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Voiceover:

Good morning, please welcome to the podium, Royal Australian Air Force Air Commodore, John Haly.

RAAF Air Cmdr. Johnny Haly:

All right, good morning ladies and gentlemen, thank you very much. It's a pleasure to be here, and a pleasure to be joined on stage by four space acquisition professionals today, who are going to talk about accelerating space acquisition. Please help me welcome the honorable Mr. Frank Calvelli, Assistant Secretary of the Air Force for Space Acquisition and Integration. We're going to get the Oscar's music every time here. Dr. Kelly Hammett, Director of the Space Rapid Capabilities office. Brigadier General, Steven Whitney, Military Deputy Office of the Assistant Secretary of the Air Force for Space Acquisition and Integration. And Brigadier General Steven Purdy, PEO, Assured Access to Space.

So we're talking before about the audience today, and I think we've all agreed that the one thing that we're a 100% sure of is that the one thing that we all have in common, is that you're all here as volunteers, and so I'm going to ask the panel as we start to not only deliver opening remarks, but I'd also like them to talk a little bit about what they do, and what the role is and in particular what the roles of their respective offices are as well. So we'll start with you, Mr. Calvelli.

Hon. Frank Calvelli:

Hi, so I'm Frank Calvelli. I am relatively new, four months into the job as the first assistant secretary for Space Acquisition Integration, responsible for space acquisition across the entire department of the Air Force. A few opening thoughts, my top three priorities in this job are really simple. It's speed, it's resiliency, and it's integration. It's speed in our acquisitions to enable us to deliver new capabilities to our war fighters faster, its resiliency in our space architecture to make sure that space can be counted on, during times of crisis and conflict. And its integration, it's integrating space with other war fighting domains, to support our operational imperatives in the department, and to give our war fighters a strategic edge. Now, in 30 seconds, let me tell you how I think we get speed into acquisitions. I think we get speed by doing three things.

The first is building smaller, building smaller spacecraft can be done faster. It's just a matter of physics, and so going small with space, and going smaller and more manual bite size chunks of ground, are key enablers to speed. A second key enabler to speed is reducing non-recurring engineering using existing technology and existing designs. If we have smaller systems using existing designs, and reducing non-recurring engineering, we can go faster. And then finally the third element of speed is execution, it's actually delivering our programs on schedule and on cost. One of the things as I prep from my hearings this past spring that I noticed was that there's a track record of being late on programs. We have to turn that track record around, and actually execute, and if we build smaller, reduce non-recurring engineering, and execute to our plans, there's nothing that can stop us.

Dr. Kelly Hammett:

Thanks sir, good morning everybody, thanks for being here, and thanks to the Air and Air Force and Space Association Conference for having us on the panel today. I'm Kelly Hammett, I am just under Mr. Calvelli in terms of tenure in my position, three months and 14 days. But I am in my 34th year of acquisition and federal service into the department of the Air Force, came out of the lab primarily. So as I was trying to think of my three opening points last night, instead of sleeping as I came from the mountain time zone to the eastern time zone, I think I'm going to go off the rails on number one right

away. You said in the last panel session, there was a talk about prioritization. For me, it's focus and alignment, and I don't want to upset my boss here, but my predecessor said, "Speed is king."

Well, I am a rocket scientist, actually a degenerate rocket scientist, and so speed is not king. I told my people, "Velocity is king, because velocity is speed with direction." And so that's kind of point number one. Number two, was competent workforce with the right experience and training. And so at the Space RCO, we're a selectively manned organization, we hand pick everybody that comes in, and we have all the acquisition, quals, and experience that we're looking for to be successful there. And then the third, was wait for it, I've lost it (laughs). I'm telling too many stories.

No, it is working the seams of partnerships, and breaking down the bureaucracy, right? Because we can go really quick, and what I've told my folks on this several times is we can develop something really quickly and hand it off. But if we haven't built it into an architecture that's integrated and accepted, and you heard Chief Raymond this morning talking about the swack, designing our force so that we have an architecture, and things can plug in and we're all in agreement, and alignment. Back to my point number one, if we're all pulling in the same direction with the same unity of effort and purpose, we can go fast. And that's what we do, primarily in the classified space domain area, thanks.

