broad range, from collecting unclassified information to espionage and other, what do you see is the landscape there and how's that changing?

Hon. William Evanina:

Well, that's not only a good question, but that's a four-hour answer, but I'll start with-

Christopher A. Williams:

You have six minutes and 19 seconds.

Hon. William Evanina:

I'll start with the understanding that it's a comprehensive strategic plan that the Communist China has with respect to attacking a known want, whether that's a software capability, that's a technology or it's access to technology, they will take four, five, six different avenues to get there, starting with the insider. Secondarily, with the cyber penetration, they'll do to non-traditional collectors, business development folks, traveling business people, and they'll invite folks from a company that's in here today, for a trip to Malaysia, Indonesia, Vietnam, around the world, to go preach about something and they'll bump that person in the bar. And that person has no idea what they're being asked or who they're being asked to. So what does that mean? That means the companies that are here today that really work closely with Department of Defense, have to really up their game on counterintelligence training.

Simple stuff, what does solicitation solicitation look like? What do you report if you're on foreign travel? What do you report on your LinkedIn if you're pinged by someone who you don't know? Simple stuff, because at the end of the day, the most vulnerable folks in this ecosystem are the procurement acquisition folks. And I would proffer you, our procurement acquisition folks, whether you're a DOD or you're in a company here that supports them, are the least trained in this arena. So we have to up our game in training for every individual who's making business decisions, our procurement acquisition, be trained well enough to understand what it looks like, what it feels like, what it's tastes like when they see something suspicious in their world.

Christopher A. Williams:

And we have just a few minutes remaining, so I'll ask you one other question and try to give you some time to do a quick summary at the end. And this is a hard one to go quickly on, but nonetheless, can you provide a quick overarching assessment of the threats to the US posed by Iran and North Korea as well? We've talked a little bit about Russia and China, but to what extent are the Iranians and the North Koreans involved in nefarious activities of stealing IP and the like?

Hon. William Evanina:

So I think they're both in a category of not front of mind for me because we see North Korea and their capabilities are valiant when they want them to be. And I go back to the Sony attack, they're one of the few known destructive attacks that we've seen in our nation's history, that really promulgated a lot of meetings in the White House about what is an attack, that lexicon of attack versus a breach, because attack is a very, very finite word in diplomatic world, and you had a couple hundred million of damage to a US company, that was problematic. They're capable of doing that onesie, twosies, they're capable of doing their criminal behavior to elicit money. They're like organized crime that's state funded. So they also could, they've tried in this world, to supply chain interruption on launches in space, because they know they're competitive.

Iranians, they're like a caged animal. If you look at over the last decade, the ayatollah and the president, and you see now where there are continued attempts to assassinate people that are on their want lists, we saw that, Ambassador Bolton, I think they will continue to do that. The Iranians have a long memory, years and years and years, so they will wait a long time to facilitate what they want. But unlike China, North Korea and Iran have no economic duel use capability. So their theft of intellectual property is only for military use. So Iran does that a lot through to facilitate old weaponry they might get from the Russians. But for the most part, there's not an economic value, that economic value is germane to the Communist Party of China. But Russia has their own military capability and what they want a single target particular technology, but Iran in North Korea, I would call them more in the destructive phase, capable, but less effective.

Christopher A. Williams:

So I think I have time for one more quick question before your summary. We've seen an uptick, significant uptick in attacks on US critical infrastructure recently. For example, there are increasing concern about attacks on power stations and things like that, that provide power to homes and businesses, et cetera. How worried are you about that and can you speculate on where the sources of that might be coming from, carefully?

Hon. William Evanina:

I'll tread lightly on the speculation. But yes, critical infrastructure specifically in our energy space, actual grid, highly regulated, but not all that well secured. And I would say that it's a case by case scenario. And I go back to the Metcalf attack in California a decade ago, it's still not been solved. I think you have to look at actually what occurs on each attack and the TTPs that occur in that attack. Who's capable of doing that? If someone's just driving by a pickup truck and spraying weapons, any Bubba Gump can do that. But if you look and if they get inside, they do some close access capability, they cut things underground and they get inside manhole covers, that's a different world. And I'm, in my role, going to jump right to a nation state threat intelligence service.

Christopher A. Williams:

Well, Bill, we have about a minute left. Please use that for any concluding remarks you'd like to make today, and thank you again for being here.

Hon. William Evanina:

Thanks, Chris. First I'd like to say thanks for everyone who's here today. This is a really important aspect, and again, I'm humbled to be part of this amazing agenda. Secondarily, in my world, it's very negative and it's depressing and sometimes demoralizing, let's just be honest about it, this is not a good morning wake up call. But that being said, I just need you to know that we live in the greatest nation that's ever been invented in the world. And the women and men who work in Department of Defense and intelligent community and work for all the organizations that are here today supporting that, are second to none in the world. Our offensive capabilities have never been better than they are right now. And as an American, I am incredibly proud of what we do every day for sustainability, reliance, how we do it, when we do it, where we do it because of the human nature of the American ecosystem, the American embodiment, pride of being an American.

So I think as we venture into this world of space, let's not forget it's a challenging world, but because of your spirit, your get-to-itiveness and your ability to partner effectively around the world and with your partners will make us successful, because by golly, the United States has been great, and will continue to be great because of the women and men sitting in this room. Thank you.

Christopher A. Williams:

Thank you very much, Bill.

Hon. William Evanina:

Thank you.

Christopher A. Williams:

Well done. Thank you so much.

Speaker 2:

All right, well thank you, Bill, thank you, Chris. Well, we come to the last session this morning and I'm going to introduce Steve Jakes. But Steve's going to spend the next 45 minutes or so talking about some of the accomplishments over the last year that NSSA has done. And it's really supposed to be a celebration, and I think you'll see this to be a pretty enjoyable event. So with that, Mr. Jakes.

Steve Jakes:

Well thanks Chris, again, and thanks for taking the duty of being the MC for this morning. It's been great to have you and great to see you again. So folks, we thought for a bit, it'd be good to just take a little time reflect back on some of the special events that NSSA had the privilege of being involved in over the past year. So we have three. The first one was an event that was instigated by HawkEye 360s CEO, John Serafini, a member of one of our board of advisors in NSSA. And for John, as if he had nothing else to do, early last spring, he and a colleague went straight to Ukraine to see everything firsthand, because that's just the kind of person John is. They were both blown away at the humanitarian crisis right before their eyes, and John came back knowing he just had to do something about it. So he created a vision, coining it, SIFU, the Space Industry for Ukraine.

And John wondered if NSSA would be interested in participating, and of course we said, "Yeah, why not? Let's go do it." So we did. With John's passion and leadership, coupled with a young and equally passionate Kayla Miller, a member of our NSSA team, everybody dove in. So now it's important to note that a lot of folks, a lot of companies were involved in humanitarian efforts with Ukraine and it's just wonderful that people would do that, and God bless you all in your companies for having done that. And so with that said, let's let John and Kayla talk about what NSSA was involved in and its companies who contributed. A story I think you all want to hear. So John, over to you, sir. John and Kayla, come on up. Thank you. All right, good. All right.

John Serafini:

Well, thank you, Steve, for your partnership and Kayla, for your involvement and partnership as well with this crucial initiative. As Steve mentioned, we went down back in March and obviously it's tragic to see grandmothers, young mothers, babies coming across the border with nothing but the clothes on their back and what their grandfathers could carry. But at the same time, seeing the lines of NGOs, the nonprofit organizations lined up along the border waiting for these people to come across, it was inspirational. Seeing their passion was-

PART 2 OF 4 ENDS [00:52:04]

John Serafini:

Seeing their passion was amazing, Israeli nonprofits next to Egyptian next to the people of the Polish country who so opened up their arms to this refugee crisis. And seeing that and meeting some of the nonprofit organizations that were doing amazing work on the ground, and with Steve's partnership and championship, we were able to raise over a million dollars today from companies here amongst us, 23 space companies who understood that yes, we have a role to play in this conflict, but there's also a role for us to play on a humanitarian basis. I'm very pleased to report to you that over the past year, with your capital, we've funded 16 different humanitarian projects. We've moved millions of pounds of food to the affected areas. We've pulled tens of thousands of people out of danger. We've rebuilt homes. We've funded amazing humanitarian efforts.

Unfortunately, as we all know, the depravity of the Russian government and their military continues unabatedly, and the need remains, if not worse. Our friends in Ukraine remain without power, without food, in some cases still in the line of fire. And while all of us, some of us, most of us are doing amazing work to help militarily on intelligence basis with our space capabilities, there's more that needs to be done from a humanitarian perspective. We've asked each of our space industry companies that have had the chance to speak with the CEOs to consider \$25,000. \$25,000 per each of our companies pooled together and deployed thoughtfully with our non-profit partners creates immeasurable value for these

poor people. So I'd ask, if you're a CEO, if you're a C-suite individual who can convince your CEO, please consider a \$25,000 contribution.

Thank you. I'll now ask that we roll a short video that we've developed, highlighting the space industry for Ukraine's efforts. Thank you.

Speaker 3:

In the early morning hours of February 24th, 2022, Kyiv awoke to the sound of air raid sirens and explosions. The fight for the future of Ukraine had begun. Russian forces launched an invasion by land, air, and sea, igniting a catastrophic humanitarian crisis that rattled the globe. Once-vibrant cities have been reduced to rubble, lives and livelihoods have been shattered, and millions now face an uncertain future eclipsed by the shadow of war.

Both appalled by the widespread destruction and inspired by the unbreakable spirit of the Ukrainian people, the space community rallied together with the aim to alleviate suffering and restore human dignity through the provision of humanitarian aid. Space Industry for Ukraine, a collective humanitarian effort of industry leaders, experts in cutting-edge technology, national security space, and defense, pooling their resources to challenge the traditional bounds of strategic support. Forged by innovation, driven by mission and powered by community, Space Industry for Ukraine is uniquely poised to address the most critical humanitarian needs in-country, in coordination with our trusted and highly qualified NGO partners. A number of high-value projects have successfully launched, acquisition and delivery of medicine and food, rehabilitation of wounded veterans and civilians, evacuations and assistance for refugees, critical infrastructure support, housing reconstruction, personal protective equipment for local journalists, and other forms of humanitarian aid. Ukraine remains under siege, and ahead of winter, millions are in need of humanitarian assistance. We stand with our partners. We stand with conviction. We stand with Ukraine.

Speaker 4:

Very good.

Kayla Miller:

Hi. My name is Kayla Miller. I'm honored to be here today. I'm very humbled as well. Thank you for having me, and a big thank you to Steve, who graciously asked me to speak.

When SIFU first started, we knew that we wanted to harness not just the resources but also the experience and the knowledge of our partners. And under John and Steve's outstanding leadership, that is exactly what we did. We were able to fund a number of different projects. Some of them targeted a more specific need, for example the purchase of medical rehabilitation equipment through Revived Soldiers Ukraine. We also purchased protective gear for local journalists through IREX, as well as helped support the development of field communication prototypes like the balloon that we have pictured. And we had other projects that were a little bit more encompassing, and this resulted in the delivery of over 2 million pounds of aid, the winterization of homes and repairs for over a hundred families, and housing and professional support for over 250,000 refugees across Poland.

When we talk about impact, those numbers are always going to be part of that calculation. It's just par for the course with reporting. But there are some pieces that are really difficult to quantify. For example, we have the relationships that we've built with our NGO partners who really developed, and they're the ones who executed all of these projects. We have them listed, Aerial Recovery Group, Alaska State Sno-X Lions Club, IREX, Save Our Allies, Spirit of America, and Revived Soldiers Ukraine. These

organizations have been outstanding, and it really takes remarkable people to do this kind of work, so we couldn't be prouder to partner with them.

And to our industry donors we say, "Thank you so much," because we're constantly reminded of how much your contribution means. Your generosity is what made this initiative possible, but it was your solidarity and your leadership that made it such a powerful force for change. So thank you again. Being a good global actor isn't just about maintaining a wide geographic presence. It's about recognizing the responsibility to contribute and then leveraging that influence to inspire meaningful action. Our partners not only took action, but in doing so they also demonstrated that we have the innovation, the versatility, the audacity, to really revolutionize the way that industry approaches international crisis response. And they dared to ask that question, "What might that look like?"

These could have easily been pictures of a sunflower field out in the Dakotas, or maybe a quiet summer afternoon out in the Puget Sound in my home state, or somewhere out in the Ozarks, but they're not. These were taken out in Ukraine during the war by the founder of one of our local beneficiaries, The MAMI Project. And she chose these because these were the ones that reminded her of what was being fought for, not just what's been lost. As a reminder, Ukraine has a strong legacy of scientific study in aerospace development. It has a rich culture and history, one that's only matched by the richness of its land, which feeds hundreds of millions of people worldwide. If this is Ukraine bloodied and bruised, I really can't wait to see it when it's healed and whole. Must be one of the most beautiful places on earth.

SIFU is an investment in this Ukraine. It's a vibrant country built on the resolve and the resilience of a proud and unbreakable people, but that indomitable spirit isn't something that we should ever take for granted, especially when we have the capabilities to bolster it. But all of that takes action from a community just like ours, and I couldn't be prouder to be part of that. Thank you.

Now, next to speak is someone who I deeply respect and admire. Iryna Discipio is a recipient of the Order of Princess Olga, one of the highest civilian awards in Ukraine, and she's also the founder of Revived Soldiers Ukraine, a SIFU partner NGO. Now, RSU has spent years long before this recent invasion of Russia supporting the rehabilitation of wounded Ukrainian soldiers both in Ukraine and abroad. Two of those soldiers are in the US receiving prosthetics and were able to make the trip out here and join us today. We have Vlad, who was taken prisoner during the siege of Mariupol, and Boris, who has awarded Ukraine's highest national title, Hero of Ukraine, by President Zelensky. [foreign language 01:01:46]. Iryna, you have the floor.

Iryna Discipio:

Hello, everybody. Thank you, Kayla, so much for inviting us. Thank you, Steve, for inviting us over, and thank you very much for getting Revived Soldiers Ukraine as a part of your corporation.

Revived Soldiers Ukraine exists for seven years now as a response to Russian-Ukrainian War in East of Ukraine, and now all over the country. Only last year we spent on humanitarian help to Ukraine and wounded Ukrainian soldiers \$7 million our little group of volunteers had to raise and deliver. A lot of images from the video you just saw, actually it's my city of Irpin, which is right outside of Kyiv. Who would think in three hours from the Russian border Russians will be in my hometown, bombing my kindergarten, bombing my school, taking stuff, killing my neighbors, killing my friends? It was tough. It was very tough.

And these guys stood up. I cannot bear guns. I can't even shoot a gun. I would, but I can't. I don't know why. But these guys can, and they stood up, and this is the least we do here in United States, is to go around, raise funds, and help, because these guys right now fell behind. Ukrainians in the war, humanitarian crisis, refugee children and women are sitting in the basement. We don't know where the

Russian rocket will fly from tomorrow or today. We learn how to live without power. We learn how to live under bombs.

Because of you guys, Americans who stand with us shoulder-to-shoulder, we can fight. We stopped Russia. We kicked them out of my city of Irpin. Yes, it's halfway destroyed, but it's free. And we're again working. We're helping wounded soldiers based in Irpin. Revived Soldiers Ukraine has a location in Ukraine in Irpin. We're getting our territories back because of America and because of the world stood up together with us. So I really much thanking everybody, every American who called me or who contacted not just us but any NGOs and help us.

These guys put their health. A lot of put their lives. Revived Soldiers Ukraine sent seven wounded soldiers on prosthetics to the war zone. Two of them get got killed by Russia, one of them in city of Bucha. He couldn't run. He simply could not run with a gun. He was buried in a mass grave of 110 people. It was very tough for our country. It was very tough for our soldiers. And at least what we can do right now is to give them prosthetic legs, prosthetic arms, and help them, be their strong backup.

So thank you very much. Thank you, Steve, once again. And thank and God bless America. Thank you guys.

Steve Jakes:

[inaudible 01:06:12]. Thank you very much. Center here for a little photo.

Kayla Miller:

Hey, Steve, [inaudible 01:06:49].

Steve Jakes:

Oh, sorry.

Kayla Miller:

One more... We have a couple of partners that are also here with us today, Spirit of America, Colleen and Terrell, and IREX, Nino, if you guys are up there and want to come up.

Steve Jakes:

Come on up. Come on up.

Kayla Miller:

Yep, Nino. Don't be shy.

Steve Jakes:

Don't be shy. Come on up.

Kayla Miller:

Done good work.

Steve Jakes:

Well, that's a tough act to follow. So thank you again for everybody who's been involved in this very important initiative. And John wanted me to mention to you folks that of the contributions that come from all the contributors, very low burden rate. It's like in the 5%. So the dollars are going right to the cost. And the doors are still open for additional contributions, if you're interested.

Okay, so the next event was an appreciation and tribute dinner for the now-retired congressman, Jim Cooper. So if we can have his pretty picture up here. I think a lot of you folks know Jim Cooper. Mr. Cooper, a true patriot, now retired from the great state of Tennessee, and really a leader who will go down in history as one of the two de facto co-founders of today's United States Space Force. The dinner we had occurred in late November at Capitol Hill Restaurant, with NSSA co-hosting with the Aerospace Industry Association, AIA, sponsored by Lockheed Martin. And a number of you folks were among the hundred or so who attended. Had some VIP attendees, the now-chairman of the House Armed Services Committee, Congressman Mike Rogers, the now-chairman of the HASC Strat Forces Subcommittee, Congressman Doug Lamborn from Colorado Springs, the now-retired General Jay Raymond, our nation's first chief of space operations, the Honorable Frank Calvelli, our nation's first assistant secretary of the Air Force for space integration and acquisition integration, the Honorable John Plumb, our nation's first assistant secretary of Defense for space policy, and of course Mr. Cooper himself, his wife Mary Falls, and her daughter Catherine Falls. It was pretty cool.

Simply stated, were it not for the passionate, persistent, bipartisan leadership from Congressman Cooper and Rogers for several years... And keep in mind the house flipped during that time, so the two of them joined at the hip, with Mr. Rogers being the Republican and Mr. Cooper being the Democrat. Again, arguably we would not have the Space Force today. That's our belief. But how about we just hear it from some of the real experts? We have pictures here coming up of General Hyten, preceded by Doug Loverro. Both of them wanted to be there in person. They were unable to attend it in person, so they were so gracious to offer their perspectives in a recorded tribute. So with that, if you would please roll the videotape.

Doug Loverro:

Mr. Chairman, congratulations on 32 years of service in Congress. I'm really disappointed I couldn't be there celebrating with you, so this video note from down under in Australia will have to do.

Even though it's now well over six years, it seems like it was yesterday when I trudged up to the Hill to visit you and then Chairman Rogers in the fall of 2016 to discuss the need for Space Force. What was so vivid in my mind was the fact that you and he were literally joined at the hip in every step we took as we tried to push the department to understand the urgent need. Along with [inaudible 01:12:04], you two plotted a steadfast course.

I've kept pushing the department forward even as the DOD and the darn Air Force kept pushing back. I'm not sure how many others recall it, but that first year set the groundwork for what would come next, especially the excellent report written by Matt O'Kane in response to your 2017 Authorization Act. I sure hope Matt is in the audience there and is able to celebrate this evening with you.

Then in January, 2017, you and Congressman Rogers set the pace early in that first committee session with a fact-finding hearing that you held as you prepared the full committee for a task ahead. I think y'all spent the better part of your day hearing from witnesses, including the late-in-the day session you held with Keith Hall [inaudible 01:12:46] so that you could get the entire committee on the same sheet of music. I don't know who else you spoke to that day, but it apparently worked, since that was the first year you were able to get legislation on a Space Corps.

And I really can't recall how many meetings we had on the subject that first year. It seems like there were a dozen or more. And in every one, the legislation seemed to get just a little bit closer to becoming a reality. When it passed the House, but failed in the Senate that year, I think we were all disappointed. But having made it that far, you were clearly not ready to give up. At least the next year, you and Chairman Rogers were able to successfully create a US Space Command, which was really table stakes on the way to the Space Force.

When the Congress switched hands in 2019, I figured we were done, and we'd have to wait another decade like we had so many times in the past, especially since incoming House Chairman Smith had come out against the proposal once it was taken up by then-president Trump. It's not clear to me what magic you may have used to convince him to change his mind, but whatever it was, it worked.

I was looking back at some old news clippings from the time, and I found this one from Breaking Defense that Colin Clark wrote. In it Clark, commenting on Chairman Smith's position, said, "Given the relative lack of interest about a Space Force in the Senate, I think Representative Jim Cooper's optimism about the passage of a Space Force language in this year's NDA appears, at the most optimistic reading, misplaced." That was in March of 2019, and yet just nine months later, a Space Force was birthed into existence, and you and Congressman Rogers were certainly the proud parents. What a fantastic accomplishment to complete your congressional career. Lord knows we still have a ways to go to get the Space Force where it needs to be, but it's well on its way thanks to your leadership. Congratulations on a great congressional career and your many years of service to the nation. I bid you farewell.

John Hyten:

Greetings, Congressman Jim Cooper, family, friends, everybody gathered here tonight to wish Congressman Cooper farewell as he moves into the next chapter of life. I'm John Hyten, General at the United States Air Force, retired, emphasis retired. I used to be the 11th Vice Chairman of the Joint Chiefs of Staff. Some people say that means I used to be somebody, but not anymore.

So Congressman Cooper, first thing, you're about to be a used-to-be-somebody, and I can tell you a couple things about that. Number one, a used-to-be-somebody is not that bad. It's a pretty good life. It's nice to wake up in the morning, 6:00 or 8:00 or 10:00 or noon, and then go do something or not do something, and to have a choice just to go get a cup of coffee, to hang out with your family, hang out with your wife. Do whatever the heck you want, 'cause you have earned that opportunity. And you're going to walk into a coffee shop in Tennessee someday soon, and nobody's going to know who you are. And oh my gosh, that's a good feeling. Look forward to being a used-to-be-somebody.

And then, second, I just want to say thank you. Thank you from John Hyten. Thank you from everybody that I served with over the last nearly 40 years. You've served in Congress since 1983 with honor. What struck me about you from the first time I met you is that you're what a congressman should be. You care deeply about this country. You care about the people of this country. You care about the people in Tennessee and the people of your district. That's what a congressman should do.

And when it comes right down to it, especially with respect to national security, you have to reach across the aisle. You have to reach inside your own party. And you did. You reached across the aisle, not just to Congressman Rogers, who I hope is there right now, not just to a couple select. You have to reach across the aisle to people that disagree with you. You have to reach inside your own party, and you have to build a consensus, and you have to understand what we need to do. And you did that. And you held us accountable. You asked me the tough questions time and time again, and you forced me to think and to understand and to work towards a better future.

And yes, you and Mike Rogers are the driving force behind the creation of the Space Force, and that's a remarkable achievement, and the history books will record that. It took a president to sign it into law, but it took lawmakers to create the law and that's what you did. And you and Congressman Rogers decided that there had to be something different in space, and you were right. And I got to sit with you in the Capitol and have those discussions. I got to write a paper that you actually read and cared about and argued about, and you did the right thing. But maybe most remarkable is that's the way you did business.

So now you live in an amazingly beautiful state, Tennessee, and you get to go there, and it's north of another beautiful state, Alabama, and Congressman Rogers from Alabama. It's amazing a Republican congressman from Alabama, the Democratic congressman from Tennessee could work together to create the most significant change in our military in 70 years. That's remarkable. And I know Congressman Rogers and you have a friendly rivalry about Alabama versus Tennessee. I'm from Alabama. I love Alabama. It was a little rugged this-

PART 3 OF 4 ENDS [01:18:04]

John Hyten:

I love Alabama. It was a little rugged this year in football. I'm still kind of torqued about Tennessee beating Alabama and the way it happened. I'm sure Congressman Rogers is too, but I'm sure you, Congressman Cooper, are pretty darn happy about the way it turned out. I never will be. There's something about Orange that I just don't like, but I do like Congressman Jim Cooper and you've been trying to get me to call you by your first name for a long time. And a couple emails recently, I've used your first name. So last thing I want to do tonight is just say, congratulations, Jim.

