Center for Strategic and International Studies

TRANSCRIPT

Online Event

"Rethinking Homeland Defense: Global Integration, Domain Awareness, Information Dominance and Decision Superiority"

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FEATURING

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CSIS EXPERTS

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Tom Karako: Well, good afternoon, folks. I'm Tom Karako. And on behalf of the Center for Strategic and International Studies, I want to thank you for joining and welcome you to today's event.

It's entitled "Rethinking Homeland Defense: Global Integration, Domain Awareness, Information Dominance and Decision Superiority." There's a lot going on in that title, and we're going to do our best to walk through it and dissect it all. We're going to be talking about homeland defense for North America, both some pressing threats and some recent activities that North American Aerospace Defense Command, or NORAD, and U.S. Northern Command, or NORTHCOM, are undertaking.

And for those watching live, please remember you can submit questions via the CSIS registration page, which will then come through to me through the CSIS version of JADC2 and information dominance, also known as a little Fire tablet, and I'll be able to pose those to our – to our guest speaker.

Our speaker today is, of course, General Glen VanHerck, who has served as commander of NORAD and NORTHCOM for just over a year, since August of 2020. So, General VanHerck, welcome. We're happy to have you here. We're going to go through a lot, but first I want to hand it off to you to kick us off with a little bit about your command and what's going on with you this week.

General Glen D. VanHerck: Great. Thanks, Tom. It's a – it's a privilege to be here to talk about something I'm very passionate about, and that's defending North America and certainly our homeland. I plan to talk a little bit about the commands, why we're rethinking homeland defense. I'll talk a little bit about integrated deterrence, our homeland defense design which relies on layered defense. And that'll get us to really where we're going to talk about global integration and globally integrated – the experiments – the information-dominance experiments that we've been doing.

And so, first, the commands. What a privilege and honor it is to command two fantastic commands: NORAD, 63 years old, a binational command with the Canadians; and United States Northern Command, which will be 20 years old October the 1st of 2022. As you know, it stood up after 9/11. NORAD's mission: air defense, really – aerospace warning, aerospace control, and something that many people don't realize is we also have a maritime warning mission. The commands are really – although separate and distinct, I think they're inseparable. And so as I transition to Northern Command, it's all about defense of the homeland; defense support of civil authorities, which I view as crucial to homeland defense; and then, obviously, theater security cooperation for our missions.

So the why is really why we're rethinking homeland defense. If you had asked me this question 10 years ago, the threat to the homeland would have been dramatically different. Over the past 10 years till today, really it started with shock and awe back in Desert Storm I, if you will, when the folks around the

world watched how the United States of America and our allies and partners projected power. They understood that if we're allowed to project power forward that it's not going to end well for them. And so they're creating capabilities to hold the homeland at risk with the intent of destroying our will, delaying or disrupting any forward power projection capabilities – capabilities that they believe they can execute below the nuclear threshold and achieve their objectives.

And so I'm trying to create a new homeland defense design to give decision space to our senior leaders so that we don't find ourselves with limited options that are escalatory in nature – i.e., striking early or responding early – or having an attack on the homeland, which then makes us quickly respond as well. And both of those options, in my mind, are very escalatory.

So in my mind it starts with integrated deterrence, and the secretary of Defense has talked about this. That's where I'm focused. It's changing the focus away from solely kinetic end-game-defeat capability to day-to-day competition and creating that deterrence on a day-to-day basis. And that deterrence is created not only with military capabilities and all-domain capabilities, but it's with my fellow combatant commanders, all 11 of them, allies and partners, like-minded nations around the globe, and all levers of influence here with our country and our other countries.

When I talk about homeland defense, as well, it's a layered defense. Homeland defense doesn't start in the homeland. It starts abroad. I don't want to be shooting down cruise missiles over the National Capital Region. I think that's a little bit late in the process. I'd like to be engaging or deterring, well, what I call left of launch and creating opportunities through our allies and partners by sharing them information and data and through all levers of influence that we may have. So we have to balance those.

So the foundation of making all that happen is global integration. It's about taking all strategies, plans, the way we do force design, development, budgeting, acquisition, and thinking about the global nature of the problems that we face today, creating global dilemmas. The days of having a single combatant commander are really over when they're supported only. The days of having multiple supported combatant commands I think is the way of the future, whether that be for a peer competitor or even a rogue actor who has access to information space that creates opportunities for them to challenge across all domains. And so to execute that, you got to have the capabilities to do it, and that's where GIDE really comes in, the capabilities to collaborate real time or near-real time across all domains with all 11 combatant commands and the department to create that decision space, a single pane of glass, if you will, that gives you domain awareness; it gives you, when utilizing machine learning and artificial intelligence, information dominance, and then, when provided to the right leader at the various levels, from tactical to strategic, what I call decision superiority. And I think using those capabilities, whether it be in day-to-day competition, in crisis or conflict, gives us the ability to achieve our objective.

Dr. Karako: Well, thank you. A lot's going on. Before we get underway, I'd be remiss if I didn't ask you about something going on this week, and that's, of course, the Afghanistan situation. I know there's some special immigration applications going on there. I think you have a special role there.

Gen. VanHerck: Well, we've been supporting the special immigrants coming from Afghanistan now for several weeks at Fort Lee, Task Force Eagle. We're almost approaching 800 that we've supported there. That's going to expand with the current situation ongoing in Afghanistan to where we're going to take upwards of about 22,000 or so at a couple different locations. So one location up at Fort McCoy in Wisconsin that we're building out right now to receive about 10(,000) to 12,000, and then Fort Bliss, Texas. We expect to have additional capabilities and capacity here in the next few days to start at Fort McCoy, and then the next couple weeks down at Fort Bliss to also house upwards of 22,000 total.

Dr. Karako: Fantastic. Well, thank you for that.

So let me just seize on what you led off with. The title of this event is "Rethinking Homeland Defense," so let's stay at the very high level for right now before we get into the weeds. You know, why is it that we're having to rethink homeland defense. You mentioned NORTHCOM was set up 20 years ago. Why are we rethinking it now?

