12.21 Brig Gen Leonard

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**SPEAKERS**

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**Lt Gen (Ret.) Dave Deptula**

Good morning ladies and gentlemen, I'm Dave Deptula, Dean of the Mitchell Institute for aerospace studies and welcome to our final space power forum for the year 2020. We're really pleased that Brigadier General Brooke Leonard to join us today, his chief of staff of Space Command. He's the principal advisor to the US Space Command commander, and directs the activities of the Space Command staff. It's a big job. Prior to his current role, he most recently served as the director of air operations Combined Joint Task Force, Operation Inherent Resolve. So he brings a wealth of experience and perspective to his current job. So welcome, General. And thanks very much to join us today. I think you're very well aware of the fact that it's just been over a year, since us Space Command was reestablished as a combatant command after about a 17 year hiatus. So what I'd like to do is kick things off by giving you an opportunity to make a few opening remarks on the progress today, building out space Comm. And just what some of your biggest challenges and priorities are as you look to the future. So with that, over to you,

**Brig Gen Brooke Leonard**

Sir, thank you, I'll tell you, I'm super fired up to be on the space power forum. Thank you General Deptula and thanks to the Mitchell Institute as well. On top of that, it's a little bit of a foreboding task, right to be the last one in this crazy year called 2020. But I wanted to start it off by not only saying thanks, sir, to you and your team, but also Happy birthday, to the US space force, we just celebrated that yesterday and the guardians, you know, are part of our headquarters, and we're very happy to be able to celebrate a momentous occasion for our spaceforce. So Happy Birthday to them. We're a half year older, and so not that much far ahead of them. But it's awesome to see the focus that our nation has on increasing our space capabilities, not only our awareness, but what we're able to do across the breadth of the American life and in way of lives. And so it's a really fun opportunity to be a part of this as the chief of staff. And so I'll tell you really, what we're doing is you alluded to is we're reestablishing us Space Command, some would call it us Space Command 2.0. But there are some differences from the Space Command that we had about 17 years ago. The first really big one is our area of responsibility. We have a defined area of responsibility. And so you could call us a geographic combatant command, we might call us an X xo, terrestrial combatant command, because we don't necessarily own geography. But we do own space. And so that's a little bit of a difference. And when you look at that we touch every other combatant command, either functionally or geographically. And so being able to intertwine with them in our missions, is one of our big challenges. And one of the new differences for Space Command 2.0. Another one is our mission to protect and defend not only allies and partners, but also commercial and civil infrastructure for national security space. And so that's an added mission set that we have as well. We have a new functional component command, joint task force space defense to help us do that. And their operation center, the National Space defense center. And so a lot of organizational change, as well as sort of mission change. And that goes for the headquarters as well. We really want to be the D o d Vanguard for operating in the digital age. And so I know you wrote a paper on mosaic warfare, you know, sort of that systems warfare, that's something that we are highly focused on. And so we've looked at organizational design principles. We've partnered with the Stanford design school, we've partnered with the Joint Special Operations University and some other experts in organizational design, because we want to be able to get it right we know it starts at that tactics and organizational level as we start to build those habit patterns and processes here in the headquarters. And so we want to be not only agile, but we also want to be ambidextrous. We want to be able to get after the mission that we have today, but be able to take those leaps and bounds into the future. We know for instance, in competition with the Chinese, we're not going to be able to slowly evolve and stay ahead of them. They're going to be able to steal our secrets and continually stay a pace with us. And we just can't afford to do that as the United States of America. And so we're looking for those big leaps. And so how do we do that? How do we organize our headquarters and our command to be able to do that. And so we're focused in on that, and one of our design choices is to get to an 8020 split to where we're focusing at least 20% of our time and resources on the future, on really big ideas. And we know that's a volume game. And so we're dedicating forces to be able to do that, we also have to be able to establish credibility. And familiarity, as, as I mentioned before, we need to work with daily each one of the other combatant commands, and also the civil sector, the commercial sector, and allies and partners. And so that's a big task of what we're trying to do. But to do that organizational design, as well as being focused on dedicating the resources on a very daily tangible level, we're also looking at technology. And so how do we really take the technology that's out there and be able to pull in all sorts of data, everything from unclasp, all the way up to the highest levels of secrecy that we have inside the United States, to be able to take all that data, combine it together, use machine learning, hopefully, artificial intelligence someday, be able to weave that in with human emulation, and then be able to get that information out in a very tailorable way to be able to execute mission command at speed. And so we want to develop that technology. And unlike maybe how some other organizations have done in the past, where you take technology, and you sort of wrap it around your organization, and you try to do somewhat better that way. We're looking at developing the technology, and then Cyborg in our organization on top of that technology. And so it's a little bit different with our organizational design process on how we're going to do it. But we think that we'll get after the mission that we have that much better and that much faster. There's also some things that we're continuing to do. And so as we came out of being a component to Strategic Command, and into a full blown us Space Command, we still have our mission to be able to deliver space effects across the joint forces into enable them to be better. And so that's going at pace, we never slowed down at all, in fact, we're continuing to increase because we're ivali, evolving from more of a central command focus into a peer near peer competition and conflict, daily focus. And so as we deliver those effects, we're delivering those effects