Golden Dome Industry Day

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**SUMMARY KEYWORDS**

missile defense, presidential mandate, capabilities at speed, global threat, strategic defense initiative, integrated air missile defense, domain awareness, command and control, space layer, upper layer, under layer, limited area defense, AI enabled fire control, remotely operated systems, agile and efficient testing., Missile Defense, acquisition, contracting, non-traditional acquisition, kinetic and hypersonic defense, non-kinetic and electronic warfare, command and control, disruptive technology, space demonstrations, National Integrated Air and Missile Defense Center, engineering, collaboration, innovation, cost and schedule performance.

**SPEAKERS**

Speaker 2, Speaker 7, Speaker 9, Speaker 8, Speaker 3, Speaker 5, Speaker 6, Speaker 10, Speaker 4, Speaker 1

**Speaker 1** 00:00

For what you do and what you're going to bring to the table, your your passion, your patience, but also your innovations and your thoughts. And I'll second that as well. As we move forward to change this, this game, we have a presidential mandate. We've only had two other presidential mandates in this in this business, in the last 42 years, and those two, as I just mentioned, change the face of missile defense, going from really science fiction to real, and then actually putting capabilities into the into the field that today are the only systems that are protecting our homeland, our families as we chart forward. It means we're not going to be operating businesses, as usual. Our only metric of success is delivering capabilities at speed. and scale as quickly as we possibly can as we move forward, because these are the systems that protect our families, protect our communities, give choices to our nation's leaders, and set the high mark of of deterrence and capability development in in the world. And so that is really important, especially that role defending our families. Because I'll tell you, don't believe anything that you read in the papers that the threat isn't real. It is real. One has to look what's going on in Ukraine, what's going on in the Middle East, but also, look what's going on in the provocative actions of our adversaries in the South China, Sea and the Pacific. Really, around the globe, the threat is real. They have seen what we have done. They've tried to copy it, but they've also tried to go around us and bring different avenues of approach, different complexities, both in altitude, in layering, in countermeasures, in electronic warfare, you name it. They have been studying what they couldn't do, but they've been studying what we've been doing and trying to defeat us. And they really bring a complicated game to bear, and they have been maturing on this their systems for 40 years. So in some regard, as we look back to President Reagan's edict, and everybody goes back to President Reagan saying, this is another another Star Wars or another Strategic Defense Initiative, I'd actually posit that we're in a we're in so much more complicated environment than even what President Reagan forecasted when he gave his speech in March of 1983 and so the problem's actually more complicated, but we also have an advantage today of 42 years of development in technology, development in command and control development in TTPs and relationships and how to provide layered, integrated air missile defense capabilities. Definitely in the last two years, as we've gone from It'll never work to it cost too much. Nobody asks now that it's never going to work. Now, the big comment is it costs too much. So much? So I'll tell you just, you know, maybe my only question to you, and who isn't excited about the potential and the opportunity that's now come to this enterprise, I'll tell you, if anybody raised their hand, we want to make sure that the guys next to you confirm that you're not dead. As a lifelong capability developer that's brought new capability to bear throughout my entire career, I've never been more excited about the magnitude and the consequence of the challenges before us, and today is just the beginning of a golden journey. Cliche, maybe a little cheesy, but it really is. We are entering the golden age of missile defense, or third age of missile defense. So Well, like right up front, we purposely chose to make this unclassified, public releasable for a reason, and that really is for the broadest audience possible. At the beginning of this long journey that we have before us, we won't get into the glitchy, geeky, low level classified information those kind of things, those will come in future conversations, but today, we really wanted to take a moment with as many people as we can to really just talk about our challenges, talk about the problems that we face in bringing this scale of capabilities to bear that is really required against this threat set again, we're not going to specify. We're not going to be really, I want this. I want this the way we have to do an acquisition for quite some time. We're not going to do that really, problem, focused, challenge, focused. We want to partner with you, our thinking partners, to help come up with the hows, the whats. What can we do to change the game? We can make a difference in the defense of our homeland today. We've got demonstrated capability deployed around the world, and so we can make a change today, and we will. That is part of what we're going to be looking at as we move forward, but at the same on the same line, though, we also have a responsibility to change tomorrow's game. And just earlier, I talked about the fact that many people talk about 1983 the Strategic Defense Initiative and Star Wars as being a failure, and they couldn't be more wrong, because the capabilities that are saving Israeli families lives over the last year and a half. Well, you can trace back to the technology investments that started in the 80s and 90s, because the President focused on it. Well, we need to do that as well. We certainly can change the game with today's Tech. We need to change tomorrow's game with tomorrow's tech. And you're all going to be a part of that. You're also going to see that we are not just going to talk about weapon systems, about interceptors and sensors with the old we're also going to be talking more broadly about rejuvenating the entire enterprise, because to really get to this higher level of fighting that we need to for the future, well, we have got to improve our engineering and our testing, our models and simulation, our threats. We need to upgrade all of them. Get prepared for the future fight that we need and what our enterprise needs to be, and that's that's quite a challenge for those at the symposium. There's a lot more people here than the symposium. Shame on you. You should have done the symposium, but I talked about the strategic lines of effort that the agency, the enterprise, is going down, and it's really goes across the gamut between what we buy, what we feel, but also how we do it and who we do it with, who leads. We need speed and agility across this entire enterprise. Our systems need to be more agile, brought to bear faster. Our tool sets need to support going faster and being more agile. Our processes do, our contracting, everything it does, but then also our people. We need the fastest, most agile thinkers in the nation, in the enterprise, to really move at the pace we need to. And we'll even talk about some of those, some of those lines today about how we see and where we're going with those. How do we put the right contract, agreements and everything in place to take those off the critical path so that we can look faster and access the broadest amount of talent that we have? And I'll tell you, this isn't targeted towards more of the same as I mentioned. We need, for lack of better terms, I take this too pejoratively. We need the old crimes, the expertise and experience that has been gained over the last four decades just doesn't go away. We have a wealth of information in that but we also need some of the new products. We need the non traditionals academia, absolutely. We need the best minds, the best innovators, inventors out there to change the game, soup to nuts and be prepared to deliver at scale again, capabilities in the field as fast as possible. You all saw the speech three years, three and a half years at best. My math, that's probably about 1000 20,030 days from now, not a lot. So today's just day one. Today will be a very one way dialog, again, broad audience, broadly transmit and distribute what our challenges are, what our problems are. And that's on purpose. We just we wanted to get out to you as quickly as possible. Obviously, we tried to get out to you quite a while ago, and and we are where we are as different briefers and different leaders across MDA, Space Force army get up here to talk. You're going to do it. You need to do it. Picture yourself. What you have to bring, where you fit in, where you can make a difference, and what you can do and bring to protect this country better and change the game. It's going to be paramount. I'll also say, think about what you're going to do when you get out of here, because we need to be prepared to move and move quickly and change today, tomorrow, every day between now and well, forever, but certainly within the next three and a half years to get this initial bit of capability out, but really, what else can be brought to bear to how we change the calculus of missile defense missile defeat as we go forward? So I've said it once. I said a lot nervous. This is just the beginning. This is our first dialog. There will be more to follow we've already in particular lanes, started to have industry days to get more into the into the dialog back and forth on what's needed. What can we do? And we will continue to do that in the weeks and months to come. So be prepared for that. I ask you all to commit your A game, your very, very best to bring this forward. I'll also say, I'll also preemptively ask for continued patience as well, because we have a very large enterprise in a very structured way of doing business that we're continuing to work through as well. as we try to get the appropriate authority the appropriate resources and access decision making points into play as we move forward, and that will come but Mark but there's no doubt that time is going to be critical. Many of you have already started to work and develop and get ready. Fantastic. That is exactly what you need to do. As we move forward, we're going to expect to continue to do that, but then we are really looking forward to teaming with you, partnering for the future, partnering to change the game. This is our moment as an enterprise. You probably read it since, since we haven't been saying anything, you've certainly seen people will make up their own stories about Golden Dome. And you know, my my daily thumbnail of of articles in the press by people that have no idea what they're talking about. It's been mostly negative. So positive, mostly negative. So it's our time. It's our moment to once again prove they know what they're talking about, that the impossible is possible, that we can protect this homeland and set ourselves up for safety and security in the years to come. That's really what it comes down to. This enterprise has made history in the past. We are now ready to make history moving forward. My motto, go fast. Think big. I think is very, very apropos for the times we're in. We need to transform. We need to increase speed. We need to continue to think big and change the fight. And I look forward to working with you, to teaming with you, and also inventing, innovating, changing, figuring out how we can continue to sustain agility and change over time. I appreciate that. I'm glad you're here. I'm glad we're having it finally. And I'm going to hand back over for the next briefer, and I'll see it towards the end, please. Thanks again for being part of this phenomenal system, and I haven't said it yet, but gold no for America, I can't, I haven't been able to say it so for so long. Gold no for America. Let's make a change. Let's get after it. Okay? Thank you. Applause.

