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DEFENSE INNOVATION BOARD PUBLIC MEETING

WHS ACQUISITION DIRECTORATE

DATE: FEBRUARY 1, 2023
TIME: 10:45 A.M.
LOCATION: VIRTUAL ZOOM
WASHINGTON, DC 20005

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A P P E A R A N C E S :

EXECUTIVE DIRECTOR AND DESIGNATED FEDERAL OFFICER :

COLLEEN LAUGHLIN

DEFENSE INNOVATION BOARD CHAIR :

MICHAEL BLOOMBERG

BOARD MEMBERS :

DR. WILLIAM ROPER, JR.

CHARLES PHILLIPS

ADM. MICHAEL MULLEN

RYAN SWANN

DR. GILDA BARABINO

REID HOFFMAN

GUEST SPEAKERS :

DR. JASON RATHJE

LT. GEN. S. CLINTON HINOTE

1 P R O C E E D I N G S

2 * * * * *

3 EXECUTIVE DIRECTOR LAUGHLIN: Welcome
4 everyone and thank you for tuning in to the
5 Defense Innovation Board's public meeting. My
6 name is Colleen Laughlin and I am the
7 Designated Federal Officer for the Defense
8 Innovation Board.

9 For those in the room, if you've not
10 done so already, please silence your phones.
11 This meeting is being recorded and
12 live-streamed to allow members of the public
13 to attend the meeting virtually.

14 This meeting was notified in the
15 Federal Register Notice according to the
16 Federal Advisory Committee Act requirements.

17 The public was offered an opportunity
18 to submit comments to the website. Time
19 permitting we will read through those, if not
20 we will post them.

21 And with that I would like to go ahead
22 and turn over to our chair Mr. Michael
23 Bloomberg for opening remarks.

24 DIB CHAIR BLOOMBERG: Well, thank you,
25 Colleen. And hello everyone, thanks for

1 joining us today. Speaking on behalf of my
2 fellow board members we are all honored to be
3 here and to have the opportunity to bring new
4 ideas to the Department of Defense as it works
5 to protect our country, keep our service
6 members safe and support our allies.

7 This month the world will mark a year
8 since the start of Russia's war against the
9 Ukraine. We have learned a lot in that time
10 both from the organizational and tactical
11 challenges facing the Russian army and the
12 strength, courage and determination of the
13 Ukrainian people. And we have seen how they
14 used new technology and how it has been
15 critical to their successes. For instance,
16 information and communication systems are
17 allowing decisions to be made on the edge of
18 the battlefield faster than ever. Commercial
19 drones are being used in innovative new
20 ways. Some of that technology has been
21 supported by the United States. Our
22 Department of Defense puts a high priority on
23 maintaining its technological edge and
24 supporting that push for innovation is the
25 mission of this board.

1 To get started today I would like to
2 take a moment to introduce our newest board
3 member Charles Philips. Charles, you should
4 know, is a former Marine and now a technology
5 leader and investor. He is also the cofounder
6 and managing partner of an investment firm
7 called Recognize. He brings a wealth of
8 knowledge and expertise to the board and we
9 are glad to have him.

10 Charles, welcome.

11 BOARD MEMBER PHILLIPS: Thank you.

12 DIB CHAIR BLOOMBERG: Would you like to
13 say a few words?

14 BOARD MEMBER PHILLIPS: It's an honor
15 to participate and I've been learning a lot
16 already and look forward (inaudible).

17 DIB CHAIR BLOOMBERG: Thank you. The
18 Board has been hard at work on the two topics
19 Secretary Austin assigned us, the National
20 Defense Science and Technology Strategy and
21 the Strategic Investment Capital.

22 At our last meeting we asked Mac
23 Thornberry to chair the former and Will Roper
24 to chair the latter. Mac is unable to join
25 with us today so I'm going to ask Ryan Swann

1 to share an update first, followed by Will.

2 Ryan.

3 BOARD MEMBER SWANN: Thank -- thank
4 you, Mike. And like Mike said I'll provide an
5 update to the S&T strategy -- for the S&T
6 strategy review. I'm joined on that task
7 force with Dr. Barabino and as well as Admiral
8 -- Admiral Mullen.

9 The secretary ask DIB for insights on
10 the DoD's forthcoming National Defense and S&T
11 Strategy that was mandated by Congress. I
12 believe this is the first ever DoD national
13 strategy and we're eager for the board to
14 provide impactful advice.

15 The strategy can be thought of as DoD's
16 innovation strategy, meaning it sets a vision
17 and a framework for how we are to build a
18 competitive and enduring advantage. We
19 received initial briefings from strategy
20 writing team on how DoD has taken about the
21 development, implementation and the longer
22 term impact. We also received briefs from
23 across the DoD S&T enterprise to learn about
24 key issues, mission resources and challenges.
25 We met with services, Joint Staff -- the Joint

1 Staff as well as INDOPACOM as well as OSD to
2 understand how their strategy will structure
3 priorities, incentives and outcomes. We heard
4 from labs, warfighter requirements,
5 development teams and -- and capability
6 experimental -- experimentation teams on the
7 requirements and the needs that -- that are in
8 front of us.

9 The big takeaways are the importance of
10 resources, talent, transition and how to
11 optimize the system for speed and delivery of
12 capabilities. And we ultimately want to
13 understand how the S&T enterprise is set up to
14 efficiently and effectively deliver these
15 capabilities to the warfighter.

16 Let me turn now to Dr. Bar -- Barabino
17 as well as Admiral Mullen for some comment.

18 BOARD MEMBER BARABINO: Thank you,
19 Ryan.

20 We really did receive great briefs. I
21 noted the multitude of DoD organizations and
22 stakeholders. What I'm most curious about are
23 the seams across and between. And to your
24 comment, are they effective and are they
25 efficient. Well, I hope the strategy

1 addresses the broader innovation ecosystem,
2 academia, private sector and government and
3 outlines how DoD can deepen and leverage
4 those. I would also like to see the strategy
5 address talent and culture, a tall order.
6 Because we know culture is the hardest thing
7 to change. But there's so much talent,
8 whether coming out of universities or the
9 private sector, and it would be great to
10 create larger pipelines into national
11 security.

12 BOARD MEMBER MULLEN: Thanks Ryan and
13 Gilda. And certainly I agree, or we agree,
14 with really wanting to be impactful in what
15 we're looking at. The strategies are good,
16 but implementation and metrics is how strategy
17 delivers. And I agree with Gilda, we have to
18 change the culture, which is a tough culture.
19 This effects everything from speed to risk
20 tolerance, which are key, and in addition
21 we've got to attract talent. We need the best
22 and the brightest in our nation, quite
23 frankly, and a culture they want to be a part
24 of.

25 The bottom line is strategy is

1 important but the system has to deliver game
2 changing advantages for our warfighter at
3 speed and proof will be in the implementation.

4 EXECUTIVE DIRECTOR LAUGHLIN: Thank
5 you. I don't know, other board members, this
6 is your opportunity where you've heard from
7 some of your colleagues who are looking at
8 these issues if there are sort of broad
9 thoughts of their digging into the National
10 Defense S&T Strategy kind of assessment.

11 BOARD MEMBER ROPER: Did you have any
12 surprises or, pleasant or unpleasant, in your
13 first set of reviews. I know one review does
14 not a report make --

15 BOARD MEMBER SWANN: Right.

16 BOARD MEMBER ROPER: -- but what did --
17 what did you see, Ryan?

18 BOARD MEMBER SWANN: Yeah, no, I think
19 -- I think it kind of goes back to we're
20 focused on the right areas. The areas are
21 clear. The execution and how our culture can
22 accelerate that are areas I feel like we can
23 really move the needle on when it comes to
24 kind of an innovational strategy, right. And
25 so it was good to see an alignment on the

1 areas. And I -- and I do think though as we
2 think about talent, as we think about the
3 process, as we think about implementation,
4 that -- that there are some areas we can
5 innovate. If that makes sense.

