

Missile Defense Policy

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Mr. Riki Ellison, MDAA Founder and Chairman

This is our 64th Congressional Round Table. This is on missile defense policy. We had the honor on Friday, this last Friday night, to be in Colorado Springs and honor and recognized our best of the best in the missile defense warning and the missile defense systems for the United States Homeland. This was our 10th event and in that event on Friday we talked about becoming world champions again and we treat world champions like world champions to become world champions. It's this time in our history that we have to challenge that again.

If we look back 60 years ago, we were beaten by the Soviet Union in space, in the Sputnik satellite, the first man that went up to space was Russian, and our President John F Kennedy decided to change the culture, to change policy to treat our astronauts and NASA as their world champion and we became the world champions. 40 years ago, President Ronald Reagan was in a position where the Soviet Union had outmatched us in strategic weapons and it was another turning point where instead of going offense which he could have he created a new policy and he treated that and prioritized that and we created a world championship culture that beat the Soviet Union that no longer exists today. 20 years ago, we had a, you could call a cruise missile attack on our on our country piercing our world champion status and our President, our Congress changed our policy, and we became great. Within two or three years of that policy being changed to have a cruise missile defense capability around our capital and to have an ability to defend our entire country from a small ICBM attack. Today, 20 years later, our country has been threatened, probably the greatest in 20 or 30 years, with intrusions on our airspace our space our sea space from balloons to drones, the Russian and the Chinese engagements. So, it is a critical moment now and as we know the election is a week away from today for the United States, but it doesn't matter who the President is; this is a tremendous national security challenge that we have to do to retain our ability as the lead in the world that we are. This has to be addressed, so we have a great discussion today on missile defense policy and on change of missile defense policy and we have brought two I think of the best perspectives we could ever get on this, and I want to take the time to recognize both John Rood and retired General Glen VanHerck for joining us today.

We're going to start off the discussion with John Rood and I want to just read what his accomplishments are and why his expertise is credible. Under President Trump, from January 2018 to February 2020, Mr Rood served as the undersecretary of defense for policy where he led formulation and coordination of national security policy with the Department of Defense as the principal advisor to the Secretary of Defense. He managed a team of over 2,000 civilians and military service members and was responsible for building partnerships and defense cooperation with US allies including overseeing the \$55 billion foreign military sales program and export controls. Mr. Rood managed the implementation of strategies including the defense [unintelligible]. He oversaw development of a new Cyber strategy authorities and approach a Space strategy for the newly established space force, completion of the missile defense review, nuclear posture review, and counterterrorism strategy for the defeat of ISIS.

Our other speaker, retired General Glen VanHerck, was the commander of the United States Northern command and North American Aerospace Defense command from August 2020 to February 2024. US NORTHCOM conducts Homeland defense, civil support, and security cooperation to defend and secure the United States and its interests. NORAD conducts Aerospace warning, Aerospace control, and Maritime warning in the defense of North America. Glenn and John were both at the same place when Glenn was the plans and policy J5 for the joint staff July 2017 to August 2018 and then Glenn became the vice director of the Joint staff for the chairman August 2018 to September 2019. So, we certainly have the honor and privilege of two spectacular policy analysts that can give us guidance and give us their thoughts on what the situation is today on missile defense and its policy.

So, I'd like to go to you John first from Silicon Valley California, ladies and gentlemen John Rood.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Well, thank you Riki it's a pleasure to be with you and a pleasure to be with VanHerck. Glenn, it's just so wonderful to see you and spend some time together. We enjoyed a great partnership when we were in the Pentagon together and it's just great to be back together thanks to you Riki.

Well, a couple of things come to mind of course we're on the verge of a presidential election and we're going to have a new president, we're going to have a new team, that will take place regardless of the election. One thing to bear in mind is that these are natural points for reflection and in the first year of the new Administration, whichever one it is, a new missile defense review will be put out that is going to dictate policy again and a new national defense strategy on top of that obviously with a broader domain. But you know it's interesting that over my career there's been a few major inflection points that I've had the opportunity to observe, and I think we're at one again with respect to missile defense policy. When we were in the ABM Treaty, I would say in the 1970s to illustrate the point, we had a policy that which was to defend the nation against missile attack and from the time of John F Kennedy and then early in the Nixon Administration, missile defense was put into place. Eisenhower started the initial programs and then in the Kennedy administration, McNamara was always a bit undecided and frankly unpersuaded as the Secretary of Defense because he believed that missile defenses were destabilizing and that thought unfortunately has kind of infected us since that time. So, there was a policy, and an initial national missile defense system was to be deployed based in Grand Forks in the early 70s and had a brief operational span before the United States became the signatory of the ABM Treaty. That essentially prohibited defense of your country and your territory and in the United States case our people in our cities from missile attack.

I served in the White House during the George W Bush Administration, and he came to office with the feeling this was outdated and we needed to move beyond that. The power of those policy judgments, which the clay is the easiest to shape in the first year of administration, I saw an action where over that course of that first year George W bush kind of laid the groundwork to leave the ABM Treaty. Then we had an active plan, and I worked there with others, to manage the reaction of allies and to manage the way that we would deploy this, and the president took the unusual step, I wrote a National Security Presidential Directive a presidential order, instructing the defense department to deploy a national missile defense system along the lines that the DOD was recommending. But it was that presidential endorsement which cut through all of the opposition from the various organizations in the defense department, like the CAPE and others, who historically have been reluctant to embrace missile defense and within three years we had an operational system. It just shows what these kinds of moments, if you seize the moment, can do.

Here as we stand there today and we're looking out, if you had your looking glass and you were observing the National Security environment, you'd have to say there's a lot of things in the nature of warfare, the fundamentals, that are familiar. We again have totalitarian states, such as Vladimir Putin in Russia, using their desires for expansion and aggression versus their neighbors and a desire to dominate their neighbors to have a large-scale war going on in Ukraine unlike any we've seen since World War II. We also see this in other areas with President Xi in China doing similar things, wanting this expansion. So, there's some familiarity there and there's some familiarity of the shortcomings of that approach. All the technology advantages in the world are not going to overcome poorly trained, poorly lead, and poor strategy and motivation on the part of the Russian Armed Forces to overcome the challenges they're facing on the battlefield. You're seeing the opposite also where commitment to a cause in Ukraine, good leadership, highly motivated troops, and the value of alliances overcoming a lot of the disadvantages they face.