Gen. VanHerck: Well, NORTHCOM was stood up in the response to 9/11 for rogue actors, 20 years ago. Those rogue actors today still exist but, as I said, our competitors have changed to hold us, you know, at risk in the homeland. Many people think of NORTHCOM as hurricanes and wildfires command because we've continued to do the defense-supportive civil authorities mission. But as you look at the environment, the threat to the homeland forces us to rethink that now. It's all about giving our senior leaders decision space and creating options so that we don't have to have potentially an escalatory option, such as a strike on our homeland which demands a response or potentially even risks strategic deterrence failure, which is crucial. Both China and Russia have developed very advanced capabilities. China is a peer with Russia in the cyber and space capabilities. Russia is the primary military threat to the homeland today. They've developed capabilities that didn't exist 20 years ago, capabilities to circumvent our legacy warning systems and capabilities, very low radar cross-section cruise missiles, submarines on par with our submarines that can, you know, be very quiet and present cruise-missiles threat to the homeland. They're doing that all, as I said, with the intent to create deterrence for themselves, destroy our will, and delay or degrade our ability to project power forward.

And so I think we owe it to our nation's senior leaders to have this discussion about what we must defend in the homeland, whether we need to defend it kinetically, whether we can do it through resiliency, we can do it through hardening. Those are all discussions that I'd like to see.

Dr. Karako: You say they've been developing new capabilities. But, of course, they always had ICBMs and that sort of thing. You're pointing to something different, right. It's not just the nuclear ICBMs and the big attack. You're pointing to something different.

Gen. VanHerck: That's correct, Tom. So for many years, you know, since the 1950s, certainly Russia has had nuclear capabilities, to include intercontinental ballistic missiles, as you've referred to, and bombers. The difference is the capabilities today – and I'm going to take the nuclear piece off the table, because those are always there; and to address that, the foundation of homeland defense is our nuclear deterrent.

I'm talking the additional capabilities, such as conventional cruise missiles that can be launched from over Russia today. You know, 20 years ago the range of those cruise missiles required them to either fly a bomber over North American territory or, in the even later past, they would have to actually drop a gravity bomb over North America. Those days are over when you can shoot a really low-radar cross-section cruise missile from over Russian territory that will challenge our existing warning systems today.

They continue to develop additional capabilities, nuclear-powered capabilities, that can nearly fly forever, if you will, because of a nuclear-powered engine – not nuclear detonation; nuclear-powered engine. So those are challenges that we're facing.

Dr. Karako: So let me pull on that, because you're taking the nuclear off the table. You're putting aside the ICBMs and focusing on really nonnuclear cruise-missile attack. Walk me through why that's important to them. And what is the scenario? You've alluded to it, but walk me through a little bit why that makes strategic sense for them.

Gen. VanHerck: Yeah. So I would expand it beyond just cruise missiles. So it could be cyber capabilities. It could be space capabilities. There are many capabilities. But why it's important to them is to delay and disrupt, as I talked about, and they believe they can destroy our will.

So I don't believe they're going to attack us out of the blue. But in a regional conflict where they understand if we're allowed, as you've witnessed us do several times, to take months to build up a conventional force, that if we're allowed to do that and then project power in a regional crisis or conflict, that that won't turn out well for them. And actually I would tell you that they've watched us change some regimes around the globe for several years now; decades. And Putin would believe that that may be a potential.

And so in the case like this, he doesn't really have anything to lose to disrupt or delay, once he knows that we're going to be, in a regional crisis, able to inflict our objectives upon him, to delay and disrupt and destroy our will. He believes that he can do that with his conventional capabilities. And not only does he believe it. It's in their doctrine. They have stated it publicly. They have demonstrated the capability through several exercises recently.

Just last year we had more incursions into our air-defense identification zones since the end of the Cold War; and only basic incursions, multi-access incursions where they stay for hours. And so they're demonstrating that capability to create

deterrence, but they're also doing it to, in a crisis, destroy our will and our ability to project power.

Dr. Karako: So I've heard you highlight the cruise-missile threat from Russian bombers really operating in Russian airspace as targeting large parts of North America and down in the United States. That's a significant standoff capability.

But just to pound this point home, the Soviets had SLCMs, sea-launched cruise missiles, for a long time. We relied on deterrence. So you're suggesting that there is a deterrence problem here for those kinds of threats.

Gen. VanHerck: Well, I do believe there's a deterrence problem. For the nuclear-deterrence piece, Admiral Richard has got that covered. Nuclear deterrence is a portion of it. Deterrence, though, in my mind is not just nuclear. Deterrence is more broadly. It's all levers of influence that we have, including conventional capabilities. It's about creating doubt. It's getting in their gray space, their cognitive space, to either make them believe, yes, they can achieve their objectives; or, no, depending on what you're trying to make them believe. And you can do that through conventional capabilities, through – in competition, showing that you have the ability to respond in a timely manner; that you can detect them before they become a threat to you; through resiliency – demonstrating the capability to show resilience as a nation, if they were going to attack that you can survive that, and also hardening capabilities. And you do that with – across the interagency and our nation to create doubt that they could ever achieve their success with a strike on our homeland.

Dr. Karako: In a way, the phrase I would use here is non-nuclear air and missile attack with strategic effect. They're trying to get into our gray space. The scenario you're laying out is there's some regional fight and they hold this at risk or attack this to get into our gray space and affect our political calculus.

Gen. VanHerck: That's correct, to make us believe that we cannot achieve our objectives; or we'll be late, degraded; or most importantly, they believe they can destroy the will of the American people to respond in that situation.

Dr. Karako: Yeah. On that point, it was I think a 2016 Joint Staff document called "Joint Operating Environment 2035" and there was this phrase in it – this was five years ago – that highlighted exactly this, that adversaries will threaten the homeland not to physically destroy the United States or even in anticipation of truly hindering its economic or military potential, but rather to change the decision calculus of leaders. Now, that document, that sounds like what you're talking about. That document's subtitle is "2035," but this isn't a 2035 problem. This is a this-decade problem now.

Gen. VanHerck: Yeah, Tom, I would agree with that. It is a problem today and it will grow dramatically over the next 10 years.

Russia today has fielded two to three of their Sev-class submarines. They'll have nine of them within five to 10 years.

China, as I mentioned earlier, has cyber and space capabilities on par with Russia, but they're developing the capabilities – the kinetic capabilities such as submarines and bombers to do the exact same thing. So we'll have a persistent, proximate threat both – off of each coast and I would say all vectors 24/7/365. We've never had that without – when you don't factor in an ICBM nuclear threat, a conventional threat capability that we haven't had to deal with. That will absolutely challenge us to project power globally on our own timeline and place of choosing.

Dr. Karako: So you have highlighted some threats there that are going to potentially come over the pole, over the Arctic, and I wonder if you might speak to some of the activity you're seeing from our strategic competitors, Russia and China, up in the Arctic. What do you see up there?