Brig. Gen. Steven P. Whitney:

Good morning, I'm Brigadier General, Steve Whitney, I'm Mr. Kelly's military deputy. So I help him run the organization, help him set things up. It's a historic time for our department, for department of the Air Force, for our Air Force, for our Space Force. We heard General Raymond talk today a lot about the F Y 21 National Defense Authorization Act, which created the Space Force. At the same time that same act did something that's not anywhere else in the federal government. It created the office of the Assistant Secretary of the Air Force for Space acquisition, and made them a second acquisition executive inside the department. Nowhere else in the federal government, whether it be agriculture, interior, on the Hill, is there two acquisition executives in one department. And they did that specifically so that we get after this problem of space, and we've been spending a lot of time over the last several years making sure we get set up, and in culminated with Honorable Calvelli's confirmation in this last spring.

And I can tell you nobody was more excited than about his confirmation than me. And so we're all thrilled to have you on board, boss. I think my role if I could for my priorities is real simple other than supporting my boss, but I think we do that in three very distinct ways. First, as you heard the boss talk about programs, right? We've got to get our programs right. We've got to deliver our capabilities.

Our second one is our organizations and our relationships. You've heard a lot of talk over the last several days about how we play together with different entities, how the space side plays with the air side, how we work together and different programs. We've got to get those right, we've got to be able to work together. And the third and most important in my mind, is we got to make sure we develop our greatest resource, and that's you, our people. And we've got to make sure that we're growing the future leaders. Because at the end of the day, what we're up here about is setting the future of space. And we're excited to do so. Steve?

Brig. Gen. Stephen J. Purdy:

All right. Good morning, I'm Steve Purdy, and no space conversation is complete without talking about launch.

Brig. Gen. Steven P. Whitney:

Just ask him, it's all about launch.

Brig. Gen. Stephen J. Purdy:

That's right, it is all about launch. It's fascinating you build to satellite, but you don't get there without launch.

Brig. Gen. Steven P. Whitney:

It's just a ride.

Brig. Gen. Stephen J. Purdy:

Ah, it's ballast. It's ballast. We all know it's ballast.

Brig. Gen. Steven P. Whitney:

The satellite guy, the launch guy.

Brig. Gen. Stephen J. Purdy:

Right, this is unity of effort sir.

Brig. Gen. Steven P. Whitney:

(Laughs).

Brig. Gen. Stephen J. Purdy:

But let's talk about unity of effort-

Brig. Gen. Steven P. Whitney:

[inaudible 00:08:14].

Brig. Gen. Stephen J. Purdy:

... because I'm blessed to run this enterprise that's called, "Launch" assured access to space. I'm actually quad-hated to do so. And it's been a fascinating evolution within the space industry. So I am the PEO, programming executive officer for shared access to space, which means I run the \$16 billion NSSL heavy program, to make sure we hit our most important payloads in orbit. We also handle small launch through that, we also handle the range upgrade systems through that. But I'm also the space launch Delta 45 commander. As part of that, I run the bases for Cape Canaveral Space Force Station, and Patrick's Space Force Base and Ascension Island. I'm also the director of the Eastern Range, which means we run the entire DOD test range, which is most of the Atlantic.

And then finally, I'm the commands S3, so the Director of Operations for Space Systems Command. What's fascinating in that, and I think there's an interesting lesson, is the unity of command. That was unit of effort that was just mentioned. We actually are vertically integrated now within the launch arena. Requirements, acquisitions, operations, sustainment is all within our own [inaudible 00:09:27] way. We're about a 10,000 person organization scattered across multiple different states. But that is the true end-to-end system. The earliest acquisitions our ranges, our bases, a mix of Airmen and Guardians to manage those bases, and then the sustainment. And so what I think is the key interesting learning point here is that vertical piece, we're actually structurally designed to work together.

In the past it was four different organizations scattered across these multiple locations, and then you had to get that cooperative effort going. Now they all report to me, and we were able to flatten a lot of that

organization, very space force-like, flatten a lot of these elements in these pieces. Which has enabled us structurally to go faster in ways that I didn't really predict before I was actually running this organization. So it's an interesting object lesson I think, and probably a topic of discussion about a vertically integrated organization that owns its own operations and acquisitions.

