

Virtual CRT The Missile Defense of the North American Continent — “A Golden Opportunity”

[Riki Ellison]

Good afternoon, ladies and gentlemen. From a sunny 85 degrees in Tucson, Arizona, it's great to be back here. It's in the Sonora Desert. I've been traveling in Europe and Belgium and Germany and even Colorado, so this is just the best. This is where I went to high school.

My name is Riki Ellison. I'm the founder and chairman of the Missile Defense Advocacy Alliance. We built this, I think, 24 years ago, right after 911, and when NORTHCOM was founded and when we put our GBIs in the ground and when we did the cruise missile defense around the capital. But I've also been involved with it for 45 years, going all the way back to 1980 in the formation of the Strategic Defense Initiative when Ronald Reagan was the governor and running for that.

So, our whole purpose is to educate and advocate because we believe that missile defenses make our world and our nation safe. That's what we do. We've been doing it for those 24 years and 40 years all along. And the last couple days has shown that missile defenses have made the world safer, saved probably a million lives, prevented us or the world going into a World War III. And you're seeing the power of that. We are struggling with capacity because we don't have the capacity that we need on this, but it is a significant momentum shift on missile defense.

You have to look at nine countries that were struck by missiles. We've been to all nine of those countries. We've been to seven of them advocating for missile defense for at least 20 years on that. And we do want to start off and say how great we're seeing both left of launch and right of launch. Certainly our terminal missile defense capabilities have been outstanding. The THAAD, the Patriot, our Electric Warfare have been outstanding over that time. So, you know, I just want to reach out and thank and bless those, pray for those guys, women that are out there today on the front with our missile defense capabilities on that.

This is our 92nd virtual. This is a missile defense for the North American continent with golden opportunities that we're going to get into. We're pretty blessed and really excited to have three great experts on this, all close friends and understand the subject matter that we're going to discuss. We have, obviously, the former general retired, Glen VanHerck, former commander of NORTHCOM NORAD from 2020 to 2024. He's on our MDAA board. We have Major General Jeff Smyth. Smytty is his nickname from Canada. He is the chief air and space force development. He's also pretty special because he's part of our SHIELD program, my original graduate of our SHIELD that was there. And we have Pete Saunders, who is the Canadian director general of NORAD continental defense modernization. And Pete and I go back a couple years, I think back to the Pacific IMD conferences with Cruiser, who now is the chief of our air force on that.

I saw both Pete and Smytty this week in Denver. We had opportunity to listen to our top generals on space and air force at that. And it was great to have Pete with me Friday night on our 12th Missile Defender of the Year awards that we held in Colorado Springs with the

deputy commander Ian Huddleston from Canada. So, that was quite a treat. Thank you, Pete, for being part of this.

I want to just open it up with the two golden opportunities that are happening right now. I think the first one is the momentum that just happened over the weekend. And we recognize not only that the North American continent doesn't have it, the European continent doesn't have it, the African continent, the INDOPACOM, they don't have a layered missile defense capability to even be able to deal with what we just saw. So, that time now has to be approached that we have to be able to defend a layered defensive architecture against today's threats. That's real. That's no longer you can't push it away. It's real. And that's happening. I think the momentum shift is in such a pace that everybody now understands that you have to have these capabilities.

The second one is the Golden Dome opportunity. And specifically, in President Trump's Golden Dome executive order on the Section 4 piece, having allied integration and cooperation is in that big time. And so, we know that Canada and us are on the same continent. And Canada and us have to do this together. And in the Golden Dome, they're the first ones in, and they have to be in this. They cannot not be in this thing. They have to be in it to make this the best that we can knock it out with.

So, if you look back in our history, both of us, Canada has been with us, I would say, all the way back to 1775 when they fought on our side a little bit against the Brits. They've been with us. They're the number one partner, number one ally, the oldest ally of the United States has. And they've been with us through all the wars alongside us—World War I, World War II. And then, after World War II, we had the USSR become a significant threat to the world and certainly to our continent as they flew the Sputnik in 57. And in 1958, the United States and Canada came together and created NORAD to defend our airspace together, like we're doing today, together against the number one threat to the world order, which was Soviet bombers and Soviet ICBM force. And back then, we built together that command.

That's significant because as we look at today, there's reality that that world order is changing, trying to change again. And we're coming back to this architecture, Golden Dome architecture, or for the North American continent to be able to win that battle.

And that's the opportunity that we see today. And we as a world championship team here, which we are, when you have a great team, your teammates, you trust all the way through. And to make the team the best, you have to pull out the best talent from your teammate and what they do best. You don't pull out what they don't do well, or their average. You have to pull that out to sustain that.

So, it's going to be a great discussion because we want to find out what Canada does great in this area that can help us win a world championship and help us defend the North American continent, which has to happen. And they've done some great stuff since 1958 on doing this, especially in the air defense arena, where they pay for 45% of the budget for NORAD. So I don't think people understand that and how important that is, and how integrated they are with our C2, with our air defense capabilities today. They're right in with us. So this is adding into that relationship and building off of it to go much bigger to where we have to go from space all the way down to what we're seeing over in the Middle East.

Okay, so I'm going to start it off introducing Pete to give us a great perspective, a Canadian perspective, perhaps, of where we're at today. And obviously, you may see things differently than we do on what's happening over there in the Middle East. So Pete, it's all yours.