Gen. VanHerck: Well, I'll start with Russia. You know, Russia relies heavily economically on the Arctic. They get about 20 to 25 percent of their GDP from the Arctic areas, and so certainly they have a vested interest in being a(n) influencer and having power in the Arctic. They have taken what I would call their Cold War infrastructure across the northern portion of Russia and reinvigorated those facilities. They have already completed their modernization of their nuclear forces and their bomber forces. They have about 54 icebreakers. Some of those are nuclear-powered. They claim they're defensive capabilities, but they also clearly have offensive capabilities not only on ships but also on the land, which you may claim for defensive purposes. They're utilizing those and coming up with policies to say they want to have military members as folks transit the north passage there on their vessels, which is in violation of international laws and norms and policies. They're trying to change those kind of things.

China is in the same place. They call themselves a near-Arctic nation. Just recently – they're in the Arctic right now with their Xuelong vessel. It's a research vessel, but it's of interest where it goes in the Arctic and what they're doing.

And so both of them are trying to ensure that they establish rules, norms, behaviors – expected behaviors and change those to their benefit. Russia just took in May the chair of the Arctic Council. They will utilize that position to try to change the influence and the aspects, and they'll utilize it to create friction where there is gaps and seams between us and the other Arctic nations. And so there is great-power competition or what now we call strategic competition ongoing in the Arctic.

Dr. Karako: So in an article you published I think it was this summer – maybe or month or change ago – in War on the Rocks, you highlighted our peer competitors' doctrine, operations, publish pronouncements, and demonstrated exercises to suggest that they view the threat or the conduct of conventional attacks on the U.S. homeland as a viable thing. Can you give us some examples of their doctrine, operations, and pronouncements that you're paying attention to?

Gen. VanHerck: Sure. And when I say that, I'm primarily talking about Russia when I'm talking the homeland, but certainly the ADIZ incursions that I mentioned earlier that have dramatically gone up last year. But Ocean Shield exercise last year in late August/September timeframe, where they took a large portion of their Pacific fleet, operated it right in the – our economic exclusion zone right off of Alaska. You may remember where they surfaced a submarine in the middle of a bunch of fishing vessels up there and actually fired a missile from that location, certainly intended to demonstrate to the U.S. and others their influence and to put them back on the stage what they believed would say is a great power. This summer, their distant summer exercise in the Pacific where they were surrounding – or north and west of Hawaii with large naval force and presence, and also maritime patrol aircraft as well, the Russians. And so they routinely demonstrate capabilities. Every year for the last five years, Tom, they've brought their Sev-class submarine into the Atlantic Ocean. And at different times they go different places, but one year they brought three submarines. They included a(n) Akula-class submarine and an Oscar-class submarine. So they're demonstrating not only capability, but they're showing that they have the will do utilize it.

Dr. Karako: So we've kind of laid the foundation here and talked about the why and the scenario. I think you have a video, if this would be a good time to play for the audience. Is this – is this good?

Gen. VanHerck: This is a great time, so please roll it.

Dr. Karako: All right. All right.

(A video presentation begins.)

Announcer: Today, the United States and Canada face competitors capable of striking military targets and critical infrastructure in the homelands through both traditional and nontraditional methods of attack. These threats limit our response options and could compromise our ability to surge military forces from North America.

NORAD and U.S. Northern Command, in collaboration with all U.S. combatant commands, have executed the third in a series of Global Information Dominance Experiments in partnership with the Joint Artificial Intelligence Center, the undersecretary of defense for intelligence and security's Project Maven, and with significant funding and manpower support from the Department of the Air Force's Chief Architect Office.

Gen. VanHerck: I believe GIDE will be crucial to enabling a globally integrated deterrence. And what we saw in GIDE 3 was exactly that, where you can coordinate options in near real time, much faster than we do today.

Announcer: In the competition stage of the experiment, the GIDE team aggregated early indications and warnings during 120 days of geopolitical events. Real-world alerts indicated adversary actions and led to cross-combatant-command collaboration.

Colonel Matt Strohmeyer: So the Global Information Dominance Experiments are a series of events to allow us to leap forward our capability when it comes to the ability to perceive domain awareness or earlier indication and warning on competitor activities, and then to be able to take that information, apply artificial intelligence to it, and garner new insights for decision-makers, and then to allow us to be able to collaborate between combatant commands in common data environments to be able to create deterrence responses.

Announcer: In the crisis phase, senior leaders assessed available data to develop rapid courses of action in preparation for deterrence or conflict while adversaries sought to disrupt allied logistics channels.

Major Benjamin Burgeson: It was a very eye-opening experience to be able to bring in all of the combatant commands into a single environment, be able to talk with them, be able to collaborate as we developed new plans around the contested logistics vignettes that we saw.

Announcer: In the conflict stage, real-world assets were employed in response to live red-force threats.

Major Eric Blewett: We forward-deployed our capability into Michigan's Alpena Combat Readiness Training Center, and we actually used those players to fuse them into the architecture in the domain-awareness tool for operators to make decisions. It proved, one, we could use a cloud-based architecture capability to access data anywhere in the world. So, again, we had 2C2 (ph) operating those, one at Kendall and one in Michigan. Tasking from both locations just showed that they were able to tap into the same data source. So when we talk about cloud-based architecture, it's important that no matter where you're at you have access to that same data.

Col. Strohmeyer: We're talking about real-world data and real-world movements of forces to ensure that the systems that we are fielding today have been checked against actual adversaries and that are giving us real opportunities to decide how to conduct actions faster and to be able to create that deterrent effect.

Announcer: In a future crisis, leveraging these tools to gain decision superiority could mean the difference between peaceful resolution and unintentional escalation.

Gen. VanHerck: I think the tools that we demonstrated are ready to be applied at the operational to strategic level to create time and decision space.

Preston Dunlap (Department of Air Force): It's really great that we've got all the combatant commanders coming together, and that NORAD/NORTHCOM has served as the banner by which we can all come together to look at global conflict. I appreciate General VanHerck's leadership being able to pull all of that together, which is crucial because any particular activity on one spot of the globe might mean an instant later it's important somewhere else across the globe.

Lieutenant General Michael S. Groen: And for those of you who think, hey, GIDE 3 is done, we've got this artificial intelligence thing licked – (laughs) – we've only just begun to fight. So I think, you

know, we've really – you know, have really started to move the ball on transforming the Department of Defense, and that is a significant thing.

Gen. VanHerck: It gives you time and decision space, and that's what we don't have necessarily today. I can never get enough time as a combatant commander to create deterrence options, to create de-escalation options, or defeat options for advice to the chairman, to the secretary, or to the president.