RAAF Air Cmdr. Johnny Haly:

Yeah, it's interesting. What do you think the limitations are? Like how scalable is that in a context of vertical integration when you start looking across the entire force? Mr. Calvelli, what are your thoughts?

Hon. Frank Calvelli:

I think it helps you to actually be able to do a lot of things internally yourselves, and I think it's positive, I'm not sure how far it can scale. You've seen it.

Brig. Gen. Steven P. Whitney:

So sir, if I could I just take a moment. The ecosystem that we have I think is an incredible change that has happened over the last several years. So growing up, Steve, and I, and Kelly all grew up in this era where there was one PEO that decided everything, and it was a three star general. And so now today, you look across the PEOs, the program executive officers that run programs that report to the assistant secretary. And I think if I counted correctly, there's eight different PEOs, and one CEO that all support that, and they push that decision making down to try and go faster, but then follow those things. I think that gets to Johnny some of your question about scale is you've got these eight different senior leaders like Steve and Kelly here, who can make decisions that are empowered to go with inside of something, and that's I think part of how we get after speed too.

Dr. Kelly Hammett:

So vertical integration inside a product line to deliver a capability, but then horizontal integration across the architecture, and I saw Joy sitting down there. So SSEs, stand up of the systems integration office, your space acquisition council, the forums we have to get the senior leaders together, make decisions and give direction at the senior leader level, that is then implemented across lines of authority to integrate into an architecture is how we scale.

Hon. Frank Calvelli:

It's a great point because I mean from an integration perspective, we have to work across the entire department, right? So we want to make sure that space is fully integrated with air, and then we have to work across the entire Department of Defense. To me, space is the great enabler. So the integration of space capabilities with ground, with sea and with air, are what we need to be doing to give ourselves an advantage as a nation, so really critical.

Brig. Gen. Stephen J. Purdy:

And we shouldn't discard the point. I mean, Steve mentioned the splitting apart of the PEO and Space Systems Command, is a really powerful notion that's that's been a single three star for a long time. That allows us to go a lot of faster just naturally. These PEOs can now operate within their mission area, and do that horizontal integration with Spock and StarComm in the joint war fighters in a much faster way than we could have done in the past.

RAAF Air Cmdr. Johnny Haly:

So General Romans this morning spoke about the space development agency coming within Space Force in the next couple of weeks. What does that change? What does that bring into the stable?

Hon. Frank Calvelli:

I think it brings a great deal of resiliency into the architecture with their proliferated LEO transport layer, and their proliferated LEO Tron Zero One in terms of tracking satellite as well. I am generally excited about their approach to doing business, they are building small, they are doing things on two year centers and they are delivering capabilities faster. And I actually think that's a model that we could take advantage of and actually push across the organization, across the other PEOs, and something we can learn from. When SDA comes on board in a couple weeks, they come on board as is. There's no dramatic organizational changes coming, and they've been given the same authorities that they currently have today, as they come into the space force to execute their plan. And so I'm excited about the first launch of Tron Zero coming up in December, second one in March of 23. Tron One is well underway in terms of development and acquisition. We're thinking through ideas on Tron Two, and I think it's a way to add a great deal of capability and resiliency quickly to the architecture.

Brig. Gen. Steven P. Whitney:

I think if I could add, it gives us an opportunity as a broader ecosystem. Whether you got a traditional program like my beloved GPS or SATCOM or something and you want to do consistent type of things, then you've got a different way with Dr. Hammond's space RCO to get after something real quick, that's a quick short term deliverable. And then you've got SDA, with its tranches and it's small spiral growth and its different patterns. It gives a great opportunity for us to use different tools to try and get after the problem set.

Hon. Frank Calvelli:

But I really think that, Sorry Kelly-

Dr. Kelly Hammett:

It's okay.