But that that conflict is still very much a question mark on how that's going to end because there are some things that I don't think we're embracing enough in the United States armed forces and how we see the world from a political policy perspective. We're not paying attention that missiles, there's been an evolution in the tactics and the techniques of warfare and of course that always happens and many times in the largest conflicts those cycles of learning and cycles of innovation if you will, reaction and counter-reaction by different forces, are accelerated. So we're not going to school enough on what we're seeing in the conflicts, whether that's in the Middle East between Israel and Iran or what we previously saw with Iranian proxies fighting missile wars and other conflicts with Saudi Arabia and the UAE led by the Houthis or what the Chinese are doing to intimidate Taiwan using missile forces and other techniques. There's not been a fast enough evolution, you know some of the things that we're seeing is the primary method of warfare the Russians are employing is daily missile strikes, daily drone strikes, cruise missile strikes, hypersonic missile strikes, ballistic missile strikes. One of our board members Mark Montgomery was just in Ukraine, returned over the weekend, and there were daily attacks using missiles and it's showing some of the shortcomings of our tactics in the West. Frankly the Ukrainians have gone through more cycles of learning than I think our Armed Forces, our defense establishment if you will, have because if the same attacks are employed against US forces, whether deployed abroad or in the United States, I think we'd face some real shortcomings.

We still have a few handicaps, this belief that missile defenses are destabilizing is so outdated. I mean that's drawn from worshipping at the altar of the ABM Treaty. That thought of remaining defenseless has been proven wrong, that it did not restrain an arms race in the Cold War and we're seeing today in places like Iran's attacks that missile defenses are stabilizing, they do provide other options, they do provide time and space for things like diplomacy. They're part of contemporary deterrents and our deterrent thinking needs some updating as well.

We suffer from a few other handicaps from the Cold War, a reluctance to see the space domain as truly just an extended domain where unfortunately the reality is when the first airplanes began flying, flyers from opposing forces observed each other, sometimes wave to each other, but it was pretty quickly thereafter they started bringing weapons into air combat and the same thing is happening in space only our nation's not responding fast enough. We've got to see that as not only a place that our adversaries are basing weapons upon which to strike the United States and our allies but also seeing it as an operational domain to attack other space assets and we have to kind of shed some of this this old, outdated policy thinking. We have to shed some of the outdated policy thinking that sees a bright line barrier at the airspace borders of the United States where a whole different set of authorities do apply to the military but we're seeing our adversaries take advantage of that such as in the articles that have been written about the Drone incursions over our major air bases and we saw this with China's use of an observation balloon and other things. Our adversaries are not respecting those boundaries, nor would you expect they would.

So, what do I think the missile defense policy ought to be; I think we need a new one when the new president, whoever that is, takes office. Let's start with some fundamentals. We have to protect the Homeland and protect the American people, after all the purpose of our Armed Forces, our military establishment, our defense establishment is to protect the American people. So we need to prioritize that and there needs to be a policy that they can be protected and we will organize training equip to protect against missiles of all types of all ranges from any origin. I would explicitly begin shaping the size and scale of our missile defenses to deal with China. To pretend that that's not the largest existential threat facing the United States is you know not a wise policy. So, we need to begin along at that fundamental level and then we need to begin also organizing ourselves and unfortunately there's been a weakness in our ability as a defense establishment to make these decisions to drive and to execute. Typically we've made the most progress when we've organized along the lines of a central organizing and authority that's the systems architect like the missile defense agency but you know their authorities have been so weakened, and candidly some of the executions been rather weak here in some areas so that needs to be revitalized. The services are not working in a coherent way because I think there's a dearth of leadership driving that. Unfortunately, we spent four years and I don't know how many billions of dollars, we don't really have a better defense to show in a place like Guam. Well, you know people are responsible, that happened because people didn't manage the system appropriately and leadership ultimately needs to be held accountable for those results. So, we've lost ground over the last four years five years to our adversaries, we're not treating missiles and missile defense as a primary area of warfare, the funding for that level has declined over the last five years. Which is you know shocking at a time when missiles are being used by our adversaries every day as a primary instrument of war.

That needs to be reversed and of course it needs to come from somewhere, there's only so much money to go around but we have to evolve our defense budget to take account of that. For example, I think it's still the case, the largest spending item in all of the service's military budgets is manned aviation. Well, we're seeing trends where missiles and use of offensive missiles needs to also be part of the missile defense fight if you will. Our adversaries have embraced that. We had a hangover of staying in the INF treaty far too long even after the Russians violated it for a good decade and it's handicapped us. In some ways our advantages have limited our thinking too. We have the world's best air force with tremendous capabilities but in many ways some of the roles played by manned aviation can today be performed by low-cost, inexpensive offensive missiles. Whether that be ballistic missiles of our own, cruise missiles, or our own unmanned systems. So, I would like to see an evolution and we need to incorporate other parts of the electromagnetic spectrum into our defense thinking. Sometimes just disrupting the operation of a missile in flight is a good way to kill it because it lacks its precision and other things of that nature. So that's probably more than you wanted but, and allies have to be, I forgot, the Allies have to be a bigger part of this equation. There was a time that it was very central to our strategy to involve the Allies in our missile defense programs and to foster their own missile defense programs and that has been continued but without a lot of vigor. I would like to see us be much more aggressive and assertive in that way because that's part of our killer advantage. We're facing essentially a constellation and axis if you will of States with China, Russia, Iran, and North Korea that have chosen to ally themselves together and that's probably the biggest strategic danger we face as a country. But we have to start thinking that way in the missile defense context as well where in the case of the Ukraine war they're all supporting the Russian forces. The Chinese with components, the North Koreans producing missiles and shipping them to Ukraine, and the Iranians

doing the same. They are working together in the conflict and that's likely to produce you know a closer relationship that can be applied in a lot of other domains.

So, thank you again Riki for having me on and I'm just delighted to be here with Glenn.

Mr. Riki Ellison, MDAA Founder and Chairman

John just for the general public; change of policy, what has to happen. Because people think Congress controls this, people think the Secretary of Defense controls policy, the administration and when those big

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Okay, there seems to have been a little communications interruption Riki, but I got the gist of the question. You know, we have a complex government and different people play different roles but ultimately the President, under the Constitution, sets the tone as what our Foreign Affairs, our National Security posture is going to be and as the Commander-in-Chief there are so many authorities that are kind of derived from a few simple paragraphs in the Constitution. So ultimately the president, whoever that is, will have a vision for what the United States should be and how we behave in the world and from that the cabinet and the other you know political appointees such as what I used to serve as flesh that out and begin to articulate that vision.

So one, the executive branch plays the lead role, the Congress can play and does play a very substantial role particularly in funding priorities and certain authorities granted that are required by law. The Congress's ability to set policy was actually quite limited. I served in the Senate as a staffer as an example and we had an ongoing argument at that time, trying to force previous Presidents to say it's the policy of the United States to protect the United States from a missile attack. We ultimately passed a Bill led by Senator Cochran that required that as the policy of the United States.

