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UNCLASSIFIED DIB ADMINISTRATIVE

Defense Innovation Board  
Summer Board Meeting Agenda  
Pentagon, Washington, DC  
July 17th, 2024 | Pentagon  
10:32 a.m.

Moderated by Marina Theodotou

Washington, D.C. 20005

Job No. TDB6732709

<p style="text-align: right;">Page 2</p> <p>1 APPEARANCES:  2 BOARD MEMBERS  3  4 Michael Bloomberg, Board Member  5 Marina Theodotou, Executive Director  6 Ryan Swann, Board Member  7 Will Roper, Board Member (virtual)  8 Admiral Michael Mullen, Board Member  9 Charles Phillips, Board Member  10 Mac Thornberry, Board Member  11 Sue Gordon, Board Member (virtual)  12  13 List of Speakers  14 Alexis Bonnell, CIO and Director of Digital  15 Capabilities Directorate, Air Force Research  16 Laboratory  17 MAJ Michael Kanaan, Military Deputy Chief Information  18 Officer, DOD Chief Digital and Artificial Intelligence  19 Office  20 James Appathurai, NATO Acting Assistant Secretary  21 General, Innovation, Hybrid and Cyber  22  23 CAPT Colin Kane, Chief of Staff, Military Deputy,  24 Joint Rapid Acquisition Cell  25</p>	<p style="text-align: right;">Page 4</p> <p>1 have been no significant changes to the meeting's  2 agenda as it is posted on the Federal Register  3 notice.  4 The public was invited to submit  5 written comments for the board members to consider  6 and we received three public comments in advance  7 of today's meeting, which we will review during  8 the meeting.  9 As a reminder, these are comments to  10 the Board and not a question-and-answer session.  11 These comments will be posted to the DIB website,  12 Defense Innovation Board, innovation.defense.gov.  13 And now, I would like to turn it over to the  14 Defense Innovation Board chair, Mr. Mike  15 Bloomberg.  16 MR. BLOOMBERG: Thank you, Marina.  17 And welcome to everyone watching this meeting  18 online. Thanks for joining us. Let me start by  19 saying a few words about something that is on  20 everyone's minds. I think we're all thankful  21 former President Trump survived Sunday's --  22 Saturday's assassination attempt, but others at  23 the rally were critically injured. And a former  24 fire chief was killed while shielding his family,  25 saving their lives.</p>
<p style="text-align: right;">Page 3</p> <p>1 * * *  2 P R O C E E D I N G S  3 * * *  4 MS. THEODOTOU: Welcome, everyone,  5 and thank you for joining us today for this  6 Defense Innovation Board public meeting.  7 My name is Dr. Marina Theodotou and  8 I'm the executive director and federal-designated  9 officer for the Defense Innovation Board.  10 Today's meeting is being live  11 streamed and recorded so that members of the  12 public can attend the meeting virtually now or  13 view later.  14 Thank you to the Defense Media  15 Activity for providing their expert support and to  16 my team and all involved to bring you this event  17 today.  18 The Board will now convene in its  19 public session. First, I would like to make some  20 procedural remarks. This board is a discretionary  21 independent advisory board operated under the  22 Federal Advisory Committee Act and the Government  23 Sunshine Act.  24 Today's meeting was announced in the  25 Federal Register notice on July 9th, 2024. There</p>	<p style="text-align: right;">Page 5</p> <p>1 I think President Biden said it well  2 on Sunday night: Violence absolutely cannot and  3 must not be a part of America's political life.  4 The peaceful resolution of our differences is what  5 our democracy is all about. The job of political  6 leaders right now is to come together and unite  7 the country around that vital principal.  8 Members of our armed services and  9 Pentagon leaders understand that there is strength  10 in unity. They embody that idea every single day,  11 and I know everyone here will continue to do all  12 they can to support them together with our teams.  13 Now, speaking for the members of the  14 Defense Innovation Board, we're all grateful for  15 the opportunity to serve. The men and women of  16 the U.S. military are bravely defending our  17 freedom and protecting America's interests around  18 the world. Our service on this board is all about  19 doing our part to help them, and I'm glad to say  20 we've gotten a lot done since this board came  21 together almost two years ago now.  22 We've drawn on a wealth of  23 experiences from across the Pentagon and beyond.  24 And as of today, we've published six independent  25 studies that Secretary Austin directed us to</p>

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1 undertake in response to specific challenges the  
 2 Defense Department is facing. Those reports are  
 3 not just sitting on a shelf either. By the end of  
 4 this year, the Department will have implemented  
 5 40 percent of the Board's recommendations with, we  
 6 hope, more to follow.

7       Those recommendations really run the  
 8 gamut. Among other priorities, they will help the  
 9 Department build better long-term relationships  
 10 with the private sector, speed up the adoption of  
 11 technologies across the military, secure the  
 12 rights to the data they produced together. And,  
 13 most importantly, continue to foster and sustain a  
 14 culture of innovation.

15       Today we'll take a little more time about  
 16 that culture and talk about it in the  
 17 collaboration and prudent risk-taking that helps  
 18 make it possible. We'll do so as we present our  
 19 two newest reports. They are the product of  
 20 dozens of interviews and hundreds of hours of  
 21 research.

22       The reports are called "Aligning  
 23 Incentives to Drive Faster Tech Adoption" and  
 24 "Optimizing How We Innovate with Allies and  
 25 Partners."

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1       Admiral Mike Mullen is ready to tell  
 2 us about the former study, and Charles Phillips  
 3 the last -- the latter.

4       Admiral Mullen will speak first, the  
 5 other board members will have a chance to comment,  
 6 and then we'll ask two guest speakers to share  
 7 their insights as well.

8       Admiral Mullen, you're up. Please  
 9 go ahead.

10       ADMIRAL MULLEN: Thanks, Mike.  
 11 Thanks for your leadership of this board. And to  
 12 your point about -- we hope that these can be  
 13 implemented. We certainly hope that this study  
 14 will provide help, in what is a significant  
 15 challenge with respect to innovation in the  
 16 Department. I think you'll find when you read the  
 17 report that actually the language is very strong,  
 18 the findings and the recommendations. Words like  
 19 "clear and present danger," "risk to winning  
 20 specifically," and "A good chance if we don't do  
 21 this and do it well, China will overtake us."  
 22       We certainly -- from the overall  
 23 approach standpoint, it's just -- they're two  
 24 fundamentally different cultures, both inside DOD  
 25 and certainly out in the commercial sector,

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1 particularly on the startup side. And it can  
 2 be -- there is also a part of this that the  
 3 building, I think, needs to understand much more  
 4 clearly how to actually run a business and get  
 5 away from the status quo being "okay."

6       We've also certainly seen that there  
 7 is minimal collaboration across every aspect of  
 8 what it takes to deliver capability, requirements  
 9 acquisition, programmers, budget, contracts,  
 10 contractors, legislators. They're never once at  
 11 the same table, and that's a huge challenge in  
 12 terms of creating the kind of innovation and  
 13 technology at the speed that we need.

14       The specific findings in the study  
 15 -- and I'll just briefly touch on them. First of  
 16 all, just avoiding risk, perpetuating complacency,  
 17 and preventing speed. The building is very  
 18 risk-adverse, and the requirement is to move very,  
 19 very rapidly, which is going to require  
 20 significant increase in the appetite for risk.

