

Center for Strategic and International Studies

TRANSCRIPT

Event

“Golden Dome One Year In”

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CSIS EXPERTS

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Kari A. Bingen: It's been one year since the Trump administration launched the Golden Dome for America Initiative in a January 2025 executive order. Since then, debate has swirled about the merits, feasibility, and scope of the initiative. I'm Kari Bingen, director of the CSIS Aerospace Security Project.

To have a conversation about the Golden Dome, I'm joined today by the Honorable Melissa Dalton, former undersecretary of the Air Force and former assistant secretary of defense for homeland defense, now a nonresident senior advisor with the Aerospace Security Project; Lieutenant General, retired, Dan Karbler, U.S. Army, former head of Army Space and Missile Defense Command, now a nonresident senior advisor with our Missile Defense Project; and my good colleague and friend Dr. Tom Karako, director of the CSIS Missile Defense Project.

So what has happened over the last year? What do we know? What don't we know? What are the key issues surrounding the initiative? And what should we be watching for in the year ahead? We've assembled a top-notch group of substantive experts today with policy, operational, and technical experience spanning military and civilian backgrounds, who, importantly, have worked across different administrations and can discuss areas of agreement and disagreement across the aisle. We will take audience questions, so please submit those online via the event page.

You know, Tom, for those of us – or, for those in our audience that may not be following Golden Dome or maybe tuning in here at CSIS for the first time, I think it's important for us to discuss what is it? What is the Golden Dome for America? And, perhaps, what do folks maybe misunderstand about the initiative?

Tom Karako: Yeah. Well, I think, frankly, the word "initiative" is a good one. And it was the Strategic Defense Initiative back in the day. You know, when it was first – it was 382 days ago when the Iron Dome for America executive order was put out. And I think we'll probably be getting into kind of what's been done and what hasn't been done. But it's important emphasize that it is – it's not a thing. It's not a program. It's not a single system. It's very much an initiative to, in the first instance, pull together what we have today in different and better ways, as well as develop new next-gen capabilities.

It's absolutely overdue. The threat has multiplied and proliferated in all kinds of different ways. The threat spectrum of UAVs and cruise missiles and ballistic things and hypersonic glide-y things, and, yes, bombardment from space as well has just exploded. And so I think in a sense while there's a lot of debate, as you talked about, in terms of

upsetting strategic stability, I think the threshold is just how much has changed on the threat landscape and the need to adapt and evolve our defensive posture, not to supplant or replace deterrence but rather to supplement it and to adapt to the new strategic environment, which includes a number of nonstrategic – or, excuse me, non-nuclear strategic threats as well.

Ms. Bingen: Well, and Melissa, you're a former assistant secretary of defense for homeland defense, so how do you look at this homeland defense challenge? And where have you seen the threat evolve over your time, both in government and out of government?

Melissa Dalton: Yeah. Thanks, Kari. And I completely agree with Tom's depiction of how fundamentally the scope and scale of threats to the U.S. homeland has changed over the last 10 to 15 years. And that really requires a different mix of capabilities and approaches to address those challenges, whether that's modernized missile defense systems or a modernized nuclear deterrent, counter-UAS systems, cyber defenses, space-based investments. It really runs the full gamut of what's going to be required to address the challenges ahead.

And within this context, the administration is making a deliberate choice in terms of how it defines and executes homeland defense, which is a bit of a considerable shift. They are choosing to make it more geographic, focused on this particular Western Hemisphere, rather than a layered approach that includes projecting power forward into regions around the world, holding the option open for targeted operations like we saw against Iran's nuclear facilities last year. And so, in making this shift, are we recognizing that most of the threats to the homeland do not actually respect geographic boundaries, whether that's missiles or cyberattacks, and again running the full spectrum there?

And if you consider that from a missile defense perspective, it's quite notable when you think about indications and warning, left-of-launch options, missile defeat, all enabled by the access, basing and overflight, and relationships provided by our allies and partners gives the United States the ability to neutralize threats abroad before they manifest here at home. And so it opens the question: If the United States is choosing to de-layer some of that forward power projection capability, are we circumscribing our ability to address threats before they manifest here at home?

Ms. Bingen: And, Dan, you know, is it needed? Is Golden Dome for America, is this kind of initiative needed?

Lieutenant
General Daniel L.
Karbler (Ret.):

Yeah. So Melissa really brought up a good point about they don't respect the – missile threats don't respect the boundaries. And we look at the use of missiles and drones/UAVs by our adversaries, it's normal now. And I think about, you know, my 37 years – or, nearly 37 years of being an air defender, you know, a good majority of the time we didn't have missile attacks going on all the time, country v. country. We certainly didn't have drone attacks. But now we look, you know, over the last 10 years just the normalization of missile attacks, and adversaries are using them. I mean, our missile early warning crews now are so practiced at missile – detecting missile launches and tracking them, whereas 10 years ago we just didn't – we didn't see that. So they don't respect the boundaries and they don't respect, frankly, the norm of don't shoot.

And so now we have got to be prepared for a rogue shot. Who's to say an adversary just might take – you know, one shot at the U.S. to test our resolve if China wants to invade Taiwan, for example, and see, you know, how do – how do we react to that? We've got to have a Golden Dome capability to give our decision-makers that decision space and the decision time to be able to react adequately.

Ms. Bingen:

Yeah. You know, and the framing that I think about it in is I would observe I think it's less of a radical departure from what we've been doing on homeland defense, but I would say it's a necessary evolution. And I put together a commentary a few weeks ago about this, and I – given your point on geography is no longer a sanctuary and there are so many different types of threats nowadays, including strategic threats that are short of nuclear that can reach the homeland on unconventional trajectories – whether it be air-breathing platforms, missile platforms.

