TRANSCRIPT

Event

“MDA and the 2025 Budget”

DATE

Thursday, June 6, 2024 at 10:00 a.m. ET

FEATURING

Lieutenant General Heath Collins
Director, Missile Defense Agency

CSIS EXPERT

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Tom Karako: Good morning, folks. I’m Tom Karako, director of the Missile Defense Project here at CSIS. And we’re delighted to welcome to CSIS for the first time Lieutenant General Heath Collins, director of the Missile Defense Agency. Great to have you here, sir.

Lieutenant General Heath Collins: Thanks Tom. Thanks for the opportunity.

Dr. Karako: So, General Collins, before you started as director, he was the program executive for ground-based weapon systems at MDA, which include GMD, THAAD, as well as some Israel programs, and some others. He entered the Air Force in 1993. He’s had a number of program management and acquisition positions over the years – Air Force PO for weapons, Air Force fighters and bombers – and worked on the GBSD program, as well as many other things.

So we’re here today to talk about your portfolio at the Missile Defense Agency, the agency’s place within the whole defense and defeat enterprise for this threat, to talk about your vision for PB – for the Missile Defense Agency, and, of course, how PB ’25 fits into all of that. We’ve got a lot of topics that we’re going to discuss. And then, for those here in the room – thanks for coming – and for those online you can submit questions via the event page and, through the Joint Track Management Capability bridge, they’ll come here to my tablet, and we’ll direct them to the General as appropriate.

So, General, thank you for coming over. And what I thought we might start with is really what MDA is and why it matters. I’m not thinking of this in terms of, you know, missile defense specialists that wake up and think about this every day, but I’m thinking kind of the opposite. For folks who are not as familiar with MDA, with this enterprise, you know, what is it that MDA does? And what is it this enterprise does? And why is it important?

Lt. Gen. Collins: Yeah, thanks Tom. It’s a good place to start. Certainly, very proud of the men and women within the Missile Defense Agency. Long lineage, decades of lineage within what we do. We’re chartered to provide layered missile defense of the homeland, as well as our deployed war fighters and our partner nations. Which means a very challenging threat set that we need to maintain cognizant of, and a very tough technical challenge that we have to answer by bringing the full life – the full fire control loop of capabilities to bear, from the detect, the sensors, through the comms, through the control, and eventually get
to fire control. With the appropriate level of timeliness to actually consummate and finish off.

We're the only agency responsible for bringing that capability to the homeland, defense of the homeland. And we're very proud of that and celebrating a major birthday this year. But we also – as seen over the last couple years – we also have demonstrated and delivered capability in the field that’s been very effective. And it’s saved lives.

Dr. Karako: Yeah. And 20 years this year for MDA, succeeding BMDO and SDIO. That’ll also be 20 years for GMD, that special program that you – that unique program you talked about. How do you think about MDA’s core competencies? Like, what are the things that MDA does well, and that kind of – that it that does uniquely?

Lt. Gen. Collins: Yeah, absolutely. You know, first and foremost, system of systems engineering, the ability to bring together an entire missile defense mission thread around the planet, from where the threat starts all the way to the finish – hitting a bullet with a bullet. The ability to bring all of the different capabilities together, connecting a global array of sensors, getting the battle management and data to the right place at the right time, in time, so that an interceptor – whether that’s a sea-based, land-based, or home-based interceptor – can then intercept and take down that target. That systems of systems engineering is really a key competency that we have. We always have had, we’ve developed – we’ve put a lot of energy and emphasis on that over the years. And that’s really one key area that we have.

Second thing is doing that integration and bringing in all those sensors, whether they’re sensors we’ve provided or whether they’re another service’s sensors, or whether they’re another country’s sensors. Our ability to take all of those sensors and integrate them together and then integrate the battle management layer with a host of interceptors, not just MDA interceptors but other interceptors – services and partner nations – that ability to integrate missile defense jointly and internationally is a very strong capability that we bring to bear, and bring to the missile defense enterprise as a whole.

Dr. Karako: And, again, 20 years and counting, here. Some of these systems have been around for a while. So you’ve got a life cycle management for all this stuff as well, not just the fielding and warfighter support.
Lt. Gen. Collins: Absolutely. As you – as you mentioned, some of our systems have been deployed for 20 years. Some of the sensors are actually well older than 20 years. And our ability to continue to both sustain but also still modernize, still get additional performance out of older systems or deployed systems, to tackle new threats, new attributes, new things that we need to solve, and finding the right place within the enterprise to focus attention to solve that problem with what we have. And then, if we don’t have it, then – and we can’t get it out of the systems we have – then we start a development to bring new capabilities to bear.

Dr. Karako: Yeah. I’ve heard you many times – your mantra, since you’ve – especially since you’ve come in as director – go fast, think big. What does that mean? What are you trying to go fast about, and how? And what are you thinking big about?

Lt. Gen. Collins: Absolutely. I get this question a lot, since I’ve had that mantra for a while – that motto for a while. So first on the go fast piece, we’re capability developers. We’re capability fielders. Our sole report card is capability in the field. And we have to be centered and focused every day, every decision, everything we do into getting the right capability to the field as absolutely fast as possible. The warfighter needs it. They’re counting on it. They’re relying on it. We have to focus on fast, everything we do. And that’s just not delivery of the capability, but every process that we have that all builds into delivering this capability. Every single piece has got to be really thought through, streamlined out, so that we can get there, with the right level of risk acceptance as we go there.

Now, think big. We need to be thinking past today’s problem into the future problems. If we focus solely on the programs we have today and solely on executing the programs we have today, then we will get behind the threat. We will get behind the industry tools and things that are available to us. We need to continue to think long, to look that long look of every decision we have, whether it’s our weapon systems, whether it’s our processes, whether it’s our tool sets, everything. We need to think big, long term, so that we are staying in the fight, staying relevant, for as long as the nation needs us which, well, is quite a bit into the future.

Dr. Karako: And we’ll come back and kind of talk about how that applies to lots of different programs and missions in just a bit. But why do we kind of
talk about the threat? Which is, fundamentally, what drives all this. You know, I like to quote former Assistant Secretary John Plumb, who talked about missiles as weapons of choice. In the ’90s, these were kind of boutique threats. Truck bombs was where the real action was at. But now you just see this massive proliferation. How do you conceptualize, how do you think about this? And the sky is turning black with all the different kinds of missiles that we’re seeing. How do you see the trends and how do you – how do you make sense of it?

Lt. Gen. Collins: It’s something we think about every day, in where the threat goes. We’re a threat-focused organization. And it drives our investment. It drives what we – what we do every day. Big thing is – we talked about 20 years ago. Twenty years ago Missile Defense Agency, BMDO before it, the threat space was ballistic ICBMs, intercontinental ballistic missiles. You know where they’re coming from. Single – sole shots, sole RVs, no countermeasures. And it was truly the bullet hitting a bullet. When their rocket motor burnt out, we pretty much had a good idea where it was going to land. And that was the ballistic fight that we were focused on. And the air threat was a service issue. Cruise missile was a service issue. And there’s a large separation between the two.

Today what we see is a much more complicated environment, where ballistic missiles are still a choice weapon, as we see every week lately, but we’ve also now seen cruise missiles and hypersonic maneuvering glide vehicles and cruise missiles entering the fray, such that the boundary between the ballistic missile fight and the air defense fight are now blurred. And it’s hard to tell where the seams are. In many regards, the threat’s probably been looking at where the seams are and have been focusing on the seams. So the quantities have increased greatly. Raid sizes are enormous. The complexity of countermeasures, and deception, and the scenes we see outside the atmosphere, inside the atmosphere have increased. The electronic warfare has increased. So it’s a much more complicated environment that we’ve got to be prepared for.