[Pete Saunders]

Sure. Thanks, Riki. And thanks for the invitation and the offer to spend some time together last week. I really appreciate it. And spend some time today talking about what we've been getting up to over the last period of time. And as you pointed out, Canadian perspectives, which realistically, as we look at the threat picture that's out there, both public domain and otherwise, is really a threat to North America, a threat to Canada, a threat to the United States. Collectively, we share a landmass. And that's an inarguable fact. And it does color perspective as what we do.

You mentioned what happened, the events over the weekend. And I think really what that really drives home, and you said it quite well, is that the fundamental nature of warfare has in many ways evolved. And as we look at the threats that present themselves to North America, I'll speak to Canada specifically, you know, they are those missile threats, they are those airborne threats, they are those things that can be launched at distance and hold us at risk.

So to your point, we need to be able to respond to that. And not only to respond to that, but also to position ourselves in such a manner that people would choose not to hold us at risk. That would be the ultimate.

And you're right, our allies and partners, you know, the North American continent, yes, but also European continent and elsewhere. Most countries and allies that I've spoken with in this area are very much seized with that reality that this is very difficult work. You've been advocating for a very long time. It's not because people didn't care. It's because this is really hard. And it's really hard because of all the different elements that are part of a layered defensive system. And oftentimes, people will choose to go after those things that are a little bit easier, a little bit more manageable. This is hard business. And people, I think, collectively, are becoming more and more aware of the requirements that are inherent in trying to field any sort of a layered system.

So when I look at this from a Canadian perspective, I go back, I won't go back too far. But let's say 2017, the government of the day launched an air defense strategy, strong, secure and engaged. And it was a shift in terms of what we were trying to accomplish. It brought forward a lot of new capabilities that are needed by the Canadian Armed Forces, generally speaking. And it brought forward things like a replacement for our fighters, the river class destroyers replacing our frigates. It brought forward a replacement for the Aurora P3, in your vernacular, now with the P8.

A lot of those things were brought forward. We have policy coverage, that is to say, the enshrined in government policy, and we had funding, and a desire to move forward. And we have done that. And we have done that, I think, quite successfully. Every one of those things are constituent elements of what anyone would call an integrated air missile defense system, if you choose to look at it through that lens.

Subsequent to that, there was a desire and an acknowledgment that there was more needed to be done specifically to continental defense, specifically, as we look at NORAD and the requirements that would be articulated by NORAD commanders going back, but General VanHerck as well, and others. What else are needed? And many of the things that were highlighted, to your point earlier, sensors, the ability to actually detect threat, to understand what is out there such that you can do something about it.

We came up with an interim policy, NORAD modernization, again, policy coverage through direction from government and funding to get after that sort of thing. A couple of the things that came out of that were the Arctic Over the Horizon Radar Project, the Polar Over the Horizon Radar Project, Future Combined Air Operations Center, all of those projects that I had the honor to lead, and a number of others. But the focus on that was ensuring that we were providing the requisite tools to the commander of NORAD in a timely manner to enable us to better understand what the threat is, where it is, where it's coming from, and then to make decisions. And then we had the subsequent policy, our North Strong and Free, which filled in some of the gaps that were left from NORAD modernization, bringing in airborne early warning and control and a number of other capabilities.

So when we look at it in whole, with the benefit of hindsight and in retrospect, what we have are a collection of capabilities that when appropriately integrated, bring forward the ability to detect threats, not entirely, but a heck of a lot more than what we've been able to do historically, to make sense of that information through appropriate command and control, and so on, to allow a commander time, the one thing every commander wants, time to make a decision, and then in extremis, to act.

That is sort of the foundational, where I'm mostly interested in and the work underway right now came to us under our North Strong and Free, the defense policy back about a little over two years ago, where not only were we given direction to do certain very specific things, we were also tasked with an explore task. And that explore task was, what else, in addition to these things that we've already given you money for and policy coverage for, do we need to do in terms of integrated missile defense?

So that's been my world for the last, not quite two years, looking at assessing what is the threat, what needs to be done, what additional sensors are required, what additional command and control structures are required, and so on and so forth, in order to play a very significant role in the defense of our continent. And that is effectively what the work is on a daily basis.

The last thing I'd offer is a lot of what we're looking at is driven by data. And we have a lot of discussions about fifth generation military, fifth generation air forces, and everyone has a slightly different definition of what that means. It started off as a branding exercise. For me, the determination is all about data. They who control the data control the fight. And three quarters of what I'm looking at is how we can ensure that the data that is being generated by all these sensors, and I will argue there's always going to be need for more sensors because there's no such thing as perfect domain awareness.

We need to be able to take that data, get it to the appropriate location, turn that into information through the appropriate analysis. And with that information, give a commander such as General VanHerck here, the wherewithal to draw a decision in a timely manner, in a manner such that we can actually take action. It's that data.

And the challenge we have, as we all understand, is every one of these things we bring on board, whether it's a new, like a P-8, bringing a remotely piloted air system, over the horizon radar, space-based systems, they generate, the word enormous is not significant in terms of data, an absolutely overwhelming amount of data. Transporting it is challenging, but then making sense of that, turning that into useful information. The only way really you can get after that is through some application of artificial intelligence to help process that data into useful information and parse that information to develop courses of action.

So there's a lot of focus right now on that. And fortunately, we have folks within the Department of National Defense who that is very much their focus to enable us to move forward on integrated air missile defense.

So I'll stop there. There's quite a bit to talk about. I'll see where questions go.