Hon. Frank Calvelli:

... I really think the old approach of these sort of seven year development contracts that we're doing, I mean if I look at NextGen G, right, that should not be that hard. Forgive me for saying that, but I mean it's a seven year development for a class of spacecraft, a missile one that we've been building as a nation for 30, 40 years, right? And it comes again to the matter of the size of the satellite itself, just the physics behind building those large structures, those large reaction wheels, those large star trackers, those large everything, take time. And building brand new focal planes, and brand new asics, and brand new optics and everything else.

So we really truly have a threat from China. I mean the secretary is right, it's about China, China, and China. And if we really want to go fast, we have got to stop the traditional way of doing satellites and these sort of large seven year cost plus contracts, and go to smaller systems, more proliferated whether they be at MIO, or at LEO or even at GEO, and stop redesigning everything. And when we do that, we're going to add a significant amount of speed. That plus industry, executing the plan.

And so my message to industry I would say is please bid on programs with realistic costs, and realistic schedules, and please bid on programs that you can be successful with. And then when you win that

contract, execute. Deliver those programs on cost, deliver those programs on schedule. I think it's going to be key to all of our success as a nation, and to counter the threat against China.

Dr. Kelly Hammett:

I was just going to jump in on the SDA thing, one last time. So the last mission directive I saw, they come across like us as a direct reporting unit, vertically integrated to deliver capabilities, but sit on your acquisition council, and Derek becomes another space force PEO.

Hon. Frank Calvelli:

Correct, that's the model.

Dr. Kelly Hammett:

And so, that'll work great.

Brig. Gen. Steven P. Whitney:

Hey boss, you want to talk for a minute? You know mentioned you were talking about cost and schedule realism, but you didn't really get into the tech realism. And you and I, have had several conversations in your office about bidding to technology that exists today, rather than trying to do that outreach, and that grab for the \$10 million for, "Just two more percent, I can get it, I can get it." And that's where we tend to struggle. You want to talk about your thoughts on that?

Hon. Frank Calvelli:

So we love as engineers and scientists to ourselves in the government as well as an industry, we say, "Hey, you know what, I've got this existing system that works, but I could redesign and get you 10% extra off this ASIC, this FPGA, this focal plane assembly, this ROIC, whatever." And we say, "Oh that sounds really cool, let's go do that." And then we end up down this development path for that 10% extra in performance and we end up adding years to the schedule. And I think that was a perfectly fine approach 10 years ago, when there wasn't a real threat. But now that there is a threat, and now there is a sense of urgency, I think we have to back off on that, and we have to start to use existing technology and existing designs in different ways to get speed, and then folks are going to say, "Well if you do that, then you never do any development work."

Not true, AFRL does an amazing amount of development across the lab, so they're constantly doing that. Industry has a great amount of IRAD going on. I'm just saying, "Don't do new development on these rapid space contracts that we need to get there faster, whether they're being done by SDA, SSC, space RCO, or others." And so it's really going to be key for us to enter this new paradigm of how we want to go develop things faster. We just can't afford to do things that we did in the past.

Brig. Gen. Stephen J. Purdy:

Well I think I'd add, I mean the proliferation concept allows you to get after that R&D in a more rapid cycle, which benefits the R&D on the production sides and keeps them live. On the launch side, we see that change occurring as the architecture is shifting out of the larger systems into that proliferation. But I'll go back to one of the main reasons we have these larger systems, is because we had exquisite launch and very minimal launch, couple launches a year. The bosses up here talking about a future where we're going to have 300 plus launches a year, most of which has commercial. Commercial's enabled us to leverage that, and as they started building commercial small lift, commercial medium lift and soon

commercial heavy lift at mass rates, that allows us to finally go after a different architecture, which allows us to then get after that speed.

Hon. Frank Calvelli:

You're right, I mean it's amazing what launch, where launches come from in the old days where I think General, you said 25 or 30 launches a year to where we are today, so close closing on a hundred. So just phenomenal, and I think it allows us to think differently about the architecture across the board for all of our US Space Force.

Brig. Gen. Stephen J. Purdy:

Absolutely.

RAAF Air Cmdr. Johnny Haly:

So structurally, how does the launch business going to change or need to change to facilitate these sorts of visions?