21       Lacking tap cover -- top cover,  
 22 sorry, and underleveraging the frozen middle. And  
 23 I think leveraging the frozen middle from an  
 24 innovation standpoint has great potential, and we  
 25 need to really focus on that. And too often

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1 rewarding the status quo. Lacking innovation --  
 2 an innovation career path, and mismanaging talent,  
 3 particularly of the innovators, often they can't  
 4 get promoted, they can't get the good jobs, and in  
 5 that frustration, they oftentimes leave. It's not  
 6 that they're not focused on the mission; they love  
 7 the mission and they really want to try to make it  
 8 better.

9       A lack of understanding of how  
 10 industry worked, I touched on that briefly before.  
 11 And the detachment of innovation and innovation  
 12 requirement from the mission, and in so doing  
 13 really, you know, flying blind, we call it.

14       So recommendations, briefly embrace  
 15 risk. Figure out a way to do that in a way that  
 16 really takes calculated, understood risks so that  
 17 we can move at speeds to deliver the capability  
 18 that we want.

19       Leaders have to provide top cover  
 20 for innovators. I mean, we do that as mentors and  
 21 leaders emotionally, but for the quote/unquote,  
 22 mavericks that are amongst us, those that can  
 23 really bring innovation, we've got to find a place  
 24 for them, promote them, make sure they have a  
 25 future to eventually get into positions of

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1 leadership themselves. And we've got to stop  
 2 rewarding mediocrity. We need to accelerate  
 3 speed, really put ourselves on the clock, and  
 4 that's challenging given the overall budget cycle,  
 5 we certainly understand that. But we've got to be  
 6 faster in delivering that capability, almost as if  
 7 we're at war.

8 We need to create a career path for  
 9 innovators that's challenging, that's within the  
 10 career paths that exist right now, and to  
 11 contemplate whether we should create a separate  
 12 career path for those who innovate. Track people,  
 13 track an individual's innovation readiness levels.  
 14 There is a technical, academic background on how  
 15 to do this, so we don't have to make it up. And  
 16 looking at the body of work that is focused on  
 17 that, particularly at DAU, the Defense Acquisition  
 18 University, I think is worthwhile. We need to  
 19 align our mission to drive innovation very  
 20 specifically, and then finally to learn from the  
 21 best.

22 There is, you know, a clear  
 23 challenge in what we've certainly found, and this  
 24 is new in the lack of flexibility and funding, the  
 25 damage, quite frankly, that continuing resolutions

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1 do year after year after year when budgets show up  
 2 late to execute almost halfway through the year,  
 3 creating that kind of flexibility. Improving on  
 4 that would also really, really help. And then  
 5 lastly, just every aspect of who should be at the  
 6 table trusting each other to get to the right  
 7 answer to support those that are in the field,  
 8 that are at sea, that are in the air, and  
 9 supporting everything that we do to meet the  
 10 current very, very challenging national security  
 11 requirements that exist globally. And with that,  
 12 Mike, that's -- that kind of covers quickly what  
 13 we went through.

14 And I want to thank the rest of the  
 15 team, the team that supported this, as well as the  
 16 rest of the members of the DIB who supported this  
 17 study as well.

18 MR. BLOOMBERG: Thank you, Michael.  
 19 Would anybody have comment.  
 20 Charles, would you like to say  
 21 anything.

22 MR. PHILLIPS: No.  
 23 MR. BLOOMBERG: Thank you very much.  
 24 We have two experts that have joined  
 25 us to share their thoughts on the report and our

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1 recommendations. Let's start with Alexis Bonnell.  
 2 She is a Google alum, and now she leads research  
 3 and development for the Air Force as its chief  
 4 information officer and director of digital  
 5 capabilities.

6 Alexis, the floor is yours.  
 7 MS. BONNELL: (Audio glitch.) --  
 8 experiences in life, one was spending time with  
 9 our troops in our defense mission in places like  
 10 in Iraq and Afghanistan. The second is actually  
 11 being able to create an innovation lab at the U.S.  
 12 agency, for International Development, and to  
 13 serve as its chief innovation officer.

14 Then, of course, as was mentioned,  
 15 my time at Google but I will tell you the reason I  
 16 came back to DOD and public service was, as I was  
 17 working to socialize technologies like artificial  
 18 intelligence and others from my vantage point at  
 19 Google, what I saw was a tremendous amount of fear  
 20 in government and in my DOD colleagues. And what  
 21 I realized, fortunately, especially with something  
 22 like AI, is the number one thing our adversary  
 23 wants, is for us to be scared of our own  
 24 technology.

25 So coming back in was really a

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1 commitment to the idea of how do we reduce the  
 2 fear and how do we make it easier for people to  
 3 innovate. So today I'll share a couple of things  
 4 that I think have been my observations and hopes.

5 I think the first is technology has  
 6 to be seen as an ally. That's something that  
 7 people navigate a relationship with. Oftentimes  
 8 we treat it as this technology and that  
 9 technology, not understanding that we're asking  
 10 people to update their identity and to, in  
 11 essence, adapt who they are as they make this  
 12 journey.

13 What I think the Department has done  
 14 well is, when you think about that type of  
 15 adaptation, there is what people do, what they  
 16 think, and how they feel. What we tend to do well  
 17 is address what people do, meaning we make funds  
 18 available or roles available, you know, different  
 19 types of training, and those really matter. But  
 20 the problem is people -- it doesn't stick, and  
 21 they don't believe you until they start to change  
 22 how they feel or how they think.

23 So particularly, when we think about  
 24 something like artificial intelligence, one of the  
 25 things I focus on is having people have their

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1 relational progress, meaning their "ta-dah"  
 2 moment; working through the "uh-ohs" that they're  
 3 concerned about; the "aha" where they realize that  
 4 it's relevant to them; and then, finally, that  
 5 moment I call "ho-hum" when it becomes normal, you  
 6 know, "Googling it," et cetera.

7 I think one of the things that I've  
 8 recognized in coming back to this role is that  
 9 story also matters. Typically our impression of  
 10 risk is because we assume something is going to go  
 11 badly. So one of the things that I do with my  
 12 team at AFRL is before we look at using any type  
 13 of technology, introducing it, embracing it, we  
 14 actually get together with all of the stakeholders  
 15 and we write the press release, not with the  
 16 intent to put it out, but with the intent to  
 17 surface the equities, the concerns, the issues;  
 18 but more importantly, to be able to reorient all  
 19 of the players at the table on what "great" would  
 20 look like and really have them go in with that  
 21 spirit.

22 The second thing we do is a  
 23 premortem. Meaning if this ends, when this  
 24 ends -- and everything should actually end -- why  
 25 will that be. Will it be because another

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1 technology has overtaken it? Will it be because,  
 2 you know, it didn't work? And actually put all of  
 3 those issues on the table as a way of helping  
 4 someone process risk.

5 Another thing that has been truly  
 6 critical -- I'm lucky enough to have had amazing  
 7 top cover from Ms. Goodwine and others as we've  
 8 looked to bring the first generative AI tool,  
 9 NIPRGPT. And that top cover that was mentioned  
 10 before is absolutely critical. It is really  
 11 important not only to be able to have access to  
 12 leaders, but more importantly for, you know, them  
 13 to actually be partners to us as innovators, and  
 14 I'm so proud of what we've been able to do  
 15 together.

16 One point that isn't mentioned very  
 17 often but I think is the most important, is the  
 18 fact that I've learned that toil eats purpose  
 19 faster than mission can replace it. And I think  
 20 one of the ironies I found, as a leader coming  
 21 back in, is how much toil is removed from my  
 22 experience. And what that means is that when we  
 23 aren't aware of the toil, we're not actually  
 24 cognizant of the true risk, and the true level of  
 25 effort our people have to take in order to do

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1 that.