to competition from a worldwide perspective, rather than maybe our typical, or at least our past focus on the Middle East. And so that's something that's slightly new, even though it's something that we've had our functional component in the combined forces space component, focused on daily, we'll never let off our if that ball for sure. And then we have sort of some future missions that we're preparing for our global satellite communications manager mission, and our global sensor mission, and how that plays into missile warning and missile defense. And so we're working very closely with NORAD northcom, as well as Strategic Command to be able to do that, right. And really make the most efficient use out of many of our sensors that do a lot of the same things. And there's a lot of overlap there. Some other new things that have come late, and again, the timeliness of our focus on Space Command and spaceforce, couldn't be better. You can see what our adversaries have been doing in space, a lot of activity in terms of taking what is a peaceful domain, a domain that is critical to our way of way of life and offers a lot of sort of economic and, and commercial opportunities. And they've begun to weaponize it and turn it into a warfighting domain. And so we've seen those activities, again, they understand our capabilities in space, and they're looking to deny those. And at the same time, they're trying to build their connectivity between their space capabilities, and their other domain capabilities as well. And so lots of activity on that front as well, which again, is is a challenge and an opportunity, but something we're taking head on. And then we have the commercial and civil sector, which is just booming. I mean, it's just been amazing to watch SpaceX and NASA's lodging, Americans from American soil up to the International Space Station and recovering them. We see activities across the board from Virgin Galactic Blue Origin starlink, the Artemis project that's coming on board we see the Japanese do some amazing things with asteroids. And so this space business is booming and like we've seen across human history, as we develop this new capabilities and people start to venture out into their You know, there be dragons if you will. In other words, we need to go there to provide a secure environment, a stable environment, and the capability to preserve the American way of life that's so intrinsically tied to our space capabilities. And so to do that, we're focused on a warfighting culture and organization, you know, that has everything to do with training and standards and daily how we look at our mission and the intensity that we look at it with, and sort of the dailiness that we look at it with. To do that, we've stood up our components. So we have every service component except for the Air Force, but we're working diligently on that the Air Force is going through a design process as well to accelerate, change or lose, as Darryl brown would say. And so we're working with them to understand and to appropriately construct an Air Force component. But we do have components from all the other services. And it's been wonderful to see the capabilities that the other services bring, not only in warfighting, which I think is sort of the obvious answer, but also in space. And I've been very impressed to see you having grown out of a Airforce culture and seen the space force from an Air Force perspective and grow out of that, knowing full well what capabilities they bring. It's been wonderful to see the space capabilities and expertise that not only the army brings, but also the Navy and the Marine Corps. And so being part of a joint warfighting headquarters, it's been incredible to see that from really the warfighting perspective, but also the space expertise perspective. And then on the parse partners and commercial integration side. I'll tell you one of the big highlights, but one of the missionaries that we continue continue to focus on is the human spaceflight support. And so those lunches up to the International Space Station that I referred to earlier, those were supported by a joint force around the world, ready at a moment's notice to be able to recover those astronauts in case anything went wrong. NASA and SpaceX were responsible for the normal recoveries. And I'm glad it happened that way, our forces didn't need to get used. But that's a booming business and will need to continue to grow out that mission. And so we're focused on that. But that shows you the amount of integration that we need, not only with partners, but also on the commercial civil side as well. And then, definitely, something that's important to mention is the intelligence support in the intelligence community. So everything from organizationally we've brought on our National Agency reps. And so we have a personal integration from a liaison perspective, but we're starting to stitch together our processes and our capabilities. And so it's been wonderful to see the expertise that they bring to the field, but also the reliance that they have on space, in particular, operations intelligence, which had subsided in the 17 years where Space Command was not in existence, the foundational intelligence of Hey, you know, this is what a bolt hole pattern looks like on a satellite or, or some information that we need to make sure we understand the adversaries technology that continued to go on, but really the operational intelligence so we understand their intent, so we understand what is exactly going on, so that we can compete and counter that if necessary. And then certainly Last, but not least, is our focus on the links cyberspace, if you will, because we understand that the space domain is not only on orbit, but very intensely tied to terrestrial ground stations and components, and then the links in between. And so our integration with Cyber Command is quickly growing. That's a huge point for our command is to make sure we're lashed out because so many of those links are controlled through cyberspace. And then last but not least, we finally or not, finally, but we we finished our integrated priority list, which in many ways is like a birthday party or a level of maturation in a command where we as a warfighting command can really think through what we value and put those warfighting requirements out there to really take the incredible teams have space focused organizational units and acquisition arms, and really try to get everybody moving in the in the same direction for speed and efficiency to stay ahead of our adversaries. And the commander's focus is focused on first of all, that battlespace awareness, and then command and control what we like to say we need to be able to understand decide and act at speed and out thinking outmaneuver the adversary. And so it was great to finally put sort of a done on that and start to get that out across all the different space agencies that plan to that answer. So that's a brief focus on on where we are, where we're going. And again, sir, it's a privilege to be on your space power forum this morning.