It had limited impact; I mean it certainly settled a debating question, but it did not compel the President to go out and spend the kind of money or to actually put in place the right programs. There are other examples I could tell from my time as a Senate staffer where the mood of the Congress is very different from that of the President. But it was mostly through funding and restrictions or grants of authority in law that the Congress can really play a role except as a serious influencer because of that substantial power on the administration. Sometimes just by threatening funding or providing funding it can really motivate an Administration to do certain things. Within the executive branch you know the national defense strategy is probably the penultimate document in the DOD. It's drawn from the National Security strategy that the National Security Council and the President will put out but generally that's a pretty top-level strategy that the Administration in the White House will put forward. So a lot of this comes down to the Secretary of Defense and the Deputy Secretary, particularly on resource decisions and authorities decisions and organization of the department because that person is essentially the Chief Operating Officer of the DOD and then it's the policy lead to set the tone and push or restrict if it comes down to it you know areas.

For instance, the idea of moving forward in space, treating it more like the air domain, that yes, we're going to have offensive weapons, we're going to have defensive weapons, we're going to have logistics, we're going to have electronic attack and defense, we're going to have you know the essentially refuelers and other things in Space, the full spectrum of capability. I think that's a major policy decision. It's a major policy decision, unfortunately [there's] been too many restrictions placed around someone like the Commander NORTHCOM and General VanHerck for defense against things like hypersonic missiles or cruise missiles or the ability to do something about someone like China doing incursions in US airspace over the United States Territory. So, I'd like to see a number of those things, and unfortunately there are other organizations that sometimes take liberties, in my opinion, with their role. Really you should have organizations like policy setting/policy strategy what are the priorities, what do we want to do as a country, and what are the limitations of where we can and can't use force and then from that our war plans are developed and the individual COCOMs do that and the Joint Staff plays an integrating role to organize those things and to make sure that there's coherence between series of planning activities. But the resources, the programmers, are really supposed to look at our strategy and our war plans and resource against them. Organizations like the CAPE are just supposed to be somebody that looks at those plans and tries to resource them and knit all the services and the DOD activities together. They're not a competing strategy organization or somebody that comes up with their own plans that are different than the Army, Navy, Air Force, Space Force thinks is the appropriate way to fight. You're supposed to be systems engineering and integration and cost estimating but they've frankly I think exaggerated their role. So, there's a few other areas where we've got some impediments to progress that need to get ironed out hopefully with some new leadership and stronger direction.

Mr. Riki Ellison, MDAA Founder and Chairman

Thanks John. So, the time is right. Right now, is the time to make the changes. Last question. What's your thoughts, because it looks like from our previous policies that we have a lot on deterrence through our nuclear deterrence and that strategy goes back to the 50s and that is a strategy that sometimes is being used to be able to not put resources on cruise missile defense or hypersonic defense to this country. Are we still in the 50s nuclear deterrence phase, which is you know 80 years old, or have we moved because what's happening with Russia not paying attention to it, China, Etc. Where are we at that and when does that become policy shift that seems to be a tremendous shift or tremendous line of both sides that would have a hard time agreeing on that.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

I think there's some rather outdated thinking still that is present in the current Administration and certain individuals in positions of authority. I think that this thought of nuclear deterrence, the threat of overwhelming retaliation, the lethality if you will of nuclear weapons is sufficient in kind of a existential way to deter an attack on the United States or to deter people from attacking US forces abroad or prevent missile attack, you know that was an interesting argument during the 60s, during the McNamara era. He was wrong then, that did not that level of thinking, you could prove it like a theorem that it was outdated even at that time. But unfortunately, there's some of these ideas still kind of permeate and we've got to move beyond that because I mean first of all deterrence is not a static equation and it's not mechanistic. Deterrence is always dynamic, always changing, it's based on who, the people that you are deterring fundamentally. This is not about weapons, this is not about technology, this is about what does it take to deter a person or a group in their way of thinking.

So, basing this thought that just having nuclear weapons would prevent any adversary from daring to attack your forces in the United States well unfortunately some of these ideas, I guess they didn't go to the same training I did. Where you have a theory, you write down what you think would prove your theory, and then you go out and see are those things observed. Well here when those things are not observed, or your theory is proven false somehow there's not a revision. As an example, Israel is a nuclear armed State, the threat of nuclear retaliation would surely prevent any attacker from attacking that Nation with a large-scale missile attack. Iranians have done it twice here with hundreds of missiles in the last couple of months. Hmm think that might cause you to revise your theory? No, usually some of these folks are so stubborn they're impervious to new data. Would the threat of US nuclear retaliation deter someone like say North Korea or China from building up a massive arsenal of offensive missiles, clearly not. We have to think in terms that there are people, there are groups, that we need to deter, we have to observe their behavior and we need to be adaptive in how we're adjusting how we deter them.

So as an example, this is one of the things I found very outdated. We wanted to have long range conventional strike missiles because you need to have different ways to deter, different tools, and different levels of deterrence. With the Russians emphasizing low yield nuclear weapons and nuclear attack to greater extent we need to have lower yield capabilities as part of our deterrence kit and we need to have conventional offensive strike and we need to also be operating in the electromagnetic spectrum in a way that's more substantial than we are today to give ourselves a more range of motion and more opportunities for ways to deter attackers. Sometimes it's best to deter in ways that are unattributed by the way. This is very hard for most you know American thinkers, but you know as an example the Israelis practice this regularly and in some situations just simply not acknowledging what many people can tell happen provides a way for your adversary to step down.

So, it's very culturally dependent, very dependent on who you're deterring in my view for deterrence to be effective and sometimes having the ability to defeat an attack lessens the likelihood of an attack see missile defense.

Mr. Riki Ellison, MDAA Founder and Chairman

Thank you, John. That's monumental shift potential with this next Administration to look at deterrence differently than what we've been doing because of some of these reasons that you put forward.

All right now we're going to go to just a tremendous man, a tremendous leader. We happened to be there on his retirement ceremonies, standing ovation. I mean he's beloved at NORTHCOM and what he's done to keep our nation safe during his time there has been spectacular knowing the threats that are out there. It's great to have a Warfighter perspective from the guy responsible for the defense of our of our country, our homeland, North America, has the opportunity fresh out of his job to add some commentary or some thoughts on how we can better protect our nation. I mean that's what this is about, how do we better protect our nation specifically from

missile defense but how do we do it. So, ladies and gentlemen retired General Glen VanHerck from the state of Missouri, the show me state. Go ahead Glen.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Hey thanks Riki and thanks for what you're doing. First I want to thank you for going out to Colorado Springs and recognizing our outstanding missile defenders and our warners out there recently and I want to thank all of them, congratulate them and say thanks for what they've been doing. Standing up each and every day doing our nation's business.