2 And so one of the things that I'm  
 3 really looking at is going back and actually  
 4 saying, how is it -- excuse me -- that we  
 5 experience, and that I can experience all of the  
 6 toil, because without taking away all of the  
 7 extra, it becomes very difficult to do something  
 8 new or novel.

9 Another element that I recognize is  
 10 that we tend, when we have a low relationship with  
 11 risk, we make people do more things to ensure less  
 12 risk, and that just simply adds do the toil. And  
 13 quite frankly, it disincentivizes the spirit to  
 14 actually go on that journey and be in a discovery  
 15 or curiosity state.

16 Another element is that we tend to,  
 17 in a low-risk situation, we tend to give more air  
 18 to critics versus doers. And so in any  
 19 instance -- and this is true societally as well.  
 20 If you think about it, we don't watch the news; we  
 21 watch five people's opinion about the news. We  
 22 don't watch sports; we watch three commentators'  
 23 opinion about sports. And in social media, many  
 24 people get to have many opinions. If you think  
 25 about it, as a doer, as an innovator, it becomes

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1 very draining knowing that you're going to have,  
 2 in essence, a critic army that you have to  
 3 navigate, and I think that's really important.

4 Another note that I might mention  
 5 is, what really drove me coming back into DOD is  
 6 that I truly believe that time is a weapons  
 7 platform. It's our most important weapons  
 8 platform, but if we don't treat a minute as  
 9 important as a missile, then we waste them, and we  
 10 invest them in the wrong places. One of the other  
 11 challenges is that we are very good at a few  
 12 things, but there is three things I found an  
 13 organization has to do well to thrive, and, in our  
 14 case, to have national security advantage.

15 One is we have to be good at  
 16 starting things. I actually think the work of  
 17 this group and much of the innovation work in  
 18 government is actually really good at starting  
 19 things. The majority of our time and attention,  
 20 though, goes to maintaining things. But the third  
 21 thing, and the most important thing, if we truly  
 22 want to innovate, is we have to be brave enough to  
 23 stop things. And I would really challenge people  
 24 to ask, "What are the last things we consciously  
 25 stopped doing?"

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1 To that effect, one of the things  
 2 that I shared with the Board and the committee was  
 3 that we actually introduced a kill bonus. That  
 4 sounds much sexier than it is. What it really is  
 5 is actually encouraging my people, where I will  
 6 actually write them a monetary bonus for bringing  
 7 me something we can stop doing. Because there is  
 8 only so many resources, only so much treasure --  
 9 whether that is emotional, intent, talent, et  
 10 cetera -- and if we are not -- if we are not as  
 11 heroic about being brave enough to stop things, we  
 12 have nothing left to truly start things or  
 13 continue them.

14 MR. BLOOMBERG: Any comments from  
 15 the panel?  
 16 (No response.)

17 MR. BLOOMBERG: Alexis, thank you.

18 MS. BONNELL: Thank you.

19 Now, deputy chief information  
 20 officer at the Pentagon's Chief Digital and  
 21 Artificial Intelligence Office, Michael Kanaan,  
 22 over to you.

23 MR. KANAAN: Thanks so much. And  
 24 thank you to the staff and evidence members who  
 25 have logged in within and outside the Pentagon's

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1 walls. It's a pleasure to be here.  
 2 First, this enduring topic of  
 3 aligning incentives to drive faster digital tech  
 4 adoption resonates with our role here in CDAO as  
 5 we strive to develop policies and tools, speed  
 6 solution, scale that impacts the DOD, whether it's  
 7 specifically for the Warfighter or complimentary  
 8 business processes that unleashed the Warfighter.  
 9 For those traditionally viewed support functions,  
 10 they too are Warfighter needs.

11 I'm going to explicitly come back to  
 12 this point later in my comments because it's an  
 13 important nuance. But passing underlines, this  
 14 topic also strikes me on a deeply personal level,  
 15 as countless times throughout my military career,  
 16 being the first line of accountability for  
 17 authentic questions from young, technically  
 18 inclined service members. Like, "What's my  
 19 pathway? Where is the place, commission, and  
 20 ecosystem? I know my skills might not be  
 21 traditional or institutionally well understood,  
 22 but can't they still be valued?" Simply put, "Why  
 23 doesn't my computer work?"

24 And truth be told, I've asked these  
 25 questions myself and whether grappling with them

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1 internally or, again, being response to the new  
 2 generation of service members for answers. Those  
 3 answers, they're still tragically hard to come by,  
 4 because we should be able to alleviate or satiate  
 5 what is, at its core, a passionate, altruistic,  
 6 and authentic, and when spoken aloud, courageous  
 7 inquiry about the state of digital technology.  
 8 And for the most part, these are not technical  
 9 questions. They're human. Their organizational  
 10 design they're clearly on call for prioritization  
 11 and a contemporary acknowledgment of the times,  
 12 that they are a changing. It's about commitment  
 13 to the word spoken on every panel or public  
 14 speaking event alike, that technology, no matter  
 15 the type, is a human endeavor, and people are at  
 16 the core of what we do, that's the challenge.

17 And with that backdrop in my  
 18 personal view, I'd like to endeavor with the  
 19 characterization of issues and subsequent  
 20 takeaways that certainly will not wholesale solve  
 21 the underlying problem, but might materially help.  
 22 So here it goes. And almost, without fail, every  
 23 conversation on the topic of technical talent  
 24 centers on new hiring strategy, and those are  
 25 important. But what about the people we have?

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1 The conversation cannot begin and end in only  
 2 considering new hiring strategies, instead in what  
 3 is albeit rather unfair bureaucratic work of  
 4 reassessing current roles by redefining current  
 5 performance metrics, valuing reskilling and  
 6 upskilling, and focusing on process improvement  
 7 and technological adoption as is the job  
 8 measurements. And that means annual performance  
 9 reviews.

10 The DOD doesn't have the luxury of  
 11 looking at bonuses or corporate profit margins on  
 12 a 10-K statement to shareholders. Our capital  
 13 currency often boils down to the narrative words  
 14 and a mission well done, and the inherent reward  
 15 functions therein that serve as a litmus test on  
 16 whether I was a good sailor, soldier, airman,  
 17 marine, guardian, or civilian at the end of every  
 18 year. But the rigidity of performance reviews,  
 19 particularly as it relates to military personnel,  
 20 is a fundamental stumbling block. They remain in  
 21 nature unchanged and not based on the nuanced  
 22 demands of various positions for your fields or  
 23 the demands of changing times.

24 Whether it's an acquisition of  
 25 professional, an intelligence analyst, human

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1 resources specialist, or a fighter pilot, the  
 2 evaluation form is uniform. First takeaway, I  
 3 recommend reconsidering what is measured, and  
 4 making at least some component unique to career  
 5 fields and dynamically updatable, at least in an  
 6 add-on capacity to the foundation of what we  
 7 otherwise measure with mostly standardized  
 8 depictions of, quote, leading people, or improving  
 9 the unit.  
 10 Now, caveat, I'm not saying these  
 11 aren't absolutely vital to a well-functioning  
 12 military. Leadership matters. I'm just saying  
 13 that, perhaps, there could be something more. But  
 14 for one to measure what matters, we also need to  
 15 be continuously informed about the evergreen,  
 16 ever-changing technological landscape. Bottom  
 17 line, education matters. But it too struggles for  
 18 priority in the budgeting process, which I think  
 19 reveals the underlying difficulty of quantifying,  
 20 communicating continuous learnings ROI in a  
 21 form -- fashion that resonates, whether that's  
 22 with lawmakers or military budgets.  
 23 Now, initiatives like Digital  
 24 University and the Air Force MIT Accelerator  
 25 Phantom internship program, these exemplify the

