091719 Missile Defense Advocacy Alliance (MDAA) Capitol Hill Briefing with Undersecretary of Defense for Policy John Rood; and Riki Ellison, Founder and Chairman of the MDAA, on "The Status of Missile Defense for U.S. National Security"

MR. RIKI ELLISON: it's a packed venue. There was a waiting list. Like you said, John, it's Washington. It is what it is.

I'm excited about today. We have the great privilege to be able to assess what has happened since the January 17th announcement by the president of the United States to put forward his six national security objectives for missile defense under the realm of being able to defend the United States from any place, anywhere, at any time. There have been eight months that have passed. There has been a prolific threat that has developed and continues to develop.

We can look briefly at North Korea, who has had 10 ballistic missile tests since that timeframe, that has continued production of their ICBM capability, that we have not seen progress in denuclearization of that country. You have Iran that has had three failed missile tests, rocket tests. You have Iran that has continued to support Syria, Lebanon and the Houthis with missile developments, with missiles and drones.

We've seen, as you know, this weekend with the Houthi in Yemen who launched a 360 attack on the oil fields with drones. That's not the first time they've done this. They've struck at airports and other areas over the last eight months, and they have continued to fire ballistic missiles into Saudi Arabia.

You have Russia, who on the INF Treaty is continuing to build outside of those limitations. The reaction of the United States from getting out of that treaty, and you've seen a ramp up of that. You've seen a nuclear-powered cruise missile that is being developed. You've seen hypersonics that are being developed. You've seen the Russians with their air platforms pushing on our borders in Alaska. You've seen the Russians with the Chinese in their air platforms pushing into South Korean air zones.

You have China that is continuing to be strong in A2Ad capabilities, developing their ballistic missiles in quantity and quality for the first and second island chains. Their hypersonics are probably the best in the world at this point in terns of testing on that. So, we've got an accelerated threat and I think with the drones coming out you're going to see even more and more of that proliferation at that level.

In response, our country has done some good things over the last eight months. We started off with the March 25th GBI salvo test, which validated our current system today, not just with the newest generation GBI interceptor, but with two different types of generation interceptors that made a successful intercept, but also leveraged the cross-domain capabilities of other sensors fusing information from space and air and from the sea to make that.

We also saw that our country made the decision to cancel the RKV program, and that was a huge decision. And we've seen now the introduction of a next-generation interceptor to replace that capability, but it looks to be not deployable until 2030 at a minimum. So, we do have a gap of capability right now with the 44 GBIs in place until that new generation interceptor come in place.

We've had THAAD and the deployments, just this year in the last eight months, a mobile deployment to Israel and a mobile deployment to Romania. It has been very successful. THAAD was just recently tested on Kwajalein Islands the JEON application, which means the integration between the THAAD and the Patriot that they are putting forward to put in Korea to be able to prove out a greater capability. THAAD can leverage and engage on remote on the Patriot radars, which can now be able to place their launchers over 100 kilometers away from the radar. This giving you a much greater defended area and much more battlespace for the THAAD capability. So, the THAAD has really done well with the testing.

We continue to test our Aegis capabilities with SM-3 over the last eight months. That transition from the SPY-1 to the AMDR, and moving that forward, has been positive. We've introduced the F-35, with their capability as a sensor.

We've just recently had a test validating that -- I think on September 16th -- that validated their ability to passively pick up a missile launch and transfer that information back down through a U2 to the ground. This also, I think, was used for the ballistic missile salvo shot, so we now have a capability that has been proven out that we can leverage the sensors on the F-35 to help use the best defenders that we can do. The F-35 also this year did an exercise with the Patriot missile in the IBCS. They proved that out a little bit as well.

Our Patriot units around the world are all now PDB-8, which means the latest generation of capability in the MSC missile. All of our forward-based Patriots are completely layered now, so there's a seamless layer from THAAD all the way down to Patriot. We've had great success at White Sands on IBCS where we've engaged the longest distance cruise missile that we've done in history with the Sentinal (ph) radar, using engage on remote, with the Patriot. That just happened last month.

We've seen the electronic jamming of the ship that we did in the Persian Gulf that was able to down those Iranian drones. So, there has been some really solid movement in the technology buildup that we've been doing.

It is now an opportunity to have really the founder of the MDR with us today. When he first got in office in January of 2018 his first decision in the Office of the Undersecretary for Defense for Policy, was to stop the Ballistic Missile Defense Review and move on to a much broader missile defense review that captures hypersonic, cruise and ballistic missiles.

So, the undersecretary made that happen. This January he was with the president in the Pentagon on January 17th when the president, with his National Security Council, made the

sixth national policy statement that reflect his position on the change of environment. We were previously just focused on Iran and North Korea, and now we're going to expand our capabilities and intent and policy to be able to defend the United States much better than we have in the past.

With those presidential initiatives, the Department of Defense' policy now had to implement those initiatives, and they implemented them in the form of the MDR. So, the MDR came forward with its implementation of that, and in that MDR there were 12 studies that were done. We're in the middle of the process, only eight months moving, and I think a lot of us in Washington measure things on how much money goes toward the problem. That's really not the way to measure missile defense right now because it's about getting much more efficient at what we're doing and developing new capabilities and bringing the space layer in and doing things better, cheaper, faster and rapidly deploying those systems.

So, it's an exciting time and certainly there are some things that were not done, that have not been achieved as of yet. There are some things that are in progress and there are some things that have been done. I want to congratulate you on one of the big things that has been done, which is the increased burden-sharing with allies around the world. Foreign military sales for missile defense has been the highest it has ever been.

That's where we're at this morning. It's a great honor to introduce John, our undersecretary. I think it is important that 9/11/2001 – and we met prior to that – but that was a shift for missile defense.

Prior to 2001 we were a Patriot-based, division-based air defense capability that moved in a Cold War concept. We were abiding by the ABM Treaty that did not allow us to protect just one site, and we canceled that site. The attack on 9/11 changed the trajectory and changed the policy of our country, which he was part of in that decision-making process to withdraw from the ABM Treaty. We have now shifted in that direction.

