

# A Clean-Sheet Approach to Space Force Acquisition

Automated transcription contains errors throughout, apologies! Highlights are what I found particularly interesting as I listened through.

[00:00:36] **Eric Lofgren:** I'm pleased to be speaking with Cynthia Cook and William Shelton. They are both senior analysts with Rand corporation and they've written a great new report, a clean sheet approach to space acquisition in light of the new space force. And that's what we're here to talk about today. Cynthia, bill, thanks for joining me on acquisition talk.

[00:00:53] **William Shelton:** Thank you.

[00:00:54] **Eric Lofgren:** So can you set the stage for us by describing what's the driving logic behind the creation of the space force and where are you guys coming from with this report?

[00:01:03] **Cynthia Cook:** We can't speak in depth to the driving logic behind the creation of the space force because that wasn't part of the study.

[00:01:11] We do know that space is becoming an increasingly contested environment and that was part of the driving reason to carve the space force off into a new and separate service. Our project itself was aimed at taking advantage of that opportunity. A new service means that you can adopt new processes and new approaches for doing some of the necessary functions required for any service.

[00:01:41] And in one of these is acquisitions. So we were approached by the space force. They ask us for some big ideas about space acquisition. They specifically wanted a clean sheet approach. They told us to come up with unconstrained big ideas.

[00:01:57] **William Shelton:** And you don't often get that opportunity.

[00:02:00] As we uh, in the acquisition community know there are a lot of rules and regulations and things that require compliance and sometimes it gets hard. With this opportunity to look at the space for us and maybe starting with the clean sheet, we could possibly design an approach that would be an improvement over what folks have to do today and still perform the mission expeditiously and effectively.

[00:02:27] **Eric Lofgren:** You know, You guys did talk a little bit about, some of the things that kind of led to the space force in the report, I think one thing that everyone's pretty aware of is the fragmentation, right? There's that report that came out a few years ago, that was like, there's 60 or something organizations and they all have some kind of a space responsibility, and we need to consolidate some.

[00:02:45] And, some of that did get consolidated other parts didn't, but you also talked about this interesting concept of vertical and horizontal synchronization. And this was actually something, I did

a space report, back when I was at Cape a while ago. And we were just like lining up okay, when did they get the satellites up there?

[00:03:02] When the terminals come online, GPS with OCX in the user equipment is another big one. Can you just talk about what is the synchronization problem and what's the difference between vertical and horizontal?

[00:03:12] **William Shelton:** Sure. Yeah. Thanks for that question. So you're right. We'd talk about it in two different ways, vertical and horizontal, the example that you gave about MUOS and GPS having the satellite, the launch surfaces, the user equipment, the ground station.

[00:03:28] That to us is the vertical part. , the vertical part of everything's there you provide a capability. The horizontal part is the coordination and interaction between different agencies that all participate in the space enterprise. And as you talked about before in the previous example, you gave about the 60 different organizations that participate.

[00:03:47] So there's a lot of folks out there who are interested in space and the space force has been given a large portion of that, but you have the intelligence community, you have the other services, you have civilian organizations, you have allies all those folks play. And so how you interact and communicate between those different entities as what we're talking about.

[00:04:12] When we say horizontal synchronization,

[00:04:14] **Cynthia Cook:** the standup of the space force helps the department of defense have a single point of contact, single oversight, for most of the DOD space. So that will help with providing a resource to all these other agencies and organizations and allies in knowing who to go to a fair, particular space questions.

[00:04:36] **Eric Lofgren:** Does the space force, I guess I can see how the space force is helping solve some of the horizontal, how about the vertical? Because I think SMC, they had all of the GPS pieces themselves. And then we got like the GPS three launches, years ago, but then the user equipment might not come online for years to come.

[00:04:53] So the, can you just quickly talk about , how will this space force help with the vertical synchronization?

[00:04:59] **William Shelton:** So those are good. Those are good points with respect to GPS. And we looked at the vertical synchronization in our report. And we looked at some of the programs and how they have performed and getting things out to provide a capability at a specific time.

[00:05:15] And part of the issue that we noticed was each of those different pieces that comprise the capability were managed as separate programs. They were entities unto themselves. And while there was some coordination and conversation between the different pieces of the capability, it may not have been the priority of the program managers who are executing those different programs.

[00:05:45] I remember from my experience as a PM, I was singularly focused on executing my program. And what I did to coordinate with other programs was something I did, but if I had a,

another priority that impacted me executing, then that would take precedence over that coordination aspect. That may be what happened in these cases.

[00:06:14] And so one of the things we talked about in our report was developing a culture of where people were focused on delivering capability as opposed to systems. And that was part of where we were going when we were thinking about the vertical synchronization and some mechanics on how to do that. Setting hard milestones, having shorter times between capability deliveries instead of having a seven year program where.

[00:06:47] At five years you have a milestone, you have to meet look at 18 months centers when you're delivering capability or that people could March along to and go down that path. So those are some of the things that we discussed in our report.

[00:07:01] **Eric Lofgren:** Yeah. I want to talk about, this kind of bleeds into this next section here, and I want to talk about some of these kind of big dichotomies that you brought up throughout the paper.

[00:07:09] And let's start with the first one that I think gets to what you were talking about. These stovepipe systems, vs enterprise architecture. And of course, we think of the stovepiping as like a complete weapons system, but actually a lot of times these programs actually get broken up into multiple programs.

[00:07:23] The GPS case is one that you just provided. So can you talk a little bit about that? It seems to be a buzzword now in DOD, right? Stovepiping of, weapon systems. So can you just talk about that dichotomy? what's the space for, to looking for.

[00:07:34] **William Shelton:** I think our belief, at least my belief is that the space force is capability focused. They're trying to get whatever it is that they need as a capability to go help execute national defense, the national mission those sorts of things. And our view as we went through the research, it would be great if you had an overarching roadmap, for lack of a better term that showed how all the piece parts might fit together, how the different systems interact together.

[00:08:08] And as we were thinking about that, it was, that roadmap is really an enterprise architecture. Here's what we want space to be. Here's what we want it to look like. Here's how the different pieces of systems or capabilities, what have you would be integrated in this overall architecture, and then that would be the driving force.