**Lt Gen (Ret.) Dave Deptula**

Well, thanks Brooke, for that question. context and insight in. Also, please pass on our thanks to your team and everything that they're doing to protect the space domain. So let's dig a little bit deeper into some of the topics that you mentioned. Space Command was obviously reestablish that of a recognition that space is an increasingly contested domain that you alluded to and and that it's absolutely foundational to effective joint warfighting. Russia and China are developing their own space capabilities not only to exploit space for themselves, but also to deny our freedom of action. So as you look ahead, what are some of the key trends regarding competition in space?

**Brig Gen Brooke Leonard**

Sir, I would tell you, from a generalized perspective, competition is an everyday event. And it used to be, I think, a little bit more episodic. But now it's an everyday event. And if you're not in the game every day, if you're not focused on that, you're falling more, more behind and more behind. And so not only the dailiness, the ubiquitousness of it as well, every domain, every dimension, you need to be able to compete and to be able to force your enemy, one way or the other, through lots of different effects. And so to be able to coalesce those effects, to be able to prioritize those to organize is really important. And a lot of that goes through space. And like I mentioned before, we touch other every other geographical combatant command. And so that inner that integration, and that synergy is really key. But I'll tell you really, what it goes back to is erasing the lines that we've had on our maps. And in our minds for so long. We met with general heighten and he just brought out the fact that we can't continue to draw lines. And what he didn't want is that 100 kilometers and up geographical, if you will Roundtree line that we have become just another line, if you will, and another combatant command, just vying for their own silo of space, if you will. And so really, our task is to make sure that we're integrated. And then we're thinking from a globally integrated fires perspective on a continual basis. And the fact that competition isn't a subset, that's just all off by its lonesome kind of in its separate phase, if you will. So hey, we're gonna, we're going to compete, and then we're going to transition to preparing for war, and then we're going to transition to conflict. And then we might have a contingency operation, a lot COVID or a hurricane. But all those really intertwine. And so it's this continuous sort of mixture of competition, contingency, operations and conflict all at the same time. And so to be aware that you're in that environment, makes a difference. But the other piece of that is understanding the fact that because of that, really this traditional way of looking at warfare, where you have these phases that you increment incrementally ratchet up through, and you finally get to, hey, bullets are flying. Now. That's, that's really not the way it's going to play out. And the timing of that is going to be different across the domains and the dimensions of the conflict or of the competition that you're in. And so understanding that we might have a different timing, in other words, we might need to go first in space, we might need to be able to survive and take a punch in space, to then be able to enable another domain or another dimension, to compete or to actually fight more effectively. And so working through that timing and phasing. And where does space fit into that has been really important. Specifically, what we've seen is that in the competition as it sort of fades into conflict, really Cyber Command cyberspace, if you will, Space Command, and a lot of our gray forces, whether it be undersea or special operations forces, form a synergy that really allows us to set the battlespace to ratchet up our competition, or to set ourselves to win before we even fight. And so our focus is really how do we think about the fact that competition and staying in the game and doing so in a way that we can easily pivot but yet at the same time, show strength is key to winning without fighting? And obviously, that's the intent of any military organization. And so we feel like we have a key role in that. And so developing the organization and the processes and the capabilities to do that is key for us, particularly in this digital age.

**Lt Gen (Ret.) Dave Deptula**

Um, hey, thanks very much for that thoughtful answer. I got a, I'd really like to underline a couple of things that you said there. One is the fact that we've got to move away from this last century, kind of linear approach to phasing that has been the foundation of joint doctrine for far too long. And then the second one, if I could take what you said, and perhaps change it a little bit in terms of context, and, and that's moving away from simply the services and the service components, to join combatant commands from simply interoperability more toward interdependency, which acknowledges everybody's unique capabilities, but does so in a much, much more integrated fashion than we have before by just simply, you know, coordinating with one another, as opposed to integrating the capabilities that each of the service components provide. Is that a fair summary of what you said?

**Brig Gen Brooke Leonard**

Yes, sir. Absolutely. And take it back to our fighter pilot days. It's like air combat maneuvering, but at a very large scale. And we call that dynamic operational mutual support. In other words, what is the fighter or, you know, in this analogy, what is the combatant command or the domain or the capability in best position to employ, and that employment is everything from a competition level employment, like a strategic message all the way up to a conflict level employment, which would be some sort of kinetic operation or everything in between. And so now, as you're in this swirling fight, you know, who's in the best position to fire, we're in mutual support of each other. We're aware of what each other's doing, we have rule sets in place to know how to do that. And so how do you do that at a very large scale operational level, and that's, that's exactly what we're focused on.

**Lt Gen (Ret.) Dave Deptula**

Yeah, that's another great point, too, is in order to get to the speed of relevance, we're not going to be able to have conference calls amongst a bunch of seniors, to figure out what to do rulesets need to be put in place, no more calling the chaotic back and asking mother, may I, but folks at the leading edge of the forest need to be able to understand what the joint combatant commanders guidance is and execute, without having to ask for permission.

**Brig Gen Brooke Leonard**

Sir, we talked about computing, edge computing, we need power and decision level come to the edge as well.

**Lt Gen (Ret.) Dave Deptula**

That's great to hear. Let's shift that. let's shift gears just a little bit here. Last month, the Department of the Air Force announced six candidate locations for us Space Command headquarters, including its provisional headquarters at Peterson Air Force Base, our yard now, and I understand the sensitivity of this. So without getting out in front of any kind of basing decision, could you give our audience a little bit of insight into what you think some of the most important considerations are? in making that determination? And perhaps what are some of the implications of where space comes ultimately headquartered?