[Riki Ellison]

Okay. Pete, let me, I got, I'm going to go two parts, one on data, but one on Canada. Because as we know, Canada is very comfortable with the air defense mission. And growing up with this program, with the GBIs, there was a little bit of discomfort or not, I wouldn't say discomfort, but a separation from BMD to cruise missile defense.

So we are now where those threats are absolutely real, including hypersonic and counter U.S. all the way down. I'm saying to you, is Canada now adjusting its policies and its position to go against all these threats now, instead of just let the U.S. do everything else, but we're going to do the NORAD role?

[Pete Saunders]

Certainly, from a policy perspective, the policy prohibitions that existed with respect to ballistic missile defense are gone. No longer exists. That's a matter of public record. Full stop.

Now, you can, policy prohibition can remove. You still then have all the work that our respective governments would need to do to determine how do you take advantage of that? What would be the appropriate next step? Which rules would be appropriate for Canada under what circumstances?

[Riki Ellison]

Is that where this is going to fit with Golden Dome? Is that where you think that link is going to go? Or you need to be led to that a little bit?

[Pete Saunders]

We'll see where that goes. Right now, the focus is on identifying very specific gaps that Canada can take advantage of. And I say take advantage of those things that we can actually contribute to under domain awareness. There's still more to be done, in my opinion, as well

as on the command and control side. When it comes to very specific missions, I think it's premature to say exactly where that would go. So we'll let that one sit for now.

[Riki Ellison]

Pete, besides policy, what about culture? Is the Canadian general public receptive to taking on this type of role or the connection with Golden Dome, if I can ask?

[Pete Saunders]

I really wouldn't be able to speak for the breadth of Canada. What I can offer is that the defense of Canada, the defense of the continent, the discussion is far more elevated than it has ever been in my career. People are actually aware of some of the aspects of what it takes to defend the continent. It is part of the conversation. And I think that's a good thing. And the various polls, I think, would bear that out.

Whether it's part of Golden Dome or another way, that's a separate discussion. Because in the end, you're talking about integrated air missile defense. And what we do know is we need to make sure we have appropriate sensors and the ability to take advantage of that information.

[Riki Ellison]

And then I just want to go into the data part of what you said very well. And that is the game right now, is collecting all that data and putting it together and spitting it back out.

And our country is putting \$175 billion into the Golden Dome. And that's one of the critical things the Golden Dome is going to do, is doing that joint across the board command and sensor pickup of everything. So, they're creating this, and they're doing them with a consortium, and they're moving fast to be able to do it.

So, it would seem odd to have two people, two resources doing the same thing. It would seem to be more fitting on how to fit into that. Like you've done with NORAD, with air defense, you've done this before with the U.S. on that. And some of the biggest issues are going to be the ability to power up those super AI computers in the database, and that you're going to have to, we can't, the power to do all this is going to be, infrastructure is going to be really required to be helped on that part of it. And then getting your sensors collectively into the Golden Dome aspect to add to that depth to go forward.

I mean, I think that's some of the things that they're looking at being able to, I wouldn't say pay to play, but it's contribute to play in a significant way so we all work together efficiently, not doing separate things on that.

[Pete Saunders]

We don't want to be duplicative. We also don't want to leave gaps, through operating in such a manner that we're not coordinated. But that's the beauty of NORAD. And it's something that I would hope everyone who would choose to tune into this would understand, but it is the only binational command on this planet. That is a unique thing. That is precious thing. And both of our countries contribute to it. And I don't see that ability to contribute to NORAD shifting. My goal, my objective is to ensure that we have sufficient sensors out there that can feed information to NORAD, and thus enable us to collectively

acquit ourselves of those missions that have been assigned. And at the moment, granted, those missions are maritime warning, aerospace warning, aerospace control. Those are the NORAD missions. That is my focus. And that's kind of my area of responsibility. Beyond that, that's where our various governments will do the work to determine how best to support one another.

[Riki Ellison]

Thank you. Thank you, Pete. I'm going to come back to you on that, the Ottawa and going back into possibly a third site, possibly an LRDR to the east and all that more specific. But you've touched a broad position and perspective that Canada has. So thank you very much.

I'm really honored to have one of the great generals of our country, a great leader, retired General Glenn VanHerck, who's done an outstanding job in his time, keeping peace and dealing with this problem right up front to allow Guillot to have the ability now to bring in the Golden Dome and lead that. So, Glenn, all yours, sir. Welcome.

[Gen (Ret.) Glen VanHerck]

Hey, thanks, Riki. I'm sorry I'm a couple minutes late. I apologize for that. It's great to be with Pete and Jeff and see them. I look forward to further discussions. Thanks for having me.

A couple of comments. What I would say is we're stronger together, allies and partners. It's our asymmetric advantage that China and Russia, North Korea, Iran don't have, don't endure. And so, the relationship can't be overstated how important that it really is. And more broadly, the Western nations that are allies and partners who bring so much together. We're seeing that play out in the Middle East right now, by the way. Relationships have enabled us to have access, overflight, basing, staging, those kinds of things. So we have to work hard at that. Don't take them for granted.

You know, I just want to start out with what is Golden Dome? I think a lot of people think it's all about space and space-based interceptors and defending from threats coming in space. When in reality, it is about space-based interceptors to go after ballistic missiles, potentially maneuvering missiles, hypersonic missiles in the atmosphere, cruise missiles, hypersonic cruise missiles, but also Group 3 and up UAS, which would include military style drones that you see today. And many of those can be launched from maritime platforms. They can be launched from land platforms, undersea platforms, and much, much more. I would point out that Canada is already doing parts of Golden Dome for NORAD and for themselves.