14:01

So thank you so much for those remarks. You

**Speaker 2** 14:16

ladies and gentlemen with honor, I would like to introduce our first speaker, Mr. Stan stefira, Chief Architect Missile Defense Agency. Mr. Stafira assumed the duties of MDH chief architect in January 2020, and in this capacity, provides the agency with a strategic plan for the missile defense system. He is responsible for the MDS architecture representation for the mission areas of ballistic missile defense, hypersonic missile defense and Homeland cruise missile defense, as well as integrated air and missile defense in agency's role as an iamd technical authority. Additionally, he is accountable for ensuring international integration of the missile defense architecture across the agency functional and program elements, which serves as a foundation for the MDS to ensure the war fighter receives the capabilities to accomplish their mission. Ladies and gentlemen, please join me in welcoming Mr. Stan stom, thanks. Thank

**Speaker 3** 15:34

you. Wow. What a big crowd. My mother can only see me now I I don't think she would believe that I would be talking that crowd so big. Certainly a bucket list item, I guess. So I'm happy to talk to you today about the Golden Bell architecture that we've that we've been working, and we've been working for quite some while, and I have to say, we've been, we've not been working it alone. We've been working in concerts with our partners in the Space Force, Air Force, Army, Navy, Marine Corps, other agencies. We've been, we've been talking about, talking a lot of people as we put together this our picture. So hopefully today I'll be able to illuminate what we are, what we're looking at there. So let's go to the next slide. So when we're looking at the architecture, and what I want to say with the architecture that we tried to design from the beginning is an ad agile, adaptive and flexible architecture that's integrated across across the area that we're looking at. Golden Dome is there to defend the United States. We're here to defend our our friends and our families, our forces in the United States. That's how the architecture was put together. The the threat was given to us. The threat was that we're to defend against is ballistic, hypersonic, cruise, advanced aerial threats, 360 degrees around the defend the citizens of the United States against any of those threats, against projected against us by our adversaries. Now to do that, we looked at, how will we get at that problem? And certainly we've always talked, and we've been looking at this for a long time, defending in layers. And we're looking at layered defense of the United States to ensure that we can defend that area. And so you can see here, we're going to talk about five different layers today of that defense that's part of this architecture. We'll talk about a space layer, which includes space based warning and space based sensing, as well as tracking and defense. And our Space Force scholars will come up and talk about that in a few minutes. We've got what we term the upper layer that's expanding the defensive capability that we already have out there to defeat any threats that's coming into the United States is especially ballistic threats. Then we talk about an under layer. And when we talk about an under layer, the under layer is there to provide another layer of protection to the United States against those threats coming in, both from ballistic threats, but also from threats that are asymmetric. It's threats that are coming lowering and from different directions, and we're trying to make sure we defend every every area there that that under layer defense includes ballistic threats and hypersonic threats. And then then we then we will talk about layered area or limited area defense air assets that will be deployed to defend against cruise threats and other aerial threats, and that will be our army colleagues will come and talk about that. So I'm going to talk about those upper and under layer first, and then we'll talk about the those other areas after meeting. And then probably the most key piece of the architecture, at least in my mind, is the domain awareness architecture we really need to revolutionize our c2 command and control so that we can better integrate our capabilities together, so that we can have that integrated defense against ballistic, hypersonic and cruise missile threats and other aerial threats. So I'm going to talk a little bit more in detail about that domain awareness when we get to that domain awareness layer, because I think that's an area that's right for us to be looking at, for innovating and to be able to get more capability out to our war fighters so they can make better decisions, and so we can effectively use those layers to be able to defend The United States against all those threats. Next slide, the it. So when we're looking at the architecture, what are the desired attributes? I mean, General Paul has talked about what we want to do in this architecture. Specifically, we really want to transform digitally. We want to be able to use the capabilities that we have out in the industry right now to digitally transmit data and digitally attack this threat so that we can do a better job at engaging that and helping our war fighters. We've seen already in conflicts like the 12 Day War in Israel, or other assets that are being attacked in Ukraine, how massive strikes are going out there. We got it. We've got to help our war fighters out. We've got to give them the ability to sort through those threats and be able to have a good defense against the threats that are coming at them so that they can engage those threats. We precision and performance. We need to be able to take the data that we give, give good targeting, quality data to our factors, whatever they may be, non kinetic or kinetic effectors, and to be able to get them on target quickly assess what happens, so that we know if we need to reengage again, or we or we've cleared that threat from the battlefield. Crucial, crucial, crucial in our ability to do what we think we need to do. As I mentioned, agile, portable, network enabled. We want to take any sensor, best sensor, any shooter. We've heard it all before, but we want to put them together against the right threat, you know. So we want to give our war fighters The advantage to be able to choose what they need to be able to affect those threats that are coming into them so they can do a better job at defending the assets they have to defend against, and make sure that we can serve our inventory. You know, having a deep magazine is important. You know, the number of threats that we need to engage against IS is large, and we want to make sure that we have that deep magazine so that we get the warfighters have the best opportunity to engage those threats. We gotta deliver this capability fast. General talked about that already. We don't have a lot of time. The threat's not standing still. We need to get out there and get into his in the loop and make sure that we can influence the way we're we take advantage of the what we're doing and influence the the way the battle is going. So we need to deliver at speed. The system itself needs to be reliable and sustainable. We don't want one off solutions. We want to make sure that we can have capabilities that are out there that the warfighter can rely on. They're easy to maintain, easy to upgrade, easy to easy to continuously upgrade. As we see the threats change. We've noticed over the last few years that the threats changed a lot. It changes pretty fast. We want to make sure that we have the capabilities out there so that we can upgrade those systems quickly, so that they can take advantage of the capabilities that are out there that you guys are developing right now. And we want to get them out in the field fast. Want to get those capabilities out the field faster than we can take out those threats. And then finally, we want capabilities that are resilient, survivable and relocatable. We're trying to make sure that we have the ability to flex our capabilities to where they're needed. So as we put assets out in the field, we can take them from where they're at and move them somewhere else, if we need to, in a reasonable amount of time, so that we can get them to where they're needed most on the in the country to defend what we need to defend, as far as this defense design that we're looking at and so resilient, survival, relocatable assets, so that we can take best advantage of capability and use it the best we can in whatever manner that the President seems wants us, leaves us needing to use it all right. Next slide. So let me talk a little bit about the global dome, gold dome for American upper layer. Gd, upper layer. So currently, the upper layer capability was designed against the limited defense against a rogue intercontinental ballistic missile threat, very, very, very focused, very capable against, be able to design against that threat, that particular threat, and it served as well. As a matter of fact, I would, I would say that that the success of what we've done, what you guys have provided, as far as capability, has caused our adversaries to change, which is why we see the threat changing today and so many different ways that the adversary is trying to attack our missile defense system. So what's our goal is to expand that upper layer defensive capability to detect and decide and defeat any adversarial attack, to include peers near peer, and Rogue adversaries. So we're going much, much higher level of complexity, much higher level of threat. That's what we're looking for in that new upper layer that we're talking about next slide. So what? So what's, what's contained in that upper layer of defense? And so this is, this is just a graphic to show you all the assets that we're looking at when we're looking at the upper layer defense. You see the ones that are highlighted with a green box around them. Those are new capabilities that we are looking at deploying in the future, and that's where we need help developing those, but we also need help with the ones with the green dotted lines around that. We want to enhance the capability of those assets as well. We need to bring everything up to be able to handle those pure and near pure threats that we're going to be facing over the next years. And so that's what we're looking at here, looking at upgrading our early warning radars, the upgraded early warning radar systems that we have in tooling, clear flying, filing, Dales, meal, Cape Cod, how do I make those better able to handle those, those advanced threats, upgrading the lrdr, the long range discriminating radar that we have up in Alaska To make sure can discriminate those, those more complex threats that we're looking at. We have, we have, we're deploying ground based interceptors. We had deployed ground based interceptors up in Alaska, next generation interceptor we're going to be deploying that. That's part of this architecture to handle these threats, as well as looking at CONUS intercept, expanding CONUS interceptor site for next generation interceptors, as well as upgrading those capabilities across the force other radars that we're looking at. So here we're looking at terrestrial radars. We'll talk about that in another section, the radars that aren't terrestrial, but we're looking at a number of terrestrial radars here, including a southeast radar to provide us more discriminating coverage of threats coming from that southeast quadrant, as well as transportable, ground based radars that we'll use to augment both this upper layer and under layer defense that I'll talk about in a few minutes. And so all those capabilities together are what we need to upgrade in advance to get at this threat at this upper layer defense that we're looking at here. And finally, it's all pulled together by next generation command and control capability. How do we get at that? I'm going to talk more specifically about that later. But how do we get more data into the network, allow our commanders to see the battle better, act on the threats, to be able to engage those threats better as we go out into the future, to the threats that we're looking at? So this is really what we're talking about in the upper layer, a lot of additional capability, additional upgrades to radars that we have, both in the field and that we're we're bringing to the field. That's what we're looking at here. You guys to help us upgrade those capabilities and provide those new capabilities. We're looking for new capabilities Next slide. As I look at this right now, we have a couple of our fees that have been released on these additional capabilities, the theater based ground radar that teach TV, gr you see in yellow there, we have RFIs release for tipping to light radar, or our radars that can do that same kind of mission. That's what we're looking for. That's what we're looking for to be able to expand our capability to defend that under layer, we're looking for radars like that. And then there's south through East radar. We're looking for our southern facing radar that can provide us a lot longer range, a lot a bigger field of view, remotely operated by ctbmc. You'll have seen those come out. But those are the those are the big radars augmenting this architecture that we need to be able to provide you that upper layer defense. So that's that's really what we're looking at for the upper layer to try to bring more capability together, bring more data together, to provide that 360 degree defense of the United States against an ICBM threat, because we don't know where they're coming from anymore. In the past, we knew where these threats were coming from. The smaller countries more directionally focused as we look at threats, they can come from any direction now, and so we want to make sure that we have the capability to be able to see from any direction those threats coming in, and then have the capability to affect those those threats with both our command control, getting data out and engaging them with interceptors or other effectors as we go out to negate those threats. So that's really kind of the upper layer. And so that's a mid tier layer, the space layer, as I mentioned, will be talked about after, after my after, my little discussion here. So those are the those are the first two layers. Now let's go to the next layer. Next slide, the gda under layer. Now we talked about that this GD under layer. What we're trying to do is, how do I bring additional capability to bear to be able to engage threats that might have gotten through the upper layer or could not be engaged by that upper layer capability just because of the way they're flying. And think here ballistic missiles that don't fly as high, hypersonic missiles that are flying underneath those those engagement ranges. Because really, at the upper layer, we're engaging in space, here, we're engaging in airspace or lower to be able to engage threats that come in. So our problem is design, that architecture that's resilient, reliable, and then can be moved as needed. And I'm not talking about it needs to be on wheels or anything. I need to I need to be able to transport that capability to where it's needed so that it can gage those threats. And so that's where we're looking for help. We're looking for innovation on how we can get capability out there, both from a sensing capability as well as an effective capability. How can I get capability out there to provide Wide Area Defense around critical assets to defend our our families and friends out in the field. And so we're going to provide that flexible under layer to defeat ballistic, hypersonic, advanced cruise, next generation attacks, again, against the pier, near pier, and Rogue threats. Now I'm not going to be talking about in this portion, the the portion of the underlayer that's that's directed against the cruise missiles. I've got a colleague from the army who's going to come up and talk about that in a minute. I'm going to talk I'm going to mainly focus right here on the ballistic missile and the hypersonic defense. That was request that was directed in the executive order, because we were told that we want to defend against all those threats. So how do I defend against those threats Next slide? So when I'm looking at the under under layer, I'm looking at trying to integrate all communication. We have to have a a ability to track threats worldwide, against the United States, so that we can get our capabilities ready and able to be able to engage those threats. So we're looking at trying to feed all sources of data into the into the network, so that as as threats come in, we are we're able to sense them, we're able to command and control, what we need to do, what, what area needs to be defended against those threats, and then then be able to engage those threats with the capabilities that we have defending the assets that are being attacked. And so that's really important for us, is, how do we bring that integrated air and missile defense