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1 value of such investments, and they, along with  
 2 other nascent efforts you can find throughout the  
 3 DOD, warrant further expansion.  
 4 As I often like to say, you can't  
 5 hack the bureaucracy unless you understand the  
 6 bureaucracy, and an educated workforce must be the  
 7 ones to build an environment that supports the  
 8 adoption of technology.  
 9 The second takeaway, prioritize and  
 10 fund education. Which brings me to acquisitions  
 11 concerning -- you can insert AI -- quantum,  
 12 automation, or whatever digital expression  
 13 technology might choose, for we are squarely in a  
 14 world in which the data writes the software. We  
 15 like to call it AI, but at its core that's all  
 16 we're talking about. Math. And sure, perhaps,  
 17 that seems like an oversimplification, but it's a  
 18 profound change if you take a moment to sit back  
 19 with it.  
 20 So in acquisitions concerning data,  
 21 software, and chiefly AI-enabled capabilities,  
 22 again, this era of data writes the software. It's  
 23 in my view that the situation might be a little  
 24 more straightforward than often perceived.  
 25 Consider any AI-related requirement, be it

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1 computer vision or a large language file. The  
 2 usual inquiry in the Pentagon discussion, well,  
 3 I'll tell you, it goes something like this: "Is  
 4 this a 3,400 Operations and Maintenance  
 5 requirement, or a 3,600 Research, Test and  
 6 Evaluation requirement?" Colors of money.  
 7 Upon which the response for anything  
 8 emergent, especially AI, generally leans to 3,600.  
 9 However, I think this binary distinction misses  
 10 the point because as an example, AI activities  
 11 themselves inherently and definitionally span both  
 12 categories. That's to say, give me a requirement  
 13 statement, and I'll coherently argue that it's a  
 14 research function, and operations function. Not  
 15 in the monolithic spirit of the requirement, but  
 16 rather it's stages of the process, like  
 17 benchmarking versus training on operational  
 18 data -- the third takeaway.  
 19 The DOD requires bold and clear  
 20 recognition that AI encompasses both O&M and  
 21 RTD&E. And moreover, there is a noticeable  
 22 disconnect when the DOD advocates for commercial  
 23 technology. Yet, when it comes to brass tacks  
 24 proposals, contracts, and acquisition strategies,  
 25 the stance doesn't always materialize. So the

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1 question is why -- the fourth take away.  
 2 The DOD should rigorously reassess  
 3 all rationale behind opting for traditional  
 4 procurement methods over those encouraging partial  
 5 solutions. For example, in parts 10 and 12, and  
 6 to get really legalese for a moment, in accordance  
 7 with 10 U.S. Code 2377, there is a mandate for  
 8 ongoing market research and preference for  
 9 commercial items across free solicitation,  
 10 solicitation, and task order phase of delivery.  
 11 The justification and tools to  
 12 change exist, and hence a refreshed enterprise  
 13 wide directed review of its adherence, since  
 14 commercial capabilities have changed so quickly, I  
 15 think might be an effective ends -- means to an  
 16 end for modular and commercially friendly  
 17 strategies that should be taking place more often.  
 18 And I know that was a lot of  
 19 acquisition nerd-like speak, but truly the  
 20 tactical choices today are the strategic decisions  
 21 for tomorrow. And with all of that said, everyone  
 22 will tell you that everything needs to change; I  
 23 just did it. But there is a flip side to that  
 24 argument that might be more insightful about what  
 25 doesn't need to change in an effort to preserve

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1 maneuver space in an uncertain future.  
 2 Think of it akin or analogous to the  
 3 foresight of the 1900s, President Woodrow Wilson  
 4 establishing the national parks to preserve green  
 5 space for likely industrial onslaught then. There  
 6 exists a prevailing human bias for action and  
 7 novelty, particularly related to AI for more  
 8 change, more policy that leads to misconceptions  
 9 like the need for entirely new cyber risk  
 10 frameworks or rhetoric to completely overhaul the  
 11 rules of engagement for warfare, which is usually  
 12 spurred on by the overestimation of AI  
 13 capabilities, or just simply sci-fi imaginations.  
 14 In practical reality, and hear this  
 15 now, the most profound AI impacts will inevitably  
 16 be whether professionals from all walks of  
 17 business are sooner or later in the back-office  
 18 functions, at least in the short term. But it's  
 19 an area overlooked for its lack of glamour  
 20 compared to war-fighting applications. And these  
 21 tasks that clutter the mission offer a lower  
 22 barrier to entry and present less risk.  
 23 For instance, using AI to detect  
 24 anomalies in staffing projections is technically  
 25 the same pipeline development process and

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1 deployment or at least should be, ideally as in  
 2 identifying gaps in intelligence.  
 3 Precisely speaking, what does that  
 4 entail? Personnel generating floor templates;  
 5 intelligence analysts doing language translation;  
 6 pilots scheduling sorties; load justicians; depot  
 7 maintenance, and review; auto form; budget;  
 8 finance; acquisition professionals; redundancies,  
 9 and national language questions about programs and  
 10 plans; cyber continuous monitoring and  
 11 authorizations to operate; military and specimens;  
 12 install Python for better pivot tables; and  
 13 speechwriters, quit writing speeches from nothing;  
 14 chaplains have better sermons.  
 15 The fifth takeaway: AI will most  
 16 impact what is seemingly least compelling from the  
 17 clickbait headline perspective.  
 18 And in closing, this generation will  
 19 not likely be the Ender's Game heroes of lore.  
 20 But if the next generation doesn't have the  
 21 opportunity to be, then we failed them. The call  
 22 to action is to set the contentions with  
 23 contemporary software requirements, computer  
 24 resources, and data structuring that enable modern  
 25 forms of software. And then adamantly communicate

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1 that as not a tangible thing, but the end-state  
 2 expression of an IT journey for which foundations  
 3 matter first.  
 4 How do we align incentives? What  
 5 does the future look like? Who predicted  
 6 generative AI? It'd be hubris to say we have all  
 7 of the answers. But I do know that too many  
 8 people, too many places, are having "too hard a  
 9 time" air quotes here, installing it. And that's  
 10 the essential spirit and of the problem you  
 11 address. The cultural norms of risk aversion and  
 12 cost schedule performance exist because we allow  
 13 them to. It's the supposed way we are good  
 14 stewards of the taxpayer dollar. Obligated,  
 15 exercise and paying it up front. We got it all  
 16 right. It will go exactly as envisioned. But I  
 17 leave you with this: The question is not whether  
 18 we are risk adverse, but whether is that a  
 19 euphemism for "risk blind." Shift the narrative  
 20 to one about blindness, and not what might be lost  
 21 by the operative word here, trade-off, but instead  
 22 what is lost because we haven't made the  
 23 trade-off.  
 24 Accelerating the adoption of digital  
 25 technologies means some things will have to come

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1 to their overdue end, and if that's going to  
 2 happen, well, change what people are measured by.  
 3 And with that, I thank you so much for this  
 4 opportunity.  
 5 MR. BLOOMBERG: Thank you. Any  
 6 comments from the panel?  
 7 (No response.)  
 8 MR. BLOOMBERG: Your comments,  
 9 Michael, on our wonderful staff and all of the  
 10 people who dedicate their lives to protecting  
 11 America was fascinating. Thank you.  
 12 We'll now have a vote on the  
 13 recommendations. And I will call each member, and  
 14 you can vote yea or nay.  
 15 First Mac Thornberry?  
 16 MR. THORNBERRY: Aye.  
 17 MR. BLOOMBERG: Gilda Barabino?  
 18 MS. BARABINO: Aye.  
 19 MR. BLOOMBERG: Ryan Swann?  
 20 MR. SWANN: Aye.  
 21 MR. BLOOMBERG: Mary Meeker?  
 22 MS. MEEKER: Aye.  
 23 MR. BLOOMBERG: Charles Phillips?  
 24 MR. PHILLIPS: Aye.  
 25 MR. BLOOMBERG: Michael Mullen?