But during that time period right after we were focused on Iraq and Afghanistan, and as a cost saver we eliminated our air defense capabilities from our Army. Now, after those wars are settling down and finishing up, we now have to re-address getting air defense back into the Army, which we are doing, to be able to compete against the near peer threats of Russia and China. So, you're seeing another transition that is happening today.

I also want to say that the United States Navy is ahead of everybody, because the U.S. Navy never took their eye off the ball. Their ball was China. So, the Aegis ship platform is a 360 degree layered missile defense capability that goes from the sea realm all the way up into space. It is the best capability we've got and it's able to be mobilized and can do launch on remote and engage on remote. That's what they're focused on. We're now trying to get the Army into that, and that's where the IBCS is coming from, and not going bigger than that.

Ladies and gentlemen, I'm going to pass it over to the Undersecretary, John Rood.

SEC. JOHN ROOD: Thank you, Riki, for the opportunity to be here today. I have to say it's fantastic to be up here on the Hill again. I started my career in the federal government at CIA, but after a little while they sent me on a fellowship here to work for a senator. I worked for Senator Jon Kyl from Arizona. Every time I come up I have very fond memories of those times as a Senate staffer.

At that time, missile defense was a huge political issue, and very much a defining political issue in a lot of ways between the parties, still kind of laboring in the hangover of the fight during the Reagan years over Start Wars or successor systems to missile defense. We still were in the ABM Treaty, which prohibited a defense of the United States from long-range missile attack. So, here we are now quite some time since then – I hate to admit how many years – and in the intervening period I had the opportunity to meet Riki Ellison as he was just starting. He had the idea for this Missile Defense Advocacy Alliance, and you should just be so proud, Riki, of how far the MDAA has come since that time and how many events and state resolutions and impactful activities in the Congress, or in other countries, that you've done. It's really terrific.

I see a number of friends here from our allies in Europe and in Asia. Thank you for coming out. In terms of what I thought I would cover is to talk about where we stand on missile defense.

A lot of you know when the administration first began there were a number of major reviews conducted, beginning in 2017, things like the construction of a new national defense strategy and a review of our strategic programs such as in the Nuclear Posture Review. Another one, as Riki mentioned, that we completed at the end of 2018 and rolled out in January of this year, was the Missile Defense Review. President Trump came to the Pentagon and rolled it out. I had the pleasure to be there.

A couple of key things from this is that first, it was called the Missile Defense Review on purpose, as Riki mentioned, because I and others really wanted to signal that we were moving beyond a period where there was just ballistic missiles that threatened the United States and our allies, but rather other forms of missiles, things like hypersonic missiles and cruise missiles. So, the Missile Defense Review is purposely titled that way. The coverage in it, for what the Defense Department and the U.S. government, and indeed what we would love for our allies to do, has been more focused on a broader set of missile threat capabilities.

We are strengthening our current missile defenses while moving toward new missile defense concepts and innovative capabilities to address the evolving threats that we face. I'd say that dynamism in the security environment is really remarkable. I've said this before, and I don't think it's an overstatement to say, that in my lifetime this is the most complex and dynamic security environment I've ever seen. I'm not alone in that regard in the sense that a number of other very learned people have pointed that out, with longer lifespans than mine, thankfully.

In that dynamic environment the missile threat and the evolving nature of it and the rapidity of the changes to it, is noteworthy. It is one of the things that we're focused on as we look across the spectrum at all the types of threats and the challenges that the United States and our allies face. What are some of the ones we're going to focus on? Missile defense is noteworthy.

So, this year you saw the president request in his budget request $12 billion for missile defense. That included $9.4 billion for the Missile Defense Agency and about $2.5 billion for U.S. Army. We produced a National Defense Strategy that talked about the re-emergence of strategic competition amongst the great powers and talked about the great concern that we have about China's growing ambitions, coupled with a desire to challenge the international order and the international rules-based order in a way that poses a threat not only to the United States but to our partners and those that have worked so hard to develop that system.

We also see Russia conducting a range of destabilizing activities around the world and a malign influence. Things such as interfering in the elections of other parties, political assassinations of opponents using chemical weapons, the violation of international arms control agreements and the like. So, we see China and Russia promoting an authoritarian model that challenges freedom, that challenges this international rules-based order.

We've also seen, as Riki talked about, Iran with the largest ballistic missile force in the Middle East. They continue to modernize and expand their arsenal. We also see North Korea continuing their missile program apace, including some of the recent launches of shorter range systems.

So, the Missile Defense Review said, in order to address this evolving challenge to our security we needed a comprehensive approach. The roles for missile defense are things like the importance of protecting our homeland, our forces and our friends and allies, and that we needed to diminish the value of coercive capabilities. One of the things that we see our adversaries, or potential adversaries, developing missiles for is to exercise a coercive element to their policy.

Having effective missile defenses allows you to address that coercive element from those threats. We are able to assure our partners and our allies of our capabilities, and our ability to stand by them with our security commitments. We can preserve freedom of action for military operations, and we can hedge against future unanticipated missile threats.

A number of key policy priorities shape our missile defense capability and posture, and one of the key findings from the Missile Defense Review was that we would size and field the U.S. missile defense force to stay ahead of the projected missile threats from North Korea and Iran. Our missile defenses will defend U.S. forces deployed abroad and support the security of allies and partners against the full range of missile defenses from any source, to include regional threats from countries like Russia and China. We will work with allies and partners to help better defend themselves, and we're going to pursue new missile defense concepts in

advanced technologies, including capabilities like space-based sensors, directed energy and boost phase intercept to address these evolving threats.

As we look at the priorities the defense of the U.S. homeland is our highest priority, of course, and we need a layered defense. U.S. missile defenses for the homeland are designed to defend against an ICBM attack, but our homeland defense could also be used – I should say we also have a homeland defense to defend against other types of threats, like cruise missile threats. And, we are developing capabilities in the hypersonics spectrum.