And so, going back to the missile defense enterprise, all pieces play into it. We’ve got to now engineer, decompose, and find out where in the sensor, comms, battle management, and interceptor realm, or effector realm – we’ve got to now decompose those threats into where is the best place now to increase our capability to go against that very much – that increasing threat capability. And with
increasing raid sizes, cost now becomes even more to the – to the forefront, as we start looking at the sheer sizes of weapons that can be set against us at any day, as we’ve seen just recently.

Dr. Karako: And it’s not an academic problem, as you say. We’ve seen this in a number of very real-world events, most recently in the April Iran attack on Israel. Yeah, what are you seeing in that attack? Lots of stuff, complex and synchronized attack. As well as Ukraine and, of course, the Red Sea.

Lt. Gen. Collins: Absolutely. Yeah, much of what we’ve seen in those three environments are just what I was talking about from where the threat is going. We have the term, integrated air and missile defense. Well, we’re seeing integrated air and missile offense. The Iranian attack was a great example. Ballistic missiles, one way UAVs – unmanned aerial vehicles – and cruise missiles all launched at different times to ensure simultaneous time on target, hitting the Israeli air defense system. The raid size was larger than we’ve seen ever. And it is just – it just forecasts more to come in the future that we – that we need to be ready for.

Ukraine, I think similar things. Integrated cruise missile, ballistic missile, hypersonic maneuvering missile, and UAV attacks, in large quantities – continued large quantities over time. So capacity over time is in order. And then Red Sea, even the lowest complexity threat actor gets its hands on weapons, and it learns, and it shoots different ways. And we are continually integrating with the Navy, and the Red Sea cell, and the fleet on what we’re seeing, what we’re learning in way of antiship ballistic missiles combined with UAVs and different strategies that the Houthis are trying. And how do we continue to learn, grow, and field capability back into the fleet quickly to respond to new things we’ve seen in that environment?

Dr. Karako: What kind of operational lessons are you learning from the Red Sea, Ukraine, otherwise? And are you beginning to weave that back into the development side?

Lt. Gen. Collins: Well, certainly in the Red Sea side we’re – again, an unsophisticated actor with a semi – not that complicated set of – set of missiles and UAVs. But they’re coming at us from different angles. They’re coming at us from different altitudes and times. We’re learning more about the Aegis weapon system and how it acts in that very cluttered
environment. And we’ve actually spun a number of software builds out to the fleet to handle that.

It truly is – I mean, last year we did a test where we – in the Pacific – where we had one destroyer target two rocket – two incoming missiles and two UAVs, two air vehicles. And that was a pretty complicated test. And it was just a bell ringer for what the fleet is doing day-in, day-out in the Red Sea. And we are certainly incorporating those back into the Aegis weapon system, into our flight tests, and how we prepare. Not a lot of use of the Standard Missile 3 that we have. It was used on April 13th with very good success.

Dr. Karako: That’s historic.

Lt. Gen. Collins: It was the very first operational use of the SM-3. And it performed as expected, and as designed. And we’re proud of the lives we’ve saved in the state of Israel by what we did that day, in partnership with international partners, and the Israelis.

Dr. Karako: I think in the past two years just about every missile defense system has been operationally used – from PAC-3, THAAD, SM-3, SM-6, and so on, in just the past two years.

Lt. Gen. Collins: Absolutely. Two decades of investment in weapon systems that have really come to bear and, again, saved lives, kept us in the fight, and will enable us to win.

Dr. Karako: Yeah. Let me ask you briefly about something that’s been kind of in the conversation lately. You know, former NORTHCOM commander VanHerck was kind of pounding the table about this. TRANSCOM commander Van Ovost was talking about this. And that is kind of the coercive attack – coercive attacks on the homeland. Again, recognizing that that’s – the Air Force is probably going to have a big role there. But from a conceptual level, how is the conversation changing? You mentioned the blurring of the spectrum. You’re also kind of seeing the blur between regional and homeland in terms of what’s threatened by these things.

Lt. Gen. Collins: Yeah, certainly, the threat environment is getting much more complex, that blurring of lines. And policy wise, our homeland defense purpose is still focused on the rogue nation ballistic missile threat to the homeland. And we continue to focus on delivering the
right capability to go against that threat – capability and capacity that that a rogue nation could potentially throw at us. I don’t get as much into the policy lane as much on the coercive strike and how we prepare for that. We do our best to get the most capability into the systems we have and show how those could potentially be integrated and layered to provide capability against an ever-broader set of threats as we go forward.

Dr. Karako: Yeah. So in terms of the recent department strategy documents, the last two missile defense reviews, for instance, talked about how active missile defense fits within, call it IAMD or call it missile defeat. I wonder, what’s your perspective on how – what you do, what the agency does, within that missile defeat spectrum? Sometimes you hear people kind of contrast active missile defense and missile defeat as alternatives. How do you think about the relationship?

Lt. Gen. Collins: Comprehensive missile defeat is a whole suite, is a whole spectrum of capabilities from left to launch activities that could be brought to bear to right of launch, when the missile’s launched, a whole slew of passive or active defense mechanisms to counter that. And there’s probably a whole lot of other things that could be tacked on there. I see missile defense as part of that spectrum. And today, it’s probably the biggest and most effective part of that spectrum that we’ve seen. And we demonstrate – and it’s been demonstrated for years in Ukraine, and Israel, and other locations. And the secret will be, how do we integrate that particular focus of active with passive, so you have a comprehensive set of capabilities to bear? They’re not stove piped. You really need to layer them all together for the best benefit to the nation, to the warfighter, and to our partners.

Dr. Karako: Well, back to the Israel April thing, for instance, you know, that allowed the decision space to respond as Israel and the United States chose to respond, as opposed to if they’d had – just had eaten 330-plus objects, that would have probably had a very different outcome.


Dr. Karako: So another kind of big thing, and you mentioned it already in your discussion of core competencies, is integration. And Missile Defense Agency is congressionally, again, designated as the tech integration authority. Why is that hard? Why is it important, in a global sense but also in a technical systems sense? And how do you think about that challenge?

Lt. Gen. Collins: Absolutely. It’s a key responsibility as we pull this together, you know, building on the integrated air and missile offense. And we’ve
got to – and blurring lines between different historically separate activities – service air defense, Army air defense, ballistic missile defense – pulling those together, integrating together, those systems have built up their own weapon systems and comm networks to answer those calls, designed separately, fielded separately. And now to bring those together and share that information, still with the same timing, accuracy, and sensitivity that we require but now spreading that across any and all systems, some of them fundamentally architected differently than each other. How do you bring those together?

You know, that integration role, that interoperability role, we've been working on that for quite some time. Step one was just developing the homeland defense system, the Missile Defense System that we have today. We don't own all the sensors. We don't own all the networks. We don't own necessarily all the interceptors. But we need to design a system that could take the sensor, get to shooter, in time to finish the fight. And we have worked with a number of international partners from an interoperability perspective of how to get data to them or data from them through MIL-STD 16 – really, Link 16 formatting, such that we support coalition fight today.

We share data with our – with our partners. MDA sensors provided data to the Israeli missile defense system so that they could, we have been. And on April 13th, and every day before that, we have been providing data such that they can have a better solution. We've been able to do that. And now, as we get more and more systems being fielded and the advent of IBCS in the Army to also bring to bear, we are now very focused on a new architecture to do integrated fire control. Joint tactical integrated fire control is our standard that we have been working on for well over a decade, with the services, to allow a standard such that those fire control systems can share measurement data, and any shooter – any sensor to any shooter across the fight.