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1 MR. MULLEN: Aye.  
 2 MR. BLOOMBERG: A virtual  
 3 participant, Will Roper?  
 4 MR. ROPER: Aye. And the speakers  
 5 were great.  
 6 MR. BLOOMBERG: Thank you. And  
 7 virtual participant Sue Gordon?  
 8 MS. GORDON: Aye.  
 9 MR. BLOOMBERG: Thank you. It  
 10 passes. That concludes the first study. We'll  
 11 now turn to Charles Phillips to tell us about the  
 12 Allies and Partner Study, and then he'll be  
 13 followed by two more guests.  
 14 Charles, the floor is yours.  
 15 MR. PHILLIPS: Thank you,  
 16 Mr. Chairman. The Allies and Partners Study was  
 17 an effort to recalibrate and relook at how we work  
 18 with other countries. So fellow board members  
 19 that worked on this program was Mary Meeker, the  
 20 Honorable Sue Gordon, and Dr. Will Roper, who are  
 21 online.  
 22 We also had a lot of help from Jacob  
 23 Savitt and Elliott Silverberg, Jacob and Elliott  
 24 are on the staff. So we talked to a lot of  
 25 different organizations to get the sense of how

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1 it's working today; other countries -- Norway, UK,  
 2 Ukraine, even, are our allies in many different  
 3 areas -- many different areas of the DOD,  
 4 different agencies, the State Department, the  
 5 Commerce Department, and then some startups trying  
 6 to work with the DOD from outside of the U.S. and  
 7 finding out how to work with us.  
 8 So the number one issue we found is  
 9 that there is no pathway for working with the DOD  
 10 if they're coming from another country. No one  
 11 knows how it works. It's too fragmented, and  
 12 there is a lot of different certifications that  
 13 are required. I'll get to that in just one  
 14 second. The important reason why it's important  
 15 to rethink how we're doing this now is the context  
 16 of where we're operating. So if you look at  
 17 China -- this is all in the report as well: 37 of  
 18 the 44 critical technologies identified by a  
 19 third-party research organization, China is  
 20 leading.  
 21 If you look at high-end systems  
 22 adoption they're moving 6X faster. They're now  
 23 coordinating with Russia, North Korea. The three  
 24 of them collectively have 1.6 billion citizens.  
 25 And so the rate and skill of their investment has

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1 changed. So one way to respond to that is if we  
 2 collectively work with our partners, we can  
 3 recreate that scale a different way.  
 4 So what does that mean? It means  
 5 shared systems and equipment, but also shared  
 6 data. There's plenty of reason to do that.  
 7 So number one, it creates a much  
 8 larger, addressable market. We need more private  
 9 companies and vendors to view this market as  
 10 something worth investing in, build a capacity.  
 11 We don't do that for smaller units. If you have a  
 12 lot of units, you'd have to look at the market.  
 13 Their ROIs are different. They've told us that  
 14 many different times. And so an adjustable market  
 15 is changed if you have common equipment.  
 16 Two, there is federated innovation  
 17 around all of our partners. We used to think we  
 18 were the only ones innovating; that's the wrong  
 19 way to think about it now.  
 20 In recent years, especially the last  
 21 year, we've gotten equipment from Norway, to help  
 22 with 155 rounds. We work with Israel. Lots of  
 23 different examples they told us about. We need to  
 24 be aware of what our partners are doing and then,  
 25 where possible, let's coordinate our research and

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1 engineering.  
 2 Number three, foreign military sales  
 3 in the U.S. is an \$81 billion market of what we  
 4 export there to increase jobs here.  
 5 And then fourth is our supply chain  
 6 resiliency. There's a finite number of repair  
 7 parts and suppliers. When we get into a war, we  
 8 need to replenish that. They have limited  
 9 capacity. If we had more partners working with us  
 10 and more distributive ways to manufacture it, we'd  
 11 be more resilient longer term.  
 12 We're too reliant on some of our  
 13 adversaries for some of the components as well,  
 14 such as lithium coming from China and Russia. So  
 15 we need to rethink the supply chain; our partners  
 16 can help with that.  
 17 The good news is, we do have an  
 18 example where it's starting to work well. There  
 19 is a program called AUKUS. So AUKUS is a  
 20 combination of UK, U.S., and Australia to build a  
 21 nuclear-power submarine. But it has two pillars;  
 22 that's pillar 1. Pillar 2 is longer term, you  
 23 learn how to coordinate on development and  
 24 research around eight different areas such as  
 25 cyber, AI, quantum for instance. And so that part

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1 has not yet been figured out. This is still very  
 2 new, but we can come up with the process as to how  
 3 to share data. Maybe we can build around that.  
 4         So what are the barriers -- the  
 5 barriers that we're seeing? One of us is culture  
 6 because we're used to building our own technology,  
 7 not invented here syndrome. Foreign technology is  
 8 viewed with suspicion. We work more easily with  
 9 people with common languages -- so what's called  
 10 the five I's, and certainly we had not looked as  
 11 broadly as we could have. And now the situation  
 12 has changed. We have partners like Germany and  
 13 Japan that want to work with us given what's going  
 14 on in the world.  
 15         Two, we make it hard to work well,  
 16 with the DOD, the compliance standards, things  
 17 like CNC and ITAR, export controls, even for U.S.  
 18 companies, it sometimes takes years to get  
 19 approvals. And so we'll get to that in just a  
 20 second -- our recommendations on that.  
 21 Classifications, we automatically classify  
 22 information as no foreign -- no foreign  
 23 dissemination without any analysis beyond that.  
 24         So looking at all of those issues,  
 25 we've come up with a couple of recommendations.

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1 In 2018, we split U.S. -- the undersecretary for  
 2 acquisitions technology, and logistics into two  
 3 different organizations. One is acquisitions and  
 4 sustainment; the other one is research and  
 5 engineering. We'd like to recombine those for the  
 6 undersecretary of industrial and international  
 7 cooperation. The reason is we need innovative  
 8 designs, we need innovative manufacturing capacity  
 9 around the world. It's hard to do that in  
 10 separate organizations.  
 11         And, secondly, they need a single  
 12 point of contact, who can make decisions, what are  
 13 we building and how do we plan to design it, and  
 14 who is working on -- what research is happening.  
 15 And trying to do that right now is far too  
 16 difficult for partners. It's actually difficult  
 17 internally as well.  
 18         We have some smaller recommendations  
 19 as well. Justifications for non-exploitability.  
 20 When we say something can't be exploited, let's  
 21 make sure that that's indeed the case.  
 22         We have a program called Buy  
 23 American. With good reasons, people want to  
 24 compare parts, granular repair parts and  
 25 components built in the U.S., but sometimes that

