Missile Defense and Stability: A Conversation with Deputy Assistant Secretary Robert Soofer and Dr. Jim Miller

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- Dr. Robert Soofer, Deputy Assistant Secretary of Defense for Nuclear and Missile Defense Policy
- Dr. Jim Miller, Senior Fellow at Johns Hopkins University’s Applied Physics Lab and Former Under Secretary of Defense for Policy
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Rebeccah Heinrichs:

Good morning. My name is Rebeccah Heinrichs and I'm a senior fellow here at Hudson Institute. This is a virtual event with the Hudson Institute, and I am joined today by two distinguished guests. It's my privilege to have them here. We have deputy assistant secretary of defense for nuclear and missile defense policy, Dr. Robert Soofer. And senior fellow at Johns Hopkins University's applied physics lab and former undersecretary of defense for policy, Dr. Jim Miller. Thank you both for joining us this morning and for taking the time out to have this event for us. I think it will be informative, and those who are watching it this morning will appreciate your insights.

What I'd like to do is turn the floor over to Dr. Soofer to outline some of the department's priorities in missile defense. And for the purposes of our time together this morning, I'd like to focus on the homeland missile defense portion, leaving some of the other regional threats for another time and another day. So, Dr. Soofer, the floor is yours.

Dr. Robert Soofer:

Thank you, Rebeccah, for inviting me to attend and it's a big pleasure to be here with Jim Miller, one of the architects of the 2010 ballistic missile defense review. Few people are better situated to understand the complexities of the issues that we've been dealing with. I know you want to focus on homeland defense, but let's just clear the underbrush with the regional missile defense because really, there were two major strategic problems that we faced when we commenced the missile dense review; problems that were given to us by the National Security Strategy and National Defense Strategy. One was, of course, the proliferation of regional range missiles; short, medium, intermediate range missiles. Not just ballistic missiles but cruise and hypersonic missiles. This was a threat posed not only by rogue regional potential adversaries but also in the context of great power competition-- China and Russia.

In order to address that problem, we developed a concept for missile defense that included not only active defense and passive defense but also attack operations; being able to try to eliminate the threat before it's launched to the best that we could. And to deal with the large numbers of regional threats, we pursued what's called integrated air and missile defense. And this is an opportunity to make sure that we can integrate all of our sensors and all of our interceptors in the most efficient way and to make sure that we have interoperability amongst the services as well as with our allied forces as well.

In this context, it's important to note that the defenses that we're building in a regional context are meant to address not only the rogue states but also China and Russia. And it's in their context of their access of aerial denial and anti-access capabilities. If we end up in a conflict either in Europe or in Asia, the objective of Russia or China would be to deny us access; to keep us from reinforcing our allies. We need to overcome that strategy and, again, that's the purpose of deploying missile defenses for our forces, our allies, protect our bases, our ports so that we can reintroduce and reinforcements to turn the tide and win the battle. And that's why we include missile defense as a component of our overarching strategy for dealing with Russia and China.

Now, let's jump into the homeland missile defense area, which I know is the emphasis for today. The main strategic problem that we face in the homeland context is a threat posed by rogue countries such as North Korea and potentially Iran. I think this is pretty well understood given
the level of nuclear testing that North Korea has been conducting as well as the ICBM tests. We believe North Korea has the technical capability to attack the homeland with an ICBM though the growth of that threat over the next 10 years is a little harder to predict. But clearly, they are increasing numbers. They have a combination of fixed and mobile ICBM launchers and we believe it's a threat that we have to reckon with. Iran, they don't have technical capability for an ICBM today but they do have a space launch vehicle capability. If they improve that, they can convert the space launch vehicles into potential ICBMs, so there's still a potential threat from Iran in addition to the existing regional threat posed by Iran.

Our approach for addressing this rogue threat to the homeland is what we're calling a layered missile defense system. It began a few years ago with the introduction of an additional 20 ground-based interceptors to the 44 that we already deploy today. The original plan was to arm each of these new interceptors with what was called the redesigned kill vehicle. For reasons that I don't want to go into today, we find that the RKV was not the right way to go. It didn't meet the requirements that we needed to stay ahead of the threat. And so, as some of your viewers will know, we now have adopted a program called next generation interceptor. Again, purpose here is to add 20 ground-based interceptors starting in 2028. Probably take us a couple years to finish the build out, but by 2030 at the latest we would hope to have a total of 64 ground-based interceptors to protect the homeland against a rogue nation threat.

What do we do in the interim between now and 2028 when we start to deploy the system? Well, first we're planning to improve the reliability of the current GMD system; give it service life extension program, add ground-based radars. We now have a space-based kill assessment capability all meant to improve our shot doctrine. If we take fewer shots against a threat, we can shoot at more of them. Again, 2028, NGI. Today, improve the GMD reliability.