6 BOARD MEMBER ROPER: Good.

7 EXECUTIVE DIRECTOR LAUGHLIN: All
8 right, excellent.

9 Mike, we'll turn it over to Will if
10 you're comfortable?

11 DIB CHAIR BLOOMBERG: Will, all yours.

12 BOARD MEMBER ROPER: All right, thanks
13 Mike. And good to be back in the Pentagon and
14 see some -- some old friends and colleagues
15 today. And I just want to really thank
16 Defense Innovation Board and Mike for asking
17 me to lead the task force and for Sue Gordon
18 --

19 DIB CHAIR BLOOMBERG: I've asked
20 (inaudible) are they happy to have you back.

21 BOARD MEMBER ROPER: They're not.
22 Actually what they say to you, to your front
23 versus what they say to your back can often be
24 different things.

25 DIB CHAIR BLOOMBERG: No, thank you for

1 your service in the past and for doing this.

2 BOARD MEMBER ROPER: It's fine. And I
3 -- I do know from the past that it can be
4 really helpful to people that are in this
5 building that are going ninety miles an hour,
6 they're pulled by lots of different political
7 forces, it can be helpful to have someone come
8 in that's got a little more separation and
9 just say what you're saying. Even if you're
10 sharing things that they know sometimes it's
11 helpful just to be able to say I just talked
12 with the Defense Innovation Board and they
13 told me that. So, we're certainly hoping to
14 play that role on how the department works
15 with private investment and companies that
16 might be considered dual use, having the
17 ability to work in the private sector but also
18 be able to contribute to the public sector,
19 particularly the military.

20 I want to thank Sue Gordon, who
21 couldn't be here with us today, for being on
22 the task force with me, along with Reid
23 Hoffman. Charles Phillips welcome to the team
24 and welcome to the task force. And we've even
25 asked some generative AI to join our task

1 force. One, to help with the writing and,
2 two, it's a good reminder for us that there is
3 a lot of innovation happening outside the DoD
4 that's going to be transformative. This will be
5 a very palpable reminder to us as we write the
6 report in collaboration with AI that we're
7 trying to give the department advice about how
8 to be a better person with companies that
9 won't just change the military, they'll change
10 the world.

11 In terms of how we'll be engaging,
12 unlike the S&T study we really need to talk to
13 people outside the Department. And it's not
14 just start-ups, which you would guess we would
15 do, we really need to speak with investors.
16 And we also need to speak with defense
17 companies that have been working with us for
18 decades about how they view working with
19 companies that have a different track record
20 than just being part of the defense industrial
21 base only. What is the department doing to
22 encourage or make it easier to work with such
23 companies? Are there incentives in place?

24 We'll look at the process, obviously,
25 we'll look at the authorities, obviously,

1 we'll also look at the budget, and I expect
2 that we'll find areas that we can be useful in
3 our suggestions in each one of them.

4 So, right after this meeting on the
5 Defense Innovation Board website there will be
6 a link to a survey that separates into the
7 type of organization we want to speak with,
8 either investor, either start-up, either
9 defense company. And look I know people don't
10 filling out surveys. I don't like filling out
11 surveys. But we really ask that -- that you
12 take this on as a service to the country. We
13 really need your input both statistically
14 looking across a large number of organizations
15 and we want to hear your comments. We want to
16 hear specifically what was good, what was bad,
17 so that we can see is that a broader trend
18 that should be addressed. So, you'll see that
19 on our website in the DIB, you'll see it
20 pushed out through various social media
21 accounts. Please take the thirty minutes or
22 so that it will take to fill it out to do so.
23 And then the -- the Pentagon, the DoD, will
24 select a subset of the survey filler-outers to
25 be interviewed by the DIB so that we don't

1 just get the survey we get some stories and
2 anecdotes.

3 Ultimately we'll roll this back up and
4 our charter is to provide good advice on being
5 a better partner with private sector companies
6 no matter what domain that recommendation is
7 in. And we're particularly excited to learn
8 more about what Jason Rathje is doing in the
9 Office of Strategic Capital. I got a briefing
10 from him this morning. And Jason is a friend
11 colleague from the past in the Air Force,
12 definitely a smart guy who knows what he's
13 doing. But we want to understand how this new
14 office is going to fit into this broader
15 ecosystem and ultimately make that ecosystem
16 understandable and a better partner with
17 companies that are -- that are growing out of
18 the private sector.

19 Reid, anything you want to add to our
20 study? Then I'll open up to Charles and back
21 to Mike.

22 MR. HOFFMAN: I think it's -- it's an
23 extremely important thing about how we
24 leverage some of the advantages that we have
25 in our (inaudible) network of companies,

1 capital, talent and innovation and it's part
2 of the modern, I think the modernization and
3 modern thinking of this building. We need to
4 think about how to harness that and to work in
5 tandem and ultimately achieve our goals of a
6 very prosperous country and world.

7 BOARD MEMBER ROPER: Thanks, Reid.

8 Charles, you've invested in a lot of
9 companies and worked with a lot of big
10 companies what are you --

11 (At this time the audio feed cut out.)

12 DIB CHAIR BLOOMBERG: Okay. Well, why
13 don't we start. Hopefully everybody is tuned.

14 Ryan and Will thank you.

15 It's especially important that the
16 Strategic Investment Capital Study be informed
17 by real experiences and outside perspectives.
18 So start-ups and tech companies, defense
19 contractors and investors, please sign up so
20 the department can hear from you. It really
21 is important to get a broad range of views.
22 We're in a sprint, as you know, to get our
23 recommendations to the Secretary by June, so
24 the sooner we receive input the better.

25 And now before we hear from our two

1 guest speakers let me turn it over to you,
2 Colleen.

3 EXECUTIVE DIRECTOR LAUGHLIN: Yeah.

4 DIB CHAIR BLOOMBERG: All yours.

5 EXECUTIVE DIRECTOR LAUGHLIN:

6 Excellent. Thank you.

7 So, we'll have two guest speakers here,
8 Dr. Jason Rathje and Lieutenant General
9 Hinote.

10 Gentlemen, we'll do about twenty,
11 twenty-five minutes, a little bit of a brief,
12 and then I think just some good dialogue and
13 Q&A with the board members. We will cue you
14 on some times, so apologies in advance if you
15 see the hand waving so.

16 All right, Dr. Jason Rathje, let me
17 turn it over to you.

18 DR. RATHJE: Well, thank you, Colleen.
19 Thank you, Chairman Bloomberg and
20 distinguished members of the panel.

21 It's very exciting for us at OSC,
22 probably the newest and youngest organization
23 inside of the Department of Defense, to brief
24 you today on the focus of the organization,
25 why this office was established and what our

1 strategies are in supporting our -- our
2 thriving innovation system of trying to really
3 harness the power of our American innovation
4 ecosystem in support of national security and
5 also long-term economic prosperity.

6 OSC was fundamentally established to
7 give the Department of Defense a new tool in
8 our current competition. Because the today
9 the United States, if we can go to the first
10 slide, is in a global competition to be a
11 world leader in the emerging and critical
12 technologies. Critical technologies that span
13 a wide variety of technology areas that are --
14 not only support national security -- my
15 apologies the briefing is the Office of
16 Strategic Capital (inaudible). Technology
17 areas such as semiconductors, advanced
18 materials and biotech are just as critical as
19 those defense technologies that we consider,
20 such as hypersonics and directed energy.
21 These technologies areas are ones that we
22 spend billions of dollars of S&T funding into
23 but we require new products and services that
24 our department can leverage in support of our
25 military needs but also lead towards long-term

1 economic prosperity.

2 So, if you go to the next slide,
3 winning this race is truly vital to National
4 security and economic prosperity. Now, this a
5 race that we're not familiar -- we're not
6 unfamiliar with in the United States. It's a
7 race that we've run before. Over the last
8 hundred or so years we've been in cyclical
9 races to be the world leaders in critical
10 technologies. So, our office has looked at
11 examples of where we've been in these
12 challenges before and tried to pull forward
13 case examples of opportunities where the US
14 government has partnered with our American
15 innovation ecosystem to drive new
16 capabilities.