(Video presentation ends.)

Dr. Karako: All right. There's a lot going on in that video and we're going to work through it a little bit.

Let me start again at the high level and that is you talked in the video and elsewhere about your goal to create strategic deterrence and defeat options for political and military decision makers. You've talked about how NORAD, NORTHCOM in the past have been focused on tactically defeating threats and closing kill chains, things like that, faster. What's different? How is it different for you today as opposed to what the focus has been on the past?

Gen. VanHerck: Well, I believe you hit on it, Tom. First, I don't want to be shooting down cruise missiles or other capabilities over our homeland, as a starting point. Certainly we must be able to do that and figure out what we need to defend, but my goal is to give that decision space to our senior leaders, decision space that they can utilize to create deterrence options. So, for example: If I'm able to see through the capabilities that domain awareness exists today and utilize artificial intelligence and machine learning to give me indications of when a bomber may be planning, by looking at cars in parking lots, weaponry around an aircraft. Now I have the opportunity to posture forces as an operational commander, or give that information to the secretary of Defense or the chairman or the president of the United States to pick up the phone or utilize the information space to create deterrence options. If required, we can do the same thing in defeat options, to get further left, to take offensive actions sooner than being reactive and having to shoot down things over our homeland.

Dr. Karako: A couple things there I want to pull on. First of all, when folks hear, you know, you talk about the conventional deterrence gap or something like that, first of all, the reaction might be, wait a minute, isn't strategic deterrence STRATCOM's mission? Right? So why is this a "you" thing, and what's the relationship between what you're thinking about and what you're doing? What's the relationship to Admiral Richard's STRATCOM here?

Gen. VanHerck: Well, strategic deterrence, the nuclear deterrence is absolutely Admiral Richard's job, and he does a great job with that. I think deterrence is much more than our nuclear deterrent. It's all levers of influence that we have across the government, with our allies and partners, with all 11 combatant commanders. This is about creating global dilemmas to get in their gray space, not just regional challenges. It's about demonstrating the ability, the capability, the will to take the actions day to day in competition. That's where you create that deterrence. And it all involves being able to assess global risk, global resource allocation, and to come up with a

collaborative global picture. And I think all 11 combatant commanders are responsible for part of that deterrence as well.

Dr. Karako: So, in other words, what you're pioneering here is something that's going to have applications across lots of different combatant commands.

Gen. VanHerck: Absolutely. What we're doing does not solely benefit NORAD and United States Northern Command. It benefits all combatant commanders. It benefits the Department of Defense, the secretary of Defense, the chairman, the services. Just as important: Providing the data and information benefits our nation's national command authority in the senior leaders and allies and partners. You know, in GIDE 3 we brought in some allies and partners to participate as well, and they're crucial for integrated deterrence and part of our homeland defense design for integrated defense as well, so they have to be part of it.

Dr. Karako: We'll come back to some of the details there, but you just, again, mentioned integrated deterrence for the second time. And that – Secretary Austin has talked about that as kind of an overarching umbrella concept. Integration means bringing things together into a whole. So what does integrated deterrence mean to you? And what is being brought together that maybe wasn't integrated before?

Gen. VanHerck: Well, from a military dimension I'll talk about first. Integrated deterrence would involve operations, activities, investments that we do today that are oftentimes done with a regional focus, not integrated, synchronized, coordinated across a global problem set and an all-domain problem set. Integrated deterrence within the military dimension would bring all of that together, to include not only utilizing the operations and activities, but also theater security cooperation as well would be part of that, and to have effect.

I think where Secretary Austin is and where I think we're going as well would be all levers of influence across the nation are crucial, whether that be, you know, the diplomatic piece of that, whether that be the information piece, the economic piece. All those have potential impacts on overarching deterrence. And when you bring all of that together in an integrated, coordinated, and synchronized manner, that's very powerful.

Dr. Karako: Great. We'll come back to the combatant commands in just a bit. But let's move to the other part of the subtitle of today's event, domain awareness.

Gen. VanHerck: OK.

Dr. Karako: You mentioned that, information dominance and global integration. So let's unpack those several things. So talk a little bit, if you would, about NORTHCOM and NORAD on the detection piece, what you have, what kind of sensors you have, first in terms of the detection and domain-awareness capabilities.

Gen. VanHerck: OK. So for NORAD, primarily we have the North Warning System, a system built back in the end – towards the end of the Cold War, updated in the 1980s, that gives us – it's a series of radars, if you will. It's across Canada and Alaska,

designed to detect bombers flying at 36,000 feet, that had to, back in the days when it was created, fly essentially over the homeland to drop a gravity weapon. So that is one of the sensors.

Certainly, we have fighters on alert that provide additional radar-sensor capability. We can integrate with undersea capabilities as well to detect undersea domain awareness also.

Space is a huge piece of domain awareness for me. In my NORAD hat, if there's a ballistic-missile launch, my NORAD hat comes on first to provide threat warning. I'll quickly put my NORTHCOM hat on if the missile threat is engageable, and then put my NORAD hat back on to do an attack assessment, and if it would strike somewhere, put my NORTHCOM hat back on to do consequence management. So you can see how intertwined the two commands are, to include for the domain awareness that you're actually talking about.

Dr. Karako: So could you maybe walk us through – I mean, this is lots of things moving quickly, perhaps challenges of picking it up in the first place – walk us through a little bit the steps involved at the detecting, the tracking, the passing of information. What's the telephone game there, you know, in the general sense? This must take some period of time. But what are the steps involved there?

Gen. VanHerck: Well, today I would describe it as analog steps where the radars that I alluded to – so, for example, I'll give you a bomber option for our NORAD mission. If our radar detects a bomber approaching from the north, the east, the west, the first step would be the controller that detects it picking up a telephone to talk to the command center, who would then pick up another telephone to talk to either the CONR, which is Continental NORAD Region; ANR, the Alaska NORAD Region; or CANR, which is the Canadian NORAD Region.

You talk about those sectors. We have two sectors as well. So you're going to pick up a phone call, and finally it'll get to my headquarters through another phone call, which would take minutes to do that. That's not good enough in my mind. So imagine having a single pane of glass to be able to see that all real time and globally collaborate on response options to something like that. That's where we're going.

Dr. Karako: All right, let's stay with the detection and the awareness piece of this right now. Your unfunded requirements, UFR, list for PB-22 had $27 million for radar, an elevated radar talked about, for the National Capital Region. What is that, and why is that important for this priority?