fight together? I talked about the upper layer in the in the previous, previous few slides, I'm talking about the under layer. But these layers aren't separate. Don't think of them as onions that are separate like that. We need to be able to integrate between the layers. We need to deconflict fires between the layers, so that if I'm taking a shot in one layer, I know that's happening in the other layer. If something gets through, he know he's commanded them to engage that threat, or if I take it out, then they know they can stand out or engage other threats. And that's extremely important. As we look at the layers, how do we communicate between those and integrated defense? We don't want to, we don't want to stove pipe those defense capabilities. That's not what we're looking for. We're looking for Integrated Defense. Next slide, part, part of what we're what we're doing. They're not only integrating that all sources of data. We're looking at kick our capabilities to provide the factors to where we need them. So we released a RFI, looking for a common launcher. We're looking at trying to base capability where we need it using a common launcher system, so that we have the capability that we need, when we need it, where we need it. Our goal is trying to use the best capabilities that we have, be they, Aegis, Standard Missiles, glide phase interceptors, Standard Missile, six patriots, Thad talons, what I need, whatever we need in the area that we're trying to defend. We're trying to use that common launcher capability to provide that defense to the area that we're looking looking at trying to defend. And so using that along with virtualized capability so we're we're trying to make sure that we're not building a number of sites that we need lots of Manning two we are looking for. automation as. defend. And we want to do this quickly, cheaply. How do we get, how do we get that out there? How do we base that minimal presence when we put these out? We don't want to build big sites. We want to be able to put them down and move them as we need to move them. Alright, next slide, alright. And then, and then the final portion of the the or the final set of layer, or the final layer that I'm going to talk about is the gda Domain Awareness layer. To me, this is a crucial part of the architecture, really crucial part of the architecture. We need to look at a common operating picture, maximize the efficiency of the sensors that we have and that we're using in the network, enhance planning so that we can know where we're firing and when we're firing, and then as the battle happens, to do dynamic planning to be able to engage and move as the battle changes, and then maximize the effectiveness of fire control systems that we have now really talking about revolutionary revolutionizing the c2 that we have out in the field. To do this, we have a lot of systems moving down the path to better integrated capabilities, and this is taking it to that next level to get that data across. I think this is the foundation of the Golden Dome architecture. Is, is the commanding control from this framework. That's where everything else implies. As you put this communications Command Control Framework down, I'm going to then put my under layer on top of that. The over layer is going to plug into that, and the space layer is going to plug into that, so that I can have that Integrated Defense of those layers and operating through those layers. That's what that's what our war fighters are looking for. That's what the President's looking for. As far as the defense the United States is an integrated defense to be able to fight those threats as they come through next slide. So what are we talking about? What are desired attributes for for this domain awareness layer we want to make sure that we coordinate offensive, defensive and cyber. So one of the, one of the one of the key things that we need to make sure we're doing across the network is making sure we know when things are are happening, so that the warfighter knows when things are happening as as the battle progresses. We do not want to waste interceptors on something when that's being affected by something else. So if there's an interceptor already going up against something, we don't want to shoot two interceptors at that. We like we prefer to shoot that one interceptor and assess what happens, and then if I need to reengage, do that. So we really need to have that, that that coordination, both the offense, defense and cyber and protected, protect across the network. We know that the adversary not only is trying to to attack our area, but he's also trying to attack the system. And how do we defend the system against attacks that the adversary has taken against us? Again, another key part of that command and control awareness is, how do we defend that systems? We want Advanced Data mesh. How do we get all the data? There's all sources of data coming from lots of different sensors, lots of different platforms that we have out there. We have a lot of data. How do we get that data down into a network so that I can share it with all the all the systems that need it quickly we're looking for that. We need that data down. I want to the more data I have that I can fuse together, the better picture I get, so that I know what I should be shooting at. We want to be shooting at the right thing. We don't want to be shooting at decoys. We want to be shooting at the lethal objects. We need that. We need that data sharing and that and low level of latency to get the data there at the right time so I can get the effectors off and to the target when I need them. We need system performance. We need to be able to use the system to pre plan how we want to fight it, and then dynamically plan through the fight. We all know that every plan is is great until it it, but it doesn't survive contact with the enemy as soon as it as soon as we start fighting, we know more and have challenges. How do we plan? How do we plan through that? How do we battle through that? You know? How do we manage by exception? How do we battle manage? How do I get decisions down for the right guys? And I'm going to talk about that a little bit later on my last slide, I think to kind of go into the thought process behind how we're looking at command and control threats going to be complex. How do I look at that threat and make sure I understand what threat that is that I'm being attacked by, so that I understand how to address that threat with the right kind of effector. I want to make sure that I have a good picture of that and make sure I understand what I'm engaging so that I do do the best job and have the best capability to be able to engage that threat. And then finally, we want to communication, communicate across all domains. It's going to be crucially important for us to understand not only when we're firing, but what's the effect of our fire. We need to understand when we have a kill or a no kill, when do we have a miss? When? When do we need to re engage a threat? That's going to be crucial in this, in this command control table, that's what's integration is all about integrating that capability to be able to assess what has happened and then know whether I need to re engage or that I can hold fire on those threats. We're looking at strategic, regional and tactical levels, layers that were that we have to fight through or have to coordinate through, and all those layers are important for us to make sure that we basically thin the herd as it's coming at us, so that each successive player has an easier time at defeating threat. I don't want everything to come I would not ever want everything to come in to my terminal defense, my last defense with 120 130 you name it, number of missiles, it's just too hard for an individual operator to handle all that at one time. I want to be able to take out threats as they as they come through layers, so that I give my operators and my war fighters a better chance to engage all the threats and have less chance of being having a bigger come through. And then we need to. We need this whole system abuse, resilient and secure. How do I make sure I keep it up? Our warfighters are going to rely on this system. They're going to rely on the capability, and they need to need to know that it's going to be there when they need it, and they need to know that that the adversary can't get into that system. So a reliable and secure system is going to be crucial for us as we put this command and control system together to make sure that that it works for a worldwide next slide. Now what we have currently is, is, is CT, PMC for the Missile Defense Agency, is command troll, battle management system. This is what we have right now. It's a great system that has brought together a lot of capabilities. It's bringing sensors together. It's enabled us to launch and engage off of different sensors in the network globally, worldwide, provide situational awareness, climbing tools, distributed training and a communication network that has served us well for the rogue threat. But we're talking about an order of magnitude shift here on the threat that we're looking at. So how do we enhance the capabilities like ctbmc with other command control capabilities to be able to do a better job at providing that data to the war fighters so that he can better fight the system with the layers that we're putting out there for you know, we've got fire control layers, as you can see, that that he were engaged with this cgbmc At the upper layer, which includes the ground based fire control at that and what I would consider the under layer, with the ages and bad capabilities, even down to the lab stem we'll talk about with the Patriots and IDCs with their effectors. The current system is critical to do some of the roles, to be able to task sensors and to be able to provide that data to those but we need more. We need more help on the command control, and I'm going to talk about that on this next slide, so that we did kind of understand where we're, where I'm thinking about when we put the architecture together, as far as how we should be thinking about command and control Next slide. So when I when I look at command and control, I come at it from my background is, is military. So I come at it from a doctrinal perspective. I look at it from a strategic level, an operational level on a tactical level, what? And those are different levels of command. In each of those different levels of command, what do I need and what do I need to be done? And as you can see here, I've split it up from it from missile defense to air defense to kind of been, what are we what capabilities we've got, and where do we need to go? So at the top level, we've got command and control for integrated domain awareness, common operating picture. How do I get a common operating picture at the four star level, our combat command level, to provide an understanding of what's going on at about I think that's what the force that our combatant commands are looking for. They're looking for ability to to for the for the commander to be able to look at see, where do I need to adjust fires? How do I need to change my plan? He needs the information in in at that level to do that. Now, what I would ask is, what's the questions he's trying to ask? What's the data? What's the critical data that he needs to make his decision? That's what we need to be looking at in that strategic level, that integrated domain level. We need to provide him the data that he needs to be able to make those decisions, so he can make the right decisions at that strategic level and be able to allow that to flow down to the operational and tactical level. Now, when I want to, I jump, jump down to the bottom level, the tactical level. That's our tactical fire control level. Our doctrine in the United States has always been centralized control, decentralized execution. And this is the decentralized execution part. We have fire units or teams, IDCs, Navy ships that are out there, and those commanders have orders, and they will fire on assets or threats as per their orders. So they're they're decentralizing executing the orders that are coming out from a higher level. It's taken us a little while, and we, and I have heard it mentioned a couple times in the in the symposium already, but we're starting to get to that point where we're integrating that tactical level together. As you can see at the bottom, that bubbles at the bottom, you see we have the Navy cooperative engagement capability, the army integrated battle command system, or an integrated fire control network. The Air Force has an air based air defense system. We've got Air Force aircraft. The Marines have their composite tracking network capability. You know, we we at NBA, have our THAAD system and our ages BMD systems. We need to keep those tactical fire control capabilities. We need to link together. We're starting to do that with a with a capability. We call that joint tactical capability. Joint, joint track management capability, bridge, station, bridge, to bring those capabilities together to give us a joint, integrated fire control network. That's what we're looking for. That's what we're that's what we're building to. Right now, we need to do more of that, the ability to allow any shooter in that network to shoot off of any sensor that's providing data at that network. We've already shown that we can do that. We've we've had, we've had Patriot missiles engage off of marine Gator radars in a cruise missile defense role. So we're already exercising that capability to be able to do that. That's just at the basic level. But we need to do better. We need to be able to provide data across that network. To do to provide more data so that the warfighter can make better decisions on who needs engage what threat as we go through that network. But it's important that we bring that network together. We also have ground based fire control. We're going to have a space based interceptor fire control capability. There's space capability. We need to bring those look together at the tactical level, so that they understand what's going on, so that they can, they can push data across the network as needed, to help each at that level, at that tactical level, so they can execute and ensure that that the right data is getting to them. So we need help there. There's, and as I'm talking about this I'm hoping I'm bringing up in people's minds, where you think you can fit to help. us do a better job at bringing that data together, bringing that kinetic troll capability together. Now finally, there's that operational level, I think cgbmc, the capability the Air Force's CBC, two system that they're putting out. The Space Forces forward system. I think those all operate at that operational level. That operational level is kind of the one two star level, for example, for lack of better term, the joint functional Air Component Commander level, or the double amdc level. At that level, the decisions they're trying to make, they're looking at the tactical level. They're seeing how the battle is being fought, and they're trying to help that engagement. If somebody is taken out, where do I need to move forces to come down on where that asset is taken out? How do I how do I provide better defense? If I see more assets being sent one way or another, where am I losing interceptors or effectors, and I need to push more ordinance so that that those sites can continue to fight and continue to fight against the threat. That's what's happening at that operational level. So what are the questions that the operational commander has? What are the things that he needs? What information does he need so that he can make the best decisions so that he can push that down into that tactical level. Again, from my perspective, we're looking at horizontally integrating all this command and control from missile defense and air defense and integrated air missile defense, but also vertically integrating it as well. How do I get data across and up and down that network, but the right thing, the right data, we the problem I've seen is too much, too much data being pushed so that that we won't be able to have enough information going through. We have too much information going through the network, and so therefore that the network kind of grinds to halt. So we want to make sure that we're pushing the right data. To the right place. And so with that, I want to, I'm going to, I'm going to close the comments on the architecture and turn it over to our next briefer. But that's what we're looking at when we talk about the gda architecture. We're talking about that, that space architecture, upper layer, under layer and limit Area Defense in that domain awareness architecture. And that's, that's, that's how we wrap up that whole golden thumb architecture. So hope that gives you some food for thought as you think about how you can influence that architecture, how you can provide capability to that to that architecture, because that's what we're looking for. Thanks very much.