So for example, they're doing cruise missile defense every single day as part of the NORAD mission. Counter UAS Group 3 and above, they're doing it as part of the NORAD mission. So I think that's great, but it creates some unique challenges.

If the Golden Dome mission is solely placed under NORTHCOM authorities and roles, how do you bifurcate the NORAD roles today, which are crucial, including threat warning and attack assessment, which I said was the most important or most strategic mission that I had when I was the commander. And that directly supports missile defense and much, much more, continuity of government, et cetera. So I think it's important that folks understand it's

much more than the space layer and going after space-based interceptors. So they're playing a role there.

So the questions I think we have to ask going forward is, what is that command and control, the authorities, the responsibilities look like? And I see a great opportunity. Most people talk about Golden Dome falling under the NORTHCOM side. If Canada jumps in and plays in Golden Dome, and they don't have to build space-based interceptors and space-based capabilities, they're already playing for cruise missile defense, likely Group 3 and up, threat warning and attack assessment, all NORAD missions. If they jump in, and like we did with the current NORAD setup, where Canada funded nearly half, 40% of the NORAD architecture, if you will, what does that look like? And it would work under NORAD. Actually, it would be more, what I would say, seamless if you did that. If you did a portion under NORTHCOM and a portion under NORAD, things can get quite unique and challenging.

Those are questions that I don't know have been answered, but they're certainly questions that we have to consider going forward as Canada looks to potentially dive in and invest fully into missile defense and much, much more. And that ought to be part of the discussion.

I couldn't agree more that it's all about the data, and Canada has a lot to offer there just like we do. They have to provide their data, share their data, and data is going to come from multiple platforms to include over the horizon, which can see space-based, do space domain awareness. Over the horizon capability can see the air threat, including very low radar cross-section kind of capabilities, and they can see maritime platforms. So they'll have significant domain awareness there.

If they continue forward with the P-8, the P-8 will have a role as well contributing to Golden Dome with its maritime capabilities and much, much more, just as if they go forward with a submarine buy, and those submarines can get after submarines that can launch ballistic missiles, cruise missiles at North America as well. So, I point this out because contributions by both nations can vary, and I agree with Pete that we don't want to be duplicative in our efforts. And I'll finally point out the F-35. I think if they go forward and make sure we don't change that interoperable platform, the F-35 will be a significant contributor to not only NORAD, but Golden Dome in whatever format it comes with. It's incredible radar capabilities to see a Group 3 and above, to see cruise missiles, and much, much more, Riki.

So I'll stop there. I look forward to the discussion.

[Riki Ellison]

Thanks, Glenn. And going back to the F-35, it's the data problem, because in Europe, when they're going to have 600 of them, they're still not able to process, you know, 50-40% of that data they bring in because they don't have the AI supercomputer to process it. That's got to be absolutely resolved to make this thing work.

Glenn, I just want to, from my perspective on the Golden Dome and get them a little bit more specific, there is going to be layers of it. So the first layer, like you said, is that space-based interceptor, which is right now going to be boost phase. And then there's the midcourse space layer, which is basically the NGI right now, that would, or the GBI, that's going to happen. Then underneath that will be the underlayer, which will probably be SM-3

Block 2A's legacy in containers or something like that, that's going to do whole big areas. And then underneath that is the LADS, limited area defense system that will have terminal defense capabilities to do small regional areas.

So if you're Canada, and if you're the U.S., Glenn, or it seems like our administration wants Canada to help defend not just Canada, but the U.S. I mean, that's along with Canada. What do you think that opportunities are in those layers or how they go about it? And is pay to play the right way to do this? Because you've already established that you don't pay to play, that they're already paying with the NORAD thing. But that NORAD is just one little part of the bigger golden dome picture, let alone the C2 that's got to be all done across that.

[Gen (Ret.) Glen VanHerck]

Well, I think, as you said, they are paying in some way today. There's more that can be done. They need to have that discussion to achieve their political end states, whatever those are. But I see them having the opportunity to significantly contribute to everything below the space layer. And if they are going to get overarching protection of all of North America, including Canada, from the space layer, then I think there's a discussion about what does that look like from a, I'm not going to call it pay to play, but a contribution to the larger architecture and capability of golden dome to include the domain awareness that's going to, or the data that's going to have to happen. So I think there's a discussion there, Riki, to happen.

But for the hypersonic, the underlayer, what Canada brings is terrain. They bring terrain that's crucial to the United States to defend ourselves, to place some of this underlayer lower down below to get further forward as well, to put sensors further forward. So what's the value of that terrain that they offer to us and the Arctic to be able to defend our own homeland as well? So those are things that we'll have to have a policy discussion on.

[Riki Ellison]

Can you just help explain if the Canadians decide to contribute a big LRDR radar on the Canadian east or a third site, how is the control of effectors, who gets to pick which effector to use of them? That complexity, if they did something like that, is that an issue where who gets to control the interceptors that are coming at the North American continent when you have limited amount?

[Pete Saunders]

As General VanHerck pointed out, there's a lot of policy discussions that need to occur when you get into those specifics. In general, what I would offer is that there's been a tremendous amount of work done looking at sensor deficits. Where do we have a deficit against what type of threat coming from which directions under what circumstances? That work is informing some of the recommendations that we'll be making to help ensure that a commander sitting where General VanHerck has sat has the information they need at the earliest possible opportunity. That is foundational to me, and that can be any number of capabilities. We've already talked about our overthrust radar.