[00:08:29] It would be focus on the enterprise and delivering that capability instead of a specific, system, a specific satellite or launch service or ground station. What have you, but how does it contribute to the capability that's dictated by the enterprise architecture? And in that way you would come, your focus as a PM would change from my program to how do I contribute to the enterprise and drive the overall capability?

[00:08:59] **Cynthia Cook:** Bill, let me pile on a little bit to that. Which is what you described is an evolution. If not a transformation in the way program managers think about the responsibilities from delivering successful programs to delivering successful pieces of an architect. And that's really one of the opportunities that the space, the standup of the space force creates, which is setting a new

culture where people think about their responsibilities differently and therefore focus on integration issues, not just on the successful delivery of their own program.

[00:09:39] **Eric Lofgren:** , we have the iron triangle, right? Like cost schedule performance, what's in the APB go after it. And you program manager, that's your duty. And this is the only amount of money you've got to do that. So you've got to kind of wave off some of those other things that fall below the line.

[00:09:52] Like, how do you think about,

[00:09:54] The performance metrics put on the program manager themselves, in terms of that iron triangle cost schedule performance, is there like , a fourth part of that that's kind of interoperability or are you really blowing that thing up and saying, we need to evaluate people in a different.

[00:10:08] **William Shelton:** So I think it's more of the latter. As a program manager, you're right. I had the iron triangle, don't mess with my cost schedule performance. Anybody comes with a new idea. If it's going to make me slip or cost money, thanks for your interest in national defence, but I'm going to go do what I got to do to meet my APB.

[00:10:28] So what we are proposing our report is you need to grade people differently. You might need a different personnel structure, maybe a different promotion system that looks at things other than what we, what the primary of air force currently does. And as a new service, the space force, get to set those parameters, how they want to promote and reward their people and reward those kinds of behaviors that would drive you to the, what you're looking for.

[00:11:02] **Cynthia Cook:** I think bill hit the nail on the head. What you have on your podcast today, Eric is somebody who's been focusing on the academic research of acquisition for over two decades. And we have someone, bill, who was an actual program manager in the air force, as well as being. 10-year plus researcher at Rand.

[00:11:22] So when he speaks about what the program manager has to do or say I truly believe that he is the expert

[00:11:30] **Eric Lofgren:** of RG. Yeah. It's funny. When I was thinking, what you guys were talking about reminded me of this kind of optimization problem, actually that was being discussed at Rand back in the fifties and sixties.

[00:11:40] And there is a whole debate can we actually optimize the portfolio of programs that we have in the department of defense and choose the right ones at the lowest cost. And then it just turned out like, there is no like social welfare function for defense, right. we have to sub-optimize the problem.

[00:11:55] But then the assumption was if we sub-optimize each program, ? So each program is optimized in of itself, but not related back to the rest of the force structure, then we're getting to a better place. And I think, 50, 60 years on what we found is actually. Potentially that stovepiping creates other problems.

[00:12:14] Like the interoperability problem actually was a real issue. And your optimizations may have led you to programs that are not optimal from the enterprise or the arc, the enterprise architecture viewpoints. Would you agree with that kind of lineage

[00:12:29] **Cynthia Cook:** we've seen efforts at optimizing acquisition and I've, I've read some stuff about, how do you optimize army acquisition?

[00:12:39] The army is a huge service and they ha they have to do a lot of different missions and they have to do them successfully. So the systems they have , can be very different space. The space force is a much smaller service. It's much more technologically focused. So we think that there is.

[00:13:01] Sort of the potential for movement along a spectrum towards greater optimization in this area than there are in, if you're looking at acquisition more generally in the department of defense or even within one of the other services.

[00:13:18] **William Shelton:** And to add to that we're, I don't think we are saying you have to choose missile warning over PNT over Satcom.

[00:13:28] We're what we're saying is there are probably ways that those-- they all need launch services. Okay. All right. What's the best way to go do that? They all have some kind of ground station, maybe there's commonality, maybe there isn't, but think about it, you know, you need those different missions.

[00:13:47] They're all important, but find ways to take advantage of any commonality. You may not want to force commonality. We've seen that in some programs where, Hey, we all want to have an airplane, so let's all just buy the same one. You could go back. I mean, the F-4 was like that with the Navy, the air force bought it and used it.

[00:14:10] It was great Vietnam. We have another airplane now that's a fifth generation fighter. That's after that a bunch of folks are buying and it has some scar tissue in it as well. So let's not do it for a reason and fit it into that enterprise architecture just don't do it to.

[00:14:28] **Eric Lofgren:** I think, along these lines, you guys also brought up this idea of exquisite systems for proliferating.

[00:14:34] Good enough systems. Can you talk about this, the shift here?

[00:14:37] **Cynthia Cook:** Oh, sure. , there's exceptions to every rule, but there, so this is this, we're talking about it in generalities, but of course there's exceptions, but this there's this idea of traditional space systems as being so expensive and so challenging to get up into space that they have to be perfect.

[00:15:02] They have to induct a lot of missions. They have to be these systems that are not only deliver the capability, but they can, be an orbit for a good amount of time. The model has changed. the cost of launch have decreased there's different approaches to managing capability.

[00:15:24] There's proliferated system versus integrated systems. So there's really different approaches to the space architecture itself. So that has allowed for different approaches to thinking about what you're acquiring in a space and

[00:15:42] **William Shelton:** just piling on again.

[00:15:44] You put up a satellite or you put in it's a billion dollar satellite. Okay. You've got, because they go up at a certain frequency, you. Everybody who wants to do something that's related tries to put their requirements on that satellite and it goes up. So now you've, so you've you're creating a death spiral here.

[00:16:05] If they take long and everybody needs something and they put it on there, the satellite gets more complex. Then the reason it has to be, have even greater mission assurance because, oh my gosh, if it fails, we've lost a billion dollars and all of these people won't get their things. now I have to be more risk adverse and it just keeps getting worse and worse cause fewer satellites are going up

[00:16:32] **Cynthia Cook:** and that impacts cost and schedule.

[00:16:35] **William Shelton:** Absolutely. And so if you take the smaller proliferated idea, if I'm putting up hundreds of smaller satellites that. Network together can perform the mission of a lower number of satellites of exquisite design. If one of those fails or the launch doesn't go, I don't lose as much. I'm more resilient, if the warfighter or the operator or the user knows that, okay, I didn't get my stuff on this launch that happened yesterday, but I know another one's happening in six months that might be able to do what I need.