To further mitigate the risk in the interim period, we're going to be looking at conducting a test of the SM-3 block IIA missile against a North Korean representative ICBM threat. The SM-3 IIA missile, your viewers will know principally as a regional missile defense program designed to intercept medium range, maybe intermedium range ballistic missiles in the midcourse. Congress asked us, I believe it was last year, to conduct such a test. And we'll be doing that probably in the Summer timeframe. If the SM-3 IIA is capable of intercepting a North Korean representative ICBM threat, this opens up some possibilities to use the SM-3 IIA as an underlay for the GBI system or the GMD system.

Let's see if the test works. If it does work, then we come back to Congress the next year and explain what our concept would be. We'll probably get into this a little bit more, but right now one could imagine at least deploying these systems on ships where they're already deployed but will require ships to be in a certain location to be able to intercept this. And it would be, really, in the mid-late course terminal phase of flight. In other words, whatever you couldn't intercept with a GBI, you might get another shot with the IIA missile.

Eventually, you might also contemplate putting in the IIA missile on land as well, much in the same way as we plan to deploy the IIA missile in Europe as part of the European phase adaptive approach.

Again, to summarize our approach at this point to deal with a North Korean threat is to improve the current GMD system by making it more reliable and adding discrimination radars, to look forward to a next generation interceptor starting in 2028 and in the meantime, to deal with any potential risk, to look at the IIA missile as an underlay as well as, by the way, to continue to look
at how we can improve our attack operations so that once North Korea starts firing ICBMs against us we just don't rely on missile defenses but we will be going after those missiles before they are launched.

Having said that, I'm going to stop now, turn it over to Jim and then maybe we can have a more fulsome discussion about this concept.

Rebeccah Heinrichs:

Thank you so much, Rob. That was a wonderful overview and I especially appreciated you starting with the regional context because that answered some questions and some maybe mystery around how the missile defense review fits into the larger context of great power competition, so thank you very much for that summary.

Jim, I would like to start with you, if we can. One of the big pushbacks we've had is the Russians insist that the improvements that the United States is intending for, especially the SM-3 IIA, but as we build out homeland defense threaten Russian offensive capabilities. That's the reason that they cite for their investments in some of these more exotic offensive capabilities. Can you speak to that? About whether or not there's some merit to the Russian complaint about American homeland missile defenses in particular and how missile defense does or doesn't affect stability?

Dr. Jim Miller:

Sure, Rebeccah. Let me first start by thanking you for hosting this discussion today. And also thank Rob Soofer for his long support of missile defense and nuclear policy issues and trying to work on a bipartisan basis, including from the Senate Armed Services Committee as well as from his current position.

In my view, there's long and strong support for home and defense. Goes back to the end of the Cold War as bipartisan support. And I think it's important to understand that the reason that the missile defense system of the United States, the GMD with these ground-based interceptors, focuses on North Korea and Iran, is that we can. We have the technical capability to do that. If we attempted to build a system that could deal with Russia and China, we would have to scale it to an enormous size in order to be successful or have any prospect of being successful and then we'd run into the technology issue. And then they both have diverse delivery modes as well.

It's not that we prefer to be vulnerable; it's that we don't see a way out of it. And I don't see any way out of it vis-a-vis Russia or China for a couple of decades at least and probably longer than that. In that regard, I think it's valuable to note that basically the policy of this administration, of the Trump administration, is the same as the policy was in the Obama administration and same as George W. Bush administration. And that is that homeland missile defense is the number one job for missile defense, it's the priority, but that it is focused on so-called rogue states, North Korea and Iran and others, should they arise. Again, not because that's all we would limit to but that's what we're technologically capable of. And that we rely on nuclear deterrents, the threat of an overwhelming response with nuclear weapons, should we be attacked by Russia or China. Of course, we would try to intercept anything that they launched at us but we don't expect that we'd have much capacity and capability to do that because of technological sophistication to scale.
With that as the starting point, the Russians have long-standing concerns and fears about US missile defense. The Chinese have expressed those concerns as well over recent years, including when I was in government and in channels for so-called track two discussions, non-governmental discussions I've been involved with since. So, I do think it's credible that the Russians are concerned not about today's missile defense, not about the ground-based mid-course defense system we have today or even the SM-3 IIA underlay, but about what might come in the future. The fact that they've moved forward with multiple new delivery systems, including hypersonic strike for both conventional and nuclear capabilities, I think is consistent with their long-standing concerns about US missile defense.