**Brig Gen Brooke Leonard**

Yes, sir. So I'll tell you in terms of I'd like to start with the implications piece first, because, as I mentioned earlier, our adversaries are not slowing down, they're not letting us take a timeout as we stand up Space Command 2.0. And as we focus on digital age competition, as we've talked about, and so the speed at which we do that is really important. And where you're based, where you're headquartered, and everything that goes along with that, really is important to be able to understand what that is as soon as possible. So we're excited for the work that the Air Force as our service element lead is doing for us. In that basing decision, we have a provisional headquarters decision, which has helped out a lot. And so as we build our command, that's moving people to where they need to be that's hiring folks into the slots to be able to execute the missions that we need them to execute. And so having that out there is really important to us, as we do that at pace. In fact, we've accelerated our hiring and Manning process, we're looking forward to accelerating that even more. So we're working with the Department of Defense to do that, because as you know, in our business, even in space, people are the foundation of our warfighting capabilities. And so bringing that expertise on, and that that kind of dovetails into the requirement that you asked me to kind of highlight is, what are the things that we're looking for for headquarters? Well, first and foremost, we're looking for a place where we can have and grow incredibly smart joint space warfighters. And so having a location that not only has that talent available, but also that can house and feed and take care of that talent. is really important to us. And then it's important in every age, whether it's sort of a more austere budget time or there's abundance, it doesn't matter, those are taxpayer dollars. And so making sure we do that in an effective and efficient manner is is also very important to us. So looking at infrastructure and communities, and costs is also really important to us as well. But more so than just looking at Space expertise. It's really important to us to look at joint warfighting and space expertise. And so our headquarters will be approximately 60% civilian. And so we're looking for locations, not only where we can get that joint warfighting space expertise from our military population, but also from our government, civilian and contracting population. So those are some of the key attributes that we need to have for Space Command to be able to keep pace with our adversaries and protect our way of life.

**Lt Gen (Ret.) Dave Deptula**

No, thanks for that. Brooke, I think your point on the civilian workforce is extraordinarily important, particularly when it comes to the talent that both space man and space force are going to need to expand. Clearly, the civilian workforce is perhaps a place to forget some of that. Now, recently, Marine Corps activated the Marine Corps Space Command as its service component, and as you mentioned, in your summary remarks up front, this leaves the airforce as the only service without a dedicated organization that work was based on what's been your experience integrating subordinate service components to date? In Can you tell us if there's been any progress in determining the shape and makeup of the Air Force and space component?

**Brig Gen Brooke Leonard**

Sir, first a big whoo Yeah, out to the Marine Corps. So we are very excited to take on our service components and and like I said earlier, I've just been flat out amazed at the capabilities that they bring not only warfighting, you know, you'd expect a marine a sort of talking about more for space to bring a warfighting perspective for sure. But the space expertise that they bring, so, you know, satellites don't have parents, you know, a lot of people sort of look at that. And they go wow, you know, is that really a warfighting domain, we have couple astronauts up there. But we don't have flesh and blood on orbit. I'll tell you every satellite ties to flesh and blood to the last tactical mile. And Mar Force Base, in this case, brings that in spades each and every day, you know, what's, what are the capabilities that a marine needs on the ground, to be able to be a part of the joint fight. And so to have that perspective, and understand their needs, again, space is not only what's on orbit, but what's on ground and the links in between. And so, you know, that's just a flat out plain, but warfighting example. But not only that, but it's a space example of what the marine component brings to us. Same thing with nap space and the capability, you know that they operate in terms of the satellite communications and understanding the tactics, techniques and procedures that they have in integrating them with what the Air Force and now space force uses has been incredible to kind of see that. And then obviously very excited for our space force component as well, to be able to help us from a very forcus organized, train and equip perspective, bring those capabilities to bear. And so again, the expertise that other service organizations bring have been really important. The space force has a particular specialty code, obviously for space competency. And then the army does as well. And so those are the two services that are really bringing a lot of that specific spaceforce capability or space expertise to the companion. And then the other part about that is the services bring with them not only a different perspective, but a different way that we can tie into a different domain. You know, it's our intent to compete multi dimensionally multi domain. And so to be able to do that, we have to understand the different platforms and capabilities that those services have and how we would integrate space capabilities and needs. And so it's a supported supporting relationship just like it is with other combatant commands, with the services themselves, not only on an acquisition side, but definitely on an operational side. So, again, it's been great it and really, it's it's vitally important to what we're doing, because we cannot think of space particularly from its on orbit capabilities and interaction. And then for the Air Force side, as I mentioned, obviously, General Brown as you know, is going through reorganization and looking at different ways to accelerate change. or lose inside the Air Force. And so we're working with the Air Force on how we do that. And really, we're just going back to mission planning, you know, how do we ask the right question? What's the problem that we need the Air Force to help us solve. And some of those are sort of foundational things. And that is just being able to advocate for needs or capabilities that we might need from a supported supporting relationship with the Air Force. But also, as I mentioned before, human spaceflight support. So the majority of the military folks sitting on call ready to recover astronauts, if anything went wrong, were from the Air Force, personnel, recovery assets, mobility, assets, etc. And so that's a very stark mission set that we need to look at. And that's an expertise that the Air Force brings for sure.