And I think the part in this that sometimes I think gets lost is I – I think Americans would be a bit surprised at maybe how limited our missile defenses are, you know, and defense of the homeland is. And if you look historically, Cold War, much of our defensive posture relied on mutual vulnerability and the threat of nuclear retaliation. After 9/11 happened, where we just wouldn't imagine that an aircraft would be used to attack our country, we – and you had North Korea, Iran developing longer-range missiles – we put in place a limited ballistic missile defense system, 44 ground-based interceptors in Alaska and California. You had sensors. Some air defenses over Washington, D.C. But it's fairly limited when you think about all those different threats that are really here and on the horizon. So this is this new epoch of homeland missile defense that I think we need to get our head around.

I know, Tom, you've also written on this as well and talked about this is, like, our version of A2/AD, while the Chinese and Russians have had their version of anti-access/air denial capabilities for decades.

Dr. Karako: Yeah. I think that's exactly right. I think that's why it is so overdue. That we've kind of had our head in the sand. We've kind of been handwaving this problem away, thinking – maybe out of habit, out of hope – that it was an over-there problem. And I totally agree with everything you said about the need to have the forward-based capabilities, and working with our friends over there. That goes for Canada. It goes for Japan. Lots of other countries and partners as well. But, yeah, I think that's right. These are – you know, Dan, you said it, in a sense the threshold for use is so much lower than we might have thought about when – and back in the day, you know, there was no better indicator of a nation's nuclear – or intent to get nuclear weapons than a ballistic missile program. Well, now you see Iran shooting hundreds of ballistic missiles at a nuclear-armed neighbor, for instance. You see Iran shooting a bunch of missiles at Al Udeid, at American soldiers last summer, for instance.

Lt. Gen. Karbler (Ret.): Russian missiles, right? I mean Russia in the Ukraine, it is –

Dr. Karako: Exactly. It's that threat of nonnuclear strategic attack that you're pointing to that is – it's just ubiquitous. And that, I think, is – it requires us to grapple with this and to realize that if we don't change that we'll be behind the eight ball. And I think you also said it, Kari, that when we talk about the Russians and the Chinese doing this, like, oh, well, it just makes sense for them to have these thickets of A2/AD bubbles up and down. But for us, oh, this is something, you know, provocative and scary. No. I think it makes just a whole lot of sense to have this – it will ultimately be limited. Every weapon system is limited. Haven't met the Pentagon weapons program that is not limited. And in doing so, I think it will contribute to our broader deterrence and defense goals.

Lt. Gen. Karbler (Ret.): One other –

Ms. Bingen: And, Tom – go ahead.

Lt. Gen. Karbler (Ret.): One other thing too about the threat. You know, a lot of times we like to focus on the high end, right? The hypersonic, the nuclear field cruise missile that the Russians have. But let's face it, the adversaries still have thousands and thousands of just regular ballistic – analog ballistic missiles. And last time I checked, they didn't go into a big de-mil, you know, situation where they got rid of these things. So we have to be able to address the whole range of threats. Yes, the high end ones, but we

also just have to be ready for, you know, mass attacks by just stupid, regular, old ballistic missiles, because the adversaries are going to use those too.

Ms. Bingen: Right. And it is something short of having to rely on a nuclear response. And I think that's really the change, is to be able to have that in your pocket. You know, Tom, we mentioned at the outset it's been one year since that executive order was released. What's the progress today? You know, what do we what do we know, what don't we know about this initiative?

Dr. Karako: Yeah. Well, look, like I said, it's just – it's been just over a year. You know, it took about six months – there was an Oval Office announcement in May, of course, but it took about six months to get the four-star general in charge, you know, Mike Guetlein, to get him confirmed, for instance. And then you basically saw some drills being run. OK, what's the plan? What's the architecture going to be? What's the implementation plan going to be? Meanwhile, at the White House's direction, last year the reconciliation bill had just about \$25 billion – with a B – set aside for Golden Dome. Now, how much of that has been put on contract? And dollars are not real unless they're, A, appropriated and, B, put on contract to do – to build things and bend metal. So far, vanishingly little has been done.

But I think that's also mostly understandable. We don't have a lot of time to waste. We don't have any time to waste. And I'm hopeful that in the coming weeks, now that we're kind of on the other side of those big lifts, we've got 2,400 companies that are kind of spring loaded into this contracting mechanism ready to go, and so I'm hopeful that now we will begin moving out with probably rapid acquisition. That's the other thing that Golden Dome is. It's one of several experiments in defense acquisition that the Pentagon is currently undertaking with these direct report program managers, with kind of the whole JCIDS revisit, with the FMS and DCS revisiting, and with the PAEs – the portfolio acquisition executives. These are all kind of big experiments. We're going to see – you know, General Guetlein was the first DRPM put in place and he's going to kind of be a test case for this.

Ms. Bingen: And then, Dan, you know, you've commanded Army Missile – Army Space and Missile Defense Command. You're an air missile defender. You've been at STRATCOM.

So what's going through your head as you channel some of those old positions of what are these – what are they working on now? What are some of the things that you'd be focused on as they're nugging through the next several months or so?

Lt. Gen. Karbler: Yeah. I was really encouraged, first off, by the stand-up of JTF-Gold. So my old command, Space and Missile Defense Command, the second hat that the SMDC commander wears is the JFCC IMD, so Joint Functional Component Command for Integrated Missile Defense. That staff is out in Colorado Springs.

So they've really – what Sean Gainey has done is morphed that staff into the foundation for JTF-Gold, which is going to be the operational arm for the NORTHCOM commander to put in effect, you know, the day-to-day operational oversight of all these different platforms and elements that are going to fulfill the defense design requirements for the Golden Dome architecture.

With that, when we saw Forces Command – U.S. Army Forces Command go away and what's stand up – stood up now is the Western Hemisphere Command, General Gainey took the opportunity to kind of take the Air and Missile Defense Forces that had formerly been underneath FORCECOM and bring those underneath Space and Missile Defense Command. He took the 263rd Army Air and Missile Defense Command and brought that underneath Space and Missile Defense Command.