Let's go back real quick to what Secretary Rood talked about. John it's great to see you again we'll link up here in the future. The policy aspect, to me as a combatant commander, I looked at policy and the guidance for my vector on where I'm going, to create options for the President and the Secretary based on that policy to execute whatever they've tasked me to do. When you create those options, you find you have gaps in capability or gaps in policy and law to execute them and it's a vicious cycle that repeats itself over and over. I think that's really important to understand that; that policy should drive everything that I did as a Combatant Commander or a binational Commander of NORAD. That's what I look to and I'll talk a little bit more about that. I couldn't agree more with Secretary Rood on the election, irrelevant of who gets elected it's time to look at the existing policies and potentially change. The world is changing, the world has changed and will continue to change and therefore past policy may be irrelevant as we go forward. Much of it will apply but some of it will not be applicable today and so it's a great opportunity to move forward as we change out elections. Unfortunately, in our current environment it takes a long time to get leadership in place. I would urge Congress and the Senate to move quickly; the world needs us to move quickly and put leaders in place, irrelevant of which party you're in, so that we can move forward on National Security issues.

I want to talk, and Secretary Rood talked a little bit about it, about strategic deterrence Riki. So often, we could probably get 10 people have a view, but 10 people would have a view of what strategic deterrence really is. I just want to share that to kind of level where I see strategic deterrence and how I view it. First, the nuclear deterrent is the foundation of Homeland defense. Okay, but it's not the only thing that defends and protects our homeland, it is certainly foundational. So, cost imposition is on one side and cost imposition is the nuclear deterrent and can also be a conventional force that projects power forward in a time of crisis. I will tell you Nations have watched how we project for power forward over time and they've created capabilities to hold the Homeland at risk and our way of power projection and therefore we need to rethink deterrence as a model. So there's the other side which is deterrence by denial and missile defense certainly falls into the category of deterrence by denial. It creates doubt in any potential adversary about their ability to be successful in the first place and therefore, as Secretary Rood talked about, it's the perception, it's the gray matter battle that they won't take that action in the first place. But there's so much more when you look at strategic deterrence, that could be the command and control aspect for our nuclear forces or continuity of government, it could be nuclear force posture, it could just be the infrastructure that we have to project power from our homeland, it's aerial ports, sea ports, rail transportation, If you can demonstrate daily, overtly, that you're so resilient and capable or you can do that clandestinely and covertly through messaging; that in effect has a deterrent value overall. When you lump all that together, I see that as strategic deterrence and we've got to get away from thinking the nuclear deterrent is solely going to take care of, especially, our homeland. Maybe it worked in the past, it's likely not going to work in the future.

So what must we defend? When I got to NORAD and NORTHCOM in August of 2020 I looked for that and surprisingly there was no policy on what you will defend, and you can't defend everything, and it says you're going to defend the Homeland. So I approached it from a different perspective because really to approach building plans and resourcing those plans you have to know exactly what you're defending and it can't be just the continental United States or North America. I looked at it from a picture of, it should be those things that could bring us to our knees and it's not everything and everybody but just think of things, critical infrastructure, such as our ability to execute continuity of government, our nuclear force posture, our nuclear command and control, single points of failure for the defense industrial base, power projection nodes. Those are obviously critical things that we must defend but you don't have to defend it all. So, I sought policy, and it took about two years to get some of it. But I would encourage this next Administration to look forward on what are we going to defend and it's not only for DOD, it's Homeland Security, it's FEMA, it's a lot of other organizations that have to pitch into this to understand strategic deterrence and how are we going to do this holistically. But that policy has to be provided.

One thing I do want to talk to you about also is threat warning and attack assessment. We can go back and talk about missile defense, but I think the most strategic mission that I did as the Commander of NORAD NORTHCOM was in my NORAD hat and that is threat warning and attack assessment. Is North America and

the United States of America under attack? From a missile or could be from the air, could be from various platforms. That's crucial for multiple reasons; it provides strategic stability because you can identify who's attacking you, gives you the option to respond, it allows you to survive your key nodes of continuity, or your nuclear force posture for an assured second strike. That is being challenged today Riki. As we go forward hypersonics, low observable cruise missiles, UAS, all kinds of platforms and capabilities are challenging our ability to know when we're under attack and that reduces strategic stability.

So, we have to go look at that with policy, I think we have to go to space for those capabilities sooner than later and we have to ensure those space capabilities are resilient or quickly replenishable to make sure we can have the ability to know when we're under attack. We also have to go back from a missile defense standpoint, and I'll spell out how I view missile defense in a minute, but who are we defending from? I believe most people understand that current policy has us defending against Rogue Nations. Think of North Korea or Iran. Is that good enough today? The world is fundamentally changing; we need to go revisit that policy and ensure sure that we're comfortable with where we are or do, we have a new need to change what we're going to defend from.

I have a personal opinion, I think certainly we need to look at that and I agree with Secretary Rood, I don't think it becomes strategically destabilizing to be able to defend yourself. I think it's exactly the opposite. If you can't defend yourself and you can't provide a warranty, I think it begs a potential adversary to actually think about taking that next step and attacking. So that's something we have to look at. And what are we going to defend from? So today we defend from ballistic missiles and as a Commander of NORAD I was tasked to defend against cruise missiles including hypersonic cruise missiles. I was not tasked to defend against hypersonics fractional orbital bombardment systems, those types of things. This nuclear deterrent was the strategy for that in the in the current policy.

But I would also look at this from a different lens and what are or what should missile defense consider for defense? So, I would tell you that counter-UAS and drones, I think that's part of the integrated air and missile defense mission. But if we segregate that to something separate, I think we create command and control challenges, developmental challenges for capabilities, and I think that's a policy we need to go look at. So for today I would tell you, in the Homeland specifically, I was not tasked with counter-UAS, or counter small drones if you will for the smaller type one and two, that went to the services over their installations, Homeland Security primarily, Capital police, Secret Service, those agencies. Those are primarily law enforcement like responsive agents and therefore they respond typically after an event occurs. I don't think that's a defensive posture that we need to be in. We need be able to take a more proactive approach to defend ourselves and that's going to take a look at policy for who owns the responsibility going forward, that's something we must look at.

I would tell you that policy, I'll just go over a couple things. They're a little more tactical than Secretary Rood. But you know we're going to have 64 interceptors, years in the future, hopefully by 2028 we start filling more but today it's at 44. I don't know that that's the right number, but we need to do an intelligence assessment across the intelligence community that gives us what is the right number to deter multiple nuclear actors or multiple actors utilizing conventional ballistic missile capabilities, which are being filled today, to respond and create a deterrence by denial capability. I think that's really important. We need to look at threat warning and attack assessment and come up with a policy and does that policy include 360-degree assessment because today we're challenged in threat warning and attack assessment from certain aspects to our homeland because we fielded it based on a threat that would likely come over the pole. Today longer-range missiles, maneuvering missiles, will challenge that system and as I said it was probably the most strategic thing I did. We need to go look at that.