Just as we want our missile defense to be ahead of North Korea and Iran, I believe they want their offensive capabilities to be ahead of anything we might put forward in 10 or 20 years. That's their choice, as long as they have them under tight command and control. As long as they don't do anything stupid with them or do saber rattling, that's their choice and they will determine what they need to have an effective deterrent from their perspective. Our job is to make sure that we have an effective second strike no matter what they throw at us and that we have an effective missile defense vis-a-vis North Korea and Iran. And that has to deal with the growing scale and sophistication of the North Korea threat as well.

I'll stop there.

Rebeccah Heinrichs:

Thank you, Jim. Rob, if you could speak to the question that I put to Jim. As Jim said, some of these systems that Russia is developing, might be because they're looking out to the future of what the United States might eventually have. But is there any merit to the argument or to the assertion that they have to build these particular systems now because of the things that the United States has now deployed and is intending to deploy in the near future? The GMD system, Next-Generation Interceptor, and in the potentiality of the underlay.

Dr. Robert Soofer:

Right. Thank you. There's a couple of ways we can answer this in terms of why they're doing what they're doing today with these new novel systems. There's probably a number of explanations. One of which may be some reaction to missile defense. I don't personally believe that and I'll mention why. Part of it has to do with the fact that again, if you listen to what Jim said, he doesn't see any way that we can handle Russian retaliatory capabilities anyway. And I think the Russians understand that, at least today, so the concern is potentially in the future. But there's other motivations for why Russia is doing this. There's a great piece by Rose Gottemoeller, former Under Secretary of State under the Obama administration, where she tries to explain why the Russians have done this.

And she says, "In the past few years, Vladimir Putin does seem to be after nuclear weapons for another reason: to show that Russia is still a great power to be reckoned with." She says, "These exotic systems have more of a political function than a strategic or security one. Their role is to signal Russia's continuing scientific and military prowess at a time when the country does not otherwise have much on offer." I think again, Russia is moving out on these novel systems, not because of what we're doing on missile defense, but for other purposes.
Now, to the broader argument about whether missile defenses potentially spur sort of this action-reaction type cycle where if we deploy missile defenses, Russia would be inclined to increase the size of its forces to overcome ours. That's a notion that's been invoked since we signed in 1972 ABM treaty. That was the whole rationale behind the ABM treaty. But then if you look at the history of arms control and nuclear arsenals since then, that really hasn't been the case. For instance, in the mid-eighties, Ronald Reagan announces the strategic defense initiative. The Russians must've been really scared that we're going to be deploying missile defenses in space, capabilities that would obviate a second-strike capability. And yet we managed to get the START treaty which limited our offensive forces. Likewise in 2002, we pulled out of the ABM treaty which probably must've again, scared the Russians that we would be deploying massive missile defenses, but yet we managed to get the strategic offensive reduction treaty which reduced forces from 6,000 down to 2,200. Again, reductions.

And finally, under the Obama administration we had the 2010 nuclear posture review with again this notion that we're going to continue to play limited homeland offenses and yet we got the new START treaty. The Russians have said constantly that they're concerned about our missile defenses, but at the end of the day they seem to want to limit their offensive forces. In fact, look at today, they are requesting, they are very much interested in extension of new START. If the Russians were concerned about the IIA missile, they were concerned about our missile defense programs, why would they agree to limit our forces and extend new START? They should be pulling out of new START and building up their offensive capabilities, but they're not. I think at the end of the day, the Russians may be concerned, 20, 30 years from now that we might have some missile defense capability, but the argument just doesn't hold water today.

The final thing I'll say on this is look, we pulled out of the ABM treaty in 2002 and today we have 44 ground-based interceptors. We have the original ABM treaty that allows you to have 200 interceptors and we've only deployed 44 so the Russians need to look at what we are saying and that is that our missile defenses aren't directed against them. And they need to look at what we're doing and that we're not building massive missile defenses against Russia. Take all that together and again, I think that the Russian complaints have no basis in fact and are being done principally to influence our domestic calculations as well as potentially our relationship with our allies.

**Rebeccah Heinrichs:**

Thank you.

**Dr. Jim Miller:**

Rebeccah, could I pop in real quick, if you don't mind?

**Rebeccah Heinrichs:**

Yep, please do.

**Dr. Jim Miller:**

Rob raises a good point and Rose Gottemoeller raised a good point as well. There are multiple motivations for what the Russians are doing and the desire to be as much as possible viewed as a superpower. How being in one dimension, even one dimension of military power is
certainly on that list. And I also want to say very clearly that US missile defense as it is today, US missile defenses that are planned, US missile defenses that are plausible in the coming decades not only have no real viable capacity to go against the high tech countermeasures and volume of a Russian or Chinese attack, but that will be true for at least a 20 plus to 30 years. I do think the Russians, there is a degree of saber rattling if you will, in development of new systems to show that in a sense that they have that capacity to develop new systems.