**Speaker 2** 51:41

Thank you, Mr. Stephen, for getting us started today. Now it's my distinct pleasure to introduce Colonel Brian McLean program executive officer, space combat power, Space Systems Command. Colonel Brian McLean directs at the Tyler's portfolio of over 30 programs and $9 million encompassing a wide range of mission areas exposed space devoid to space domain awareness, space control, defensive cyber operations and innovation and prototyping. His responsibilities include approving program strategies, delivering programs to meet more fighter needs, and engaging with headquarters United States. Force, the Office of the Secretary of Defense and other departments and agencies. Ladies and gentlemen, please join me in welcoming Colonel

52:34

McClain the Yes.

52:43

Thank you.

**Speaker 4** 52:45

All right. Hello everyone. Good afternoon. I am really, really excited to be here and have this opportunity to talk about what our vision is in the Space Force for what we're bringing with the space based interceptor program. I'm also really excited and thankful to MDA for having us here. We are standing up an integrated program office between both MDA and ourselves, as well as some other mission partners to get at this

53:10

very challenging problem.

**Speaker 4** 53:12

I want to set the stage. We've talked a lot previously about the larger architecture. What I'm going to talk about today is a small piece of that larger architecture, yet a very important piece. I think everybody who's been involved in the missile defense world recognizes the fact that there is a threat out there, and we recognize the fact that we need this specific type of capability for quite some time, but we haven't quite gotten there yet. Now is our opportunity. Now is our opportunity to harness changes that are ongoing in the world, in the marketplace, to really pull this off. And so we're very excited for this opportunity to take what we have together, blended great team and make this happen. So, let me hit on that market idea with the next slide, please. I'm kind of a picture type of person. I just like throwing up some pictures for everyone to think about. Here is how I see the space market today.

54:17

The space market. previously.

**Speaker 4** 54:20

that industry, we were very unique. Launch was very expensive. We needed satellites to last for a very long time. And so the end result was that everything was hand built, really kind of like the old horseless carriages. Everything was hand built. Fast forward to today. Things are changing. Launch costs have come down. The idea of proliferated satellites is now out there. When you start putting all of that together, I would argue our industry right now is more akin to the motor industry, really around the time that Ford started producing a creating a production line. But there's a lesson from that. When Ford first started the production line, the Model T was the only thing that he was going to produce. It was easy. I have one. We're all going to build it. Everybody gets a Model T, and nobody gets anything else. Because why would you want that? I'm making it so cheap, but innovation is important. And so the market recognized the fact that people want a little bit of variability, but you can't have 100% variability. And so we have what we have today, which is a very robust industry, global industry, even. But you have multiple different choices, but there are limits to what those choices are. So take that combined with the fact that we have a mission that we have to do space based interceptors. So how do we start combining those two together? That is what we're trying to do. From our program office perspective, we are looking at getting government out of the way as much as possible. How do we take a strategy that focuses more on demonstration to allow us to step back all of that oversight that tries to minimize. some of the unique requirements that sometimes we bring forward to try and get at this mission. Because I firmly believe if we can keep the costs affordable, we have the opportunity right now to deliver an amazing capability, and not just a capability, but something we all know we need. What is the space based interceptor world, and how does that fit with the broader architecture?

56:34

Let's hit the next slide.

**Speaker 4** 56:37

So this slide is wrong. I'll warn you right now. It's just an attempt to kind of communicate the idea, when we look at this situation, space based interceptors are only a small part of that broader architecture. We already talked a lot about, the sensors that identify what's going on, passing that data down, and then that gets understand you've got target track generation, battle management, and really it starts getting to this point where there is a point where a golden dome battle management team has to decide which

57:14

layer it goes

**Speaker 4** 57:18

to. The space based interceptor is only one of that layer. One. we receive that, we recognize that there's a need for fire control system and a common ground system to maintain these various interceptors. five provides that information to the constellation, and those go and do the target engagement. i will highlight that from the space force perspective. we are looking at ensuring that we, we go after all of the opportunities to make an early engagement, whether that is immediately at the boost phase, as well as a little bit later, trying to make sure that there is an appropriate mix because we look at that. Mix it's giving. flexibility to. So that's really kind of that theory that we've got going in there. Moving forward, if we hit the next slide, throw up a couple of words that highlight some of the things that I talked about. We built interceptors. We've built rancher vehicles. Now we need to combine that technology together, but we need to combine it at a crazy speed. You might say that we're kind of going at ludicrous speed. There we go. Thank you,

**Speaker 2** 59:54

Thank you globally for the presentation. Our next speaker is Colonel guy from the peu missiles in space. Kanayamata currently serves as the project manager for integrated fires and rapid capability office at peu missiles in space. He also serves as a deputy for acquisition and systems management. Ladies and gentlemen, please join me in welcoming Colonel Hamilton.

**Speaker 5** 1:00:35

Good afternoon on behalf of Maida general Lozano, our program executive officer for po missile and space, who unfortunately was called away this week. Thank you to Lieutenant General Collins for inviting me to come back to NDA, if only for a few minutes, to participate in today's golden dome for America industry summer. It's a privilege to be here with so many innovative leaders. Today, I am going to outline the Army's recommended, recommended contribution to the Golden Dome architecture. And more importantly. highlight the areas where we're actively seeking industry partnership to make this vision a reality. Our focus is on providing a robust, scalable and technologically advanced defense capability for our nation's critical infrastructure. So on the next slide, you will see the Army's recommendation for limited area defense that leverages the proven capabilities within PEO missiles

1:01:35

in space.