Steve Jakes:

Well that was cool. Mr. Cooper would've loved to have been here with you today, but he's currently on travel in Europe. However, he was also gracious to offer us with these recorded comments.

Jim Cooper:

Thank you, Steve. Thank you, General Hiten. Thank you, Doug Loverro. I'd like to single out not only those three distinguished people, but every single member of the audience here at NSSA. Nobody in America did more to get Space Force across the finish line than you did. In particular, I'd like to single out the 43 people who signed that crucial letter in the spring of 2019 that helped get Space Force passed into law by Congress. This award that NSSA was kind enough to give me is really belonging to everyone in this association, 'cause there are many other groups who were all against Space Force and they'd like to forget about that now, but NSSA really got it across the finish line. So thanks to each one of you. I could not be more grateful for this award. I'm actually writing a book about the founding of Space Force, so be on the lookout for that. And in the meantime, rest easy knowing that America is safer than it was before the Space Force was established. Thank you.

Steve Jakes:

He's writing a book about Space Force. Can't wait to be there for that. It was a fun evening to honor a great leader. Will truly miss his presence on Capitol Hill, as you've heard. However, he's not going away from space, nor is he going away from NSSA as he's accepted our invitation to join our esteemed Board of Advisors. How's that? Is that cool or what? We can't wait for his book. We can't wait for him to stay along and join us.

Okay, now for the grand finale of our little celebration hour, a lifetime tribute to Marty Faga. While Marty's unable to attend in person due to a little medical condition he's dealing with, he's still here with us virtually thanks to the miracle of Zoom. Who'd have thunk? Huh? So Marty, I'm supposed to look at the red dots. Can you hear us okay?

Marty Faga:

I hear you.

Steve Jakes:

All right. We hear you okay as well. All right. So we're going to, we'll be hearing from Marty very, very soon.

So a little background for y'all to hear. Last year, the Executive Committee of NSA's Board of Directors agreed it was time to create its first award, NSA's very own prestigious lifetime achievement award. So the first question was, whose name should the award bear? Who would we like it to bear, with what name? Well, that took about two nanoseconds to figure out who better than the Godfather of National Security Space, the good godfather that is, the honorable Pete Aldridge. Pete, as many of you folks know, is the former undersecretary of the Air Force, then to become the secretary of the Air Force. And all combined with his dual hat assignments as Director of the O back in the eighties during the Ronald Reagan era.

The second question was, well, who should be the first honoree? Well, that answer took about as long as it took for us to figure out who we'd love to have named on the award. So that that award will go to one, the one the only Mr. Marty Faga. So after approaching Mr. Aldridge to seek his concurrence and use his name for the award, our selection, and also our selection to be Marty for the first recipient, here's Mr. Aldridge's response. And I quote, "It would be an honor to have the NSSA lifetime Achievement award to be named after me. And I can think of no one more deserving than Marty Faga to be his first recipient."

That's kind of cool. That was all we needed to hear. And we cannot express in words how honored NSSA is to carry the esteemed legacy of Mr. Pete Aldridge. Many of you in this room who have hair color sort of similar to mine, been in the space business, know the great and consequential leader Mr. Aldridge was, no question about it. So, okay.

In early November, we had a special two-hour tribute with some hundred folks attending. Again, probably some of you folks were there with us and everything went just fine. And to summarize, I wanted to thank our friends at MITRE also for hosting.

So for who to summarize this special event and pay tribute to Marty, who was the anchor that afternoon that evening. You might know the gentleman that would be the honorable Jeff Harris, the MC of the event. So Mr. Harris. The floor is yours, sir. Thank you.

Jefferey K. Harris:

This group loves to get excited about things like launches and successes on orbit and wheel mission successes. But it's always fun to pause and take a look behind the curtain at to where the magic comes from. And on November 14th in the Rob Auditorium at MITRE, we had a group get together to celebrate the lifetime achievements of Mr. Marty Faga. And Marty, we're really glad that you can join us remotely.

Today, I can see Marty's face on because he's on the screen in front of this, in front of me at the event he was sitting here. But more importantly in the front row was a flock of Faga children and grandchildren anchored by Barbara Faga. And it's always interesting while you're speaking emotionally

to look at the faces of people. Now, I know the agenda's going to run about two hours, and I'm looking at the grandkids and says, as much as they love the grandfather, two hours of space stories may be a little much.

Now I was stymied by Barbara both laughing and crying, sometimes simultaneously. But the highlight was Marty grabbed me about a week later when we were an event at Liberty Crossing. And he was describing one of his grandkids reactions to her grandfather actually having accomplished something and how proud she was of him. So I felt that the efforts of many did not go sort of undeterred.

Now, telling a story of this complexity required a lot of help and assembling a storyline over several decades involved Duane Andrews, Joanne Isham, Marion Daja, Tony McPeak, Don Hard, Jeff Grant, Pete Aldridge, the former SEC Def and vice president who dialed in for the event, the Honorable Dick Cheney, Al Grasso, the former CEO of MITRE and Matt O'Connell representing some of his board and industry experience.

So many of us know this, but we have forgotten what we already knew. He was confirmed by the US Senate on September 22nd, 1989. He was confirmed as the assistant secretary for space and covertly confirmed as the 10th director of the National Reconnaissance Office succeeding Pete Aldridge, aka Pete Aldridge.

So this sets up a focus on the word covert NRO. But before I get to that, let's go to the story of Marty, a renaissance man, a patriot, a thought leader, a visionary, a trailblazer. But in the beginning, a boy from Bethlehem, Pennsylvania. A family man, a friend of many, an electrical engineer and a mentor to me, and many of the people in this room. Today, as we did on November 14th, we celebrate his leadership, his technical acumen, his political savvy. He's a good leader. He's an expert at sensing the moment and seizing the day. He has the patience of Job, a mission focused technologist who puts the analyst and operators first. As the director of the NRO He led the declassification of the NRO's existence following more than 30 years in secrecy.

To paraphrase Marty, if you're going to go to all the trouble to have real-time intelligence, why do we make it so hard to get it in the hands of the military user? Marty clearly understood the Gulf War as the first Space War, and it highlighted the opportunities. And many people talked about the opportunities. Colin Powell opined about the opportunity. But Marty took action instilling his belief with the NRO bureaucracy.

And you can imagine that was a slow pivot. But more importantly, simultaneously with the Secretary of Defense than Richard Cheney. Marty, as he got approval to take the organization, unclassified created the operational support office, OSO, with the creation of a deputy director for military support. This put the military mission front and center because the NRO when it was a secret organization, wasn't listed in the legislation as a combat support agency, but it occurred to many of us in the NRO, we actually probably did support the military, and Marty did more than talk about what the law intended. He did it. And the magic that we have done over the last couple decades with the operational support office to enable our mission partners across the defense and intelligence community is are remarkable.

Case in point, on June 2nd, 1995, Captain Scotty O'Grady was shot down while flying an F-16 mission over Bosnia. We were flying tracks in order to collect the information. And he was an easy target for a Mobile Sam Missile. Second Nimit systems spread to action. If you watch the movie, Captain O'Grady described himself as a scared little rabbit where he was running for cover and trying to use his search and rescue radio. Now, we counseled Captain O'Grady that when he finally was successfully rescued, that the fact that he had his low frequency search and rescue radio and he had his back to a wall of rock because he was trying to control the field of view of the Serbian forces looking for him. We said, "We had trained you about this," but you sort of say, are you thinking about the satellites that are looking for

you to help create your extraction? My military deputy at the time was Admiral Jack Dantone, a decorated Navy flyer, and he came into my office and Frank will appreciate this, one of the great pleasures of being directors, as you can say, come over here.

And the admiral sort of scoots over. And I had taken O'Grady's call for help that Tom Conroy helped to intercept. And I put the little bouncing ball on it so that you could understand exactly the point that Scott O'Grady was making. And Jack Danton had traveled with me all over the world to all the operational commanders around the world. And he looked at me because all of a sudden it became personal to Jack. He said, "Look, I have listened to god-damn thousand of your damn briefings, Harris, but this is real when you're listening to pilots from 22,000 miles away, calling for help and the American forces can respond for a pickup.

So at that moment, Marty, the work that she did with taking down the walls, the work that you did, the opening the doors to the operational support office and the rescue of Captain O'Grady, that took all of us working as the village is proof positive that Marty was right.

Getting the organization right was Marty's next priority. Jimmy Hill at times was a man of few words, but he had this belief that if the organization didn't pivot, the organization just couldn't survive. And we're talking a lot about the challenges of the future. But Jimmy, who was a protector of the bureaucracy as several of us were planning the reorganization of the NRO, was leaning in like no others. And he understood that the effective reorganization in order to connect even more, fulsome me to mission was important. So Marty, thank you for your NRA service.

To be complete today, Marty began as a research and development officer in the US Air Force, working in the field of infrared reconnaissance equipment and the application of laser technology to reconnaissance. He then moved to the CIA for the year 72 to 77, Hep C for 12 years, 77 to 89, working program and budget. I can remember talking about infrared sensor systems with both the Hep C and the Cis C, and a particularly astute engineer that happened to be on the Hep C staff as we were making decisions about infrared. A very brief stint at Perkin Elmer vice President and President and Chief executive Officer at MITRE Corporation.

So you say that's enough? Oh no, there's more. He retires from MITRE, moves on to the MITRE board. But then his giving to the public service comes to one of my personal highlights. He joined the president's foreign intelligence board, bringing both stature and substance to a very important independent body that advises the President of the United States. But really interesting, he worked with Senator Des Moynihan on the public interest declassification board that was aligned with the Moynihan commission on protecting and reducing government secrecy. So this could have been a theme that Marty had throughout his career of secrets to be kept secret, but secrets that aren't secrets ought to be shared where they can get the appropriate.

In a public hearing that you can find on YouTube, Marty says, "As the practitioner of the classification art, nothing be made secret unless it need be." So his conclusion after working through all of this is that we all have to stand tall and do that. He was a fellow at the National Academy of Public Administration and served on the board of directors of Alliant Orbital Electronic Data Systems, Digital Globe, GOI, MITRE, AFIO, the Thompson Rotor Special Services, in Merced government. And today we're pleased to have him serve as the director of the National Security Space Association.

He has received Lifetime Achievement Awards, the USGIF 2016 Lundahl-Finnie Lifetime Achievement Award, the DOD Public Service Medal, the Air Force Exceptional Civilian Medal, the NSNASA, NASA Distinguished Service Metal, the Intelligence Community Seal Medallion. And as you all know now, we have bestowed the first ever Edward C. Aldridge, NSSA Lifetime achievement medal.

So in closing, as I told Marty on the 14th, we can all go to Wikipedia and understand the life and travels of Marty Faga. When you get down to the link, national Reconnaissance Office, Martin C Faga, official biography, you click on this link and it comes back 404 page not found. So very much like general Hiten, there's only so much you can do. But to put this in perspective, I am sitting in the Pentagon in Marty's old office as his successor as the director. And he shuffled into the office one day with a paperback book, and he opened up the paperback book about a third into it. And he reads, he said, this is a compelling novel of intrigue. And on this page 56, you're going into the Pentagon to see the director of the NRO, M. Faga. And he says, so no matter how big you think you are when you are in the job, when you leave the job, it turns out to be fiction. So Marty said to me, don't let all this go to your head after being NRO, you are just reduced to fiction. So Marty, the floor is here to make a few remarks.

Marty Faga:

Thank you very much, Jeff. I regret not being there today, but it is what it is. I'm reminded of the ceremony on the 14th and the reaction of the grandchildren, most of whom are in their twenties, you will recall. And they keep asking questions and they have this look in their face that says, but we didn't know you were smart.

But seriously, I have received a lot of very kind notes from that time, and I appreciate it very much. I'd like to take that point to an experience actually that you and I shared, Jeff, in 1995 when we met Lieutenant General, Georgie Ponchin of the Russian GRU, who was here for a conference on climate. And in the conversation, which was a very nice conversation, a very delightful fellow, he made this statement, which I'm going to read, even though it's short. "I am proud of my service and of yours. We both labored during the Cold War to keep our leaders informed. Every time our leaders feared the worst, our hard evidence showed that the intentions of the other side were not so dire. I know that we both helped prevent the Cold War from becoming a hot one."

Well, he said, your service and mine. But what he really meant, of course, is all the people in our audience who built and launched and operated those satellites over at this point, some 34 years and today, some 60 some years. And I offer that quote to drive a point that he was making, which is, this stuff is big and this participation that all of you have had is world history big. Not very many people get the opportunity to do that. We all have. Now, in a sense, this award is quite inappropriate for me because I've actually achieved nothing, nothing except what I achieved with you. Thank you.

Steve Jakes:

Now this fine leader, Mr. Faga, is one of the five founding members of NSSA's Board of Directors. He's on the executive committee of the board of directors. Now, he didn't make the decision that we're going to pick him to be, but you talk about a lifetime achievement, and on and on and on is Marty's story. He won't say it, but we will for sure.

So with that in mind, I would like to now invite all of our distinguished board of advisors, board of directors, other seniors, Mr. Cavelli, please come on up on the stage because now what we're going to do is we're going to virtually present to Mr. Marty Faga, his award, his Pete Aldridge Lifetime Achievement Award. So everybody come on up, please. This be kind of fun. Need a bigger stage, I hope. Let's hope the stage doesn't break. Come on in. We want to make sure we're in the field of view. Holy moly. Come on in the front row if you want to. I love this. You can see how well we prepared this thing, right folks? So where's Joe? Come on over. Mr. Marty Faga, it's our privilege. Where's the red dots? To virtually present the Pete Aldridge Lifetime Achievement Award to you, sir. We salute you.

Marty Faga:

This transcript was exported on Feb 23, 2023 - view latest version [here](#).

Magnificent. Thank you. Thank you.

Steve Jakes:

Fantastic. Okay. I think that does it. Don't drop it. There's a story behind this. We're not going to bother you with it today. But anyway. Okay folks, thank you so much.

All right, gang, that's a wrap for this morning. Wanted to say thanks to a few folks for sure. Thanks for to Chris Long for carrying the water for this today. All the folks, the moderators, the keynote speakers, it's been a fantastic first part of the day. So let's get on to lunch. Thanks to L3Harris. I'm sure their logo's going to pop up here in just a moment for buying lunch for us. We do really, really appreciate that. So let's get up and let's get rolling. Because of Mr. Mulfrey's tight schedule, we'd ask that you all be back here in your seats by about 12:50. So eat fast. I don't care. Bring the food in here if you want to. Okay? So very cool. Let's enjoy. See you back at 12:50. All right. Thank you.

PART 4 OF 4 ENDS [01:42:47]

Transcript

Part 3



Speaker 1:

Our guests, please silence all electronic devices. Please take your seats. Our program is about to begin. Please take your seats. Our program is about to begin.

Joe:

Okay, good afternoon. I'm told if I just start talking, people will come. My experience has been when I start talking they usually run away, so we'll see how this goes. All right, we're mustering. Well, good afternoon. We've got a jam-packed afternoon session, which we believe you'll find to be as substantive as what we had this morning, which was just a wonderful lineup of great discussion, great messaging.

This afternoon we have as our master moderator, Lars Hoffman, who is Vice President of National Security Sales for Blue Origin. As Vice President of National Security Sales, Lars is responsible for helping Blue Origin deliver critical capabilities to the United States government to support a diverse and growing set of national security space requirements. Before joining Blue Origin, Lars was Senior Vice President at Rocket Lab, where he helped build Rocket Lab from a private startup to a publicly traded end-to-end space company. From 2014 to 2018, Lars was an executive at SpaceX directly supporting the national security space community. Prior to joining industry, Lars completed a distinguished career in the United States Air Force as a U2 reconnaissance pilot, a test pilot, and in senior leadership roles in the Pentagon.

Lars holds advanced engineering degrees from the academy, from AFIT, US Air Force Test Pilot School, and has earned national security degrees from MIT, the Air University and NDU. Finally, I'll note, as a fellow Bruin, he has a master of business administration from UCLA. Go Bruins. Lars, over to you.

Lars Hoffman:

Good afternoon. I see everybody making their way back in from the wonderful lunch. Thank you to the staff here at the Marriott for supporting this great event and for supporting us with wonderful meals and breaks. Thank you, Joe, for the introduction. It's a wonderful opportunity to speak here at the second Defense and Intelligence Space Conference. A very large gathering, larger than last year, and it's good to see the turnout increasing and the caliber of attendance and speakers just continues to impress. We've got a great afternoon ahead for all of us, and I'll just go ahead and get right into my remarks here.

I'm here also representing my company, Blue Origin, and I'd like to spend just a few moments here introducing Blue Origin before we start with the afternoon speakers. I'm curious how many of you here in the audience have heard of Blue Origin? Okay. All right, well, that's good.

I'm going to hit some highlights here. Blue Origin is, we're kind of a quiet company and we're building slowly. We've been doing this for quite some time, since 2000 as a matter of fact, but I think you're going to see and hear a lot more of Blue Origin in the coming years. We're very excited about that. I'd like to share just a few highlights with you from 2022 and a peek ahead of what's coming up for 2023.

In 2022, the company grew rapidly. In fact, we almost doubled in size. We're almost to 10,000 team members here. Very highly talented and passionate team Blue members. All over the country we've got locations. Our headquarters in Kent, Washington, right outside of Seattle. We've got our engine manufacturing in Huntsville, Alabama. We've got a large orbital launch site in Cape Canaveral, and very excited to start putting that to good use soon. We've got our suborbital launch site, what we call Launch Site One in West Texas. Spread all over the country with many other offices. Here in D.C., Los Angeles, Denver, Colorado, and elsewhere. Blue is really growing rapidly.

In 2022, we continued to fly our New Shepard vehicle out of West Texas Launch Site One, achieving its sixth human space flight, and we expect more of those human space flight missions in 2023. To date,

New Shepard has successfully completed eight human rated missions, including six crewed flights and two uncrewed verification flights and 15 uncrewed development flights. We've flown 31 people to space and back, including seven women and Captain Kirk among some of our better known astronauts.

Last year we announced Orbital Reef, our business park in space that will replace the International Space Station as a commercial LEO destination. That will continue to grow and service many communities, including National Security Space community. We submitted our bid with the national team for the NASA award for the human lunar lander. You're starting to get a theme here that we're much more than just a rocket company. We're building out an architecture between here and the moon and everything in between.

We delivered our first two flight engines to our partner, United Launch Alliance, two of our BE-4s. The BE-4s are American designed, American made. They're beautiful engines, in the words of Tory Bruno. He even claimed that he might have hugged them when he received them finally. He's installed them and his company has installed them on the Vulcan booster and just yesterday, I believe he was tweeting pictures of it arriving at the Cape. Look forward to Vulcan launching very soon and multiple times this year and we'll be cheering ULA and Tory and the team on every step of the way.

Our orbital launch site at Cape Canaveral tested our transporter erector system. That's going to be carrying the New Glenn rocket out to the pad and bringing it vertical. The first time I saw the transporter erector, I commented that it looked like something that was of the scale of an offshore oil rig, and the response was, "Well, that's because the people that built it do the same and build offshore oil rigs." It's massive to carry the massive rocket out to the pad and bring a vertical. The beautiful thing was the first time it rolled out and connected and was brought vertical, everything was flawless.

They've also tested at Launch Complex 36 all of the water deluge system. There's like a million gallons of water there that are flushed through for the noise suppression for launches, and it worked perfectly the first time also. We're making great progress towards our first orbital launch and many more to follow.

Speaking of New Glenn, our orbital rocket, we have been building out flight articles and lots of test hardware in preparation for the first launch that's coming up here in the very new future. We've got a short video to show some of the testing that we did in this case with the fairing, which is rather large. It's a seven meter fairing. The standard today is five meter, so this is seven meter diameter fairing, which actually equates to twice the volume of a five meter fairing. I knew this crowd would be interested to hear that because of some of the rather exquisite and large payloads that we need to carry up into space. We'll go ahead and roll the video here and you'll get to see some of our young, talented and passionate employees at Blue participating in the testing of the fairing. Go ahead.

Speaker 3:

We're here at NASA's Armstrong test facility in Sandusky, Ohio. We took the fairing from New Glenn, the world's largest fairing to the world's largest vacuum chamber. It's the only place in the world that we can test out this fairing in an environment similar to what the rocket will be seeing in space.

Speaker 4:

Payload fairing is the nose of the rocket. Inside there is the satellite. The payload fairing's job is to protect the satellite as we ascend through the atmosphere.

Speaker 3:

This is the largest structure that has ever been tested here. The New Glenn fairing is 72 feet tall, so when we put that on top of the 26 foot test stand, we're taking up 98 feet of vertical space in the 120 foot chamber.

Speaker 5:

This jettison test is a huge milestone for us.

Speaker 3:

We'll be firing ordnance that will separate the fairing within the chamber. When it separates, the fairing is going to create this huge breathing motion, and we want to make sure the edges aren't going to come in and hit the payload.

Speaker 5:

This test is important because it helps us qualify the payload fairing and prove out that they actually do separate as designed. We'll be looking at things like deflections and stresses.

Speaker 2:

I.O. Ready.

Speaker 4:

We have done a lot of component level verification, and this is really the culmination of putting all those things together.

Speaker 2:

All cameras are up and awaiting trigger.

Speaker 4:

It's going to all happen in a split second.

Speaker 2:

Firing in three, two, one, fire.

Speaker 3:

It separated as expected. We collected a lot of really good data. After this first shot, we're going to test again, and once that is successful, we say yes, the fairing is good to go.

Lars Hoffman:

A little sense of the scale and the caliber of people that we have working at Blue. By the way, that second test was successful also. You can imagine the size of satellites that you can carry in a fairing that large, or multiple satellites, or a whole bunch of smaller satellites, Mr. Calvelli.

All right, so let's get on with it. The final thing I'd like to mention that Blue is reaching out across the country because really we're building for future generations as well. We're building this architecture to space, everything from launch to lunar landing and everything in between. We've got a non-profit arm of Blue Origin called Club for the Future. We've reached 4 million students across the country and

around the world, and I've had a chance to participate in some of those events. Those are the people that are going to be sitting in these seats in the coming years, and so it's all about getting them excited about what we do and helping to bring them along and bring them into the very industry that we all know and love.

Now I'd like to introduce, as we move on to our speakers here. We've got some incredible speakers this afternoon and some incredible moderators to help assist with those speakers. I'd like to introduce our next moderator, Jennifer Walsmith, and she'll be introducing the Honorable Ron Moultrie, Under Secretary of Defense for intelligence.

Jennifer for over 35 years has been a mainstay within the intelligence industry, a leading expert in cyber intelligence mission solutions. She's spent 15 years specializing in offensive and defensive cyber at the National Security Agency, where she was a very key player within the US Comprehensive National Cyber Initiative. She also served in senior advisory roles to the Under Secretary of Defense for Acquisition Technology and Logistics, Senior Integration Group, and the Office of Director of National Intelligence Acquisition Council, all while serving as a senior acquisition executive. I can think of no one better to introduce Secretary Moultrie than Jennifer Walsmith. Thank you very much, and Jennifer, welcome to the stage.

Jennifer Walsmith:

Good afternoon everyone. I'm honored to be here today. It's both an honor and a pleasure to introduce our special guest, the Honorable Ron S. Moultrie. Now, Ron has already asked me to keep my introduction of him brief, but how could I do that? I mean, there is so much to be said in terms of his career, but I will honor the honorable and keep it relatively brief.

Ron is truly one of the most accomplished and trusted American intelligence officers to serve the United States, and we are fortunate to have him with us today. He was sworn in just over two years ago as the undersecretary of defense for intelligence and security. In this role, I just want to say the importance of not only being the senior intelligence officer, the counterintelligence officer, and advising the Secretary of Defense on all security matters, where he exercises authority, direction, and control on all intelligence and security organizations within DOD. That's NSA, NGA, DIA, NRO, DSCA. I mean, the list goes on.