That is one capability, is one component, of an overarching system of systems that will enable domain awareness. We talked about space-based sensing. That is another layer,

whether you call it a dome or a layer or an ability to see. That is something that we are looking at very carefully.

Then you get into the question of factors of what do you want to do about it. As we discussed earlier, up until not that long ago, the policy prohibitions made discussions like that very challenging. We're able to do modeling now that is relevant to this discussion and trying to figure out what it is that Canada should be doing from an air missile defense perspective that can be additive and that can be of greatest impact as we're looking at the defense of our country and by extension, the defense of our continent.

There's a lot of different ways of attacking that, and that's where you get into policy discussions, which is outside my remit.

[Gen (Ret.) Glen VanHerck]

Yeah, Riki. I just want to pile in. Pete articulated that very well.

I think there must be a policy discussion. That's not an operator's decision on first how you fund that specific radar you're talking about. That doesn't mean it's all 100% funded by Canada.

It may be a shared asset. Today, the commander of SPACECOM is the global sensor manager. I would articulate to you that even for the commander of NORAD and the commander of NORTHCOM, the same person, all those sensors that do threat warning, attack assessment, support, ballistic missile defense, they're managed by the commander of SPACECOM.

I don't see that changing depending on the policy for who would, I'll say "own," a radar put in Canada. That's TBD, though. I won't speculate on what our policymakers might come up with for who purchases it, how they fund it, and who technically owns it.

[Riki Ellison]

And you've made it very clear there, Glen, that the Golden Dome, General Guetlein is not the commander of that. He's the developer of the systems, not the commander, which is most likely Gooney or your job or the combination between you and SPACECOM commander, Steve Whiting. They were, by the way, great in Denver unified behind Mike last Tuesday.

[Gen (Ret.) Glen VanHerck]

Yeah, very good. So, I think there's many policy discussions that have to occur, assuming Canada is going to play a larger role in Golden Dome for ballistic hypersonic space-based defense layer.

[Riki Ellison]

Okay. Thank you, Glen. That was great.

We're getting pretty heavy on the top. Smytty, you're up. I know he did, for everybody here, he was on the original USC SHIELD program.

He did a capstone on the Arctic with Canada and the U.S. It was well done. That was about three or four years ago. So, ladies and gentlemen, Major General Jeff Smyth.

[MG Jeff Smyth]

Keep in mind the Canadian defense budget was about \$10 billion. U.S. Army, Navy, Air Force for everything. So, when we talk about ballistic missile defense, we didn't necessarily have the funding to be able to contribute in a way for GBIs. But the world has changed since then, clearly.

Events in Iran, events with Israel, in Ukraine, in Russia, and what we've seen even in Azerbaijan and other places. Integrated air missile defense, from an air defense perspective and from a missile defense perspective, are critically important. And so, when I look at it from what's the threat to Canada, you know, it's not the Russian Army driving tanks over the North Pole, or it's not the Chinese airborne jumping into Seattle and Vancouver, right?

It's a missile coming from over the horizon. So, the way we've kind of designed the defense of Canada has been very much in conjunction with the U.S. from a NORAD perspective. But also, you know, Pete talked about all of the different historical kind of policies, the defense policies that have been out.

Each of those kind of builds on the things we've been doing traditionally. And so, right now, with the government decision to go to 2% of GDP this fiscal year, which ends at the end of March for us, and then up to 3.5% of GDP by 2035, opens up a lot of doors for us to be able to do some of the things that Pete mentioned.

[Riki Ellison]

So... Smytty, how much money is that? What is 2-3% of your...

[MG Jeff Smyth]

About \$150 billion a year, thereabouts. That's not all on new equipment, obviously, but it allows us... That's kind of what it's looking like by 2035.

And so, what that means is that the investments, you know, I think the government's announced about \$180 billion worth of investments in kind of the Canadian Armed Forces here over the next little while. So, that means when we bring on things like P-8 and new submarines and airborne early warning and control, over-the-horizon radar, those sensors and effectors, you know, fighter jets, all of that kind of stuff, it starts to add up to contributing much more to integrated air and missile defense, kind of as Pete mentioned. And so, the Explorer task we were given for integrated air and missile defense, what we're doing right now is kind of looking at that options analysis.

And the way I try to articulate it is, if you think of us, you know, on a scale of infinite risk on one side and infinite cost on the other side, because both Canada and the US are big countries, we can't necessarily defend every inch, let's say, the way Israel can, because it's just so much smaller. The question for government is, where do you want to put the slider in between that closer to infinite risk and closer to infinite cost? You know, we can't put enough Patriots across North America to defend everything. It wouldn't be cost effective.

So, the question then becomes, how do we figure out, once the government's made that policy decision, what are the parts that we want to contribute to? You know, do we buy into Golden Dome? Do we just focus on our own integrated air and missile defense from, you know, small UAVs up to cruise missiles, hypersonics, all those kind of things.

So, those are the conversations that we're having in terms of the options analysis for that task to explore integrated air and missile defense. And the conclusion we've come to is that if you're just focusing on sensors and command and control perspective, you don't actually buy down the risk at all, right? You know, we need to have the data, we need to have the command and control capabilities there, and we need to have the sensors to understand what's going on in all domains, kind of, to be able to defend the country.

But if we can't do anything about it, once that missile is launched, then the risk, you spend a couple billion dollars on sensors and command and control systems, but the risk doesn't, you don't buy down that risk at all without the effectors to be able to do things. So, that's the kind of conversation where we're doing our analysis. So, okay, let's push that up to government and let them decide where do they want to put that slider, right?