Brig. Gen. Stephen J. Purdy:

Yeah, so from a launch perspective, you really have to go all the way back to the beginning. So it's not only our launch contracts and leveraging the commercial elements, and not just building an exquisite one-off system that's designed for government requirements, but trying to figure out ways to leverage commercial launch itself. But also extends all the way into the range, and the base management. In a world where we were manned to launch 10 launches a year, and there were 10 government launches a year, everything was fine, everyone focused on that. Now in a world where we're launching 60 missions this year on the eastern range, and we're planning for a hundred next year and the 300 in two or three or four or five years from now. We really are restructuring at a range level in a base level how we even think, we're not a launch base anymore.

We tell ourselves to think like an airport, and when you tell yourselves to think like an airport, it's a new paradigm. And an airport is all about mass operations, and mass takeoffs, it's all about providing services such as terminals, and terminal support. And you have paying customers that come in, and whether they're paying customers are humans or cargo, it's a little agnostic to the airport, it's about providing all those services. So from a port perspective, from a range perspective, we're trying to think an airport, a seaport, airport, kind of a model. Which is what range of the future is all about. It's really about that range of the now to figure out how to do that dynamic pieces, and then it goes all the way back to the left side, figuring out a way to maximize commercial. And we're helped tremendously by our paying customers on the government side that can take commercial, take commercial ICDs, that don't want a bunch of mission uniques.

The more we're allowed to get into that common methodology, the more we're allowed to get into a commercial buy, which gets to we talk about our freight train to space and that freight train is forming, the tracks are forming, and the train is forming, and pretty soon we'll be at a point where there's a train going almost regularly, and you can toss your payload when you're ready, on that next hour or next day. So it's a pretty exciting time in launch and we love it because it will be able to facilitate on the war fighter side, new capability on a constant pace.

RAAF Air Cmdr. Johnny Haly:

So we spoke before about the length of time that these projects take to build a great big bus, and get it ready to go. So how long do we have to wait for all of those projects to I guess get pulled through the system before we're focusing exclusively on the build smaller launch, smaller model? Or do you see there always being a place for those large exquisite things as well in almost a hybrid approach?

Hon. Frank Calvelli:

You want to take a grab at that?

Brig. Gen. Steven P. Whitney:

Want to take a grab of that? Sure, I'll go first, sir. My personal opinion is I think there's a balance, I think the opportunity that allows us to go forward with these small things, we're kind of in that transition stage, and so we got to kind of balance. There are systems that we have that we cannot let fail, and we've got to continue to those services, and make sure that they're available, but at other times there are things where we can go fast, to try and get a new capability on online. As we talk about missile warning, missile track, and we've got our SBIRS architecture, and we're looking at the pivot to this new proliferated architecture. We've got that backstop right now of that existing architecture, and so we're trying to make that pivot underneath, but there are other services, and it's just going to take time for us to get through that.

I think the other thing that we could take advantage of though is on a lot of things there's probably industry opportunities for us to just to quote General Gutline, "Buy directly". And I think of SATCOM, and I know there's number of different vendors out there that offer things, and as we look at our force design for space data transport, "What are those that we could just buy directly so that we then don't have to invest our own systems? This is all part of that transition.

RAAF Air Cmdr. Johnny Haly:

Yeah, that's interesting. General Raymond spoke this morning about General Gutline's methodology of, "Exploit what we have, buy what we can, and then build only what we must." What are the areas there that you think are most need to be improved, to realize that sort of a methodology?

Dr. Kelly Hammett:

So I'll take a shot. Having coming out of the lab and listening to the discussion we were just having really in the acquisition community, have to stay closer to the S&T community, and be smart buyers. We have to be able to appropriately evaluate high TRL systems and as Mr. Calvelli's plea industry give us realistic proposals, but if they're not realistic, and they're risky, or it hadn't been done before, we need to know that and we need to be making source selection decisions appropriately from that perspective. One other thing I was going to say for a couple years, and this dovetails into the last session in on the space side of things in AFRL, we created a new position to do just that. The deputy TEO for space science and technology, I did that job for 18 months before coming over to do this.