We are going to, of course, continue to modernize our nuclear triad and rely on it to deter Russian and Chinese strategic attack against the homeland, or to deter other states who may harbor such thoughts. The United States today is protected by the GMD system which consists of 44 ground-based interceptors supported by a globally integrated network of sensors and command and control. We are taking steps to improve this system.

You've seen us improve the performance of existing sensors, but also deploy new missile tracking and discrimination sensors in both Alaska and Hawaii. We have fielded a new space-based kill assessment capability. These have both enhanced the effectiveness of the current GBI force against missile attack.

We're also investing in the expansion and modernization of that system. One component of that is the deployment of 20 additional Ground Based Interceptors. There were issues encountered with the recent testing of what was called the Redesigned Kill Vehicle, in the R&D phase, that led the Defense Department to conclude that the current design would not meet the rigorous standards of performance that we had. And so, after a detailed review of that program, my colleague, Undersecretary Mike Griffin, terminated that program.

Instead, in order to effectively meet future threats to the nation, DOD has initiated a new effort to develop 20 new next-generation interceptors, and that includes a new kill vehicle. This will lead to a total of 64 interceptors. The MDR, of course, recognizes that we've got to improve our capability to detect and defend against emerging threats, including increasingly sophisticated cruise missile threats to the homeland.

In response, we are bolstering our efforts against such threats. This includes a phased effort to enhance our ability to warn and defend against air-breathing threats, and cue our missile defense systems against these threats. Funds for homeland cruise missile defense were included in the president's FY '20 budget request, which includes $301 million for what's called the Wide Area Surveillance System to support this effort.

Regional missile threats to U.S. forces abroad and allies and partners are growing in scope and scale. Potential adversaries are developing more sophisticated offensive missile systems with greater speed, range and accuracy. These offensive missile threats seek to complicate the defense of U.S. deployed forces and allies, and erode U.S. and allied will to respond.

To address that, we're focusing on strengthening our regional missile defense posture. We're procuring additional Patriot, THAAD and Aegis interceptors for that purpose. We're fielding mobile and relocatable missile defense capabilities to provide the flexibility to respond to different crises. And, as Riki mentioned, we're exercising that mobility, such as the deployment of THAAD to Romania in an unplanned way to take over for the defense of that area when we were doing some upgrades to the Aegis Ashore site there.

We're improving the integration of regional ballistic and cruise missile defenses with offensive operations, because you have to have a link between your offense and defense against respective threats to really be effective. We're trying to take that to the next level. We're enhancing the interoperability and where feasible the integration of systems. That is producing substantial improvements in capabilities through things such as our ability to link THAAD and Patriot capabilities to substantially improve the effectiveness and coverage of those systems.

Looking to the future, we are investing in new areas. Some of our priorities for more advanced capabilities are coming to the fore. The Missile Defense Review talks about pursuing a range of new capabilities, things like additional space-based sensors, integrating that space-based kill assessment more fully into the ballistic missile defense system.

We're going to operate and sustain, for instance, the Space-based Tracking and Surveillance System. We're developing defenses against hypersonic missiles, including near-term sensor and command and control upgrades. I'm please to note the Congress has been very supportive in the various marks in the four committees in that area, either funding or increasing the amount of money requested by the administration for the hypersonic threat tracking that we would like to do. We're examining kinetic boost phase intercept using tactical air platforms.

The MDR, in addition to new technology, stresses the importance of working with friends and allies, and encouraging them to invest in their own air and missile defense capabilities. For example, we're committed to bring to full fruition the European Phases Adaptive Approach. Phases I and II of that are complete, with ships stationed in Rhoda, Spain and a TPY-2 radar deployed in Turkey. We've also deployed the first operational Aegis Ashore system in Romania, and as I said, brought it down for some upgrades and had THAAD come and cover for its protection. And, were in the process of completing in Poland another Aegis Ashore site, which should be completed within the year.

In the Middle East we're working with Gulf partners who are acquiring a range of missile defense systems, including PAC-3 and THAAD missile defenses. We're also supporting Israel's missile defense program at about $500 million per year.

In the Indo-Pacific Japan is perhaps the best example of the strong cooperation we've had, where we've co-developed the SM-3 Block 2A interceptor with Japan. Japan is planning to

deploy two Aegis Ashore systems, in addition to the numerous Patriot systems Japan has deployed. They also produce, under license in Nagoya and elsewhere in Japan, the system.

Let me just give you a few highlights on some of the programmatic advancements we've made. One of the follow-on things from the MDR was, again, hypersonic tracking. We're very pleased that the hypersonic and ballistic tracking sensor system that is part of the DOD's space development architecture, is something the Congress has been very supportive of. MDA is moving out very quickly to reach an on-orbit demonstration of this capability.

Another area that we took as a follow-on task for the Missile Defense Review was to look very seriously about the analysis of alternatives. AOA, as it's called, looks at different systems, different particular capabilities, and does comparative analysis. The CAPE, or Cost Analysis and Program Evaluation, team in the Pentagon is just wrapping up the sufficiency review of that analysis of alternatives. You do the analysis of alternatives and then an independent group does a sufficiency review to examine it. That is expected to be completed in the next two weeks.

As I mentioned, because of some of the technical issues that were uncovered with the Re-designed Kill Vehicle, that program was terminated. But, we've moved out smartly. The Missile Defense Agency has released the next-generation interceptor draft RFP. They received comments from industry and they're on-track to put out a second draft for what we hope will be the final request for proposals in October, next month. So, that's moving quickly. We are positioned, I think, for near-term responses from industry and the Missile Defense Agency advises me they are poised to try to rapidly move to award.

Considering homeland defense is a layered defense, we are looking at leveraging the SM-3 Block 2A. The initial production decision is on-track and we have plans for SM-3 2A to be tested against an ICBM next year. I mentioned Aegis Ashore in Poland. Though the construction has been delayed, we think we're going to be able to complete that construction within a year. And then, of course, Aegis Ashore for Japan, that FMS system, or foreign military sales contracting system, is in place.