**Speaker 5** 1:01:37

We've built this concept on the foundation of our air and missile defense reference architecture, the same architecture underpinning the Guam defense system. We've termed this the minimum capability package, or MCP. An MCP consists of an integrated air missile defense battle command system, engagement operation system, mouthful, IBCs, EOC, the lower tier Air Missile Defense sensor, ltms, the signal a four radars the army, long range, persistent sensor, Alps and patriot and if pic launchers, the integrated fire protection capability, launchers and their associated munitions, this config. provides 360 degree defense against air breathing threats and tactical ballistic missiles. The integrated fire control network connectivity between the EOC and a mix of sensor shooter combinations delivers a flexible and adaptable defense design and engagement operation essentially, it's a matter of scaling each MCP defends a defined area against these threats. We determine the number of MCPS needed based on the size of the population center being protected, factoring in terrain and dispersion. We anticipate potentially tailoring perhaps, consolidating IBCs for a task force of multiple MCPS, or even reducing the number of signal radars depending upon the environment. We also recognize the need for a robust counter small UAS capability to protect our MCP components themselves. The map in the upper right. corner illustrates how these MCP task forces that is one or more than one MCP. Those domes could be linked or expanded could be linked for command, expanded command. In control or even remote operation. Now we understand we can't deploy a patriot battalion's worth of soldiers to protect every critical asset the country around the country. We simply don't have the manpower. This necessitates advancements of AI enabled fire control, remotely operated systems, autonomous systems and increasing the reliability of our already dependable systems. Now all these are all topics I discussed on Tuesday during the SMB symposium keynote that I delivered, just not from today's perspective. So today we're going to talk about those topics from the golden dome for America perspective. And so on the next slide, this brings us to the core of our technological needs. We envision a future where our systems are more adaptable, more resilient, and require less direct human intervention. This future hinges on two key concepts, remotely operated, autonomous systems and AI enabled fire control. So let's start with the remotely operated systems. We're talking about significantly reducing human in the loop interactions across sensor and effector platforms, consolidating control into a common point of operation. Physically, this means discrete, unobtrusive platforms that blend into their surroundings. We need automated procedures for emplacement, road marches and reload operations, and we require diversity in communication mediums beyond traditional fiber optic connections to support robust, redundant options. Seamless power transfer is also critical. Failover from shore power to generator without system interruption, requiring a universal power supply arrangement. Initialization needs to be net centric. We need the ability to remotely push patches, remotely key systems and centralize initialization operations within the EOC. Frequency management, especially in urban environments, must be flexible and controllable from the EOC. Functionally, we need to relinquish the majority sensor and effector operational tasks currently residing in the radars, transitioning them to the EOC status and maintenance information, resource status, equipment states, fault codes must be published as a service, enabling net centric monitoring of PMCS tasks. As we explore these concepts, it's important to understand some key supporting elements. We recognize that our systems will need to blend into their environment. We are actively looking at containerization of weapon systems, enabling rapid reconfiguration and deployment to different locations, providing greater flexibility and responsiveness. This, of course, relies heavily on access to high quality real time data. We're seeking industry partners who can contribute to developing robust data pipelines and advanced analytic tools to support these systems and underpinning everything is cybersecurity. Any remotely operated or autonomous system must be protected against cyber attacks. Finally, interoperability is key. All systems must seamlessly integrate with existing army and joint architectures, and we prioritize open architectures and standards to facilitate this. Now let's turn to AI enabled fire control. This is about leveraging AI to reduce cognitive load, augment tasks and increase system performance in engagement operations, we need to continuous and precise tracking, intelligently trained cctdi That's classification, categorization, track, detect, discriminate and identify. So we need intelligently trained cctdi models. Think of a system that team that that burns what normal looks like, like an airport identifying an anomalous aircraft. We need efficient data discrimination and routing and the ability to leverage multiple electronic protection inputs in a bi directional, network centric manner, and must have a graceful degradation, failover and devolution of command capabilities to address less than full mission critical capabilities during missions for force operations, we need AI to optimize effector usage through enhanced battle damage assessment, intelligently scheduling engagements based on kill probability and adjusting the shot doctrine in Real Time. We also need real time defense design analytics, automatically adapting to new intelligence, re evaluating designs and presenting optimized options to the operator. Finally, in support operations, we can leverage the increased status and maintenance information to create optimized and predictive scheduling of systems. Actions and responsibilities. So my last slide, this brings us to the core of why we're here today. We need your expertise, your innovation, your partnership. We need you to think outside the box, specifically regarding AI. We need balanced, a balanced approach, one that leverages AI autonomy while maintaining critical human oversight. Advanced machine learning systems should support, not replace, critical decision making. AI should replicate human reasoning and adapt through learning, but final decisions particularly in complex scenarios like distinguishing cruise missiles from commercial airliners must remain human LED. We need your help in developing AI systems that can operate autonomously, learn from experience and solve complex tasks with minimal human intervention. For remote operations, we need durable ID specific components with predictable maintenance and minimal soldier touch points. This requires reliable, sustainable and practical long distance communication systems. We also need to consider power requirements reliable and sustainable power sources are critical, especially for remote deployments. We're looking for partners who can help us develop secure, reliable and adaptable systems that can operate in diverse environments with minimal human oversight, building on the foundation of remotely operated systems, our ultimate goal is to achieve true autonomy systems that can operate independently and adapt to changing conditions. This requires a significant leap in technological capabilities, including multimodal sensor integration, AI enabled decision systems, adaptive autonomous controls and secure autonomous operations. We need to empower our systems to independently detect threats, execute tactical decisions and adapt to changing mission conditions, this requires advancements in sensor fusion, AI driven perception, collaborative engagement, resilience and fault tolerance and rigorous validation and verification methodologies. As you think outside the box on these needs, we must ensure the same or higher level of confidence in these capabilities. The challenge before us is significant, but the opportunity is even greater. By working together with industry leaders like yourselves, we can build a robust, resilient and technologically advanced defense capability that protects our nation's critical infrastructure and safeguards our future. Thank you for your time and the opportunity to attend and brief in this great arena where I'm usually sitting pretty close to the ceiling.

1:11:16

Be All You can be this will defend Thank

**Speaker 2** 1:11:28

you. Carla Elberton, our next speaker is rare. Admiral Douglas Williams, Director for tests and targets Missile Defense Agency. Rear Admiral Douglas Williams is the director for tests and targets assigned at the agency, single test authority in May 2022 he leads the Comprehensive Planning execution and management of the nation's missile defense testing program. This includes developing and maintaining the test schedule and managing critical test infrastructure and facilities. He oversees flight and ground tests, including comprehensive operational cyber security testing utilizing advanced modeling, modeling, simulation and hardware, the loop capabilities. He directs the target procurement program, ensuring threat relevant and cost effective solutions. He is responsible for cybersecurity risk management and strategic planning across the test enterprise, ensuring the delivery of proven missile defense capabilities for Homeland Defense and deployed forces and allied nations. Ladies and gentlemen, please join me in welcoming Admiral Williams. Good

**Speaker 6** 1:12:52

afternoon, folks, absolute privilege to be here, the only guy

1:12:58

in all white

**Speaker 6** 1:13:01

in an army town. Anybody remember the score of the football game from about six months ago? Anybody right? That's what I'm talking about. Yeah, life looks good, doesn't it? Hey, listen, I'm going to jump back to something general Collins referred to, it's an incredibly exciting time to be involved in this enterprise. You. With that excitement

**Speaker 7** 1:13:34

comes a lot of pressure

1:13:38

and a demand signal from our

**Speaker 7** 1:13:40

administration and our DOD leaders.

**Speaker 6** 1:13:45

There is an expectation that we deliver capability at pace, and so with that comes the demand signal that we demonstrate that capability at pace. And now I have the opportunity to talk to you about the most important topic of the day, how we test at pace. And you're going to get a lot of slides, a lot of information when you walk out the door. I do want you to remember three things from the most important topic of the day. Everybody in this room has an obligation, to a certain degree,

**Speaker 7** 1:14:30

to be agile, to be affordable and to be efficient.

**Speaker 6** 1:14:37

Agile, affordable, efficient, and I'm going to tie all that together in the spirit of testing and what we are demanding of you when the executive order came out, just happenstance I had in all hands about two weeks after the executive order came out, with the entire

1:15:03

test and targets director

**Speaker 6** 1:15:08

and I had a sense of what was going to come. I had a sense of what the demand signal was going to be of all of us, and what I communicated to you know, our entire test and targets team was the demand signal is going to be unrelenting

1:15:31

that we deliver.

**Speaker 6** 1:15:35

We have to deliver at pace. We have to demonstrate at pace. We have to test at

1:15:41

pace.

**Speaker 6** 1:15:42

And I told them, in the very near term, test was about to be the center of the missile defense system universe. And I meant, let's go to the next slide. All right, the challenge, bad guys keep doing bad things. Our missile defense system is pretty robust. It's pretty impressive.

1:16:08

It saved a lot of

**Speaker 7** 1:16:10

lies in the Middle East and over our Israeli partners,

**Speaker 6** 1:16:17

but our adversaries and our near peer adversaries continue to evolve those threats, and as we looked at the fact that test was about to become the center of The universe, as we looked at the demand signal that we had to deliver capabilities at pace. We have to demonstrate at pace and test at pace. Our entire team kind of stared at our mission statement, our vision statement, which was develop and execute a test program that delivers capability,

**Speaker 7** 1:16:57

and we had to add to it. We had to add. Add two words to it.

**Speaker 6** 1:17:03

We had to add the words agile and affordable, because that's how we're going to get to demonstrating at Pace next slide. You know, we execute a baseline, a defined baseline, and we have done a really good job over the past, frankly, three years, holding that baseline. You know, the past 1214, months, we executed six major flight test operations in over 15 cyber and ground test operations, pretty impressive. When you look at the demand signal, deliver at pace, demonstrate at pace. What we were providing wasn't good enough. The frequency that we delivered our testing program had to be high. We have to strategize a high frequency test cadence. When we look at targets, I fly a lot of targets, and targets is half my budget. We have to find a pathway to have more affordable targets, and I'm not talking on the fringes, orders of magnitude in affordability initiatives. That's what we need. That's what I need from you. The bottom two bullets are of interest to me.

1:18:50

My background.

**Speaker 6** 1:18:52

I spent 20 years as an engineering duty officer in the Navy Strategic Systems Program Office. So think the Navy's nuclear weapons enterprise I have over 20 years, 75 tried it to defi flight tests under my belt, and I can remember very

1:19:12

vividly looking at

**Speaker 6** 1:19:16

The data analysis plan and seeing that it was going to take six months to crunch through all that data and have a flight test report that is not going to do. Six months has to turn into six weeks. Six weeks has to turn into six days. Six days has to turn in six hours. Six hours has to turn into six

1:19:47

minutes.