17 So, I wanted to start this briefing
18 today with a story about Cray Research. Cray
19 Research is the world's first supercomputer
20 company. Founded in the early 1970s. By the
21 early 1980s it provided supercomputers
22 globally in support of many commercial
23 industries, but also supported our position in
24 analytics for our nuclear enterprise, helped
25 to build a nuclear deterrent strategy and

1 helped us to win the Cold War.

2 Now, a little known story about Cray
3 Research is that in nineteen -- in the late
4 1970s they were about three months from going
5 bankrupt. Cray at the time was a crazy
6 concept. It was a small start-up trying to
7 develop a computer, a new product for a market
8 that did not exist, against competitors much
9 larger than itself that were much more well
10 positioned to own the supercomputer market.
11 And at that time Cray was struggling to find
12 capital. It was struggling to find financing
13 to build a production line to establish the
14 words first supercomputer.

15 Cray was fortunate that three SBICs
16 existed. SBICs are government-backed
17 investment funds. And at one time in the
18 1960s two thirds of all venture capital was
19 backed by the US government throughout SBIC
20 model. Those three SBICs invested five
21 hundred thousand dollars into Cray Research.
22 That five hundred thousand dollars crowded in
23 another two point three million dollars of
24 private capital to build the world's first
25 supercomputer that Cray sold to the Department

1 of Energy. The second computer was sold to
2 the Department of Defense. And within ten
3 year the CFO and Cray in Senate testimony
4 discussed that without SBIC program Cray would
5 not exist.

6 Critically it was that government
7 partnered with investors to create efficient
8 investment vehicles through the SBIC program
9 that invested into Cray, did not spend R&D
10 money, but invested into a deep tech company
11 to build a product for a market that did not
12 exist because it was important to national
13 security, but it also led to another
14 opportunity for long-term economic
15 prosperity.

16 Now today, if we can go to the next
17 slide, the US government, by policy, does not
18 co-fund new investment funds in deep
19 technology. Instead we rely on our private
20 capital markets to take the S&T that we fund
21 and transition it into products and services
22 that can be sold on the market. And ever
23 since the 1980s our private capital markets
24 have thrived. Today US private capital
25 comprises about fifty percent of global

1 private capital. The US has an incredible
2 competitive advantage in this technology
3 competition in our private capital markets.

4 However, if we can go to the next
5 slide, that private capital is not giving the
6 patient investment that many of our
7 e-technology companies, our critical
8 technology companies, require to scale the
9 proverbial Valley of Death. For example,
10 e-commerce receives about three times more
11 investment than artificial intelligence does,
12 probably about a hundred and fifty times more
13 investment than quantum.

14 Now, why is that? Well, private
15 capitalists have been successful because they
16 have been focused on high upside with low
17 downside. Investing in companies that support
18 consumer growth, that support software, that
19 support low technical risk, create market
20 opportunities to grow capital fast. The
21 capital flows to returns. Unfortunately this
22 leaves our innovators our American innovation
23 ecosystem in these critical technology areas
24 without direct access to capital.

25 So, it is our position in following

1 this flow of capital markets that we need to
2 do more. We need to do more as a government,
3 more as a department, to increase access to
4 capital for innovators in these technology
5 areas.

6 If we can go to the next slide. Jake
7 Sullivan the National Security Advisor talks
8 about this as part of a wider industrial
9 strategy. We are investing in industries of
10 the future, strengthening the resilience and
11 security of supply chains to underpayment.
12 With each of these investments our goal is to
13 crowd in private capital, not replace it, and
14 attract patient capital to bring critical
15 technologies to scale.

16 This is not just a national security
17 imperative that we maintain these industries
18 in the future, it's also an economic
19 imperative. Brian Deese the National Economic
20 Council Director talks about this in terms of
21 attracting investment into the industries that
22 are required for long-term economic
23 stability. Our modern -- our modern
24 industrial -- American industrial strategy
25 reflects a commitment to make bold investments

1 in key areas to everyone from academics to
2 business leaders alike and raise our
3 foundational and economic growth. These
4 investments help accelerate and shape
5 breakneck innovation and they encourage
6 private investment in the market competition.
7 So, the Secretary of Defense has established
8 the Office of Strategic Capital to align
9 private capital with the national security
10 priorities and scale private investment in
11 critical technologies.

12 If we can go to the next slide. But as
13 we said earlier in this discussion, the devil
14 is in the details. We know that many
15 technology companies and that the American
16 innovators can develop world changing S&T. We
17 have had incredible academic ecosystems
18 coupled with US government grant and contract
19 funding to develop next generation
20 technologies across all of our critical
21 technology areas. But how do we take that
22 next step? How do we give these technology
23 entrepreneurs the opportunity to take their
24 S&T into products and services that not only
25 support the national security mission but also

1 margin economic prosperity.

2 Well, the Office of Strategic Capital
3 is investigating two new strategies to help
4 align and scale private investment in support
5 of national security. The first is
6 syndication. Syndication is a strategy that
7 simply partners with private capital providers
8 to co-invest in new technology efforts to help
9 scale the business as we help scale the
10 technology. This was a strategy that was
11 actually pioneered under Dr. Roper's tenure as
12 the Assistant Secretary of Acquisitions.

13 BOARD MEMBER ROPER: Well, you -- you
14 did most of the work, Jason, so.

15 DR. RATHJE: But it was under -- it was
16 under your leadership.

17 BOARD MEMBER ROPER: I may have signed
18 off on it but I don't know (inaudible).

19 DR. RATHJE: The -- the opportunity
20 that we can provide through these programs is
21 with existing funding. With existing R&D
22 funding, with existing procurement funding we
23 can co-invest on vehicles like other
24 transactions, innovation vehicles that allow
25 us to cost share with private capital

1 providers to make mutually beneficial
2 investments to help scale technologies that is
3 (inaudible).

4 The other strategy though, the more
5 novel strategy for the Department is leverage.
6 Leverage works to change the economics on
7 investments in deep technology areas.
8 Fundamentally what leverage does is it lowers
9 the cost of capital. Private investors can
10 make the patient capital investments that are
11 required at the sizes that they're required to
12 invest in deep technology companies.

13 Now, these strategies are ones that are
14 not unfamiliar to the US. They're also not
15 unfamiliar to other countries and certainly
16 not unfamiliar in these technology areas.

17 Perhaps the best example today of a --
18 of a government public/private partnership
19 that used syndication and leverage to help
20 finance and scale a new company is the
21 Taiwanese government in the creation of the
22 Taiwanese Semiconductor Manufacturing
23 Corporation. TSMC was founded by Dr. Morris
24 Chang. US educated, worked at Texas
25 Instruments for twenty-five years, had the

1 opportunity with a partnership with the
2 Taiwanese government to build a fabrication
3 shop, a manufacturing plant. But the
4 Taiwanese government did not fund that alone.
5 They only funded half of TSMC. The other half
6 of TSMC came from private investors.
7 Investors like Philips, the parent company of
8 ASML who was an anchor investor into TSMC. In
9 fact, the pre-money valuation on TSMC was zero
10 dollars. It was a government organization,
11 Morris Chang was a government employee. And
12 but it -- TSMC provides us a great example for
13 a critical technology area where a public/
14 private partnership innovation was coupled
15 with a business model innovation to catalyze
16 an entire new sector and new ecosystem in
17 Taiwan.

18 OSC is investigating strategies like
19 this. Strategies in these technologies --
20 technology areas where we can help increase
21 capital flows and increase market
22 participation across the entire area. The
23 first program activity that we launched in
24 December to help get after solving this
25 problem is the SBIC Critical Technologies

1 Initiative. This is the same SBIC program
2 that funded companies like Cray. It also
3 funded small companies like Apple, Intel, Sun
4 Microsystems.

5 When SBICs were used in the 1960s they
6 were used with a focus on national security.
7 Again, we were in a strategic competition at
8 the time. In partnership with the SBA, who
9 has been a fantastic partner with us, we have
10 been able to bring back the SBIC program to
11 create investment opportunities in early stage
12 deep technology companies.