The next policy I would say is that a ground-based system or space base or a combination of both to provide more resiliency. Do we bring our allies and partners data and info in from around the globe to help give us a global picture for threat assessment around the globe, that's something Secretary Rood talked about. An integrated air and missile defense in the Homeland is something that we must come to grips with, who owns it, how are we going to command and control it, and that's crucial Riki because today we operate in stove pipes. Service stove pipes and Homeland Security stove pipes but who makes the overall assessment. Is this an attack on our homeland? That could be started with a small UAS, a counter-UAS type of activity. Today it's not one entity but I think you need one entity that's looking at that, that has domain awareness of what's going on, where there's UAS activities, what facilities are they attacking, and who can put it all together and go this is an attack on our homeland and make that determination. I think that as we look forward to integrated air and missile defense it doesn't need to be kinetic. Much of it in the Homeland can be through the expanded use of the electromagnetic spectrum denial and deception capabilities and I want to get further left in the defense if you will and that may include supply chain interdiction and other things. But also it may include policy and I hate to say that we have to tie our hands here in the Homeland, but certainly if you don't abide by the requirement to

register your drone or your small UAS, we need to look at policy to ensure folks are meeting those requirements so we can track those that are legal and certainly give us an indication of where there are aspects of folks flying around illegal.

One other thing that we've got to look at is passive collection. It ties my hands Riki. As a commander I could not, and for valid reasons, collect intelligence in the Homeland. Certainly we don't want to spy on the American people, but we have to know when we're under threat, we have to be able to analyze the electromagnetic spectrum to see where guidance systems are coming from if they're in our homeland, how they're talking to potential weapons such as drone threats, those types of things, and without that I think we find ourselves, from a national security perspective, at a detriment. So, that's something that we need to look at.

Culture-wise we need to go look at acquisition, we need to go look at budget. I think they tie our hands too often. The policies of the way we do business today often times serial in its steps from requirement, development, through fielding, request proposal, comes back, down select, do developmental testing, do operational testing, before we field things. Much of that can be done in parallel today, to buy down risk and field systems faster. The way we do budgets ties our hands, crossing of money during the year of execution. I fully respect congressional oversight of what we do but the budget has got to be looked at to ensure we can go faster and make sure that we make the decisions that we have and in the culture within the services change as well. So I know you want to get to some questions, I'll stop there I think I've highlighted some policy kind of topics, over.

Mr. Riki Ellison, MDAA Founder and Chairman

Thanks Glen. It's extensive how many policies changes you just mentioned, and it looks not impossible but very formidable to be able to do all those. If you stand back what's the vision that needs to be at the high level to capture all of them. Then it looks like our opponents, whoever they are, know our gaps. They know that our gaps and they're coming at our gaps on the high end and on the low end. It's great that you pointed out that you're separate I think with NORAD and NORTHCOM and the agencies on the drone level aspect. You're not allowed to advocate for the hypersonic strike and so forth. How do we bring all this together and what's priority first? Is it the sensing network of the high-end and the low-end before you get to the effector aspect of it? How do you, I mean it's massive, so how do you start this thing, in a new Administration how would you suggest to go about this?

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Well, it goes back to policy Riki, and so with a new Administration I think you have a great opportunity. If they'll move quickly with regards to integrated air and missile defense policy globally, but specifically within the Homeland once you provide policy you can then go forward with the development of new capabilities, new plans and move forward quickly. But building capability without policy, you're likely building the wrong kind of capability. You may not even be able to use it and there's a misperception in the Homeland about the use of kinetic capabilities, the use of the electromagnetic spectrum, and those types of things. The policy drives it all and this Administration, whichever side gets in, needs to step back and take a quick look at policy for a Homeland missile defense and integrated air and missile defense but also globally. I'm sure Secretary Rood has some thoughts on that as well.

Mr. Riki Ellison, MDAA Founder and Chairman

John, do you have anything before I ask?

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Well, I think we do need to clarify that authority. There historically are very good reasons, there were and are very good reasons, why we want to limit the ability for our government to intrude on the private dealings of its citizens. But you know we have to adapt and there have been times where we have adapted those rules to understand. You know for example communications originating from overseas where there's clearly is a risk of people being instructed and things being done to command-and-control operations in the United States that we just have to think about how we need to adjust to those worlds. You know it all comes down to fear of unreasonable search and seizure in the Constitution and the amendments to it, but we've been able to adapt to that for the Cyber age. It's never done that's the thing, you know these technological advancements continue so, you have to have a thought process that the legal framework and the policy framework has to just continuously adapt and continuously be molded to fit those environments. So, I agree with General VanHerck, that's a big shortcoming right now. Our adversaries know that they organize and train and plan in a way that they want to make that very difficult for us.

So, we underwent some substantial revisions in our cyber authorities when I was in government and that was a major endeavor, it took like a year of work to persuade and to develop the policy such that it allowed cyber command to do some more reasonable things. There's no reason we can't do similar updates here to allow the Commander of NORTHCOM and others to do their mission effectively.

Mr. Riki Ellison, MDAA Founder and Chairman

Thanks John. Glenn going back, you know the Holy Grail is space policy and the nuclear deterrent policy that prevents our ability to advocate for hypersonic strike or cruise because they think anything that would attack the us at that level will be deterred by nuclear capability. Can you properly defend, can any NORTHCOM Commander properly defend this country without changing that major Holy Grail space policy to have capabilities up there and to change our deterrence posture to adjust to this.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

I do think you can defend the country within even today's existing policy in some ways. I think there's policy lacking on integrated air and missile defense especially against small UAS and drone. The challenge has been the resourcing has largely been limited and gone forward. So, if you're going to, in the budget, spend 8 billion dollars to defend Guam, which as you knew exploded to a much larger number, yet we choke on two billion for Over the Horizon Radar for the Homeland, that tells you the priorities are not truly defend your Homeland first. That messaging is part of strategic deterrence, it's part of what our potential adversaries will look at and take away that they're not serious about defending their Homeland.

So, part of this is an education factor as well Riki. We have to educate folks that the Homeland is largely exposed, and you can plan on fighting forward but 80% of the force comes out of a Homeland. Our power projection, our ability to produce and sustain Warfare over a long period of time, our economic Prosperity comes out of this Homeland, and we better make sure it's safe and secure.

Mr. Riki Ellison, MDAA Founder and Chairman

John, do you want to add into this on Space policy, the discussion.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Well I think at the top level our space policy needs to evolve where we're treating it again like a domain. A domain for operations. This notion that we're afraid of quote weaponizing space, well first of all, our adversaries have already weaponized it. Secondly, it's a very academic way of thinking of it, before people have been using space to command military forces or to guide weapons to target for an awfully long time; and re-entry vehicles have been re-entering from where? Space. For a long time, weapons have been in space for quite a while and the military uses of space are well known. Somehow this is just some handicap. But secondly, for missile defense we have also had a handicap of avoiding that and use of space for missile defense and we need to embrace that in a very substantial way. We will need ground based radars we will need ground based systems and sea based systems but the advantages of space are just manifold from that that high ground and the technology has advanced to the point whether that's microelectronics or dramatically smaller more capable Satellites with high degrees of maneuverability and smaller launch vehicles which are; you know the cost of putting something in orbit has declined by 95% over the last 20 years according to some of the studies that are out there. All of that leads to its dramatically less expensive and the technology dramatically more capable and there are inherent advantages from being in space essentially in that high ground to perform missile defense sensing, to for missile defense defeat, and missile defense kinetic operations, and we just need to embrace that I think to an extent we haven't.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Hey Riki, can I add to that.