I do think they have a long-term concern about where we go, but these concerns and this issue is not interfering with, as Rob said, with their willingness to extend the new START treaty, which is something the United States should do. And in my view, nor would it be sufficient to cause any pause for reductions below the level of the new START treaty, should that be contemplated by this or a future administration. Their long-term concerns, I think the Russians are to a significant degree, paranoid about the future technical competence and excellence of the United States, but that the systems that are on the board today are not going to interfere with strategic stability and are not going to block future progress on arms control as well.

**Rebeccah Heinrichs:**

That leads me to my next question and we'll stay with you for a moment, Jim. When it comes to some of these specific programs, the GMD system, seeking to improve it, again looking at the rogue state threat in particular of North Korea, but not just the threat that North Korea can pose today, but also looking just over the next several years at the direction they're heading, the proliferation of technology, the kinds of systems and capabilities that we think that the North Koreans are developing and then the Iranians as well perhaps eventually. Should the United States, based on everything that we just said and discussed, take into account some of the rhetoric coming out of Moscow and even Beijing? China, I have noticed, they take a page out of the Russian playbook and will push back on American missile defense policies and deployments. I think for a variety of reasons. One, because they see that it works in American domestic politics sometimes.

But should what we're hearing from these authoritarian countries affect what we are doing, what we intend to do to protect the homeland against the threats that Rob just outlined from rogue state actors? And if you could speak to the GMD system, what we intend to plan and then this underlay, this new concept to provide extra bolster complimentary systems for GMD.

**Dr. Jim Miller:**

We cannot and must not give Russia or China a veto over the United States ability to defend ourselves from North Korea and Iran. That is an absolute no go for any administration. And the American people, would in my view rightly be up in arms should any administration propose something like that. And as I said, the systems that we have deployed today, the systems that are plausible for us to deploy in the near term are not going to upset strategic stability and are not going to undermine future prospects for arms control in the next 10 to 20 years. If we got to a much more advanced set of capabilities including directed energy, if we deployed interceptors in space, I think the calculations would be somewhat different in the sense that for example, space-based interceptors would pose a challenge to strategic stability because of their threat to satellites more than their threat to ballistic missiles.
But for where we are today, for where we are for the next 10 to 20 years, the United States doesn't face the trade-off between what we need to do to defend ourselves vis-a-vis North Korea and Iran and strategic stability. If the point comes where there is such a trade-off, that's the first thing that we need to do is to engage in strategic stability talks with Russia and China and manage that tension, which is based in part on their worst fears, in part on misperceptions and probably the least of all on American capabilities. We can't give China or Russia veto on what we need to do to defend ourselves vis-a-vis North Korean and Iran and we need to be engaged in strategic stability talks with them and explain to them not just what our intent is for the near term, but our sustained commitment to strategic stability. Understanding that each side has to take the measures that it thinks are necessary to support its concept of strategic stability.

We will under any administration, I'm confident that the United States will continue to do so both on the offensive side vis-a-vis North Korea and Iran and on the offensive side as well to make sure we have an assured second strike, no matter what missile defenses China or Russia were to throw up in the future. I'll stop there.

Rebecca Heinrichs:

Thank you. And Rob, speaking of the plan, the timeline for improving GMD and getting the next generation interceptor, you said 2028 is the aspiration for first deployment. And then we'd be extending the life of the GMD system in the meantime. And then also working to get at this underlay with the [Aegis] SM3 IIA system. As you look at the threat facing the country, is the timeline right? The Commander of Northern Command General O'Shaughnessy in the last hearing in March, when he testified with you before the House Armed Services Committee, he really gave a compelling case that he would like to make sure that we do everything we can to move these things to the left. To bolster homeland defense because of the variety of threats that he sees facing the country. Can you speak to the timeline and how comfortable you are with where we are in the development of these things? And is there something that we can do in the interim before getting the next generation interceptor? Or are you confident with the timeline as you laid out?

Dr. Robert Soofer:

All right, thanks. The first thing to understand is that today we are in an advantageous position vis-a-vis North Korea. 44 ground-based interceptors. General O'Shaughnessy has complete confidence that the system will work and we can address the threat. Then the question is, is can we wait until 2028? What's a threat going to look like between now and 2028? And the problem is, and I think Jim can appreciate this is, when we're trying to do the policy analysis, we have multiple dimensions of uncertainty. The first dimension of uncertainty is we don't know how quickly that threat is going to progress. You just don't know. The intelligence community has an estimate, but at the end of the day it's difficult to know how quickly it will progress, both in terms of numbers and in terms of the sophistication of the threat.

Second dimension of uncertainty is, again, part of our missile defense strategy here is to defeat those missiles before they're launched. A certain number of those threats, assuming that they increase from the numbers they have today, will hopefully be taken out on the ground through attack operations. But we can't rely on attack operations because we don't know if we'll find those threats. We don't know if we'll be able to attack them in time. There's a dimension of
uncertainty that we don't know how much of a threat we can buy down through attack operations.