**Lt Gen (Ret.) Dave Deptula**

Well, very good. Thanks for that. Shifting a little bit toward commercial industry, I know there are some out in the audience that really like to hear your thoughts on what's going on. During the AF works excelerate event. Dr. Will Roper announced the stand up of spaceworks and space prime as part of the Department of the Air Force's efforts to leverage cutting edge commercial technology, as well as open up new markets for next generation Space Systems. Could you speak a bit to your efforts in partnering with the commercial industry as you plan the charges chart the plans ahead for spacecom?

**Brig Gen Brooke Leonard**

Yes, sir. And we kind of think of it as more of a barbell diagram, if you will. In other words, on a very tactical in, we are integrated are we have a commercial integration. So as an example, up in Vandenberg Air Force Base with our combined forces space component command, and they are integrated from a very daily very tangible, very tactical perspective. So first of all, understanding the testing that some of those commercial organizations are doing, we need to be aware of what those are and what they're doing. We don't have the capability is, as you remember to fly over Nellis and do experimenting and testing, you know, the hlr area of responsibility that we have is also our test range. And it's also where folks are launching, you know, numerous satellites, last SpaceX and starlink. And so, as this expands, both from a testing perspective, but also from an economic perspective, we have to understand that we have to be able to provide the deconfliction between those satellites and rocket bodies and rockets and tests. And we have to be able to understand that and so our commercial integration cell goes a long way in our supported support team relationship with commercial partners, we're very concerned with the launches that our commercial entities are doing in many ways. It's putting economic pressure on Russia, because now we don't pay to put up astronauts in one of their rockets, but we actually do so on our own. And so that's another way that we're competing. And so to be able to protect and defend those launches, from everything from how they roll out to the launch pad to actually them launching and putting whatever it is up in orbit that's part of space commands responsibility to secure that. And so integrating on the commercial side on very tactical, tangible level is really important. And then I would swing to the other end of the barbell, and where we see very fruitful opportunities as we integrate with commercial entities. And that's taking those big leap forward. That's understanding, you know, the requirements that we need. And it's our responsibility to provide very clear, very warfighting focused requirements, and then also harvest the technology and the capability and the ideas that these companies or have an understanding where they're going. The fact that Elan musk wants to go to Mars is very important for us as we consider what's the outer boundary of our area of responsibility. I mentioned 100 kilometers is sort of the inner boundary. But what's the outer boundary? And how fast are they going there? And in what way are they going, they're China going to the moon, and mining moon rocks and bringing them back? That's very interesting to us. Because that expands our thoughts. And that forces us to be able to think through how we would secure that environment for the Artemis program as we go back to the moon as well. And so tying in with that commercial civil peace, from both how we handle the daily operations and secure those, all the way up to how we together hold hands and make these giant leaps, to keep American dominance in the space domain to be able to protect the American way of life is key to us. And so your standard exchange of liaison officers and operation centers and pulling them into our headquarters, but also spending a lot of time thinking Just really coming up with big ideas, and testing those ideas out, drawing them into our exercises, drawing them into how we do our battle rhythm every day. And so, as a headquarters, it's been really fun for me as the Chief of Staff, to see commercial partners, allies, civil, you name it, as we integrate them into things that maybe you know, back when I was a little bit younger would only be folks in in uniforms like this taking part in but now we see folks from all kinds of walks and ways of life. And that integration is key to how we go forward and continue to compete against our adversaries.

**Lt Gen (Ret.) Dave Deptula**

No, that's very good. It's also a good segue to talking about cooperation with the our allies. Space coms repeatedly emphasize it. greater cooperation with America's partners and space is absolutely critical. The combined force space component command through activities such as a operation Olympic defender, is a focal point of building such international partnerships. Could you talk a little bit about some of the inroads that you've made toward a better working with our allies in space? And how you're approaching some of the hurdles to greater cooperation, like the very heavily classified nature of us space operation?

**Brig Gen Brooke Leonard**

Yes, sir. So just again, on a very tactical basis, you mentioned operational Olympic defenders. So that's our competition every day in space with our allies and partners. So it's ongoing right now. And we take it very seriously. But really, our focus on allies and partners that, you know, spaces a team event, I mentioned, sort of the United States focus, right, you know, commercial civil integration that we talked about in the last question. And now as we pivot to allies and partners, again, allies and partners and commercial allies and partners, and civil allies and partners, so not only thinking about other allies and partners, militaries, thinking about other allies and partners, commercial and civil organizations. Now, we don't directly link up with those, but encouraging our allies and partners to integrate themselves and then take that integration and integrate it with us. Think of it as multi bilateralism, it's really important for us to stitch together a team like that. So that's one thing. The other thing is, is developing, so not only learning from our allies and partners in their capabilities, but also leveraging those and not just, you know, becoming integrated. But having interoperability, you know, that 100 kilometers in up is around the entire globe. And so having friends around the world with capabilities, to be able to see into space, and to be able to command and control assets in space is critical to us. And then it also knits together a wider web that I think, in many ways deters our adversaries, because an attack on one would have to be an attack on all to really start to impact our capabilities. And so that's important. There's a redundancy and resiliency piece, as well. And we see that in the competition space, with our messaging against Iran and Russia. Particular we saw a lot of different allies in the European Theater, come on board with that, and the effectiveness of having a larger coalition, all kind of crying out with one voice, at really what we see, as a, say do gap between what Russia is saying and doing in space has been incredibly powerful. And so to be able to continue to promote the peaceful development of space, which is in the interest of everyone really on our globe, it's important to have those friends to do that. And so to bring them along, to be able to learn from them is really important. I mentioned before the integration of sort of commercial civil into our exercises, we've seen a powerful impact that at multi level exercises to help our allies that are just growing their space capability. Understand the space environment, we've signed space sharing agreements, now we have over 120 of those. And so worldwide coverage in terms of space, situational sharing agreements, which helps out everybody but then it It allows that nation to be able to be build their space program. And then we integrate and further stitch together their capabilities. And so we've seen a lot of that we're bringing allies into the headquarters, just like any other combatant command, we're bringing allies into our components. And again, we're bringing allies systems into our, our space systems architecture, if you will, again, to make sure that we can secure that peaceful development of space that's so critical to global economics, and peaceful development.