**Speaker 6** 1:19:50

Your investments in digital tools can realize six days into six minutes. Your investments in instrumentation, instead of waiting for a ship that's got data on a hard drive six weeks to get back into port, now takes six minutes to go through a satellite transmission. Those investments are going to make us more efficient. Those investments are going to allow us to test at pace, demonstrate at pace, and deliver capability at pace. Next slide. So how we go about doing that? We go from a cadence that's fairly demanding into an absolute high frequency cadence, and it's not on the shoulders of the Missile Defense Agency solely. There's a recognition that we have an integrated test baseline of the missile defense system, but there are a lot of DOD stakeholders out there that have their own test baselines, and we are going to be partnering up with them. We've already made agreements to incorporate various test baselines so that you will have the capability to test at pace. And I know it says up here at least one flight test, quarterly. I am telling you, folks, we are going to realize monthly tests, monthly flight tests that are available to you to test at a component level, minimum, quarterly at a subsystem level. And then you see we will have these Capstone events where we will take the subsystems, integrate them into a weapon system that is our golden dome architecture. And we will have multi threat, multi shooter, multi Coast capstone event,

**Speaker 7** 1:21:55

simultaneous. It will be big and beautiful. I. It okay,

**Speaker 6** 1:22:07

the end to end efficiency. I already spoke about that. I didn't cover the lab virtualization. The more we can get out of an H well environment, the more that we can get out of a flight test environment, and the more we can pull in a virtualization to learn and gain insight into the health and welfare of the performance of the weapon system, is a good thing.

1:22:33

We need that

**Speaker 6** 1:22:36

agility. And I will tell you a C story on agility. I think in the past, the Missile Defense

1:22:44

Agency has been known for its risk aversion.

**Speaker 6** 1:22:52

We would grind risk down to zero before we

1:22:56

put it on a range.

**Speaker 6** 1:23:01

The winds have to shift, and I will tell you they are shifting. We are walking that journey of getting comfortable, being uncomfortable, taking risks so that it can feed our own agility. Case in point, femo two, our flight test that we flight that we did off of Guam on December 10, 2024

1:23:28

Don't you know,

**Speaker 6** 1:23:30

11 months prior? So January 2024, we're in a program with you. And the team says we are eight months off schedule, the soonest that our scheduled risk model says with reasonable confidence that we can execute is August of 25 Right now, the

1:23:58

direction we gave the entire

1:24:01

team was

**Speaker 6** 1:24:07

I'm pushing a ballistic missile out of a C 17 on December 10, and we're

**Speaker 7** 1:24:12

going to look pretty stupid if we don't have a weapon system ready to engage it.

**Speaker 6** 1:24:18

Fill this page out. We can make December 10 if

1:24:24

and give me that list.

**Speaker 6** 1:24:27

The team took about two weeks they created that list that became our program plan. It became our methodology of how we accepted risk. We became agile, we became affordable and we became efficient, and on December 10, we pushed a ballistic missile out of C 17, flew it across the sky

**Speaker 7** 1:24:52

and launched an SM three two way and intercepted it. Successes,

**Speaker 6** 1:24:57

we are ready to be your partner. To be agile. We need you to bring us the pathway

**Speaker 7** 1:25:06

to embrace that agility. Next slide, last slide, when you walk out this door, we need three things from you, how to be affordable, how to be efficient and how to be agile.

**Speaker 6** 1:25:30

We have to test at pace to demonstrate at pace to deliver capability

1:25:35

at pace,

**Speaker 6** 1:25:38

we need you your ideas, your energy, your technical horsepower, to get there. We look forward to the journey. Hopefully you will too. Before I depart the stage, I just will simply say, go Navy, beat army. Thank you so much. Thank

**Speaker 2** 1:26:01

you. Thank you. Edward Williams, our next speaker is Mr. Walt Chai. Program Executive, advanced capabilities office, Missile Defense Agency. Mr. Chai is responsible for rapid delivery of advanced asymmetric capabilities to the warfighter to disrupt the evolving threats. Mission areas in his portfolio include kinetic and hypersonic defense, forward which command control and integration, non kinetics and electronic warfare, in addition to disruptive technology and space demonstrations, Mr. Choi is also the director of the missile defense integration and Operations Center, more commonly known as video in Colorado Springs, where he concurrently serves as FDA director of space capabilities, responsible for developing, operating, exploiting and integrating missile defense satellites and joint space capabilities for the missile defense system the. Ladies and gentlemen, please join me in welcoming Mr. Jeon. All

**Speaker 8** 1:27:13

right. Good afternoon, everybody. I want to add my thanks for you to be here. I hope you don't mind I'm going to stand behind the podium because I'm going to talk about the most important topic this afternoon. And so there's two things I'm going to talk about. Basically, first is the challenges to developing the next generation missile defense system and where you we could use your help. That's basically it. That's all I want to talk about. And so bottom line is that, you know. Hopefully, after this, this talk, you know, you'll walk away with the knowledge that you know we want to partner with you and whether you're traditional or non traditional, and we'll meet you where you are. We're going to try to knock down barriers so that we can work with you, and then we're looking for ways to do that, and so that's

**Speaker 7** 1:28:02

really the takeaway. So Next chart, please.

**Speaker 8** 1:28:06

So for a very long time, you know, by policy, missile defense was focused on defendant just rote threats, right? Rogue threats. They're more limited, they're less sophisticated, and we dealt with our near peers through mutual assured destruction doctrine. Now we're called upon to defend against their near peers, and that's going to be a challenge. And so you can see on the left hand side some of the challenges to the legacy system. And so lot of our legacy systems, lot of our I guess, what we call franchise systems. You know, they were developed at a time when we're going against rogue threats,

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and so they had

**Speaker 8** 1:28:50

perhaps easier requirements. Now we have to think outside the box and and not think about incremental changes to those but, but really look for destructive capabilities. So some of those challenges are latency across the kill chain. So we all know about hypersonic kill vehicles. You know where they're going mock such and such. So we have lot more, lot less latency to work with communication between disparate systems. So we need a layered defense, and all the systems need to talk together, and some of those systems were never intended to do that. And so that's another challenge. System performance in rates, as I mentioned, our near peers have lot more capability, lot more numbers, lot more sophistication. We need to address that complex volume of threats. The environment is contested, and so we can probably expect our adversaries to use electronic warfare along with kinetic warfare. And then, of course, there's always the cybersecurity that's looming that we need to address. And so some of the attributes, you know, for us is we need agile, flexible, mobile domain assets, continuous birth to death, tracking, low cost for defeat. You know, we get criticized a lot in the news about that we need to address that seamless integration with joint assets, any sensors, any effectors. What that means is we have to net enable all those to make that work, kinetic and non kinetic missile defeat and integrated left to left to right on launch. So our missile defense fight doesn't have to start with a launch of the missile. It can start way beyond, way to the left of that. If we

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can negate some of

**Speaker 8** 1:30:49

those capabilities, then we don't have to expend our, you know, interceptors and our effectors. Next chart, please. So these are the core tenets required to transform for the Future Fight, and this is where we need your help. We need destructive capabilities, not incremental changes in the current system. We need partnerships with our both traditional defense industry and non traditional and this includes our FFRDC and ur partners, we need to rapidly transition capabilities to the warfighter using prototype demos in a very short cycle, and I'll talk more about this later, but we're going to be leveraging a unified digital ecosystem to make decisions. So these are things like war gaming and exercises, ground and flight tests, refining Con Ops and tactics, digital acquisition and engineering and being able to do trades, electric digitally. You know, what does a new capability bring to the fight? You know, where are the gaps? We're going to be lean and agile teams. And. Quick decision processes, and we're going to leverage all our unique acquisition authorities that we have in the Missile Defense Agency to make that happen.

1:32:09

Next chart, please.

**Speaker 8** 1:32:11

So we're here today to expand our partnerships. So some of the challenges here to the left, you know, there's numerous I talked about. A lot of the missile defense is a team sport, and so we're going to be all working together. So we're going to need to attract non traditional companies, identify novel ideas and capabilities, complexity and contracting with DOD, I think is legendary. I think you guys know that better than any other people, mandatory systems, deliverables, contract requirements, complex and evolving requirements, time to work contracts is not ideal, and then we need to and there's extended return on investment. And I think some of you who know me know that. You know, after my Air Force career, I went to go work for IVF, a commercial company. And I will tell you, I was quite frustrated working with the government contracting. And I'll just give you an example, just mundane things, like, you know, we had a proposal to do it. Wanted to know, you know, what are some of the examples of work that you've done in the past. And unfortunately, for a commercial company, you know, we signed non disclosures with banks, credit card companies. We couldn't take credit for any of those, even though they were all relevant. And so, you know, these weren't intended barriers. They just never thought about it in the government. And so I think you know, if you come across those kind of barriers come talk to us because they're not intentional, right? I think there's ways around those. Some future attributes that we need are expanding across all classification levels, simplifying, acquisition and contracting. We're going to be attribute focused versus specific requirements, focused because we know what we want. That doesn't necessarily have to be the tight requirements, less prescriptive, looking for novel solutions, and then again, leveraging non traditional acquisition. And so there is a number of them. And I think Mr. Tynan after me is going to talk about these in detail. But there's multiple authority announcements that we put on sam.gov in March of this year, Broad Agency announcements, commercial solution openings, OTAs. And what I'm most excited about are the craters. And I'll talk about that in the next chart. Next chart, please. So we're always looking for ways to maximize flexibility, to partner with you, to meet you where you're at. And you may not be aware, but MDA is now a member of the federal lab Consortium, and a fun fact is, I'm the lab director as part of this job, so I'm excited about that. That's why I'm excited about creating and so some of the other tools here, the bottom left is CTAs, commercial test agreements, education partnership agreements, information transfer agreements, material transfer agreements, and patent software license agreements. And so these are all the tools that we've developed so that we could meet you where you are, so that we could collaborate together. And so if these tools interest you, please reach out to us.

1:35:33

Next chart, please.