And then the third dimension of uncertainty is we don't know how well the GMD system will persevere until we get the 2028 deployment of NGI. That is, you have to constantly keep the system reliable, which is why we're doing the reliability improvements and the life extension on that. There's three dimensions of uncertainty in trying to figure out how to address this problem.

And underlay all of that with what is obviously a tremendous competition for resources here in the Department of Defense. Great power competition is not cheap. And so we're spending a lot of money addressing the conventional threats, the cyber threats, all the other potential threats from Russia and China as well as other rogue countries. And so you have to balance all of these. At the end of the day, we came to the conclusion that we can, given the uncertainty of the threat, we know it's going to increase. We just don't know by how much and so we thought it was worth delaying the fielding of the RKV or the NGI by a few more years to get a system that literally is a next generation interceptor. The current system that we have today is based on the interceptors that we deployed in 2004 and 2005. The redesign kill vehicle will just go on top of the old design boosters.

The NGI is really the next step up. It's like going from the Polaris missile to the Trident missile, from going from Minuteman 2 to Minuteman 3. It's a major upgrade to a system that I think is worth the wait, if you will, bearing in mind that we will be conscious of buying down the risk through a combination of attack operations and hopefully this SM-3 block IIA.

Rebeccah Heinrichs:

Thanks Rob, I think your remarks just now calls to mind the Missile Defense Review. It highlighted the role that missile defense plays in diplomacy, that even as the administration pursues diplomatic efforts with the North Koreans, missile defense does not conflict with that. It actually strengthens the hand of US diplomats as well. And I would argue that it's even more important now because the North Koreans continue to work on their program. We need to make sure that we have the most robust, credible missile defense system protecting the American people as we pursue diplomatic efforts.

Jim, based on what Rob just said, do you have some views on the timeline of the Next-Generation Interceptor, the necessity of that interceptor based on GMD’s… confidence in the GMD program? The last flight test that GMD had was successful. It was the most complex threat scenario that we tested it against, and it was successful. So the combatant commanders have repeatedly expressed confidence in the system, but even so, the technology is still dated, and we need to invest in new technology for the Next-Generation Interceptor. Are you comfortable with the timing of that, and can you speak to that system?

Dr. Jim Miller:

I'm comfortable with the need for it, and the requirement for it. The EKV that has been deployed on the Ground-Based Interceptor has improved in reliability over time, but it has inherent limitations. And those limitations were the core reason for moving towards the so-called Redesigned Kill Vehicle called the RKV. The RKV would have fallen short in its capabilities. I think that's about all I can say. Maybe Rob could add something, but would have fallen short and when that became clear, I think this administration and Congress made a smart choice to
shift towards the Next-Generation Interceptor, and to develop a capability that notwithstanding the uncertainties, can deal with it, the expected threat from North Korea and Iran, and can deal with the potential, keep those that they can add to that system that would challenge our current system. So I think that it's the right move without question, it's the right move.

Anything that can be done to pull to the left without putting at risk the quality of the technology, engineering and at least initial testing that goes into that program makes sense. Based on what I have seen, I think 2028 is a very achievable date, and may be possible to move it a little bit earlier into 2027. But we should do it right, and we should lean as much as we need to on the existing system in the meantime. And it's an important reason that we need to look at underlay, not just for defensive Guam and Hawaii, but in the event that it could, that SM-3 IIA could provide some residual capability for the mainland as well. Because the American people would not forgive a President or Congress who had an opportunity to defend us from a threat and chose not to do so.

We'll see what happens with the tests of the SM-3 IIA, but we need to look at that as a possibility as well. And as we discussed earlier, I'm confident that if we go forward there, it can be done without upsetting strategic stability. And I think it's important to speak to Russia and China about it, but we can't give them a veto over what we need to do to defend our people.

Rebeccah Heinrichs:

Thank you. I'd like to focus on the SM-3 IIA. Rob, some members of Congress have expressed concerns that we're pursuing this without knowing where we might deploy these on land. But you said in your initial remarks that these could be at sea originally. And we are growing the number of deployable Aegis ships that would have the missile defense capability to 48 as the intent of this administration. But the SM-3 IIA still doesn't have the inherent capability of a GBI for instance. It's a smaller missile, it's going to be intercepting the adversary's missile in a different phase of flight, et cetera. So can you talk a little bit about your idea broadly for deployment of the SM-3 IIA system as an initial underlay concept?