So, that's critically important from our perspective. And I will say, you know, there's a lot of policy work to be done yet on, okay, so if we have, let's say we go out and we buy a bunch of, you know, air defense systems for Canada to defend certain areas of the country. How do we integrate that into the command and control structure that allows us to do that defense?

So, that we've got unity of command, we're doing it in a way that protects both countries kind of effectively to the way that our governments and our people expect. So, there's a ton of work still to be done there. There's a lot of decision space still for our government to determine how much and what that looks like.

But, you know, the way I will maybe wrap that up is to say that the Canadian people feel threatened in a way today and this is kind of the, you know, what we've seen and polls and other things, so that they're supporting that investment in our national defense in a way that we haven't in the last several decades. So, you know, it's kind of up to us to provide recommendations to government for them to make some decisions to say, okay, yes, I'm interested in that option, no, I'm not interested in that option. And then we'll figure out the best way to roll it out and how to command and control it in defending kind of Canada and the U.S. together. So, that might be a good way to kind of leave it.

[Riki Ellison]

Yeah, yeah, it's good stuff. I'm just so curious about your balance in your job title of funding from Space versus funding from Air Force and where you're going with that. And the innovation that's required for all of this, because you can go FMS and do military sales pretty easily.

But are you ready? Is Canada ready to start creating cheaper capabilities? That's necessary today.

We cannot do what we're doing today at all. And that growth, especially in I think our biggest gaps, cruise missile defense.

I mean, that and mass quantity, how do you do that cheaper? And is Canada willing to create their own industry for this or are they going to leverage the U.S. industry to help them do that? It also takes a burden off of us as we got enough stuff to do over here.

But something like that, I'm just curious on all that.

[MG Jeff Smyth]

So, I think if you think about it conceptually, if you take any sensor best shooter. So, we want to have all of these things integrated together in a way that operates off of not necessarily completely common data, but at least the important part. I look at it, it doesn't matter whether it's an over the horizon radar or a radar that's on an aircraft or a radar that's on a ship.

The important data that it generates is a track. Hey, there's a thing there. Is it a good thing or a bad thing?

Do I want to kill it? And if I want to kill it, then who should kill it? So, we need to be thinking along those lines.

It doesn't mean that Canada is just going to buy everything FMS. The question is, what are the types of capabilities we need to plug those gaps as we're doing that analysis? And then where can we get that at the best price for the right way and how do we integrate it into the system? So, whether it's a Canadian system, a European system, a U.S. system, it shouldn't really matter if we've designed the system right. So, we should be able to plug and play just about anything into that and then be able to carry out the defense that we need to do.

[Riki Ellison]

Glen, did you have something, Glen?

[Gen (Ret.) Glen VanHerck]

No, I understand exactly what he's conveying and agree to that. It's to get to the policy decision first as well, though.

[Riki Ellison]

So, keeping on this piece, because this is where the revolution is happening, is cloud-based capabilities going into civilian big cloud that can process and store and do that better than anybody. And we've got to open that avenue up to let them in to support that data ability to flow. And that's the engines behind this thing.

And I don't think there's been much thought about how that, you know, the power of that, how we bring in the civilian expertise into a cloud-based that's on the edge that's so good that it can do fire control from open software and open C2 to going all the way back to the data storage of where that is and integration between both of them. They all should be one system. And we're not doing that right now.

Like you just said, we're putting tracks together with tracks together with tracks together. On top of that, we're missing a lot of stuff that those tracks don't see. Even though we got a great, I mean, the best is the FAA and all our airports and all that, we can see everything, but we're still missing the gaps and filling that up.

So, are you in that phase of things? It seems like it's a lot safer, just from my hearing you, that you like the foreign, the FMS, a lot of these legacy systems to solve your problems

rather than create your own specific capabilities because the big U.S. has got all of them for basically what you're doing. Is that maybe how?

[MG Jeff Smyth]

So, you know, maybe slightly different tack. I don't know if you've kind of, if you're tracking the, our defense industrial strategy that the prime minister just announced last week or the what's, we want to build what we can in Canada and where we can't build it or we, you know, we don't have the capability, we'll partner with someone to do that. And if we can't partner, then we'll buy it off the shelf.

Right. And so that's a very general summary of that. But there's an expectation from Canadians that if we're going to spend a whole, you know, billions of dollars on defense, that we get some economic benefit out of that.

And so, you know, just buying FMS off the shelf isn't necessarily the best solution in every case, but it might be the right one depending on where it fits in that, you know, build, partner, buy. So maybe there's things that we can develop together. Maybe there's some expertise that we can bring that are in small, you know, companies right now that just haven't been exposed to it.

So part of the challenge that we have is how do we make sure that we can have the discussion, hey, here's an operational problem that I have, have that discussion with industry and go, okay, what's the best way to solve that problem? When it comes down to how integrated it is, it needs to be able to enable that kind of see first, decide first, act first kind of perspective when it comes to defense. And so how we plug that into NORAD, I think we'll figure out the command and control once we decide what capabilities are going to be in place.

But, you know, I think what we can say pretty much for certain is that anything we do to defend Canada, like General VanHerck mentioned, there's an awful lot of Arctic, that space that we can use that allows us to defend the populated areas that we really need to do, whether they're in Canada or the U.S.