**Speaker 8** 1:35:35

So I'm going to transition into four thrust areas that we're working on in advanced capabilities office. I'll talk about the challenges and then future attributes to address those. So the first best area is kinetic and hypersonic defense. Accelerating industry development is a challenge. Kinetic systems have a high cost per kill. I mentioned that earlier, that's something we're always criticized about. Adversary offensive threats are less expensive and easier to produce than our defensive capability. Hit to kill requires exact imprecision post intercept assessment. So if we're going to use non kinetic effectors along with kinetic effectors. How do we know if we actually affected it? If we don't know that, we're going to have to send kinetic effectors up to cover that, just in case, high speed maneuvering threats, limited kinetic inventories, some of the future attributes, the low cost defeat kinetic and non kinetic. Effectors, modular design, spiral capability improvements against harder threats. Wide Area effectors, kinetic and non kinetic, near term capability against hypersonic maneuvering threats and low cost long waves detection and tractor sensors. And so these are some of the i. Areas where we need your help to address some of those attributes. Another thing I think about in this category is, you know, can we develop lower cost interceptors? Right now, our interceptors are expensive because they have to have a high probability of kill individually, so they're exquisite. Can we develop lower cost interceptors, maybe not as reliable, lower probability of kill, but used together in a salvo? Could actually achieve better probability of kill at a lower cost? Can we use automotive parts instead of space punch? So I think those are things that are, you know, outside of the box, thinking that we could leverage

1:37:46

Next chart, please.

**Speaker 8** 1:37:48

So the next area is non kinetic and electronic warfare. I think it's safe to say, as I mentioned earlier, that our peer adversaries will implement this tactic simultaneously with kinetic effects, and so we need to be prepared for that. So some of the challenges there defeating large and complex threat rates, integrating non kinetic and kinetic weapons, to conserve inventory, non kinetic integration efforts, size, weight and swap power for multiple domain operations and some of those feature attributes, asymmetric capability, multi domain, lower cost per kill. Again, we want nearly unlimited magazine. I think, you know, we're sort of in a pickle with the magazine that's right now and then. We want to thin the herd as much as possible using non kinetics and scalable capability for future threats. And then the bottom left, there's a little you know, for directed energy. Some of the challenges are swap production, beam director, battle management, lethality, thermal So, so the I'll just move on to the next area. And so this is the next generation. Go to the Next chart, please. You have the next generation forwarded to command and control

1:39:12

integration. So

**Speaker 8** 1:39:16

complex scenes during the raid we want, we want low latency across the kill chain, integrated systems, across multi domain enterprise system performance and contested environments. And you can see the future attributes there. Again, we want to be able to leverage c2 capabilities so that we can take our missile defense flight to the left of the launch, and integrate that with our right of launch. So this is another critical area, the last of the four thrust areas. Next chart please, is disruptive technology and space demonstrations. So here, our focus is not necessarily on basic technology, just for technology sake. We want to leverage perhaps maybe more mature technology that are focused on missile defense so that we can get that technology out to the war fighter in very short time. And so some of the challenges are identifying new, game changing technology. And you can read all the rest, I think again, you know, there's other things that are enablers that are critical, like niche technologies, like radiation hardening, additive manufacturing and those kind of things that can enable this capability. Again, future attributes in this area also is lower cost, space solutions, reduced latency. So I think you get the sort of the theme in all these areas. You know, we're looking for low cost, modular, reduced latency. I think it's a common theme. And then, of course, you know, AI and ML to enhance the Manage, making.

1:41:05

Next chart, please.

**Speaker 8** 1:41:07

So I touched on this earlier, and so to enable all this, there's a project that we're working and it's called, it's it's called the National Integrated Air and Missile Defense center, or the NIC. And so it's a unified digital ecosystem with all the data, digital data for all missile defense at all classification levels. And so there's two lines of effort that are critical. First is for the operators. The operators will be able to leverage this capability to do war games and exercises, ground tests, Con Ops and tactics refinement, assess gaps, and when we bring in new capabilities, you know, how does that support the flight? What does it have? But on the other side for the developers, it's going to allow for digital engineering, digital acquisition, digital program execution. This is going to help, perhaps bridge the gap between the operators and developers as well. So this is a key capability that we're working and so there's going to be more forthcoming from the agency on this, on some opportunities to partner next chart. So just in conclusion, I hope you took away from this that you know. We want to work together with you and partner with you, and we're doing the best that we can to try to knock down barriers and meet you where you are, so that you know we can leverage your creative thinking, innovative ideas, both from the traditional and non traditional companies. Thanks very much for your attention.

1:42:49

Thank you, Mr. Chair.

**Speaker 2** 1:42:52

Our next speaker is Miss Jeannie Perkins, Chief Engineer Missile Defense Agency. Miss Perkins has served as the NDA chief engineer since 2024 she's responsible for developing and implementing robust engineering processes, ensuring rigorous engineering controls and providing independent assessments of engineering developmental efforts. These enable the development of a reliable and sustainable missile defense system, safeguarding the United States, it's deployed forces, allies and friends from missile attacks in all faces of flight. Ladies and gentlemen, please join me in welcoming, Miss for kids. Woo.

**Speaker 7** 1:43:40

Woof. This is rickety.

**Speaker 9** 1:43:46

It's not a good engineering design. Hey, good afternoon, ladies and gentlemen, this is going to be a surprise to no one, but I'm here to discuss the most important topic, engineering. All right, it is an honor to be here today and speak to you about a topic that is not only critical to our national security, but essential to the future of engineering. At mga engineering for the future, we bear an immense responsibility in safeguarding our nation and ensuring engineering practices evolve to meet the challenges of an increasingly complex and rapidly evolving global threat landscape. Today, I will discuss the problem we face, the goals we must achieve, and the transformative attributes which will define the next generation of missile defense, the evolving global threat landscape presents challenges which are more complex and dynamic than ever. Our missile defense system of systems must contend with adversaries who are rapidly advancing their capabilities, leveraging emerging technologies and exploiting vulnerabilities in traditional systems to maintain decisive advantage. We cannot rely on engineering practices of the past. The pace of technological change demands that we fundamentally transform how we design, develop and deploy our systems. This transformation

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is not optional. It's imperative

**Speaker 9** 1:45:31

to deliver effective next generation capabilities, we must embrace modern methodologies and technologies to enable rapid evolution and integration. Our goal is clear. We will enable a rapid and cost effective evolution of next generation systems, of systems through transformative engineering solutions. This goal is not just about building better systems, it's about creating a framework that allows us to adopt and innovate at speed. It is ensuring our systems are not only effective today, but also resilient and adaptable for challenges that will come tomorrow. Brace yourselves. I'm going off script, and I'm going

1:46:20

to do a football analogy.

**Speaker 9** 1:46:24

We've got to stop taking what the offense is giving us, and we have got to anticipate what their move is going to be before the ball snaps to achieve the transformative engineering solutions required, I should have said next term for next generation missile defense system systems, we must work together as a unified community, government, industry and academia. Today, I'm calling on industry to help us meet the following critical attributes that will define the future of industry. Hearing, we need industry to prioritize modular designs that enable flexibility and scalability. We need open system architectures embracing interoperability and reduce vendor lock in ease of integration for frictionless frictionless integration is essential to accelerating deployment and upgrades. Your expertise will be invaluable here. The ability to harness and leverage data effectively is critical. We ask industry to develop tools, frameworks and methodologies that enable data driven, decision making, optimization and predictive capabilities, together, we can make data the foundation of our engineering practices. Model Based Engineering is a game changer, but it requires robust tools and processes. We need industry to advance simulation, analysis and validation technologies that reduce risk and accelerate development. Your contributions will ensure our systems meet the high standards of performance and reliability. Automation is key to driving efficiency and reducing costs. We urge industry to innovate and automate technologies to help us streamline processes, minimize errors and free up resources for higher value activities. Efficiency is not just about speed. It's about smarter engineering, agility and responsiveness. You've probably heard agile today. I wanted to say it too, agile and responsiveness are essential to counter emerging threats. We need industry to help us build systems that can adapt quickly to change and meet real time needs. Your ability to deliver solutions that are both flexible and resilient will be critical to our success. Transparency and traceability are non negotiable. We ask industry to embed these principles into every aspect of engineering, from design to deployment. By fostering trust and accountability, we can ensure the integrity of our systems. And finally, collaboration is the cornerstone of innovation. We need industry to create tools, platforms and processes that enable seamless collaboration across teams, organizations and disciplines, together, we can leverage collective expertise to drive breakthroughs. The challenges that we face are daunting, but they are not insurmountable. By embracing transformative engineering solutions and focusing on the attributes I've laid out here, we ensure our missile defense system and system remains effective, resilient and adaptable. We need to move from a reactive approach to a proactive strategy. Defense wins championships. The future of engineering is not just about technology, it's about a clear vision, collaboration and unwavering commitment to excellence. Together, we can build systems that safeguard our nation, inspire the future generations of engineers. Thank you for your attention, and I look forward to our collaborative efforts for the next generation of missile defense.

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Thank you. Ms Watkins, i

**Speaker 2** 1:50:44

Our next speaker is Mr. Tracy Tynan, Director for acquisition and sustainment, Missile Defense Agency. Mr. Tynan is a member of the senior executive service and serves as a director for acquisition and sustainment. He is the senior advisor and leader for all aspects of acquisition, sustainment, contract planning and management for all the programs integrated into the approximately $12 million annual missile defense system. Mr. Tyron also serves as the MDS Senior Services Manager for a $3 billion services portfolio. He's also responsible for the management of missile defense related security cooperation activities and relationships with international partners, to include international engagements and foreign military sales. Please join me in welcoming Mr. Tyler. You You

**Speaker 10** 1:51:44

all right. Well, thank you very much. Tracy Todd, and a pleasure to be here today. You know, typically, thank you so much. Kind of typically, when I'm here, I'm enjoying a havoc game. I go, I go, havoc. I was a big hockey player as a kid, but I. To throw a check before I get going on Admiral Williams, Walt chai and Jenny Perkins for saying that they're the most important briefing of the day, I think maybe I'm not the most important, but maybe for all of you the most practical, right? So we're going to be taught like talking about you've heard all of these, all of these great, great programs and plans that we have, and how do we get you on contract? How do we make sure that we're working with you, that we're collaborating with you, to get you on contract? So that's what we'll be discussing today in a few slides. Next chart, please. So here's kind of our guide points for us from an acquisition perspective, we want to make sure that we can accelerate our acquisition like tempo, and I'll talk about each of these in just a second to make sure that we establish some action tools. And you've heard, heard about that from Ginny just a second ago, from Stan earlier, about some of the tools that we're suggesting that maybe that you put into place. And then also, on the rapid delivery side, as General Collins had started off, that's the measure of merit, is making sure that we could deliver a capability just as soon as we can. That's the name of the game. So on the on the acceleration of the acquisition, like tempo, some of you know that when MDA was stood out