So you've seen him arm himself now with operational forces that he will have control over so now he has got the ability to meet the architecture requirements, the defense's own requirements that the NORTHCOM commander, General Guetlein, are coming up with without having to go through the Forces Command, without really having to worry.

I mean, you always have to worry about deployments to CENTCOM, but now he controls that Space and Missile Defense Command command in his JTF-Gold hat, controls those operational forces, and that's a – I think that's a huge win and it's really, really smart to have been done.

Ms. Bingen: And then, Melissa, I'm going to ask you to channel your old role in policy, but then also as a service under secretary, you know, what do you think is going through their minds right now? What are the policy issues that they're working through?

And then as a service that's under the DARPA, the direct report, what do you think they're working through? What kind of progress do you think they're making?

Ms. Dalton: Yeah, a lot of focus on this right now.

First, from a policy perspective, there's the question of what will Golden Dome actually defend. You know, there are many nodes across the United States and its territories that are important and vital for the nation, and being prioritized about how those will be defended to what level and how persistently are really important policy questions to nail down from the get go because that then drives the focus and resource application that follows and the technological design that also relates.

So getting that right at the front end is really important. That is also going to be highly political, so the communication with Congress is going to be key because inevitably these nodes of importance are in constituencies and you can imagine the debates that might unfold when it becomes clear what might be defended and what might not be, and for what reasons.

And so that constant dialogue with Congress and with state and local authorities to ensure that not just from a technical and operational perspective but from a policy and political perspective – all this is going to be knit together in a durable fashion – is quite important.

On the service side, there are acquisition efforts, as referenced, underway but there's also a bit of a balancing act right now that's needing to take place for the services in terms of how does the Golden bill – Dome bill add up relative to other modernization and readiness priorities that the services are trying to balance for right now.

When you look at the array of missions that the military is being asked to do, whether that's homeland defense, deterring aggression in the Indo-Pacific, Caribbean, Middle East operations, and the readiness deficits that all the services are carrying, big bills that are coming due, and as, hopefully, we get more information in terms of what the Golden Dome architecture is going to look like and what the costs are involved with that, that will, hopefully, help with balancing the books and what is actually going to be in the fiscal year '27 budget.

But a lot of focus on that right now.

Ms. Bingen: That's where the deputy – yeah, but you were always in that unenviable position –

Ms. Dalton: Yes. The DMAGs, yes. (Laughs.)

Ms. Bingen: – of having to figure out how to balance the books.

Ms. Dalton: Yeah. Yeah. Yeah.

Ms. Bingen: It's really hard. (Laughs.)

You know, that – but that reminds me, this – there are – there are big debates on this ahead. There are some major, you know, policy issues you touched on, some operational challenges, technical challenges. I'm going to try to channel my old – you know, the old aerospace engineer in me. I'm going to come back to you, Melissa. Can you unpack a bit what are the debates that we're going to see on this? I mean, you did work in a – in a different administration. You know, how do you think others are looking at this issue? And what do you think some of those debates are that we should anticipate? And how do – how do we just constructively help, you know, inform those debates?

Ms. Dalton: Yeah. So I think the cost considerations are really important to be able to be clear and transparent about. And you know, the preface to that has to be this is the architecture, this is why it's important, getting back to the why, and then the how, and then how much it's going to cost, being able to break that down in terms of short term versus long term. There are certain political objectives that are important for this administration to hit in terms of timelines, but then there's the operational and technical realities of how long it's going to take to build these. So that can also help in terms of building a broader base of support that can be enduring for this program if it's broken perhaps into what is achievable in the next two to five years; what is going to take longer, over five to 10 years; and then what are the cost considerations that underlie that that can be methodically planned for.

Then there is a set of strategic stability considerations that have also been raised by colleagues on the Hill that I have heard. And you know, we also hear this more broadly in the policy debate: Will the fielding of Golden Dome prompt strategic stability concerns when it comes to China and Russia? And here I think it's important to anchor back to the threat environment and where we have seen China and Russia develop their own strategic and non-strategic capabilities over the last number of years, to include space-based capabilities.

Ms. Bingen: And you wrote a piece on this, right?

Ms. Dalton: I did, yes, with Clayton Swope, a few months ago that lays out what are the risks and opportunities from a strategic stability perspective of fielding Golden Dome.

You know, where we landed is that it actually can open some doors, potentially, for reframing dialogue with Russia when it comes to their strategic weapons, their nuclear and novel capabilities and space-based capabilities that they've been fielding; and open the door, potentially,

with – for dialogue with China. You know, at minimum starting to build some of those crisis-response and management mechanisms with those two countries is vital as each country continues to build out its inventory, that currently we don't have at our disposal. And so this could be a great forcing function to open the door to those types of talks.

Ms. Bingen: OK.

Go ahead.

Lt. Gen. Karbler: So, Kari, I want to – I want to talk a little bit on what you talked about for policies and authorities.

So we have got to open up the aperture on authorities, and I would just use the most recent example where I think we've failed miserably. And I don't have the details about the drone/balloon incursion over El Paso, but I'm fairly certain that whoever engaged those targets had approval to do that. You know, as an air defender we don't just willy nilly just pull the trigger on something. But, yeah, I hear now the FAA came out and they, you know, oh my gosh, shut down the airspace for 10 days around El Paso. We're going to have to – we're going to have to figure out the authorities. And we're going to have to give authorities at the right level, at the right time, in the right manner so that we can execute engagements if needed. And we don't always have the best indications and warnings, so sometimes you've just got to be able to execute immediately because something pops up and you've got to address it before it – before it strikes the assets. So whatever policies are in place have got to empower and push down the authorities to the lowest level possible so – again, so we can effect those engagements rapidly.