[Pete Saunders]

Just to follow up on Smytty's point, so defense and industrial strategy, well said, and that is going to guide, you know, how we go about this work. But your point, Riki, about data, about cloud-enabled data management, I'm going to try to paint a picture as best I can, but the way I've presented this problem set in multiple fora is I've looked at the shiny capabilities that everyone's familiar with, whether it's aircraft, whether it's radar systems, whether it's ships and so on, and they fall under the sensors and effectors, right?

We all understand what they are. People can touch them, you know, anyone on the street, if I were to ask them, you know, can you tell me what a fighter jet is? They've all watched Top Gun. They all can at least point to what a fighter jet looks like. They all can point to a ship. Good.

Those things, as we said, all generate data. They also all require data in order to be, you know, maximize their effectiveness. So the way I've been characterizing this is we have many of those either underway in place or on the books for acquisition.

Good. What we're lacking collectively, and this has been the same with every ally I've spoken with, including the United States, is what I've been referring to as a blue donut of death, that ability to seamlessly and in a timely manner share information between platforms, between platforms and decision makers across services, which could be challenging depending on the country and how their service structure is.

We have a different structure than United States, obviously, just not only in scale, but also in structure. And that fundamental ability was lacking. And six months ago, I would have said that is still a blue donut of death.

We simply are not able to share that data in a timely manner, which is going to diminish our capabilities, notwithstanding the inherent capabilities of the various platforms within our digital services group. That issue is being hacked at rapidly. Secure cloud under way, under contract.

Those things are happening. A project called Orion, which is our unified data layer, enabling not just cloud architecture, but also the ability to host data, share data with the appropriate credentials and access: under way. Various command and control applications residing on top of that, all of which under way.

So most of the things that I need to get after, if I was to describe an integrated air missile defense system for Canada, are under way: under contract, or under close development. There are other gaps? Yep.

There are still things we need to get after, because this is a very messy digital space. And there are all sorts of elements there that need to work. But what I've offered to you is that there's the amount of focus and attention that's being applied there is, again, not something I have ever seen.

And it's because the leadership in that group is absolutely seized with ensuring the data or the sharing of data is not the impediment, it's part of the solution. And making it such that a given warfighter, the captain of that ship has the information they need to do the job that's being tasked to them by the commander sitting in NORAD or in Sea Jock or the various commands with the appropriate authorities. And that is underway.

[Riki Ellison]

Yeah. And I just know our country with Mike Guetlein, they're putting the best team they've ever got to create that C2 data where they can bring in all the data, including your data in the NORAD is just getting you in there quickly. And it doesn't seem because of gag order or whatever, you're not in the game yet.

And you need to be in this game for us to be able to do what the President has asked us to do is defend that entire our country and Article 4 with you, the North American continent. We got to move on this. So we're not doing duplicate stuff and get this get you guys at least talking to each other to be able to move fast on it.

Glen, you had something?

[Gen (Ret.) Glen VanHerck]

Yeah, I do. So this is a great point.

From my experience and what I'm doing right now, and as a former commander of NORAD, what I would tell you is we don't have a technology problem. OK, Google, Amazon, they've figured this data thing and data sharing out. What we have is policy, culture, and process problems that are the barriers to success.

And we have to break those down and move forward. And we need to identify where the roadblocks are and run them over. That's what we need to do.

But to be successful, we have to go down this path or Golden Dome will be a failure and future warfighting we will lose. He or she with the right data at the right time wins in the future, whether it's day to day crisis or conflict. So get on the train or get out of the way is what I say.

[Riki Ellison]

That's well said. Well said. And I just because of the war that's going on Ukraine, I, you know, from my travels, I believe C.D. Donahue and what they're doing over there with open architecture, with the nine EFDL countries are rolling in that way. They're not not even close to what you do at NORAD or NORTHCOM. But we got to we got to move on this. You're right.

The processes have killed it and people that own the processes are trying to kill it. And so we have a lot of those obstacles. They're not the threat or the technology that have to be broken to allow us to do this, including the relationship with us in Canada.

We should be working together right now on Golden Dome together. They should be from secret.

[Gen (Ret.) Glen VanHerck]

I couldn't agree more. I could not share secret data, secret or leasable to the Canadians in many areas because we couldn't get them the right equipment. And it's crucial for defending our homeland, North America in general. Yet it was so painful because—not technology—process, culture, those kinds of things.

[Riki Ellison]

Glen, do you think because I go back to World War II with the Enigma and the Germans, and our services have just been so claustrophobic about security and classification, that we are now, we can't fight against China without all of us sharing complete classified data, everybody to help with the censoring, exacting the effectors on it. We're still not there. It seems like we're still in another era where we don't move.

So how do you break that? Do these guys break it?

[Gen (Ret.) Glen VanHerck]

The National Security Agency has broken this already. They're able to share with our Five Eye partners in many ways.

Those Five Eye partners have access to data that they're allowed to see through an encryption mechanism. I'm not the technical expert, but the bottom line, this can be done. It's done in the cloud that you referred to, Riki.

That's where the security architecture platform will live. And based on your credentials and what you're accessed to, the cloud will only allow you to have that information. By the way, when we say cloud, it's not a single cloud.

We're talking multiple cloud architectures and infrastructure spread across multiple geography that are making it resilient and secure. And people are concerned about the security of a cloud. I will tell you that the cloud architecture is more secure than systems-of-systems approach connecting multiple systems together today like we do.

[Riki Ellison]

I wouldn't expect the Five Eyes to be able to fire control on trillions of bits of data that you're getting from multiple rockets launches and so forth. I don't think they're at that level to with no latency to be able to do that. And the only way I think we can get to that level is to start with unclassified capability to do that first and then move up and be able to put that information to classify up.