[00:17:13] Then you, you can work with that. So that's , how I think about this issue. And I believe that's compatible with what Cynthia was

[00:17:22] **Cynthia Cook:** describing it,

[00:17:23] and it enables a culture change in acquisition,

[00:17:25] **William Shelton:** right? Both for the customer and for the

[00:17:29] **Eric Lofgren:** developer.

[00:17:30] Okay. Yeah. Talking about culture changes in acquisition, One thing that you guys brought up in your paper that was interesting was that you traced space requirements to six organizations like army Navy Marine Corps, U S STRATCOM joint chiefs of staff and space command.

[00:17:46] And so there's all these types of places that are bringing requirements to the space force. But the space force has also been talking about, Hey, we really want to beef up our commercial, like anything that we can do as a service let's do asset service, let's bring in all the commercial, new space companies and try to leverage them.

[00:18:03] But that also potentially has bearing on the acquisition process. So can you talk a little bit about this requirements, pull version of acquisition versus a commercial technology push?

[00:18:14] **William Shelton:** . you know, As you were talking about all the different organizations and then all the opportunities for technology to be inserted in space.

[00:18:23] I go back to that enterprise architecture, you have that vision for how things are going. If industry knows what you're thinking about and your architecture is adaptive enough that it can accept new technologies or adapt to changing threats, then you've got a coordinated way forward to help marshal all of these resources to provide the capabilities.

[00:18:47] And that was one approach that we put forth in our paper.

[00:18:51] **Cynthia Cook:** The requirements are set by the combatant commands the role of the space force as the other armed forces is to organize training equipment. In focusing on The responsibility of the space force is really to deliver the best capability of the lowest price in a timely way that they can.

[00:19:11] And that comes from commercial companies. It's helpful for the commercial companies to understand what the requirements are because they can better, focus their own development efforts on supporting those requirements.

[00:19:27] So a good amount of communication between the requirements centers between the space force and between the companies that actually are going to be designing and building and delivering these capabilities. It's very

[00:19:42] **William Shelton:** important. one more thing to add to that, Cynthia is, that sharing of information between the space force and the providers industry is key, right?

[00:19:54] You asked about commercial Bush. One of the things that we proposed in our research was that there be an exchange of, people between the space, for, and between industry. Right now the air force has a program called education with industry where they put people in in companies for a year and they come back and share what they learned.

[00:20:17] So , we were thinking about something a little more focused, almost more like the requirement for military officers to have a joint tour, to be promoted to a general officer. Why not do that. And the space force across civilians and military and make it a requirement to become a general officer or become an SES.

[00:20:40] And the space force is to have them do a, at least an assignment two to three years, working in a company and then come back to space for some, bring those ideas. And you could also reverse that as have people from industry come and work in the space force for two to three years before they go back to their company.

[00:21:03] And that could help inform that technology push and the requirements post.

[00:21:07] **Cynthia Cook:** So bill, when you're talking I was recalling one of the other ideas that we just have discussed many times as part of our project and then in the report, which is the somewhat unique nature of technology in the space force compared to

[00:21:25] many of the other services, the space force in the space operators, the space guardians are going to be operating a technological capabilities. They're not engaged in, direct hand-to-hand type combat. So what they need is to understand technology they need that I would under ideally understand technology management.

[00:21:52] If there are space operators, setting requirements for the future war fighter, understanding the the path of technology developments underway commercial companies will help them more effectively. Set requirements in such a way that recognizes likely future of technology.

[00:22:17] **Eric Lofgren:** sticking with the workforce a little bit here. You guys had a brought up one of my actual favorite quotes from Irving Holley back in 1964 is buying aircraft. He said the procurement process itself is a weapon of war. No less significant than the guns. The airplanes in the rockets turned out by the arsenals of democracy.

[00:22:35] And so you guys had a nice little section there where you're talking to. this idea of acquisition as a support function, which is tends to be how we've always thought about acquisition versus acquisition now as a war fighting capability. And I think you guys were talking about, the space force as a much more, technology, heavy service and also being a smaller service, it really needs its workforce to be, in tune with the war fighting capability, but also the technology.

[00:23:00] So can you talk about this? I almost think of it as like a paradigm shift of, moving from acquisition as a support function to a war fighting capability and what that means to you guys.

[00:23:09] **Cynthia Cook:** Thanks for picking up on that. Eric, that's something we both loved talking about. It's always been interesting to see acquisition being characterized is part of the tail, if you will, a support to the war fighter, and, it's such a critically important function though, especially as the department of defense continues and evolution to become being a more technologically focused force.

[00:23:41] It always has been, and that's the, it continues in that direction. So what does it mean to rethink the cultural understanding of acquisition as a support function versus acquisition as a war fighting capability? There's a lot of ideas that underpin that, but really the primary one is to understand that.

[00:24:03] We can't predict what our adversaries are doing. We have to be able to respond to potential adversaries to potential threats, and we have to really be able to do that quickly and effectively. And if we think of acquisition as sort of a second ranked capability compared to war fighting, that we might not resource it or think about it, in the way that we think it should be considered, which is if you can bring capabilities to the operator at the speed of need, you are part of the response.

[00:24:44] You are a part of the operator's ability to meet potential threats

[00:24:50] yeah. And I'm thinking that if



[00:24:53] **William Shelton:** We try to blur the line between what we call operators and what we call acquirers in our document.

[00:25:00] And Cynthia alluded to it earlier, when she was talking about how the operator has that understanding of technology. The reverse is true. The acquirer has to understand how the technology is going to be abused. And in our vision they're interchangeable the operator and the acquire.

[00:25:19] Potentially looking at a military person you get committed and we'll talk about an officer for this example, you get commissioned into the space for your second Lieutenant and your first job is to go work in a space plane. You're there for two to three years. Yeah. Maybe you get another job within the space plan, but you start to understand how the technology is used and then you've been there for four years or so maybe after that, your next PCs, permanent change of station.

[00:25:50] You go to another organization within the space force and you learn acquisition. You learn how to put your, the technology, how to develop it. What are your commercial context, et cetera. And then you're at your eight year point, maybe your ten-year point, you're a senior captain junior major, and then you make a decision.