13 Now, the way this program works is it
14 leverages what is called the federal credit
15 program. The federal credit programs are
16 programs where other departments and agencies
17 utilize government loans and loan guarantees
18 to increase leverage in technology areas and
19 sectors, societal sectors, that we think are
20 important to increase investment in.

21 A great example of a federal credit
22 program is the VA Home Loan Program. VA home
23 loans provide low mortgages, access to
24 mortgages, for service members and veterans
25 because we as the government have taken on

1 twenty percent of the risk of new mortgages
2 for that sector of the economy. We provided a
3 loan guarantee to banks that provide mortgages
4 to service members through the VA Home Loan
5 Program. Utilizing a similar structure with
6 the authorities and the federal credit program
7 that the SBA maintains today, one of a hundred
8 and eighteen federal credit programs inside of
9 the Department -- inside of the US government
10 to take advantage of loan guarantees to offer
11 leverage to new investment funds.

12 The way these investment funds work is
13 that we can license new limited partnership
14 that are vertically focused on deep technology
15 areas where we can provide two dollars of
16 leverage, two dollars of debt, for every
17 dollar of private capital that is raised.
18 Where we match dollar for dollar with private
19 capital providers, in fact two dollars per
20 dollar with private capital providers, to make
21 new investment funds to create patient sources
22 of capital for these critical technology
23 areas.

24 If we can go to next slide I want to
25 briefly mention where we're at and where we're

1 heading. So, the partnership that I just
2 mentioned, which is the SBIC Critical
3 Technologies Initiative, just kicked off in
4 December. We hope to start taking
5 applications for that initiative by early
6 summer. We are coupling that with the
7 publishing of our first investment strategy
8 which is taking a look at our critical
9 technology areas and assessing them for
10 capital availability as well as liquidity
11 opportunities. So, what this does is it
12 really helps us to tip-and-cue these tools to
13 invest in the areas of these technology
14 sectors that most require this source of
15 capital.

16 Lastly, we're mostly -- we're very
17 excited about other areas of partnerships. Of
18 the hundred and eighteen federal credit
19 programs that exist in the US government today
20 unfortunately the Department has none so we
21 rely on our interagency partnerships to help
22 us learn how these programs operate but also
23 help to apply these in areas which we see
24 mutually beneficial in support of national
25 security. While we look forward to announcing

1 those -- the partnerships soon, which include
2 opportunities to learn from things like the
3 DOE's loan program, the Export Import Banks, a
4 CTEP, Counter-China Transformational Exports
5 Program, as well as the Developmental Finance
6 Corporation, all which use eq -- equity and
7 debt instruments in support of their mission
8 objectives.

9 And lastly, very soon we hope to start
10 making our initial investments.

11 DIB CHAIR BLOOMBERG: Jason, thank you
12 very much. Using financial tools and public/
13 private partnerships, as the Office of
14 Strategic Capital is doing, can spur the
15 development of new technological capabilities,
16 including in the energy industry, really is
17 critical to our national security.

18 Any of the board members have any
19 reactions or questions for Jason?

20 BOARD MEMBER PHILLIPS: I have a
21 question.

22 DIB CHAIR BLOOMBERG: Charles, go
23 ahead.

24 BOARD MEMBER PHILLIPS: When you look
25 at the full investments being deployed and the

1 products that's coming out of those companies
2 do you anticipate that all of those products
3 will be things that the general public can use
4 or are they specific for the Department of
5 Defense? How do you think about how to
6 reinvest it?

7 DR. RATHJE: We -- our -- our initial
8 thrust is for truly enabling technologies.
9 So, to your point, we think of these as
10 products that are in the industrial base that
11 need to be absorbed into defense capabilities.
12 Things like semiconductors. Right, so I like
13 to give a story. There's a company that we
14 often work with that is developing carbon
15 nanotubes. They have received nearly sixty
16 million dollars in S&T investment from the Air
17 Force, from DARPA, from the National Science
18 Foundation. But this company requires
19 significant capital to get to revenue. We're
20 talking hundreds of millions of dollars. And
21 they've got a great strategy, but that type of
22 investment is, for companies that are going to
23 be operating in the margins that they're
24 operating in, is just not seen. You know
25 they're not operating on a software margin,

1 they're operating on a hardware margin. But
2 this technology is truly fundamental. It's
3 going to support, and their initial market is
4 space, but it will -- it will support power
5 plants. They're targeting underwater
6 applications. They're targeting the
7 automotive industry. So, opportunities to
8 scale and enable a technology like carbon
9 nanotubes.

10 Another example I give is cubic boron
11 arsenide. A replacement to silicon has ten
12 times the thermal conductivity as silicon. A
13 great article came out of MIT recently funded
14 by ONR prototyping the technology and proving
15 it works on an integrated circuit.

16 Unfortunately the -- the -- the engineers and
17 the Navy at the end of this article talk about
18 how hard it's going to be to commercialize
19 this technology. How do you get cubic boron
20 arsenide into -- into F-35s, but also how do
21 we get this into the -- into the industrial
22 base. There's a required industrial base to
23 make sizeable investments in these types of
24 technologies to get them over the line.

25 Investments that are going to dwarf the S&T

1 investment that we took to get it to TRL 6.

2 But that's not to say that we're not
3 going to be supporting things that the
4 Department's not just going to buy.
5 Fundamentally though we're focused on the
6 competition over these technology areas and
7 wherever those markets take us is where -- is
8 where we're going to go.

9 BOARD MEMBER SWANN: What's been the
10 initial reaction from your investor community?
11 Any -- any idea -- also any idea on time
12 frames on when you would like to see like the
13 first investment. Give me a sense of where
14 you're going.

15 DR. RATHJE: We -- I mean we would like
16 to license our first funds on the SBIC Program
17 this year. I mean we would like to license
18 them, you know, by the end of the summer if we
19 can. You know we -- we're very fortunate that
20 the SBA has done a lot of the legwork on their
21 own to get us to where we are. They have had
22 to shift the debenture structure to make this
23 possible because the existing SBIC Program is
24 not conducive to the patient long-term
25 investments that we need for these technology

1 earnings. They have made a massive shift to
2 the program in support, you know, of an
3 additive niche here.

4 The -- our conversation with the
5 investor community is -- is one that has been
6 positive. It's been one that we've had to
7 continue to advance the narrative. Because
8 there is a lot of work that organizations like
9 AFWERX and DIU are doing to help transition
10 commercial technology into the things that we
11 buy. And those are critical and important,
12 but we need private investors there too.

13 But those conversations are inherently
14 different than seeding and changing the
15 economics in the deep technology community to
16 get after some of these areas of the economy.
17 Areas that are deep within our supply chain,
18 but areas that we certainly need to have
19 advantage in from a national security
20 perspective. The sensitive areas that we'd
21 lose as we seen from the CHIPS Act could be
22 really hard for us to get back.

23 BOARD MEMBER SWANN: Okay.

24 BOARD MEMBER ROPER: Jason, my
25 question, and I -- I do think the Department

1 needs a deep tech office, it's just a step
2 before where the service, research and
3 development procurement process kicks in, so
4 in theory I understand. This sounds to me
5 like -- just like you and your colleagues
6 hacked the current statutes and regulations to
7 make the citification model work, we got right
8 up to the line of what was allowed. It sounds
9 like the same thing is being done with the
10 leverage model, trying to hack these credit
11 programs to make them work for defense
12 purposes. What -- now that you're hacking two
13 different kinds of systems what needs to be
14 changed? Like I know you're making this --
15 that's what I took away from your briefing,
16 how should the system work ideally in your
17 opinion?