And we have demonstrated that a number of times, most recently in the Army's Project Convergence where we had a number of airborne, marine, Navy, and Army shooters together. And we were passing data back and forth through that bridge. The instantiation for demoing is the JTMC Bridge – joint tracking management – C –

Dr. Karako: Capability. (Laughs.)

Lt. Gen. Collins: Capability. Thank you. I always forget the C. Capability bridge. That is the instantiation that we've been demoing to show off that joint tactical integrated fire control architecture. And it's worked very
You know, everybody throws around the word “integrated.” I mean, you cannot have a PowerPoint in the Pentagon without having the word “integrated” somewhere on it. But what does it mean, concretely? And what does integrated fire control mean? Why is that hard? And what is the criteria for fire control quality data and measurement data, as opposed to other things?

Yeah. It’s kind of a microcosm of the JADC2 that the department’s trying to solve. But, you know, from an integrated fire control, it’s really the challenge of taking any sensor’s data and making it available and getting it to the needed battle management and shooter at any time, any place, from any direction, and without thinking about it. It just happens. And how does that – how do you set up an architecture such that you can do that and share the appropriate data with the right timeliness to be able to do that? And that should be able to be dropped into any location at any time.

If you have F-35s in the sky, well, we should use those. If we have Army radars on the ground, we should be able to use that. Space layer, any space layer should be able to plug in. But making sure you continue to stay, though, within the confines of what you need to close a fire control loop. It’s not just a matter of detecting and tracking. You need – we have a higher level of standard to do the fire control to make sure we get an interceptor, or any type of effector, into the right box to actually find the right threat and close it.

There’s a lot of deconfliction, so you don’t have multiple units all shooting at the same thing. That’s battle management, I think, right?

Yeah, you get into battle management. You get into engagement management and engagement control, to really the key in the future – especially these big, large raid sizes – is inventory management. We need to preserve our inventory as much as possible. And if you’re shooting two or three rounds at the same threat when the first round hit it, you know, we want to avoid that and work through that whole integrated battle management kind of construct.

You know, the headline I think I saw most – the splashy headline of, you know, expensive missile defense interceptor goes after a cheap drone, or cruise missile, or something like that. My colleague here in the missile defense program, Wes Rumbaugh, wrote a piece, the cost exchange ratio, how to think about it, and the cost versus value. A lot was spent on that April – that one weekend in April, in terms of all this. How do you think about the cost exchange? How do you think
about computing it, calculating it? And how do you think about cost versus value?

Lt. Gen. Collins: It’s definitely come to the forefront, as I mentioned, as raid sizes get bigger and the needed number of effectors to counter that has increased. That surely comes to bear and plays as we try to solve the readiness, capability, capacity curve for providing weapons.

You know, number one, we certainly look at – we’re pretty proud that we save lives. And we put systems in the hands of our war fighters that save their lives and they save the lives of citizens around the world. And would we not want them to be in the hands of the warfighter to be able to consummate? I mean, you know, we do talk about the cost capability curve. The war fighters that are on the inbound, receiving end, they never – actually I’ve never heard them complain about the cost curve.

Dr. Karako: (Laughs.) You’ve never seen a captain of a ship sit there and calculate the Nitze criteria about whether or not they should fire? (Laughs.)

Lt. Gen. Collins: I haven’t. I haven’t. Because part of it is the – you know, you can certainly look at just the cost of one round versus the cost of that round. But we also look at it as if the cost of that round being a leaker and hitting where it wants to hit, and hitting in the worst place possible, what could that do for, one, lives, but also, two, our campaign success? And if a ship is taken out, or a runway can no longer generate sorties for a given period of time, the calculus of winning changes. And so I don’t necessarily believe it’s a cost versus cost.

Now that being said, the cost curve in getting to be – to more affordable solutions is absolutely paramount. Deepening the magazine of our warfighter, paramount. And we pursue all parts of technology to bring anything we can bring to bear to change that cost – that cost equation of how many interceptors does it take to take out a threat? Do you need an interceptor? Can you go left of launch in missile defeat? Or can you do non-kinetic?

Or whatever the right spectrum is, we, the services, we’re all – our partners – we’re all looking for different capabilities to bring to bear, and always looking for the cheapest way to effectively take the shot, but also get to the point where the warfighter on the ground has confidence in not taking a longer distance kinetic shot for maybe a non-kinetic shot. How do we – how do we make that all work? And it’s got to work anywhere, everywhere. Islands are different than Ukraine, is different than other places. Every different situation is
probably going to need a different combination of sensor, battle
management, and effector, given the terrain.

Dr. Karako: Well, shifting from kind of the strategy and all that to kind of your
priorities, the agency’s priorities. You talked about your vision. I
think last year, maybe year before last, MDA was kind of talking 2045
stuff. And you kind of alluded to, got to think about the future. I think
you have something coming up this summer, an innovation summit,
and you mentioned innovation just now. So what are your top
priorities? How does the far future and innovation fit into that? What
are you thinking about there?

Lt. Gen. Collins: Yeah, certainly. Part of that thinking big, we are looking long term in
where the threat may go, not wait to be reactive to what we find the
threats already fielded. And so there is an innovation summit that
we’re hosting next month. Shameless plug. (Laughs.) But, you know,
from an innovation perspective I think it’s going to be key. We, MDA,
don’t see the fight being the same fight that we set up today. That
very large ground-based radar, with a host of large kinetic
interceptors, that’s not – that’s certainly what we have today, and it’s
a very effective system – set of systems that we’ve shown and proven.

But that isn’t likely to be the missile defense system, the missile
defense enterprise we need in the future, as much more complicated
electronic warfare, much more complicated countermeasures, much
larger sizes, much different flight profiles, and depressed trajectories,
and hypersonic maneuvering targets, and all those different threats
come to bear. We’ve now got to look at all parts of the kill chain and
understand what is needed in that future. The sensing network – or
the sensing architecture needs to be different for the very complex
exoatmospheric scene. It has to be different for the hypersonic
maneuvering scene. And we’re in the midst of working towards both
of those. Battle management scale, and speed, and distribution of
everything – sensors and shooters – much more complicated.

We’ve got to make sure that we have the scalability and the capacity
within our battle management and our networks to be able to do the
fight anywhere, at any time, from any direction, in any altitude. And
then certainly the effector piece. Whether we talk non-kinetics or
kinetics, we’ve got to take a look at – and we’re in the middle of some
pretty large programs to look at new interceptors to take down and
counter some of these newer or much more complicated threats as
we move forward. But then also looking for other novel technologies
that could be brought to bear – non-kinetic, directed energy. Those
are certain areas that we’re looking at. It’s always been the it’ll-be-
here-tomorrow kind of technology, and it’s always been tomorrow.
We’ve made great strides over the last five, 10 years with the capabilities of our directed energy systems. And so we’re starting to look back at those from our threat set as we move forward.

Dr. Karako: Great, great. I wonder if you’d talk a bit about kind of your relationships and your priorities in terms of, you know, working with the services on warfighter support – your office is in the same building as SMDC commander – you know, both with the services but also with the combatant commanders.

Lt. Gen. Collins: Absolutely. Those relationships are just absolutely vital as we move forward, because we are a global agency that supports everyone. And so each combatant commander has a different sight picture of where they are, and what they’re seeing, and what they need. And whether it’s INDOPACOM or CENTCOM or Space Command, they have different requirement sets.