I was just – the other thing, too – and Melissa talked about, you know, the political side of the assets, right? So in Army air defense, we go through our – when we develop our defended asset list, we – CVRT it's called: criticality, vulnerability, recuperability, and threat. How critical is it to the mission? How vulnerable is it? How much can you recuperate it? And then how likely is it going to be targeted? What I've been coaching some of – some of the folks on that I talk to is it's CVRTP, which is the political piece, because you can have the best analysis in the world and come up with your prioritized defended-asset list – (laughter) – and there's going to be a P in there that's going to potentially alter the racking and stacking of the – (inaudible) – for the defended asset list.

Dr. Karako: Well, I'll say a couple things. First of all, you beat me to hitting the El Paso comment there. But I'll just say that the fact that it took us that long to kind of react to that, that's not a good sign. I remember when I first came to CSIS over 10 years ago, one of the first things – one of the

first kind of roundtables I went to was FAA versus DOD on policy issues, right? We have seen this coming for a very long time. And there – you know, this is one of my little comments about the executive order, is it wasn't a whole of government executive order. It was directed to DOD. And so they need to be – we need to be looking for those outside-of-DOD entities to make sure everybody is, I would say, seized of the threat – seized of the urgency as much as it as it is appropriate.

So, having said that, it's absolutely imperative to hit the political or policy issues. This is, frankly, the reason – one of the last pieces that I wrote was called, you know, start talking about Golden Dome. Because if you don't persuade people what this is about, it's never going to get built. But having said that, what I really don't want to get into is kind of the NIMBY issues of either not wanting effectors in my backyard or wanting them for my city versus somebody else's city. And this is where I think we need to – you know, some things will remain a secret. And they should be. I think that there's opportunities for different ways to approach this problem that don't just sort of consist of big Fort Greelys that are super obvious where everything is. You know, when Ukraine disperses its counter-UAS capability or its air defense capability, they don't tell the Russians where they're putting everything. And so I think there is a – as we think about North America, as we think about the homeland a little bit more operationally, as opposed to a sanctuary, we're going to have to think differently about that as well.

Ms. Bingen:

And I'll just add a technical and engineering part to this. Yes, I'll nerd out for a moment. (Laughs.) But, you know, I don't want to downplay how technically complex Golden Dome is. At the same point in time, I think, Melissa, to your point earlier, I mean, if you can break this down into manageable chunks or phases over time, it becomes much more feasible and doable. So, you know, if we think about the near term, over the next three years, assuming you can get money flowing on contracts and actually start buying systems and interceptors, you're largely looking at what is the kit I have today? Maybe I make some modifications to it. But it's largely now an integration, a networking, a battle management, command and control challenge. How do you stitch all those pieces, those sensors, together? Then I think the longer-term – and you can field something that actually meaningfully improves homeland defense. Then that longer-term horizon is more space-based interceptors, technology development that lowers the cost per shot, some of these other, you know, maybe harder problems. But take it in chunks.

The other thing that I'll throw out on the space piece, because I also want to get everyone's read here, is the lightning rod really has been space-based interceptors. I think the technology has evolved quite a bit since the '80s, and Star Wars, but even in the last 20 years – there were

a few different studies done in the early 2000s. And at the time, you know, the assessment was this is technically feasible, but the math – the economics don't work out. At the time, in the early 2000s, the cost to launch was so expensive. We've driven that down now in order of magnitude or two. You know, the amount of times that you can launch. I mean, SpaceX has blown that out of the water, where they're launching 150 times a year. And we can mass produce satellites now in ways that we never could 20 years ago. So, I mean, I think there are going to be big policy issues to think through, but technically I want to go back and at least challenge those assumptions, because I think it's changed very much. And then that opens the door to just different ideas of what we can do on orbit. But, you know, I'd be interested in any of your takes on the SBI issue.

Ms. Dalton: No, I think that's right. And the chunk approach, if that's what we're going to call it – (laughs) – is beneficial because it helps build confidence in the approach over time. If you're building out that architecture, and then you introduce the more technologically sophisticated elements that are going to take more time to develop and field, you're building a momentum as you go. It also opens the aperture for being able to evolve as the threat evolves. So, you know, this underscores the importance of the open architecture system to allow for some modularity and adaptation, as we understand more about the threat and as it evolves.

Lt. Gen. Karbler: And, Kari, you talk about, you know, launch, right? Launch is cheaper. Launch is cheaper. You know, we've never built anything in space to economies of scale, right? It's always been kind of unique, one-offs or two-off things. I believe that when we have the space-based interceptor solution, we start building those out to the quantities that start bringing the price down and, oh by the way, taking advantage of technology. I think some of the estimates that you see out there, you know, where it's, you know, trillions of dollars is not taking account that, hey, there's technologies out there for the interceptors that is not beholden to the old way of doing business. You add that in with the economies of scale that you get when you start to build out the scope, hopefully then you'll see, you know, the costs come down.

Ms. Bingen: Tom, can you address the cost issue?

Dr. Karako: Yeah. So back to the Golden Dome reconciliation bill funds. You know, that, again, almost \$25 billion that we charted had, I think, it's \$5.6 billion for space-based interceptors, and \$7.2 billion for space sensors. So, you know, that – the word was “accelerate” in the executive order for the space sensors in particular and, ye verily, that's what is most needful to be done.

Having said that, I think we will get to not just proliferated space sensors, but, frankly, proliferated space fires of various kinds, of which space-based interceptors for ballistic things and space-based interceptors for hypersonic glide things are a subset, and only a subset. But I think it's real important that, again, not only is this not the Soviet Union in the '80s or the ex-Soviet Union in the '90s. This isn't and shouldn't be framed as GPALS 2.0, right? Global Protection Against Limited Strikes. And I think here, again, the explanation, the why, the big idea here just needs to be communicated. And I think there is a very compelling case for talking about the logic of space-based intercept of various kinds against, frankly, limited attack.