**Lt Gen (Ret.) Dave Deptula**

Very good. I've got one more. It's a it's a it's a it's a real interesting one. But it's also a short one before we shift to questions from our audience, but the Director of National Intelligence recently announced that his agency is considering whether the spaceport should become a member of the US intel community. What are some of the potential implications of this move? Can you elaborate a bit

**Brig Gen Brooke Leonard**

is there I think it goes back to really that supported supporting relationship and building out really the holistic nature of a warfighting domain. And that's the intelligence component is key to that. So to both have the space force, and then also Space Command recognized as parts of the intelligence community is key, because we rely on what they do, and they rely on what we do. And so to be able to join their community of interest, just like we're having them join in our headquarters is really important. That allows for the development of intelligence officers as well, which is key because that attracts even better talent, which is important to us as we continue to try to stay ahead of our adversaries. And as I mentioned before, that foundational inch Intel, for space is really important, but as a warfighting command, what we're really interested in is the operational Intel that tells us adversary intent. And so we can understand how to react and how to compete every day as well as how to determine how to defend and ultimately how to defeat. And so being a part of that community will allow us to leverage that Mosaic, if you will, of, of this multi bilateralism. So that we can stitch together the not only space capabilities, but also the space interests and requirements, and to be able to feed the entire machine as we look to compete, again, multi domain and multi dimensional. And we can't do that without our intelligence community. And so we're very excited about that. We've already seen sort of the tactical level advantages of that inside of our headquarters. And we're starting to see the very strategic and process and organizational advantages. As the Chief of Staff, like I said, I see them involved in our battle rhythm events every day, and I see the benefit of those relationships. And so I think that's a key component to warfighting, and we're very excited about that.

**Lt Gen (Ret.) Dave Deptula**

Well, very good. And we've now come to the end of this segment of our discussion, as I mentioned, General Leonard, thanks so much for your insightful comments and sharing your valuable perspectives. I'd also like to thank our listeners, for tuning in to all our programs this year. While 2020 was in many ways, a difficult year for everyone. In our national security enterprise, we're grateful to all of you and our speakers, for helping keep the aerospace power dialogue alive. I'd like to especially thank all the sponsors and donors, to the Mitchell Institute in 2020. That made our video series possible, the aerospace nation series, a space power forum, and our nuclear deterrence series. And I'd also like to do something a little bit different here. And that's give a shout out to the personnel mental institute that made the series such a success this year. So Camila again Gunzinger. Lucas Out and Read Daniel rice, Dan Gettinger, major Chris Olson, and Peter Houston, you all did a great job. I'm so happy holidays, everyone. All right, Brooke, what we're going to do now is open the session to questions from the audience who've been listening the conversation. So reminder to our listeners, when I call on you. Please announce who you are, and what your organization is. And we'll turn first to Teresa Hitchens. Teresa.

**Theresa Hitchens**

Hi, this is Teresa Hitchens with breaking defense. Thanks for doing this during Christmas week. Um, my question is about how you're setting requirements priorities, and what the balance is between requirements for resiliency of current systems, legacy systems and current Space Systems and capabilities, vise requirement requirements for new things as you look at future missions you just mentioned, for example, the need to consider what's happening in the commercial domain pushing out beyond cislunar space. How are you? How are you looking at that balance? And can you kind of talk about how you make those decisions?