Dr. Robert Soofer:

Rebeccah, I really wish I could, but it's difficult until we know that it actually works. But we do know for instance, that if it does work, it is already deployed on ships. So it will begin with a sea-based deployment. If you look at how many SM-3 IIA's we're planning to the build over the next five years, it's probably no more than a couple hundred. And these are going to be spread amongst the ships. They're going to be deployed in other regions so they won't all be back protecting the United States. And I suppose you could call them all back in to protect the United States, but then you'd lose this combat capability in regions where the conflict is taking place. So ultimately fielding them on ships is not the ultimate answer. I think we probably will need to move them ashore in the same way that we have Aegis Ashore sights in Romania and Poland, we would have similar sites in the United States.

I don't know how many that would number, I don't know that it would even be in the same configuration as Aegis Ashore in Romania and Poland. They could be different types of launchers, but you need the interceptor, and you need a radar, a sensor to support it either deployed in the United States or forward-based. Again, I wish I could say more but we don't know. But at the very least, we know that we can deploy it on ships, so there's no reason not to
go forward with the test and some additional funding to operationalize it should it prove successful.

Rebeccah Heinrichs:

Thank you. Even if you can't give any more specifics about that, that's helpful because I think that members of Congress and their staff can sometimes get so concerned about not knowing deployments that they might be hesitant to support the capability, but it's important to have the capability. And then we can make assessments based on the threat to determine where we might put those sea-based capabilities. And we would have that option to do so once we get to that point. So thank you for that. What about, I know for underlay, the other program that has been discussed is the THAAD system.

I remember back when I was working on the Hill and Secretary Gates was the Secretary of Defense, that there was some concern at one point when North Korea was threatening to launch missiles. And he made the decision that we could potentially have THAAD, and it would have to be a bad scenario, but we could employ THAAD for the protection of Hawaii if we needed to for additional capability, even though we were confident at the time that GMD could provide protection of even Hawaii. Can you talk about that, Rob? I guess we'll start with Rob and then go over to Jim. Is THAAD still something that is in the consideration of this administration to add to that underlay concept?

Dr. Robert Soofer:

Definitely. THAAD is also going to be tested I'm not sure when, but the idea is to give THAAD an ability, and it'll have a much smaller defensive footprint than even the SM-3 IIA. But that's definitely in the mix, and certainly it performs better when deployed in Guam against the medium range system, and in Hawaii against something that's less than an ICBM threat. So definitely THAAD is going to be part of the architecture if it works.

Rebeccah Heinrichs:

Jim, would you like to comment on the THAAD system for Homeland events?

Dr. Jim Miller:

What Rob said is exactly right. It makes sense for certain contexts, and if you're looking at a shorter range missile and a relatively small footprint of coverage, THAAD has a real chance to contribute in that. To me, that's certainly the case for Guam and Hawaii. The country has never been in the past comfortable with the idea of national deployments that aren't part of an overall national architecture. So I think there'll be an interesting conversation on Capitol Hill if there is a recommendation to go forward with both with the SM-3 IIA in a ground-based mode and with the THAAD. But it's something that it's important to discuss, but first things first, first the test, then a conversation about the architecture, and the coverage and the contribution, and then we should have a recent discussion about the extent to which the assistance can contribute to the defense of the Homeland, including continental United States, but also Alaska, Hawaii, Guam.
Rebeccah Heinrichs:

Each of these systems has different coverage limitations and the GMD system is still going to be the backbone of the entire Homeland defense system if it provides coverage of the entire country from the ICBM threat.

But let's move on. Let's move up to space. Rob, can you talk about the initiatives in the budget that would improve Homeland defense that are space-based, and some of those have moved outside the Missile Defense Agency budget and maybe in the Space Development Agency but are still applicable and tied to what we do for the missile defense mission.

Dr. Robert Soofer:

Right. Thank you Rebeccah. We concluded early on, and I think this is something that even the previous administration was looking at and that is that we need space-based sensors to improve the efficacy and the performance of our ground-based missile defense system. And so the approach that we are taking is with the standup of this new Space Development Agency, SDA is actually looking at a new paradigm for doing missions from space. And rather than large single high-performance satellites, you have a proliferated low earth orbit architecture which makes these systems inherently more survivable, and probably even less expensive to field.

As part of the SDA mission, as part of this pLEO [proliferated Low Earth Orbit] mission, part of that will include tracking, tracking for hypersonic glide vehicles and also for the upper stages of ballistic missiles. And so SDA is now charged with figuring out how to incorporate a missile defense sensor that MDA is going to build into their pLEO architecture. And we're hoping that in the near future, certainly within the next five years, we will have a test where we'll put on orbit a couple three of these sensors that will be able to track hypersonic glide vehicles as well as again, these dim upper stage ballistic missile threats.