Many of you know he's also dual hatted, and I think this is really important for those of you that listened to Secretary Kendall last night as a direct report to the DNI as the Director of Defense of Intelligence in the ODNI. That's again that convergence of what's happening across our missions. Ron served a 36 plus year career. Many of us don't like to say how long our careers are, but he's served many roles of distinction across leadership positions in the DOD and IC, but the ones that I'm most fond of are those within NSA and the CIA.

I met Ron and worked with him when I was at NSA and he was the director of operations. This was a really dynamic time. NSA achieved under his leadership pioneering four operations, the unprecedented status as arguably the world's most preeminent cyber organization. Think about that. That's a little while ago, and yet it is so important to what we talk about today. He brought governance with agility, two words and activities that we don't often feel are mixed but are needed for scale and speed.

More recently, Ron was a senior advisor to the Secretary of the Navy, playing an instrumental role in the Comprehensive Cybersecurity Review, a topic near and dear to my heart. He subsequently crafted a digital roadmap to better optimize the DOD's cybersecurity, data analytics and infrastructure, emerging technologies such as AI/ML, 5G 6G and quantum computing.

Ron has had numerous awards, prestigious awards such as the Presidential Rank Award, two Navy Distinguished Civilian Service Awards. The ODNI Seal Medallion Award, and I could go on and on in this list, but those are all because of his tremendous accomplishments.

Ron is a Maryland resident, calls his home Annapolis, so another kindred place for me because that's where I call home. He holds an MS in strategic intelligence from NIU, a bachelor of Art, Magna Cum Laude Business Management, University of Maryland, and started a lot of his career in Russian language. So very important. These are all tremendous accomplishments, and I would like to share though one that is another dear to my heart and that's his philanthropic work. Giving back to others such as the Wounded Warriors is an area that he focuses time in his busy schedule. Please give me a warm welcome to the Secretary Moultrie.

Hon Ronald Moultrie:

Good afternoon, and thanks for inviting me to be here today. Jennifer, thank you for that warm welcome. Jennifer's introduction to me is actually longer than the remarks that I have to speak to you about today. I told her to keep it short, but she wouldn't listen, so don't be surprised.

It is an honor to be here. I was talking with Mr. [inaudible 00:20:16] right before we came on, and he mentioned that I was scheduled to be here last year, but I think many of us were interrupted by this thing called the Russia Ukraine conflict, and that prevented many of us from coming out and doing the things we wanted to do. We weren't going to let that get in the way this year, so it really is a pleasure to be here.

NSSA has done tremendous work fostering cooperation between the government and industry and promoting America's superiority in space. The American people may not be aware of the increased multifaceted focus on our space capabilities that we have today, but globally we all benefit from our collective space efforts. Let me start by saying how much we at the DOD value and appreciate the expertise in this room and throughout your community. You play a critical role in keeping America and our allies secure.

Again, it's an honor to be included in your distinguished speaker lineup, including many of my esteemed DOD and IC colleagues. Although we have diverse perspectives, please know that we're driven by a singular goal, and that's advancing our national Security. America has demonstrated its all domain prowess since our nation's earliest days of fighting for our independence. Over the centuries, we have touted our prowess on land, on the sea, and in the air. During the era of Mercury, Gemini, and Apollo, which culminated in the 1969 Moon Landing, we also demonstrate our prowess and space.

However, we are now increasingly turning to space in a more comprehensive way. Space is an indispensable component of our economic, diplomatic, and military activities and our daily lives. Space is vital to our nation's security, prosperity, scientific achievements, as well as to our effective military operations. Our challenge is simply this. We are not the only nation that understands the vital importance of space. Space has become increasingly congested and contested.

The expansion of global space services has placed more assets in orbit, which is now exponentially multiplied when we factor in our allies and competitors space operations. Alarmingly, we know that China and Russia are developing counterspace capabilities, including multiple attack options designed to deliver a whole spectrum of effects. Some reversible, but some that would inflict permanent damage. With advances in space asset tracking services, we are increasingly vulnerable in this domain.

In addition to hostile threats that deliberately seek to attack our assets, the increased congestion in space poses unique hazards. There are increasing amounts of debris in orbit that heighten the risk of a catastrophic event or a collision. Are integrated deterrence objectives require a resilient end-to-end

space architecture that can robustly operate in times of reconnaissance, reconstitute quickly, and do so with a degree of increasing agility.

We also support the protection of our allies' space assets. We have committed to declassifying information. Let me say that again. We have committed to declassifying information about these threats, when possible, and have established mechanisms to share information with commercial providers to enable them and help them protect their systems. Our defense intelligence agency recently released an unclassified overview of the growing threats to our space capabilities, especially those from China and Russia. It's called the 2022 Challenges to Security in Space, and it's available on DIA's website. I really strongly encourage you to get a copy of it, read it or read it on the website. It's a good read, a very good read. I have a copy in my office.

Adversarial threats have major implications to our mission. I'd like to share a few, an overview of what this means for our future architecture, policy positions, and investment priorities. I'll start off by affirming that America has developed and deployed the most capable and comprehensive intelligence surveillance and reconnaissance or ISR architecture that the world has ever known. The National Reconnaissance Office has been executing that mission since its inception at the dawn of the space age, which is more than 60 years ago. Those of you who are attending tomorrow's classified session will hear more about NRO's latest tools and capabilities from his principle deputy director, Dr. Troy Meink.

As a preview, I can tell you NRO's satellites and other space based sensors provide what I deem mission enabling, life-saving intelligence 24/7, 365 days a year. Yet, in order to stay ahead of our competitors and remain the undisputed leader in space, we must modernize our architecture both in space and on the ground to become faster, more innovative, more agile, and just as importantly, more resilient. To that end, we are building a diversified proliferated space architecture, one that leverages a mix of large and small satellites, both national and commercial, across multiple orbits. This will allow us to spend greater time over target with increased fidelity and with a higher degree of resilience.

In addition to modernized capabilities, we are enhancing our processes. This includes working with our combatant commands, our military services, our combat support agencies, to modernize our tasking, collection, processing exploitation and dissemination, which all of you know we refer to as TPED. This will ensure our nation's war fighters have access to the data that they need from our space architecture in the most timely manner possible. For us, it's all about providing our policy makers and our war fighters with what we deem to be a decisive information and decision advantage. We are also moving towards greater automation and more incorporation of artificial intelligence in our architecture.

Finally, we're committed to integrating commercial capabilities in our architecture to the greatest extent possible. We have allocated and programmed resources to assist commercial providers with meeting DOD's timeliness, security and accuracy requirements.

Our second focus is on our policy issues. Our policies must evolve to meet the space domains, challenges and opportunities. First and foremost, we are examining our existing policies and working with the undersecretary for policy, the DNI, the NSC, and the inter-agency, to ensure that we responsibly execute our ISR and mission. We are committed to operating by the rule of law, establishing responsible, safe space norms, and being good stewards of the space domain.

Second, we are examining our current policies to determine if revisions or potentially new policies are needed to maximize our collaboration with the commercial sector. We embrace the expansion of commercial space capabilities, such as commercial radar and radio frequency detection, which are really game changers. They really are, and they're major shifts in where we were before. However, we must keep privacy considerations paramount as we determine how to best integrate and securely deliver commercially derived products and services to users in a timely manner.

Third, we're evaluating our classification guidance in order to maximize the sharing of information where appropriate. This will help us strengthen the existing relationships, build new partnerships that deliver tactical and strategic advantage for the United States and its allies.

The last here I wanted to discuss is our investment priorities. We are working to build capacity, agility, and resilience into all of our systems and capabilities, both on the ground and in space. This will help us anticipate and adapt to current needs, emerging customer demands, and future threats.

Finally, our end-to-end space architecture must remain resilient, interoperable, and capable of satisfying a wide array of future mission needs. The decisions that we make today will help guarantee our space domain success in the future. Our investments, our forward looking policies, coupled with collaborative and willing commercial space coalition will be vital to our future. I want to thank you and your organizations who you represent for your leadership and investment in this vital domain. Collectively, our work in this frontier will keep America and our allies safe, strong, and secure. With that, thank you very much. Jennifer, I welcome questions.

Jennifer Walsmith:

Ron, that was a wonderful talk with us sharing your top priorities and where the nation is going relative to space. My first question for you though is, are you fully committed to commercial and what does that look like? Can you elaborate?

Hon Ronald Moultrie:

Sure. The Department of Defense is fully committed to commercial space, as is the DNI and the rest of us in the inter-agency. We in the department have really painstakingly looked at our requirements for space, and what we've done is we've codified those requirements through our joint requirements process, if you will. We've committed to doing this. We've worked with the DNI to allocate funding over the next decade, I believe, that we've allocated some 4 billion plus dollars over the next decade for commercial space.

Working with the NRO and the others, we've established an innovation fund. That is something that we want to do so we can find innovative ways to approach space and to help us in space, and what we're doing now is we're institutionalizing this. We're working very closely with the various companies. We're working very closely with those who can help us bring this forward. Just as importantly, we're working with partners and allies because they're all investing in space, they're all moving there.

My comments about this being an area where it's going to be a little bit more congested. In a way, that might be a good thing, but we have to coordinate with our partners and allies on this. We're all in on commercial space. Finding the best way though to securely integrate it into our current architecture will be the challenge that we have, and being able to help make it as resilient and protected as possible.

Jennifer Walsmith:

Very true, very tough. You talked about congestion though. I mean, we're moving into an era where it's congested and contested. What have you prioritized to ensure access to space-based ISR capabilities?

Hon Ronald Moultrie:

Yeah, that's a good question. I look at the space domain as I look at all other domains. You mentioned cyber early on, and it's another area where it's fraught with challenges, if you will, but we found ways to overcome that. In the space domain, I think I would start with awareness. It's how do we build awareness of what's occurring in that domain? As we have in all other domains. We've done that in the

sub sea domain, we've done it on the sea domain, the air domain, ground domain. How do we build that same awareness in the space domain? Once we have developed that means or finding awareness, then it's incumbent upon us to develop the means and the policies to share that information. You have the awareness, here's your threat, here's what's occurring in your domain.

PART 1 OF 4 ENDS [00:33:04]

Hon Ronald Moultrie:

You have the awareness, here's your threat, here's what's occurring in your domain. How do you then establish the policies that allow you to share that information? And we've already worked through many of these. How do you establish the pipelines to the organizations, the companies, to the various entities that are going to need that information? Once you have that information, then you have it going securely, how do you establish a way of ensuring that you have some degree of resilience? So some will call it how do you enable the protection and how do you enable, or how do you ensure that we've done all we can to defend ourselves in space? Well, that will start with our being able to look at what are those processes or techniques we can bring on board that will help make us more resilient. How do we then take that, put it into the CONOPS that we use today?

How do we work with companies so companies become more integrated into our planning and how we will do things? What happens when you have a real world situation? And I would say that looking at Ukraine, which I talked about at the beginning of my remarks, is probably the best real world situation that we could have. That conflict that's occurring there today has enabled us to really fine tune what we had committed to paper, what we had committed in some ways to theory, but had not put into practice operationally. And that is how do you take commercial, integrate it so you can deliver that to partners, to allies, to customers as required. So we've done all that, and what we have to do is now look at how we bake that into our future war gaming schemes. How do we bake that into our plans and operations?

It's about normalizing the space domain. You'll hear me say this many times probably today, and you'll hear me say it many times in the future. The space domain is really just another domain that we are now operating in a more complete, comprehensive, fulsome way, if you will. We had to learn how to operate in the cyber domain. We've had learn how to operate in other domains, operating in the space domain the same way we've operated in other domains, having those means to inform alert, make aware, defend against all those things are what we're working on now, and it's going to require all of us, and it's going to require NSSA and your organization to help us do that.

Jennifer Walsmith:

Got it. Got it. So as I want to put on that thread for a minute of information sharing.

Hon Ronald Moultrie:

Yeah.

Jennifer Walsmith:

And I would say, I think I probably have many colleagues that would share this view that, we've made progress in information sharing, but when we talk about information sharing that goes all the way across DoD, IC, allies, partners, and even industry, there are likely still barriers. Now, you've talked a little bit about policy, but do you think those barriers are that we still have, when we talk about doing it at speed and scale, one thing that very well from the cyber regime and our discoveries there?

Hon Ronald Moultrie:

Well, in looking at space, we have committed to our national defense strategy, which we can only enable if we are sharing information, and we have to maximize the sharing of information. So my commitment to the Secretary of Defense and to the leadership of the Pentagon and to our partners and allies is that we want to maximize sharing. We'll do everything that we can to maximize sharing in this domain. To that end, we have to have the policies that will enable us to do it. One of the things that I undertook over the past year and wrote amplifying guidance on late last year, was reviewing our classification and sharing arrangements that we have. So there is some thought that we over classify information. I don't know if any of you might feel that way, but there is this belief that we hide behind the veil of classification.

And I would say, in some ways we've been guilty as charged, in other ways I would say it's been done for reasons that we haven't done a good job of communicating to everybody as to why we do that. We are committed to lowering that veil and absolutely opening up the aperture to share with people. So we will be reviewing that in the coming months and in the coming years. And I've asked our partners and allies to do the same, and they've committed to doing the same. So it's not just United States that must do this, but our partners and allies who have their constructs for doing things that are what we call eyes only, all right, and things that are within their domain, had to open up too. So that's one of the things we have to do. I think another thing that's really important in this space is ensuring that we have the means to provide that information, and we have an agreed upon mechanism for companies and organizations to receive that information, if you will.

So one of the things that we've done is, working with the ODNI, and the director of National Intelligence, Avril Haines, who's been a great partner in this space, if you will. We've looked at what would be that best means and what would be that best way of setting up space sharing policies that allow us to get us to reduce the barriers that prevent us from providing that information and opening the aperture so we're giving out more information. Now, we have probably done this to a greater extent with a limited subset of partners, but as Ukraine and the Russia conflict has shown us, we had to do it with partners who we weren't anticipating would need that information. So we've rewritten policies and we are rewriting policies. We are developing means, which is just as important to the over classification piece, you have to develop a means to share information with individuals.

We have to determine what should be declassified or what should be reduced in classification, if I can say it that way, at the outset of some of our activities and operations. And then we have to go about ensuring that we hold ourselves accountable for releasing that information. I think part of this is going to be a cultural change. So I think we can put policies in place. We have to get people to not default to putting certain classifications at the top of pages. So I think the space domain, figuratively and literally we would say in the IC, and then the DoD, defense intelligence enterprise has been radioactive, which means that we can't share with other people. We have to find a way of demystifying it, normalizing it, and saying to people, we will share in this domain just as we share in other domains where we have just as sensitive, if not more sensitive, sources and methods, but we found ways to minimize classification.

We found ways to share this information. We found ways to put it out in the public domain. And we are doing that. We have done it since the outset of the conflict in Ukraine, and we're going to continue to do that. We have to work with you. We have to work of course, with the interagency, we have to work with National Security Council, we have to work with the DNI, and we have to work with our leadership to make sure they understand why we're doing it. We have to preserve sources and methods. I mean, that's really key. Everything that we say, every word that we say at this conference, our adversaries will look at, they will note, they will study, and they will play back to us, and they will find ways to exploit the

vulnerabilities that we may have here. But I think it's important to us, space is it's going to be an integral part of what we do in the future.

It's going to be baked in. It's already being baked into our future planning. And for us to be successful, we're going to have to continue doing this. And to really lean forward with these forward leaning policies and thinking policies on this. I just have one ask of you as we do this, work with us on it, tell us where we are falling through the mark. Tell us how we can better engage with you. We're committed to doing so. I have had multiple dialogues with leaders in your industry to talk to them over the last year and a half about what we are doing, what we need to do better. I've committed to working with our overseers and Congress to ensuring that we do this, and I've committed to the Secretary to ensure that I do my part as the lead for defense intelligence and security enterprise to ensure that we are doing all we can to enable his national defense strategy, but more importantly, to enable the continued security of United States' partners and its talents.

Jennifer Walsmith:

Got it. Thank you so much.

Hon Ronald Moultrie:

Yeah, thank you.

Jennifer Walsmith:

So I'm going to pivot a little bit.

Hon Ronald Moultrie:

Sure.

Jennifer Walsmith:

And ask about cybersecurity in space. I couldn't sit here today in my role, in my background, without asking you to elaborate your views on cybersecurity in space.

Hon Ronald Moultrie:

Yeah I think when you look at cybersecurity in space, I would kind of flip the way that we name it, the nomenclature for it, and not call it cybersecurity in space. I would call it cybersecurity in the space domain, because it's not just in space, it's the ground architecture that we have. So when you start looking at space and we start talking about the end-to-end architecture that enables us in space, starts with our ability to have our ground component. We have to have that ground component. We have to ensure that ground component is secure. We have to ensure that all the things that enable that ground component are secure. And that enables us to ensure that we are able to look at the space component. It's the uplink downlink, ensuring that we have the right security there, whether it be with encryption or other things. And then how do we to the best of our ability, protect our in-orbit assets? Or how do we have the right communications infrastructure around those assets? How do we make sure that communication, infrastructure is hardened and secure?

How do we ensure that what we pass down and downlink to our assets around the world that may be engaged in military operations or maybe involved in operations in an allied company or a partner company, a country or somewhere around the world, have access to that communications in a secure way that cannot be denied. So that gets to this integrated operate architecture we're talking about. It

gets us to resilience. And that resilience that we talk about is just not with the proliferation of multiple vehicles or a multiple orbit architecture. It's also end-to-end ground up through the space layer. And how do we defend all that? How do we think about that? And it also starts, as I said, with the components that enable that, which may be something as simple as a utility company that provides a power and cooling for our ground architecture. That's a great question.

Jennifer Walsmith:

Thank you. So as we wrap up, one of the questions that I know everyone wants to hear is, how can we help you? Is there anything particularly in terms of a message you'd like to leave with us and how can we help you?

Hon Ronald Moultrie:

Yeah, I think one of the things I would ask is, talk to us about concerns that you may have about whether or not we're committed to this. If you feel we're not committed to it, please come talk to us. We are committed, and my door has been relatively open to phone calls, to meetings in my office with many of you, to engagements with you on this. We have Congress that's been pushing us to do this. But more importantly for us, we have our Commander in Chief who says, "Look, space is important to us." So it's come from the President of the United States that this is an important domain and we are going to do all we can to ensure that we are fully optimizing our ability to operate in that domain. And we see commercial as a major component of optimization.

So we're committed to it. We may not be as transparent as we need to be, and that's something that we have to work on, but we're committed to it. So I would ask if there's something, that's number one, I would ask, if there's something that you see that you believe is a barrier to us engaging or something that we haven't done, let us know. We have this innovation fund that I talked about and things that we want to do and all that. Number two, I would ask you to continue to innovate because that is important to us. And as I stated in my remarks, things like radar, this was a world that we worked for years in the commercial space with electro-optical and things like that. But opening it up to radar, opening up to RF was from the world that you and I, both were in, right?

Jennifer Walsmith:

Yeah.

Hon Ronald Moultrie:

Wow. That was the domain and purview of another organization. But now opening up there, keeping in mind all the privacy things that I, because of my background, I speak to privacy and see it's important, that the American people feel safe, that our partner and allies and competitors feel safe. But there are other areas I think we can open this up to, and there are other things we can do outside. So just another focus of ours in the, what I'll call the national security establishment, is not just what we do in terms of our combat operations or our military support operations. The DNI and I have increasingly committed to supporting the peaceful application of space and how do we ensure that we're looking at things like climate. So it's just as important. Climate change has been identified by this administration, but it's been identified by our Secretary of Defense, as an issue.

That should be one of our top priorities. And that's because it will impact and has impacted our military operations around the world. It has impacted our installations and bases and other activities, if you will. So there are other applications of this that I think that you can help with, that you can think about and

not just, well, how can we help you with this problem over here? How can you also help us with our global footprint, and the global work that we do to enable our national defense strategy? And the last thing I would say that we need you to do is to partner with us as we look at how do we not only make our architecture more resilient, how do we ensure that we are working across each other? How do we ensure that you are not just working the stovepipe of Europe?

So NSSA is working together, but we need the companies also to work together because we don't want to be the final integrator of some product that everybody has built in all these stovepipe ways. I know it's somewhat hard because it's proprietary information on all these things that you have. But remember, we are looking for solutions that we can integrate as quickly as possible into our architecture, to our work fighters, to our partners and allies, so that we can bring that greatest impact and effect possible to activities around the world. So I would ask that you also consider the work that you do among each other because that will help us, in the long term, be able to deliver this for the American people and our partners and allies.

Jennifer Walsmith:

Hear hear. Thank you very much. Well, on behalf of the women and men in the room today, let me thank you for joining us. Your schedule is so busy and the fact that you took time out of that precious schedule to spend with us on behalf of NSSA, we truly appreciate it.

Hon Ronald Moultrie:

But first and foremost, let me thank all you for taking time out of your days to do this. This is important for you, but it's important for us. But I know it's time that you take out of your schedules to be here too. So it's an investment. What you're doing is an investment in our nation's security. And I mean that in a way that you probably may never understand, but it is so important to us. For those of you who write about this, whether you're press members or those of you who go back and talk about it, I want you to talk about it in ways that say we are all committed to it too, right? So it's an investment of all of our times. It's an investment in the presses time. But Jennifer, I also want to thank you for your many decades of commitment to this.

I mean you, as well as I, have been behind the wired fence, if you will, and you know how important this is. You know we can't do it alone, you know that we have done all we can, from your time running acquisition for a major combat support agency, to really move away from that not invented here syndrome to that, hey, we have to rely on commercial. And so I thank you for the work you're now doing on the outside, to make that a reality. And for being here today and facilitating this, I just thank you for the partnership, the friendship, I look forward to working closely with you in the months and years ahead.

Jennifer Walsmith:

Thank you, Ron. Let's give a round of applause to Mr. Secretary Moultrie.

Hon Ronald Moultrie:

Thank you.

Lars Hoffman:

All right. That's a great way to welcome everybody back after lunch. Thank you Jennifer and Mr. Moultrie, fantastic opening to our afternoon. Now I'd like to bring back to the stage Mr. Joe Dodd, you

met Joe earlier this morning, and again this afternoon when he introduced me earlier. Joe's going to be conducting or moderating a conversation with Air Vice Marshal, Paul Godfrey, Commander of UK Space Command, virtually, we have that technology now, so via Teams call. So that should be a fascinating conversation. Air Vice Marshal is recently in charge of air and space assets in the combined Air and Space Operations Center in Al Udeid, undoubtedly using many of the space assets that Joe and all of us have helped put into space over the past few decades. So Joe, I'd like to welcome you back to the stage.

Joe:

Okay, good afternoon. While as Lars mentioned, it's a great pleasure to have a new friend join us virtually and remotely from the UK. And that's Air Vice Marshal Paul Godfrey, who's both a member of the Order of the British Empire, and also the First Commander, current commander of UK Space Command. Just a few words about AVM Godfrey. He joined the Royal Air Force in 1991. He's been a fighter pilot for most of his career, or as they say over there fast jets, that's a term I learned years ago, I love that term. A weapons instructor on the Harrier, and one of the first operational pilots in the Eurofighter Typhoon. He's flown on numerous operations and exercises with RAF and undertook an exchange tour on the F-16 Fighting Falcon with the United States Air Force.

Space Command was established, as many of you know, in April 2021, it's a joint command headquartered at RAF High Wycombe and Buckinghamshire. It's staffed by personnel from the Royal Navy, the British Army, and the Royal Air Force. Alongside civil servants and contractors. The UK has been operating in space routinely since 1969 and continuously since 1988. Following its formation in 2021, UK's space commands, capabilities, and workforce have rapidly grown, now including command at RAF Fylingdales, North Yorkshire, and the UK Space Operations Center also at High Wycombe. It's a privilege, it's been a privilege for me to get to know Air Vice Marshal Godfrey since his appointment to lead UK Space Command. I'm certain that you'll find his insights, perspectives to be refreshing, substantive and vital to efforts underway between the US, UK, and other close allies to move more fulsomely toward National Security Space interoperability. Godfrey, over to you.