It just seems like it's a challenge to get the amount of data that we're talking about now for fire control on the edges has to have open data from everybody to throw that in.

[MG Jeff Smyth]

So, maybe I'll just say, you know, obviously we've asked on a couple occasions for some more detail on the architecture for what Golden Dome is going to look like because that'll help inform our decision. And the discussion so far has been not yet, right? So, I'm expecting at some point in the next few months there will be something that's releasable that can allow us to make sure that what we're building will actually work well with what the U.S. is building for Golden Dome. And, you know, to go to your point about, you know, policy process and culture. So, General VanHerck, I'm sure if you remember walking around the headquarters in NORAD, you saw the odd Canadian with a mug that said, "yes foreign" on it, as opposed to "no foreign." And so, our ability to share with our, you know, friends and allies is critically important.

So, obviously, you know, we will be as in as the U.S. will allow us to be in, provided the government makes that policy decision, right? So, for Pete and I, it's up to us to kind of provide the recommendations. And then, you know, the rest of it kind of depends on some policy level discussion.

So, I'd be very interested to see where this goes.

[Pete Saunders]

What I'd offer, if I could, is we have, you know, within the Golden Dome work that's underway, which is a massive enterprise, and I appreciate that with specific deliverables. And, you know, it's being held tightly because that's the, you know, desire to get certain things sorted out and get it blessed by your government in order to be able to move forward. And we're in the same boat.

We have, you know, the recommendations I would make would not be something I would be able to share until such a time as government has a chance to chew on it, opine, and provide a decision. However, when we look at the NORAD structure, and we look at what are we trying to accomplish, we take labels away from it, whether it's Golden Dome or Canadian system, we're trying to improve domain awareness in the continent. Well, everything I'm doing will do that.

That is a truism, and I don't have to have any insight into architecture to know that. Anything I do that helps turn that usable information into tracks is additive. I don't need to have a full insight into an architecture to be able to do that.

In reasonably short order, I would assume we'll get to that point where we can actually have a much more detailed conversation about how we're going to generate data, in what format, under what systems, and so on. How are we going to fuse that into common operating pictures? That will come, but in the meantime, the work required to just get ahead of that, to get the machinery of acquisition underway to ensure that we have the right sensors coming down the pipe at the right time, that is advancing.

And when we have that insight one to another, I'm confident that just as NORAD has resolved a litany of challenges over the years, we will resolve this too, and we'll be able to move forward. And we will collectively be able to sit with confidence, say, we know what the threats are, we know where they are, we're actually tracking that, and we can do something about it. I say we, that's NORAD.

[Riki Ellison]

Thank you, Pete. I think that's yours. We're out of time a little bit, is that good for your summary?

You did a good job on that. Okay. Glen, would you like to give us a summary or your final thoughts?

[Gen (Ret.) Glen VanHerck]

Well, I think this is vitally important. The threat landscape has fundamentally changed with regards to threats to North America. They're internal, they're external, they're small UAS, to hypersonic, to ballistic missiles.

We're stronger together, we should partner together. I look forward to the discussions that Canada has with regards to their policies on where they're going to go for missile defense. But I do think that we would be better off together going forward.

[Riki Ellison]

Thanks for your time, Glen. Smytty?

[MG Jeff Smyth]

Yeah, I'll certainly echo what General VanHerck said. We're going to look at what makes sense for Canada and how we connect together there, because I'll go back to our geography is inescapable. We are going to work together to defend our countries together.

There's lots of discussions still to be had. There's lots of decision space for government still on how much they're willing to do. But our job is to provide those options up the chain.

And I think, you know, if you watch this space over the next little while, there's going to be a lot of interest here on both sides of the border on what this looks like going forward. So I really appreciate the opportunity to have the chat today.

[Riki Ellison]

Thank you, gentlemen. We're going to advocate to get you guys in the Golden Dome as fast as possible. This is ridiculous, from an outside perspective, that you're already in on NORAD, you're got all the assets, we're going to work with you regardless, that we should be together as soon as possible to start maxing this thing out to help us develop the thing on time and ahead of schedule.

So I think there's some process or maybe culture that's not allowing this right now. And that's got to be broken for the best sake of our continent. Because look what happened over there two days ago, where Iran's shooting in nine different countries.

I mean, we don't have a layered defense capability that's got to be done. And you guys are part of that. And I know from Gooey, talking to Gooey, it's sensors. He doesn't have enough sensors. I think, Glen, you don't have enough sensors out there. You got too many gaps.

And we got to fill that to know what's coming at us before we can do and then do all the processing. But we seem to be stuck with not asking for help with our best partner in the world right now for this continent. So I really wanted to put this out there to everybody. Go ahead, Glen.

[Gen (Ret.) Glen VanHerck]

Yeah, I know you got to go. But my final comment would be, I don't think defense of North America and our homeland defense starts at home. It starts with our fellow commanders forward, our allies and partners forward, sharing their sensor data and awareness and generating effects forward so we don't have to do it in the homeland.

And that means day-to-day deterrence effects, and during crisis and conflict, defeat effects. So that just tells you how important connecting data and sensors and being able to collaborate in real time is for defense of the homeland. We don't want to be shooting things down here.

We want to generate that effect forward and actually deter every day in campaigning.

[Riki Ellison]

Well, we're going to end it on that. Thank you, Glen, for the closing remark. Thank you, gentlemen. Really appreciate your time and effort.