18 DR. RATHJE: I think, and we've all
19 been there at different start and stops in
20 kind of partnerships with the government, what
21 we know is that you have to handle bringing
22 outside in, you have to handle innovation
23 fundamentally differently than you handle
24 day-to-day business, right. You know what
25 you're -- where your current organization is

1 very successful at executing on is going to be
2 fundamentally different than the things that
3 may disrupt the status quo. And so what we've
4 noticed as we, you know, now are shifting our
5 hacking from working directly within a service
6 to now supporting cooperation with the
7 Interagency is that there is a strong desire
8 to figure this out. And -- and -- and I'm
9 getting that exposure now working with the
10 Interagency, working with the National
11 Security Council, the National Economic
12 Council. We know that we need to find ways to
13 crowd in capital. We know we need to find
14 ways to figure this out and we know it is not
15 a simple problem. There is not one solution
16 that's going to fix this. Just in the private
17 capital markets alone there's the multi
18 variant equation we've gotta -- we've gotta
19 assess. But I think it fundamentally comes
20 down to if we want to get after these problems
21 that we've seen endemically it's gonna require
22 service based approaches, it's gonna require
23 DoD approaches, it's gonna to require an all
24 government approach and we need to change our
25 processes to adapt. Because our current

1 processes, even within the building, are not
2 gonna be equipped in the way, shape and forms.
3 And, you know, one of reasons we established
4 OSC was to create a separate structure to help
5 figure out this specific problem.

6 BOARD MEMBER ROPER: Do you think for
7 the time frame of the investment that you
8 think will be needed can you survive
9 leadership changes? Like when you have to be
10 slow and patient as to take something that's
11 deep tech and get it to the point that it can
12 be commercialized, Jason, is that a risk
13 (inaudible).

14 DR. RATHJE: Absolutely. I think we
15 need to prove that these models work, don't
16 work. That's why we're trying to launch a
17 number of financial products and investment
18 tools this year to start quickly figuring out
19 and getting case studies and seeing what works
20 and what doesn't. But we're also gonna look
21 to the private capital markets. You know if
22 -- if there's a strong interest that we can
23 license that would be fine. I mean we're
24 fortunate with some of the partners that we
25 have. The SBIC Program has been since 1958.

1 The last twenty years they've operated at no
2 cost to the taxpayer, zero percent subsidy.
3 Which means that we've been able to increase
4 investment in different areas, not these areas
5 but other areas of the economy, at no cost to
6 the taxpayer.

7 Now, the efficiency of which we think
8 these tools can be applied to these areas as
9 well as the operationalization to actually
10 showcase value is going to be our focus over
11 the next two years. But, you know, I -- I
12 wouldn't -- I wouldn't -- I'd be -- it
13 wouldn't be honest of me to say that there
14 certainly is no risk that this goes away in
15 two years.

16 BOARD MEMBER BARABINO: Jason, you
17 mentioned as a next step the Critical
18 Technologies Initiative would be open for
19 applications. Can you say a little bit about
20 the strength of listening and attracting
21 applications particularly so that it's not
22 just the usual players and maybe there's some
23 tech talent somewhere that needs to be brought
24 in (inaudible).

25 DR. RATHJE: Yes. No, that's -- that's

1 great. I think there are a couple. One, we
2 are launching listening sessions. Actually
3 we're having one with the NVCA this Friday.
4 So, we're trying to leverage those
5 relationships to get maximum external
6 exposure --

7 BOARD MEMBER MULLEN: What's NVCA?

8 DR. RATHJE: The National Venture
9 Capital Association.

10 -- and partnering with a number of
11 organizations across, and I'd appreciate any
12 feedback that you did have on other
13 organizations that we can bring in to help
14 partner and bring this to other areas of the
15 economy that are traditionally targeted by
16 these types of programs.

17 But we, you know, we don't see this
18 just as venture capital, we see this as
19 private equity. We don't see this as just the
20 coast, we see this as the middle of
21 country. We have a fund we're working on
22 right now that supports industrial
23 transformation focused on -- on accelerating
24 our Tier 2, Tier 3 suppliers to prepare them
25 for the future to come, hypersonics and energy

1 and space, but also allowing faster times to
2 produce the supply that we need today,
3 examples that we've seen from Ukraine.

4 Now, to your -- to your other point,
5 one of the great things about the SBIC Program
6 is that they have been operating for a long
7 time and licensing funds and what it allows us
8 to do is it allows to say, hey, investors, if
9 we -- if we license this limited partnership,
10 we provide you that debt, you actually raise
11 the finance from us, it comes from a private
12 bank, it's a loan guarantee it doesn't come
13 from us, and the limited partnership is
14 licensed for ten years with a five year
15 additional option. So, we can create
16 fifteen-year funds that once they're licensed
17 and operational they're effectively operating
18 as a for-profit private entity. Right, we're
19 checking in with them, we're monitoring them,
20 but it allows us to put the funds into point
21 of capital. They get to pick the companies,
22 we just say, hey, for some percentage of your
23 portfolio invest in the fund. We -- we
24 negotiate that up front.

25 BOARD MEMBER ROPER: Do you have

1 control of leadership?

2 DR. RATHJE: Of the -- of the limited
3 partnership?

4 BOARD MEMBER ROPER: Yes.

5 DR. RATHJE: We get to -- we get to
6 assess the investment leadership for licensing
7 and then ultimately there's the same if we
8 license something with a certain leadership
9 structure then anything additional has to be
10 approved.

11 BOARD MEMBER ROPER: For anything new
12 it's usually good to think about when
13 something does go wrong, and it will
14 eventually at some point, how -- how does the
15 system do its counterbalance and can you avoid
16 that being catastrophic, meaning ruining the
17 whole thing, by saying, well, let's prevent
18 that from ever happening again by never doing
19 it again.

20 DR. RATHJE: Well, you know, when you
21 think about federal credit programs it would
22 be -- it would be -- it would be dishonest of
23 us to not to compare Tesla and Solyndra. I
24 mean, you know, I think it's important for us
25 to understand from an energy perspective we

1 need to take risks. We need to take risks to
2 avoid climate change, we need to take risks to
3 provide for renewable sources of energy.
4 There's also a massive national security need.
5 And Agility Prime is a great example of where
6 we have to take and be a leader in a space
7 supporting electric vertical takeoff and
8 landing. But, you know, if you look at the
9 energy program its loan program office has
10 been operating at a return to the taxpayer
11 from a portfolio perspective for years and you
12 have still have had loans that have gone
13 wrong, like Solyndra. But you've also had
14 companies like Tesla which were massive
15 successes. And I think, you know, to your
16 point it's not only an understanding of we've
17 got to take risks in these technology areas in
18 order to maintain a competitive advantage but
19 we also need to balance those risks across a
20 portfolio of investments.

21 BOARD MEMBER ROPER: The DOE program
22 seems like it has a mirror horizon for ROI. I
23 think that will be challenge, the horizon will
24 likely be longer. You'll be -- you'll be
25 asking those looking in from the outside to be

1 even more patient than they've been for the
2 other credit programs. (Inaudible) messaging,
3 at least in my opinion, really (inaudible) to
4 say this is the -- this is the deep, the
5 deepest of the deep tech, not the surface
6 layer of deep tech (inaudible).

7 DIB CHAIR BLOOMBERG: Jason, I just
8 wanted to stay thank you.

9 And, Colleen, you are going to
10 introduce our next speaker.

11 EXECUTIVE DIRECTOR LAUGHLIN: Yes.
12 Yes. So, we have joining us a guest speaker
13 Lieutenant General Clint Hinote with US Air
14 Force Futures really but today talking to us a
15 little bit about his experiences with service
16 innovation organizations.

17 And so, sir, I will turn it over to
18 you.

19 GENERAL HINOTE: Thank you, Colleen and
20 Chairman Boomberg and members of the board.
21 Thanks for the opportunity to come and talk to
22 you today. And when I walk around with this
23 uniform around the country I often get thanked
24 for my service, and I appreciate that. I want
25 to thank you for your service. And for many

1 of you it's -- it's another chapter in your
2 service. So, thanks for being able to -- to
3 come back and help us, I think it's important.