Gen. VanHerck: It's domain awareness. So while we're on domain awareness, that radar would give us – in the National Capital Region, domain awareness today is challenged; challenged by those cruise missiles that I've talked about, which are very low-radar cross-section, that fly about 500 miles an hour and 500 feet or below. That challenges the existing systems that we have, not only in the National Capital Region but across Canada and North America and around the rest of North America. And so that would be able to give us a proof of concept.

Why that's important, Tom, is having that domain awareness, especially in the National Capital Region, where strategic decisions are made, gives decision space for continuity of government options, for nuclear-response options if needed, those kinds of things. So that's crucial to have.

Dr. Karako: Great. Now, I've heard you – we're going to get into the data and all that sort of thing. But I've heard you say that as all these sensors are out there collecting data, that some 90, 98 percent of the data is left on the cutting-room floor as a – what does that mean?

Gen. VanHerck: Well, that means that we're not processing all of it. What happens is the raw data from the – so, for example, the radars that I alluded to, the North Warning System, that raw data is not what you're seeing. It goes through multiple filters and is presented to an operator on a radar scope.

What we're finding is that that data, as it goes through filters, is not being analyzed. And across the board, what we're seeing is a large portion – like you said, about 98 percent – is not. So what we're doing is not asking for necessarily new sensors there, but utilizing software capabilities and artificial intelligence and machine learning, and taking the raw data from the radars and assessing that. And what we're finding is, when you take that raw data and you combine it with other data, such as from the Federal Aviation Administration or the Secret Service, Capitol Police, that now you're able to create a much better picture and you're able to see the threat much sooner.

Dr. Karako: So you mentioned the Northern Warning System a couple of times. And you're wanting to leverage all the data that's coming off of that and other places. But you also mentioned along the way that it was last updated in the 1980s. Is there maybe some work that needs to be done on making the Northern Warning System sensors better as well?

Gen. VanHerck: Well, ideally we would like to go to an advanced system, over-the-horizon radar. The North Warning System is limited in its distance. Radars are limited by over-the-horizon capabilities, the curvature of the earth, which doesn't allow us to see far enough out away from the homeland. And so there's technology today – it's proven technology – that would give us over-the-horizon radar capability to that domain awareness that we're talking about.

I think it's crucial, as we create new systems, that we don't make them singularly focused. So any new systems that we create must be able to not detect bombers, but cruise missiles, but even small UAFs or UAF kind of systems, to be affordable and usable.

Dr. Karako: Great. So you've talked a data-centric approach. You're talking about filling in some of the gaps there. And the purpose, as I gather, is to – and you've used this phrase – move left of launch. But you're not talking about left of launch in the sense of going and tracking the launcher. You're talking about moving left of launch into their thinking about the launch so as to create that space. Is that right?

Gen. VanHerck: That's exactly right. So when I say left of launch, it's not in the kinetic realm. It may end up being a kinetic option, but it's really getting left of their launch. So, for example, if DPRK or somebody's going to launch a missile, a ballistic missile, the first indication I don't want to be is an OPIR hit for a launch. And that's our Overhead Persistent Infrared capabilities.

I would actually like to be able to get hours, if not days, further left by watching pattern of life, fusing not only GEOINT – overhead satellite capability – but signals intelligence collection capability, to ensure we fuse that to give us as much decision space as possible, so again I can create deterrence options or we can use the information space. That's what I mean when I'm talking left of launch.

Dr. Karako: That's really indications of warning.

Gen. VanHerck: It is indications of warning. But today the data and the information for the indications of warning that we're talking about is oftentimes not shared. It's not shared across multiple agencies, it's not shared across multiple combatant commanders, and it's not analyzed sometimes for hours, if not days.

What I'm talking about is sharing that data, making it available immediately, real time, the raw data, utilizing missions and capability to begin to learn pattern of life, and to give you that global and all-domain data and information that you can make decisions on.

Dr. Karako: Yeah. Are there new I&W datasets that you're working with or trying to develop to make that a reality, for your command and for others?

Gen. VanHerck: I wouldn't say new datasets. What I'm – I'm not asking for new data. I'm utilizing data that exists today, that is not processed. But I do need additional domain-awareness capabilities; specifically, as I mentioned, over-the-horizon radar, some undersea capabilities. And then we need all axes and vectors that could attack the homeland.

Dr. Karako: OK. Move to information dominance. That phrase means different things to different people, decision superiority. You've mentioned a couple of times, and it was in the video too, artificial intelligence. So what does artificial intelligence mean to you in the mission that you're describing, and how is it going to help you get this information dominance that you're aspiring to?

Gen. VanHerck: Well, to me, artificial intelligence is taking data and information and analyzing it with computer and software capabilities to do assessment and analysis. It's not about making decisions at all. But today oftentimes that analysis and assessment is made by humans, and we don't have enough and can't build enough analysts fast enough to do what we need to do.

But you can take advantage of computers and software capabilities. Those software capabilities can actually analyze and detect changes in pattern of life or detect changes at an airfield or a submarine base, and then cue a sensor to go look at that or to see if there's additional information that can now present you a

warning that you need to go look and pay more close attention to what's going on here. That's really the artificial-intelligence aspect.

Dr. Karako: So in terms of the prospect and the potential to get more out of artificial intelligence, to say, hey, go look at this over here, you know, there's an example. You know, if you tell a computer AI to go look at this image, it's a panda. But if they put a few little pixelations in there to confuse the computer, it's a stop sign or something.

And so isn't there an assumption here that the bad guys won't recognize what we're doing and try to spoof or create noise and pixilate, as it were, what they know that we'll be relying upon for this?

Gen. VanHerck: Certainly, they do that today. That is a technique that you would expect any time. The difference – what I'm talking about is it's not new data. It's data that is already available today. We're just going to analyze it and assess it much sooner than we do today to present global near-real-time or real-time options. It's not new data. That's what's crucial.

Dr. Karako: So the next piece of this is the global-integration thing. So again, integration is one of those words that gets thrown around a lot and it kind of means everything to – means something different to everyone. So when you're talking about global integration across the combatant commands, sharing, collaborating, communicating – other than just holding two phones together, as it were – what do you see with that? What's your vision there of the cross-cutting combatant-command integration?

Gen. VanHerck: Well, let's just start off with taking the intelligence. It's the indications and warning. Imagine all the combatant-command J-2s, which are the intelligence folks, being able to sit down and assess all-domain information in real time and come up with an assessment of what's going on by any competitor or potential adversary. And imagine they can hand that assessment to the J-3s, now the operations folks., to create options, dilemmas, global dilemmas, de-escalation options. And they can collaborate in near real time across single pane of glass, all seeing the same picture. And imagine they could hand that off to the logistics experts – the J-4s, if you will – who can assess, is that feasible options or are they able to be executed? Is the fuel in the right place? Are the weapons in the right place? Are the platforms in the right place? And then assess, can we execute it?