So we have an opportunity, and we've made some changes to tighten up that linkage, and break down some of those themes between the organizations to help us do that. As well as prioritize the S&T investment we want out of the lab, to go after the things that aren't as mature. So we have to be a demanding customer, and give them those prioritized demand signals.

Hon. Frank Calvelli:



To add to that, I think it's also really important that we all understand what commercial can and can't do. I mean, whether it's in communications, or ISR, or space and man awareness, we need to understand commercial industry, what the capabilities are, and then take advantage of that.

Brig. Gen. Stephen J. Purdy:

I would add in general, go line also says for the PEOs to act as PEOs for the mission areas, not just the programs, that's a bit of a shift of a mental shift. Traditionally you would have your set of box programs, and then the PEO manages these boxes and that's it. To do this method properly, you really need to understand what else is out there, and you need to really own your mission area, and go after activities and follow a concepts and commercial ventures, and international ventures that you wouldn't normally do as part of these other programs that you're running. So it forces you to expend some time, and energy, and funds to follow and track all those other elements, so that when those capabilities present themselves, you could go after those and switch, and exploit, or buy, versus having to actually build.

Brig. Gen. Steven P. Whitney:

I think the other thing then, if I could tie it actually to the previous panel that was up here with General Richardson, he talked about optimization and at some point you got to optimize for the enterprise and maybe sub optimize for individual programs because you're going to have to make trades to be able to do those. And so we've got to figure out how to make sure we're doing that effectively. And I think there's some structural things we've put in place, but at the end of the day it's going to be a culture shift, and getting people to think that way, just like Steve's talking about, to make us really move forward.

RAAF Air Cmdr. Johnny Haly:

And I think it'd be a fairly poor version of an international officer if I didn't also note that there are a lot of technologies and opportunities that exist outside of the United States as well, that are available to be considered in that stable of things that can be bought. And frankly, some of the elements of changed that probably need to happen are the interpretation of some of the language components of control regimes, which at the moment are preventing your allies acting in their best interest of the United States, and they don't seem to be presenting other, preventing other people from developing me cell technology very well. But anyway, let's take that as a comment as I step back into my moderator role (laughs). We heard before Mr. Calvelli, you spoke a little bit almost directly to industry about some of the things that you'd like to see them concentrate on. Perhaps we could hear from the other panelists about some of those components that you'd like industry to focus on, or cease focusing on.

Dr. Kelly Hammett:

Sure, I'll start-

Hon. Frank Calvelli:

Go for it.

Dr. Kelly Hammett:

... if you don't mind. So we're trying to go fast. Mr. Cavelli said, "No seven year development contracts." Our contracts are typically two to three to four years, that's very hard to do. So there's a couple things that we have to work on jointly. One is you talked about executable spending profiles, and for us that's that's going to be a nontraditional spending profile. That's in many cases going to be front-loaded,

because the long lead parts that we need for microelectronics, precision optics, other types of things, if you wait to go through a year or two of design to get to a CDR, and then order long leads, you're into a seven year development effort. So like he said, you either have to buy something that exists right now, and that may or may not meet the requirement or you have to shift a bunch of that emphasis upfront to get after things you need immediately. And so I've been having several discussions with our industry partners of utilizing things like capital, to bring some of those things in house and then sell them to the programs.

Back to my point number one, alignment industry has to know where we're going, what programs are coming to make those bets to go off and do that and as well with their IRAD investments. So getting that alignment on what the architecture is, where the technology gaps and the mission capability gaps are, and getting us all working to solve that problem rapidly is what we're pushing.

RAAF Air Cmdr. Johnny Haly:

Do you think if we take a pause before we go down, do you think in government there's sufficient appetite for risk and for the failure states that will occur, or are likely to occur if we're in the develop while we fly it?

Hon. Frank Calvelli:

I'll defer to you for the first answer. I think there is. If you're building just two giant Battlestar Galactica satellites, there's probably very, very low tolerance for risk. You build proliferated systems, you're building 50, 60, a 100 systems, there's a lot more tolerance for risk like that. And so when you're spending billions upon billions of dollars on taxpayers' money and a seven year, 10 year development cycle, yeah, the taxpayers should rightfully so expect it to work when it finally launches. And I think building smaller, allows you to take on more risk.