[00:26:08] You know, I'm going to. Become an acquiring expert or an operational expert, but later on in your career, you flip so, and our view, these people, these guardians are essentially warrior engineers. I think we use that term in our report where they could speak equally about operations and acquisition and can bring both capabilities to bear.

[00:26:33] And when you've done that acquisition is no longer support. It's an operational capability that allows you to get things in the field in operation and being used right away

[00:26:44] **Cynthia Cook:** well said. So that, that you get at the operationalization of what acquisition as a war fighting capability is it would require a significant culture change.

[00:26:58] The space operators will have to. Really think of understanding acquisition processes and understanding the path of technology as part of their job.

[00:27:11] **Eric Lofgren:** Yeah. There's a great quote from the sixties, from Werhner Von Braun, where he basically says just like a doctor who doesn't, you know, see patients anymore loses his ability to, have that ability to be a doctor.

[00:27:23] If the government organization doesn't have the ability to actually build some pieces of things in house, then it loses its ability to understand what it's contracting for. And so you can't evaluate for what you don't know how to build. And so when you talk about warrior engineers, what do you actually like, how do you actually see that?

[00:27:39] Will they be building components or even systems or things like that, or are you thinking they're going to do the mission integration and execution and they'll understand enough about the engineering to do the acquire. There's not actually going to be like in-house building. How do you think about that?

[00:27:53] **William Shelton:** At this point, I think the government, regardless of the service would be hard pressed to actually make something as complex as what we have today and go operate. There are probably some niche capabilities throughout the department where that's done probably in labs or they , bend metal and build things and experiment with it.

[00:28:16] But on a large scale production, probably not. I don't see that as being in the immediate future for the government., when I think of this warrior engineer, I think of it as the latter part where they're not actually bending metal, but what they're doing is understanding the technology and how it's used.

[00:28:37] Being a smart consumer so that when they go do talk to industry or they're embedded with industry, they become more aware and have an increased understanding of how it all fits together. So Cynthia alluded to that. I was a program manager in my active duty career and I was, and when I thought I understood the business world, I thought I understood how my industry counterpart did things.

[00:29:05] And then I retired and I went to industry and I found out how much, I didn't know. And I think if I had that education that I got after I retired while I was on active duty and one of these exchange things I would have been that much better. An air force officer than I was.

[00:29:25] **Cynthia Cook:** There's also a lot of innovation occurring right now in the commercial space.

[00:29:31] There's competition in new ways who would have thought 10 years ago that there would be so much competition in space launch, for example. One of the benefits of the government not building things is that it means that they are forced to buy things from commercial companies and those commercial companies have the incentive to compete for our they're driven by the profit motive.

[00:29:57] And so that goal there is to win larger portions of business by inventing new things and identifying innovations. So that's really the strength of the market, and that is what the space force can really take advantage of. And that's actually one of the change in the space market is one of the opportunities for the space force. And one of the reasons why this is a great time to rethink a acquisition, it's part of a reason for the clean sheet.

[00:30:31] **Eric Lofgren:** . At least I think in AFRL, right? At Kirtland, the space vehicles, directorate, they actually do a lot of this stuff in house and maybe that's where it should reside.

[00:30:38] So you guys interviewed a bunch of folks in this space and you guys came out with some themes that were emerging from these . And, first I'd like to talk a little bit about let's circle back to the architecture front. You talked about articulating it, but at least in my mind, some of the problems is , how do we like lock this thing down?

[00:30:56] Create this global architecture and then expect everyone to be. Fit into that. And then that thing will persist. So how do you allow for architecture to change?

[00:31:04] ?

[00:31:04] **Cynthia Cook:** The architecture is not intended to be fixed. There is no single space architecture that you can develop to create a vision. That's going to drive everything for the next 12 to 15 years. Rather, the space architecture is a pathway or a set of pathways with an overarching structure for how systems fit together and inter operate and integrate to deliver a capability.

[00:31:37] The minute you define it with very specific technical specifications, it'll be out of date. So it needs to be flexible. It needs to be adaptable to incorporate new technology, to drive in new directions. But their responsibility is understanding that it is a big picture where different capabilities fit in and you are driving towards certain needs.

[00:32:03] And you need to think about it as an integrated

[00:32:06] **William Shelton:** whole. So if you look at the DOD architectural framework, I know that's all they have this thing called an OVI one operational view, one it's a high level system view. And then it shows if you have a particular capability, how it interacts with all the other different pieces of that capability and that, and it also shows how it might interact with other systems.

[00:32:27] So that's big picture. Who needs to tap to how things work and what the view is. If you take that and expand it, all right, it's going to get pretty unwieldy. You know, When you start trying to put all these architectural artifacts in there and whatnot as you're going through, but if you think along the lines of what Cynthia is saying, is it can't be static because we don't have a perfect picture of the future.

[00:32:52] Remember, the adversary gets a vote, right? There's something new could pop up that you hadn't thought about. Five years ago or some company X that didn't even exist when you built the architecture comes up with a game changing idea. And if you just exclude them, because it's not in your perfect vision that you came up with five years ago, you're going to miss out on something that somebody else could take it there.

[00:33:18] So that's why we're using terms like roadmap. That's why we're using terms like, the way forward that it has to have some flexibility in it. It can't be completely rigid, but you can use it to help drive your decision making as to how you go forward in the opposition, in the acquiring of of a systems and capability.

[00:33:41] **Eric Lofgren:** Yeah, I think, related to that, what you were just talking about, Cynthia, I think another aspect is portfolio management, which allows for that kind of a little bit more open-endedness right. And you guys were talking about and we've heard about the space force wanting to move to portfolios for last couple of, since at least last year, when they came out with their big report. You guys mentioned, we want to move from program managers to capability managers. Can you put that all together? What is the capability manager? What is the portfolio? How has that all actually work on the ground?

[00:34:10] **William Shelton:** We were trying to get away from the stuff pipe systems that we talked about before, instead of focusing on the satellite or the launch vehicle, or what have you, you would focus on what's the capability that all of these components together are supposed to bring, and then. Capability manager would be able to work with those different piece parts to make sure that the capability is delivered as opposed to one component of the capability.

[00:34:41] And so if you're thinking from, you mentioned portfolio management, if you're thinking along those lines, then, wouldn't it be great if you're you have this portfolio of Satcom. And I know that I have to provide am responsible for delivering this, the Satcom capability to the United States, through the space force, then it would be great if I had the funding flexibility, like one big program element that I could.