Mr. Riki Ellison, MDAA Founder and Chairman

Yep.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Yeah, I agree with everything Secretary Rood talked about. You know the one thing I could never give the president or the SEC DEF enough of was time and decision space. The only way you gain time and decision space is processing data and information faster than we do today to get further left. My goal was to deter day to day and in crisis before conflict and to make sure if we had to defeat before launch. So, things for space policy to change, I think going forward we shouldn't have to wait and download, at a specific time, data from space-

based capabilities. We can put those capabilities in orbit, AIML kind of capabilities, that can then quickly search out and find those missiles that may be threats to a Homeland in foreign territories that can launch and then we can take action before they launch. That action may be a phone call from the President to the leader of that country and says don't even think about it. That has a deterrent effect. It may be me as an operational commander in my previous life maneuvering operational forces. But we've got to get further left and the use of data and information will help us do that.

Mr. Riki Ellison, MDAA Founder and Chairman

Glen, can I follow up with you on the discussion of resourcing our Homeland defense operations, whether it's sensors or shooters or C2, over our forward operating COCOMs and so forth. Is there policy that needs to change to be able to give capacity to the defense of our Homeland? How do we get that when the arguments from the other COCOMs is that we're got to defend forward from this? If we have limited amount of resources that battle has always been to the other forward operating COCOMS on this. Is this a shift of balance that we need to make and a new policy to get a policy that allows resourcing and taking funds from that or from the office? How do we do this, or do we just add on or ask for an add on to the one and a half percent budget that we have for missile defense?

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

I don't think it's a policy change. I think it's a prioritization, a perception management change as well that the Homeland is not going to be attacked it's not under threat. So, there's an educational aspect of this. Ultimately you can legislate it as Secretary Rood talked about. I don't think you want to go there, that's never how you want to go there, you want to take the executive branch policy and turn that into policy all the way down that funds this. That's ideally the way we would do it. So, I think there's probably exposure to the administration of the vulnerabilities in the Homeland that still needs to occur.

Mr. Riki Ellison, MDAA Founder and Chairman

John?

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Well I think we do need to take a reset here and I agree that sometimes the use of Congressional authorities can be inflexible, where you know laws stay on the books in perpetuity and they're not the most flexible way to be updated and so you really have to think about what's the appropriate use of those authorities and it's to create a framework where you have implementing organizations. Whether that's the Department of Defense or law enforcement or others that can act upon those things. So, I think you know that's not the best way to do that and so many things are done in regulation. I wouldn't push that side of it. I would think the policy flexibility is there and you know General VanHerck had an interesting point about onboard processing and the ability to do more from space. I mean that is a reality that this massive stream of data, ones and zeros that composes all the data. There are dramatic advancements being deployed in in early stages in space to do a lot of that processing there instead of waiting for downloads of mass amounts of data that which we try to brute force process very quickly on the ground. So, there's you know tremendous advantages that can be gleaned if we take off some of these blinders if you will and shed some of these outdated thoughts and really get after it. I do think this is going to be one of the major priority areas in the National Security area facing a new President because just look at where the prioritization of spending is in places like Russia and China. They're prioritizing these kinds of offensive missile capabilities, whether that's hypersonics, ballistic, cruise, and we're late in responding. We've allowed ourselves to fall behind the threat. You know, we've got to take out the mirror and just look hard and recognize where we stand.

Mr. Riki Ellison, MDAA Founder and Chairman

Glenn, you brought it up. We're in a you know a war of attrition and economically you can very well argue that we're losing that war of attrition and the raids that less than an hour what Israel withstood and the cost of it. How in the heck are we going to be able to break that cost curve capability when you have defense contractors that have 10 years of orders that they can't produce, you've got very limited supplies. We're going lose that fight if we're using you know \$2 million missiles against \$30,000 drones as an example. How do we shift out of this? It seems like we're still in the McNamara age of acquisition. Not being able, as a war fighter, getting your capability as quick as possible into you and it takes three or four years to get something new certified for you. How do we get policy to move on this?

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

There's a lot there Riki, in that question. So first I would say you know in the cost curve, and I'm talking with regards to the Homeland, it is utilization of the electromagnetic spectrum better than we do or we're allowed to

in the Homeland. You know there's an ongoing battle for the utilization of the electromagnetic spectrum with the FAA, Department of Transportation, and DOD if they want to jam small UAS for example. Certainly, those are more on the cost curve better ways to deny, deceive even cruise missiles. Cruise missile like capability. I do think we need to change our acquisition steps to allow small companies easier access into the department. I know the deputy secretary has worked hard on this but it's still you know the Valley of Death getting into the department. There are so many small companies today that bring incredible cost-saving capabilities to the department. It's just breaking in through the security access requirements, every that comes with it. If you don't have a large staff to do all that for you it becomes very challenging, and you limit what we need as defenders to do our mission.

I think data and the use of data and information, Riki, is going to help us in the future get further left to create deterrence and defeat options before end game kinetic defeat with multi-million-dollar missiles that were shooting down thousand drones. We've got to do a better job.

Mr. Riki Ellison, MDAA Founder and Chairman

Glen, what about the bigger missiles. The hyper glide interceptors that we're going to develop or the very expensive NGI weapons or the Patriot, how do we accept that or do we get bigger production? How do we handle those costs within it or is that just part of the necessary funding to support that and have that capability?

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Well, I think MDA actually did a pretty good job on cost saving and time saving as they develop the Next Generation Interceptor. They did an early down select, they moved forward, they've accepted a little more risk to go faster and also to save money. Risk is a big thing; you know when you have a risk averse department when Congress demands a two- or three-year investigation for every failure you have that slows us down. We have to accept more risk to go faster, and failure needs to be something that we don't embrace but we learn from. But it can't be the showstopper that slows everything down in the future.

Mr. Riki Ellison, MDAA Founder and Chairman

John?

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Yeah, I resonate with what Glen's saying there is that we have an acquisition system which is overgrown and overburdened. It's dramatically too complex for the task and it does need to be overhauled rather substantially. There are all kinds of studies that show that. But the reality is, if you're trying to treat every program as a no fail and punish failure you're going to end up with this kind of system where time is an independent variable. There's always more time, there's always more ability to add more steps in the process, leaving aside what the need is in the field and also leaving aside the cycles of learning. So, take for example you know SpaceX fails rather famously here but they've done several launches, several failed flights of the their latest rocket in less than a year. Well in the DOD system if we had a failure in a flight test, we might spend a year investigating the failure in many ways getting back out on the pad, testing it, and continuing to fail fast, and demonstrate effectiveness is the most cost effective and most advantageous way to develop things.