Our terrestrial sensor architecture is progressing with the Long Range Discrimination Radar in Alaska. We've received strong support for the homeland defense radar in Hawaii from the Congress. We're continuing support to the Army, and as I mentioned, employing this dynamic force employment concept through the deployment of THAAD in Romania. We're also employing dynamic force employment increasing to more parts of the U.S. military force.

There are 38 ballistic missile defense capable ships that are on patrol now that the U.S. Navy operates. That's a substantial increase from years past. And then, I'll close by mentioning in our support for allies we went through a noteworthy test earlier this year with Arrow III testing for Israel that was launched from Kodiak, Japan, where we supported the certification and production decisions. We also had a THAAD remote launcher test in the Pacific that helped

us validate U.S. Forces Korea's JEON, or Joint Emerging Operational Needs statement that substantially improves that capability.

So, let me just wrap up by saying there's an awful lot going on in the missile defense world right now. We are making significant progress and seeing our missile defense investments and priorities come to greater maturity. When you look at the force structure, and the Missile Defense Review includes some charts that lay that out, from the time I worked in the Congress where we talked about starting all these programs, to now seeing them fielded in substantial numbers, that's the growth in capability we really want to continue to see.

This will help us strengthen our ability to protect the homeland, enhance deterrence, provide stability in crisis situations, and better control escalation so that we can protect not only Americans but our friends and allies against this growing threat. Thank you, Riki, for the chance to come, and thank you all for turning out early on a Tuesday morning.

MR. ELLISON: Thank you, John, that was awesome. What I'd like to do now is, if I can, John, go with you through those six presidential statements and get a little bit more in-depth from your perspective on the success or them and where they're going. Let's just start off with the first one, which is we will prioritize the defense of the American people above all else.

I think you've already gone over the new radars and sensors, with the review for the 20 additional GBIs. If we get a little bit deeper in it, if in fact North Korea continues to increase its production of numbers, and Iran possibly gets a capability to strike the United States of America before the next generation GBI comes forward, there has to be some capability that we need to be able to deter or defend our people. Is that the underlayer, which seems more like leakage for the SM Block 2A on Aegis ships, or is it a boost-phase interceptor, or is it possible a THAAD capability at some point? You've got five of them in the country as we speak.

Or, is it a combination now of offense and defense to be able to do capability left of launch with that? That first statement by the president, and then the movement of RKV not coming forward, and thus the delay, causes some concern, I would assume, from the American public that that first statement is pretty critical between now and 2030.

SEC. ROOD: First of all, the prioritization of the defense of the American people and the American homeland is our highest priority. It remains our policy and is something that we talk about very regularly. For instance, this is one of the exchanges General O'Shaughnessy, our capable NORTHCOM commander and I had yesterday in a meeting where we were talking about how we take that further forward.

The defense of the American people is enhanced firstly by noting there's not just ballistic missile threats to the United States. We are seeing emerging cruise and hypersonic threats. So, the additional emphasis we're placing on those, admittedly these are earlier stage programs. They're less mature than our ballistic missile defense efforts. But it is important to

get started on those earlier phases, and I'm gratified that Congress has been so supportive, particularly of hypersonic defense.

For instance, one of the committees on the Senate side has added nearly $250 million to our request for that area, so we are funded at about $250 million, which is significantly over our request. But in other areas, we have gone forward to continue the construction of a new discrimination radar in Alaska, the Long-Range Discrimination Radar. That will provide a substantial improvement in our sensor capability. It's a homeland defense radar that we are also getting funding for to enhance protection in places like Hawaii.

The better linkage of the space-based kill assessment, the series of space-based sensors we've put in place with the ground-based radars, to add all of those capabilities together as a whole gives you a much better picture of what threats are coming, how well you can track them, and increasing your probability of a successful intercept, and then determining the results of your defense efforts. We have continued to work through the issues that were uncovered with the RKV. My colleague Mike Griffin, the undersecretary for research and engineering, takes the lead in that.

And we're very lucky that – you know, I'm always amazed when I'm in the Pentagon or elsewhere that we've attracted some remarkable talent to serve our country. They're not doing it for the great pay or the terrific dental program. But in Mike's case, the former director of NASA, we couldn't have had a more capable person leading a technical review of a system that operates in space, and how it will need to operate and some of the issues.

So, Mike terminated that program, but again, we're moving rapidly for a next-generation interceptor. The funding is going to be a part of the president's budget request next year. There is some perturbation to the program, but we're moving rapidly through the next phase of that. The Missile Defense Agency is doing that.

But the plan is still to mount that defense to increase from 44 Ground Based Interceptors to 64 Ground Based Interceptors. We are, in fact, continuing the construction of the silos at Fort Greeley, Alaska for that purpose, to be ready to house those interceptors. There will also be, as noted, an SM-3 2A test next year against an ICBM, so this will bring an additional class of capabilities, assuming the test validates what our analysis and our models tell us to be true. If we can use that capability for defense against an ICBM, that will give us another capability.

The Missile Defense Review talked about adding and combining some existing parts of the U.S. defense arsenal. For example, the F-35 has a very capable sensor system. Those aircraft are going to be operated, they are being operated today by the Air Force, Marine Corps and Navy. Those systems can, with their sensors, plug in to the ballistic missile defense system and provide additional sensor capability.

And then, I think one of the areas that we have always talked about in missile defense, but now that we've gotten to a level of maturity, are starting to get to the phase to implement it more, is the important linkage between offense and defense. You never have, in any other phase of our military lives, offense and defense operating completely independently. Here, when you're talking about being in a potential conflict with significant numbers of missiles being launched, your ability to have offensive forces tied into your defensive capability so that you're attriting the attacker, while you're also dealing with missiles that have been launched your way and defending against them, is very important.

It gives you options where you can look at -- even before missiles are fired, if you're able to locate them on the ground and address them with your offenses, this is even more effective. It strengthens deterrence and improves the capability of your defenses. So, all of those things combine I think into a very robust commitment that still exists for prioritizing the defense of the American people.