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1 can slow innovation. And sometimes it's not  
 2 available, the capacity is simply not there.  
 3 There is an exception process to that, but that  
 4 takes years as well.  
 5         In addition, we want to align export  
 6 networks. The commerce department, for instance,  
 7 is investing in manufacturing segments. Some of  
 8 that could be dual-use technology if DOD knew  
 9 about it, let's connect those two networks. And  
 10 then we want to create international defense  
 11 innovation, a community of experts that we can  
 12 collaborate and talk to each other. We have some  
 13 live suggestions on how to reform ITAR and how to  
 14 reform CNC to meet security standards. There are  
 15 third-party assessments that are done by  
 16 consultants in the U.S. to certify that they're  
 17 complying with those standards. Those third  
 18 parties need to exist internationally as well. So  
 19 with that, those are our recommendations.  
 20         MR. BLOOMBERG: Thank you, Charles.  
 21 Any recommendations from the panel?  
 22         MR. THORNBERRY: Like the last  
 23 study, I think this study highlights an area of  
 24 innovation that has not gotten a lot of attention  
 25 and is a very accurate, but also stark description

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1 of the problem. It's hard to be a friend to the  
 2 United States, as Charles has laid out.  
 3         The only point I want to make, as he  
 4 mentioned, one of his recommendations is to  
 5 reverse a decision Congress made a few years ago  
 6 regarding the organizational structure, within the  
 7 Office the Secretary of Defense. I participated  
 8 in that decision, and I've got qualms on going  
 9 back because I know the arguments back and forth  
 10 and came to a different conclusion.  
 11         Having said that, I think the study  
 12 is absolutely on the right track in all other  
 13 areas, should be supported, and again, highlights  
 14 a very important issue not a lot of studies have.  
 15         MR. BLOOMBERG: Mac, thank you very  
 16 much for those comments. And you were there, and  
 17 we can hold you responsible.  
 18         Next speaker is -- we're fortunate  
 19 to have join us -- is a longtime anybody of the  
 20 NATO team. He now serves as the acting assistant  
 21 secretary general for Innovation, Hybrid, and  
 22 Cyber. James Appathurai, thanks for taking the  
 23 time. Over to you.  
 24         MR. APPATHURAI: So thank you very  
 25 much for the invitation to speak to this very

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1 respected group of people. And it's a topic  
 2 that's really close to our hearts here, so let me  
 3 just give you maybe three, four minutes on how  
 4 we're approaching these issues. And then I'll be  
 5 very open to any questions or comments you might  
 6 have.

7         So a few years ago, what we took was  
 8 a couple of our decisions to help foster the  
 9 pipeline of innovation and get startups, in  
 10 particular, through the Death Valley for which  
 11 you're all familiar. One was to set up something  
 12 we call DIANA, which is a little bit like a  
 13 transatlantic DARPA. The United States is  
 14 participating in that where we're working with  
 15 startups, bringing them through test centers and  
 16 accelerator sites, providing them funding so that  
 17 they can have dual-use technologies available for  
 18 us.

19         Second is a 1 billion Euro deep tech  
 20 innovation fund so patient capital to look for  
 21 cutting edge technological solutions. Canada is  
 22 about to join. The United States I know is  
 23 considering this in congress, and we're looking  
 24 very much forward to the United States joining as  
 25 well. And we'll get to France when they have a

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1 slightly more settled political situation, but  
 2 we're getting there. We have 24 countries in this  
 3 now. But this is about stocking the shelves.  
 4 What we are now turning our focus on is someone  
 5 buying what's on the shelves at the speed of  
 6 relevance, and we're quite concerned about the  
 7 speed of relevance.

8         I've been speaking to some startups  
 9 that are supporting Ukraine. In fact, just  
 10 recently at the Washington summit when I  
 11 participated in the industry forum, and they were  
 12 saying that there is a two-week innovation cycle  
 13 for software in Ukraine. So they're putting a  
 14 certain amount of software into drones. It's  
 15 being neutralized by the Russians in two weeks,  
 16 and then they have to come up with a new  
 17 innovation and new technology. So that's the  
 18 speed of the war, and we certainly need to  
 19 accelerate at NATO.

20         So we are now turning our attention  
 21 to that. We got a tasker or out of NATO summit in  
 22 Washington to develop a rapid adoption strategy in  
 23 time for the next Summit in The Hague, and that's  
 24 what we -- my division and my colleagues -- are  
 25 turning to do. And this basically has three

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1 elements -- this challenge. One is to ensure that  
 2 the EDTs that are fielded in innovation  
 3 initiatives, like DIANA and the Fund, actually  
 4 make it into the hands of operators when they need  
 5 them and before they are obsolete. And I can tell  
 6 you if you followed every NATO procedure perfectly  
 7 for some emerging technologies, they'd be obsolete  
 8 by the time they made it through the process. So  
 9 we have to fix that.

10         Second, to ensure that the startups  
 11 in the small and medium size enterprises  
 12 developing battlefield decisive EDTs are actually  
 13 included in our procurement mechanisms, which have  
 14 traditionally focused on the big primes.

15         And, third, to create the linkages  
 16 between the capability shortfalls that we've  
 17 identified and the EDT solutions that can fill  
 18 those requirements at times to bridge until a  
 19 heavy metal solution that takes a while -- maybe  
 20 two, three, four years to come to market, we can  
 21 use EDTs to bridge to those solutions. And that  
 22 will, of course, offer to the startups that have  
 23 gone through our processes an actual market.  
 24 Because it's really important for us that we  
 25 don't, as I say, stock the shelves, but in the

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1 end, no one is buying. The message will get out  
 2 quickly to the startup community that our  
 3 initiatives actually don't lead to actual  
 4 procurement. So we need to avoid that also for  
 5 the success of our other -- our other initiatives.

6         So what are we doing? We will focus  
 7 the plan on two main elements; one is the  
 8 political. We want out of the next year's summit  
 9 to provide to our heads of state and government,  
 10 which they can then agree to give direction on,  
 11 clear messaging for what we need to accomplish.  
 12 We believe that there needs to be clear top down  
 13 from the very top messaging about what is the  
 14 speed of relevance and what everybody needs to do  
 15 to actually adapt their own procedures across the  
 16 NATO enterprise and as an offer to allies to  
 17 adapt.

18         Second, to actually establish and  
 19 tailor adoption pathways for NATO and allies to  
 20 address -- to address novel solutions at the speed  
 21 of relevance. For example, by finding new ways to  
 22 include startups in our acquisition processes as I  
 23 mentioned. Second, creating avenues to better  
 24 understand how EDTs can fill existing capability  
 25 requirements and developing improved processes for

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1 concept develop, testing and experimentation, and  
 2 developing clear procurement outcomes from the  
 3 testing and evaluation.  
 4 Final point, just to say, we're  
 5 really grateful to see that this is a priority for  
 6 you, your board, and we are looking forward to  
 7 your forthcoming studies -- for example, on  
 8 aligning incentives to driver faster tech  
 9 adoption. And on optimizing how we innovate with  
 10 allies and partners, exactly what you're  
 11 discussing here.  
 12 U.S. leadership for us is crucial,  
 13 A, because you've done a lot of the thinking, and  
 14 we've modeled a lot of our work on DIU and DIUX.  
 15 But of course, because the U.S. is so far ahead of  
 16 many other allies when it comes to public-private  
 17 partnerships, we're looking for really strong U.S.  
 18 engagement in our processes as we move to the next  
 19 summit.  
 20 So we would hope to keep a line open  
 21 to you. And if there is anything that you could  
 22 offer to us, we'd be very grateful for that.  
 23 MR. BLOOMBERG: Thank you for those  
 24 insightful comments.  
 25 Any comments from the panel?