Back to that – not just, you know, the non-nuclear strategic attack, but also just limited – even limited nuclear coercive attack, for instance. That you can – you can contribute meaningfully and raise the threshold – you know, the threshold for use has been lowered, as we talked about. But you can raise the threshold for use by having enough capability to meaningfully affect an enemy's calculus. And I think there's goodness to that. And we don't have to – the metrics doesn't need to be a thousand ICBMs that we have to defeat. It may be a much, much smaller number of different kinds of threats. I think just getting that message out would be very helpful.

Lt. Gen. Karbler
(Ret.):

And we have the strategic return. I mean, the reason that we have our nuclear forces is to prevent exactly what you talked about and deter that.

Dr. Karako:

You know, I think back to Ash Carter. I think it was Ash Carter who said our nuclear turn is the bedrock, or the foundation. Various secretary of defense have said that. But, you know, in air defense land in Oklahoma, it's also tornado alley. And a foundation is what's left after the tornado takes the house. We need to make sure that we don't just have the foundation. We got to keep the house intact from these other non-nuclear things as well.

Ms. Dalton:

The other element of the space-based interceptor conversation that I think is important is how this fits into the context of the Space Force's evolution of its doctrine, the role of offensive space weapons, potentially, and what that portends for the future of warfare, and how the joint force interacts with the Space Force, how those capabilities are integrated into operational concepts and deterrents over time. I know CSIS is going to be undertaking some work over the next year in this regard, but it raises a lot of important questions beyond Golden Dome in terms of the role that space-based weapons are going to play in the future of how we fight and defend the homeland, and deter aggression abroad.

Ms. Bingen: That's a great point. And even on – back on SBIs too – is I think we have to remember this is a layered defense system. So we're not asking the space layer to do it all. They would do some of it, and then if they miss you have other layers – airborne, terrestrial layers – that can also take shots. And then the other piece, Dan, I want to pick up on your earlier comments on integration. So much of this is just going to be an integration challenge of actually, to your point, stitching together all of these different sensors, fusing the data, making sure that, you know, one satellite that detects those incoming missiles, the next satellite or sensor knows that those are the same missiles, and can track it all the way through.

And then, how do you do that massive orchestration, like we're probably seeing in Israel vis-à-vis Iran, or in Ukraine. You know, how do you allocate defensive assets, interceptors, to incoming threats? And doing that all at machine speed. So that requires a lot of testing, but, you know, I think the technology is there for us to do that. And, I agree with you, I think some of the harder challenges then are going to be the policy and the cultural challenges of how do you integrate across authorities, how do you integrate across services. (Laughs.) Yeah.

Lt. Gen. Karbler (Ret.): Yeah. I just – you know, we actually have little Golden Domes in Bahrain and Qatar and areas where we have U.S. forces already deployed: Aegis, THAAD, Patriot, counter-UAS systems deployed taking intercepts so that – you know? Now, the scope and range and geography of the U.S., obviously, is bigger than Bahrain or Qatar, but we have demonstrated the capability to do it. And we've been attacked, and we've demonstrated the ability to defeat those attacks. So it's there; we just – frankly, we have to move off the dime a little bit, to Tom's point about the public discourse.

If I could just share a little history, my father-in-law was the driver for the ARADCOM commanding general back in – when Sentinel and Safeguard were being deployed. And he told me that they had this road show that would go out to the different areas of the United States. And I'm not quite sure what kind of mockups they had, but they would go and bring this road show out to the different areas around America to educate the public on what was going to be set up in their backyards. And to this day you can drive around the U.S. and you see some of the old Nike sites and some of the old Safeguard sites around there.

So there's got to be some public education. I think that this is kind of the more mundane and arcane, but all this – all these platforms, all the equipment's got to go get set up somewhere. So there's going to be some

local governor or local mayor, city council, whatever who's potentially going to have a slab of concrete or slabs of concrete. Well, no better way than to talk about – you know, no better way to talk about it than: Hey, this is – this is going to create some jobs for you. We've got to put some infrastructure in here because there's going to be some Golden Dome platforms that are going to get set up in your area. And people have got to be willing to welcome that in their backyard.

Ms. Dalton: To that point, you know, in parallel we have the modernization of the Sentinel – today's Sentinel program – (laughs) – the ICBM, and the need to coordinate at the community and base level to ensure that there is that level of bottom-up support for that initiative when it's been, you know, 60, 70 years since we were digging holes in U.S. states.

Lt. Gen. Karbler (Ret.): Yeah. Good point.

Ms. Dalton: So perhaps there's an opportunity for some shared lessons learned in terms of the best practices of that community engagement that could be borrowed from Sentinel.

Lt. Gen. Karbler (Ret.): Yeah. For sure.

Ms. Dalton: Yeah.

Dr. Karako: I think – I think there's an opportunity here that, you know, the phrase "missile defense" has so much baggage attached to it. And I think that there is a different perception, for instance, of the phrase "air defense," or of "countering drones" and things like that. I think people get it. Like, the drones and the aerial threats are just so ubiquitous that, like, well, why wouldn't you want some kind of defensive capability there? So I think really emphasizing on, again, the lower-tier stuff, which is, you know, very much the garden variety, ubiquitous threat everywhere is going to be important for the messaging, and frankly steering away from some of the really high-end space-based, ICBM, hypersonic – hypersonic stuff.

I want to come back to the integration thing, however, which is pulling together these things and making them work together is no small undertaking. And this is – you know, several years ago the Biden administration kicked off the extremely important defense of Guam effort, and at the time it was described as the perfect air and missile defense challenge. Well, guess what? And the reason was in these challenges we had to take THAADs and Patriot/IBCS and Aegis and some other systems and figure out how to get them to talk together so

on a very bad day, when Guam is hit by a complex and integrated Chinese attack in their backyard, we could – we could do so efficiently, for instance.