[00:35:16] Reallocate funds to different pieces of the capability to make sure things were delivered on time. So if you're running long services as one program element, you're running the satellite development as one program element, you run running the user equipment and a ground station, each a separate program elements.

[00:35:38] If one gets behind and one's too far ahead, how do you move resources from one to the other so everybody's at the same time? You could do that with this funding flexibility and this merge program elements that we were recommended in the report. And as a portfolio manager, or as a capability manager, you would be thinking across those and look at it as entity, as opposed to different component.

[00:36:05] **Eric Lofgren:** The portfolio manager that would be like the senior material leader, or would that be at like a PEO level?

[00:36:11] **William Shelton:** It could be ,

[00:36:12] the closest thing that I, and I'm hesitant to use the term, like senior material leader and program executive officer, because we're not, we don't want to constrain the space force to the construct. We're thinking your capability manager would probably be a relatively senior person who had a lot of experience who knew how things worked.

[00:36:35] And they would be working with other folks within their organization to help bring things along, to develop, to provide the capability. It could be a PEO like. And the people that work for them are so senior material leaders. I don't know, but I wouldn't want to put those labels on it now to constrain.

[00:36:56] People's thinking about how they would. So

[00:36:59] **Cynthia Cook:** Belle that gets at the fundamentals of our project and, brings us back to what we were asked to do. The space force did not constrain us in any way. They said, we want your best research on what this potential clean sheet could look like.

[00:37:17] They wanted big ideas. They wanted us to push the envelope of what acquisition could be. Implementation is a separate issue. That is, that was not part of this project. We were really focusing on putting forward big ideas for them.

[00:37:33] **Eric Lofgren:** Maybe this was the guest to this specific implementation, but I was wondering, what are the portfolios you were thinking?

[00:37:38] I think the space force came out with like missile warning and, based support to operations, such as common nav and, space, domain awareness. Like these were the types of things

that they were throwing out last year, at least in their alternative acquisition report. Are those the types of portfolios that you think make sense?

[00:37:56] Or how do you think about what is like the overarching classification structure that you think makes sense?

[00:38:01] **William Shelton:** The department has been looking at portfolio management for a long time.

[00:38:05] They, if you look at how LSD thinks about it, they came up with multiple different portfolios. Then there was one, we could look at it as a kill chain. There were other ones by commodities. And I liked what you were describing there. Do it as a capability portfolio, so missile warning, and that view makes perfect sense as a capability, as a portfolio.

[00:38:30] Excuse me. But at some point you have to have those different capabilities, have to understand how they interact and how they would use or require input or provide output to other capabilities. Satcom doesn't work in a vacuum, sorry. Nope, no pun intended. That's a warning. It doesn't either, right?

[00:38:51] They all share things, information and whatnot between them. So the capability managers, the portfolio managers. But also have to be, have some understanding of how they interact with their counterparts.

[00:39:07] **Eric Lofgren:** Definitely. And one thing that you guys said that was interesting was that you were thinking like these capability managers should be , having control of the end-to-end process. Sometimes people call it like, cradle to the grave kind of things, I wonder how does that kind of align with this also idea that, the space force has been moving towards enterprise tools, like obviously launch, you wouldn't want each capability manager to own their own launch or potentially do you I don't know.

[00:39:32] Like, how do you think about what, where does end to end start and end? Because it seems like the same with the capability portfolio is like, we want a coherent capability portfolio, but we recognize everything is intertwined. How do you think about end to end versus leveraging enterprise tools?

[00:39:46] **William Shelton:** Yeah, I hear where you're coming from. If I'm responsible for the PNT, everybody's launch services, so what's the best way to do launch services. Is everybody do their own that's your question. And I have to be honest, I haven't thought about that deeply. On the surface, it seems to me that there are some real benefits to having a predefined launch capability that you designed towards, or as requirements go launches, maybe thought of as can I say, launch is a service where the, as the capability manager, I say, I have a requirement that I have to get this amount .

[00:40:28] Have a weight into Leo or geo or whatever. And I go by that as a service and I buy it either commercially or I buy it from a government provider. So if it's something as ubiquitous as launch is maybe you just buy that as a service and you focus on other

[00:40:51] **Cynthia Cook:** things.

[00:40:51] **Eric Lofgren:** so I got to admit, you know, like the idea of funding, flexibility to capability portfolios or this type of portfolio concept, I think is probably one of the biggest things.

[00:41:01] Like we don't, we haven't had that since the fifties or before, with the PR planning program, budgeting execution system, it has been focused on so pipes, weapon systems, and, a lot of that is also transparency and insight and control by folks in oversight, but also in Congress, in the like, Yeah, this capability portfolio concept can really unleash a lot of the cultural aspects. And a lot of the other things that you guys were talking about in terms of like architecture, what kinds of approaches to data transparency, you know, might make this actually, feasible from a stakeholder perspective, because if you do have these portfolios, you do empower people.

[00:41:38] Then it's we don't know where we're going. I don't have this, thousand line IMS integrated master schedule that tells me, exactly what you're planning to do. And then I can hold you accountable to that for cost and schedule growth and this, that, and the other. So how do you think about that kind of transparency and what will bring Congress long to say, yeah, space for us, we're going to give you a shot.

[00:41:57] We're going to give you some trust and some, and we'll put some boundaries on it, but we'll let you go for that. What needs to happen?

[00:42:03] **William Shelton:** So I think you hit on it earlier in your comment about data transparency. People tend to think of data as there's, the air force thinks it's data. Is it owns its data, the PEO thinks he or she owns their data, the program manager owns his or her data.

[00:42:22] And I think for this to really work data needs to be considered an enterprise resource. I know I use, we use the term enterprise a lot, but at this point, a program manager, an oversight person they should have access to the same data. It should be open. It should be common.

[00:42:42] It should be in a data structure that is easily understood and accessible and. I'm not saying that you give every Congress man or every congressional staffer, the same exact data as you give to the PM who's or the capability manager who's doing that work. But if they know they can go in at some level and see in real time what's happening, then that visibility is there.

[00:43:13] You can build that trust and you will consequently have more leeway to go do the things that you need to go do, because you're bringing, your oversight people along with you. You need to think of them as partners, as opposed to overseers.