And so the engagement and interaction with those combatant commanders to understand their problem sets and what they really require is absolutely critical to us. And how those all get integrated together through the joint staff and also through the joint functional component command for integrated missile defense, JFCC-IMD, how those finally get integrated together into a prioritized set of gaps or requirements that we need to then focus on, that’s absolutely critical. That relationship is vital. And we have embeds in all those places to make sure we stay tight.

Services. The services operate our systems. They provide us capabilities. They are the true lifecycle force providers that have scalability and size and can do that. And so we – many of our systems transition to them. And so we have to be lockstep with what they’re doing and what they’re going, to make sure that we have the appropriate transition plans. As we’re ready to hand over, they’re ready to pick up.

And then, second, each one – as we talked earlier – each one has their own air defense or IAMD strategies and enterprises, or other mission sets that they utilize within the same weapon systems.

We've got to stay integrated with them such that we know what else they’re doing and ensure that we are an effective part of that. But we've got to stay synced with their plans. We've got to get – we've got to be on time. And we've got to be constructive to what they need, not counter or destructive to what their plans are.
Dr. Karako: Yeah, that’s right. I mean, you were talking before, the Army’s air and missile defense modernization alone is rising to $7 billion in FY ’27. That’s pretty – that’s a lot. And that’s a reflection of where the threat is. But is it fair to say that – whether it be through the IPLs, the integrated priority list, or the warfighter involvement process, that your relationship with the war fighters and the combatant commands, that’s regular and frequent?

Lt. Gen. Collins: It is regular; absolutely. And through those processes, through the IPL list that goes up to joint staff to bring us the JIPL, the joint integrated priority list, those processes are never ending, constant. Every week if not every day we are in communication with and working with the COMOs and the services. It’s paramount.

Dr. Karako: Great. Now, you’ve – I’ve heard you describe – you spent a lot of your career as an acquisition professional. And before we kind of get into the programs, the stuff that you’re buying, I wonder if you could talk a little bit about your philosophy as an acquisition professional. You know, what are the main care-abouts? How do you approach defense acquisition? And when you think about best practices and principles and good relationships with industry, for instance, what comes to mind?

Lt. Gen. Collins: Yeah, absolutely. You know, I’ll certainly, once again, use my go fast, think big moniker to kind of take us through this. Number one, the tenet of go fast – and, you know, fast and acquisition don’t tend to be used in the same sentence very often. (Laughter.) Unless there’s a “not” or “isn’t” somewhere in that sentence. And, you know, frankly, that annoys the fire out of me as a career acquisition officer, because I think the processes and the tool sets that we have can be fast. Risk aversion, people, can slow those down. And those need to be watched as we move forward.

Risk aversion has seeped into all parts of life, and certainly is a large challenge within acquisition as we move forward. So how do we get to the fast, maximize delegation, push it to the lowest level possible, and take off the strings and the shackles on just an incredible core of talented acquisition professionals that can get the job done, but sometimes need to – need to take two years out of their life to develop a host of documents to get through a meeting before they can move forward. Anyway, you can set up acquisition strategies to be more agile. You can set up contracting strategies to be more agile. Take those things off the critical path of you delivering capability.

You can design weapon systems better, more open, more modular, more agile. And, if you can, bifurcate hardware from software.
Hardware can take a while to develop a new missile, a new plane, you name it. But then you should get to a point where software should be able to go at a much faster clip. And if you can get to a truly software defined everything – software defined radio, software defined sensor, software defined network – then you should be able to really increase the acquisition tempo of your delivery of capability to the field.

OK, getting into think big, I think we focus on solving one problem at a time, and we maximize one problem at a time. And we don’t necessarily get to that designing agility into the system as we go forward. We put a lot of effort into really, really big programs, and then we defend those programs till they’re delivered. And then the moment they’re delivered, we need to immediately recap them, because it’s taken so long to develop the first thing. Smaller bites. You know, a baseline of agility is start small, deliver, learn, scale, and keep doing that.

Instead of one big delivery every 10 years, how about one small delivery every one year, if not faster, and much quicker? Get it into the field. Get it tested. Get feedback. Adjust it. And continue to grow. So but plan to do that forever. You’ve got to plan that there’s no end to this as we move forward. You’ve got to think big into the long game so that you’re always prepared and expect the change that’s required.

Dr. Karako: There’s a lot there. You mentioned earlier kind of a threat-based acquisition. You know, at the same time we’re trying to look over the horizon to the – to the far future. And so this is kind of a threat-based capability acquisition, or is it – threat basing or capability based, how do you think about that?

Lt. Gen. Collins: Yeah, I’m not sure if I know the difference, because I think how I address the threat is to bring the capability to bear. So the capability piece of this is to address the threat. And if they do something different in countermeasures, I’ve got to bring a capability to the field to counter those countermeasures. If they bring more of something, I’ve got to then bring a capability and a capacity to be able to handle that. And so I think those processes overlay each other.

And you’ve got to be tight with intel, tight with threats, tight with even wargaming where they could go, physics-based forecasting of where they might do that, and get that into your prognosticators that look. You know, this may be the worst thing they could do to us physically when we go forward. OK, let’s start. What would we do about that? Sometimes, if we wait for the threat to come out in intel, we may already be behind because we just didn’t – you know, we’ve
been surprised a number of times. But if we can combine intel threat based with physics-based forecasting, I think we can continue to try to stay ahead of the loop.

Dr. Karako: Great. And you talk about your bite-sized approach. And the agency was really built to go fast. The charter for MDA, when it was stood up, in contrast with BMDO, was created to centralize decision-making authority, milestone authority especially, in the person of the director. And the last update to the MDA charter, I believe, was in 2014. There was the Directive Type Memorandum from three or four years ago that kind of pulled some of that back. You’ve spoken to the press about kind of forthcoming updates to the charter. Your thoughts on that, and where that’s going?

Lt. Gen. Collins: Yeah, absolutely. The charter is continuing to go through the magical coordination and staffing process within the Pentagon. It is close to finalization to move that out. And it – while not going back to the original charter level of authority, there is a significant amount of authority that is going to be institutionalized within that new MDA charter as it wraps up this summer.

Dr. Karako: Great. We’ll look forward to that. The other thing that you said you talked about your acquisition philosophy was, you know, new things. The acquisition of new things, not merely the legacy systems. And yet, we’ve got a lot of this stuff, THAAD, Aegis, GMD, that’s been around for a while. And as a result, a decent percentage of your budget, color money and otherwise – and recognizing the color of money is a little bit different here – is going to essentially sustaining those systems. So how do you – how do you do that? How do you do so much more of the new while sustaining all this old, especially with the topline pressure, fundamentally?

Lt. Gen. Collins: It is certainly a balancing act. I always talk about our job as lifecycle managers is to ensure we have a capable and ready force at the right capacity, any day, every day, today and tomorrow, and how you balance readiness with capability capacity. They’re all interrelated. A better ready force has more capacity in the field, more capability, and the like. And so it is certainly a challenge. And over the years, we have had more and more weapon systems in the field that we have to sustain and take care of, while also modernize. And, frankly, it takes – probably just a little bit more planning out into the future.

The biggest draws on the funding are obviously the very large design work that we have to do – a new interceptor, a new radar. Frankly, you’ve got to think long term into how you phase those developments such that you can handle them in an order, if you’re
going to do a big hardware change. The software change, that should be capability pipeline based, and continually at a level – find whatever that level is you can afford, and then get the most capability out of that as you possibly can as you move forward.

Dr. Karako: Well, let’s kind of start with the programs and kind of work through them, and perhaps how that might be manifest. So again, GMD. This was – you spent the last couple years before coming as director focusing on ground weapon systems. How do you think about GMD today, and its ability to stay ahead of the quantitative and qualitative just North Korea threat? And I’m thinking in terms of the SLEP, an addition of a new missile field. What are the things going on right now, even before NGI, to get after that?