Speaker 4:

Well, that goes down the line too. If we're launching a \$2 billion satellite, we'll go spend \$300 million on mission assurance on launch. That's \$300 million I could have bought a lot of satellites with, if those payloads had been more commercial oriented. Back to your question on industry, from my perspective, and it's colored by my own personality, I need an honest frank conversation with industry. What I don't need is the BD sales pitch. And the reason is, because we are getting into a hyper more technical world, especially this space force is getting into a deep world of cloud, and DevSecOps, and cyber, and a lot of technical stuff that a lot of us may or may not have grown up in. And so when you get an industry pitch that says they can go solve the world in 60 days or less, and do it for 20 million, there's just a bit of credibility discussion that you got to have.

And so what I really, really need is for industry to understand where our systems are, and what our needs are and how you can plug into those needs in a non-pro proprietary way, so that we can continue to move along, and not try to sell me on something that I'm going to have to go buy a license for here to eternity, et cetera. So plugging in, and being a part of that broad team is critical. And understanding that you may have a great solution, it may work great in your lab, but I have 12 other contractors that are saying exactly the same thing, and it's very difficult to figure out who's telling who. And so you got to get past those BD sales pitches into some real discussions. And when we could do that, it helps a lot, I found those conversations with industry extremely valuable once you get past those early kind of marketing pitch at the levels.

Brig. Gen. Steven P. Whitney:

So with regards to industry, I'd state that I agree with my fellow panelists, but I just harping back to the opening statement, "Industry, we need you to deliver on your commitments." Nothing will set us up for success more than you delivering on your commitments, okay? Nothing's going to help us change the attitude, change anything else if we can't deliver what we've signed up to do, and we need your help in that.

Brig. Gen. Stephen J. Purdy:

Yeah, I'll jump back on that in echo, in the launch area in particular. we've got just a wonderful opportunity to launch right now. So many much interest, so much venture capital pouring into launch, it's really an exciting time for our world. But there's a lot of new internet age style thinking, and BD sales pitches going on in our world, and there's are a lot of slips involved as a result. And so that if we start depending on you and laying contracts in, we need that delivery. I need the deliveries to get on time because we are depending on you to launch national security mission critical payloads, and those are for war fighter needs. The war fighter needs that data, and so in order to do that, we need the launch vehicles hitting their marks.

RAAF Air Cmdr. Johnny Haly:

So perhaps coming back to our own spheres of influence, and in your case command, let's look ahead to 2023. What are the practical things that you intend to, or seek to do within your roles to accelerate space acquisition? And we might work sort of backwards from you, General Purdy.

Brig. Gen. Stephen J. Purdy:

Okay, 2023. Well, launch and range is an ever changing, ever increasing activity, so there's a plethora of stuff in our world. I really want to see responsive space get up there, which is really more of my fellow PEO activity, that we have a launch support to that, and that's getting to that 24-hour time period. We need to be able to get to the point where we can go launch a rocket in a mission in 24 hours, and get that data flowing. That's like almost unattainable right now, but we need to find that point, I'm looking to '23 to really try to hit that home. We're looking to come in with more development of small launch in large launch. On the range of spaceport side, we're really bringing together industry here on the spaceport side within the next month or so. And then we have another conference in February, to start bringing together the spaceports themselves for the first time ever, and start developing a spaceport strategy, a national spaceport strategy to start that integration, at a spaceport level.

And then the new exciting portion of our portfolio was the on orbit element. We're not just ground based launch, we are on orbit. So the whole concept of on orbit maneuver, on orbit logistics on orbit, servicing on orbit junkyards, depots, fuel, all of those kind of futuristic concepts. We had a great first industry day last week, and so we're going to start levying that next year and really start formulating. We have an ICD in place, we've had industry in place, they've got great commercial activity that I think we can leverage commercially. So that's an entirely new mission area for the Space Force, and a missionary that right now that we're kind of taking on completely from an acquisitions, and operations thinking perspective insured access on the acquisition side. So I really hope to get to a maturity level on that piece because I think once we understand that, it can backfeed into the architecture, and inform the architecture. We can refuel, we can do repair, we can do other activity that will enable war fighter benefit down the long term.