**Brig Gen Brooke Leonard**

Theresa, uh, thanks for that question. And I will tell you that really everything comes back to closing the kill chain more rapidly than your enemy. And the walk that back a little bit if you can do that, hopefully you don't have to do that. And so we look at everything inside the idea that we need to be able to understand we need to be able to decide and we need to be able To act quicker than the adversary and at the same time, we need to be able to slow down the adversaries capability to understand decide and act. And so we look at capabilities that enable that our first requirement. Our first priority, if you will, from our commander is battlespace awareness. So that's that understand piece, and then command and control, which is that decide piece and then developing the capabilities that will allow us to act responsible responsibly and safely in space is that third piece, if you will, and so that that's kind of our strategic look at how we determine those priorities. And then to your point, in terms of how do we focus on sort of the near term and resiliency, and then maybe the long term, I would tell you that we look at resiliency, from both a short and long term perspective, we think the capability to be able to stay in the fight, to be able to take an attack, but be able to keep on operating is really important, because that buys the Joint Force and our national command authorities and our civilian leaders, the opportunity to be able to figure out what's going on and contemplate our response. And so the more time that we give them, the more resilient we have in individual systems. But also creating a system of systems that allows us to have multiple nodes also builds resiliency. And so we think of resiliency as something that's important in the short term right now, as well as the long term. And we think of resiliency from a hardening individual sort of things, as well as building a wider web, a multimodal web that can take a hit in one particular spot, but continue to operate on along multiple paths. And then in comparison with some of the newer technologies, it's very important for us, like I mentioned before, we can't sort of just evolve in the space realm, and stay ahead of peer competitors, like Russia and China, we have to be able to take those really revolutionary bounds. And so we are very focused on the idea development, the thought process of problem solving work that needs to be done. And then the testing and the experimentation to be able to take those big leaps. I mentioned before, we sort of dedicated ourselves in one of our design choices, have an 8020 split, that doesn't necessarily equate to, we're going to, you know, spend 80% of our money on resiliency and 20% on the future. But that's really time and resources and the fact that we need to continuously invest in what normal corporations would call research and development. And as you mentioned, that sort of our new stuff perspective, if you will. And then not only do we need to have new things to be able to counter what the enemy's doing, as you mentioned, we need to be able to have new things to be able to go where our nation is going to the moon, to Mars, to different orbits. And so that's very much an important thing that we do. And so I would tell you that both of those things are important, because we have to be ready here and now for competition. But we also have to make sure that we're ahead of a near peer adversary where we continue to be able to provide that security, but then also to deter. And so we need to have that capability to go faster. And so that's kind of how we look at it. And then the return on investment is the other piece. When we look at our requirements, we not only put the requirements out there, but we're developing a very robust program to assess those requirements. So is the program that we're advocating for going in the right direction and holding the services accountable, with not only producing that requirement, but also connecting to that requirement was really important to us to where we can actually take what's on orbit and translate that into an advantage in the last tactical mile. And so I hope that answers your question on how we look at both resiliency, and new capability in space.

**Theresa Hitchens**

Thank you.

**Lt Gen (Ret.) Dave Deptula**

Okay, Sandra Irwin.

**Sandra Erwin**

Hi, good morning. Thanks, Dave. And thank you, General Leonard. Just had a simple question about the current size of the US Space Command headquarters. What? How many people do you currently have? And do you have a breakdown of how many Army Navy Air Force space force break down? Thanks,

**Brig Gen Brooke Leonard**

Sandra. Thank you, and good morning to you as well. And thanks for the simple question. So it's actually a little bit more complicated than that. But just to answer your specific question, we are authorized 1397 in terms of headquarters strength, you know, that doesn't include liaison officers, allies and partners. So it'll be a little bit bigger than that as program right? We are looking at how we make that a little bit smaller because we want to be agile and what I call ambidextrous to be able to pursue not only the here and now to build credibility to the other command commands, but make those revolutionary leaps forward. And so we are looking at our, our total strength right now. But we are authorized 1397. And that's a fairly even breakdown between the services. And that would surprise most folks, particularly as they look at the space force in Space Command, there's a lot of confusion and in how we relate, but it's a really unique relationship. But as I mentioned before, as a joint combatant command, we're very interested in space and warfighting. And it's also been very amazing to see the capabilities in space that the other services bring. And to Teresa's question, as we look at new capabilities coming on board, particularly in this global competition environment, we're looking to leverage the other domains. And so the other services are very important to us. But to answer your basic question, it's essentially a, you know, a one fifth kind of breakdown between each one of the services with a little bit smaller component in the Marines just based on their overall size and in strength. But we we pretty much have a a breakdown between each one of the services kind of a fair share between each one of them.

**Sandra Erwin**

And just to clarify the 1397. Is that your current, you say that's the authorized, but is that currently what you have? Or is that the end goal? No, I

**Brig Gen Brooke Leonard**

wish we had that many right now. We're at 597 as the last week. And so we're building out our headquarters, we are able to do what the nation needs us to do. But to stay ahead of our enemies, we're going to need to continue to build out to like I said, whatever that full strength ends up being 1397 authorized, but again, we're looking at how we can make that a little bit more agile and ambidextrous.

**Sandra Erwin**

Thank you very much, and happy holidays to everyone.

**Lt Gen (Ret.) Dave Deptula**

Thanks, Sandra. About we turn now to Mr. Frank wolf.