If that works, now you potentially will have to expand that system to get global coverage, but now you have a space-based sensor that can provide the tracking of this new hypersonic missile threat, which would be a big game changer. That's sort of in the mid- to long-term, but currently as you know, we've put into space the Space-based Kill Assessment capability. It's a sensor that will determine whether or not an intercept has been placed in space, which will help you preserve your rounds. But basically again, to summarize, SDA has the lead for integrating a payload that is going to be built by the Missile Defense Agency.

Rebeccah Heinrichs:

Thank you for that. That last point you made is important to highlight -- that some of these investments, though they're pricey up front, they're actually made to squeeze capability out of our current systems so that we don't need more numbers that you can actually look and have greater assessment before you actually shoot another interceptor at a potential threat coming our way. So I think that that point is important. Jim, space-based sensors, can you talk about that? Anything that Rob just said that you'd like to add to, or highlight, or even potentially disagree with?

Dr. Jim Miller:
I would just highlight that space-based sensors had been part of the architecture from day one. And adding additional both capacity and redundancy and resilience given the advances in any satellite capabilities and counterspace that Russia and China are making makes a lot of sense. So everything that Rob said on space-based sensor side is spot on. And there'll be discussions about what the most effective orbits are, what the most survivable orbits are and so forth. But basically, getting these sensors in place and having a higher degree of resilience in our space architecture for missile defense and more broadly is an important step. And I'm pleased to see movement in that direction.

Rebeccah Heinrichs:

With our time left, I'm going to ask about cost. Rob, it seems like especially with the Missile Defense Review, missile defense is playing a larger role in how the United States thinks about deterrence, and how we think about empowering diplomacy. We're looking primarily at rogue state threats for the Homeland, but now we are considering the variety of threats to our national interest, and our allies, and our deployed forces abroad from powerful countries, China and Russia. And now we're not just looking at ballistic missile threats. We're concerned about the cruise missile threats, the hypersonic threats. So the mission for missile defense is growing pretty dramatically and I think rightly so. But the budget, for the Missile Defense Agency at least, has remained about the same and even a little bit lower than previous years from what the president has requested. Can you explain the challenges that you see for the budget and what you're hopeful for with the support of Congress and maybe potentially future presidential budget requests as we try to get the country's national priorities for missile defense deployed.

Dr. Robert Soofer:

Right. As I mentioned before, there is tremendous competition for resources in the context of a great power competition. And that makes it extremely difficult to eke out additional funding in the annual budget process here. But still missile defense is a priority for the President and for the Secretary. And there's perhaps no greater proof of that and the fact that within, I think it was FY17 we submitted a supplemental budget request for $4 billion. $2 billion for missile defeat and $2 billion for the Missile Defense Agency, which ultimately led to the additional 20 ground-based interceptors. So we took the threat seriously and we moved out on the 20 GBIs as soon as we possibly could. The budget today, $9.2 billion being requested for FA21 are higher than what they were four or five years ago.

But even four or five years ago, you could see those numbers ramping up. So we are at a higher level today than we were, say four or five years ago. And even though there may be a small reduction in the FA21 request, it's still at a higher baseline level. And then to compensate for some of that reduction, I'll point out that the services are spending money on missile defense. There's about $3 billion for the Army. Space Development Agency has about a hundred million dollars to begin this hypersonic ballistic tracking space sensor and then we have a host of money going into the attack operations left of launch capabilities. But the other thing I would say is that the Missile Defense Review laid out a number of important policy vectors but you can't go from a paper review to fielding overnight. And so you have to do the R&D with space sensors. You've got to get the technology down.

Boost phase defenses, whether utilizing an F35 or potentially lasers on a UAV. You got to do the research and technology is still the law in Poland and intent and once the technology bears
fruit, then you can start spending more to field those capabilities. So I would say that, give us
time. Let us do the R&D, let us get on with adding the 20 GBIs against the current rogue threat
and then we can reevaluate.

Rebeccah Heinrichs:

Jim, are you comfortable with where the budget is now, given the direction of the threats and the
aspirations of the country for expanding the role of missile defense? And if you could also speak
to, you started with that point about bipartisan support, the importance, because some of these
programs they're going to get these on time and on target it's going to go beyond the next term
of the next president. And so it will require some pretty serious bipartisan support and a
commitment on the part of the country to get these things deployed. So if you could talk about
your confidence in that and where the budget is in the direction of the budget.

Dr. Jim Miller:

Rebeccah, let me make three points. First, we can't go to the American people and say, "Sorry,
we ran out of money and we didn't have any leftover over to defend the nation from ballistic
missile attack from North Korea, Iran." So we need to invest what's necessary. It's the top
priority for national missile defense and it's got to be one of the top couple of priorities as you
look at the budget competition for the department as a whole. So that's point one. Point two is,
notwithstanding that point, missile defense still has to compete for resource and the proponents
of additional missile defense capabilities and new systems. We need to make the case that they
will contribute effectively and importantly to the capabilities of a nation. I think that's the case for
the systems that are on the table today. I think it's particularly true for the Next-Generation
Interceptor and it's true for the so-called underlay of SM-3 II and that as we work through those
issues.