Lt. Gen. Collins: Absolutely. Ground-based Midcourse Defense, very capable system. Hitting 20, and still the only homeland missile defense system that we have protecting the States from – to include Hawaii – from an incoming ballistic missile. We track that readiness greatly. We are in the middle of service life extension program on a number of the oldest of those systems, of those interceptors. And continue to support that, to refresh both reliability, but some of those reliabilities bring a little bit more capability as well. So we keep working on that.

We're still bringing in new capabilities, such as we demonstrated in December of last year with our flight test GMD-12, FTG-12, where we had a threat with a medium-complex scene, if you will. And we launched a GBI out of Vandenberg, California to intercept. We demonstrated two capabilities in that. One was the three-stage/two-stage selectable launch, which was a new capability that was brought to bear. GBI was designed with three stages. And every GBI today uses all three stages. And the kill vehicle cannot separate until all the stages are burned. And so you’ve got to wait for three stages to burn before you can separate, to then close an intercept.

We did analysis and determined if we – in certain intercepts, if we launched it and only burnt the first two, stopped, and then separated from that, we actually pick up minutes of additional intercept space, decision space, to get maybe some previously un-interceptable scenarios as we go forward. And so we demonstrated that capability. We used the two-booster phase on that. Second, there was a kill vehicle update to the software for complex scenes. And we demonstrated that as well. And that worked very well.

Dr. Karako: Yeah. And that selectable stage moves to support shoot-look-shoot for instance, as well.

Dr. Karako: And then you mentioned the kill vehicle. This is sort of the older CE-1s, to moving to CE-2 or CE-2 beyond, that sort of thing, I imagine. Talk about the thinking behind the disaggregation of the overall GMD construct into several different contracts – SITR, Ground Weapons System, the NGI thing, and In-Service Fleet.

Lt. Gen. Collins: Certainly. When GMD first started and was given the go-ahead, schedule was paramount. And the concept was pick a prime, have them responsible for everything – the old total system performance responsibility, TSPR, as we used to – we used to call it. And they would control everything. And since that time, for the last 20 years, that has been the construct, with one prime. And we would always have to work with the one prime to do anything within the weapon system, whether it’s the ground system, whether it’s the kill vehicle, whether it’s the booster. You name it, anywhere within that.

And so over the last couple years, few years, as we’re getting ready to transition into a next-gen interceptor, and the future of the GMD system, we explored and chose to, instead of going through one prime, let’s go to the next level of work and go directly to – if we’re going to work kill vehicle business, let’s just set up a contract directly with the kill vehicle provider. Launch system? Launch system provider. And so that was part of the deconstruction. It brought more integration responsibility onto MDA to do that, to be able to kind of fill in that top layer that the prime used to.

We’re still in the middle of that transition, and it is working very well. You know, both from a rate and cost structure, but also from a – probably getting into why are we doing this? We’re learning a lot of things that we have been doing for 20 years that maybe we don’t need to do anymore. In some ways, it needed to completely crack the construct to be able to really understand those kind of things. And so those are savings. And those are money that can then go back into capability and capacity and readiness.

And so that’s really what came down to it, was to make us more agile and provide a little bit more control on our side of our destiny and how we work that. And it was really critical to have what we call GWS, our GMD weapons system, contract directly under MDA. They’re the ones that actually are part of helping us integrate NGI into the existing GBI – or, GMD system. Critical for us to have that not go through another way.
Dr. Karako: How’s the schedule for GWS and SITR?

Lt. Gen. Collins: Both are awarded. Both are in the middle of transitioning. GWS certainly turned on real fast, because they needed to very quickly get on top of NGI. And at that – when we first awarded it, we had two primes. So they had to work integrating two different NGI designs in. Now we’re down to one, but they’re key and all spun up. The SITR contract, which is more system integration test kind of things, that was – that one is – actually, just recently achieved the full manning that they needed to be at, and are working and supporting.

Dr. Karako: Yeah. So moving to NGI, it was about a month ago you did downselect on NGI. It was – it’s been five years since DOD cancelled RKV and the JROC kind of approved the NGI plan. So we’ve had a little bit of time here. How are you today, where you are today, thinking about the relative balance between schedule and reliability – because it’s got to work, got to get it right – and capacity. How are you thinking about those three criteria for NGI?

Lt. Gen. Collins: Yeah, absolutely. It is that – just that key balance of ensuring. We have a need set forth by U.S. Northern Command to have NGI in the field – start fielding by ’28. And that is what we’re shooting for and doing everything we can to ensure we make that date. Now, to do that right is we’ve now got to at all phases – through design, production planning, all of it – we’ve now got to make sure that we are very thorough, that we hold a high standard to the criteria for those particular reviews, and pass those accordingly.

Many programs get in trouble when – I call it traveling work. They get to a review, and they want to have it on time, so they have the review and take a bunch of actions. And those are liens for later. And then more liens for later, more liens for later. And then eventually, those kind of stack up into we find that there’s actually been a pretty big miss or a redesign, or something that’s got to happen late in the – in the cycle. We’re holding to the criteria, to a very high standard that we get through that. And if done properly, if we do our jobs, you can do both – meet the criteria, execute on schedule, and meet the war fighters’ delivery schedule.

And that is by far our focus for the NGI program. It is the cornerstone of homeland defense for the future. It is a completely different level of performance and capability, above and beyond what GBI is and has. And it is also designed for that 2035 and beyond threat. It’s got capability to get there and it’s got more margin, design margin and capability margin, to continue to grow into the future and evolve to where the rogue nation threat is, and what our nation needs.
Dr. Karako: And you’ve – I’ve heard you say in public speeches before that, you know, the NGI of 10 years beyond fielding is probably going to look different than the NGI that’s originally fielded. How do you think about that evolution? You know, you mentioned the importance of selectable stage, for instance. Different kill mechanisms. How do you kind of see that – recognizing we haven’t fielded one yet – how are you thinking about that, because you’ve already highlighted it as important?

Lt. Gen. Collins: Absolutely. Frankly, we – you know, we have a – we have a chief architect in all, that’s starting to look at where the threat’s going. We are starting – one, we’re ensuring that there’s the hooks into the program such that we can evolve into the future, that we have that growth potential into the future. And while keeping folks focused on executing the program today, we’re starting to have some other folks starting to think about what comes next.

Let’s think big beyond these next five years to NGI fielding. What comes next after that? And where and what – where could we bring more capability to bear within the design of NGI as we go forward? And it could be new technologies, or it could be just better using the technologies that we have on board, and using the margin that we have on board.

Dr. Karako: Gotcha. Well, another program within the ground weapons portfolio is THAAD, of course. Now, whereas SMs, Aegis, PAC-3, GBIs have had a lot of hardware evolution over the years, as well as software, THAAD not so much. Where do you see that – the potential for growth there? I’m thinking both on the TPY-2 side, as well as the – you know, some future THAAD interceptor as well.

Lt. Gen. Collins: Absolutely. We do have a flight plan for THAAD moving forward. First on the TPY-2 side, you know, we do use our TPY-2s differently, whether they be in forward-based mode to feed into the missile defense system or whether we have them in THAAD-mode supporting a battery there. We have been maturing TPY-2 along the way. We have – we have been bringing new capabilities to bear in that for different threat types as we move forward. And we will continue to do that with TPY-2, whether it be potential future hypersonic threats or others – or space domain awareness. We continue to grow the TPY-2 piece of that as we – as we move forward. While also focusing on the readiness of it, and making sure that it’s always available.
On the THAAD piece, the interceptor piece, the Talon is what the interceptor in THAAD is called, yeah, we’ve been buying the same configuration for some time. We have done some studies over previous years. And in this, in this budget, in PB ’25, we have a good amount of money to start bringing some new capabilities into the Talon we have today, and to expand the threat set that THAAD can intercept. Focus very much on – you know, now we’re talking regional fights. So regional fight, we very much are focused on a PRC or Russia threat set. And so we’re looking at the PRC threat set, and how and where can we bring more capability into THAAD.