MR. ELLISON: Thank you, John. His second statement is that we will focus on developing new technology, not just investing more money into existing systems. I think you've talked about the next-generation GBI. You've talked about a boost-phase intercept capability. You've talked about developing a hypersonic missile defense capability.

But I think if we step back a little bit and look at the whole architecture, when you start talking offense-defense you're also talking about artificial intelligence with decisions being made, being able to coordinate all your new space assets up there into a command and control environment that you can best efficiently use your best shooters or your best (interceptors ?) with your best sensors. Where are we at on the president's second statement?

SEC. ROOD: We have come forward with a number of new proposals that I'm pleased the Congress is being supportive in pursuing new defense technologies. One of the ones, as I mentioned, as we talk about the greater focus on space-based sensor capabilities, not only for ballistic missile defense but for hypersonic defense -- the Hypersonic and Ballistic Tracking Sensor System, or HBTSS, we could use a little work on the marketing. It's a little hard to say, but that's what the name of the system is.

You do see the Congress being very supportive of that, and that is something that the space development Agency that we've proposed to the Congress, and indeed the Space Force that the president has come forward to create a new sixth branch of the United States military, focused on space. This is the type of work that we want to see that Space Force use operationally, and the Space Development Agency rapidly bring to the fore. In this particular case, the Congress has given the mission to the Missile Defense Agency, which is our legacy agency, and that's also very workable. MDA has a substantial amount of experience in these areas.

But the defense against hypersonics using space-based technology, integrating the space-based kill assessment layer, did come forward to the Congress with other proposals for

space-based tracking. That whole area is going to be something where we're spending more time and effort in the space domain, because space is a warfighting domain now. There was a time when we had a more hopeful view that that could be preserved as a sanctuary, but frankly we've seen what our adversaries are doing in the space environs. We've got to take steps to treat it as a serious warfighting domain.

So, where we are also prioritizing things is in the development of directed energy technologies, the pursuit of boost phase technologies. In both the boost phase area as well as in the hypersonics increase missile area, if you can't see it you can't shoot it. And so, we're placing priority initially on the sensor capability and the ability to import that into the ballistic missile defense system for a strong command and control, so that you get a sensor capability linked with your command and control, and then the evolution being utilized to your shooters to close the chain. So, that's just a few of the things we're doing in the new technology area.

MR. ELLISON: Thank you, John. The third point I think you've already addressed this, but I want to say it again to you, we will protect the American people from all types of ballistic, cruise and hypersonic missile attacks. Is there now an entity that has that whole, all three of them, together? Is MDA now that entity that's going to acquire that? It looks like we're still split up, with MDA doing ballistic, your services doing cruise, and the new development of hypersonics. Do you envision as being separate or all they all going to come together into one authority?

SEC. ROOD: The Missile Defense Agency has the mission for ballistic missile defense, and then we have also given MDA the executive agent authority, or given them the mission for hypersonic defense as well. Cruise missile defense, because cruise missiles – there are a lot of similarities to aircraft and air defense. Air defense has traditionally been the lead responsibility of the military services, the Army, Navy and Air Force. That's still the case, although we are putting more emphasis on integrated ways to look at cruise missile defense, particularly cruise missile defense of the homeland, as opposed to deployed forces.

MR. ELLISON: We do have today in this National Capitol Region, a cruise missile defense capability. Looking at the intrusions that we're seeing in the Arctic, in Alaska, that movement, which is not a regional defense capability, are we looking at beefing that up and addressing that issue?

SEC. ROOD: We do have a phased program to expand on the defense of the Capitol region, to cover the other parts of the country, the whole country, against cruise missile attack. That defense is planned to expand in a phased way. And then, there is a desire to improve our capabilities elsewhere, for deployed forces in that area just because we're seeing the growth in capabilities that other countries have, whether it's cruise missiles or a separation between what's called a cruise missile and a UAV, or so-called unmanned aircraft vehicle. It's getting very close. In the past UAVs traditionally maintained a person controlling them, but today in

some cases they're programmed to fly to a certain target, which in a lot of ways is very, very similar if not the same as a cruise missile. So definitionally, it's a little harder.

MR. ELLISON: As you talk about UAVs and cruise missiles, it seems to be very challenging to be able to track them because of their small cross-section. If you're going over the horizon, it's very hard to do it with land-based radar. So, where are we going? Is that space-based or is it some sort of persistent UAV up in the air? How do you address an over the horizon threat that's coming that's small?

Smaller, stealthier cruise missiles and UASs are a growing challenge. What Riki's is mentioning is, ground-based defenses have some inherent limitation there in the sense that, if you think about it, if you put a sensor here on Earth there's a lot of other things that create clutter in that radar environment. So typically, we orient them a little bit up. When you take that angle and propagate it outwards, that creates a certain gap under which the radar is in this area, and you can fly, if you're the incoming, below the radar coverage if you can stay very low.

And so, there's an advantage to having elevated or airborne sensors or space-based sensors that can look down. There's a technical challenge that comes from that in separating the moving aircraft from the clutter of the Earth below. One of the things when you're looking in the air is there's many, many things that cause a radar reflection up there. And so, it's easier to identify the targets than against the background of the Earth.

But there have been substantial advances in this area, so what are we looking at? Both networking and linking ground-based sensors, but also this airborne sensor capability. For instance, I mentioned just linking in the capability provided by the F-35 radar suite, which is excellent. It's a tremendous advancement, the capability of that radar. And most importantly, the ability to share that sensor, to be a node for C2 in the sky. And then, space-based capabilities as well. So, having a suite of those things, and most importantly the networked capability and the ability to do something with the data, not just providing warning, but the quality of the data such that a defense can be used by other capabilities, other shooters, other systems.

MR. ELLISON: I'll give a shout out to the Navy on that E-3 Hawkeye, which does cruise missile defense capability tracking. Again, because the Navy was focused on China, they're ahead of the game a little bit. But that is a big, as you said, challenge that we're going to get through.