4 I am not speaking on behalf of the
5 Department either the Department of the Air
6 Force or the Department of Defense today. I
7 hope I can speak to you as Dr. Hinote and not
8 General Hinote. Why? Because I want to be a
9 faithful reporter to you of what I have seen
10 since I have been in the Innovation Technology
11 Strategy space since 2015 when I came to work
12 in the office of Deputy Secretary Bob Work.
13 And for -- with the exception of one year when
14 I was in Baghdad serving in the US Embassy
15 I've been here struggling with the adoption of
16 -- of innovation and I want to be able to have
17 that opportunity tell you what I've seen
18 because I think it's important to your work.
19 And so I'm going to be, if you have seen I've
20 -- I've -- I handed out some slides, I'll be
21 following them loosely. But I just want to be
22 able to talk with you a little bit about what
23 -- what I have observed in those years.

24 My thesis is pretty simple. It's that
25 we've got access to more innovation than I

1 think at any point in our history. It's not
2 an access to innovation problem that we're
3 dealing with it's an innovation adoption
4 problem. Now, I'm not the first one to say
5 that, to write about it. In fact, the
6 Atlantic Council has stood up a commission
7 under deputy -- Secretary of -- or former
8 Secretary of Defense Esper and Former
9 Secretary of the Air Force James to -- and
10 it's call Innovation Adoption. That's what
11 the focus is. That's a good thing. And it's
12 -- it's where we stand right now. But why?
13 And I think this is what we have to struggle
14 with. Because until we begin to address some
15 of these issues we are going to be in the same
16 place. My thesis, my -- my answer to why is
17 cultural and structural problems. Again, I'm
18 not the first person to write about that or to
19 talk. But I'm going to be more specific about
20 it because I think it's important that the
21 board is aware of how hard we have been
22 working and how difficult it has been. So,
23 I'm going to talk to you about some barriers.
24 I could write probably in the neighborhood of
25 thirty or forty off the top of my head. But

1 what I did was, I think this might be sixteen
2 here, I've witnessed each of these stifle
3 innovation on behalf of the -- of the
4 bureaucracy and at the expense of tomorrow's
5 warfighter.

6 The first thing I'd say is although I
7 believe our leaders, and I've seen leaders on
8 three different administrations, I believe our
9 leaders do have a sense of urgency about
10 change, it is not permeating throughout the
11 organization and that's unfortunate. But it
12 is true that our department is the most
13 diffuse organization when it comes to power
14 I've ever seen or studied. And when that is
15 the case having the -- the lack of sense of
16 urgency in the middle is deadly. And that's
17 what it has been for us. Often times the tool
18 that is used is, well, why don't we stop doing
19 it? Well, as you can imagine that's a really
20 difficult thing to answer because there's a
21 reason for everything that we're doing. Even
22 if it's not a good reason it is often a reason
23 that people, either it helps local interests
24 or it -- it serves a purpose that is -- allows
25 people to stay in the -- in the know or in the

1 -- in the process.

2 There is a huge disagreement in this
3 Department over the time lines of risk.
4 Meaning that the actions of the Department
5 tend to focus on near-term risk but the words
6 of the Department tend to focus on long-term
7 risk. Why? Because we have built up a
8 tremendous amount of long-term risk. I'll be
9 able to talk with you more about that in a
10 closed session.

11 There are a lot of people in uniform,
12 outside of uniform that identify with the old
13 ways, the old ways of doing things, as opposed
14 to the new disruptive ways. And so a lot of
15 advocacy is built around an identification,
16 people who grew up whose identity is
17 interwoven with a type warfare. A good
18 example would be fighter pilots and their
19 airplanes. I am a fighter pilot so I really,
20 really, really liked the airplanes I flew.
21 And the folks that fly airplanes today are
22 very, very sure that their airplane is the
23 best airplane that ever flew.

24 But what happens when we get to a
25 disruptive point in aviation? Well, that

1 tends to slow down the progress to disruption.
2 There are a lot of soft vetoes in our
3 department. That probably doesn't come as a
4 -- as a surprise to anybody but it is true.
5 And at any one point they are so many
6 different people, offices, interests that can
7 block an action. They can't start an action,
8 they can't initiate or get an action through,
9 but they can block. And that's a fact of life
10 in this Department that makes it very
11 difficult to keep going. There's also a
12 culture of compliance, meaning you're
13 incentivized to be compliant with the process
14 over being incentivized to produce outcomes
15 that make a difference on the warfight. I can
16 give you numerous examples of this and we can
17 talk about that later.

18 Linear processes are -- are very
19 difficult to overcome in our Department
20 because they are very easy to describe and
21 write on a piece of paper. A good example
22 would be I have the word requirements in my
23 title so I work requirements on behalf of the
24 airmen of the Air Force. Often I am asked
25 what kind of capabilities will airmen need in

1 2038. I have no idea. And I can't write a
2 decent requirement for 2038 in this
3 environment. But yet that's what the
4 bureaucracy would like because then you get --
5 it's far enough out, first of all, it doesn't
6 hurt too many of the current programs and you
7 can have a very relaxed acquisition process to
8 be able to meet that requirement and you
9 always have the requirement as your
10 justification of being compliant. If I'm
11 compliant with the requirement then we must be
12 okay. I don't know what technologies will be
13 most prevalent, most salient in 2038. I don't
14 know in 2030. I think I might know 2030
15 better than 2038. But if I don't know, and I
16 have access to as much information as anybody
17 has ever had, I don't know how we think a
18 linear process will help us. And that gets
19 into the whole lack of a requirement, well,
20 what is the requirement for that. Well, often
21 time what I see is technology makes things
22 possible that no one imagined. Certainly not
23 imagined at the level of a requirement that
24 you would write down and put key metrics on.
25 And often times we have a lack of awareness

1 about what really is going on in the
2 technology space so it's impossible for us to
3 know how that might change for fighting
4 because we just aren't aware of it.

5 There is a strong not invented here
6 culture. And you can imagine this is true in
7 places, a good example would be some of the
8 science and technology laboratories that we
9 fund. And what I see is there is often a
10 competition with the internal S&T versus the
11 external S&T that are being driven through
12 commercial incentives. And while I -- I don't
13 necessarily mind the competition between those
14 two sides what I do mind is when the internal
15 organizations have a soft veto on the external
16 organizations, and that is true today.

17 The timelines of our budget versus our
18 -- the timelines of the companies that we are
19 working with are vastly incongruent. I'm
20 going to quote a recent DoD leader retired now
21 but who just addressed PPBE Commission that
22 Congress put together. And he said, "Nothing
23 says support like come back to me in two years
24 when I've got money." I will tell you right
25 now there are technologies that that is

1 exactly what we are saying to these small
2 start-up companies. And it can't be true that
3 a company -- the only way that a small
4 start-up can -- can work with the Department
5 of Defense is that they have to self-fund for
6 two years or more, but yet I have heard all
7 start-up companies tell me exactly that.

8 So, we are blessed and cursed with some
9 of the best military technology companies in
10 history. Those are, of course, our primes and
11 they -- they have incentives of their own.
12 And while we are so blessed to have the
13 incredible depth of talent in those companies
14 we are also cursed with some of the incentives
15 that they have. An example, when a small
16 start-up company comes forward with a
17 disruptive way of fighting that threatens
18 profit margins, especially profit margins that
19 are built on sustainment models, meaning it's
20 more profitable and certainly more predictable
21 if you're sustaining equipment over a period
22 of years, decades, versus being disrupted by a
23 small start-up that may work, may not work.
24 And so what ends up happening sometimes is
25 that the primes buy up interest in the small

1 start-ups. And -- and while they may say, and
2 I think in some cases they would be accurate,
3 that they're trying to ingest the technologies
4 into their companies in some cases we know
5 that they kill them. And that's just
6 something that we have to deal with.

7 And I think the last thing I'll say,
8 and if you haven't run into this yet you will
9 in this space. The unfortunate lack of trust
10 and comity between the Executive Branch and
11 the Legislative Branch. And we when we talk
12 about the flexibility to be able to use money
13 in ways that are different we find that there
14 is not a lot of trust. In fact, it was
15 written into the Appropriations Bill in 2021,
16 if I remember right, where they actually wrote
17 we don't trust you to be able to spend the
18 money flexibly. And so as we think about what
19 that requires we're going to have address
20 that. It is a structural problem that we must
21 do something about.