And we’re starting to do that in this president’s budget. And we’re also starting to look and evaluate where the limits within the outer mold line of the current system – i.e., what and where could we go after this Talon? What potentially could come next in a future theater missile defense system?

Dr. Karako:

Yeah. You’ve already touted the Aegis operations in the Red Sea. I wonder, just give us your perspective on Aegis combat system. Aegis BMD evolution. You know, the Jack Lucas has put the sea with the AMDR. And, of course, you’re moving out on, yes, some derivations of the SPY-7 as well. But how do you think about that portfolio – Standard Missile as well as radar?

Lt. Gen. Collins:

Yeah. What a – what an incredible history of Aegis since the beginning. We talk Aegis as a missile defense system, when in actuality those – they actually have, I forget, I lost track, I think it’s 17 or 19 different missions that they execute out of – out of those ships. Missile defense being one of them.

And so we have a very unique partnership, and a historic partnership with the Navy, in the fact that they deliver the Aegis weapon system and then we have to bring in the ballistic missile defense part of it, and integrate it together into a capability on the ship as it goes forward. Just a lot of work, a lot of interfacing. We talk about relationships with services. That’s a key one, because we’re kind of both working on the same system to develop a total system capability for the fleet. That’s been paramount.

We continue to work to get more out of the SPY-1, the existing set of BMD ships. The Red Sea encounter, and how we’re rotating, learning from that, that’s just one example. But there’s other ways to get as much as we can. That still is going to be the – most of the BMD fleet is going to be SPY-1 ships for a long time. And so we need to make sure that we continue to get the most out of them.
We are really excited about the SPY-6. You know, I actually got a Masters in radar, so I am stoked when I see new radar capability being brought to bear. And the level of capability that’s brought to bear in today’s technology, whether it be the SPY-6 technology or the SPY-7 technology, absolutely fantastic. We’ve already brought in the base, the baseline 10 – the SPY-6 into some of our flight tests to learn. And had them track and discriminate and be part of – and simulate launches.

And so we’re already learning and integrating with them. And we are staying in lockstep with the Navy on the deployment of that system. But it shows the – it shows the flexibility and the agility of the Aegis Weapon System, because whether it be SPY-1, whether it be SPY-6, or whether it be a SPY-7-based technology – i.e., Japan or Guam – it can integrate those in as well. It’s a true weapon system that can take any sensor, integrate it in, and close the fight. And so that future is bright on the radar front.

On the SM front, on the Standard Missile front, SM-6, again, a partnership with the Navy. They buy the SM-6, we help bring BMD capability into that missile. Phenomenally successful. And today, the only interceptor that we have with hypersonic maneuvering threat terminal capability out there protecting our fleet. Increment two is out. Increment three brings new capability to bear. And next year, that should be fielded as well. And so that’s still – we work very tightly with the Navy. And our future with SM-6 is bright, as we continue to bring more threat capability into SM-6 to protect the fleet as we move forward.

SM-3, the IIA, that we just did recently an SM-3 IIA shot very, very successful. A huge increase in capability to the fleet to really bring to bear against a PRC threat. And whether it’s to Aegis afloat or whether it’s to Guam, SM-3 IIA is going to be the foundation for bringing that capability against the PRC threat going forward. And we will continue to grow and modernize and upgrade SM-3 IIAs as we move forward.

Dr. Karako: I do have to ask about the IB. That was, of course, used historically, as you just highlighted there. PB ’25 talked about kind of phasing that out, I guess, in favor of the IIA. South Korea is still interested in it. Secretary Del Toro went to the Hill and said, we need more IBs. How do you think about that balance, those trade-offs, again, that you’re under?

Lt. Gen. Collins: One, it was an extremely tough decision driven by the Fiscal Responsibilities Act. We weren’t the only people. Everybody, I think,
is feeling the pain from tough decisions that needed to be made. So looking forward, we have a challenge of capability, but capacity as well, for the fleet. And we have got to continue to take a look and figure out, how do we continue – we’re still – we’ve got IBs on order. We’re going to be delivering IBs for years to come, to continue to raise the inventory up in the fleet. The question is, what’s the longer term? You know, think big. What’s the longer-term capacity and capability the fleet needs? And we’ve got to get our hands on what that plan is to do that. And I don’t have that plan today, but that is going to be a challenge on capacity in the future.

Dr. Karako:

You were talking about the future. You were talking – you know, it wasn’t about a thing, a particular threat. You were describing characteristics: more maneuverability, all those sorts of things. And so that’s a transition to the future of, you know, so-called hypersonic defense. You know, MDA is the executive agent by statute for hypersonic defense broadly. You’ve got the GPI, Glide Phase Interceptor, thing moving out. There again, FRA. PB ’25 called for the downselect on that prior to PDR. And you testified recently at HASC – I think was HASC – the importance of thinking about things other than GPI.

And so, again, as the executive for hypersonic defense, what are the things that can be done sooner? Because that’s still a 2035 thing. What can be done sooner, whether it’s evolution of Aegis things, whether it’s evolution of the THAAD hardware, so on and so forth, because it has to be a comprehensive thing not just one particular box to check?

Lt. Gen. Collins:

Yeah. We have a lot of work to do to determine the capability box that we could potentially bring to bear. You know, my story on SM-6 and how we took a system that was already in the field and figured that we could bring Sea-Based Terminal capability to bear and bring hypersonic defense capability to SM-6, that was envisioned at the beginning of SM-6. We do need to sharpen our pencils, and we're beginning to take a look at where else in the system – on the interceptor side, where else in the system could we bring something to bear, whether it’s something within the Missile Defense System of today, or maybe it’s something not in the Missile Defense System of today.

I was the weapons buyer for the Air Force. There are other things that are being purchased by other agencies. Can any of those be brought to bear? If we really want to get after integrated air and missile defense, then we should maybe look a little – cast our net a little wider, to see if there’s some other things we can bring to bear to
bring some capability in the near term. You know, it isn’t going to
solve all things for all threats, certainly not looking forward, like GPI
will. Glide Phase Interceptor is a tip to tail designed system to
counter the threat set of 2035, not today. And so it is an important
program to get us where we need to, but it’s going to take some time.

End to end, new weapon systems aren’t created overnight. And so
that is going to be a very deliberate, focused on standards process to
get that new capability to the fleet first, and grow from there. But to
bring that long look capability to the hypersonic fight. We’ve been
tasked to think creatively and bring capability sooner – ’29, ’30. And
that is really going to take maybe some different style of thinking
than traditional start with a – start a new weapon. We’ve got to figure
out – it’s most likely got to be a weapon that already exists today.
What can we do to get the most out of it?

Dr. Karako: So when you think about schedule acceleration for hypersonic
defense capability, you’re thinking about something other than GPI?

Lt. Gen. Collins: I think in two lanes. I think, one, what is the safest, most reliably way
to increase or accelerate GPI, but still make it a fundamentally viable
program? You know, I could claim that we’re going to do it in ’28 and
skip all the testing, and then I would be a case study in acquisition
school. (Laughter.) So I want to – I want to increase that as quickly as
possible, absolutely. But then I also want to see what else we could
bring to bear, so that between now and then we’re better protected,
wherever we may be. Hypersonic weapons are being used today. And
the inventories of our threats are increasing in the years to come.