His fourth statement is we will recognize – you've already addressed this – that space is a new warfighting domain, with the Space Force leading the way. If you could sort of help us understand the difference between the Space Development Agency and the Missile Defense Agency in terms of their roles and responsibilities. It gets a little confusing non who's got what and what the future is with that, the architecture and space-based interceptors, sensors, etcetera.

SEC. ROOD: As Riki mentioned, the president has put forward this vision of a Space Force which will be the first new branch of the military since the Air Force was created right after World War II. Of course, prior to that time we had the Army and Navy in this country really operating all of our aircraft. But people like Lieutenant Colonel Gleason here who is wearing the Air Force uniform, came into being after World War II.

So, the president recognized that we're in a new period of time now where space is a warfighting domain, and space is increasingly contested and congested and important to our way of life. We could play a game here almost like six degrees of Kevin Bacon or something about how many things come from space and how many ways can we link everything that we like to space capabilities. It's just amazing the role that it plays in our way of life.

And so, befitting that focus the president has come forward with this idea for a Space Force. The Space Force would be a branch of the service, but there are some other portions of it that we've also proposed establishing, one of which we've got strong support for and started to establish is the Space Command. The way the United States military works is you have a branch of the service which does the mission of organize, train and equip. They recruit the people, they organize the force, they train them, and they give them the equipment to go perform their mission.

So, if you were the Air Force you do that with airmen and aircraft and the like. The operator of those forces is one of our combatant commander. So, for instance, it's Central Command. In the same way here, space is its own domain, so we will have a Space Command. They will operate the space capabilities that are provided in a focused way because this is a domain above Earth that is defined as a geographic area.

So, we have a Space Command leader in General Raymond, who has been named, and we're standing up that new command. These will be the people who will operate the space-based capabilities. So you have a trained and organized force that the Space Force will provide.

The missing portion, of course then, is developing the capabilities. That's where the proposal for the Space Development Agency came forward to more rapidly develop space capabilities to be placed in orbit or to be used here on Earth. If you stop and think about it, space is a very equipment intensive area, and so the ability for you to rapidly develop and deploy capabilities will play a bigger role in space because there's going to be very few humans in space involved in that. It's going to be very hardware intensive.

So, we made a proposal to the Congress. There is right now some overlap in the sense that we didn't have a Space Development Agency before. And so, the Congress correctly asked, last year, the Missile Defense Agency to handle these space-based sensors. Last year the Missile Defense Agency was doing the development of them.

Does the Missile Defense Agency have a lot of capability in this area? The answer to that is yes, yes, and yes, they do. We're starting a new proposal. We'll see whether the Congress fully supports that.

Certainly right now most of the Congressional marks provide that space-based funding in capabilities to our existing organization, the Missile Defense Agency, and obviously that's the way it was last year. You could do it that way, but we've argued in favor of a very focused Space Development Agency that would be an improvement. The results of that all await the finishing of the bills, which probably will happen this fall here in the Congress.

MR. ELLISON: Space has the ability to link offense and defense together, much more. MDA is just a defensive capability. C2BMC is basically defense. Space development looks like it's a much broader perspective in leveraging AI with all the capability that you may get with low Earth orbit satellites you may be putting up and putting that all together. It just seems that may be too big for MDA to handle, because they're a defensive oriented group. Is that one of the reasons why we're going in that direction?

SEC. ROOD: As you mentioned, the space domain and what we want the Space Development Agency to do, is much broader than just missile defense. There will be a number of capabilities that we would like to see. Take for example, situational awareness about what's occurring in space. That's not strictly speaking missile defense, but we want to know what's going on in that domain and have the ability to track it and monitor it.

So that's sort of the work the Space Development Agency would do. As you mentioned, enabling offensive forces has been something our space-based capabilities have done for some time. For example, we all get GPS signals on our phones and on our devices. GPS is based in space, of course, and it provides a lot of the precision, navigation and timing used by our weapons dropped from aircraft, launched from ships, launched from soldiers on the ground, to enable those capabilities. That's a space-based enablement of offense that is already occurring. But clearly there's more, much more, that could be done using the space realm.

MR. ELLISON: His fifth point, we will remove bureaucratic obstacles to dramatically speed up the acquisition and deployment of new technology. Dr. Griffin has been really big on this, because he has seen the average time for deployment is 14 years for most of our systems. He goes back to the 1960s and '70s on the fast pace that we did through deployments of the U2, etcetera.

But it's interesting, because you're a part of it, that President Bush made a decision to operationalize and deploy a ground-based interceptor and you did it in three years. Is that correct, from 2003 to 2006, or earlier? So, there has been a precedent.

But again, with that rapid – we've had some technical issues with it, but it was in place to have some defense for the United States of America during this time. If you can address that

and how you're going to be able to speed a 14-year process? Maybe not go all the way down to what happened with GBIs to get it more efficient and more capable.

SEC. ROOD: Rapidly developing and fielding capabilities is just very important in this area. The example Riki was mentioning was when the Missile Defense Agency was created in 2001 it was given special authorities, special authorities to set requirements and to rapidly develop capabilities in ways that followed the basic process of the department, but allowed you to do it faster without quite all of the number of process steps, I guess, is the best way to explain it. The results have been very good.

It allowed us to rapidly field the initial system. It allowed us to field successive generations of the system all in significantly less time periods than you've seen elsewhere in the department. That's not to say in any high technology engineering effort if you're not encountering any issues you're not actually doing new things. Frankly, having worked for technology companies, even when you try to restart old things you used to do before and you're doing the engineering and testing, it's very natural that there are issues along the way.

So here, there have been some programs that have experienced issues. We just talked about one that was cancelled due to performance issues. We have had those, but we've had those also in the traditional DOD development system, which is longer, much more deliberate, and doesn't move as fast.

I think all in all we're very pleased at that. But one, you've got to give people a clear mission, you've got to give them clear authorities, and those authorities have to match towards the responsibility area that you're giving them. So when we talk about removing bureaucratic obstacles, we try in the department discussions – we've participated in some just in the last two weeks – in which we've reviewed the authorities that we vest in the Missile Defense Agency to try to keep those as something that can move quickly and rapidly.