22 I'm going to go through a few things
23 here in the last few minutes and then I'll end
24 with a -- with a key ask. And it may be a
25 little bit different than the type of ask that

1 -- that you may be used to. I believe strong
2 leadership is -- is necessary to address
3 cultural and structural concerns. I think we
4 have to encourage that strong leadership. I
5 believe this board has a voice. You all
6 individually have voices. That influence is
7 important in making it better. Actors respond
8 to incentives. I challenge this board to do
9 something like this, map out the incentives of
10 the acquisition world, the services, R&E, A&S,
11 hey, policy, the small start-ups or small
12 subcontractors versus large contractors or
13 primes versus the committees, and it will be
14 different for the appropriations committees
15 and the authorizing committees. If you would
16 take the time to map out the incentives there
17 you will find there was a lot of barrier and
18 maybe some opportunity. That would be
19 something that I think would be good for the
20 board to -- to look at.

21 We've got to incentivize risk taking.
22 The markets do it all the time. If -- if
23 we're not incentivized to fight better so that
24 we can save lives and defend the country
25 better than I don't know what -- what we have

1 to do, but we gotta do something because the
2 incentives right now are lined up against
3 rapid scalable progress.

4 Flexibility in the budget. I've
5 already talked about that. Right now that
6 trust doesn't exist. I don't see a way over
7 the Valley of Death without it and so at some
8 point we're going to have to explore what
9 types of transparency we need to get our
10 Congressional stakeholders semi comfortable
11 with the type of flexibility that we know we
12 have to get to. And I think that that
13 involves a flexibility in intellectual
14 property that we have not seen yet. We are
15 going to need to figure out incentivizing
16 intellectual property but also using it to
17 scale. An example might be that if we know we
18 have a good missile, we'll just call it
19 weapon, missile, and we know that our partners
20 and allies have lots of manufacturing
21 capabilities, that is true today. There is --
22 and we know that we would need them, the
23 people that we're going to go defend, to have
24 this missile to deter and, if necessary,
25 defeat an adversary. I'll talk to you about

1 specifics of this here in the closed session.
2 If -- if that is true it is in the national
3 interest to lease the intellectual property,
4 give it to the partner and let them build the
5 weapons. Because at the moment we are not
6 able to build enough weapons fast enough and
7 that's clear. Even a situation like what we
8 have in Ukraine has challenged us. It will be
9 a -- an order of magnitude worse if we have to
10 go fight it right now.

11 So -- so, I think that as we are
12 thinking through what we have to do I've got
13 one ask. And -- and I want to tell you this
14 story. Last week, and it could have been the
15 last three years, but last week I had a senior
16 department and we were in a meeting like this
17 and we were discussing an innovative effort by
18 the Department. And we were looking for --
19 for reasons to continue with this innovative
20 effort. It happened to have the last word
21 "prime" in it. And we were working through
22 what -- what is the -- what is the importance
23 of it, how can we leverage it, and by the way,
24 in this particular program we have seen in one
25 company, I'll just tell you, one company we've

1 invested less than fifty million dollars in
2 SBIR funds. They have raised three ways, an
3 initial round and two series of venture
4 capital, over eight hundred million. Most of
5 that eight hundred million is going to achieve
6 parameters that will help us. So, we're
7 talking about this and then I -- I hear this
8 from one of our senior leaders, it is if we
9 start developing a capability today it won't
10 fill until 2032. I think that that -- that
11 one statement encapsulates the difference
12 between the -- the what you might call the
13 innovative ecosystem that we are so blessed to
14 have in our country and the -- the
15 governmental system. Which is, are you
16 kidding me. We can't put something. I mean
17 some of these technologies, a good example
18 would be uncrewed aircrafts. There are
19 thousands of variants of uncrewed aircrafts
20 flying today. We should be able to scale
21 uncrewed aircraft to the point in our military
22 that any formation that needs one can have
23 one. And I don't believe that takes ten
24 years. It cannot take ten years. And I don't
25 think any of you who are in private capital

1 would allow anybody to say that to you. But
2 we literally say it to ourselves all the time
3 and unfortunately it's a self-fulfilling
4 prophecy. What we have got to do is change
5 the conversation because there is nobody in
6 the middle who hears that in a meeting and is
7 incentivized to push, to push the bounds of
8 technology, to push the bounds of schedule and
9 cost to take risk. That's how deep it goes.
10 And so what I'm asking the -- the board to
11 consider as you do a survey and you talk to
12 people and you see where we are today and
13 where we need to be, I would like to see it.
14 Because eventually we've got to address the
15 culture and the structure.

16 I have looked back over many of the
17 recommendations that previous boards and other
18 boards and other commissions have -- have
19 recommended. They're all good. I certainly
20 wouldn't disagree with any of them. Most of
21 them have been put in place in some way.
22 We've gotten acquisition reform. We've gotten
23 middle tier acquisition, OTA type structures.
24 We've got money, I mean eight hundred billion
25 plus. All of that is what we have. And we're

1 so blessed to have the best innovation
2 ecosystem in the world. We're not taking
3 advantage of it because of culture and
4 structure. And until we at least call that
5 out and address it and incentivize people to
6 do things differently I don't see how it
7 changes for tomorrow's warfighter. And
8 because of that I -- I just wanted to say I
9 don't believe this is impossible. I don't
10 believe that people want to watch innovation
11 flounder in our department. But the
12 incentives are structured in a way that makes
13 it darn impossible and until we call it out I
14 just don't see how it gets better.

15 So, Mr. Chairman and members of the
16 board, I -- I -- I'm passionate about this
17 because I've seen it happen. I've seen some
18 successes but a lot more failures. And I
19 believe that we can and should take advantage
20 of the -- of what we've got as a country, as a
21 private sector. We're not, that -- that makes
22 me frustrated, and I know that tomorrow's
23 warfighter needs it. So, thank you for being
24 part of the team to help us get through that.

25 DIB CHAIR BLOOMBERG: General, the

1 country is lucky to have you. And you're
2 enthusiasm is something that we are certainly
3 going to hopefully build on.

4 Does anybody have any comments or
5 questions?

6 Michael?

7 BOARD MEMBER MULLEN: Terrific. My
8 sense is you have it, you know, pretty close
9 to exactly right. Do you have any thoughts in
10 the current conflict on some of these old
11 systems that took a long time that are
12 performing incredibly well and how -- how the
13 future would look with how to still develop
14 those --

15 GENERAL HINOTE: Yes, sir.

16 BOARD MEMBER MULLEN: -- because they
17 do take a long time --

18 GENERAL HINOTE: Yes, sir.

19 BOARD MEMBER MULLEN: -- and a lot of
20 money, in addition to bringing in the
21 technologies of the future.

22 GENERAL HINOTE: Sure. It's -- Ukraine
23 is an incredible example of this. So, yes,
24 systems like the surface-to-air missile
25 systems that Russia developed over many years,

1 as well as systems that we developed over many
2 years, like HIMARS would be one example.
3 Though I -- I don't want to say that military
4 driven innovation is off the rails. It is
5 not. We don't we talk about it a whole lot
6 but I will tell you we are in the middle of
7 some incredible military driven innovation.
8 And those programs are developing mostly
9 behind the scenes, some of them in the
10 classified world, but those are generally on
11 track. I'll give you an example, the B-21,
12 the Raider. We unveiled that with Northrop
13 just before Christmas. It was conceived years
14 ago. The requirements were made years ago.
15 And generally the military driven innovation
16 is having an effect. That would be true for
17 the planes, the tanks, the missiles that
18 you're seeing on both sides. But what makes
19 them so much better is the access to the
20 commercially driven innovation. And this is
21 where you have to give Ukraine some of the
22 best credit that you could ever give to any
23 fighting force. They have adopted a
24 symmetries in data, in access to data, in
25 being able to move data around the battle

1 space in ways that have kept them in the ball
2 game when none of us gave them credit for
3 staying in the ball game. I've never seen
4 data used so well in -- in avoiding attack and
5 in prosecuting attacks. And I don't
6 understand why the Russians won't adapt and
7 the Ukrainians are so good at adapting, but we
8 still have Russians who are turning their cell
9 phones in combat. Well, I don't understand
10 why but, well, you know, we're gonna help the
11 Ukrainians take advantage of that. And so --
12 so with all of this together what I think I
13 think is that the military driven innovation
14 is something we're fortunate to have and it
15 needs to stay on track. And this includes
16 things like adaptive engines and counter
17 infrared technology. The ability to do
18 hypersonics in ways that we've never done
19 before. We have two different styles of
20 hypersonics, both are working now. And I
21 could go on with all the military driven
22 innovation, but the secret sauce that makes it
23 so much better is in the commercial world
24 being driven by commercial incentives. And if
25 we can be half as adaptive as the Ukrainians

1 have been then it makes all of our long-held
2 investments in these systems all the better.
3 And I'll be able to talk more about this when
4 we talk about concepts.