**Frank Wolf**

Yeah, hi, General. And thanks again, for doing this. I Frank wolf of defense daily. I'm just wondering if you could talk a little bit about the joint warfighting concept which the Joint Staff has been developing and this joint concept for contested logistics JCL, which is part of that and sort of space commands, US base commands involvement in developing the concept and then a separate area, just in terms of the moment you talked about the marine component of us Space Command? What if you had any thoughts on when the Air Force component is going to get sort of stood up and what the delay has been? I would have taught the Air Force to kind of would have been first out of the gate on it, but

**Brig Gen Brooke Leonard**

alright, I'll answer those in order. So the joint warfighting concept. We love the fact that we're spending time conceptually understanding how we do warfare in this digital age. And you mentioned contested logistics and drill that tool and I kind of talked about phasing. Really, you know, in many ways we haven't thought of warfare any different since the days we're out on the fields of you name it battlefield, where we marshaled our forces, you know, engaged in battle, and then kind of did you know a count of resources and figure out who won and who lost. And so contested logistics is our understanding that we no longer can sort of deploy our, our forces to a theater standard that stand them up at some sort of protected airfield or base or you name it, and then be able to project those forces onto the battlefield, wherever that is. We will be competed with, we will be in conflict from, you know, the second we think of deploying forces. And so that's, you know, at home could be everything from cyber to kinetic attacks. But us deploying theaters from a global power projection perspective will be contested every step of the way. So from a Space Command perspective, we look at how we never have to get there. And we look at the fact that between us and cyber and special operations forces and some of what we would call our gray zone forces, but our capability to compete daily and globally, is really important, because we would like to win without fighting. And so how do we project that power each and every day? How do we sense and understand what the adversary is doing so that we can warn them if they, you know, we can understand that they are heading in a certain direction, and we can call them out? Or that we can set our forces to be able to fight and win without having to sort of deploy someone into an area of responsibility and then project that power from there. How do we fight from a very global perspective? How do we fight from home? How do we Fight from space? and really how do we compete in each one of those areas because we'd like to do that before we sort of have to marshal all our forces and gather them together because really the capability to do that and operate from sanctuary is no longer there. And so we're very excited for the thinking that's going on. In many ways, it's a joint warfighting conflict concept. And there's more work to be done on the joint warfighting concept for competition. And what we'd really like to see is a joint warfighting concept that integrates competition, contingency and conflict into sort of a complete concept that would allow us to operate across all of those three spheres without this being tied into phasing. The other piece that's important for us in phasing is that we really understand that we need to set the battlespace way ahead of kinetic conflict, if you will. And so it's important to us to be able to operate at speed and with the ability to not only compete but set the battlespace, and so we're very excited about that. And then in terms of contested logistics, our cooperation in that is, is really, we tied logistics together. Although we don't necessarily move stuff. We tie all that together, whether it's precision navigation and timing, or the communication that's enable that, but into the future, we need to think about logistics in space. And so the lift capability, the reusability capability that we see me coming into the market, rapid launch and replenishment on orbit. And then what happens if we have a colony on Mars and we have an outpost that we're responsible for. And so as we think through all those different variants of logistics, that becomes important to a space warfighting command as well. And then you asked about the Marines, and so very excited to have them as a component to our headquarters. And the Air Force, I wouldn't say there's been a delay, really the air force components, the story was they gave us a component, they just call it the space force component. And they had to go back and and then think through what does the contribution from the Air Force from a supportive supporting perspective look like in space very similar to when we pulled the Army Air Corps out of the army and, and the army understanding how they would do aviation at their level, at their service level, Vice, the Air Force doing aviation at its level. And so that takes a lot of time and work, I will tell you that the Air Force is working very diligently on that. And we're very excited about some of the options that we see in the planning phase right now. Thank you.

**Lt Gen (Ret.) Dave Deptula**

General Leonard, have one from the chat room. Very good question from Victoria Miranda. How do you advocate and gain funding for enterprise level requirements when programs tend to fund at the system level?

**Brig Gen Brooke Leonard**

So Victoria, thank you for that question. That's like, TNF, a soft pitch for me to really emphasize what's so important for us. We talked a little bit early, I alluded to Gerald that tool, his article on mosaic warfare. And then we talked a little bit about resiliency. And Teresa's question. But I'll tell you, the system level is the old way to look at things not that the system isn't important, but it's really the network and how that system taps into the awareness that other systems are giving it or the command and control capabilities or its ability to deliver an effect has to be integrated across the entire node the entire web, however, you want to take a look at it. And so really, we start by just demanding that in our requirements process. That's one of the the unique and wonderful things about a combatant command is that we're in charge of setting those warfighting requirements and so inside of our battlespace awareness, and inside of our command and control requirements that we've produced and are now communicating to each one of the services, we have a requirement to connect requirement to be part of a larger web. And so that's how we put our thumb on the scale, if you will. And it's a pretty heavy thumb. But I'll tell you, we're not meeting resistance in that area. I think there's a huge recognition that not only do we need to build great systems, but those systems need to be able to connect and we we actually need to think of it first from a connectivity and a web perspective than an individual systems perspective. And so how do we build systems that best fit into a multi modal multi domain multi dimensional resilient architecture that can help us understand Decide and act. And so that's how we do it. We really just put our warfighting foot down and say we have to do this because if we don't, again, we're not going to be able to make those revolutionary leaps and we're not going to be able to operate in this digital age.

**Lt Gen (Ret.) Dave Deptula**

Well, General Leonard that's a great answer and one that really hits exactly our TOTO of 12 o'clock. So we've come to the end of our space power forum. A big thanks to you general Leonard for your insights and a very thoughtful answers. So to you and all our audience, from all of us here at the Mitchell Institute. I wish you all a great set of holidays, and a great aerospace power kind of year for 2021 take care deserve out here.