Well, take that over a much broader area, or at least over a number of bubbles across a broader area, and that's what you have the integration challenge for Golden Dome. That is a big deal. That's why it's not just an integration challenge; it is an integration challenge. Which is, it's kind of in some ways the perfect – the hardest thing for JADC2, for joint all-domain command and control of various kinds, because, you know, our forward operating bases are defending – you know, in Bahrain and other places like that, it may be just Patriot – (laughs) – and maybe a handful of dogs and cats, but you're not necessarily reliant upon all these other things. So it is – just getting that right, the challenge of that can't be underestimated.

Ms. Bingen: Technologically, I think we can do it.

Dr. Karako: I do too.

Ms. Bingen: Here's –

Dr. Karako: (Laughs.)

Ms. Bingen: You know, one of the things I think we'll have to also just watch here is, you know, you have the traditional defense contractors; you have these upcoming, upstart, you know, emerging technology companies, nontraditional companies. We're going to need both. And I just can't stress enough, you know, you have these traditional companies that know this mission so well. They've been doing it for decades. I mean, there are so many nuances and quirks to how these interceptors work, the seeker – I mean, all of the stuff that you know so well. But then pair that with these companies that have come up that know software, that know how to orchestrate across mass inventories worldwide. How do you marry those two together for national security impact?

Dr. Karako: How does the Uber app find, you know, the most optimal driver – something, you know, of similar scale and sophistication for what's the optimal shooter for a given threat.

Ms. Bingen: So if I can incorporate some questions here. Dan, I want to pick up on your comment on little Golden Domes worldwide.

Somebody asks about how are the novel technologies of Golden Dome being tested elsewhere. There's a mention here of Ukraine. We talked Israel. You mentioned Guam. Is there a pathway here to test, you know,

some degree of – a scaled part of Golden Dome in some of these other areas or are we learning from those battlefield uses of air and missile defense every day?

Lt. Gen. Karbler
(Ret.):

For sure we're learning from the battlefield. I know the schoolhouse at Fort Sill, you know, they have a whole lessons learned team that's pulling lessons learned out of Ukraine, out of – from the Middle East and I know they apply those across the air defense force.

You know, if you talk about counter UAS testing, you know, the – used to be the JCO, now JIATF 401, hosts a whole testing series out at Yuma Proving Ground for the folks who basically show up and show us what you have, and I think that we've gotten a lot more dynamic in our ability to rapidly, you know, show up, test, and then get the best of breed out to our soldiers. So I'm kind of heartened by that.

One other testing that I kind of harp on whenever I get a chance being a former ATEC commander is we need to fix the testing – how we do testing. We can no longer afford the time where industry tests everything, then throw it over to government, now you're going to go test it and many times it's the same tests.

We've got to marry up industry and the government and test together, trust each other that we're not going to blackball industry if they fail the test. Industry's got to – you know, or government's got to trust industry that, you know, they're going to put their best foot forward so that we can shorten the timelines to meet the secretary of war's desire to, you know, reduce the acquisition timelines, and testing is a big piece of that.

Ms. Bingen:

Yeah. Another question here. This is the strategic stability issue so, Tom and Melissa, maybe I'll throw this your way. But the person writes, the United States withdrew from the ABM Treaty – the Anti-Ballistic Missile Treaty – partly because nationwide missile defense was considered destabilizing during the Cold War.

So the question is what has changed either technologically or strategically that makes a large-scale homeland missile defense shield stabilizing today rather than destabilizing. So how do you prevent it from triggering the arms competition that it is meant to defend against?

Lt. Gen. Karbler
(Ret.):

Well, I think there's a lot – I think there's a number of assumptions that are probably implicit in that formulation. You know, one of the challenges of insufficiently explaining what Golden Dome is and the concept is it's something of a Rorschach test and everybody carries around with them some kind of idea of what the Golden Dome is, and I

think the question had some words to the effect of large scale nationwide.

Well, maybe it is and maybe it's not. You know, Ukraine has to make decisions every single day about where they're going to put their air defenses, what they're going to defend, and what they're not going to defend.

Those are – those are tough decisions. We will have to make those because the beginning of wisdom here, as we've said in countless CSIS reports, is that you can't defend everything and so you have to – do you peanut butter spread everything and not defend anything well or do you, no kidding, pick a few things to defend and rely upon, you know, the threat of retaliation of one kind or another, conventional or otherwise, in an event of an attack?

I think you – I think you have to do that. And so, frankly, I don't think that it is going to be as large scale as some of the public commentary and reporting would seem to suggest. I mean, you're seeing, well, it's going to cost \$3 trillion because if we had perfect defense of every spot in North America – you know, it's not going to happen.

That is not going to happen. Congress is not going to approve \$3 trillion for Golden Dome, and so I think thinking about it in a much more bite-sized chunks or bite-sized pieces, which is what is actually going to get built, what is actually going to get fielded, what Congress is actually going to appropriate and what will actually be contracted, we need to stay in the realm of reality and not the realm of phantasm here.

And that's OK. That's a good thing. So I don't – I don't see it as nationwide defending everything, super large scale; I see it as, unfortunately, if anything, going to be far more finite and far more limited than perhaps we might want or expect.

Ms. Dalton:

Agree with everything Tom has said. I would only add that it is incumbent upon the United States, or any actor that is introducing new technology, to be clear about what our intentions are at the same time. And so particularly pertaining to the space-based interceptors, but perhaps also from a comprehensive sense of if you bring all these pieces together in the architecture and what is the U.S. intention for that, we need to be clear in terms of our aims, whether it's through private or public messaging.

Lt. Gen. Karbler
(Ret.):

So one thing that should be nationwide, though, is access to data, right? The Golden Dome operators, the planners, have got to have access to vast amounts of data. People are going to have to bring the data shields

down, whether that's shipping information, airspace information, intel, you name it. We've got to pull the barriers down so that across commercial, private, industry, government we are sharing data broadly and widely nationwide, because that will help improve our – I think that'll help improve our planning and execution, sustainment, you know, the connection, you know, all four realms of the Golden Dome mission. So that would be nationwide.