I mean one fundamental point, the pace at which our systems are fielded is not governed by the pace of technological development. I mean that that is a mistaken view. The pace that we go at is based on how fast we can execute this highly cumbersome system because technology development unfettered goes dramatically faster in the private sector, particularly at smaller companies where you can really do cycles of learning. That's not incorporated, it's recognized in like a detached way but we have a hard time with this system.

Mr. Riki Ellison, MDAA Founder and Chairman

But John, can you change that policy wise, that's been around for 40 years.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

That's not policy. That's acquisition processes, much of which is based in law, but also some of it based in the system, a management system. Here you can change it and should be changed. I mean remember the PPBE system was state of the art in the 1950s and 60s. The so-called whiz kids from Ford Motor Company brought it to the Defense Department in the 60s. That's you know a long time ago. Management processes have been updated dramatically since then. This is not the best process used. So, it can be changed, the acquisition system. But you know it's going to take people that, the Defense Department is like a country size economy. You'd have to make this a priority and really have some staying power to the people that are changing it because there's a lot of rice bowls that would get disrupted in that process. But I personally I think we have to do it. We are not

leveraging the strength of the economy and there needs to be a fundamental shift. Commercial development of new technologies is happening at very rapid paces, very rapid pace rather, so we need to adjust that system in a pretty fundamental way in my view.

Mr. Riki Ellison, MDAA Founder and Chairman

Do you think the next Administration would have that opportunity to make that shift or were these bureaucracies just waiting them out for the next President to come in or so forth.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Well, the bureaucracies do try to do that. Remember there's a culture of normalcy regular or order and so new changes, new ideas whether they're good or bad are typically fought by the current system. So there's no question people would push back around that because they they're used to a certain way and reluctant to change it. But you know you got to have some push from the top and you would have to have some staying power, you can't have people in there in one year two-year short cycle. They'd have to make this something they wanted to do over a three four-year period or beyond because you know the Congressional cycle and other things would come into play. It's not easy to do.

Mr. Riki Ellison, MDAA Founder and Chairman

Glen, can you talk a little bit about, we struggle on missile defense doing integration. The last time we did roles and responsibilities was in 48. We struggled, you saw what's happening in Guam with trying to have multiple services do the same mission and that's the right way to do it obviously but doesn't seem like we're doing it that way. How do you approach this demand, train, equip, through a service or you create some integrated, MDA is too small of a budget to do it for everybody. How do you solve this problem?

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Yeah, I wish I had the answer for you. I don't think it's the service centric way we develop capabilities today. They're competing against each other for their top line, their TOA, which drives not a joint necessarily solution. Sometimes it can but normally not. So for example when the defense of Guam was handed to originally MDA I believe I was telling the Air Force, who had the integrated air missile defense for the Homeland, be a part of that development. We need to leverage their technologies, their processes, their solutions so that you can go faster and forward. But that's just not the culture. Things operate inside service stove pipes, not across joint lines, to field a joint operational capability and defense of the Homeland is going to be joint to include Coast guard, Homeland Security, FEMA, National Guard, you name it. It's going to be multiple agencies and they've all got to be involved.

Mr. Riki Ellison, MDAA Founder and Chairman

John, do you have anything?

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

It's a team game and you're going to have to have different people play their roles effectively. Sometimes there's a shortcoming in who we appoint to lead things, for example the missile defense agency is a systems architect. One architecture that is integrated across the globe that we can that we can plug in play systems to and that can operate seamlessly with the rest of the force and they're a development agency. They are not an operational command, nor in my view should they be, and at the point that systems become owned and operated i.e. they're leaving development that's where the services have to step in. So, I think you know ultimately, this is one where the leadership you know it sounds like made a wrong call to me that you can't have a defense of a part of the US Territory given to a development organization. They could play a leading role as a systems architect, but I think you want one of the services, ultimately, to take that role of man, train, and equip in their component and somebody has got to be the overall systems integrator in leading that on an operational level. Usually, one of the commands stitching together the various capabilities that they have but the technical systems architect can be the missile defense agency and should be in my view. I think you know more broadly it takes time to implement these various changes but that's not an excuse. There are so many things that can be done within the existing authorities that could be done dramatically faster and should be because there are rapid acquisition authorities. There are areas that for example the missile defense agency used to have a dramatically greater set of authorities, it was in the executive branch that those authorities and within the defense department through a series of DOD directives that those authorities have been trimmed. So, you know those are things that the Deputy Secretary of Defense, with the stroke of a pen, could reverse to allow us to move much more freely.

The requirements system is part of the issue here but we're here we're our own enemy. The JROC process, joint requirements and oversight committee, moves very slowly and it's really focused on large scale new capability

development to replace something that already exists, think the next generation fighter to replace the older fighter, the next generation squad weapon to replace the older one. Well, that's fine in the case where you're trying to ensure that the next generation capability is good, although we still spend too much money, and our requirement system is too inflexible. Trying to predict 10 years in advance what technology needs, people in the commercial world would you know do laugh at that. They don't do that, they make estimates but it's a very fluid, very iterative process on an annual basis that that kind of technology planning is done in the commercial sector. So we have to think more like that, the requirements are not set in stone but are going to be updated, and sometimes it's based on what can be done on the basis of the technology. The technology itself sets the requirement, you know the ability to utilize a new technology to its full extent without waiting for "let's go set a requirement over the next three years and hash this out", I mean that does not that does not work. So, I mean there's some bright spots where you're seeing the Department embrace these more rapid technological efforts but not enough in my view.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Riki on the requirements, John brings up some great points there. One of the things I think we need to look at and work with industry, I think sometimes we limit ourselves by placing too many requirements that essentially tell industry this is exactly what we want instead of this is the problem we're trying to solve, within these problems here's the requirements we have to operate in now go innovate. By getting requirements that are too definitive we actually take away innovation and that's something we have to look at.