I mentioned the effort to create the Space Development Agency was similar, with very rapid capabilities, rapid prototyping, rapid deploying capabilities, and authorities within the department. If they don't have the right authorities, otherwise everything breaks down. There are other rapid development organizations inside the Pentagon that are established, but I think those are two most critical ones for the missile defense mission.

MR. ELLISON: His last point, we will insist on fair burden-sharing with our allies. I think you've broken the record. You had 49 proposed FMS sales to 25 countries on that alone, which nobody has done that before. Korea has given 2.3 percent of their GNP to it. Just talk about the struggles we're having with NATO, or the challenges we're having with NATO, that we only have six countries contributing at that two percent level, and how missile defense, which seems to be pretty politically safe investment by these countries that are certainly going to benefit from this capability, especially with what we're seeing with the 360 drone stuff that's coming forward. I think you've done a great job with getting this moving, but there seems to be resistance from big countries like Germany and so forth that could add a lot to the game.

SEC. ROOD: What Riki's mentioning is at NATO the 29 nations that are a part of NATO reached an agreement that they would all devote two percent of their gross domestic product to defense. As mentioned, we're at about countries today that are at the two percent level. But they agreed to be at two percent in 2024, not in 2019, in 2024.

As we project forward to 2024, there has been a lot of progress towards countries having credible plans that will allow them to get to that two percent level by 2024. Even some of those that are falling a little bit short of that level have substantially increased spending. Just to cite a couple of statistics, when the president took office until today nations have increased defense spending in that first two years of the administration by $41 billion at NATO. They've made commitments over the next two years to increase that level to $100 billion at NATO, versus when the president took office.

That's real money for real capabilities. There's another component of this spending, which is 20 percent of your defense spending or more needs to be devoted to procuring new capabilities. That's the other part that goes with this. It's not just spending in general, but is spending on capability improvements.

NATO has set certain capability targets in a variety of areas, and the alliance is doing better in each and every one of those, not making progress on every metric, but overall the trend is excellent on those specific metrics to see the improvement. And improvement in readiness too. We have an initiative called the "Four 30s", which is to have within 30 days 30 combat air squadrons, 30 surface combatants and 30 mechanized infantry battalions all ready for deployment at NATO. We've made substantial progress towards having that become a reality. So, it's real capabilities, real money towards real readiness.

MR. ELLISON: Can you briefly talk about the intelligence sharing? It seems to be the common and also the biggest challenge from a DCC to NATO and across between Japan and Korea. Where do we have to go to be able to fight all together on the same team and at the same time?

There's a lot of disclosure issues that are there with it as well. But how do you – is it the architecture? How do you deal with a problem like that, because we're never going to fight by ourselves. We're going to fight with our friends.

SEC. ROOD: We are going to fight in a coalition. It's one of the core strengths of America's way of conducting itself and its foreign policy. Our way of war, if you will, is the strength of this coalition warfare.

There are difficulties in doing that, and Riki mentioned one of them, which is nations all have their own ways of gathering intelligence and sensitivities about revealing the sources, especially across broad coalitions. But also then the ability, not just to simply take pieces of paper and read them, but data to be shared among sensors and other things more quickly. It requires a degree of integration in those areas.

Different countries have different suppliers and companies and technical approaches. There's not always the same standards. One of the magic points of NATO has been interoperability and common standards, common ways, so that you literally can have 29 countries show up and plug right in.

I remember one of the overseas trips I was coming back from, we stopped to refuel in Iceland. Naturally, there was a NATO exercise ongoing and I spent some time with the different NATO nations and their military. So, the first place you went to is an Icelandic aircraft shelter, and there's an Italian air squadron in there.

I was naturally teasing these Italian guys about being in the cold Arctic and having Montblanc pens and so on in their air flight suits. But, all the Italian equipment was all plugged in and all working very seamlessly with the Icelandic capabilities when they went to fly with the Truman carrier battle group from the United States that was nearby. All the standards, all the data protocol, all the command signals, everything was working flawlessly.

Go to another part of the country in Iceland, and they've got nearly 20 countries doing explosive ordnance disablement exercises. Again, all these different countries, all these different approaches, you look at all the equipment in the room and it's all very different and made by different manufacturers, but they can all get it to work together. They can't speak the same language, but they all know the right commands, processes and procedures for all these countries to work as a team, an integrated team.

And this is without any advanced preparation. This is showing up with many years of hard work, getting the protocols, the interoperability, training, exercising standards, where you now have this most successful military alliance in history actually able to pass data, fly, work and operate successfully. Those are the kinds of things that you have to in advance, and some of that requires these tedious legal agreements and understandings and ratifications by parliaments and all of those things to put in place the foundation.

You have to have all that well in advance of the fight. If you're trying to do things at the last minute, this is not going to work. This is a very exacting science, and the toll is paid in lives. So, you must do this in advance and you must have a commitment to making all those things work months and years, ideally, in advance.

MR. ELLISON: Thank you, John. That covers the six points by the president. I think you're doing great progress going through this. We'd like to open it up to the room for about five minutes or so for questions. If anybody has any questions for the undersecretary, we've got a microphone.

MR. JUSTIN DOUBLEDAY: Justin Doubleday with Inside Defense. You talked about space and space-based sensing. The Missile Defense Review mentioned the potential for space-based intercepts and how you guys would be studying that. I wanted to just ask about the results of

that study and will DOD pursue the development and deployment of space-based interceptors here in the near-tern?

SEC. ROOD: As the Missile Defense Review talked about, it talked about looking at space both for sensing capability improvements, as well as potentially for interceptors. It has been quite some number of years since that had been studied in a significant way, so we have in fact been doing that analysis. The results show that there has been a substantial improvement in the technology, and a lot of changes over the years since this was last studied effectively. I think we're getting to the phase beyond feasibility to looking at things like cost-effectiveness and alternative solutions.

So, no decisions made yet. We're still in the phase of studying it and analyzing what the possibilities are. But it is one of the areas that we're discussing right now.

MR. DOUBLEDAY: (Off mic).