Point three, it really reflects something that Rob said, we want to be in a hurry and because this
is important, but we don't want to rush to failure and so we need to invest and take no more time
than necessary, but the necessary time for appropriate technology development and testing. It
is frustrating. You'd like to snap your fingers and have that capability of the NGI here today and
not in 2027 or 28 but we need to make those investments in technology and testing. So it is
natural that that overall budget for missile defense is both significant and a point of contention
because of the opportunity costs for those resources. But I think if we keep those principles in
mind, and if we work to get bipartisan support for those principles on Capitol Hill, that will have
good chance of getting the investments and the capabilities that are necessary to defend the
nation and for regional defenses. To defend our troops overseas as well.

Rebeccah Heinrichs:

I would just point out too, Rob gave that number of $9.2 billion to the Missile Defense Agency.
You don't want to downplay the size of that number. It's still obviously a lot of money, but it's a
small percentage, very small percentage of the overall defense budget. And that budget was put
together with cost savings in mind already. And that was even before the pandemic. So even as
members of Congress get back to business, hopefully in the next several weeks in this post
pandemic environment where they're looking for cost savings, the Missile Defense Agency
budget was already being squeezed even before this, and it's not a good place to look for cost
savings. I would argue, in fact, it needs to be bigger and to grow as we protect the American
people and our strategic interests abroad. Rob, if you have anything you would like to add that I did not ask you about, please do give us your closing thoughts.

Dr. Robert Soofer:

Well, I would just conclude by remarking that for reasons that we would need more time to discuss, missile defenses have always been controversial in US national security policy. In fact, if you go back to the initial deployment of Safeguard, I believe it was the vote that took place in 1969 or 1970. The US Senate voted 50 to 50 as to whether or not to deploy or give the Nixon administration the money to deploy Safeguard and it took the Vice President coming to the floor of the Senate to cast the winning vote. So from the very beginning, the nation has been divided on the role of missile defense and its implications for strategic stability and arms control and arms racing and all that. We've had terrific, or I should say, horrific battles between Republicans and Democrats during the Cold War, during the Reagan administration with the strategic defense initiative unveiling and forward.

But I agree so much with Jim that today we find ourselves in a situation where there is a great deal of bipartisan consensus. That is to address the threat posed by the rogue countries such as North Korea and potentially Iran. And to get on with improving our regional missile defenses so that we can protect US deployed forces as well as our allies and address this great power competition. So again, I'm grateful that in Congress as well as in the broader, I think strategic community, there is consensus on the current approach and maybe in the future we can have more divisive debates as technology matures, but right now I think we're in a good spot. Thank you.

Rebeccah Heinrichs:

Great. Thank you so much Rob. Jim, if you have any closing remarks.

Dr. Jim Miller:

Rebeccah, I agree with what Rob just had to say both about bipartisan support and the importance of the mission for the United States. And we are in a place today where it's clear that the North Korean missile and nuclear threat is real. It's possible that Iran will have that capability. Any wishes that diplomacy was going to solve North Korea, I think with their recent missile tests in their continued efforts is looking like pretty much of a long shot. And I don't want to get partisan, but I think it's clear that the maximum pressure campaign the Trump administration via Iran has not moved them further away from a nuclear capability, quite to the contrary. So that's the world that we live in and we have a responsibility because we are capable of doing so to defend the United States against these so-called rogue threats on North Korea and Iran.

It is natural to have discussions, debate and so forth on the specifics. And I think that will be true of the underlay and it'll be true of specific space-based systems. One of the great things about this country is that we're able to have those debates, we get the issues out on the table and then we put it up to the people's representatives whether elected or nominated by the White House to deal with these. And I think that we have big challenges ahead on missile defense, but we have a good baseline to address them. And a lot of discussion, important discussion will be
taking place on Capitol Hill and in the public in the coming months and years. And I'm pleased to be part of this conversation today. That's touched on some key elements of it, Rebeccah.

Rebeccah Heinrichs:

Thank you. And we didn't talk about it a whole lot, but I want also to mention the role that missile defense does play in deterrence. And to the extent that we can further complicate the calculations of our adversaries, we want to do that. And so missile defense has a very significant role to play in that, both for homeland defense and as well as in the regional context. And so it's critical whenever you look at the role that missile defense is playing, that we are actually trying to dissuade our adversaries from making that initial act of aggression to keep our troops safe, to keep our interests secure, and most importantly, the American people safe at home. And so with that, I'd like to thank both of you very much once again, not only for joining us today, but for your years of service and work on these particular issues. Thank you so much.