[00:43:30] **Cynthia Cook:** So we all elected our members of Congress to be our representatives, to balance the executive branch of the government and the Supreme court.

[00:43:41] We have. Three branches of government. So what is the role of Congress in this and what would they be giving up? If you have a much smaller number of funding lines right now, all the different programs, give them insight into spending and so forth. So they have metrics, on a program level.

[00:44:04] , if you were to fund in a different way, how could you support Congress in their oversight responsibilities by giving them metrics so that they can understand the progress towards the delivering of capabilities that are key to the nations of. So that's really the key question to me.

[00:44:31] Does it need to be done by having all these different separate funding lines or are there other ways of providing data so that they can execute their national responsibilities?

[00:44:43] **Eric Lofgren:** Yeah. This seems to be like, this is going to be one of the crucial questions, going forward. And I think one of, one of the challenges here is, when we move to the current construct with APB is came a little bit later, but like the kind of cost schedule.

[00:44:57] KPP idea in the sixties? It was really that financial measure, like lock down the technical baseline, and then it's easy for me to judge your progress and performance. Just what's the cost and the schedule variation to that baseline and which of those KPIs are slipping or not.

[00:45:13] But if I have this kind of more open-ended roadmap, now it's going to be like, I'm going to have all these metrics about what I'm doing and what I'm spending on. But because there's no like baseline that I said I was going to do something 10 years ago. Like it requires a lot more effort on the oversight, to understand what is the technology? What is the operational context? What are like the contextual things going on here that I can't get out of a financialized kind of metric that tells me about execution, but it doesn't tell me about value or capability you, do you think about those types of things?

[00:45:45] **Cynthia Cook:** Absolutely. But challenge here is that if you set a technical baseline in stone and managed to it, you're going to be delivering yesterday's capability. You need to approach this in a more flexible way,

[00:46:01] **William Shelton:** not just yesterday's last decades. So you talked about how it could be more difficult for the oversight community and yeah, that's true, but you know what?

[00:46:10] It's going to be harder for the people who are executing the work as well. , I grew up in, like you said, the iron triangle cost, but costs, schedule performance. I grew up with program elements and, I got my PMD, my program management directive, and this is if it wasn't in there, that was my contract to go execute.

[00:46:32] And now. We're asking program managers to think differently. you don't have those guardrails anymore. It's saying something is in and out of scope gets a little tougher, right? You don't have as much structure. So you're looking for a different kind of program manager.

[00:46:52] You're looking for somebody who is flexible, who is risk tolerant, who can do the calculus about, all right does it make sense for me to try to develop this state-of-the-art widget? And if it fails, what do I have as a backup? And can I run those two things simultaneously? You're thinking differently than we have in the past.

[00:47:16] And there are pieces of the department that are thinking that way now. A lot of them are in these rapid capability offices, how they go forward. They get stuff done fast. They follow the far, they, they execute they're, they are legal. They're doing everything correctly, but they get it done quicker.

[00:47:35] How do they get it done quicker? They have direct access to the decision makers. They have the ability to put things on contract quicker because they have their own contracting officers.

They have people who think differently who are to take those calculated risks as opposed to the, oh, if I go do that, then I have to explain this to this person.

[00:47:59] And that person is just easier for me to go do this other process because it's the path of least resistance. So you're talking about a different kind of person at an RCO. Those folks are interviewed to go there. They are selected. They're handpicked. We're saying, you know what? The space force is small.

[00:48:19] What? 16,000 people maybe. Okay. Why can't you do something like that to get those kinds of people to develop that kind of culture and to drive it from the top down and the bottom up, and then you'll make it as a place where wow, I really want to go work for the space force. They're doing some really neat stuff and that'll be your own recruitment thing.

[00:48:45] You're going to be turning people away.

[00:48:46] **Cynthia Cook:** Yeah so bill described change that is complicated and challenging. And Eric, you earlier said that this would be the hard. And would be require a number of people to approach and think differently approach acquisition differently. So yes, we're not denying that it will be challenging.

[00:49:10] We're not denying that it will acquire some significant efforts to implement

[00:49:15] **William Shelton:** change, but it could be fun. It could be fun.

[00:49:18] **Cynthia Cook:** There's no alternative. The alternative is that we're not delivering the best capability that we don't have, what we need. And that is not a good option. I'd rather take on the challenge to transform acquisition and, at the front end say, it's too hard.

[00:49:39] Is it going to be hard? Yes. Are there mistakes going to be made? Probably, is it going to be an evolution? Absolutely. The journey of a thousand miles starts with the first step. Do you use it all phrase?

[00:49:50] **Eric Lofgren:** Yeah. I can picture the space force commercial now where you have a warrior engineer or a guardian engineer breaking the shackles of the iron triangle and expressing their creativity and scale and contributing to national security and doing that potentially at a much more junior grade.

[00:50:07] Being able to contribute as a Lieutenant, as a captain, rather than like having to wait until you're like an oh 5 0 6 until you're given these kinds of hefty responsibilities. It would be definitely I'm with you guys and it's going to be a big change that they talked about, right?

[00:50:20] The space force, all the leaders, when they're talking about, we need a space for us, it seemed like the thing that they kept saying was it's really about a culture change. But of course, I feel like there's this chicken or the egg thing with the culture change, we need the culture to change in order to do better within the regulations, but we also need the regulations to change in order to unshackle, those people so that they can feel like they're expressing themselves and doing things, so it's like you have to do those simultaneously or is there like what, like one you can start with and then pull the other,



[00:50:49] **William Shelton:** First talk about acquisition. You have the far, the federal acquisition regulation is intended to be flexible and is flexible. If you if you look at [DoDI] 5000 and its iterations, all the stuff you want to do, I believe you can do within the reg.

[00:51:05] **If you're willing to tailor, if you are willing to go ahead** and say, I need to do this, but I don't need to do that.

[00:51:13] **Cynthia Cook:** Yep. And the alternative acquisition framework offers six pre tailored pathways for program managers to take the adaptive.

[00:51:21] **Eric Lofgren:** Is there going to be a space one? I heard there's rumors of a space, a pathway that might be in the

[00:51:26] **William Shelton:** works.