Dr. Karako: And they’re being used today. And we’re seeing them – seeing them
with lots of different sensors, as you talked about. But, you know, I
think the head of TMRC, Test Management Resource Center (sic; TRMC, Test Resource Management Center), George Rumford, was
recently testifying. He says, hey, we need more hypersonic tests,
whether it’s to calibrate and verify HBTSS, other aspects of PWSA,
and so on and so forth. What do you think about Rumford’s comment
about the need for more testing – whether it be flight testing, ground
testing, mod sim?

Lt. Gen. Collins: I completely agree with it. You know, having worked the offensive
side of hypersonics, where we didn’t have very many opportunities
to test and learn, and those first few tests – I know ARRW, air
launched rapid reaction weapon – the first few tests we learned a lot
and got a lot of press stories, but it took a while before we actually
learned and have had some successes since then.
Programs of record. You know, you may launch dozens and dozens of weapons, but on the hypersonic side we just have not been able to do that. Part of it is infrastructure limited. At the time, there was only one range we could use for a really long shot. And everybody wanted to use it. And so it was very hard to get time on the range. So infrastructure, absolutely. But you also need to just fund it. You have to decide to do it and do it. It's not uncommon for a program when it starts to plan to do a full test program, and then when times get tough cut out support equipment, cut out testing, cut out this, cut out that.

And, you know, completely off the cuff I would say many of those ended up having to test more in the long run, but they ended up paying for more test assets later at more cost. We need to get into a faster clip of doing these tests, especially of the new stuff, to be able to really wring out the technology. But also to start beefing up the inventory levels, the capacity levels, because, frankly, the hypersonics are too costly because we got mom and pops and small inventories so far. We've got to get farther up the cost curve, the efficiency curve, by investing in the capacity to be able to do those kind of weapons.

Dr. Karako: Did you see the new entrants in the hypersonic industrial base as perhaps providing a basis for more and faster clip of testing.

Lt. Gen. Collins: Yeah, absolutely. You know, we – certainly on the – on the Air Force side, we were – we were picking up some small businesses that were trying to get into the fight, which was awesome. Just incredibly innovative small teams that were doing phenomenal things. And then we’re doing the same thing in the MDA side. Some of the near-term work is actually looking at hypersonic targets, because as we get an interceptor we need a target. And there is commercial and venture capital space that are bringing hypersonic capabilities to bear, which is exciting because the cost of targets is like an order of magnitude lower. If we can get those to the point where they're delivering capability that meets what we need in that intersection, that is going to be very powerful for us because more targets mean we can test more. And that is going to only help us in the long run.

Dr. Karako: Gotcha. Gotcha. And targets is a hard piece of it. Moving to Guam, recognizing that – which is going to be a target of hypersonic things – (laughs) – moving to Guam, recognizing that the Army has the lead there, nevertheless, MDA has a pretty important chunk of funding, especially for MILCON. What’s your relationship with the joint program office there? What is your kind of lead in priorities there – whether it be from integration, JTMC is a candidate there, you have a test coming up, I think maybe in December this year, for instance?
Lt. Gen. Collins: Absolutely. Guam, as I mentioned earlier, you know, the IAMD, we should be able to go in anywhere and drop and, depending on the needs of that particular space, have an architecture that can tie it all together. Guam is an enormous test of that ability to do that. And so there’s really some different parts of it. You know, one, you know, Army’s going to bring their IAMD systems. All of those are going to come to the island and pick up different, different threats from different angles. We will pick up and bring capability to pick up the particular threats that have been allocated to us: no surprise, ballistic missiles, hypersonic weapons and such.

And so we have a sensor architecture that is focused on that, and focused on a PRC threat in that region of a lot of different threats. But then a key is going to be this command center that we’re building that will have all of the different systems together in the same building – Aegis; IBCS; ARRS; Command and Control, Battle Management and Communications, C2BMC; and the Air Force AOC C2 system. All that’s going to be in that same EOC, and we’ve got to integrate that together.

And we’ve got a plan and a strategy of bringing in first, kind of do what we do today where, you know, the swivel chair kind of approach. That’s how we bring those capabilities together. But then there’ll be a structured way of bringing in joint track architecture, integrated battle management. And that is going to be a future threat. First, we’re trying to get the capability on the island, and then I think it’s going to – it’ll be a longer term set of growth into how we can improve the integration piece of it as we go forward.

The joint PEO, under General Rasch, has got that responsibility to do the integrated battle management in that future. We are in lockstep. You know, you look at his program office, a lot of MDA people in that program office. We are together in working through how to integrate this together: We have a particular set of capabilities within integrating, and we’re teamed with General Rasch to help bring that to bear.

Dr. Karako: The radar formerly known as HDR-H for Hawaii, you’re no longer doing that. And if I’m not mistaken, the panels have kind of been repurposed for the Guam mission. I think it’s the TPY-6. How’s that going?

Lt. Gen. Collins: It is called the TPY-6. It is going well. We are utilizing the hardware from the original HDR-H on a rent-free, non-interference basis, to
bring panels to Guam. The first panel – we call it a TAU, a transportable array unit – the first TAU is finishing up testing because we want to get it on a ship and send it to Guam in the next month and a half or two. To get it to Guam, as you mentioned, we have a flight experiment coming up in the December time frame. We will be using one of those TPY-6 panels with a – with a VLS launcher, a vertical launch system launcher, the Aegis weapon system launcher, and launching an SM-3 IIA against a missile threat – a ballistic missile threat off the coast of Guam, to demonstrate our ability to close a ballistic missile kill chain from the island with our new TPY-6.

Dr. Karako: Great. Great.

Lt. Gen. Collins: And, again, a very sexy radar, is the TPY-6. (Laughter.) Let me just throw it out there.

Dr. Karako: All right. We’ll note that. You talked about your dedication to digital acquisition. I think you might be, you know, have an initiative on digital transformation, for instance. Another one of our CSIS missile defense colleagues, Masao Dahlgren, noticed that MDA has a higher percentage of your grant making awards for artificial intelligence than any other entity in DOD. I think it’s like 35 percent, or something like that. How are you thinking about leveraging commercial AI, leveraging commercial modeling and sim as part of your digital transformation efforts?

Lt. Gen. Collins: Yeah, absolutely. Yeah, transformation, as a whole, has become a big effort within Missile Defense Agency over the last six months. In fact, I’ve stood up a Transformation Task Force to really systematically look across the agency, in all parts of the agency, on how to transform. Beyond just digital, but also process, business process, culture, all of it as we move forward, since I think there’s a lot that we can bring to bear to increase the speed and agility of the enterprise, not just the digital. Now, a big part of that’s digital transformation.

I’ve got, you know, many assignments of depth into different aspects of digital transformation – whether it’s the old space days, or whether it was GBSD, or even lastly down at PEO Weapons at Eglin. Transformation is all about bringing value to the war fighter and the employee. And they’re the ones that define what value is. And that’s partly the focus of this Transformation Task Force is, how do we bring value to the warfighter and to the employee?

A lot of this digital transformation is not glitzy. I’ll put it – I’ll throw it out there. A lot of the uses of AI and ML, machine learning, is actually
not glitzy. It’s actually focused on the mundane, repetitive tasks that are bogging our employees down. And if we can apply that appropriately and remove that, they have more time to focus on the mission and value-added work for the mission. And we will get more done faster. So that’s number one. That’s, again, not glitzy.