Ms. Bingen: Yeah. And I would just point out, on the arms competition or arms race piece of this, you know, if you look across the last 20 years we've been pretty steady from a homeland defense perspective. You know, 44 GBIs, 44 ground-based interceptors. We've been restrained in our nuclear efforts. We've been modernizing. The intent was to replace what we have, as Russia and China's nuclear forces have grown. But what have Russia and China done over the last 20 years? They've gone asymmetric, right? So the reason we're here having this conversation is because they sought other ways to try to reach the American homeland.

Conventional missiles, hypersonics, orbital bombardment systems from space, underwater vehicles – I mean, other ways to reach our shores. And that's the part that I think is different. That I don't think we only want – the only arrow that we would want in our quiver is a nuclear retaliation. We need defense – as long as we have the technology and the cost – we can afford it – there are other ways to protect ourselves besides just solely relying on nuclear retaliation.

Ms. Dalton: And China has built its nuclear arsenal at the same time.

Ms. Bingen: That's a great point.

Lt. Gen. Karbler (Ret.): Yeah. Yeah. Chas Richard, right? Breathtaking. Breathtaking –

Dr. Karako: And their air and missile defenses up and down the perimeter.

Ms. Dalton: Yeah. Yeah.

Ms. Bingen: So someone asked here about NATO. NATO as a burden-sharing partner. So let's open the floor to what role do we think the allies will play in a golden defense initiative?

Dr. Karako: Well, I would, again, tout the fact that Canada was mentioned in the Oval Office thing last May. I think that's appropriate. Canada's committed, I think, \$40 billion Canadian over some period of time for modernizing the north warning system. They were – we were kind of talking together about what kind of long-range detection or domain awareness we

would do. I think they basically got tired of waiting for us and they're moving out now with over-the-horizon radars of their own, to which I say, great. So I think it's – frankly, President Trump was right to flag them, and I would say commend them, for their necessary involvement here.

Look, you look at a map and it's – there's a lot of land over the top of us, between us and Russia, between us and China, that is – that gives us defense and depth. And that we should be absolutely – this is the reason NORAD has been there for many, many decades. And partnerships, whether it's on Aegis-capable ships with Canada frigates, or F-35, or OTHRs, that's all for the good. It's going to be part of the system. There's probably utility to having non-ballistic sensors and things in Greenland. And I think that conversation is appropriate to have. We've been having it in a very peculiar way, but there's enormous benefits to having all kinds of forward-based sensors as well.

So the executive order called for an Allied and Theater Missile Defense Review. I think it would be helpful to get that out there, and look at our allies in Japan, and Australia, and all across Europe. They're moving out on air and missile defense like we've never seen before. Germany, for instance, getting Arrow 3, the European Sky Shield Initiatives, all over the place.

Lt. Gen. Karbler
(Ret.):

You know, the executive order also calls for left at launch. Well, the launch isn't taking place in CONUS. It's taking place where all of our allies are at. So those different accesses that they would be able to provide to us for any kind of left-of-launch capability that we might want to employ, that will all reside on their soil, not ours.

Ms. Dalton:

As long as we have the forward projection power to enable it, right? Yeah. (Laughs.)

Ms. Bingen:

OK. So we're here today, because we're talking one year in. What are you watching for? So that when we all come back next year and we're two years in you all said, OK, man, they're making some good progress?

Lt. Gen. Karbler
(Ret.):

I'm looking for maybe some initial demonstrations or tests, right? The president kind of put the marker down, right, three years. So what kind of demonstrations or tests are going to be coming forward? You know, I think that that will go a long way towards helping educate the public. And, again, I don't know, you know, how public or private those tests will be, but helping educate the public, get congressional support for different successful test series as we come up to meeting the president's deadline.

Ms. Bingen: Tom.

Dr. Karako: I'm going to look for contracts. And I'm talking in the next weeks and maybe a couple months that if we don't begin to see contracts I'm going to start to get a little more nervous. You're definitely going to see some tests and that sort of thing. But I think, more fundamentally and more politically, you know, in the best way, what we need to see is widespread and bipartisan understanding of the basic idea of what we're trying to do here and how it contributes to deterrence in a way that makes sense. Because, you know, the politics change, the makeup of Congress changes over time, all that kind of stuff.

Golden Dome should not be political. It should not be a lightning rod. The threats don't care whether you're blue or red, which state you're in, or what have you. The threats do not care at all. And so this kind of capability development needs to be sustained. And for it to be sustained, it needs to, first, persuade. The most persuasive thing is the threat itself. This should not be that complicated. But I will be looking for greater and more widespread understanding. And, frankly, the absence of, let's just say, really misinformed, and misleading, and dumb comments about what it's - you know, the phantasms of what it might be.

Ms. Dalton: I'm going to be looking for alignment across four ticking clocks. One is the political clock. This is a top presidential priority to try to get done in this term. There's the technical and acquisition clock. We talked about the chunks. How do you get to IOC? How do you get FOC? What may take five to 10 years, how you square that? There's the operational clock. How can all the layers envisioned be integrated, as we've discussed, and knitted together to pace with evolving threats? How is it going to be implemented domestically? How's it going to be implemented internationally? And what are all the relationships that are going to enable that?

And then there's the resourcing clock. So beyond the cost question that we've laid out, can an uncertain appropriations process and ad hoc reconciliation bills get us there in terms of delivering the resources that are needed to fund Golden Dome programs? How much risk does the executive branch and industry have to assume, given that dynamic? And then, on the flip side, from a congressional perspective, what is the execution throughput and transparency that is going to be necessary from the executive branch and from industry in order to sustain congressional support through potential changes of power? So aligning those four clocks is going to be critical in the year ahead.