Air Vice Marshal Paul Godfrey:

Hey, thanks Joe. And just give me a thumbs up if you can hear me. I'm guessing all is good. Good afternoon everyone. Thanks for the opportunity to... I can see you, thank you, to be able to speak to you. It is a real honor to be able to talk to you today given the caliber of speakers you've had so far. And I sat there and the fact that Mr. Moultrie was just performing and some of the things he said, I think it dovetails into what I'm going to talk about this afternoon. I would like to thank Joe specifically for the invite today. And when it did become clear that I couldn't travel, my only rider was to be able to be projected onto a giant screen, like a huge space overlord. But I'm sure he will tell me that I'm on a TV in the corner at the moment, you've just got the slides.

So given this is the Defense and Intelligence Space Conference, I thought I would just focus my comments on developments in UK Space Command, the war in Ukraine, and finally the construct that we have devised to ensure that we can protect and defend our assets in space. And as you've heard, we've had a few up there over the years and we're hoping to have more. So as we begin 2023, amazingly, and Joe mentioned it, there it is, the year that UK Space Command reaches the terrible twos, and I did Google it. It's characterized by tantrums, defiant behavior, and lots of frustration apparently. And I can confirm that we are there.

But, we did reach our initial operating capability on the 1st of April last year, demonstrating that we had grown enough personnel and experience to be able to take on all of the capability programs, which we initiated with the additional one and a half billion pounds that was allocated to space in our 2021

integrated review essentially across government quadrennial review, which notably is being refreshed right now as we speak based on the impact of the illegal Russian invasion of Ukraine. And note that that billion and a half was in addition to a five and a half billion that was already there allocated to SATCOM. So we started with six of us on the 31st of March 2021, in Covid, no infrastructure or headquarters. And only two months after our Vice Chief of Defense signed the order to form the command. It has been an incredibly quick flash to bang and hugely helped out from all of the support in the United States. If I could go to the next slide, please.

Joe mentioned some of this. I'll see whether the international link is going to work, there it is, of where we've got our personnel. So starting with six, there's now just over 500. We inherited, you could see 300 people there RF Fylingdales, a US ballistic missile early warning radar, and space domain awareness radar, but controlled and operated by us. And the rest split between the space assurance test, an evaluation unit based to RF Waddington, and the Space Operations Center and UK Space Command Headquarters here where I'm stood right now at RF High Wycombe.

So today I wanted to cover the defense space strategy just through the lens of three strategic goals within it and how Ukraine has highlighted some significant protect and defend issues that actually Mr. Moultrie got to talk about in the last segment. So next slide please. And you can see when this slide comes up, there's three key documents here after the publication on the left-hand side of our integrated review in March 2021, the National Space Strategy in the middle there was published in September 21, and this was authored by the Space Director in our business department, the equivalent of the Department of Commerce.

And they oversee civil space in the United Kingdom in close consultation with their own MoD space directorate, that only stood up three years ago. Written at the same time with the same full cross government collaboration the defense space strategy you see on the right-hand side was released almost exactly a year ago now. And as well, hopefully a lot of you had a chance to read it. It is an easy read, because as well as highlighting the defense space objectives and capability head marks, it provides the three strategic themes that UK Space Command have used to set our direction. Next slide, please.

And as you'll see from the next slide through the National Space Strategy of Protect and Defend our national interests in and through space, you can see the three strategic themes of protect and defend, enhance military operations, and upscale and cohere. So I'll start actually with number two there. Enhance military operations. Next slide please. Now, clearly there is an expert audience here, but the war in Ukraine has highlighted exactly how space can enhance military operations. And I use three primary areas, Positioning, Navigation, and Timing, PNT. ISR, Intelligence, Surveillance and Reconnaissance. And SATCOM, Satellite Communications.

Now, the reason I am talking about this is it's not always obvious to broader defense, especially in the United Kingdom, with us only starting in the last couple of years. So I'll always take the opportunity to elaborate on this. Now, again, I don't need to tell any of you in the room how important PNT through GPS is to our way of fighting in the 21st century as well as our way of life. And whilst this is bequeathed to the world by US Space Force, all of us need to understand the consequences of jamming or space weather, and then how that affects our precision fires or navigation.

And in a previous life, as you've heard, I've definitely been on the wrong end of this. Now, for us in the UK, it's the Space Operations Center here at RF High Wycombe, they are the focal point for the understanding of the effects of space weather and jamming on GPS. And in close collaboration with the US Joint Navigation Warfare Center, they're also able to provide information to our troops and personnel on the latest status of GPS constellations, highlighting the accuracy of the service in contested environments. But unsurprisingly, Ukraine is one of those contested environments, and it has been really interesting for me to see and watch how the military have considered alternative methods of

targeting when GPS isn't at its highest accuracy, and how this affects our future capability. Ukraine has also highlighted our space is the ultimate high ground, and with neither Russia or Ukraine having full control of the air, [inaudible 01:00:25] missions have become increasingly difficult unless you are using space. And clearly that was an awful lot of the conversation in the last segment.

We've seen a huge increase in commercial ISR over the last few years, and many have made the front pages of the newspapers around the world, even before the 24th of February last year, showing the world the extent of the buildup Russian forces through to updating frontline positions, encountering Russian disinformation. And one of the highlighting examples, and one that I'll always use was in Bucha in April in Ukraine last year, where Russia ran the narrative that the Ukrainians had killed their own people and left the bodies in the streets before they arrived. That picture you can see in the middle is from Maxar and shows that commercial ISR systems ultimately, because of that releasability and proved to the world, that the bodies were placed in the streets after the Russians arrived. Critical, the commercial ISR is, if you don't have your own national technical means.

And on this, don't underestimate the deterrent effect on Russia in repeating this sort of action again, this is exactly why in the UK we're investing around a billion pounds over the next 10 years to create a dual use civil and ISR constellation in lower Earth orbit, although just as exactly as Mr. Moultrie just talked about, will continue to work with commercial imagery providers through our own collaborate and access model. But with the advantage of ownership, allowing us to control tasking and classification, although I know a lot of the commercial ISR providers are very much looking into that.

Last October at the Atlantic Future Forum in New York on HMS Queen Elizabeth, I was on stage after the founder of Google, Eric Schmidt, which was a tough follow, had called the Ukraine War, the first broadband war. And ultimately, this has been possible because a mix of lower earth orbit and geostationary comms. Now, we watched in our Space Operations Center, the initial Russian onslaught, we saw almost a hundred missiles launched in the first hour in the early morning of the 24th of February, targeting specifically communication nodes and relays amongst that initial salvo, bringing down both military and civilian comms. Next slide, please.

And this has been the fascinating part for me, but two days later, a single tweet from Ukrainian Deputy Prime Minister Mykhailo Fedorov to Elon Musk requested his help to use Starlink to reconnect the country. Now, it may well be Starlink representatives in the audience here and have much more up-to-date figures than me, but they responded with ours. And I understand that there's nearly 30,000 Starlink terminals in Ukraine, ensuring that broadband connectivity for both military and civilians. And I think one of the more interesting insights into the future of commercial support to military operations, has been Elon Musk pointing a tweet in May that's up there there, that Starlink has resisted Russian cyber war jamming and hacking attempts so far, but they're ramping up their efforts. And also adding in October that the jamming and cyber attacks have been relentless.

Now with one word in the United Kingdom with 542 since last week, satellites in orbit and with Amazon Kuiper due to launch their first satellites this year, it is sobering to hear of that action against Starlink. It's also fantastic to hear how resilient they have been through this. It also highlights a particular point as I move on to protect and defend goal that within the defense based strategy, and it has just been talked about in the previous conversation, it is all too easy to concentrate on the orbital element of the system, especially in a space command. But the link in ground segments do need continued cyber protection whilst the ground stations need to be secure to prevent hostile actors from taking action. Next slide, please.

So I want to protect and defend. Again with this audience, I don't need to tell you, November, just over a year ago, saw Russia launch a direct anti-satellite missile and destroy one of their Kosmos satellites. Almost a year ago, SJ 21 from China demonstrated the capability to rendezvous with the defunct BeiDou

satellite, grabbing it with all the open source reporting, showing that it moved up to 3000 kilometers beyond the graveyard orbit. And clearly, an amazing debris cleanup operation, but it could also be another person's anti-satellite weapon. And the first priority within our protect and defend mission is that space domain awareness, which is clearly incredibly difficult given the distances involved, 36,000 kilometers away for our Skynet satellites. Not the easiest problem to crack.

And for us, and I've seen this in the last two years, as a potential threat, actually a threat, or is it just passing by in the geo stationary belt? We need a range of sensors and protection measures on all of our on orbit capability to determine, and I think the biggest thing is attribute nefarious activity. And it won't surprise you to know that when our Skynet satellites were launched, the protect and defend mission wasn't at the top of their list. Next slide, please. I therefore thought I would just expand for the broader audience here, on how UK Space Guard, how we are working with our UK strategic command and Airbus, on protecting and defending the Skynet constellation. Now for us, requests come in from across defense with Defense Digital in our strategic command collating and managing the-

PART 2 OF 4 ENDS [01:06:04]

Air Vice Marshal Paul Godfrey:

... In our strategic command, collating and managing the request for support for SATCOM before passing this to Airbus as the operator to manage the ground link and orbit segments to provide the SATCOM service to the customers. All very easy until the orbital threat started to increase over the last few years leading to the formation of UK Space Command. And with the change from a COCO, contractor owned contractor operated, to a GOCO, government owned now contractor operated solution on the 31st of August last year, the Ministry of Defense, through us in UK Space Command, now have operational commander control of the Skynet spacecraft. Previously, as I say, it was a COCO, it was a PFI, or private finance initiative. And in simple terms, Airbus still operate the Skynet system. UK strategic command, through Defense Digital, are there to protect the payload and ensure SATCOM provision to the user. And UK Space Command, we are there to protect and defend the spacecraft on orbit.

So a quick example, next slide please, and you'll see lots of lines and elements on here. It will get busier, but our Space Operations Center becomes aware of a potential threat on the geo stationary belt from a range of different sources, including our OSINT, and there's a huge amount of commercial data available to us to look at these things as well. But a potential adversary is drifting close to one of our Skynet platforms and maybe looking to potentially eavesdrop, jam, or worse case, pose a more direct threat to the satellite. Having confirmed the threat, UK Space Command, we would convene and chair a threat response board, as you can see on the left-hand side there, which brings Airbus, the operator, Defence Digital and other key stakeholders into the virtual room to discuss the options.

Options for us may include do nothing, switch bearer or even move the spacecraft, which clearly has an effect on the users on the ground and the plan fuel on board the satellite. It may include, as we often do in other situations around the world, speaking directly to the potential threat operator. And it may include calling out the activity in international forums if it breaches international norms, rules and behaviors in space. Airbus still remain the licensed operator in the United Kingdom and are therefore legally responsible for the safety of the platform. Therefore, the discussion in the threat responsible becomes a risk discussion. How much risk are we willing to take? It may well be that potential adversaries plan to actually get us to move, to purposely reduce the fuel on the spacecraft. So it is always an interesting conversation. And clearly we're working hard as a new organization on the protection across the ground link and orbital segments and also discussing offboard solutions to space domain awareness and the ability to protect and defend.

So in terms of industry and the room there, please don't be shy. I'm all ears with the new good ideas in terms of this particular problem. Next slide please. And clearly we're not doing this alone. And so I've built it like this on purpose and you can see here the connections with our allies and partners both in the U.S. and across the world, with that combined space operations, seven nations in the middle there, so that we can share the information, and Mr. Moultrie talked about this in the last one, and enhance that protect and defend mission. We are reliant on partner and commercial capability whilst we in the UK build our own. You can see from the right-hand side of this particular slide how we match the U.S. elements all the way to defense department, and the respective state departments, who have the lead on messaging of breaches of international rules, norms, and behaviors as did happen on November the 15th and November the 16th in 2021.

So next slide please, and I won't major too much on this, but the final strategic theme is to upskill and cohere. I'm termed the training requirements authority in the United Kingdom. I am responsible for the introduction of a foundational space training course on all of our phase one training across defense, not just in the space area. And in the next two months, we're going out to invite academic institutions to tender for our Space Academy where we're collaborating with academia to ensure that, not only can we bring defense personnel to the academy to undertake postgraduate and specialist training, but we can enhance the space courses that are currently available, hopefully create capacity to train civil space industry and international students, and hopefully be able to take on some of the overseas training burden for the United States. And last slide please. And so in closing, I do need to tell this particular audience that if it wasn't obvious before, it is obvious now that space is a highly contested domain across the ground link and orbital segments of capability.

And although we're just about coming up to our second birthdate, we have made, as Joe mentioned, significant progress in understanding how we'll protect and defend our current and future capabilities and how we will enhance military operations for the rest of defense and our allies and partners. And we're now starting to move out on our capability, launching our first satellite this year and a range of other things that we've done from a terrestrial perspective to enhance our mission. I would also highlight that none of us can do this alone given the current and the pacing threats. Our budget may well be a 25th of General Saltzman's, I've worked it out.

But if we get this right, we can really make a difference from a UK perspective with our capability, our geography and support for allies in international forums. Now finally, we're in the process of upskilling not only our own people as we bring in more personnel from the military, civil service and contractors into UK Space Command, but also highlighting through education and training across defense, learning lessons from Ukraine, how space may well be the solution to the multi-domain problems we face now and in the future. And with that, hopefully we've got about 15 minutes for a conversation, although clearly I don't get to sit in the nice green chair. But Joe, over to you.

Joe:

Thank you, sir. I decided to just stand here and not sit in the chair by myself, which looked to be a little awkward. So stand here. Yeah, three questions sir, and thanks for lingering through the evening there and so far the AV and IT has worked quite marvelously. So I want to begin with where you left off. The UK is investing billions of pounds in Skynet 6, the future as you described, a sovereign UK SATCOM. Australia's investing in JP 9102, Canada, France, Germany, and others have substantial MILSATCOM capability. And of course the U.S. continues to refresh and expand narrowband, wideband protected SATCOM systems and networks. The question, "Are these efforts beginning to showcase allied by design? Quote, unquote. "Is there more work to be done toward that end?"

Air Vice Marshal Paul Godfrey:

That a really good question. I'll tell you what, so I'll point to just two recent events for me. One, last week I was in Paris. It was actually for the signature of the operations MOU for the NATO Center of Excellence for Space, which is being built in Toulouse in France. And I sat down with my, at the time, French and German equivalents from the CSPO nations to talk exactly that. How do we enhance our protect and defend mission? How do we enhance specifically the SATCOM, the SATCOM provision. We already have various MOUs, various letters of agreement across various nations about being able to use excess bandwidth, certainly from a SATCOM perspective. So that was one thing, a really good conversation last week about exactly the sorts of things that you're talking about and about future interoperability.

Just prior to Christmas, actually it was in New Zealand, we had the Combined Space Operations principles forum that had both General Saltzman and General Dickinson there and four star equivalents from the other nations. In Australia the week before, I'd specifically been talking to Australia about JP 9102 and looking at with them at the beginning of their capability journey on 9102, us being a little bit more advanced in terms of Skynet 6A, but actually fairly open with Skynet 6 EC, the follow ons from that over the rest of this decade. How do we actually bring these all together? How do we tie up both assets in geostationary? Ukraine has highlighted the advantages of LEO comms and I think we'll see this as a fundamental turning point in the future.

How do we do all the [inaudible 01:15:34]. How do we design into these things and how do we make them modular so that we can in the future do space refueling servicing or even upgrades? It's all of those conversations that we're having at the moment. So it is a really timely question, Joe, and something that we're trying to get after. But as you know with all of these things, we're just doing it bit by bit and working out how we can do this. It's actually from the other side of the house. When we look into the low earth orbit side of things, just having international standards for interfaces like laser optical links in space such that we don't need translator SATs, we're all using the same. Those are the sorts of things that, I think, we can get after easily.

Joe:

Excellent. Thank you, sir. Glad to hear. The UK now has a blossoming commercial space sector and a sovereign launch port. How are these developments being leveraged by UK Space Command?

Air Vice Marshal Paul Godfrey:

Well, it's interesting. I think everyone will be aware that whilst we got 95% of the way there to space... When was it? A couple of Mondays ago. Really disappointing that we didn't quite make it all the way there, but actually the hard work is now done. So with Spaceport Cornwall and the horizontal launch, it was the first time that the regularity in the UK, the Civil Aviation Authority, the FAA equivalent, had licensed a spaceport, a launch provider, a range operator, and so on. So the fact that we got through all of that is going to make it so much easier next time. And actually I was looking today given a couple of changes, the next space port online, up right in the north of the United Kingdom, as north as you can get actually, in the Shetland Islands, could be launching as soon as August from a vertical launch perspective.

In terms of how we leveraging it from a Space Command perspective, because it is a UK space agency who we work hand in glove with, have been dealing with United Kingdom launch. But we actually ran a reactive launch trial across all of the elements of the Virgin Orbit launch from Cornwall, using our Air and Space Warfare Centre as well, to run the trial just to see how reactive launch may well be a requirement

for us in the future and to understand exactly how these things work. So you may have seen in the press that we use one of our C-17s to transport LauncherOne across the United Kingdom, some of the ground equipment and so on.

And so it has been enormously valuable for us and you probably seen as well that we've actually had one of our test pilots. So an RAF test pilot works for UK Space Command, but actually seconded out there to those in orbit who was the captain of that particular mission a couple of weeks ago. So we're learning a huge amount from this and it is really valuable and certainly we are going to share with our partners and allies as people start considering how with the growth of launch, how reactive launch might well be a capability we need in the future.

Joe:

Super. I'm sure 95 will soon become a hundred percent. So we'll all stand by for that. And then just to pull that thread a bit further, and finally, what's your view of the need for improved commercial space collaboration development in the private sector as an ingredient or enabler of future government to government collaboration?

Air Vice Marshal Paul Godfrey:

Yeah, I tell you what, that's a really interesting question. Probably my biggest risk at the moment is that from a defense perspective, we don't necessarily have the... Just yet, we have in certain areas, but we don't necessarily have the agile procurement processes that allow us to stand on that leading edge. And where, I don't know, maybe 20 years ago you watch a movie and everyone talks about, "Right, this is military grade stuff," I think in an awful lot of areas actually it is the commercial side of things, definitely in commercial space, that there is that leading edge, cutting edge technology. And you mentioned the UK space sector. There's some amazing startups because launch has now become so cheap. The biggest issue I have is trying to keep abreast of the latest change of technologies and not being completely wedded to a set of requirements for something very specific in the future that actually, when I develop over the next two, three, four years when we launch, is out of date.

So how do we continue to essentially match the commercial sector in the advancement of technology and using that technology? And as I say, we're working with venture capitalists, all sorts of people to try that horizon scanning to determine what is out there and what might be there that could solve one of our problems. The other thing is that dialogue between us and the commercial sector, which is something that we're trying an awful lot now and trying to do this more and more. That's why I talked about a lot of what I've talked about today, to state the problem so that someone who happens to be listening to this can come to us and go, "Hey, look, I've got a solution that that might be quite good for this particular one." So we really are trying to think outside the normal defense acquisition paradigm for this. And it is by leveraging commercial space that, I think, we manage to do this. So more and more dialogue, I think, is the key and more and more forums like this to be able to get the word out.

Joe:

Superb. Sir, thank you for joining us. We're grateful for the time and effort. I think we've been enlightened by and informed by your remarks. I'd be remiss if I didn't also ask you please to pass our thanks to Lucy and your staff. Amazingly everything worked and to the audience here, please join me in expressing our appreciation at Air Vice-Marshal Godfrey.

Air Vice Marshal Paul Godfrey:

Great. Thank you everyone for listening and please get in touch if you can help out.

Joe:

Bye-bye. All right, I'll invite Lars back up to keep this going. Lars.

Lars Hoffman:

Okay, Joe. Thanks once again and especially Air Vice-Marshall Godfrey coming to us from all the way across the pond and good connection all the way through and wonderful words. Great to see how the collaboration is coming together. Now I'd like to introduce J.R. Riordan, who most of you know simply is J.R. But I'll give you just a brief background on where J.R.'s at today. Former military strategist and policy expert with deep experience in the space and geospatial intelligence markets, J.R. brings an expansive skillset as chief revenue officer at Black Sky, plays a pivotal role in building, sustaining the company's customer pipeline and strengthening its business development operations to continue delivering first to know insights to more customers around the globe. And previously, J.R. in his government service worked as U.S. Space Force architect at the Senate Armed Services Committee. J.R.'s going to be introducing Major General Greg Gagnon, who's the deputy chief of space operations for intelligence at the U.S. Space Force. J.R. is a former SASC staffer, undoubtedly architected and funded, or helped to fund, or promoted the funding of many of the space systems that General Gagnon relies on today. J.R.

J.R. Riordan:

[inaudible 01:23:24] everyone and thank you again for being here, especially to our distinguished guests. We were told today that time is probably our most precious gift and the guests that are here is a gift to us. Thank you for your attention to the program so far and to supporting the NSSA call to action; the need to secure our freedom in space. It's a great title bumper sticker, but it really is true in what we're doing. It's hard to believe that we as a community, we're in the throes of establishing a Space Force and a U.S. Space Command just a few short years ago, three plus to be exact, and now we're in a race to protect and defend our freedom in space.

Again, I'm your host for this session, J.R. Riordan, and space, missile, cyber, ISR operator, I've done a bunch of things when I was in the Air Force, and now a proud member of this close-knit community. As that SASC pro staffer was a volunteer job I did to DT Thompson to go back to the hill and help build out the Space Force work as Congress was able to approve that and the president signed it into law.

So we're continuing today in commercial industry as a senior advisor and former CRO to Black Sky, doing real-time geospatial intelligence as well. I am pleased today to introduce a shining guardian in the space community, Major General Greg Gagnon. The general is a patriot serving across multiple assignments in the U.S. Air Force, now Space Force, and till his elevation to the deputy chief of space operations for intelligence in the U.S. Space Force. A few things about the general today in his duties is that he is, of course, the deputy chief of space ops for intel U.S. Space Force at the Pentagon here in Virginia. In this capacity, he serves as the senior intelligence officer to the chief of space operations General Saltzman and is responsible to the secretary of the Air Force and the chief of Space operations for all intelligence policy, oversight and guidance of the Space Force Intel, Surveillance and Reconnaissance missions.

He does exercise overall responsibility for the Space Force Intelligence Community, a large job there, as well as the Intelligence Community element, which is the 18th member of the U.S. Intelligence Community. This wheel of seals, it's the 18th one that's in there. He is the service cryptologic component chief with delegated authorities from the director of NSA and prior to this assignment, he did serve as the director of intelligence U.S. Space Comm at Schriever Air Force Base in Colorado.

General, without further ado, and my promise to keep your introduction very short, we'd like to welcome you to the stage. Major General Gagnon.

After you, sir.

Major General Greg Gagnon:

Thanks for that short introduction. To sum it all up, if it happens overseas and it's not the United States government and people were surprised and it happened in space, it's my fault. Okay? So it's the job jar that I roll in with every day. Could we go to the first slide please? I brought a few charts, but just to guide our upfront couple minutes together before we go to Q&A. And I wanted to cage the audience. Obviously I'm the intel guy and the intel guy generally talks about red, okay? And that's what I'd like to talk about for the next 45 minutes. Now, this crowd understands the adversary or the strategic competitor very well. But a few things I'd ask you to keep in mind; as we strike out to defend freedom around the world, it's not the first time we've done that, we seldom do it alone.

So we talked about integrated by design. I mean, if we look at our history, we generally have our allies and partners there with us. And it's important that we keep that historical memory and that historical element that makes us stronger than we are by ourselves in how we plan to move forward in space. Whether that's working closely with the British, with Godders, or that's working with the Australians, or it's helping to partner with a new developing capability in Japan with the Japanese Air and Space Force. There are a series, a good group, a large group, of like-minded countries that want norms of behavior and space because it's in the best interest of the international community. There are also those who believe might makes right and the strong do what they will and the weak endure what they must.