5 DIB CHAIR BLOOMBERG: General, slightly
6 different topic, but could you explain why all
7 the intelligence services seem to have been
8 wrong about Russia's capabilities to fight the
9 Ukrainians?

10 GENERAL HINOTE: Yes, sir. The --

11 EXECUTIVE DIRECTOR LAUGHLIN: Well, I
12 was gonna say too, sir, we might want to save
13 that also for the closed classified session
14 but --

15 GENERAL HINOTE: I think I can get into
16 it --

17 EXECUTIVE DIRECTOR LAUGHLIN: Yeah.

18 GENERAL HINOTE: -- in an unclassified
19 way. And I certainly don't believe that the
20 intelligence services got it entirely wrong.
21 What I do believe is that in the history of
22 war the most difficult thing to judge is the
23 willingness of a people to fight. And that's,
24 I think, where most of us, including me, got
25 it wrong. I did not expect the Ukrainian

1 people to unite behind a very powerful and
2 well-articulated political leader and fight as
3 well and as hard and as unified as they have.
4 This will be true, this -- this same dynamic
5 will be true for any of the future conflicts
6 where we have to come in on behalf of another
7 nation. An example might be defending NATO's
8 eastern flank, or defending Taiwan or helping
9 Taiwan defend itself, defending Japan,
10 defending allies and partners in the South
11 China Sea and all around the world. The
12 willingness of the local party to fight is so
13 decisive. And what -- what we have found is
14 that if we can help them be better fighters
15 and they convince themselves to fight that's a
16 very powerful combination. I think that's
17 what we saw in Ukraine.

18 DIB CHAIR BLOOMBERG: Any other
19 questions from the other members?

20 Colleen, you had some public comment
21 that we had.

22 EXECUTIVE DIRECTOR LAUGHLIN: Yup. Oh,
23 go ahead, Your Honor.

24 BOARD MEMBER ROPER: I just want to
25 thank you. That's the best -- I think that's

1 the best articulation of the innovation
2 challenges to the Pentagon. So, I hope you'll
3 keep using those sixteen --

4 BOARD MEMBER MULLEN: Can I see the
5 other eighty?

6 GENERAL HINOTE: Somebody wrote
7 recently, I think it might have been in AI,
8 that you could put Ninety-five Theses on the
9 Pentagon door. And it wouldn't be that hard
10 to come up with, but, yes, sir, we can always
11 help you with that.

12 BOARD MEMBER ROPER: I think I've --
13 I've worked with a lot of -- a lot of people I
14 don't think I've (inaudible) another officer
15 quite like you. For everyone listening to him
16 I wish we had a thousand more people like him
17 to talk to.

18 DIB CHAIR BLOOMBERG: (Inaudible.)

19 BOARD MEMBER ROPER: I'll take a
20 hundred -- a hundred (inaudible).

21 BOARD MEMBER MULLEN: It would change
22 the world.

23 BOARD MEMBER ROPER: Yeah. He's a
24 (inaudible).

25 DIB CHAIR BLOOMBERG: Colleen has some

1 public comments. Did you just want to share
2 them?

3 EXECUTIVE DIRECTOR LAUGHLIN: Right. I
4 will just go through two or three and we'll
5 post the rest of these. I want make to sure I
6 leave some time here some good closing
7 remarks. This was such a rich conversation,
8 thank you, everyone,

9 So just, you know, very -- I think some
10 relevant questions here, right. "Will the DIB
11 look across service innovation organizations,
12 such as AFWERX and NavalX, as well as private
13 sector innovation factories, to compare best
14 practices?"

15 BOARD MEMBER ROPER: Yes.

16 EXECUTIVE DIRECTOR LAUGHLIN: What is
17 the biggest challenge to defense innovation
18 currently?

19 BOARD MEMBER SWANN: I think we just
20 heard that.

21 EXECUTIVE DIRECTOR LAUGHLIN: That was
22 -- well, I was gonna say that was mapped out
23 for us.

24 BOARD MEMBER SWANN: Well, we have -- I
25 mean we have talked about a lot of culture.

1 BOARD MEMBER MULLEN: I think he summed
2 up misaligned incentives.

3 EXECUTIVE DIRECTOR LAUGHLIN: Yeah.

4 BOARD MEMBER MULLEN: But that's the
5 culture.

6 EXECUTIVE DIRECTOR LAUGHLIN: Given the
7 current geopolitical state, will the DIB look
8 at how we work with Allies & Partners?

9 That's been something folks have talked
10 about.

11 And then: How can the Defense
12 Innovation Board improve relations,
13 specifically communication, between DoD and
14 the private sector with large contractors and
15 small businesses?

16 So, a lot of the themes I think we're
17 hearing today.

18 DIB CHAIR BLOOMBERG: The fact that I
19 was married to a Brit (inaudible) outreach to
20 our allies.

21 EXECUTIVE DIRECTOR LAUGHLIN:
22 (Inaudible.)

23 DIB CHAIR BLOOMBERG: My daughters have
24 both American and British passports.

25 That was a good session. Thank you all

1 our board members for their hard work and I'm
2 eager to see where the research takes us and
3 the ideas that our group generates for the
4 Department.

5 Let me also thank the Department of
6 Defense Undersecretary Heidi Shyu and the
7 entire Defense Innovation Board team for
8 putting together such a productive two days.

9 A reminder that anyone can sign up to
10 speak with the Strategy Investment Capital
11 task force using the link that Will -- that
12 Will mentioned earlier. I want to -- we want
13 to hear from you.

14 Also a quick announcement. At the
15 summer board meeting, even though it is cold
16 outside today summer is coming and then task
17 force chairs will present to the public both
18 findings and recommendations which DIB members
19 will deliberate and vote on. And we will also
20 announce the next slate of study topics for
21 the board.

22 Members, any closing comments?

23 Gilda, you first.

24 BOARD MEMBER BARABINO: I just thought
25 it was fantastic and I wanted to say some of

1 the challenges that the General talked about
2 are not unique to DoD.

3 DIB CHAIR BLOOMBERG: Anybody else?

4 Thank you all. And, General, once
5 again thank you. And, Jason, thank you for
6 your presentation both now and in the earlier
7 sessions.

8 Have a good summer. Until the summer,
9 I guess, and all the best.

10 The meeting is officially adjourned.
11 Or do you do that?

12 EXECUTIVE DIRECTOR LAUGHLIN: Okay,
13 this meeting is officially adjourned.

14 DIB CHAIR BLOOMBERG: Well done.

15 EXECUTIVE DIRECTOR LAUGHLIN: Thank
16 you, Mr. Chair. Thank you, everyone. This is
17 meeting is closed now.

18 (Meeting concluded at 12:00 p.m.
19 Eastern.)

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CERTIFICATE OF TRANSCRIPTION

STATE OF FLORIDA
COUNTY OF PALM BEACH

I, Richard C. Almash, certify that I was authorized to and transcribed the notes of Allison Diercks of the above-styled recorded proceeding; and that the foregoing transcript, pages 3 through 68, is a true transcript of said to the best of my ability.

I FURTHER CERTIFY that I am not a relative, employee, attorney, or counsel of any of the parties; nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

Dated this 8th day of February, 2023.

<%22832,Signature%>
Richard C. Almash

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