SEC. ROOD: We'll have at least a decision on what if any money to include in that budget request by that time, which obviously if you back that up then you need to make some decisions on whether you want to proceed with a program in that area and what that might look like. But that's all pre-decisional at this phase.

MR. DONG-HYUN KIM (ph): My name is Dong-hyun Kim from Voice of America Korean Service. I have a question. You mentioned about the linkage between offense and defense. Regarding North Korea, they are developing a solid rocket-propelled missile, which is very difficult to have enough time to detect. How are you addressing the offense side on this issue?

Second is, in July the United States Forces Korea announced that they are having common research with the South Korean government in the directed energy field. How are you sharing with developing this capability with the allies? Thank you.

SEC. ROOD: On the linkage between offense and defense and some of what you mentioned is that certainly having the capability to detect quickly offensive missiles after launch – and solid-propelled missiles are one of the things that we've architected for and have capabilities to sense and track throughout their flight – having that capability to warn of it, (is important ?) both for use of the missile defense system to defend against it, but also to share that information rapidly with the offense. The close linkage between -- for instance, if you're executing a missile defense from an Aegis ship that has onboard the capability, almost 38 ships to do missile defense, and at the same time without reconfiguration the ship is also armed with a great deal of offensive armament that it can place. And so, what the sensing of that capability also tells you is also the origin or where the missile is lifting off and coming towards you.

Having the ability to link both executing a defense with that capability, providing offense against the attacker, and then sharing that across a network with other aircraft, other ground-based systems, so that you can have an integrated offense-defense situation, is ideal. Depending on what phase of the conflict you're in, is this the first day of a conflict? Are you on

day 10 and there have been a number of exchanges? That can make a big difference in how the force will comport itself.

Certainly, that capability to have offense and defense apply together is very important. But at a minimum, thinking of missile defense, you're never going to reach the point where offenses replace defenses. You need to have both, and defensive capabilities provide a stabilizing force as well. It says to an attacker, even if you were to launch first, even if you were to pre-emptively strike us, we have the capacity to deal with that defense and to deter that attack. Therefore, they face retaliation and have not accomplished the aims of their attack. That's stabilizing, and in a crisis where people and militaries often posture to threaten each other, having the ability to have an effective defense gives you other options.

For instance, with North Korea it has given us time for diplomacy. It has created space and efforts where we don't have to react by posturing the offensive force as a hair trigger. We don't have to reposition forces. It gives us time and space for stabilizing effects and for the pursuit of diplomacy.

MR. ELLISON: John, I would add that you've got the F-35. You're getting 40 of those. That is a fifth generation air penetration that North Korea cannot stop. It can sense, and it can deliver an offensive capability. So, you have a weapon that's yours that can definitely have an effect.

SEC. ROOD: We are pursuing directed energy in research and development efforts in the United States. It's a significant focus for us. The efforts haven't matured enough to where we have really much in the way of international programs. Certainly, while that isn't an area that I personally lead, I can see us evolving to that stage at some point in the future.

MS. RENATA JANY (ph): Thank you very much. I'm Renata Jany with TBS Sahi, a Japanese TV station. With the Saudi Aramco strike this past weekend, does that strike sort of change the calculus for missile defense in the Middle East and in that region? I know you're probably going to be in a meeting today with the Bahraini crown prince, with Bahrain or Saudi Arabia, any of the countries in the Middle East, are you going to be encouraging them to consider looking at acquiring more counter-drone missile capabilities? Thank you.

SEC. ROOD: I would say just globally we've seen a growth in capabilities for cruise missiles and UAVs, or unmanned aerial vehicles. It's a little bit of a misnomer to describe these, by the way, as unmanned in the sense that people still control them. People still launch them. It's not as though they're autonomous in their operation.

Nonetheless, those kinds of threats we see in many regions of the world are growing. That has been an area that we're prioritizing more, not only in the Missile Defense Review for things like cruise missiles, but separately in the department we are talking a lot more about countering these UAV threats. We've deployed many systems in recent years.

There's a variety of systems, as you know, everything from quad-copters to very large aircraft that would fit in the size of this room, that are in operation. And so, I think we have recognized that that's a substantial and growing threat. We are giving more time and attention to it, measured in dollars, spending additional funding in the department.

And then we've put together a task force that our undersecretary for acquisition and sustainment, Ellen Lord, has been leading with the different military services. As a matter of fact we had a discussion yesterday in the Pentagon with the secretary of defense about our progress in that regard. So, I think the short answer to your question is, we've already recognized we're in a different situation in that threat area.

We're trying to rapidly come up to speed. We've put a lot of time, effort and money into this. We're not where we would like to be, and so we're trying to take our efforts to the next level, if you will, inside the department.

MR. ELLISON: Can we do one more question?

SEC. ROOD: Sure, one more would be great.

MR. MAHAL DUGI (ph): My name is Malah Dugi and I am with the Russian News Agency Rinnovati. You probably heard that Turkey and Russia are now discussing the possible purchase by Ankara of Russian fighter jets, Su-35s and Su-57s, the newest ones. Keeping in mind the situation with the 400, what do you think about a possible purchase by Turkey? How can it affect U.S.-Turkey military cooperation, or anything else? Thank you.

SEC. ROOD: Sure, Turkey is a long-standing ally of the United States and a member in good standing in NATO. We have very regular conversations with them. For instance, I stay in regular contact with my counterpart there in Ankara.

It's an area where our defense establishments have a lot of years of history together, including in our air forces. So, my initial reaction is, I'm aware of some of those reports. Obviously, we're very proud of the U.S. systems that we develop and operate in this country, and that's where we would encourage our Turkish partners to head, in favor of American produced equipment that comes with the interoperability we like.

That's where we encourage them to go, but obviously Turkey is a sovereign country. They make decisions for themselves, but we stand ready to partner with them in this regard.

Thank you very much, everyone.

MR. ELLISON: Thanks, John. It was great of you to take you time to come out here. I thought it was great being able to go through each of the six presidential guidelines for missile defense. I'm excited for you.