And we see that behavior play out in multiple domains. But the domain that really matters to all of us is when it comes together in the human domain. If a political leader, possibly from U.S. Congress, or maybe even for a European country, visits another place on the planet, other leadership, the Chinese Communist Party, want to show strength. They use an air force to show strength. They use a maritime force to operate on the eastern side of Taiwan. And in the future, as they grow space strength, they will message with that as well. So what I would like to talk to you today is a little bit about what I see with China and Russia in both their space and their space attack capabilities. Obviously tomorrow is your classified session. You can have a much more fruitful discussion, but we will talk through what we've seen this past year because this past year some of us participated in a birthday, and that birthday was the United States Space Force turning how old? Three.

And that happened on 20 December. But on 31 December, how many of you were watching those awesome football games? Raise your hand. There were two national semi-final games that were phenomenal. On that day, there was another force that had a birthday and that force was the PLA Strategic Support Force. That's the force that includes PLA cyberspace, PLA electronic warfare, and PLA space force. They call it the Aerospace Force. That force turned how old? Seven. Okay? So what have they been doing for seven years? Well, this past year they were very successful in two endeavors that were very much covered in the press and very much were part of President Xi's rightful rise and story about the power of the CCP. What could be more exciting internally to people in China or internationally than completing your space station? Which they did this past year. What could be more exciting than flying a space plane? This is their second space plane that has gone up into outer space.

Unlike the first one that only went up for about two days, this one's been up for five months. And like the first one, it's conducting experiments. These are items inside his grand strategy that are meant to message internally because the CCP's right to rule is actually by force. It's not by vote. And it's also part of their national narrative externally, not just to us, but to people or nations that may be on the fence about a peaceful, prosperous set of rules or having to deal with the country with a lot of money and an

open checkbook and the ability to buy influence. So those are the larger choices that are in play in the international system. And what I want you to walk away with today; space is part of that dynamic. It's part of that dynamic because it's part of their grand strategy and I'm very excited that it's part of ours as well. So let's go to the next slide.

I have the great privilege of being in the United States Space Force and whether I stayed in the United States Air Force or the Space Force, I'd have the same secretary, and that's Secretary Kendall. And I get to brief him on what's going on in the world and what specifically is going on in space and above his door as you walk into his office in the Pentagon is a sign. It says, "In God, we trust. All others, bring your data." And he's got it carved into a wood sign above his door. So in honor of that, I seldom go in and not have charts that have bar graphs or pie charts or whatever, so you're getting a little bit of what Secretary Kendall has. But let me tell you about 2022. 2022 was a banner year for the PLA. The PLA, in outer space, added a number of satellites. They added almost 200 satellites to outer space.

105 of those satellites were remote sensing satellites that could remote sense electro-optical, radar imaging, multi-spectral as well as RF collection. So all things that we do both in our commercial sector and at our national security sector. So of their 200 satellites they placed in outer space. 105 of them can be used in the support of intelligence, surveillance and reconnaissance for national security operations. The United States also had a banner year in outer space. We put almost 2000 satellites into outer space. 2000. That's a lot. 89% of them go back to one company. That one company is Starlink. You take Starlink and SpaceX out of your equation and then do your apples to apples comparisons.

Now, I offer this because those initiatives from SpaceX are tremendous. Those initiatives with Starlink have been tremendous. As we work diligently as a nation, as a private economy, as a national security enterprise to help connect the world through communications, another actor works to use outer space to remotely monitor, to maybe spy internally on its own people, to maybe watch force movements around the world. On this chart, you see two graphs. One is their activities, putting satellites in space. The other key activity you see on that bar chart is their launches.

SpaceX had over 60 launches this year, but if you take them out of our launch market, all other competitors are about once a month on average. China has rapidly moved from 38 launches to 55 launches to 64 last year with 62 being successful. They continue to expand their space industrial infrastructure to support launch in multiple locations. We see that because they're thinking about sort of having a log jam of productivity and they're thinking ahead for that. So they will continue to be in space. They will continue to launch. I'm excited that our commercial market is as innovative as it is. It's hard to keep up with. But another important thing happened in launch this year, and I think Godders talked about it. Did he talk about horizontal launch? He was talking about the 747, right? That's important. It's important for a number of reasons.

I'm a military officer, so it's not all about cost and weight, it's about ambiguity and uncertainty and planning. If you're a PLA planner, you know where Florida is. You know where Vandenberg is, those are fixed sites. But if you have a 747 that can put small satellites up, you have to be able to think through where's that going to go. Because in the worst case where competition has failed, where peace eroded and war has returned, because we all know that actually does happen, they will know where launch sites are. Not if you've got a 747 that can go to 20 different international airports around the world. That's hard to stop. So continued assured access to space, something that we're working towards very, very closely with the commercial sector, and that's a positive thing as well. All right, let's go to the next slide.

China wants us to know how well they're doing. They want us to know so well that in their Twitter feed, which is Sina Weibo, they'll put out little texts like this. This is one of their texts from Sina Weibo. "Hey, we took a picture. Look. See, United States Navy." So they want us to know what they can do because they want us to fear their military strength. That is part of their premise. It's my job, of course, to watch.

And I do, because that's my job. And that's the Space Force's job. And that's specifically Space Force Intelligence's job. There's been a lot of significant activity both in Asia as well as in Europe over the last year, and hopefully we'll have a couple questions to dive into that. But space has been tremendously valuable. It's been tremendously valuable as our previous speakers talked about with the ability to share information.

But it's also been tremendously valuable about bringing people together in a way that maybe we didn't think it would play out, but it has. And that's been absolutely wonderful to see. I will give you this to think about. President Zelenskyy has for free what President Putin spent billions of dollars to have and doesn't seem to have. He has a reconnaissance architecture and a secure communications architecture that the western nations have made sure showed up. Because freedom was at risk. And that's awesome. And when I say Western nations, I really mean the liberal countries of the world. Whether they're in Asia, or they're in Europe.

There is a strong group that believes in the private market, that believes in intellectual property, which believes in contract rights that is coalesced together. We are part of that group. That is the larger battle of ideas. Not how many aircraft carriers, not how many satellites, but those battle of ideas that your intellectual property, your innovation is yours to profit from some time, right? Because you believe in selling your goods and services, whether it's to the government or to another citizen in being rightfully compensated. That idea is at risk in the international market. It's at risk because a large group of people who want to enter the space market in an international way have already showed us how they will behave. We just have to be listening. Next slide.

What makes you rich can make you strong. Second-largest economy in the world is the Chinese economy. It wasn't that way 20 years ago, it was about the 19th largest economy in the world. What makes you rich can make you strong. So we have to be mindful of that. What have they done with their defense-

PART 3 OF 4 ENDS [01:39:04]

Major General Greg Gagnon:

So we have to be mindful of that. What have they done with their defense budgets? They have taken a PLA, which is a large force of about two million people. It used to be a little bigger. They have cut forces and refashioned those forces from completely ground-focused internal security to joint power projecting forces, built out their Air Force, built out their Navy. That's why you hear comments on the Hill and in this town about them having more surface combatants, more Sams and more fighter aircraft, because over 20 years, which is four fight-outs, they have made a conscious decision to build a joint power projecting force. Space is a critical part of that equation for them. We are seeing their KIT, and we are seeing their satellites. And we are seeing their operational concepts.

Not to nerd out too much, and I'll finish up right here, what do they do with this new leverage? How do they behave? This chart shows you how they behave. They take a coral reef. They add a drop of sand. They do that over and over again. They build an airfield on that. They claim territory. They hold legitimate claims of their neighbors at risk because now they have power. We must be mindful of that power as they seek to move that power, not just from the air domain locally, not just from the maritime domain in East Asia, but to outer space.

Speaker 6:

Thank you very much.

J.R. Riordan:

So General, as we had a great presentation here, thank you again for your time and your insights. We're restricted, obviously, by our surroundings, but the Honorable Mr. Moultrie mentioned a word that I didn't expect to hear here, counterspace. Can you give us some insight based on, again, where we're restricted in our surroundings on your opinion and insights into counterspace, please?

Major General Greg Gagnon:

Yeah. I would tell you for this crowd, that works quite well. But our problem or my problem is not convincing you that the PLA has a space force. It's not about convincing you that the PLA is using outer space for military and national security actions. It's about convincing the American public and convincing others in our government that this is an important thing that requires resourcing. Counterspace, as I use to explain to my mom, leads to this. What's your favorite counterspace? I think it's granite, or it's formica. Okay. I'm not sure, but I know I want it to be expansive. I want it to look out the window. We have to move away from some lexicon that we are all so familiar with and comfortable with because in the larger scheme of things, it's not the team we lead that matters. It's the larger team of America. It's the larger team of allies. Counter space is something in my kitchen. So I like to just keep it real and convince my mother that what I'm doing is important.

And in order to do that, I basically just call it space attack. It's not too sophisticated, but that's what we're talking about. We're talking about the PLA having lasers to space attack a US KIT that's in outer space. We're talking about the PLA practicing with a rocket, a guided missile, that they can launch from the ground and destroy a satellite, one that they practice with regularly. And they say they practice with it so that we will know that. This is all part of the calculus of how they wish to deter and coerce their adversaries and their neighbors. But it's important that when we talk outside of this room, we properly remember that we use some jargon that people just don't get. I'll give you another one that doesn't make a lot of sense. It does to us. A faring. Right? How about if you're counting objects in outer space and you call that an analyst. What is that? We use all this language inside. It's in-tribe language. It's not really helping us, in my humble opinion.

J.R. Riordan:

Well, General, thank you. That went a different direction, but that was good. Thinking about counters now. So sir, you did talk a lot about China today, and we do appreciate that. But the elephant obviously in the room is Ukraine and Russia. Can you give us some more insights beyond the China presentation today on what you see with Zelenskyy, Putin and the Ukraine-Russia situation?

Major General Greg Gagnon:

It is a terrible situation that we see in Eastern Europe. The Ukrainians are defending their country with their lives, and unfortunately, that is costing some Ukrainian lives, many, actually, and many Russian lives as well. One unexpected outcome of this was the rapid ability to share information. Now, you heard Honorable Moultrie talk about our desire and our need to share more, and I think in his comments, because I was sitting in the back, he says, "And we're on it. We've been doing it." Let me give you a story, and it's a story that this room will understand.

There was a time when we were convincing people about WMD in Iraq, and it turned out that we happened to be wrong. That impacted US credibility abroad to the point where you engage with your allies. We believe the US intelligence community is the gold standard, is very fair and impartial, but you are hamstrung sometimes to explain that to your coalition partners because they believe some of the

counter-narrative that you can find in the internet. But there is also some reason they can disbelieve us. We've been wrong in the past. It is tremendously powerful to talk about Russian BTGs and drop the image right there. It's even more powerful when your partner who you've convinced because you've known them for 10 years can then use that to talk to their legislative branch. They can use that same piece of information to show their public.

In the past, we've always been able to laterally talk to our military partners in a way that was controlled but was effective, but what we weren't able to do was give them something they could use with their own publics. The commercial imagery market has allowed us to do that. And because of that, the world was not surprised when Putin took his actions. The world saw what he was going to do. That played out a number of times, and it wasn't just with the start of the war, which started 11 months ago. It wasn't just what the start of the war. There's been a series of false narratives from the Kremlin. Commercial imagery has played an important role in that, and that important role goes beyond just imagery and intelligence. It now extends to state craft, and it's been tremendously positive.

J.R. Riordan:

Great. Thanks, General, very much. Great insight there. You did mention earlier in your presentation about monitoring and looking at the international market on a fairly frequent basis. You'd watch it very closely. What stands out the most to you in the international market beyond even commercial as we talked about today as to what you're looking at from a monitoring perspective?

Major General Greg Gagnon:

Okay. Let me give you this to think about. I think we will look back on 2022 and say it was an important pivot year for space launch. And I want to say this from an international perspective. In 2022, due to the actions of the Russians, increased sanctions, increased partnering across free democratic nations, the Russian launch market imploded from an international market perspective. I think they had 19 scheduled. They executed three. I think they launched 22 times last year, which were almost predominantly national security launches for them. So it's important for Roscosmos to have a certain level of demand to defer costs and pay for the business, and this crowd knows that. Think about 50% of your expected revenue walking out the door. That's a watershed event. Now think about this. In that same year that you take a revenue punch in the gut, this crazy market explodes, and you got a company launch in once a week.; And you also have new launch starting in other countries that weren't international market players before. And you've also lost iSSA, an important sort of major demand signal for international launch. I think Roscosmos has put itself in a very difficult position, at least from an international market perspective. That's my two cents. I'm just the Intel guy.

J.R. Riordan:

Great, General. Thank you very much. So we heard from Mr. Calvelli. We heard from Secretary Kendall last night on imperatives and goals. What are the space intelligence focus areas you worry about and are focused on every day?

Major General Greg Gagnon:

Yeah. So I'll tell you how we're focused because I ran this drill internal to the service. How much of our focus is on China? About 53%. 53% of our time and effort is on China. About 25% of it for last year was focused on Russia, and a large part of that had to do with the fact that there was a war between Russia and Ukraine. And then about 23% to 25% is other things, whether it's other space-faring nations or other space activities or understanding the market. And I wondered if that was balanced correctly, to be

honest, because I felt like, hey, maybe I had too much in that third category. But the market's so dynamic that we have to stay engaged in understanding. We have to fully understand the market perspective for miniaturization, on-orbit servicing, which is going to be a story in 2023 and 2024 internationally with a number of companies. So I think we've got it about where we need it.

Internal to the service, the things that I am spending most of my personal time on is how to build space Guardian intelligence professionals working inside the service to make sure we have a consistent sequence of schools, we have retention, we have the right jobs that give experience so that people continue to grow and mature and also grow and mature in a way that they want to do 20 years. The second major focus for me is digital threat modeling. Let me talk about that a little bit. Digital threat modeling is taking, let's say, an adversary piece of KIT and then figuring out how to model that from four different modeling approaches so that I can hang it on a classified library so that people who run tests can download it to use it on a test range, so that people who do acquisition programs can download it to inform acquisition decisions about measures and countermeasures so that people who have squadrons who execute rehearsals in a simulator can download that same digital threat model there.

And of course, we can use it at a large level in the Pentagon to help inform force design of what we need for a space force that gains and maintains space superiority. But those threat models need to work beyond space because when we do force design in the Department of Defense, we're not trying to simply build the best space force or the best air force or the best army. We're trying to build the best joint force. And as all of that comes together, your models and your simulations, they need to have set standards so that they can cross communicate. That's a huge project for us. It is very nerdy. I'm very excited about it because I'm a little bit of a nerd, and we've been moving out on that one as well.

J.R. Riordan:

You're in a great crowd here, sir, with the nerds. That's for sure.

Major General Greg Gagnon:

Can I tell you something J.R.?

J.R. Riordan:

Please, sir, please.

Major General Greg Gagnon:

All right. Don't write this. Okay? This will get me in trouble. Only thing nerdier than the space is cryptologist who joined the space. So I'm a NASA crypy, and now I'm living with space. So my math skills are rusty. But I have two STEM kids, so I feel like I did it.

J.R. Riordan:

You're good to go, sir. Good to go. So let's double click on that, sir. Let's double click on the early indications of the value of the Space Force to thread awareness based on what you just said. How do we tie those together?

Major General Greg Gagnon:

So what are your measures of effectiveness? Are you seeing that the Space Force is effective? I have three different examples that I like to use that show that this was a good idea. The first one, I moved to the Pentagon one July and came out of US Space Command where we were doing operations. So now I

moved to be the investment banker. As I moved into a series of palm discussions with Mr. Calvelli's office, we did not have to make the case that space was contested. We did not have to make the case that our adversaries have built, fielded and in many cases are testing second generation space attack weaponry. The Pentagon understood that. The Pentagon wasn't asking us to get to the lowest cost to deliver a service. They were saying, "What do you need to be resilient? We need you here. You need to think through that." They were making our case back to us. Five years ago, that was not happening. That is a significant change. And a lot of people here are shaking their heads right now. That was the first example.

The second one was I went out to Vandenberg to see how we're building space Guardian operators. And I went into a skiff, and I had a great discussion with them. Five, six years ago, they didn't have that class on the skiff. The second thing I did was I went through every chart that's presented from an intel perspective for the entire course. They almost breathed into a brown paper bag when I said that, but I sat down. I said, "No, no, it's okay. I want to go through every one." And they loaded up the 10 different lesson plans with all the material behind it, and I just went quickly through it. And it was all up-to-date. It was accurate. I just speed read through it to make sure, and I was like, yes. So I checked that. Good, check. They're learning the right stuff. The Pentagon's getting it.

And then the third thing was when I was on the Space Force staff for about four months, I said goodbye to some people who were going into their next assignment down into the squadrons to do space intelligence collection and analysis and reporting. And it dawned on me. I'd grown up 26 years in the Air Force. When somebody did their space job, they didn't do another one. So here we have the human capital design that we're starting people on their second assignment to add to their experiential learning because in one assignment, you might be the space attack satellite expert, and on the next assignment, you might be developing TTPs for countermeasures. But you can now piece those together, and at the end of the day, in 10 years, you have a much more capable space intelligence service-

J.R. Riordan:

That's true.

Major General Greg Gagnon:

... and much more capable military intelligence service for space than the old model of doing things. So I think I'm very happy. So I'm very happy, and I'm looking for counter-arguments. And I'm always open to them.

J.R. Riordan:

Got it, General. Thanks, sir, very much. So pivoting back to China, there's constraints on the PLA. We don't tend to see very many here, but you may have some insight that we may not get to see day-to-day. Can you share some of those constraints with us?

Major General Greg Gagnon:

Yeah, I would tell you that one constraint that the PLA has is that they don't have us. And when I say us, I'm going to put us in two buckets. I'm going to say us, our private sector and commercial sector that is tremendously innovative and also has what capitalists like to call destructive creativity. If your idea doesn't work and you can't get it fund, your company goes away. And if you have a good idea and it can get funded, you succeed. So that type of combustion inside a capitalistic market makes it very efficient

and can make it effective. We have that. We have that special sauce. They don't have that. They're trying to have that.

So in 2014, they started their commercial market. They currently have about 160 commercial companies that span building satellites, operating satellites, providing satellite services and doing launch. But they're nowhere near where we are. The second thing the PLA doesn't have is they don't have the people in uniform that we have. We have a highly educated, highly motivated, all-volunteer force. The PLA still does conscription annually for a big chunk of their folks. So what I have a sergeant in the Space Force doing they have a captain doing. And my folks want to be there. So you see what a difference that makes in combat, and you see that today playing out in Ukraine.

J.R. Riordan:

That's helpful, General, very much so. I'm going to harken back to some folks in the room that understand the old booklet called Soviet Military Power. We all read it. We all saw it was produced on an annual basis. What are we doing today for our Guardians to show that same level of cultural education of the "enemy," I'll use that air quotes, on the likes of what Soviet military power was, at least the unclassified side of that, sir?

Major General Greg Gagnon:

I love that question. So one of the last Soviet military power documents, they were produced by the Defense Intelligence Agency. My father-in-law has a copy. And I read it about six months ago, and it was absolutely amazing. It was 1989, I think. Sorry to sidebar here.

J.R. Riordan:

No, sir.

Major General Greg Gagnon:

My biggest takeaway to take away from that was from 1972 to 1989, the Soviets doubled the number of on-orbit satellites from 80 to 160. So it took them 18 years, basically I was born to when I graduated high school. And they went from 80 to 160. And I read that because I was like, whoa, because I was trying to understand a little bit on Russian past space programs. And then I thought about the PLA. So the PLA when they stood up the space force, December 2015, had, I think, about 150 satellites. Today they have 702. All right, so seven years, three to four times increase. So the rates of change are greatly different. I will tell you that DIA and the document that Honorable Moultrie talked about is a wonderful reading item. It's also on a reading list that I send to the Guardian intelligence professionals so that they read it when they're on airplanes because that's when I do a lot of those PDF readings.

J.R. Riordan:

Great. Thanks, General. And I didn't mean to go back to history, but-

Major General Greg Gagnon:

I think that was awesome.

J.R. Riordan:

... it's important to know.

Major General Greg Gagnon:

And that was actually not staged, so he did not ask that on purpose.

J.R. Riordan:

We're doing this on the fly. It's really good.

Major General Greg Gagnon:

A lot of pre-planning.

J.R. Riordan:

So let's talk, sir, on the commercial side. We heard a lot about today from, again, Mr. Calvelli and others. Commercial augmentation, I'll use that term, to what you get every day from national technical means that we can talk about here, where do you see that today from an assured access to space perspective as well as a proliferation, as we hear more and more of that term, again, in the lexicon, in the next 10 years, say?

Major General Greg Gagnon:

Okay. The commercial market is expanding exponentially. In secure communications, you see the value of Starlink. And the value of Starlink is, just from a strategy perspective, if I as a nation spent millions of dollars to develop a missile that could shoot down a satellite because it was an important strategic communication satellite, how do I build enough of those if they're expensive to take care of a 1,000-satellite constellation? So that ability to proliferate the architecture becomes not just operationally difficult. It becomes financially silly. That's one of the important steps. The second service from space, not just secure communications, but the second service that's really important is the ability to sense the environment, whether you're sensing the environment visually or through RF sensing and the ability to do that in many satellites in many orbits in many inclinations. That's important. We're seeing our market do that. We're seeing other countries realize that and want to do the same thing. So we need to be prepared for that as well.

J.R. Riordan:

That's great.

Major General Greg Gagnon:

The key thing for us moving ahead, and I'm glad it came up in the previous discussion, is cybersecurity. Cybersecurity is absolutely essential to the service that generally executes remote operations for everything. So cybersecurity is job one. So I will tell you, I have built a very strong relationship with the National Security Agency already. It's my DNA, so it was an easy relationship to build. But Guardian intel professionals who serve their career in the Space Force will do considerable amounts of time at Fort Mead and other field sites. They will be some of our best cyber assured trained people.

J.R. Riordan:

Great. Thanks, Joe. And I think we'd all agree here in the audience as well. Pivoting back, again, to China, the Belt and Road Initiative, which you had in one of your slides, we hear all these great superlatives of how great China's doing with Belt and Road. In the last month and a half, we've seen that a lot of those projects are failing. They're having concerns. They promised countries they build X, Y, Z, and they're not

coming through, not on even financially, but even in an engineering perspective. Can you comment on that, sir, as to what you see for the future of Belt and Road?

Major General Greg Gagnon:

Yeah, the Belt and Road will continue to be important to President Xi as President Xi continues his narrative about the rightful rise of China in the world. It's all part of a larger grand strategy, which isn't simply China peaceful and prosperous in Asia. It's about peaceful, prosperous middle kingdom of Asia because that's where he sees a multipolar future world. Those are all true critiques, and you can see that narrative come out in a number of think tank documents here in D.C. area. And we just ask that it's more than just a failed business problem for some people. Other countries have to make important decisions on development aid, and that's tough. It's easy for us to critique from here because we live in such a wonderful country. But for them, it's a tougher decision, and sometimes the key interest from the CCP isn't necessarily the economic development. It's really access. It's access for possibly security forces. It's access probably for information, and it's access for information technology.

A key part of the Belt and Road Initiative is the Huawei expansion across the globe. Huawei is an important telecommunications company in the world, but I think everyone in this room is aware that internal to China, there's legislation that IT companies must make their data and their circuits, if you will, available to government monitoring. If Chinese infrastructure, whether it's in outer space for long-range satellite communications or it's service on the ground, if that architecture becomes the dominant architecture for global communications, we're in effect affording them the opportunity to steal ever-increasing amounts of data. What does the CCP do with power and leverage when they have it against privacy? We all see that. We all read The Economist. We see what they're doing internally. So this ability to have power and leverage is really not a good option for us or for our like-minded partners in the world.