Ms. Bingen: Yeah. And mine was very similar to your two. It's for Golden Dome, or whatever you want to call it, but for enhanced homeland defense to

endure and to be improved you need bipartisan support. We have a midterm election coming up this year. If things change, you need to endure past then. Three years from now you need to endure past then. I think there's bipartisan recognition that we need to strengthen our homeland defense beyond what we currently have today. So I do hope, as we look at the next one, two, three years, that we can meaningfully field capabilities, and then put in place the right technology investments so that we can scale that even further. But you're right, it starts with the bipartisan support and resourcing.

OK, last question for everyone. I thought we'd make this a little fun. We are very fortunate to have with us the general who advised the movie "House of Dynamite." Which, you know, there's a message in there about homeland missile defense. So maybe I thought I'd start with you, Dan. What, yeah, talk to – "House of Dynamite," what was your takeaway? What did they get right? What is – what does it bode for –

Lt. Gen. Karbler
(Ret.):

They got everything right. I was the tech advisor, so they got everything right. (Laughter.) Well, first off, it was a great experience. It was not on my retirement to-do list at all, was to work with Kathryn Bigelow, Academy Award-winning director. Working with her was amazing. The cast and crew, just incredible. You know, she beats home the fact that if she's going to tell a story about something that really occurs, she wants to be as realistic as possible. And so we did.

And we made as realistic as possible, given security classification guidance, given the desire to have a compelling movie. As Chas Richard said, oh, you made a movie about a conference call, great. (Laughter.) You know, kind of when I first told him what we were doing. He did screen the movie. He did enjoy the movie. But you had, you know, real, R-E-A-L, versus reel, R-E-E-L. And as the tech advisor, you're always trying to strike that balance between the two, to keep it intellectually, visually, and emotionally compelling to the audience. And I thought that – I thought the movie did a great job with that.

Ms. Bingen:

Tom, what was your takeaway?

Dr. Karako:

Well, we've talked about this. I need to get your autograph before we take off here. (Laughter.) But, look, whatever is the case about – the nuclear piece of it, it was hard to walk away from that and think, gee, why weren't there more options? At least, I think in real life there would have been. In the movie there were fewer options. And that is a – in some respects faithful to what you said earlier, Kari. Is that I think most people would be shocked at the extraordinary degree of vulnerability we have. Not to an ICBM, necessarily, but to all kinds of other threats, in Washington, D.C. and across the country.

Ms. Bingen: Actually, that reminds me. Dan, can you tell us now on the record, are our GBIs, do they perform better than a coin flip?

Lt. Gen. Karbler: Yes, they do. (Laughter.) Yes, they do. I mean, intercepting the missile at the 16-minute point of the movie would have been a really boring movie. (Laughter.)

Ms. Bingen: OK, Melissa. I mean, you were in the seat. You were the assistant secretary of defense for homeland defense. What was your take on this?

Ms. Dalton: Well, I love Admiral Richard's comment that you made a movie about a conference call. (Laughter.) For those of us that have been privileged to listen in to such calls, I think it's mandatory viewing, frankly, because it really does provoke an important conversation. You know, you can debate the particulars, but the overall premise is profound. And it gets back to the fact that the scope and scale of the threats to the U.S. homeland have fundamentally changed. And we need to build an American consciousness of that. I think the biggest takeaway for me was the balance of responsibility rests with the civilian authority of decisions of this consequence. And we really need to ensure that our civilians get in their reps and sets, and are, you know, training and exercising alongside of military counterparts for these types of events.

Ms. Bingen: Yeah. For me – it was similar for me as well. As, you know, the plot aside, is it has us all talking just about nuclear deterrence, about the important role that homeland missile defenses play, and the need for a president to have more options than just to be in that aircraft of, hey, we need to launch a retaliatory strike before we even know, you know, what's hit us. But there were two things for me as well from my time in the building that I just would like to emphasize, that, you know, you see to some degree in the movie but you don't entirely see.

Just the importance of COOP/COG, which is the continuity of government, continuity of operations. And I know, you know, that was within your portfolio when you were in the building, but you know, when we – all these senior politicals, when you come in they want you to exercise that because you never know when your worst day is going to be and you need to be able to operate in crisis. So I – that got me really thinking about how important that is. And for the new team coming in, they need to be exercising that as well.

And then just I think all of us – and maybe, you know, General Karbler, you can talk to this as well – is just I think we need to continue to emphasize just how professional our forces are; those air defenders, you

know, those sitting at the watch centers – largely military, but also civilian, civilians in those intelligence watch centers – that they just do such a tremendous job. They sacrifice – long hours, missed birthdays – to do the job that our nation needs them to do. So maybe on that I can give you, then, the last word.

Lt. Gen. Karbler
(Ret.):

Sure. Yeah, and so the movie did touch on the human element of it, which we never do in our exercises, right? Our exercises are go through the process, make sure you got the right communications, the right chain of command, going through the – you know, providing the options in the correct way. But the movie wanted to also then get into the human element of it, and you saw that playing out in – through the different characters in there. And so – and I thought that was – you know, how the actors portrayed that was really, really good. You know, nobody knows exactly how you're going to react on something like that. You know, is the – is the battle manager up at Fort Greely when that – if that fails, is he going to go out and, you know, lose his breakfast? He very well might because of just the stresses on that job. So I thought – I thought that was really good to portray the human element, something that we never show in our exercises.

Ms. Bingen:

That's a really good point.

Well, I know on this Golden Dome discussion, I mean, we really are just getting started. It's been one year. But to your point, Melissa, I mean, there are several clocks here, so things are moving very fast. I think there are a lot of tough issues to still work through, whether they be policy, operational, technical. So we'll be here at CSIS tracking progress and helping to inform as we can as time passes on.

So, with that, I want to thank our phenomenal guests today: Melissa Dalton, Dan Karbler, Tom Karako. Thank everyone for tuning in. And of course, thank you to our CSIS streaming and broadcasting team for making this event possible today.

(END.)