Mr. Riki Ellison, MDAA Founder and Chairman

I know the authorities is an issue and taking those authorities from the agencies to give to like NORTHCOM or NORAD for an overall Homeland is going to take trust and is going to take an ability to do that. I just wanted you to comment on that, but I also want to just get right down the meat a little bit; we're spending you know looks like 60 billion MILCOM on construction and defense for our Homeland and Guam on it. We have a capability that is not going to have hypersonic glide defense on it until early 30s, it's got some gaps. So how are we doing this without having a full architecture in place to defend something like that and if you're going to do that is that the is that the architecture we're going to use to defend Hawaii or defend? How do we do this, I know Point defense is that as you said what you wanted you got to define what you want to defend with that point defense capability and how's this offsetting what the Air Force is supposed to be doing under the integrated air missile defense in the Homeland yet we're doing something else in Guam which is also US Territory. Just I know that's a complex question, but I got you and I wanted to ask that.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Well first if you're talking on the authorities' piece, you don't want COCOMS by national commands doing any type of acquisition work. Certainly, they're going to convey, based on policy what directs them, these are the problems we're trying to solve and allow the services in the various acquisition organizations to come up with the right capability with industry. I want to go back to policy then. You know if you're defending all of Guam I guess are you really defending anything? We need to figure out exactly what you must defend, what A-port, S pod, what C2 infrastructure, it can't be you're going to defend every single human being and build a system to do that. By defending the critical infrastructure, you'll by default defend the people of Guam and that's what I was asking for in our Homeland. But I don't think we ought to build a stovepipe system to defend Guam. The problems today are all global, they're all domain, and we need a system that allows us to have global domain awareness across all domains, to collaborate in real time, to make assessments of what is ongoing day-to-day crisis and conflict and come up with global deterrence defeat options based on global policy that starts with the White House, the Secretary that spreads down and is not a regional problem set to solve regional problems. That's my perspective on this. I don't think a single system for defense of Guam is a way to go.

Mr. Riki Ellison, MDAA Founder and Chairman

Glen how would you get open architecture for global warning to share with everyone? I mean is that doable are we stove piped with that it because it's great if we can share it, but it seems like it's very difficult to share at those levels.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

That's a lot of culture that people don't want to share. It's the rice bowls that they don't want to share. We have a lot of intelligence oversight and laws and policies that prevent often times from sharing of information. It can be done, Amazon, Google, and others have figured out how to do this globally to share across multiple domains entities. So, it can be done, it's a matter of policy and changing culture to do it.

Mr. Riki Ellison, MDAA Founder and Chairman

Thank you. John?

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Certainly, you can change the culture and can change the approach and we need to get after that. I think on your question about \$60 billion for MILCON and other things, clearly that's unaffordable. Now I don't understand that number and whether that's some 20- or 30-year life cycle for all the United States or you know it's an annual number, five-year number, but nonetheless you know clearly when you're getting into that that scale of spending it's unaffordable for single projects. Which drives you to the kind of thinking that General VanHerck was talking about which is you've got to prioritize then, and you got to prioritize what clearly matters the most. We have you know a limited, even though it's an extremely large budget, we still have a limited capability. So some of the things that are attractive to me, that you can do more cost effectively. One we've got to operate our acquisition system more effectively so limiting the number of interceptors bought to the minimum quantity that keeps a factory open doesn't make sense. You need to think in terms of what is the order quantity I want to produce and how do I operate the factory in a way that produces them at the minimum cost and so that means producing a larger number regularly than just some de minimis number because you're carrying all that overhead for the company around. In some cases infrastructure investments have to be made to allow for lower cost interceptors to be produced in the current designs. That's what you can do in the next year or two or three. But you know beyond that there are lower cost intercepts, there are lower cost architectures, but we're slow to embrace them and as General VanHerck said the DOD system has huge barriers to entry. It's optimized for very large capability systems operated by very large companies and for that that's the sweet spot where the system can work in mature technology areas. When you start to get away from that is where the system performs more poorly and particularly for small companies with new technologies that don't have you know huge infrastructures in Washington of contracts professionals and government relations professionals and things like that. So, I think you know using more of the rapid acquisition authorities and beginning to modify that system in pretty big ways be what I think is required.

Mr. Riki Ellison, MDAA Founder and Chairman

Going back to Glenn's point of left of launch. Do you think we need to have policies to enable that even further, it'll be more aggressive with that?

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Yes, I mean we have policies. Well, I shouldn't speak authoritatively. There was a time, we had authorities that would permit some of that. I know that the present Administration has modified some of those. I think moving left of launch is a helpful addition, it's not a replacement for defenses. There are some enthusiasts who think well if I just had the ability to strike the missiles on the ground they can't launch them. That's not been our experience and if you see what's going on in the Middle East with you know Israel trying to use essentially that approach to prevent Hezbollah from launching missiles at Israel and hundreds of projectiles are being launched at Israel per day, despite intense bombardment, despite intense interdiction, despite all the other special operations capabilities being applied. So, it's not a replacement for missile defenses but it's an augmentation to it that I think is quite helpful. So, you do have to enable that and some of those you know capabilities won't all be in the kinetic spectrum, but I think you know enabling that as part of the policy response is very helpful. Particularly once shooting starts, you know the ability to respond quickly, and offense defense integration is still lagging in my view. So, there is a policy adjustment there but you know we also have to develop those capabilities and pay for them more.

Mr. Riki Ellison, MDAA Founder and Chairman

Glen any thoughts on that.

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

No, I'm in violent agreement with Secretary Rood. No additions.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

So Riki um unfortunately I'm going to have to unplug here in a couple minutes.

Mr. Riki Ellison, MDAA Founder and Chairman

I got you guys. I just want to end, can each of you just give me what your two best policy changes would be for this next Administration. If you could quickly, what would you do John, if you had the opportunity to change policy for the United States of America in this next Administration, what two policies would you chase or create.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Sure, I mean two big ones would be first our missile defense capability needs to be oriented to defend against China and we need to have the ability given to our combatant commanders and others to defend against missiles of all ranges all types hypersonic, cruise, ballistic, including directed towards the United States. So, that'd be thing one. It's very fundamental but that's not the present policy. Thing number two would be, embrace space as a full domain and let's go to space with missile defenses and other capabilities, for sensing, for command and control, for including we're going to have to be able to fight and win in space. I don't think we should beat around the bush anymore about that. This needs to be kind of embraced as an open policy. Those would be two you know major changes to our present situation, but I think they're long overdue.

Mr. Riki Ellison, MDAA Founder and Chairman

Thank you, John. Glen?

Gen. Glen D. VanHerck (ret.), 9th Commander of the United States Northern Command

Yeah, I agree with John on the space. I think that the first thing we need to do is come up with what are we going to defend, what is that critical infrastructure that allows then operational plans to be developed and budgets to be built based on what you're going to defend. Next would be integrated air and missile defense and include what all is included, look at counter UAS, drone, and give somebody the responsibility to advocate, budget, do everything they're going to do to get after that problem. I'd go look at the acquisition system and the policies or laws that limit, what I would say is innovation and speed, and then the budget, the same thing, what can we do differently in the budget to give more flexibility and the ability to go faster.

Mr. Riki Ellison, MDAA Founder and Chairman

Thank you. That was a great discussion, timely, the depth of it, the breadth of it was phenomenal. To have this a week prior to the election and your thoughts, your leadership on those thoughts are appreciated greatly. So, I appreciate the time. We're going to be meeting in London for our integrated air and missile defense conference right after the election, November 13th-14th to pick up the discussion on that coming forward. But I appreciate your time your leadership. Thank you, gentlemen, for joining us today.

Mr. John Rood, MDAA Board of Directors Member, Former Under Secretary of Defense for Policy

Thank you Riki.