J.R. Riordan:

Great. Thanks, General. That's an important point for all of us to consider. And I know we're running out of time here in a few more minutes. Dynamic Space Operations was mentioned a few times. What would be your opinion on Dynamic Space Operations today as a Guardian as well as the Space Force and USSPACECOM as the combatant command as well?

Major General Greg Gagnon:

I would tell you that I was very pleased that when we established US Space Command, we quickly established the United States Space Force. And I say that because we need a military service focused on organizing, training, equipping and designing the next generation of space capabilities, and we need that service to have a level of gravitational pull to it to help bring in many other actors and stakeholders that in the past didn't have a service that was the dominant influence and organizing, training and equipping because we need to move out a little quicker and we need unified action to move out. And we also need someone who fits in the construct of the Department of Defense for employing joint operations, and that's someone is US Space Command. So as they employ joint forces provided to them from all services, but predominantly from the Space Force, they employ them to do the ability to gain and maintain space superiority and integrate into the plans of all the combatant commands across the globe. I like that the Space Force has the investment banker business. I've served in both. So when I was at US Space Command, it was my job to watch very closely what the Russians and the Chinese were doing. And I had many weekends with phone calls and getting called in. And now I'm serving in the investment banker role, and my phone doesn't ring as much nice

J.R. Riordan:

Nice. Nice. As working in commercial space, sir, we get the investment banker piece. Trust me. So I guess a few minutes left, sir. War fighting culture and acquisition improvements, two of the tenets as we stood up US Space Force back three years ago. Can you give us some summary comments to the group here as to where you see the war fighting culture of the Guardians and where you see acquisition improvement with Mr. Calvelli obviously working very hard there as well and other?

Major General Greg Gagnon:

I would tell you Mr. Calvelli's first six months here has been transformational. We also have General Guetlein out at SSC. And they could be singing a duet next to each other, and it would be in harmony. They both understand that if we can buy it now, we don't need to write the requirement. We just need to buy it and put it in the hands of operators to develop TTP. And that's their first go-to. Their other go-to, it's the KISS principle for space operate, keep it simple, stupid. Let's just do small things, do them really fast and continue to move forward. And I think that's absolutely the right way ahead. As far as a war fighting culture, I would just highlight to everyone in this room that our military is probably the most experienced we've been since maybe World War II. We've had 20 years of combat. The Space Force is more than just Air Force Space Command. On my staff, I have Army Colonels who are now Space Force Guardians. I have Navy captains who are now Space Force Colonel Guardians. I have all services represented. That all comes with all the experience of those senior officers or those junior officers or those senior master sergeants at all grades. So the Space Force is starting from birth joint. And with that is coming all the experiences that have been hard fought and hard learned, and that's helped us.

J.R. Riordan:

Great. General, well, on behalf of the National Security Space Association, sir, I want to say thank you for your time. Thank you for your service. And you're serving it probably the most pinnacle part of our history in the United States today. Again, thank you for all your time today and your [inaudible 02:08:12].

Major General Greg Gagnon:

My pleasure.

J.R. Riordan:

Thanks, General.

Lars Hoffman:

J.R., General, thank you very much for stimulating discussion. We're going on break now for the next 15 minutes. Be back at 3:15. Back in your seats 3:15. Thank you. And thank you, Northrop Grumman, for sponsoring the break.

PART 4 OF 4 ENDS [02:09:05]

Transcript

Part 4



Speaker 1:

Please take your seats. Our program is about to begin. Please take your seats. Our program is about to begin.

Speaker 2:

Okay. Welcome back from the break. If the rest of the folks in the lobby can make their way back in please we'll get started. It's now my pleasure to introduce Mr. Robert Cardillo, who will be introducing our next guest speaker, speaker Dr. Stacey Dixon, the Principal Deputy Director of National Intelligence. Most of you know Mr. Cardillo very well, the sixth director of the NGA. His heritage goes back all the way to 1983 as an imagery analyst with the DIA then rising up through the ranks of DIA, and ultimately as the sixth director of the National Geospatial Intelligence Agency. Who better to introduce Ms. Dixon than her National Intelligence colleague, Mr. Robert Cardillo. Mr. Cardillo.

Robert Cardillo:

Thank you. Thank you. Yeah, we got word that the cookies were a little too good. I said just pull the cookies in the room. Let's go. We now have our ways to get the audience back. It is indeed both a personal and a professional privilege to be able to introduce our next keynote speaker, Dr. Stacey Dixon. Stacey's a longtime friend and colleague who holds both a doctorate and a master's degree in mechanical engineering from Georgia Tech, and in between a master's degree from Stanford, so not too bad. I first met Stacey when she was on the Hill as a staff member of our House Permanent Select Committee on Intelligence. She had started her career before that at CIA. Then Stacey moved on. She came to NGA for the first time as the head of the Chief of Congressional Intergovernmental Affairs and then deputy director of our corporate communication office in 2018.

She was the fourth director of the Intelligence Advanced Research Projects Activity, IARPA, and then came back to NGA in 2019 to serve as the eighth deputy director of NGA where she assisted the director, Admiral Sharp, both to lead the agency and to manage the National System for Geospatial Intelligence. About 18 months ago, Stacey was sworn in as the Principal Deputy Director of National Intelligence, and she's now currently serving as our sixth senate-confirmed PD DNI. With that, please help me welcome Stacey to the stage to begin our discussion.

Stacey Dixon:

Good afternoon everyone. Hey, thank you for that. Sometimes you walk out and the audience is so asleep it's really hard to engage. I am really excited to be here. I just wanted to just share a couple of remarks just to comment on where commercial space is and the changes that we've seen and how important it is for not only the American industry in this realm, but the government to continue to ... is that me?

Robert Cardillo:

That's probably me. I'll be more careful.

Stacey Dixon:

To continue to evolve and just make sure that we're staying competitive, make sure that we're staying in the lead, and then to recognize the changes that are happening around us. We've gone from a place where many industries that were very, very low tech have figured out that space can help them have a competitive advantage. Space has found a place in mining, in farming, and all of these other areas that

didn't use to involve space. We've definitely seen a lot of increasing uses of space for military conflict. I mean, I think that's something that I know we're going to end up talking about, but what we've seen with regard to space in the uses of space and commercial space in the Russia, Ukraine conflict.

We see the changing landscape in space with different players, people who didn't used to be involved in having systems up there now and their competitors to American industry, but they're also out there being threats to not only American industry, but to the other national systems that are up there. Those are things that, all of these things we have to take into consideration. Again, I'm really just happy to be here and I look forward to everything that we're going to discuss today. Robert, it's great to see you again.

Robert Cardillo:

It's good to see you. We've got the room rolling.

Stacey Dixon:

We do. We've got the laugh back there.

Robert Cardillo:

Stacey, again, this is going to be fun, I hope for both of us. Let's start off with just a little bit of math. About 92% of my career in the profession, inside the government, many jobs, privileged career, many opportunities to serve, and now 8% in my former government role in industry. I'm now just the latest of a long list of formers to say the following, boy, I wish I knew then what I know now, dealing with government, interacting with the acquisition process, and the contracting process, and the opportunity process. Suffice to say it's still too hard. In some ways that's natural, but in some ways I think maybe we could do better. We've spoken a lot today and last night about the challenge of arising China and how fast they're moving. The less inefficiency we have, the better. What I'd like to open with is from your seat in ODNI, with the team that you have and the position you have, are there things that we could expect, that this room could expect with respect to maybe making it just a little less hard?

Stacey Dixon:

Let's start a little bit about what we have tried to do so far. Working with the IC, Space Coordination Council, trying to ensure that we in the IC are having more informed, better conversations about how we will incorporate commercial space and what is a threat, what isn't a threat, making sure we have a place to actually have those conversations. This council's been around for about two years. Not only have there been great, I think, education for those in the community who don't have as much understanding about what's happening in the commercial sphere, but also opportunities to showcase and host classified discussions in which industry can come in and help educate us on what are the barriers? What are the impediments? What are the things that we're not doing fast enough, and acquisitions a whole other thing, but what are the things we're not doing fast enough specifically with respect to commercial space? That was a good step in the right direction.

I think there've been some concrete accomplishments having set that up, but that's working in this larger context of all the other things that you're commenting on that you see now from a different perspective. Yes, we recognize that we have to figure out how to move faster in our acquisition realm. We have to figure how to make sure that the things that we worry about from a threat perspective, how do you balance that national security need with also making sure that American industry remains strong.

The conversations are a piece of that. You all sharing your expertise on what you see now on the outside is a huge piece of that.

I think we still have work to do, of course. We still have work to do to figure out how to make regulations less onerous. How do you make sure that we're moving faster to getting out of the way and allowing licenses to be approved? We will continue to try to increase or decrease the amount of time that it takes to do work with us and the amount of time that it takes for decisions to be made of which they're waiting on our input. Not a firm answer, but we're working on it, I suppose.

Robert Cardillo:

Thank you. Look, I have the privilege to attest to the working groups benefit. To your point, it's conversations that are hard to have, easier to have in a classified environment. I know we're on unclassified day here, so we'll keep it that way. I do agree it is a good way for industry to have a frank conversation with government, so I appreciate your support.

Stacey Dixon:

Are those the areas? I mean is it speed of acquisition, regulations, licensing? Those are the main ones that I know that we're focused on trying to make sure that we reduce the timelines for. Are there other things that you've seen? I'm turning this now on him. I warned him that I would do this.

Robert Cardillo:

Well, since you asked, I'm going to bring up one that's almost impossible to fix. By the way, I knew this when I was in government. There's a built in aversion to risk, that by the way, I think is built in there for a good reason. I think it's to be good stewards of taxpayer dollars, to be careful. We built a government that we didn't want to make really big, fast mistakes, really big slow mistakes so that maybe we can catch them soon enough. Because of that, my line is a good patriotic GS 12 who would like to be a good patriotic GS 13 just doesn't make any GS 12 mistakes. I mean that's unfortunately what we've instilled, and because the "heroes", it's risky, right, because you're trying something new, you get on the edge of the regulation, somebody waves a yellow flag and before you know it they're in the corner.

I don't know, Stacey, anything we can do, and for better or worse, my attempt at NGA was pilots and pathfinders to just try to test the waters. Where I will tell you I didn't do well is to take those successful small things in scale. I don't know, do you have ideas on how to go from small to large?

Stacey Dixon:

It's interesting. One of the things that you, I'll get to that part, one of the things that you said was the risk taking ability and we are trying to change the conversation. Yes, there's a conversation of what is the risk of doing something, but there's also a risk of not doing something, and so how do you make sure that you're having both of those more productively and providing that top cover so that GS 12 will be willing to take more risks? We certainly celebrate the people that get out of the box and do some very innovative things, but those who fail, we haven't quite figured out how to make failure something that everyone aspires to. If you fail fast, you actually are doing us a favor, but no one wants to be the one that failed at something. Everyone wants to be the one that succeeds. Even if success takes a really long time, we've got to change that paradigm.

Robert Cardillo:

I'm going to call an audible. Don't get worried. It's not a scary one. Here's another idea. Again, one that I wasn't great at. I tried hard to set up a way to exchange talent, send government officials out into industry, a year sabbatical, a two-year project or whatnot, and then bring them back in. We did okay on that part. I did less well at welcoming industry into the building for the same. I appreciate there are legal reasons and competition reasons and whatnot that made it harder. Is that something ODNI is looking into to help us learn from each other better?

Stacey Dixon:

It actually is. We have the policies in place now called the Public-Private Talent Exchange. We, like you, are focused the first go round of getting government out into industry because that is the far easier one, but it also allows us, gives us the authority to do the opposite. After we get through this first round of trying to get people out, we definitely want to get people in, specifically in those skills with those experiences and expertise that are going to help us with our near term challenges.

Robert Cardillo:

That's happening now?

Stacey Dixon:

It is happening now.

Robert Cardillo:

We have teammates out in industry?

Stacey Dixon:

We have teammates who, so we had a, what do you call it, when we bring industry in for the opportunity and I think people have been proposed. I don't know that we've sent anyone out just yet, but that will be happening in FY '.

Robert Cardillo:

23. All right. We will stay tuned.

Stacey Dixon:

Yes.

Robert Cardillo:

All right. Back to ...

Stacey Dixon:

Please.

Robert Cardillo:

Okay, Stacey, a little more seriously. ODNI is rightly credited with a coordinated effort to expose Russia's intentions before they acted. This was through the provision of open source information intelligence that shined quite a light on what President Putin was, at least it appeared to be doing, even though he

was saying he was not doing it. We're about to approach the one-year anniversary of that invasion. We sit here literally 11 months away. What lessons are you taking away, is ODNI taking away from that experience and how do you think they should be applied in the future?

Stacey Dixon:

I'll just correct one thing about how you described it.

Robert Cardillo:

Yes, please.

Stacey Dixon:

The administration decided to expose the ...

Robert Cardillo:

I didn't mean to take credit from anyone else.

Stacey Dixon:

No, no, but certainly the IC, they looked at us to try to make sure we can figure out what can we declassify? What can we downgrade to both share with partners as well as they could then share with the world? It was very effective. We've gotten feedback from partners over and over again how this was what they needed to not only help bring all of their own decision makers into the same space, but also to get their public's supporting of it, so being able to showcase. Commercial imagery was great with this, with this respect. You could show it. You could figure out what you wanted to convey, show the image. The wild card ended up being that yes, we asked our partners what they could do to support, but then industry went out on its own and decided to support in other ways and created websites and also provided images as well as other digital information to be able to share, to help educate people as to what was happening on the ground.

Even beyond what the government was able to do, industry itself stepped forward and helped out. Lessons. There's a lot of those. Of course, wherever we are in the conflict, it's not over. Lessons will continue to be learned, but certainly that importance of that sharing for coalition building purposes was extremely important. Being able to have those conversations at a level that was not classified with many people beyond the regular five eyes that we normally share with was extremely important. We've probably created an appetite for that kind of thing that we will have to see how that plays out with future conflicts. That's another unknown, I think, that we're going to have to deal with. The ability to be able to have these coalition conversations for conflicts or for subject matter that are of interest to this group.

How powerful is it to be able to have a group of people that are all like-minded and are all approaching something in the same way? Are there other conflicts in the world that we're going to be potentially part of where having such coalitions are going to be useful? Who are those individuals? Do they have the capacity and the capability? Can they bring anything to bear? Can allied partners share in this way? I mean, if you're someone on the ground in Ukraine and you want an image, you don't really care if it's coming from an American company or a foreign company. You just need the image. We have to think about broadly all of the things that are going to be brought to bear on a conflict like that, and that's certainly something that we're in the process of learning.

Again, many, many lessons about what you can and can't do and the importance of being very, very intentional about looking for what you can share and having that be the starting point and not being so worried about, okay, this is classified. Yes it is. This is sensitive. Yes it is, but let's think about it in a risk managed way and not a risk averse way. I suppose that is something that we have learned too.

Robert Cardillo:

Good. I'm going to build on that, if that's the current application, a more strategic employment of open source. One of the first jobs I took when I left government was to join a working group, sat at CSIS, and had two very interesting co-chairs. One was Stephanie O'Sullivan, so a predecessor in your seat, and the other was Avril Haines, who's your boss, at ODNI. We spent about a year, and of course very talented, experienced working groups and team members. As all good studies, we produced a about a hundred-page report with, I counted them, 104 recommendations for the intelligence community to consider as it goes forward with how do we best leverage this thing. Any updates on how you're doing on the homework I gave you three years ago?

Stacey Dixon:

Thanks Robert.

Robert Cardillo:

Or that Avril gave you?

Stacey Dixon:

Yes, yes. Well, she did. I remember, yes. There's nothing like knowing that your future boss is part of something to get everyone starting to scramble and figuring out how close you can get to at least understanding what their recommendations are. We have subsequently taken more specific looks at how we're doing open source, how we're using commercially available information, how we're thinking about publicly available information, and figuring out what makes sense of not only those recommendations, but other ones that have come out over the course of really the past couple years. We are recognizing some of the, I would say, gaps in the way that we look at open source intelligence as compared to the other intelligence disciplines, so thinking about how do you more proactively look at it as trade craft? How do you really think about those kinds of things, which is a great place to be because years back we were getting complaints that the intelligence community wasn't even thinking about open source as a source of information that was useful. We're well beyond that.

Now it's a matter of how do you optimize the fact that so many different agencies and entities have a use for it in different ways. How do you make sure that we're not buying data sets over and over again? How do you make sure that we are doing in common what can be commonly done. We are not at a point where we have a final Solution.

Robert Cardillo:

Don't want to make news right now?

Stacey Dixon:

No, try not to make news. But we are definitely moving in a direction that I think is going to be better for the community. I would say a year from now, I will have a much better answer as to what that looks like internally.

Robert Cardillo:

We are going to save this seat for you.

Stacey Dixon:

I'm happy to have the conversation because I'm excited about it. I think it's going to really do some great things the way that we're thinking about it now.

Robert Cardillo:

Great.

Stacey Dixon:

The need and the use for commercial imagery, or not commercial imagery, I'm still stuck on the commercial imagery, on open source intelligence, it continues to grow.

Robert Cardillo:

One more angle on the open source question. I've been a strong proponent for more use and more integration and partnerships and also appreciate that what I see as a big opportunity does come with risks. How do you think about welcoming, right, integrating, and also accepting or realizing ... By the way, we had Bill Evanina here earlier today and gave a fiery counterintelligence presentation. I changed all my passwords as I sat in the audience because he told me to. No, to your point, people value that image I'm handing you. How do we make sure that that image is real and not a deep fake and hasn't been manipulated, so what I call that pixel pedigree that goes with it.

PART 1 OF 4 ENDS [00:27:04]

Robert Cardillo:

And so what I call that pixel pedigree that goes with it. So there is, I guess how do you think about the dual nature of, "Wow, look how open it is" and "Oh my God, look how open it is."

Stacey Dixon:

No, we definitely have to take that into consideration and imagery is one thing, but really I would say any of the information out there that they were pulling into our systems, we have to make sure that we are considering the fact that it could have been manipulated, considering the fact that someone may be trying to shape a narrative based on what is appearing. And we certainly know with respect to social media, that is something that's very attractive to many, many countries out there to be able to shape the narrative as to what's being said about their country or what another country is considering thinking about, name your topic. It's interesting. There's pieces that we can do in terms of being able to have better technology to know when the bots are the ones having the conversation, to know when some image has been manipulated.

There's technology solutions to this, but there's this other solution that [inaudible 00:28:00] has nothing to do with the intelligence community that I hope we can figure out how to get to, which is the how do you strengthen the population to have a better sense of knowing that what they're seeing, maybe the result of someone trying to influence what they're thinking. How do you get them to know that the fact that they've just saw something on their feed rather than automatically hitting forward. Let's think

about that. Let's go the next step and let's go trace some of those sources. Let's go figure out if this thing is more than just one, name your particular social media site, is it deeper than just one post?

That's a conversation that can happen and I know that there are organizations out there that are trying to get the word out there about misinformation and disinformation and then each individual's responsibility to try to make themselves more resilient to that. We will continue to try to invest in the tools to help us do that and then to figure out how do you share that with partners when you see it happening to someone else. When it's happening within the country, you have the added complexity that it is now domestic and our role in the intelligence community, if there's a foreign nexus, certainly there's a very clear role. After that it gets a little blurred.

Robert Cardillo:

Yeah. Which all speaks to the importance of coordination which is going to be my next question, topic really. We had the privilege of having Secretary Kendall join us last evening and spoke for a few minutes at a reception, and let me be clear, he started and finished his remarks with the following, that the interdependence between the Pentagon and the IC is both critical and necessary and good. I mean he was complimenting that role. In between those pillars on the end, he made an observation that he said that he could foresee there be a possibility of, call them needs or requirements, that sit in the Pentagon in the services that may exceed what the intel community has the authority or the budget or the scope to satisfy. And the implication being, this is now Robert speaking the secretary, is that the Pentagon would pick up those requirements or needs and so we'd love to hear your view of, presume you agree about the importance of the interdependency, but about being just about that mechanic, and again, I think this is another one where there's no quote answer. It's a process and we'd just love to hear your thoughts.

Stacey Dixon:

Well, I love the book ends. There is this huge interdependency between the intelligence community and department, whether we are in a conflict or whether we are short of conflict. I will just say that to the beginning. The way that I approach it is always remembering that point and not carving out the but. Let's do the and, so yes, there are very specific needs that in the time of conflict that the services will need, the COCOMs will need. Rather than going, in my perspective, my preference, rather than going and trying to create a bespoke solution that takes care of that, let's work within what we have and figure out how do you make the entire system better so that it can handle those needs. I would say within the authority and the scope, there's a lot of things that the intelligence community can do and more and more the intelligence data is a huge piece of war fighting.

It's going to be a huge piece of understanding the battleground. So keeping us involved as long as possible is my preference though, where the budget goes, that will be an interesting determining factor. The budget could go to the Pentagon but still ensure that we're not building something that's separate from the intelligence community. So my goal and the goal of some of the studies that we've looked into, how do you create and understand what the DOD and the IC needs are for space? How do you understand what the needs are for moving that data around once it's collected for analyzing it, for exploiting it? How do we make sure that we are looking at the biggest picture of what will satisfy all needs as the starting point? And then if we get to that point and we can't satisfy the requirements, that's fine.

I would prefer to keep us in this space rather than jumping to that solution because we can solve that, but at the expense of what would be the the question. We have great conversations with Air Force and

Sperry Space Force about this and it's ongoing. I think there's information that we both have that we will continue to bring forward and have some really good debates on this going forward.

Robert Cardillo:

Thank you. I'm going to build on that conversation with first a statement on my part, which you can agree or disagree with. I have a long history of my career with a government acquisition program that currently is called Electro Optical Commercial Layer, EOCL. It's called Enhanced View, Clear View in the past, but it was basically the US government's broad-based acquisition of commercial imagery for government use and broad license agreement, broad engagement with industry. As we think about... So again, my view is I think that's a best practice with respect to government stating its needs, aligning budget with that needs and then having industry compete to satisfy it. So I guess the first short question is, would you agree that that's a best practice in that realm of contracting?

Stacey Dixon:

I guess yes is the answer. It has really served our needs in many, many ways.

Robert Cardillo:

Good, because now I have a second question.

Stacey Dixon:

Yes. I knew that was coming.

Robert Cardillo:

Should we expect to see that model replicated? I mean, is that a way that if the government wishes to better avail itself of commercial services, is that a model you think we might replicate?

Stacey Dixon:

I'm excited to see where it goes because I think it very well could be. I think trying to make sure that industry has a better sense of many of the requirements even above the quantity of data that we need. What are our requirements for security? What are our requirements for information assurance? Letting industry see what makes sense from a business perspective of investing in so that you can deliver those things, that satisfies our need to see whether we can acquire it in a different way. It satisfies the industry by giving you more to compete for or more to think about how to shape your business in that way. The Hill is very excited about it because it also potentially offers more business to industry and that may very well be what happens. So I think it's a good example right now and my guess is, it's something that we would want to model in the future, especially if it actually works and delivers what we think the potential is.

Robert Cardillo:

And again, this is why I see it as again, a positive model. Those requirements cover the intelligence community and the Pentagon. The teams come together and I'm sure they have spotty debates about who pays for what, but that a resolution occurs, a contract goes out, the government stands behind it, the license then allows the sharing across. So again, there's many things that you could adjust in that whole model, but I think the general approach is worth pursuing.

Stacey Dixon:

If I'm remembering and also provides opportunities for new vendors and new phenomenologies to be considered as well, which of course is always a great practice.

Robert Cardillo:

Well, I'll just clarify a bit because the EO is important here for this one. The NRO or teammates NRO do have pilot and test contracts.

Stacey Dixon:

That's what I'm thinking of.

Robert Cardillo:

And for hyperspectral, which are coming and RF, but those are in the pilot stage now.

Stacey Dixon:

Yes. What's nice is when we talk about it, we actually talk about it all at the same time.

Robert Cardillo:

Full spectrum.

Stacey Dixon:

Yes.