That's what we did in GIDE 3. That capability exists today. That's what global integration truly is. It's an assessment of global risk, a look at global resources, the ability to collaborate in near real time across all domains and all combatant commands. That's what I'm talking about.

Dr. Karako: And you're using phrases – J-3, J-4. What you're pointing to is the need to do this at lower levels than what is being done today.

Gen. VanHerck: Yeah. So today the example I gave you; so the J-2 piece took about 90 minutes. The way that would be done today is oftentimes a regional look at the problem set. They may pick up the phone and call a couple of combatant commands to

work this. But it's going to take hours, if not a couple of days. Then we'll assess to produce options. The J-3s will product options. Oftentime(s) that's a regional focus, regional options and not all domains. That, in GIDE 2, took less than two hours to do. And so, in a matter of a half a day, we have assessed it, we've come up with options, the J-4s validated whether they were executable, rather than taking days to produce a PowerPoint brief. And the first time you really globally integrate is at the Joint Chiefs, combatant commander, or SecDef level. We're doing that at a much lower level. And you can take that information right there and bring in the key decision-makers to see it in real time on a single pane of glass.

Dr. Karako: So single pane of glass. You're talking about this information, everybody seeing the same thing. It sounds a lot like the aspiration, the vision, the strategy that goes under the name JADC2. So what's the relationship between this and JADC2?

Gen. VanHerck: Well, I think what I'm doing is joint all-domain command and control. I don't use that because I don't think command and control is what I'm after. I'm after decision superiority, and I'm guessing we're going to talk about that. But decision superiority, whatever you do with the information, I just want to make sure that the right decision-maker has – at the right level, at the right time has the information. Whether they want to use it for command and control, deterrence options, it's irrelevant. But eventually, this is what you would call joint all-domain command and control, what we're doing.

Now, the services have a little bit of a different problem than I do. I'm focused at the operational to strategic level. They have to focus, I think, primarily to the tactical level to develop information and share that information down to individual platforms such as an individual airplane, a platoon, platforms on the sea, et cetera. What I'm trying to do is take the information that you're seeing and share it across at the operational to strategic level to create deterrence and de-escalation options, and if needed defeat options.

Dr. Karako: So you just raised it there. You've got a different job, you've got different authorities, you've got a different pot of money than the services. So why is this a you thing? Why is this a NORTHCOM thing as opposed to the services?

Gen. VanHerck: Well, that's a great question. The first thing I would tell you is I saw the value of data and information, and it was required for me to give decision space to our national command authority, our senior leaders. I saw that last year right after I took command on September 3rd, when we partnered with Space Command and the Air Force to do ABMS number three, their Air Battle Management – or number two, Air (sic; Advanced) Battle Management System. At that time they were – they were really focused on kinetic endgame defeat options, and I saw the value right away of a deterrence and getting further left to create decision space like we talked about, and so I changed our focus to do that. Not that we don't have to do the kinetic kill capability as well; we certainly would. And that's when GIDE 3 – or GIDE 1 came up in December, and since then we've gone down this path.

In the end, I'm doing this to change culture, to show right now that the capabilities exist to implement the global integration, our integrated deterrence plan that the secretary talks about, our homeland defense plan that relies on allies and partners in a global perspective, and to get away from regionally focused, stovepiped, you know, single-domain options. That why I'm doing it, and to show that this is really ready to go today.

Dr. Karako: So you're pointing in the direction to need to change culture and uses, but presumably this sort of capability that you're pioneering would be handed off to someone else at some point. Is that fair?

Gen. VanHerck: Yes, Tom. I would – ultimately, the goal is to hand it off to an entity – a single entity within the department. What I'm concerned about a little is we slow the process down. As I mentioned, I think we're ready to go – to go faster.

The department is set up what I would call in industrial processes to field ships, planes, the acquisition processes. What we're doing is primarily software-based, and we're updating the software every 14 days. Our budgeting processes, where you have a five-year FYDP and an annual budget, don't fit well into 14-day update cycles. And so we have to continue to push to change the culture to adapt to the environment we're in. I would – I would say that's digital transformation. That's culture change to embrace a digital culture.

Dr. Karako: Well, the problem of acquisition for software has been one of the products of study here at CSIS for our Defense-Industrial Initiatives Group. I just want to give that some credit.

But to that question, what you're describing, you keep saying: Go fast. It's important. Somebody's got to take the lead here. I mean, it sounds urgent, right? Urgent is the U in JUON, right? So this isn't a JIAN (ph). It's not a JUON. It's just a you thing because it's not getting handled elsewhere in the department. Is that right?

Gen. VanHerck: Yeah. We saw a need to get after the integrated deterrence in our homeland defense design and to bridge that gap, and so we moved out. We moved out in partnership with the – some of the agencies in the department, as well. And so I do get a sense of urgency.

You know, the next 10 years, the threat to the homeland will dramatically change. I don't think we can continue to do things looking in the rearview mirror. We got to look out the windshield and go forward, and that's what I'm trying to do is change that culture.

Dr. Karako: All right. So I guess, as I'm listening to the changing of the culture, the dramatic threat increase, it's sobering, right? And you've come back to say the homeland is not a sanctuary; we have to look at it a little bit more differently. I mean, to me that just says North America is a region too, and our adversaries see North America not as some special thing but just as another region into which they can project power. Is that –

Gen. VanHerck: Certainly. You know, they're developing the capability. They haven't had it. We've really been the only nation capable of projecting power around the globe on our own time and place of choosing. That's changing, and they understand that they must change to limit our access and influence around the globe. That's how they're going to compete with us. That's how they want to deter us. That's how they want to destroy our will.

Dr. Karako: So the other implication that I'm picking up here is that you're pointing out how the communication across combatant commands needs to take place at a lower level as opposed to going up and then over to another COCOM. But in a way, you're not just pointing to change the culture of the department – acquisition and the like – but you're also pointing in the direction of perhaps needing to evolve the relationship of the combatant commands and maybe the UCP potentially down the road.

Gen. VanHerck: Well, I do believe that it's something that we ought to take a look at and make sure there are studies that take a look at what the future of not only conflict would look like, but crisis management and competition. I think our combatant command structure today does really well for a competition focus day to day. The relationships I have with my counterparts that are in the NORTHCOM AOR, with my NORAD counterparts in Canada are crucial. The fellow combatant commanders who have those same relationships, that's crucial. I'm not sure that we'll ever see a single supporting combatant commander, so it may be worth at some point studying further the future for the UCP for a conflict scenario.