[00:51:27] Yeah. Yeah. I heard that too. And, I would support a space pathway and the way I look at those pathways and the adoptive acquisition framework is they are pre tailored approaches for those specific commodities. And if I'm thinking about a space acquisition pathway, I would suggest they would need to have subsets of it.

[00:51:53] **One for like satellites, one for ground stations, for the different elements of a capability.** I don't know if one pathway would be. Because if you look, there's a software pathway now, right? There's amazing. Their acquisition pathway. There's the middle tier. There are services. And there's one more, I can't remember,

[00:52:14] **Eric Lofgren:** Urgent, and then there's the business,

[00:52:16] **William Shelton:** the best business systems and the urgent.

[00:52:19] But you could look at space and space could pick up elements of all those other pathways.

[00:52:24] **Cynthia Cook:** Some capabilities could be bought using those other pathways. So that way it doesn't have to limit.

[00:52:31] **William Shelton:** So my only concern with the pre tailored ones is that people may not go far enough. I could get the major acquisition pathway and just take it and then go with it or I could take it and I could look at it critically against what I'm doing and see, can I tailor that pre tailored one, even more to be applicable to my circumstance.

[00:52:55] And then I need people and oversight positions to buy off on it. So that's part of the culture change is people should expect you to tailor and tailoring should be the norm, as opposed to the leaving it as the status quo

[00:53:12] **Cynthia Cook:** not be. Why did you tell her, but why didn't you, why

[00:53:15] **William Shelton:** did you tailor? Yeah. You really need, you had to do off 67 of those documents to get to your milestone.

[00:53:21] Really? What are you using them for? So anyway, that that's kind of where my brain is on this.

[00:53:27] **Eric Lofgren:** So I want move on to the discussion on a single space acquisition decision-maker and I think you brought this up, especially with the space RCO, right? They have quick access to the top.

[00:53:37] But of course, usually that concept doesn't really scale to everybody, right? Not everybody can be a coddled program. So can you just describe, what were you thinking with the single space acquisition decision maker and how does that kind of differ from I think of course in the next year or two, we're supposed to get a service acquisition, executive and Kendall might actually accelerate that for space.

[00:53:57] How would that be different than what's already being thought of or in motion?

[00:54:00] **William Shelton:** So when we were going through this research, there was a lot of discussion on a single space acquisition executive. I know it was in the NDAA , but there was a lot of discussion internal to the department of the air force.

[00:54:14] So we stayed out of that, but as we looked at it, we thought if you're going to go down the space force and the way that we are thinking, and you're going to have that culture and you're going to have the enterprise architecture and you're going to be thinking differently, Wow. It would really make sense if you had a single acquisition belly button that could drive that behavior and drive acquisition in space.

[00:54:43] Now it could be, one person for both services and the department that might be hard to switch your brain off, back and forth between the two organizations and culture. But we definitely think that the person who does that space acquisition decision-maker, and it could be, this I guess it's sq now what they're talking about.

[00:55:07] It could be that person, but they need to be fully imbued in the culture of a space force and execute in that manner.

[00:55:15] **Eric Lofgren:** You really are thinking of it as just like you guys call it a head of space. Acquisite. And you were just using that term because you didn't want to make it exactly the same as what was going on, but you talk yeah. Generic version, but

[00:55:27] **William Shelton:** yeah, it was exactly right.

[00:55:29] **Eric Lofgren:** And great.

[00:55:30] And this is space forks have its own head of contracting activity right now, or do you

[00:55:35] **William Shelton:** know where that's at? Yeah, no I don't know where that is. There was discussion, about contract authority and where that resides and the different procurement activities that would need to go along. I don't know what the space force is doing right now with respect to contracting or if they're going to have their own contract and shop.

[00:55:52] I know if I were running the acquisition for the space force, I would want to have a contracting organization that was responsive to the way I thought.

[00:56:02] **Eric Lofgren:** When the space versus coming up, there was a lot of parallels drawn to the Marine Corps, cause they're both, services within a larger department. in what way do you think the space force as a service within the air force should be similar to the Marine Corps as a service within the Navy?

[00:56:19] And then in what ways should it really be different?

[00:56:20] **Cynthia Cook:** that's a, great question. And it makes me reflect on my understanding of the Marine for generally and all the wonderful Marines that I know, which is the green Corps seems to emphasize a particular warrior culture. Every Marine is a rifleman.

[00:56:46] They have just an amazing. And unique and very strong culture. What we're suggesting for the space force is something similar. The space force needs its own culture within the department of the air force, just as the Marines have their own culture within the department of the maybe.

[00:57:09] But what's different is the cultures are different, Marines are on the ground engaging in direct combat and guardians could have a culture more focused on being warrior engineers. So those different. For the different particulars of those cultures may drive the S the services, unique tools, processes, procedures that are designed at supporting their unique

[00:57:42] **William Shelton:** cultures.

[00:57:43] Yeah. And then from a infrastructure point of view, so the Marine Corps, they don't have their own chaplain service. They use Navy chaplains. Okay. That makes sense. Why would the space force go ahead and do something like that? If the Marine Corps, I don't think they have their own financial management system.

[00:57:59] They use what the department of Navy has. They let the Marines have a different promotion structure than the Navy does the Marines have. Their own MARCORSYSCOM right. Their own acquisition organization that does Marine specific staff. They, even though they use things from, like I said, it used to be Spacewar.

[00:58:20] I don't know what it's called anymore, but I would see the space force as looking at the department of the air force and see what can I use that is not specific to my culture and getting that from the department and things that I need to have to reinforce my culture, support my culture, help me execute, according to my culture, like their promotion system, like their personnel system, like their assignment process, those sorts of things.

[00:58:55] I think the space force, you know that an acquisition would be one of those things, right? Because that's going to be culture dependent. So that's at this moment, I think that would be my decision process is do I need it to reinforce it, execute according to my culture? Or , can I get that from somewhere else?

[00:59:15] Part

[00:59:16] **Cynthia Cook:** of it is also that the space force is a very small service. And if we think about what the members of the service do and what they would benefit from being for example and this is just an example, so I don't know what the space force is decided to do with this particular career field.

[00:59:37] Let's say you're a security forces person and you're, you're guarding. The space force doesn't have a lot of different bases. So you're, you would be in a small community, you would probably have fewer training options. You would have fewer promotion options. It may be better for you to be part of a larger department of the air force community so that you could be a better airman with a broader set of colleagues and opportunities.