Robert Cardillo:

That'd be nice. Yeah. Turning more to ensuring that we have the talent that we need to be successful as a community, and I'm sure you'd agree that if we don't get that right, the rest, all the contracting and acquisition and technologies, they'll definitely underperform. So first question on that front is, we've clearly seen and recognized and respected the administrations, the ODNI's, yours and Aval's, commitment to have a community that looks like our country. Not because it's the right thing to do, which oh by the way it is, but because it's the necessary thing to do for the mission, diversity of views and experiences. Are there, you talked about the program earlier with respect to outreach and industry, what's the ODNI doing on the front of making sure that we are availing ourselves as the best that America has to offer from a talent perspective.

Stacey Dixon:

One of the fun things that I've had a chance to do is just to go visit more schools, both colleges and high schools, and just introduce them to the intelligence community. It's amazing when you step out of this area, how few people have thought about a career in public service, let alone working in national security, let alone working for the intelligence community by exposing them to the opportunities that we have. There's just a very variety of jobs, all the different work roles, all the exciting things that they could be part of that would at the end of the day also help keep this country safe.

It's been a great feeling because there's been a lot of interest. There've been people who after we've left, are talking amongst themselves and talking with their teachers or professors about what they might be doing, about now this is now on the list of places they may consider applying. So getting out there

and spreading the word because there's a number of us that are in the community because someone invited us in. Left our own devices, we would've probably ended up in some other career field, maybe just as happy maybe, but we've had this opportunity because someone exposed us to it, and so my goal is to get out there and try to expose many people around this country who never would've considered this to think about us as a career choice.

Robert Cardillo:

Related, but a little more specific now. I read, we hear a little bit that in some cases our military is struggling to get the inputs, the applicants that it needs to be successful. Can you speak to how the IC is doing in general with respect to... Are we getting the right, not the right, I'm just talking volumetrically now, are we doing okay on the recruitment side?

Stacey Dixon:

We're still getting a lot of applicants. I think there're going to be challenges in those fields where coming out of college you can make way more than you would ever make as a starting person in the intelligence community or in any government organization. But we are still, we're getting people to come in as interns and they're getting hooked on the mission and then they will come in as full-time employees.

We're getting people who do have that public service interest and come in despite the fact that they could make more money elsewhere. We may not keep them for 30 something years, but I think that's a model that's also changing and people can go out and get other experiences and then come back. The thing that I'm watching for is as the world is recovering from the pandemic and all of the work from home, opportunities have been out there and there's a element of the population who's going to go after those opportunities. Most of those people are not going to find their way into our community so we're dealing with a different pool who's willing to come in to workplaces to get the job done. But so far we've still had people to apply. I do think some career fields and work roles continue to be hard to recruit and we have to figure out another way to approach those, but we're looking for other hiring incentives, STEM pay, other benefits that you can offer within government that may or may not be offered going into industry.

Robert Cardillo:

And last test question on this front, but how are we doing on the numbers, I guess on improving our availability, accessibility, inclusive principles with respect to hiring? Again, my experience at NGA over four and a half years, it was just frustratingly slow and obviously I knew, "Hey, it's a lot of people, it's going to take a long time, so you just have to keep at it." How do you feel about the metric side of the question? Are we making the incremental progress? Are we heading in the right direction?

Stacey Dixon:

It's incremental. And we put out as a community demographics report every year, so I can look at those numbers and I can say, "Okay. I know what the numbers are across the community." And the beauty of that means that there's data that I can actually track. I can figure out which agencies are doing well and which ones aren't, and perhaps understand what the barriers are in those particular places or for particular populations. That is extremely valuable. I think that's going to give us a way to make more than incremental progress in the future.

Right now it is a bit incremental, although the recruiting pipeline is much better than it was because we're going out to many different types of universities all around the country, getting people in and

then keeping them in so that they are having a career that they're interested in having, making the environment inclusive enough that people can be themselves and know that their opinions are going to be valued. We will intentionally work on that going forward.

Robert Cardillo:

Great. Great. No, I know it's a long game and it's worth doing. We have a few minutes left, Stacey, I want to turn a little bit more personal. You are having a fabulous career, one man's opinion, but it's just been amazing quite frankly to see the ride that you've had. Langley, NRO, The Hill, NGA Out to research, NGA to research, deputy director and now principal deputy. I know you had no idea when you were stepping out of... Were you leaving Georgia Tech when you headed up to Langley?

Stacey Dixon:

Minnesota, post-doc.

Robert Cardillo:

Oh, you were doing post-doc. Okay, I'm sorry. She did post-doc work at the University of Minnesota too. Sorry to scrimp on your academic credentials. I mean I know you couldn't have imagined all that, but there are both post-doc and masters and undergrads out there that are watching you going, "Huh? That's pretty cool." So what, now that you're in this seat, and I appreciate all of the inhibitors on your position and what you can and can't do, but what would you both say to those potential people that are thinking about this career path and what ideas do you have to make it easier for them, not that life has to all be easy, but you know what I mean, to make it less hard?

Stacey Dixon:

First, I would encourage them to definitely consider this career in public service and just tell them that the opportunities within the intelligence community are so varied and wide because there are 18 different elements with 18 different missions, but we're all trying to do the same thing in terms of providing the policy makers the information, the intelligence they need to make good decisions for the country and keep the country safe. So in terms of having a mission that you believe in, having that purpose that many people are looking for, I've found it in the intelligence community and I think many others have as well. What are we doing to try to bring them in and encourage people to come in, one, and you'll actually be hearing from Senator Warner later on, and I want to give him credit for being an advocate for us to decrease that onboarding timeline because we know that that's a barrier for many populations having to wait that long to get into the intelligence community.

We are actually on an effort to reduce those timelines and have made some good progress considering where we started and we'll continue to make good progress over the course of this year. So number one, let's make it not so hard to get in, especially for those skill sets, like those really, really... Those language skills that we know we need, those STEM skills that we know we need. Let's figure out how to make less of a barrier for people coming in. Once they're in. I want people to really be able to have a great career here, whether it is for a couple years or whether it is for 30 plus or 40, 50 years. I've seen some people in here understanding what they want, understanding how do we ensure they're getting the opportunities to challenge themselves to continually get new skill sets if that's what they're interested in doing.

To be able to work on a variety of missions and work with great partners in so many different agencies, to go out into industry, whether on an exchange or whether permanently, and then if they want to

come back, not make it so hard for people to come back. Those are the types of things that we're trying to do as we think about this workforce in the future, we come up with this strategic plan on how we think about that. That's probably what I would tell them and that's what I'm trying to do and what we're trying to do to make this a place that welcomes people in, gives them a seat at the table where they can contribute and helps them have the kind of career that they're interested in having.

Robert Cardillo:

Well one, thank you for that, but more importantly, thank you Stacey for spending this time having this conversation with this broader team. I've had the pleasure privilege of knowing Stacey for a number of years, and I think if your first exposure was this time here, you now know how lucky we are to have this civil servant in that position as PDDNI. So happy you're there.

Stacey Dixon:

Thank you.

Robert Cardillo:

I appreciate how difficult and challenging it can be, but I love the way you're taking it on. And by the way, I think the way that you're taking on is in fact welcoming more people and so thanks for showing that it can be done in such a wonderful way. So that was a long way to say thank you for your service in the position and please join me in thanking Stacey for her time here today.

Steve:

Hey Yang, we're going to listen to a senator, how about that? So how about we briefly introduce someone who you'll probably know, a guy named JP Parker, who'll be having a little chat with the good senator from the great state or the commonwealth of Virginia who just happens to be the chairman of the Senate Select Committee on intelligence. So what do y'all know about JP? I mean, he's got the beard, he's got the look, he's been around. Do y'all know that half of his career has been in industry, the other half has been in government and every job he's had has been high-end jobs.

He recently retired out of government last year. He was the DNI's first ever intelligence community space executive. Prior to that time he was Vice President, Pence's Special Advisor on all things cyber, WMD, science and tech, things like this. This is a typical eye you see on the street. Hey JP, go get a job with the vice president. CIO jobs, pro staffer on the House Armed Services Committee, time in industry, doing a lot of work with DARPA. So I mean that's the story with JP Parker. Need I say anything more?

No.

All right, let's get started. Ladies and gentlemen, JP Parker.

Speaker 3:

Got the look.

JP Parker:

Thank you, Steve. That question mark, I don't know.

Well, it's nice to know I have got the look, whatever the heck that means, so thank you all for coming today. I know it's late in the day. We've kind of saved the best for last. I have the honor and the privilege of not only being here with you today, working with Steve and NSSA to pull this conference together. I

get the distinct pleasure of introducing our next guest of honor. It was originally slated as a fireside chat. We don't have a fire. The chairs will remain empty, but I see Senator Warner is warmed up and ready to go in his office and he's graciously carved out some time to be with us today, talk to you about things from his perspective. So if it's okay, Senator Warner, I'm going to give you a quick introduction here and let everybody know you're ready to go.

Senator Mark Warner serves as the senior United States Senator from Virginia, a seat he has held since 2009. Senator Warner graduated from George Washington University earning his bachelor of arts in political science, and going on to receive a law degree from Harvard. The first in his family to graduate from college, Senator Warner spent 20 years as a successful technology and business leader in Virginia, investing in hundreds of startup technology companies that created tens of thousands of jobs before entering public office. From 2002 to 2006, he served as governor of Virginia. When he left office in 2006, the state of Virginia was ranked as the best state for business, the best managed state, and the best state in which to receive a public education. During his time in the Senate, Senator Warner has established himself as a bipartisan leader who works across the aisle to accomplish real solutions for Virginians in the nation.

Senator Warner was ranked 10th most bipartisan member of the United States Senate and the second most bipartisan Democrat in the United States Congress by the Georgetown University Center for Public Policy. Currently, Senator Warner serves as a member of the Senate finance banking budget and rules committees, and most important for this audience and today's event as chairman of the Senate's Select Committee on Intelligence. As someone who has had the privilege of briefing Chairman Warner and the members of his committee on numerous occasions, I will testify under oath you will find no public servant, more principled, intelligent, and devoted to the cause of US national security than Mark Warner. Chairman Warner, I want to welcome you. We've got an audience, a very large ballroom filled with people here, and I want to thank you for taking the time to meet with us today. Senator Warner, over to you for any comments and opening statements you'd like to make.

Senator Mark Warner:

First of all, JP, thank you for that introduction. I've enjoyed working with you. I knew you were smart. I didn't know until your introduction that you are known for having the look, whatever that means but I look forward to seeing you in person again and sharing with the whole committee that look, number one. Number two, and I know we got a lot to cover, I'll be brief. I want to thank the organizers for everybody for doing this and in Virginia, in Chantilly, I assure you with we were not potentially still voting, I would be there in person along with you. Let me also do a quick shout out to your previous guest, Stacey Dixon. She is doing a great job. I think she's an incredibly talented and yes, as the ODNI's representative on security credential reform, I know we're going to get to that topic. I'm going to hold her feet to the fire on some of the commitments we've made. So I look forward to this conversation and let's go ahead and get started.

JP Parker:

Fantastic, Senator. Thank you. The format, as we've discussed is a question and answer fireside chat minus the fire, so I'm just going to go ahead and dive in with some questions and we'll turn it over to you for the answers.

Let's start with the fact that beyond space, you chair, the Senate Intelligence Committee and space is one of the many things that you concern yourself with and probably have issues that keep you up at night with. What are the top one or two intelligence challenges that are keeping you up at night and that are confronting the committee going forward?

Senator Mark Warner:

Well, great question. I mean, obviously what's front of mind, I think not we're just on the committee or most of us as Americans, people around the world and real time the circumstances of Putin's illegal invasion of Ukraine and the possibility that this autocrat may use tools that he'd not used so far, whether it be advanced cyber attack, God forbid, his occasional threats around at least tactical nuclear and that potential for disruption. Little over a year ago, I remember being at the Munich Security Conference and well, actually less than a year ago, when sitting with some of our allies at that point, and I remember the German intelligence had simply not believing that Putin was going to go in this extensively. And really our whole intelligence in many ways driven by some of our overhead collection, I think was absolutely a hundred percent...

PART 2 OF 4 ENDS [00:54:04]

Senator Mark Warner:

... the collection, I think, was absolutely 100% accurate in predicting that. So how we play through, and I know we're going to additional questions on Ukraine, I don't want to overdo at this point, but how we play through not only supporting Ukrainians currently, but where this leads on an offline front of mind on a more macro basis. And I think the question not just of today or tomorrow, but literally for the coming years, is the technology competition with China? I grew up in my private sector career in the wireless world, started a company called Nextel. So pretty familiar in that area. To wake up five or six years ago and see in the wireless space a Chinese company in the case of Huawei, not only in kind of running the table in 5G technology, but then supplementing that with the idea that China was flooding the zone in a lot of the technology standard setting bodies.

This is something I think has been America's secret sauce for a long time. Even if we didn't create the innovation, we would set the standards, the protocols, et cetera, for developing technologies. China was starting to do that and we were behind in 5G. The next up, and I'm proud of my friend John Cornyn from Texas, we saw the same thing start to replicate itself in [inaudible 00:55:23] CHIPS. And again, we did respond in a bipartisan way in the CHIPS legislation. Literally \$52 billion and that's not only for CHIPS, but it's also for next generation beyond 5G on the wireless side, ORAN standards. We've stepped up, but again, I think we were asleep at the switch for a while as we allowed both the CHIPS industry to both migrate abroad to the point where none of the cutting edge CHIPS were made in America, Taiwan, with all its vulnerabilities.

And my feeling and why we've got to execute correctly on the CHIPS legislation to make sure that we build the credibility with the American public and our allies, I could see similar technology competition around artificial intelligence, around quantum computing, around synthetic biology, advanced energy. And what I'm hoping is that the Senate Intelligence Committee, which both I'm very proud of the fact that a lot of this is due to my predecessor Richard Burr, has been very, very bipartisan through thick and thin. We also have, are trying to claim the mantle of being the technology committee since we get to look across all domains and I very much believe that we are going to have to make similar type national investments around national security in technology development to make sure that we and our friends around the world can stay up with the kind of investments that China's making.

So those two, and I can go way too long on all those, I know we've got a lot to cover, but are the things that are most front of mind for me.

JP Parker:

Well, thank you Senator. Let's focus a little bit more deeply on Russia and Ukraine since you brought that up. Looking back, what has most surprised you of the things that have occurred over the last year and what most concerns you both now and going forward?

Senator Mark Warner:

Well, I think, let me start with a couple of positive points. I mean, what surprised me and I was a believer, but boy, oh boy did our intelligence committee, again a lot helped by our overhead capabilities was so absolutely right on predicting the extent of what Putin's intentions were. I remember lots of conventional wisdom being that it might just be an attack in the east or there might be a thing, but this was not going to be all out war. And again, going back to that Munich security conference, I remember being so worried, President Zelensky came and spoke at that conference and there were some of us, I was relatively assured, but there were a lot of concern. Is he, was he going to pull a gun and not only come and speak but maybe move on beyond and simply keep going? Thank God he did not.

So I was pleasantly surprised about how right we got it. I also could not have been, I was surprised but not totally shocked by any means, by how President Zelensky has so risen to the occasion. And I think again, I think the demonstration of the importance of leadership, again the Zelensky-Ghani comparison, Ghani when he cut and run in Afghanistan, and even though we had an Afghan forces that were exponentially larger than Taliban, the whole country crumbled. Zelensky against a much bigger enemy in the Russians really has responded in a remarkable way. And the will of the Ukrainian people to defend their country has been remarkable and it's so important that we keep the American and our European support. So I'm glad it appears real time now, and this is not based on anything classified but just in public reports that we've worked through this issue of German and American tanks, making sure that we get the Ukrainians the tools they need.

What has also been a surprise to me, a pleasant surprise I guess was, and maybe we didn't get this fully right, but I'm not sure how we, the intelligence community could be blamed, was how pitiful some of the Russian operations were. Again, I think about some of the images even in a declassified sense of those Russian columns sitting for days as they tried to move on Kyiv. The fact that the Russian machine, which war machine, which had been Czech or elsewhere has been in play in the last number of years operationally were so poor, ended up being a bit of a pleasant surprise.

And I guess I'd, one other surprise on the good side was the fact that Russia has not used all its tools. I've always felt like the dog that didn't bark were the use of Russia's cyber capabilities. Now clearly, they launched a lot of cyber attacks against Ukraine and I think we, the United States has helped our Ukrainian friends. I want to give a shout-out as well to Microsoft on the private sector side who's been a great partner, but the fact that they haven't launched outside of a single network type of attacks like the NotPetya attack, which so frightening a few years back, I think it's been good news whether that's because they were afraid of the ability to of, as we all know, NotPetya struck not only Ukraine but had reverberations in Russia and I think perhaps concerned about what we could do pushing back. That has been a surprise.

I don't think we're out of the woods on that. And obviously the threats that Putin has made occasionally about potential use of nuclear weapons, I still put that in a cause for concern. On the negative side, I know some have criticized the intelligence community. "Well, why didn't you predict better about the Russian lack of morale or inability to execute?" I'm not sure that's a fair criticism of the community because you can't really make that judgment until you see conflict take place. So I'm more often than not, I guess I've been pleasantly surprised and while I'm critical of the administration on the Afghan withdrawal.

And one other thing I guess I want to say on the positive side, and I think the Biden administration ought get some credit on this, I can assure you at the beginning of the Biden term, NATO was virtually an organization in name only. It had been so undermined by the previous administration that there was a real question would it rally to the cause? And I do think that Biden administration's done a good job of rebuilding NATO and the long-term ramifications of to Russia of Sweden and Norway joining that alliance. The fact that we've even seen the Swiss partially get off the sidelines, the fact that nations around the world have rallied in the Ukrainian cause. I think that has obviously helped the Ukrainians, but that took a lot of work and not sure it's been fully appreciated.

JP Parker:

Well sir, thank you for the compliments to the intelligence community. Your support has been unwavering and I speak for myself and my former colleagues. We really appreciate the support you and the committee have shown and the hard work. But let me go back to a point you just made. It has to do with the leadership, the galvanizing of NATO and the European Union. What is the staying power of the West in your estimate? We're now a year into this thing with no end in sight, so how do you think this is going to play out and what's it going to do to US and Allied resolve?

Senator Mark Warner:

Oh, JP, great, great question. And I wish I had a definitive answer. Let me kind of frame a couple of points here that again, keep me fairly optimistic. First of all, the total American commitment now. While not all spent, but what Congress has authorized and appropriate is about \$113, \$114 billion. That's a good chunk, obviously, of resources. That's about, and these are rough numbers, roughly half-and-half defense and non-defense support in terms of the non-defense allot in terms of rebuilding assistance, food, other things. On the defense side, we appropriated or made deliveries or are in the process of making deliveries of about \$26 billion. So we've still got a lot of runway in terms of what's already been appropriated by Congress. I don't think people fully realize that. And while again, I have some concerns about some of the voices in the House and I would think not so much in the Senate, I mean, I was very proud of the fact that in the Senate we still haven't got 90 votes on the last appropriation. It may have been a little less but it was in that range.

I still believe the overwhelming majority of both Democrats and Republicans in leadership positions are going to be steadfast in terms of supporting Ukraine. So I find that possible. On the situation with the Europeans, I again feel better than I expected. We're what? Roughly halfway through this winter. The skyrocketing energy costs for the Europeans, so far they have born that brunt. It's one of the reasons why I still think we need to do a lot more on things like natural gas and diverting natural gas from America and to Europe. And I think we could do that frankly with just some additional pipelines. We don't even need to increase drilling. We've got that virtual supply if we can get that. So keeping the relief and assistance to our European friends on energy I think is terribly important. And this real time playing out, and I don't want to get ahead of myself because never underestimate the ability of us in politics to kind of mess things up occasionally, but this conflict around the tanks could have been that first breakdown of the unanimity with our European friends.

And it looks again as of Tuesday afternoon at whatever, 4:15, that that's going to get resolved in a positive way. I think the spring is going to be the real challenge is what Ukrainian offensive and the Russian offensive to see how all that plays out. And I guess the last point I'd want to make is that I think on a going forward basis, the situation on the ground, Ukraine has done quite well. It feels like the resolve has not been weakened. It feels like even though the brutal rocket attacks on their civilian forces has not broken their will. But I wish I could tell you, I know the secret end game here or what the off-

ramp for Putin would be. I'd love to be able to tell the crowd I have that down but it's classified so I can't share it with you, but I'm not sure I can even make that claim.

So how this plays out come spring or summer or if we're still engaged in that long haul. One of the things that continues to concern me is Russia's ability to find some of the things that we have sanctioned under their economy in terms of CHIPS and other things coming from China. Whether Russia's staying power will continue is something that we have to keep an eye on. But I don't have the full notional idea on what the final end game is.

JP Parker:

So sir, if I can just ask a clarifying question, if I heard you correctly, you said you expect something like this dispute over who sends tanks to the Ukrainians to be resolvable. It looks like more of a speed bump than any kind of weakening of the alliance. Did I hear you correctly?

Senator Mark Warner:

Listen, and this is, let me be... This is... As you also know, JP, there's a lot of discussion about classified information at this point and I want to make sure I stay on this, the right side of all the right lines. This has nothing to do with any classified. This is literally what I have been watching on some of the news channels today where it appears that the polls have asked for the poll tanks and that the Germans are going to give an ascent and it appears that we are going to, at least I saw a public commitment that the administration has indicated that some level of [inaudible 01:07:38] will be sent, which I think will then give the Germans the ability to move forward. So as of again, 4:20 on Tuesday, whatever today is, it looks like it's being put behind us. But we all have to live through circumstances where this could change by tomorrow. But as this afternoon, it feels better than it did frankly, yesterday or the day before.

JP Parker:

Thank you, sir. I must tell you that having sat in front of your dais and having to field questions, it's fun getting to ask the questions for once of you instead of the other way around.

Senator Mark Warner:

You can tell me a little more specificity if you want.

JP Parker:

We have a space audience here sir, and so we're going to be diving into some space questions, but before we do that as a segue into that, I know you have a huge interest in security clearance reform. You've been tracking and pushing that for a long time. My couple of years as space executive, I spent an inordinate amount of time trying to break through barriers not only within our community but across the barrier, Title 10-Title 50, so that we can have a global holistic understanding of what our space posture and portfolio looks like and so that we can present it to you in a unified way. We made some progress but ultimately it's still a job undone from where I was sitting. So can you comment on where you think we are with security clearance reform and the whole issue of security?

Senator Mark Warner:

Well again, great, great question and I came at this issue probably four years ago now, five years ago, and I didn't think it was going to be an issue it would take the balance of my career to actually resolve. And although there have been plenty of people long before me who've worked on this. I saw this

concern from two sides. I saw it from young people for example, who wanted to join the agency who were seeing 600 days before they get the security clearance. And while they loved the mission, they couldn't wait two years to get cleared. And I saw it as well from a whole host of people in disproportionately, my constituents in Virginia who wanted to bring their expertise or were in the private sector contractors who were just having huge hurdles on getting their security clearances done.

We have, I think, and I want to give the Trump administration some credit on this, they were partners with this when Trump came in I think, or a year into Trump, they were at a 700,000 person backlog. They worked that down to about 225,000. Commend them there and commend them also on trying to deal with part of the resolution process. The ODNI, Dr. Dixon and others have indicated that they hope to get this clearance process for everybody down to 180 days. The proof will be in the pudding and we've made some progress there and to get at least the secret clearances down to even 30 days.

My friends at the agency and Director Burns who I think has been doing a great job overall at the agency, I can assure you I am relentless on him because the CIA while is always the most challenged outlier on security clearance, but I think we're even making some progress there. In terms of overhead, this is an area if we don't have this clearance, we're not going to be able to get the best ideation from the private sector. And one of the things I've been about, I know we'll get into this JP, is in terms of how we urge more utilization of commercial.