But that's certainly a policy decision. The president signs the UCP. That's something that I will leave to the department.

Dr. Karako: Fair enough. Fair enough.

All right. So you have alluded several times to the GIDE – GIDE 3 experiments. I wonder if you might just introduce what are these GIDE 3 – we're on number three that you just engaged this summer. What are these things? They were alluded to in the video.

Gen. VanHerck: Yeah. So Global Information Dominance Experiment number one took place in December of '20. Brought four combatant commands together with Project Maven, as you saw in the video there, to really kind of a proof of concept about sharing of info and could we get further left, like I asked for – that decision space that I'm looking for. What we found was it was incredibly successful to utilize the machine learning and artificial intelligence when shared across multi domains and then the forward combatant commands.

And so I said, hey, let's expand this. Let's try to get all 11 combatant commands. And what I really wanted to do there is show all 11 combatant commands just how valuable data and information was, that we could share it and collaborate globally. That occurred in March of this year. All 11 combatant commands. We had the JAIC in there with their capabilities, Project Maven as well.

Dr. Karako: This was experiment two?

Gen. VanHerck: This is experiment two, in March of this year. Incredibly successful. And I've held a debrief at the end of GIDE 2 and GIDE 3 where the combatant commands all came together. Most of the commanders came together and we talked about the value of what we were seeing, and never heard any pushback. Actually, it was, why don't we have this now? Can't we get this fielded now?

GIDE 3, what we wanted to focus on – and that occurred in July, just last month – was expanding, with some allies and partners included, to challenge not only the ops piece or the intel piece, but the contested logistics to create options; and bring data from service readiness in, platform readiness, and collaborate in an example such as the Panama Canal is closed, how can you – how quickly can you come up with options for your logistics flow. And what we saw is having the data and the ability to collaborate globally across all combatant commands in real time is invaluable.

Dr. Karako: Well, on that point, we just got a question from Rachel (sp) in Australia; I'm not sure more than that. But Rachel (sp) in Australia wants to know, given that allies have lots of unique capabilities that could be brought to bear here, is there some intent to bring them in? I know you mentioned some involvement or witnessing of some of these experiments. Is there an intent to expand this further?

Gen. VanHerck: Absolutely. We must. When you talk about integrated deterrence and our homeland defense design, which is layered defense, which relies on allies and partners, like-minded nations, absolutely they must be part of it.

Dr. Karako: Good. So let's move to I think another topic, unless there's more on the GIDE experiments.

Gen. VanHerck: No, go right ahead.

Dr. Karako: This is another big part of your responsibility and that's NORTHCOM, NORAD, and missile defense. Last year – excuse me, last week we were down in Huntsville for the space and missile defense symposium and you highlighted in your remarks the importance of the Next Generation Interceptor, or NGI, for the rogue-state-ballistic-missile threat. What is that? What does that mean to you? And why is this significant for the homeland?

Gen. VanHerck: Yeah, so our ballistic missile defense capabilities are primarily focused on North Korea, the DPRK. As we witnessed in October of '20, the 10th of October, they continue to develop advanced capabilities and capacity, so they're building their missiles out. The new KN-28, we saw much larger capability, and the total numbers of missiles tends to increase. Next Generation Interceptor, for the mission I'm given to defend our homeland, will continue to keep us on a successful path to maintain capacity to address the threat and also the capability. As they develop capabilities such as decoys or balloons that may be challenging the system, the Next Generation Interceptor will give us that capability.

I'm concerned that we must develop it and field it on time. It's currently on track for 2028. The department, with the Missile Defense Agency, has established a contract mechanism that will reward the timing of the fielding of the NGI and the capabilities, and so that's good. That's my top priority, to make sure I can address the capability and capacity.

Dr. Karako: So you – you said schedule's your top priority for NGI, but I can't help but think – and I'm recognizing this is a policy discussion and not your call, but from where you sit, if NGI were to go away or if it were to be delayed to the right, what does that mean – or if it were to be canceled altogether – what does that mean for you and, more importantly, for the homeland defense mission?

Gen. VanHerck: Yeah, so, Tom, you're exactly correct: totally a policy decision, and I'll stay out of the politics or the policy aspect of that. What I would say is I feel like my job is to convey what the impact and risk would be of that decision and convey that to the secretary and the chairman for their advice to the key decision makers on that.

I think that would put us a little bit more reliant on our strategic deterrence, Admiral Richard and his capabilities, and it potentially could increase the risk of strategic deterrence failure, should there be an attack. I think what's crucial to realize about Next Generation Interceptor and our ballistic missile defense capabilities and the other capabilities that I haven't talked about is you have deterrence by punishment, which I did allude to.

Our ballistic missile defense capabilities are a part of what I call deterrence by denial. It's the gray matter that somebody believes that they may not be able to achieve their object because you have a denial capability, and they know if they're denied, they're, you know, they're shot – their one time – that what comes back from that is all the power and influence of the United States of America and our allies and partners. And so deterrence by denial is crucial. And so as you look at making decisions like you referred to, it is crucial to look at that not in a vacuum but more broadly on overarching strategic deterrence. And so, you know, right now we have a chance to look at that as they're doing the nuclear posture review, they're doing a missile defense review, and those two should be looked at hand in hand for overarching deterrence.

Dr. Karako: And one of the reasons that you're emphasizing the schedule on NGIs, we've had some programmatic setbacks over the past several years, as well as, you know, we're not doing more – 20 more GBIs instead, but there's also the broader homeland ballistic missile defense GMD program enterprise; it's deployed today. But I've heard you emphasize the importance of things between now and NGI. You've talked about the GMD SLEP. What's going on with that and why is that important?

Gen. VanHerck: Well, SLEP is crucial. That gets us to NGI. SLEP – this is the first time the Missile Defense Agency has really pulled our Ground Based Interceptors out of the ground and done an end-to-end test of the system, where they look at each and every component. That will give us crucial reliability data where we can now

predict future reliability. What that does is it gives me the ability to potentially change shot doctrine, which gives additional capacity, and not only is the Missile Defense Agency working with the contractor on that reliability aspect, but also adding additional capability – and I'm not going to go into detail about that – to counter the potential threats that I talked about earlier. So that will get us to NGI, and that's crucial to maintain that service life extension.