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1 MR. THORNBERRY: James, just for  
 2 clarification, what's an EDT?  
 3 MR. APPATHURAI: Sorry. Emerging  
 4 and -- sorry, I'm too into my acronyms. Emerging  
 5 and disruptive technology. So we have identified  
 6 here at NATO seven, which we consider to be, kind  
 7 of game-changing to artificial intelligence to  
 8 autonomy to quantum, and we've just set a  
 9 transatlantic quantum community in which the U.S.  
 10 has taken a leadership role as well to try to  
 11 foster transatlantic cooperation in these  
 12 technologies and these areas. And we have, for  
 13 example, a test center in the Netherlands, the  
 14 Niels Bohr Institute, which is probably the world  
 15 leader. And so startups can there from anywhere  
 16 around and alliance, including the U.S.  
 17 If you've got young folks that have  
 18 an interest in quantum technology that they need  
 19 to test, they can bring it there and the scientist  
 20 there will test it and help them improve it, and  
 21 then they can take it to an accelerator site and  
 22 help spin that up into a business.  
 23 So that's kind of the way we're  
 24 trying to orient ourselves.  
 25 MR. THORNBERRY: Show up -- James?

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1 (Audio glitch) show up -- show up at that place to  
 2 test, have we?  
 3 MR. APPATHURAI: Niels Bohr  
 4 Institute in Copenhagen?  
 5 MR. THORNBERRY: Yes, have we taken  
 6 advantage of it from a U.S. perspective?  
 7 MR. APPATHURAI: Sorry, no, only  
 8 because DIANA -- I'd say two things. One is DIANA  
 9 or DARPA has only now issued its second set of  
 10 challenges. It got 1,300 startups applying, which  
 11 we were quite gratified to see that they chose 44,  
 12 and they're now in their first six-month contracts  
 13 from DIANA. And so they're only now being moved  
 14 into the testing centers, and a new set of  
 15 challenges was just issued last week. So now they  
 16 have to filter through all of the applications to  
 17 come up with them.  
 18 So it will happen, and it is open to  
 19 all U.S. startups in this space. But it's -- the  
 20 baby's just starting to walk.  
 21 MR. BLOOMBERG: James, Michael's  
 22 question was: Do the American innovators and  
 23 entrepreneurs participate?  
 24 MR. APPATHURAI: Yes, it is open to  
 25 them, absolutely. And there are U.S. test centers

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1 and U.S. accelerator sites as well. So the U.S.  
 2 is a fully participating member.  
 3 MR. BLOOMBERG: Thank you very much.  
 4 And our next speaker is Navy Captain Colin Kane.  
 5 He serves in the Pentagon's Joint Rapid  
 6 Acquisition Cell, which moves quickly to meet  
 7 secret service members' most urgent technological  
 8 needs.  
 9 Captain Kane, please go ahead.  
 10 MR. KANE: Thank you, sir. My name  
 11 is Captain Colin Kane. I work in the Joint Rapid  
 12 Acquisition Cell. I'm the chief of staff there.  
 13 I work for Major General Edward Vaughn. What we  
 14 do is accelerate the fielding of urgent needs for  
 15 combatant commanders, and we also manage the  
 16 senior integration group process for the  
 17 Department of Defense.  
 18 So we also manage the joint urgent  
 19 operational needs, which are the critical  
 20 requirements that the combatant commanders are  
 21 identifying and say that they, you know, need that  
 22 most urgently to address immediate battlefield  
 23 problems. I think one of the challenges there is  
 24 that innovation is also slow. And so we're  
 25 supposed to field solutions within two years to

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1 those environments, and it's an extremely  
 2 challenging thing to achieve there. And one of  
 3 the things that we can do as well, and we're  
 4 seeing in senior integration groups, is the  
 5 fielding of items to Ukraine.

6 Ukraine is -- we manage the senior  
 7 integration group for Ukraine and delivering those  
 8 capabilities, as we said, that their two-week  
 9 cycle for innovation is a very challenging thing.  
 10 Russia is innovating extremely quickly, and we are  
 11 challenged to be able to field things that support  
 12 their efforts. And we are continually working to  
 13 field capabilities to them, and we're engaging  
 14 with the industry to be able to do that. I think,  
 15 you know, Major General Vaughn spoke at the  
 16 defense innovative forum in Poland back in June,  
 17 and in that environment, he emphasized the need  
 18 for our innovation and ability to field those  
 19 capabilities and to partner with industry to move  
 20 those efforts forward.

21 I think just in my naval experience,  
 22 we are also challenged from the sharing of  
 23 information. We see that sharing information to  
 24 Ukraine may not be relevant to their targeting  
 25 needs, and being able to have them address a

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1 threat that's imposed upon their battle -- their  
 2 members out in the field trying to address that.

3 I'm also seeing in terms of my own  
 4 experience as an acquisition professional that  
 5 we're not plugged in, and we're trying to pull  
 6 into the industry and the cooperation with the  
 7 research and engineering directorate within OSD to  
 8 be able to field urgent needs for the counter  
 9 untruth system threat. In that environment, we're  
 10 seeing extremely quick innovation, and in  
 11 partnership with the research and engineering  
 12 directorate, there isn't -- since we separate OSD  
 13 from R&E, we aren't seeing the ability to -- or  
 14 effective means of communication to move in that  
 15 effort. So to your point, sir, earlier, combining  
 16 those two organizations, there would be benefit.  
 17 And I think unity of effort that moves us in a  
 18 direction that helps us to make those things more  
 19 effective and get industry clearly moving, the  
 20 things that are being innovated by our FFRDCs and  
 21 UARCs into an effort that is more aligned to what  
 22 the defense department's requirements are.

23 We have got to make sure that we are  
 24 basically leading the target, and perhaps right  
 25 now we're shooting to the left of the target in

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1 terms of being able to bring those capabilities  
 2 and field them faster.

3 The -- you know, there is not a path  
 4 that clearly gets those innovations that are being  
 5 fielded or developed by our FFRDCs and UARCs to  
 6 have that feed into the palm process to be able to  
 7 then go into a program of record. And as we  
 8 talked about, there is issues in terms of "not  
 9 invented here" kind of syndrome and being able to  
 10 move those items into those programs because we  
 11 are very committed to the programs that we  
 12 develop, is an observation I would share with you.  
 13 We like them; they mean jobs. There is different  
 14 things with that. But taking, perhaps, a slightly  
 15 innovative approach, using some of the  
 16 technologies that we discussed in terms of AI and  
 17 how that can inform using AI and coding, which can  
 18 speed our program instead of a program taking  
 19 months.

20 I mean, we're talking to industry  
 21 and they're developing coding and they're fielding  
 22 code on an hourly basis. That's what Amazon and  
 23 Google and some of these other entities are doing.  
 24 And if we can't get to that -- I talked to a guy  
 25 today, he's fielding code in three months. That's

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1 the fastest I've heard anyone in DOD doing that in  
 2 actuality. And if we can't work with industry,  
 3 work with them to also stop making snowflake  
 4 systems in terms of the systems being developed,  
 5 not using consistent automated process to load  
 6 each one of them. This feeds into our programs  
 7 like Replicator, which is out there, and, you  
 8 know, industry is working quickly to innovate  
 9 things. But if you aren't having an automotive  
 10 process to keep loading those systems so you get  
 11 an exact replication of the system that you're  
 12 building, then you're not going to have an  
 13 effective system; it's not going to work the way  
 14 you expect it to.

15 I've seen this challenge on Navy  
 16 ships, the CANES system. CANES is an example of a  
 17 program that, you know, there's an individual that  
 18 goes onto the ship and loads the program and gets  
 19 this -- and each ship has its own version of  
 20 CANES. Because the process isn't automated, it's  
 21 a different individual that goes onto the ship and  
 22 loads that, as an example.