And this is not just the case around space or even around the IC directly. One of, as somebody who's a big advocate for the CHIPS legislation and as we're starting to look at how commerce implements that, we need more people with security clearances, for example, at the Commerce Department so they can work with folks in the intel community so we can see with a greater visibility where we need to stay current on both CHIP development, deployment of these \$52 billion in resources and where we need to be on the research side.

So this issue, I think we are making progress. I think it's on everybody's attention, but it is one that if you are not relentless on it, it will slip back. And I'll just, again, for some of the things, just like a small ball piece, but it's again, I think typical with some of the hurdles. If you are a small contract, you want to make sure you've got all your people on the job and you've got on a job now 40 clearances, what many times happen, and you've got all those folks as revenue generators, you don't even have enough clearances to make sure that your CEO or CFO, or some cases if you got a CTO are in that clearance.

So the idea if you're going to be a regular doing business with the government and the IC or DOD, you ought to be able to have some ongoing number of clearances for your senior executives so at least you can know what the projects they're working on. So it gets that kind of detail. I think the issue has been elevated enough, but I promise you, and I say to all of the folks in your ballroom there, if you're finding issues and challenges, please contact the intelligence committee because we want to try to have your backs. Because again, that's in the best interest of keeping our country safe.

JP Parker:

Very good, sir. We're going to shift to space. You brought up commercial space, you mentioned we're going to get into that and I know you've been a huge proponent of it. Leveraging commercial capabilities is something that I think is going to be a big topic in our conference this year. It's certainly been a big trend guiding what we do in the IC and through DOD and the previous speakers have already addressed it to some degree in some depth. Are you bullish on the space industry in general and what, having been a huge advocate of commercial space, what do you think we're getting right and what do you think we're getting wrong about leveraging the commercial industry in space?

Senator Mark Warner:

Well, I think we're generally, we make great progress here. I have joked with JB, who is my smart person on all things space on the committee that I think thought at... In my first couple years on the committee, 2010, 11, 12 timeframe, I felt like there must have been a picture of my face on dart boards at the NRO because I was relentless on saying, "We need to move away from simply these exquisite governmental only systems." I actually sometimes made a maybe inappropriate joke that I felt like most of the folks on the IC and DOD side of the space business had never ever seen a James Bond movie because every James Bond movie I remembered there were either laser guns shooting out satellites or other things that were taking out space assets.

And the more we can move the commercial, the more we can move the distributed as opposed to simply exquisite technically ETM kind of government only, I think that's progress and I want to both commend NRO on who they're selecting, but also NGA in terms of the analytics. I do think we need to remember that if we can get 80% of the solution and whether that's a combination of both government and commercial, sometimes we need to take that. We can solve many, many of our problems that way. We do not need exquisite pixels down to the smallest definition for all tools. And I think commercial has been great on that. And again, I welcome everybody in the audience to I think both give the committee and other suggestions on how we can do better.

One of the things we had recently in on both the satellite side but also on the analytics side, were a number of companies to meet with the mid-level acquisition folks at NRO. We're going to do similar ones with NGA.

So we want to keep pushing the edge on that. And I also think there is a lot to be optimistic about in terms of the analytics piece. I mean, I think there are things that are going on with some of the commercial applications around geolocation that frankly may be asking a series of analytical questions that we in the IC or we in the DOD don't even think of. So I think we need more of a mind meld between some of the most creative things on the commercial side around analytics, not just around pixels. And we need to keep moving on that.

And I guess the one other area we need to do, and I want to give my dear friend Richard Berman who was a Republican chair for many of the years that I was vice chair real credit for this because we saw what some of our capabilities, the fact that the old school which said, "We're going to do request for proposals for a couple, do an RFI start and then we'll do an RFP and after a four or five year process we'll make an award."

There were some folks from the IC and I won't mention that we had a real heart-to-heart with where we said, "That's just crazy. You can't do this in an industry that is reinventing itself literally every 24 months."

So one of the areas where I think we've made progress, but more progress needs to be made is making sure both the IC we don't have as much control over the DOD, makes a selection process much quicker and realizes that most of these assets are going to need to be replaced on a 24 to 36 to 48 month cycle rather than thinking about the long term. As Senator Angus King from Maine who's on the committee, great member, said at one point, "The big fat floating cows in the sky that are up there for decades may not be the right solution set."

JP Parker:

Senator, you mentioned earlier that one of the things that keeps you up at night as committee chair is the role of China on the international stage. Let's talk about China's role in space. I think it's been well documented and we're going to talk about it a lot here at this conference. China plans to supplant the

United States as the leader in space, and that applies to civil, commercial as well as national security functions. We've seen great advances that they've made over the last decade and now the United States, both the Department of Defense and the intelligence community are reacting and thinking through how to re-architect our space infrastructure to basically deal with China's increasingly advanced threats against us. Would you tell us your perspective on China and specifically what you think we are doing right and wrong maybe in space and how we're going to ultimately counter their advances in space?

Senator Mark Warner:

Thank you. Great question, Mr. Chairman. I think I... Can I take that one for the record? But no. Yeah, get me my, how many of you in that room have used that answer before? But let me start with how I got here, which I think might be some context. As a business guy, I did a lot, I did business with China in the nineties. I remember at the beginning of the 2000s, I was kind of what I was part of kind of conventional wisdom thinking in the more we bring China into the world order, the WTO, the more we trade, the more we joint venture, the better the whole world will be. And that was conventional wisdom for most of the last 20 years.

What started to change maybe mind was a couple things. One, being on the intelligence committee and hearing, especially circa 2010, 2012, where the level of intellectual property theft that was taking place on an annual basis, some estimated \$500 billion a year was not diminishing. It was growing rapid. Literally, the changes when President Xi moved away from any kind of appearance of even a real market based economy and the Chinese law of itself, the change that said every Chinese company was at the end of the day not responsible to their shareholders, but to the communist party. It was a really chilling effect, to the point that we started roughly the 2017 timeframe and always in a bipartisan fashion, it was always me and a Republican senator. We'd usually bring either the ODNI, Dan Coates at the time, or folks from CISA and FBI, and we did pre-COVID about 16 separate classified road shows to different industry sectors. And some of those conversations were tough.

And I think about the conversation we had with universities pre-COVID, they had like 360,000 Chinese students. Great students at our universities, but whether it be through Confucius Institutes or some of the efforts that were made by have these students families threatened back at home in China, there was a lot of intellectual theft going on there.

Now, post-COVID, we've continued some of these hearings and some of the folks who didn't want to talk to us beforehand are now talking to us. And I think most folks have realized this is a real challenge, number one. Number two, and I'll get to space in moment. Number two, I think it's really important, and this is not trying to be politically correct or anything, I think it's really important as a policymaker to always stress that our beef is not with the Chinese people. It is with the Communist Party. It is with Xi Jinping. It is with their authoritarian tendencies. And look how the Chinese people, Chinese leadership treats their people, whether be the leaders or seven and a half million people-

PART 3 OF 4 ENDS [01:21:04]

Senator Mark Warner:

Leadership treats their people, whether it be the Uyghurs or seven and a half million people in Hong Kong because I think if we don't make that clear the tools that the Communist party uses like WeChat and others to get to the Chinese diaspora all across the world, it reinforces these concepts that this is an simply an anti-China effort. So I think that's important to always make that point. So in terms of space, what does it mean? Well first of all, one of the things that became clear to me is that for the most part,

the Chinese space program really only started to mature circuit 2015 ish. So as opposed to having all of these legacy assets in the sky that you have to think about how you protect and redeploy. China has already started with a small SAT distributed network in place and I think it gives them a different starting point from us.

And China has clearly shown its willingness to even show that it could destroy space assets as kind of a warning shot across the field to not just us but to the rest of the world. So what I think we need to do, and this is I think what ought be not only vis-a-vis how we compete with China and space. But across all of these domains is to realize that this should not turn into an old bipolar world. And I do think we need to find ways where we continue to work with Chinese. But I do think we need to strengthen our ties to non-authoritarian regimes around the world, to partner as well, not just [inaudible 01:22:44] or NATO, our friends in Japan, et cetera.

But literally there's a lot of nations around the world who want to do business with us, including within the space domain. And if we can do that and whether it's in terms of sharing information, having backup communication system, there's a whole series of things that we are advantaged if we have not only an American based system but a multinational based space overhead architecture. That gives us resiliency, that gives us greater coverage, that gives us greater capacity so that God forbid that we ever get into a conflict, it will give us a huge advantage.

Because inner the Communist party in China has customers, it doesn't really have allies and frames. I still believe one of the great things about our country, even with all our flaws, is there are so many nations around the world that want to partner with us. And we need to continue and take advantage of that.

JP Parker:

Sir, that's a great answer and it segues into an area that relates to something you mentioned, which is destructive accent space. It's already been mentioned here at the conference that we had Russia test an anti-satellite missile about a year ago, a little more than a year ago. And they created an enormous amount of debris in low earth orbit. The Space Station is still dodging elements of that debris. You've talked about in alliance and the ability to form partnerships with countries that are like-minded. It leads to a discussion about norms in space. The current administration has made that a priority and has announced that we, the United States, would refrain from any destructive anti-satellite missile testing that creates debris. We've also gotten now other nations to sign on, I don't know the current count. How important is it to create norms in space and get the international community aligned with us on those norms?

Senator Mark Warner:

JP, the short answer is absolutely important. But again, let me give you kind of how I view this. And I didn't realize this until I got educated myself. We have always not been great about setting norms ourself. I think we have almost in a post Sputnik world, we have always expected that even if we didn't invent or innovate in this country, our economy was so large and we were so dominant that we would get dissected rules, procedures, protocols. Which by defacto basis almost become norms. I learned that in the late '90s when there was an effort at the UN, for example, to start setting cybersecurity norms on an international basis and we had Russian, China and others agreed. That at that moment in time the United States was so ahead in cybersecurity, we chose not to participate in that kind of activity. I think in retrospect, the idea of setting norms that include transparency, that include things like we shouldn't be this on the cyber domain, maybe shouldn't attack healthcare systems and there's certain things that should be off limits.

The idea of destroying objects in space that could create a debris that would have effects law well beyond taking out a single bird make a lot of sense. And I do hope that we will lean forward on that. But I think it is, I don't think this can be done simply arbitrarily by the United States. One of the things we have to do, and I say this from the governmental side, but I also say it to our friends in the private sector, we have to participate in all these international standard setting organizations in box. I say this as an old wireless guy, I think we fell asleep with a switch in terms of some of the telecom setting standards. And China was literally flooding the zone. And as you know in many of these international standard setting bodies, it's kind of a mini Iran. So if China was doing the belt and road initiative from some small country, they often would get their vote in terms of who's going to be in charge of the international body.

We need to reengage, the government does. And we've tried to push that and I think we're getting better on that. The private sector does. And there there's some small ball things we can do. For example, if you're a smaller company, you can write off, and this is a crazy rule, but you can write off sending your engineer to a conference if it's in the United States. You can't write off in the same way if you send your engineer to a conference in Malaysia. So making sure that from large to small to governmental, we participate in these international standard setting bodies. That not only set standards, but ultimately will be the place where you set and sell norms is really important.

And again, that goes back to the bigger question about we got to do that with our alliances and friends around the world. So I think this is a place with, again, say not only what we've seen with Russia doing, but remind everybody, go back and look at any James Bond movie. Not to date myself, the bad guys always pull this stuff. So let's get ahead of the game and try to put some rules in place before awful things happen.

JP Parker:

Excellent. Sir, we're in the final stretch here. We've just got a few more minutes. So I'm going to shift gears and note for the record that when I joined the intelligence community, there were 17 components. 17 different organizations making up the US Intelligence community. When I left last August, there were 18, we had added the first new member to the Intelligence community in over a decade and that was the United States Space Force. How do you think the United States Space Force is doing in its first few years?

Senator Mark Warner:

Well, I was not a 100% sold to start with on this idea. And I was very concerned when I heard some of the rumblings as this debate was going on. That they would try to bring in the NRO I think that would, is not appropriate, would not meet the mission and would long terms being harmful to us. But I do think I have become more and more of a believer. I think General Raymond ought to gets some credit, ought to get a lot of credit for that. I know we've now got General Saltzman in place and I think he's continuing that. As long as we can not get into jurisdictional food fights and think about the notion around that theme of unity of effort. So that we are thinking about both how we protect our assets, how we think potentially around the offensive side, and realize that are different lanes within government and frankly with our friends in the commercial sector, that we can all collaborate in a way.

And this goes back to things like not only security clearances but clearance reform and declassification of more items so that we can share on a broader basis. I think we are making progress and I actually think, and I've had a chance to visit some of the facilities. And I think there's some great work going on. So count me as a convert to something that at the initial stages I had some questions about.

JP Parker:

Well, that is a positive way to end this discussion, sir. We appreciate your time Mr. Chairman. I think on behalf of everybody here, we know how to... I personally know you had a very busy schedule that prevented you from being here. Yet you carved out time to speak to us today and we're all very appreciative. Thank you so much. Let's hear it for Chairman Warner.

Senator Mark Warner:

Very briefly. I'm a huge advocate for what everybody in this room does, but I'm still very anxious to learn. And if you've got ideas, if you've got places where you think there are bumps in the process, I promise you I'm going to stay on the clearance reform piece. Which is obviously very nerdy but very important. Please come to us. It doesn't matter, Democrat or Republican on the Intelligence committee. We are all in on overhead and space and we want to have your back and be your supporters. Thank you all very much.

JP Parker:

I'll be in touch, sir.

Steve:

All right. Okay. It's almost bar time. Don't worry folks, don't worry. Hey Lars, come on up. Just want to say a quick thanks for taking care of the afternoon today. It was very good, thank you guys. Really appreciate it. Very cool, very cool.

So this is kind of a weird time. We have a two-day conference, tomorrow's SCI. So some of you folks aren't going to be here tomorrow, so you cannot think about where do you put the closing comments? You're in the middle, so we're not going to keep you for long. Just wanted to touch upon a few things before we make a break for the hospitality suite, if you will, in the back. So let's see. We want to first touch upon a few things that some of our key folks are doing here for you. Much of what you know about already, but want to make sure you do hear them. So one at a time. Let's see. First chart I guess would be for Chris Williams, if you don't mind. I think he's got a picture. Chris, are you around? Where's Chris? There you are. Chris Williams. Couple things Chris would like to share with you all.

Christopher A. Williams:

Thanks very much Steve, and again, thank you all for being here today. As I mentioned earlier, it's my great privilege to serve as chair of the Mormon Center for Space Studies at the association. And I'd like to give you just a very quick update on some upcoming events that we're having. We have a full slate of unique and highly informative programming and activities planned for 2023. And just over the next few weeks, we have several important events and activities, including on February 9th for your schedule. We'll be conducting a classified space-time interview with NRO chief Scientist, Dr. Byron Knight on the NRO's S&T priorities in areas such as artificial intelligence and machine learning for managing satellite constellations and maximizing the value of data derived from multiple sources. Within the next two weeks, we'll be publishing a scholarly paper by Mark Berkowitz entitled, redesigning Space Forces for Deterrence and War Fighting.

As you know, force design is a critically important function now being undertaken by the Space Force, the Space War Fighting and Analysis Center in particular. And Mark is a former senior DOD official and an active member of our distinguished board of advisors. So looking forward to publishing that paper. On March 9th, we will be co-hosting along with our partners at AIA, the third IC Commercial Space

Partners Forum. Which is a half day unclassified off the record information sharing event with key leaders from across the Intelligence community. And lastly, we will continue with classified discussions with Key US government officials, including an especially IC officials on various national security space topics. Including the very timely relevant issue of protecting and defending commercial space systems, space arms control in other areas. So be on the lookout for announcements about those upcoming events. We strongly encourage your participation in and suggestions for the work of the Mormon Center. And thank you again for your continued support of the center. Thanks very much, Steve.

Steve:

Thank you Chris. Next, Ms. Mandy Vaughn who does a lot of stuff, lots and lots of stuff. She's now on the DSB if you don't know that, she's now on the user's advisory group. She continuing to be on the user's advisory group at the Space Council and for a little NSSA, she's taken on a little bit of a big challenge, I should say. Workforce development, a long-term strategic priority we have as NSSA. So snapshot of that please. Thank you.

Stacey Dixon:

Awesome. Thank you everybody for hanging in here just for a couple more minutes. So as Steve mentioned, yes, workforce development and kind of developing this culture across the community is definitely a strategic priority for NSSA. Recently in October, one of our last marquee events was sponsored by KPMG here locally where we dove into what is war fighter ethos and culture. And talent programs and workforce development priorities with a focus on the Space Force and Starcom, but more generally across the entire industrial base. We'll be continuing that discussion with an event in the April timeframe. So please stay tuned for information on that. Also, Stacey Dixon mentioned it earlier, the ICS Public-Private Talent Exchange. We'll be hosting a space-time event with the organizers of that program here shortly as well. So stay tuned, there's a lot of movement, there's a lot of need.

So we'll have some good discussions along this front. So just a couple parting thoughts. General Shaw mentioned it this morning in terms of the first of three space races, as he called it. So the kicking off event of the first space race Sputnik in 1957 resulted in the space race, eventually the race to the moon. It also resulted in the creation of DARPA as part of the FY58 budget. But also part of that was the National Defense Education Act where we really understood that this was an all of government approach to address that space race and to be ready to meet those challenges.

So here at NSSA we're working to kind of recreate that line of thinking because it's strategically imperative. We have 80 member companies now that all are recruiting, hiring, and developing leaders that we all need in our industry. So we at NSSA are trying to become that connective tissue to help you learn from each other, find what you need and work with the government community on how can we make this the best community that it can be. Our national strategy is an integrated deterrence strategy and we need to remember that part of that strategy includes we need people, we need program managers, STEM, contract officers, as we were talking about today.

Every discipline including the skilled technical work workforce that has to make and design the systems that we're going to rely on in increasing levels of conflict. And we have to clear a lot of them too. So that's another thing that we'll be working alongside like-minded leaders like Senator Warner. So I'll close with me going back to our theme that this conference is about a call to action. So I just want to remind everybody here in this room that somebody helped you get here to pull you in or to elevate your career to where you were a meaningful part of the National Security Space Community. So my call to action to you is, it's your turn. So who can you pull up and who can you mentor and who can you help bring into this fold? So thanks.

Steve:

Thanks Mandy. Thanks. Really appreciate it. Let's see. We're going to talk a little bit about our members if you will. First of all, we would like to welcome NSSA's newest four star member. That would be Capella Space. We're delighted to have you coming on board. We'll get back to Capella Space in just a minute. Over the next couple charts, we are just giving the listing of the 4-Star members. What the 4-Star membership level gives a company, is a seat at the table on our board of directors. And I will just tell you sincerely what that does. It's not just that you have a seat at the table for your company, but basically everybody leaves their logos at the door. It's really a dynamic exchange two-way to where it's very helpful to us to have substantive discussions about what's going on. Sharing those ideas and plans that we have getting from them, their thoughts that they offer themselves as well.

So it's a very dynamic, very productive relationship we've been having for the whole four years we've been together. So it's been fantastic. So if anyone's on the bridge, maybe you're bringing something like that on and joining up with us, we'd just love to have that for sure. So with that in mind, with our newest, we have two new board members for different reasons. We now have Capella as I mentioned before. And you can see Payam Banazadeh is the CEO and he's here in the room. And Payam, can we see where you are please? And stand for just a minute. Come on, turn around. Here we go. Very good, Payam. Yeah, welcome. Love to have you with us pal. This is fantastic. Super. You bet. And for a different reason, we have a new board member and that is because Jen Splaingard as a Sierra Space who's an existing member has now taken the helm for that.

And so Jen is a new person to space. She's had a fantastic career over at Boeing doing a lot of aircraft programs and has decided she wants to try to do something good. So she's now joining. She's in the cool world right now. So Jen, I know you're up here somewhere. Where can I find you? Jen?

Jen Splaingard:

Right here.

Steve:

There you are. Everybody say hi to Jen. Fantastic. I knew you're out there somewhere. I just can't see from here. That's good. So thanks, glad to have you both on board for sure. Let's see, what's the next thing we want to talk about here?

Just for those of you who are going to the conference tomorrow, this is the agenda. You will get a printed version of this and when you come in the door tomorrow, we'd love to have you there soon because there's going to be 500 plus of you in two facilities tomorrow. So there's going to be a little bit of a processing to get you through. There'll be breakfast there for you, so please show up early. That will be fantastic. And you can see that we got quite a profound prolific group of speakers that'll be speaking. We are very excited about all that. Let's see. Next, we've touched upon this, Chris has. The point being we send blasts out probably more than you guys want in your email. Just stay tuned. This is the cross section, some of which has already been mentioned by Mandy and Chris, but there's a lot going on.

We've got quite a bit of plans ahead. As Joe mentioned to you before, the international forum is coming together. We'll be planning that actively as soon as we get back out of here and close out disc 23. We're excited about that. Joe's been engaging already and others have with all the international partners. They're on board. It'll be here in town and so stay tuned for that. That'll be locked down here very soon. Next, let's see speaking of save the dates, we will likely still be here in this facility next year. If you like it here, just let us know. Currently our plan, getting venues is not an easy thing when we're talking about

over 500 people and upwards of a 1000. But we will be deciding on that here very, very soon. Now you may notice that this date window is, it might happen to coincide with a time called Valentine's Day.

So we're thinking, oh geez, well can you bring your significant other with you? And we'll work that out. We will definitely work that out and see if there may be alternate dates. But the point is we're already prepping to get ready for that before you know it. Importantly, we'd like to thank all of our event sponsors from this year. This has been because of you. You just make things happen. You help us a great deal. But certainly it's important for us to really show our appreciation for what you do for the association as well. Quite a few of you did this, it's fantastic and we want to acknowledge your help and your contribution. So thank you for that. Speaking of thank yous, our planning committee that made this happen, I mentioned this to you yesterday. Or I guess maybe this morning, I've already lost track of time.

Dozens of you have been very consequential in helping put together the theme, the thinking through the kind of speakers we want, the kind of mix we want, et cetera. Your brain trust is just making this happen. This is such a partnership that's making this kind of cool. So many, many thanks to the hours that all of you have been a part of that. This is your team. This is the team that's getting things done as well. And I'd like y'all that everybody here stand up. Come on, everybody stand up and turn around. Okay. This is the crowd that's getting things done. Mandy. Mandy, you too. That's right.

So I can spend an hour telling you about everything everybody does, but they're all superstars and we're super proud of them. It's a mixture of a couple of full-timers with Jeff and Matt. We have interns, we have part-timers, of course we have our professional consultants that are helping us. Chris and Mandy, et cetera. Mike Tierney, who would love to be here today. I think everybody knows Mike, a congressional wizard who will be leading the budget event we're talking about before. But I do want to stand up Katie Rose, stand up right now. A recent graduate of George Mason in physics with a concentration in astrophysics. So anybody looking for a hire? Anybody? I think she's going to take the highest bidder. We're going to take the highest bidder. I got hands. Okay. Katie Rose is the one. All right. So Joe, any kind of closing comments or have you had enough? Or have they had enough?

Joe:

Yeah, I've had enough. So just very briefly last night, Secretary Kendall really set the tone and Secretary Calverley got us going this morning. I won't recap what we've heard today. You were here, you heard it. I don't need recap for you what you've heard. But Frank, it's very meaningful to all of us, not just that you take the time to be very transparent and very honest with us, but to be here all day, to listen in and participate in network. It just says a lot about your commitment to this enterprise. Thanks for being with us the full day. So everyone, I'll just second and third, everything that Steve said. The staff has been amazing and we've got a wonderful reception out in well the rest of the whole hotel. So enjoy the evening. Great to see all of you and hope to see many of you tomorrow morning. Good night. Great.

Steve:

And there's going to be a launch, I'm sure you all know about the launch. There's a Rocket Lab launch window is 6:00 to 8:00. A little company called HawkEye has some spacecraft on top of that puppy. We're hoping it's going to fly. The room adjacent to us will be wired up to go watch that. So bring your drink, your food and come over and take a look at that if you want to. Okay, thanks everybody.

PART 4 OF 4 ENDS [01:46:47]