Dr. Karako: Great. Now the video you showed earlier; I mean, there was a lot going on in there and it really highlighted some political and economic and military potential targets in North America. You know, one of the thornier questions in this kind of thing, whenever you're talking about a continental-wide target list, is, you know, everything's critical, or critical to some folks, but then you have to move from what is critical to what is actually going to be defended, and so back to the cruise missile side of the house, you know, the difference between a critical asset list and a defended asset list. Do you think we can get to a defended asset list for the really critical things in the United States homeland?

Gen. VanHerck: Do I think so? I do think we can. It's a tough discussion that's been had for a while, but I think it's crucial that we go down that path. Like you mentioned, the critical asset list exists. I think that we need to look not only across the Department of Defense but the whole-of-nation on what we must defend, and that's a policy issue that I've asked for. And when I say must defend, I'm talking not only kinetically but there are other means to defend, such as using resiliency, cyber resiliency. Not every threat is threatened kinetically. And we're a very resilient nation, but we need to figure out what our most strategic assets are and how we're going to defend those. You can utilize hardening, for example, for certain capabilities as well, but the goal would be – as you said, it's unaffordable and unrealistic to defend everything; it's to figure out what those items we must defend are, and that contributes to that deterrence that I talked about earlier of the homeland, creating doubt in their mind about ever bringing us to our knees with a strike on the homeland.

Dr. Karako: But there's – you've alluded to them – there's barriers to getting to that defended asset list. You've got FAA; you've got domestic legal – you know, law enforcement entities as well. So what are the barriers to getting to that?

Gen. VanHerck: I believe it's having a sitdown and a discussion, and you don't have to identify every single point in space that you want to defend. I think the barriers involve educating folks on the ability to defend wide area spaces, so, for example, future capabilities such as use of the electromagnetic spectrum where you can defend a wider area than point defense with a missile, for example, will give us the option to lump into multiple large areas critical assets from across the entire interagency. Where you get into trouble and challenges is when you're trying to pick between one department's pinpoint location and another's on the priority. I think we can move beyond that with future capabilities.

Dr. Karako: Great. And then back to your two hats, and I'm picturing you taking the hats on and off between NORAD and NORTHCOM: What are the differences – you've alluded to it to some extent already – between the different kinds of cruise missile and ballistic missile threats? And then what are some synergies, other

than the fact you're wearing both hats as a human being – synergies between the entities between cruise missile and ballistic defense?

Gen. VanHerck: Gosh, you know, cruise missiles are totally different than a ballistic missile threat today. Cruise missiles can be launched from multiple platforms from air-launch capabilities to sea-launch capabilities to submarine-launch capabilities to container on a commercial vessel. There's multiple ways to do that, where a ballistic missile typically is going to be launched from some type of a rocket, a large IR plume that you're going to be able to detect. Oftentimes you will not see that with a cruise missile.

Domain awareness goes across both commands, from detecting of cruise missiles to detecting of ballistic missiles, so both hats; I absolutely need that domain awareness to where – you know, to where I can attack – when I say attack, provide options to our senior leaders to defend or deter against those cruise missiles or ballistic missiles.

Dr. Karako: So let me refer to another combatant command but one in which the conversation between those two threat sets is very of the day – we heard about it last week – and that is the defense of Guam. You know, we've got to worry about the defense of Guam for both the cruise missile problem and the ballistic missile problem, because China's going to come at us with everything on a bad day. So, you know, as you're tracking that – and that's INDOPACOM's number-one priority; the commander has said that's his number-one priority – are there lessons and are there things that could be harvested from whatever efforts are done there that you might apply back here at home?

Gen. VanHerck: Lessons for what Admiral Aquilino's doing that I –

Dr. Karako: From what INDOPACOM's going to do.

Gen. VanHerck: Yeah, I haven't really thought much about that. Certainly, I'm sure there's some lessons there. But what we do back home is purely a policy decision on what we're going to defend and how we're going to defend it. What I would like to do is invoke that discussion to make sure that we're at least making risk-informed decisions based on the threat that has changed over the last 10 years and will change going forward.

Admiral Aquilino certainly has the threats to Guam. He is in the region. He is close to that threat. I believe the culture believes that, you know, we're a sanctuary here, and I want to force that discussion to happen.

Dr. Karako: North America's a region, too.

So you've just finished GIDE 3. What's coming up next? Is there going to be a GIDE 4? What's the next steps going on here?

Gen. VanHerck: I believe there will be a GIDE 4. We're going to talk with the deputy secretary of defense, Secretary Hicks, about the way forward within a week or so. I plan to try to move as quickly as possible to field these capabilities. You may remember my

article was entitled "Build the Bike While You Ride It." I believe these capabilities can warrant fielding them. The different testing processes for software – the legacy testing processes that we go through for weapons platforms where you have to do developmental tests and operational tests before you field it, there are valid reasons to do that. For software-based things where we're not actually pulling the trigger necessarily immediately – it's a decision-maker still doing that – I think we can move forward to field this quickly with a next-spring validation through one of our globally integrated exercises.

Dr. Karako: But you're looking, again, moving – it's another experiment, another exercise, but presumably you're looking in the near term to hand this off to somebody to build and implement.

Gen. VanHerck: Absolutely, Tom. That would be part of the discussion with the deputy secretary. For long term, you know, as a combatant commander, I'm not in the acquisition and capability development job. And so I'd love to hand this off to somebody as long as we can keep it on the path it's been on.

When you go from December till July and develop the capabilities, and you're updating them every 14 days and utilizing those processes, I think that's a model for the future that we need to look at. What I don't want to do is go backwards and start using annual or even FYDP-type processes for the capabilities that we can field today.

Dr. Karako: Well, look, we've covered a lot of ground. I want to see if there's anything else you felt we haven't covered or anything you want to talk about for the – for the near-term future.

Gen. VanHerck: Well, I appreciate the opportunity to talk about homeland defense, defense of North America, and the capabilities that we're developing. I think that, you know, culture and education are two things that I'm really focused on – educating folks on the threat to the homeland, and embracing a digital culture going forward to adapt our processes and also to adapt to a global mindset and an all-domain mindset.

So we've moved the ball a long way. There's a lot of people involved. I'm encouraged by what I see. But we're not there and I'm not ready to spike the ball just yet.

Dr. Karako: OK. Well, thank you, General VanHerck. Really appreciate it. And please give our best from CSIS to the – Deputy Secretary Hicks while you're over there.

And thanks, everybody online. Appreciate your tuning in and submitting questions. We worked through a number of them. And please come back soon. Thanks.

(END)