23 So we need to be more flexible with  
 24 adopting AI, working with our allies and partners  
 25 to be able to bring them into the fold and share

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1 the information with them as we do this innovation  
 2 and being less afraid to do that. And I agree, we  
 3 are -- do have a great reluctance to do that.  
 4 I think the other thing is to feed  
 5 into the discussions earlier about AI is our  
 6 program managers don't have the education about  
 7 AI, and how it can accelerate their program  
 8 development. And without that, I mean, we try to  
 9 protect jobs is what I see a lot of, but if we  
 10 actually were to adopt AI, use that to develop the  
 11 code that we do, we field the systems much faster,  
 12 and we actually then can focus on more things  
 13 because the code is written and it's fielded and  
 14 is delivered to us. And then we can also share  
 15 those systems in a much more rapid pace with our  
 16 allies and partners to address the needs in the  
 17 EUCOM AOR, in the CENTCOM AOR, and also in the  
 18 INDOPACOM AOR, which is probably our most  
 19 challenging environment given the geographic  
 20 spread over there.  
 21 It's those kind of things enabling  
 22 that and developing those relationships and taking  
 23 also the perspective of the allies and partners in  
 24 those regions to inform things because they have a  
 25 unique perspective on where -- how things look

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1 from their foxhole, we'll say, and how they  
 2 address those things. And it may change how they  
 3 would code something or approach a problem, and  
 4 that's going to feed into us and make our overall  
 5 solution to how we fight and win wars in those  
 6 regions a much better answer than, you know, kind  
 7 of going it alone and developing those answers as  
 8 we've historically done.  
 9 So I appreciate your time; hope  
 10 those were a couple of ideas that can help move us  
 11 in a direction that addresses program management  
 12 and adoption of AI in developing those  
 13 relationships with allies and partners. And I  
 14 appreciate your time.  
 15 Thank you.  
 16 MR. BLOOMBERG: Captain, thank you.  
 17 I think your comments regarding the time frame  
 18 that's taking place between Ukraine and Russia in  
 19 a couple of weeks when we're talking about years  
 20 to do the same thing, and the lack of ability to  
 21 have somebody come on board and quickly fix  
 22 something because you're someplace else in the  
 23 world, we have in the private sector generally  
 24 somebody right next door who can just walk in or  
 25 do it by video quickly, that's not the environment

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1 that you've talked about.  
 2 MR. KANE: And we also need to  
 3 consider adoption of the ability to software  
 4 update over the air. The Navy is developing some  
 5 processes for doing that, but we need to be more  
 6 willing to accept those kinds of things. You  
 7 know, I think there -- technology is there to  
 8 validate that and prevent a threat actor from  
 9 introducing malicious code into the process. And  
 10 those kind of things, I think, help us to innovate  
 11 and be able to deliver capability to us while  
 12 we're deployed and be able to enable greater, you  
 13 know, engagement capability for ships or different  
 14 weapon systems we have deployed to address the  
 15 fight, sir.  
 16 MR. BLOOMBERG: Well, I think you  
 17 can really do a service for the country if you  
 18 keep pushing us to do -- to modernize and do  
 19 things that are possible but innovative, and big  
 20 organizations don't do that very well. So I  
 21 understand why it takes place, why it takes a  
 22 while to get them in; but if you keep fighting for  
 23 it, you'll be doing the country a great service.  
 24 So thank you very much.  
 25 Any comments from the rest of the

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1 team?  
 2 (No response.)  
 3 MR. BLOOMBERG: Okay. Captain,  
 4 thank you. We're now going to vote on the  
 5 recommendations. First, Mac Thornberry?  
 6 MR. THORNBERRY: Aye.  
 7 MR. BLOOMBERG: Gilda Barabino?  
 8 MS. BARABINO: Aye.  
 9 MR. BLOOMBERG: Ryan Swann?  
 10 MR. SWANN: Aye.  
 11 MR. BLOOMBERG: Mary Meeker?  
 12 MS. MEEKER: Aye.  
 13 MR. BLOOMBERG: Mike Mullen?  
 14 MR. MULLEN: Aye.  
 15 MR. BLOOMBERG: Charles Phillips?  
 16 MR. PHILLIPS: Aye.  
 17 MR. BLOOMBERG: Virtual participant  
 18 Will Roper?  
 19 MR. ROPER: Aye.  
 20 MR. BLOOMBERG: And virtual  
 21 participant Sue Gordon?  
 22 MS. GORDON: Aye.  
 23 MR. BLOOMBERG: The motion is  
 24 carried and that concludes the second study for  
 25 the day. And now, Marina, would you please share

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1 some of the public comments that we have received.  
 2 MS. THEODOTOU: Thank you, Mr.  
 3 Chair.  
 4 Yes, we have received, as we  
 5 mentioned earlier, received public comments. We  
 6 actually had to welcome comments per the Federal  
 7 Advisory Act until 12:00 noon on July 12th. We  
 8 received three comments, and I'd like to share one  
 9 which is relevant to the study from David  
 10 Dudokavich in academia who is asking: How does  
 11 the DOD plan to align incentives to drive faster  
 12 tech adoption when funds for basic 6.1 and applied  
 13 6.2 research have been consistently cut?  
 14 So that's a good question. Thank  
 15 you to all of the citizens that provide their  
 16 feedback. We welcome your feedback, and we  
 17 collate and provide that back to the board for  
 18 consideration.  
 19 And with that, Mr. Chair, I'll turn  
 20 it over back to you to provide us the closing  
 21 remarks.  
 22 MR. BLOOMBERG: Well, thank you.  
 23 Today's final agenda item is to share two topics  
 24 that the board may tackle next. One of the  
 25 departments' priorities is to open the door to

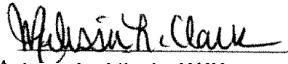
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1 more non-traditional companies, the smaller  
 2 technological companies, as opposed to the big  
 3 prime contractors. So we'll be thinking about how  
 4 the department can attract more non-traditional  
 5 companies as partners. And another topic to be  
 6 tackled is a problem getting a lot of coverage in  
 7 the press. In many cases, U.S.-made drones are  
 8 failing in the Ukraine as Russia's brutal invasion  
 9 grinds on.  
 10 And so we're also -- we'll also be  
 11 thinking about how the military can develop more  
 12 effective and less expensive drones, and how we  
 13 can spur the market to produce a whole heck of a  
 14 lot more of them. And we'll be looking forward to  
 15 getting to work on those potential new studies in  
 16 December.  
 17 Members, is there anything you would  
 18 like to add?  
 19 (No response.)  
 20 MR. BLOOMBERG: If not, thank you  
 21 for our public meeting today. And, as always, let  
 22 me thank Secretary Lloyd Austin, Deputy Secretary  
 23 Kathleen Hick, Undersecretary Heidi Shyu, and the  
 24 entire Defense Innovation Board team for guiding  
 25 us through such a productive day.

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1 Our next public meeting, you can put  
 2 on your calendar, it will take place sometime in  
 3 the winter, and as soon as we get a specific date,  
 4 we will announce it.  
 5 So until then, all the best and  
 6 thank you for the members in particular.  
 7 MS. THEODOTOU: Thank you,  
 8 Mr. Chair. Thank you everyone for joining us  
 9 today. This meeting is now adjourned.  
 10 Thank you.  
 11 (At 11:32 a.m., the meeting adjourned.)  
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1 C-E-R-T-I-F-I-C-A-T-E  
 2  
 3  
 4 I hereby certify that the foregoing is a  
 5 true and accurate transcription of the proceeding  
 6 referenced above to the best of my abilities.  
 7  
 8  
 9   
 10 Melissa L. Clark, RPR  
 11 Notary Public and Court Reporter  
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