[01:00:07] Then you could, if you were in a much smaller community and the space force, so it's not only managing what's best for you. It's also thinking about, do I really need this person to contribute to the, or this function to contribute to the culture, to execute the mission or so forth? Or what have you better to have those people be managed as part of a larger capability owned by the department of the air force.

[01:00:34] **Eric Lofgren:** , into your clean sheet approach to the space for us, it just seemed like there was a lot of just good things there that are just generally good. So when you're applying this to the space force, do you think it like is uniquely good for the space force as the service? Or do you think the space force is good for piloting these things, but ultimately the rest of the departments should follow along with a lot of these recommendations that you're making,

[01:00:57] **William Shelton:** , Eric, we had this discussion on our research team, about, is this good just for the space for us?

[01:01:04] Or could it, could these things be transmitted to the larger department of the air force and then maybe even to DOD writ large, and I think we came down on both sides of the fence on this, because it's face force is small. You could try some unique things here and see how well it works and then see how you would scale it.

[01:01:26] Like the portfolio management approach could, if it works for the space force and you can satisfy oversight that, is there a way to scale that across the department of the air force and then across the department of defense, that could really be a positive. But there are things that may not be scalable.

[01:01:45] The promotion system, or for instance made up may not work, it works for the space force, but it may not necessarily work for other parts

[01:01:54] **Cynthia Cook:** of the world. And jumping in here, our idea for the space force is warrior engineers. And that may not be appropriate for say army missions.

[01:02:07] If you're in a combat arms or artillery, or one of the army combat focused rear fields, you may not want to spend half your career working in acquisition. It is likely not appropriate for you. So some of what we're talking about is scalable and transferable and others not should all the services be, cognizant of what's happening in industry and to understand the trends of technology development.

[01:02:42] Yeah. Does that need to be everybody in every service? We'll probably not.

[01:02:47] **Eric Lofgren:** I agree with you there. So on the warrior engineer part, but you know, when I hear army folks talk and they're like, we do soldier center design now, and we really integrate the soldiers into the acquisition process and it might not be the exact same thing you're talking about, but I think everybody's getting on that train.

[01:03:03] And of course the army is probably, less technology focused. So maybe it's not every, you know, enlisted person is taking part in this, it seems like, there's a lot of goodness there that could be translated elsewhere, especially the portfolio management stuff, but I must say, but of course bureaucracy hacking is super hard.

[01:03:20] So I know you talked about we weren't supposed to get into implementation, but it'd be really great to see these things filter through. So how do you think about, getting what you're talking about into the real world and then. Yeah, we,

[01:03:32] **William Shelton:** We also had this discussion during our research and that's why we added an entire chapter on change management.

[01:03:39] A lot of the stuff that we discuss necessarily was different than the status quo, and you're going to have a lot of people who are resistant to change. And there are going to be some people who embrace it and want to get after it. And you've got to take all those folks in the consideration. In you're thinking about change management, you got what, like the top 10 or 20% are disciples are on more, you've got 20% that no matter what you do, they're just not going to buy it.

[01:04:11] They just refuse. And then you've got the 60% in the middle, the gray area that you need to sway. You need to think about that to make hard choices. That bottom 10 or 20%, you just got to let them go. It may be, Hey, you're not right for the space for us. We appreciate the service you've had for it, with our country.

[01:04:32] And there are other opportunities for you and we'll help you find that, right? You let them go. The, you focus the 20% at the who are onboard are gung ho they're your leaders. And that you use them to help pull in that 60% that's in the middle and help them see the way forward. But you're right.

[01:04:52] Hacking. The bureaucracy is hard and the government personnel system makes it difficult to release people, but it does not make it hard to reassign people and you can give them other opportunities where they would be happier and probably would be more success.

[01:05:09] **Cynthia Cook:** So that's part of it. And the other part of it is really what you celebrate.

[01:05:14] Know. One of the things we talked about in our report is, taking risks and in order to take risks, you have to be tolerant of failure. Oh no, Nope. Program manager wants to oversee a failure that is bad. That is not good for the career. so how do you counter a risk averse culture?

[01:05:32] Maybe you celebrate somebody who took a bold risk , not for foolish reasons, but for reasons of technology, the technology moved in a different direction or a bold experiment didn't pay off. You can celebrate their experimentation.

[01:05:50] Can you don't celebrate the failure? You celebrate the risks they took and what you learned from that group and what you learned from my risk. And, if it's, if the person did it in a thoughtful way, maybe they should be promoted over somebody who oversaw more successful, but more risk, averse program.

[01:06:09] **Eric Lofgren:** getting the rewards, seems to be a hard one, right? Like it seems like there's often these bureaucracies, but the ACE asymmetry of like punishment versus reward, I don't get rewarded for doing the good thing and it entails risk, but if I do the bad thing, then I know someone's going to come down on me.

[01:06:26] So it's hard to change that. Unfortunately, that, that bottom 20% that never wants to change, they always seem to be the ones that like outlast the 20% that want to change. They can stick to it and then like they'll win over time. So hopefully the space force, being a new organization is able to really drive that culture change.

[01:06:46] And I think you guys had some great recommendations to help move them along the way. So as we wrap up here, is there anything else that you'd like to leave already?

[01:06:54] **Cynthia Cook:** you know, the, The exciting opportunity that the space force off offers to do something different and new and effective, and the cultural change that will entail make it just a, it's an exciting opportunity and a tremendous challenge.

[01:07:09] **William Shelton:** And yeah, now I'll second that Cynthia and I think the space force has a real opportunity here.

[01:07:16] Just doesn't come around that often, right? The air force was the last new service. So having this opportunity and for the folks who are guardians and the folks who want to be guardians and the companies that want to work with them, they could really be.

[01:07:32] Instrumental and affecting change and actually changing the shape of the way the military and the U S actually looks at a lot of these problems. So they have this opportunity and I hope they appreciate it.

[01:07:46] **Eric Lofgren:** Cynthia Cook William Shelton. Thanks for joining me on acquisition talks

[01:07:50] **William Shelton:** as our pleasure.

[01:07:51] Thank you. Bye-bye.

[01:07:53] This concludes another episode of acquisition. Talk, if you have comments, interview recommendations, or just want to chat, please contact us@acquisitiontalk.com. Thanks again. And until next time. .