On the weapon piece, on the models and sim piece, absolutely paramount that we start bringing today’s tools into how we do business. And that’s really all digital transformation is, is bring today’s tools to bear – whether it be model-based systems engineering to have a better mission thread or digital thread of the system, and all the interactions of all the systems, so that you can make better decisions earlier. The whole decide before you buy kind of thing, if you can get that right and get the right models and sim verified and validated in advance, you can make smarter and clearer decisions.

Now, break/break, we do this very well. We actually do models and sim very well. That is the underpinning of all of our architecting, all of our system of systems engineering, and all this models and sim, and with a foundation of ground test and flight test knowledge. We do that very well, but we could do it better. It is the system that we designed a long time ago that we do models and sim. There are new capabilities to bring to bear to better integrate that into an authoritative source of truth and tie it into a broader set of tool sets that we have, so that we can make even better decisions as we move forward. That’s all about this digital transformation as we move forward.

While AI and ML probably today can bring a lot to the business side of things, we are also, though, exploring that on the weapons system side as well. We have a lot of – you know, that sensors and fusion and battle management and decision making, yeah, we believe that AI can bring something to bear to make decisions faster. Time is so important to us in the missile defense world. When we talk seconds and minutes to make those decisions, every little second can count. And so we do believe that AI – and we are exploring AI and machine learning on how we do that better, how we test better, how we pull more data and more findings out of tests.

Yeah, I could talk the rest of the day on all we’re doing with digital transformation. But it’s not one trick only that solves this. It really is a comprehensive look at this. And by far, it’s not the panacea as well. There’s no digital easy button that we’re just going to click it, and sit back, and have a mint julep. We have really got to fundamentally integrate this into our system. But it doesn’t – it doesn’t eliminate the
need that we’ve got to still do our job. We’ve got to engineer well. We’ve got to design well. We’ve got to architect well.

Dr. Karako: Very sexy as well.


Dr. Karako: We’ve covered a lot. (Laughs.) Do have to ask you about space, in terms of, you know, how HBTSS is doing. But you’ve also made a point of mentioning in your testimony, you know, the cold body tracking problem. What are the differences between those? And what are your plans to get after the no-kidding RV, as opposed to hypersonic glide kind of a tracking thing?

Lt. Gen. Collins: Yeah. It’s a – it’s a great question. And, you know, I said it in testimony, our future of a really resilient and global persistent sensor network is going to be a space-based sensor network. It doesn’t obfuscate – or, it doesn’t eliminate the need, I believe, for ground-based sensors. I think we need a resilient combination of everything. But the – but what a proliferated – and new medium and geo-altitude – set of sensor capabilities could bring to bear is going to be pretty important for us.

On the hypersonic side, big challenge is as we’re looking up to the sky for a ballistic missile, the hypersonic missile has turned over and come back into the atmosphere. And we see it so late in the fight going so fast, it’s a really, really small shot window. And so instead of being down looking up to find a hypersonic, you really want to be high looking down to track a hypersonic. That’s what hypersonic ballistic tracking space sensor is all about, our HBTSS prototypes. Launched on Valentine’s Day. Finished turn on. Finished the early testing. And we’re getting ready for our first hypersonic test bed calibration flight within a week, where we are going to take a hypersonic test, a target, and launch that. And, for the first time, have both of those sensors tracking and in looking to see how they’re doing and how they could potentially close the fire control loop.

That’ll be the first. There’ll be another test bed launch later this year. But those are just key steps in our ability to prove out that we can close a hypersonic fire control loop from space. Key to the future. And we are in lockstep working this with the Space Development Agency. And they are already planning HBTSS-like sensors in their future tranches of the proliferated warfighting space architecture, to start to fill out that truly global hypersonic kill chain for us. And so that’s a pretty bright future for us, so to speak, as we move forward.
Dr. Karako: Great.

Lt. Gen. Collins: On the cold body piece now, as we talk about a much more complex scene, way more targets, way more countermeasures, way more complex scenes, we also see a need – you know, today our primary look is in the RF spectrum, looking up with radars. And we do some pretty phenomenal things with discrimination that way. We also believe, coming at it from space looking at it differently with a different set of sensors to do multi-phenomenology is also going to help us really increase our ability to hold any threat from any angle coming into the states, hold them in custody, and to be able to discriminate them well so that when we go to intercept we increase our likelihood of hitting the lethal object, not some, some type of decoy or whatnot.

Dr. Karako: I do need to bring it to a close, but just kind of – I can’t leave without asking you. First of all, Laura from DOD – I’m not sure who that is – put in a question asking, you know, you were in the news this week about a $11 million kind of, I’m sorry, but ABL, you know, return to kind of airborne laser capability of some – of some form. So MDA is getting back to space. MDA is getting back to lasers and other directed energy. And then finally, any final thoughts you’d like to talk about, working with allies?

Lt. Gen. Collins: OK. Certainly kind of teed on it at the beginning, where directed energy has come a-ways. You know, for a number of years back we stepped away a little bit and the department took over a broader set of directed energy investments in S&T activities. We now see that getting into a level of not just power, but also the overall size and weight of the lasers, whereby we do see a future. And we’ve had an independent team come and take a look.

And they’ve recommended that there’s some things that we could do. And so this money is the beginning into a foray back into an airborne level of directed energy. We will likely start, and plan to start more in the tracking side of things – tracking, characterization side forward. And then as the technology ramp that we’re seeing, as that comes to fruition, we may then – we will continue then to look at maybe potential lethal effects of directed energy as we go forward.

Dr. Karako: That’s great.

Lt. Gen. Collins: Allies, critical. We have a number of different partnerships, whether it’s early studies and design work of how to do missile defense or whether it is delivering capability through foreign military sales to partners, or whether it’s cooperative development. That SM-3 IIA, we
co-developed that with the Japanese. And just three weeks ago I was in Tokyo and signed the Cooperative Development Agreement with my Japanese counterparts to start the cooperative development of the Glide Phase Interceptor program.

And so we tie the missile defense enterprise together. And we support any and all partners that we can. Absolutely critical. April 13th was just one example. But we work with NATO, we work with all the COCOMs, many, many different partners to bring whatever capabilities we can come to bear, you know, to make their missile defense systems better.

Dr. Karako: Well, sir, this has been fantastic. You’ve been very generous with your time. You’ve covered a lot of waterfront. We got a lot of questions from the audience we were able to work in. So thank you very much. Any final thoughts before you take off?

Lt. Gen. Collins: One, thanks, Tom. Thanks to CSIS, to host this. You know, it’s not every day that people think about missile defense, unless you’re in Missile Defense Agency. And you certainly do. But it is a critical time. The last couple years just show, one, missiles are the weapon of choice, combined UAVs and missiles, worse, is becoming a weapon of choice. And we’ve shown that missile defenses work. They are effective. They are highly sought after by the folks getting shot at. And they’re going to be key to us saving lives and winning in the future. Missile Defense Agency, a great group of folks. We are thinking big, and we’re trying to go fast, and answer the call for our nation.

We’re very proud of what we do day-in, day-out. And we’ve been doubted for decades. And now the questions actually don’t stem around whether it’s going to work. Now it stems around, is it costly? Which is a good – it’s a good place to be in, because we know the system works. Now we’ve got to make sure that the enterprise becomes affordable. It’s a new missile defense enterprise today than it was.

Dr. Karako: Well, you’ve given us a lot to think about. And we’re a think tank. We’re going to have a lot to chew on here. And just clearly, you’ve got a very big job. So thanks to everybody for coming out. And please join me in thanking General Collins. (Applause.)


(END.)