Brig. Gen. Steven P. Whitney:

All right, so I'll take a slightly different tack. I think as I look ahead to 2030, I think about, "That's eight years from now." So all you captains-

Dr. Kelly Hammett:

2030, or 2023? I thought I heard you say.

RAAF Air Cmdr. Johnny Haly:

I was asking what you intended to do in 2023.

Brig. Gen. Steven P. Whitney:

Got it.

RAAF Air Cmdr. Johnny Haly:

But sure, you have to be on your velocity, on your vector, 2023.

Brig. Gen. Steven P. Whitney:

Yeah, It's that Minnesota public education.

Dr. Kelly Hammett:

(Laughs).

Brig. Gen. Steven P. Whitney:

But as I look ahead, answer's still the same. When I think about what we need for 2030, and where I want to focus in 2023, it's really the same. I look at the captains and majors out there and think about who's going to be leading our programs. And so, "How do we develop them, how do we give them the skills? How do we give them the experiences?" We talk about what skills and what scar tissue, for lack of a better word, that the program manager needs to have to be able to know when to make the right choices, and know how to work through these different tough problems. And so, "How do we spend time over those next couple of years setting them up for success?" And that's going to be my focus.

RAAF Air Cmdr. Johnny Haly:

Getting them ready for those godlike authorities that were discussed in the previous pound, right?

Brig. Gen. Steven P. Whitney:

That's right. Kelly?

Dr. Kelly Hammett:

From a parochial perspective, over the next three years, we're going to be delivering 10 to 12 systems. That's where we're laid out. And so I talked about earlier kind of the alignment piece, and the integration piece. I need to have the processes in place for rapid fielding, and acceptance of these things, and that's not getting a lot of traction right now. So I have rapid acquisition, I'm going to build these things, I'm going to be like, "Here's your satellite." And I'll be like, "Okay, stand in line for three years, while we figure out how to use it." And so we can't have that. And then similarly, in many cases, our model is to build the first few of something, and then give the production line to SSE. So we're

working all those products, "How do we palm for money, and then move budget and set up contractual transfers?"

There's a lot of details, mechanics, that we as a space force have to come together onto to get the benefit out of the things that we're building quickly. On the enterprise side of the house, so this was alluded to earlier, I'm excited by all the work that Swack has been doing. We need to get the timing of those mission designs to influence our budgeting process, and so we're working on that, and then that is the way to do this. It is project the force design you need, do the analytics, and then get the resources you need to go execute, and then defend it in the process. And so I'm excited because as a deputy PTO, I saw the Air Force process, and I saw the Space force process, and we really have an opportunity to move the needle with how we're doing it on the Space Force side of the house.

Hon. Frank Calvelli:

For me, I'm rather happily surprised by the pivot and the architecture changes the Space Force has already started. They have done an absolute magnificent job of getting to more of a hybrid architecture that includes more proliferated systems, more smaller systems, more some larger systems, and a much more resilient architecture. For me, the focus of next year is executing. It is actually making sure that we deliver now the great set of work that's been done over the past couple years by the department and by the Space Force. And then following that execution is really going to be making sure that we integrate in with the new PEO in terms of BMC2, BMC3. With Luke and his team, making sure that space is integrated fully across the department and really defining the next block of programs that we have to go off, and build, and execute. So execution is really a key thing for us this next year.

RAAF Air Cmdr. Johnny Haly:

That's awesome, and before I give you the opportunity each to give 30 seconds of final words, I think that's great to have those actionable things to go out there. And I particularly applaud General Whitney, the focus on the human being development component to that. Because ultimately without that, you know, can have all the funky things floating around that you want, but we're not going to be doing anything with them. General Purdy, why don't you start us off with any closing points, or anything that you want us to think about. Noting we haven't touched on all the topics we might have always spoken about.

Brig. Gen. Stephen J. Purdy:

Sure, I think one last thought piece I'll put on the table is we talk about accelerating acquisitions, I'll bring it back to the beginning. You can't just do things in operations, or do things in our operations and acquisitions are our contracts, et cetera.