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by the early 2000s we

**Speaker 10** 1:53:13

got a charter that allowed us some unique like unique authority, special authorities that were not part of the standard acquisition process. The 5000 will be commonly called, call the 5000 we got exempted from that, and so that charters put us in in a good stead for a long time, come around the 2020, time frame the building the Pentagon, looked at that. And there was a couple of different camps. One of the camps was to take away a lot of our authorities. The other camp was to give us more authorities. Well, I'm happy to report for general Collins and the Missile Defense Agency. We got our charter signed here just recently, and it expanded our authorities. And so the good news today is that you're going to see we've embraced that we've doubled down on the authorities that we had. I think you're hearing the same theme from all the speakers. We want more innovation. We want to go faster. We want to take like, take advantage of that. So we're going to show you some concrete examples of how, of how we're trying to do that, on the establishing the tools you've you just heard from, you know, Ginny just a second ago on some of the things that we're suggesting that you put in place there, from an engineering perspective, your your model based systems engineering and all of that. But on the acquisition side, we also have a couple of our contracts in place that I think are going to make make that faster, and we'll show you how we're trying to get better at understanding what's the art of the possible upfront. Because if you start off well with a program, you have a much better chance of delivering in the end. And so we're focused on that upfront part of the organization, right of the of the program. And then, of course, it's all about, you know, delivering capabilities as soon as we can. Next chart, please. So here's some things that we're trying to do right this is, this is the focus that we have. We're trying to, like, leverage the industry partnerships that we currently have in place with all of you, and expand upon those. Look at the strategic sourcing and innovative business like arrangements, you'll see that in in the contracts that we have, that we're doing our level best to take advantage of that we've got some expedited pathways. We took the best of breed from what the other services are doing, you know, the military departments, we've incorporated those. We've also got some some contract authorities that I think you're going to be pleased with in just a moment that will help to streamline the process, like rapid prototyping, rapid fielding will be terrific for us trying to focus on enabling like innovation with a non with the non traditionals, all of you that are out there today on the non traditional side, that's really important for us to make sure that we're getting your input. But as general Collins has said, we need that perfect blend of the existing folks, the folks that have been trial, I tried and true, that have been defending the country since, since the early 2000s right? Those gdis are up on alert at Fort Greely in Alaska, and the ones at Vandenberg Space Force Base have been defending the country. The space satellites that we have in in place the ground, like all of the systems, have done an incredible job. So it'll be a blending of the boat both of those to try to get there. But what do we you know? How do we do that? Then, by more engagements, better collaboration with you, to expand the supply chain, make sure that we're taking advantage of all of your thinking there. And then finally, it's all about the collaboration. And you've heard that from all of the speakers, but if we go to the next slide, please, then I think what we're trying to show and what we're trying to prove is is that we've listened to not only. Of the feedback that you all have given us over the years about maybe being not as easy. I know that Admiral Williams and Wolf Chai have talked about this, maybe not being as easy to collaborate with us. We're we are changing that paradigm, and this is a perfect example here, of some of the things that we've done in the you know, just recently since we have gotten our charter sign, gave us those expanded authorities as we've got some guidance on Golden Dome. These are some of the RFIs that we've got out now. And I know that Walt covered. Walt and Stan had covered many of these, but that southeast, like radar that's out there, the under layer that we have the real takeaway on these RFIs. And I know having having been in the business for a while, I think what we're trying to do is, you know, again, to have a relationship with you all up front, so that we understand what's the art of the possible. And these RFIs that we put out is industry's opportunity to feed back to us what you think is the best way to go, after the, you know, the requirements that we're discussing in the RFIs. So some of the time, we get a mixed bag of feedback on the RFIs. I would implore you to make sure that you spend a little bit of time, especially as it relates to these, these ones that we have on the golden dome side to give us accurate feedback, so that we understand, so that we can come up with an acquisition program that gives us the best opportunity to feel the capability. That's really what it is that we're trying to do. It's this relationship, this back and forth, this collaboration, that we're trying to get to, and we're trying to show you and putting our money where our mouth is by having these, a lot of RFIs that are there so that you can give us the feedback, so that we can start our programs off better. So if you haven't been paying attention to these, we've got our partner partner with us on our MBA page. That'll be really important to give us the honest feedback that you have, and if you get better ideas, we're all about taking those in. Again, that upfront part of any program is so important next chart, and it's for both large and small industry partners. Okay, so what is something that we're doing to take advantage of of some of the authorities that we have. I've got a sorry there. I've got a feedback here. Sorry. I know that we tried to come up with a great name that would be easy for you to remember multiple authority announcement that's not a very great. Great name is not very catchy, and so general Collins put me up to the Pepsi Challenge here, before I came on stage, we've come up with a new name, noble options for

1:59:54

nimble options for noble

**Speaker 10** 1:59:55

effects. Noble is what we're going to be calling this. But this multiple authority announcement, Walt Walt Chai had discussed it just recently. Is focused on the non on the non traditionals. As you can see, we've got, it's it's got a BAA there. It's got a commercial, you know, solutions, option, other transaction authorities, which have gotten an awful lot of use in the last five or seven years across the department. It's procurement for experimentation purposes, grants and cooperative, you know, agreements and a cradle opportunity there as well. Just recently, in the last couple of months, the Department of the Department of Defense has given us, on the MBA side, the ability to be, to be a in an organization that that could sign out a crater, right is so that's a huge opportunity for us. But what we're trying to get to is we're targeting those disruptive technologies, those rapid capabilities in these eight areas that you can see on our noble vehicle here, whether it's kinetic and hypersonic defense, command and control, battle management, or the space based sensors, as you've heard about, the AI that you heard about earlier from Stan, these are all of the places this contract is out there as of this spring. It's a five year vehicle that will be there until 2030 and it's an incredible opportunity for all of you that are non traditional in the audience today, that think that you've got some capability, you've got some feedback for us that we want to make sure that we get kind of that we can incorporate and take full advantage of so I would you know again, we've got our our site page there, our partner with us page you can follow us on sam.gov we've got the two solicitations that are out there now that we're looking for some feedback. So if you've got any thoughts, then then please, then send those in that is out there now it's. Existing, and we're very excited about that as an opportunity.

2:02:05

Next chart, please.

**Speaker 10** 2:02:08

This is, this is something that I think is incredible life in my time. I've never heard of anything like this before. It's something that general Collins had started at England, brought it here to us with the like Missile Defense Agency, we put it on steroids. It's a 10 year 150 $1 billion let me say that again, a 10 year 150 $1 billion IDIQ contract. It's unbelievable. Lots of flexibility. It's out in draft now until next Monday. So just like, on the RFI side, if you haven't looked at it yet, I would implore you to go and, like, look at that that you can see our, our web page, that's that's identified there. Give us some feedback. This is going to be in place for a long time. 150 1 billion. It's a lot of money. Great opportunity here for industry. All of the great, great programs that we talked about on the RFIs, all of the activities that you saw the previous briefers have have spent some time to explain this is where the rubber meets the road between the MAA, or the noble vehicle that we have and the shield contract that we have, and we've done a great job with our GC friends. We've been able to to remove some of the obstacles for barriers for entry, so that you can become an IDIQ offer. And so the way that this is going to work is this 19 areas here that we're focused in on inside that shield. And if any of you have experience in two of those areas here, in systems and like engineering, experimentation, research and development, you can see them there. If you've got experience in two of those areas, then you'll be able to compete for and to potentially be identified as an IDIQ holder. Once you're identified as an IDIQ holder, anytime that we put a solicitation on there that you can potentially bid if it matches your company's experience, and you think that you want to compete for that work. So what an amazing opportunity, I believe, for all of you on the industry side, both the traditionals and the non and the non traditionals to engage and compete for all of the great work that you've been hearing about. This, this, you know, all like all afternoon. It's going to be a long time, 10 years, 150 1 billion. The RFP isn't closed. We extended it to make sure that I had an opportunity to get up here today, and to let you all know we're very interested in your feedback. So if you get a chance, go online, take a look at it. If you've got some stuff that you think is good for us to change, please send in your comments. I think to date, I did a data check this morning. I think we've gotten about 130 comments like so far, which is great. Some you know, some of those are the same ones, both like over and over. But we've got some some good thoughts back. So make sure you spend a little bit of time, but an incredible capability here Next chart, please. So in summary, what, what I think that you heard today from all of us is that it's an unbelievably exciting time to be part of Missile Defense Agency in the enterprise we've gotten, we've received some expanded authorities from the Pentagon and from the department that allows us to take full advantage. We've got 20 years of experience of executing programs. We've learned a lot in the feedback with you all and how to go faster and how to be more more agile. We're trying to show you that we're changing the way that we interact with you, trying to get your feedback up front. Because these are the things, those first three items that we have that are aligned there, the alignment to the requirements, getting the acquisition and contract strategy right and rapidly, or the executable, you know, the contracts. That's all the upfront work. That's the foundational work that we have to do well in the beginning, if we start our programs, well, we give ourselves the best opportunity to meet and deliver on cost and schedule, and as general Collins had talked about, as we all know, it's all about delivering on like on cost and on schedule, so we're focusing spending an awful lot of time making sure that we get an opportunity to get your feedback so we don't come up with requirements. We don't put things into these RFPs that are not consistent, that they don't make sense, you're not able to achieve them. So spend the time give us the feedback so that we can write a good RFP, so that you can turn around and give us a good proposal back to. So that we can quickly award it with that FAR Part 16 shield, shield contract that we had. It will be informed by some of some of the non, you know, the non traditionals, and the thinking that even you all on the traditional side that may have through the like noble vehicle that maa that we have in those eight areas, which all of that combined is going to allow us to do the thing that we all love to do the most, or at least that I do, which is cost schedule performance and to deliver a gate by capability. That's the thing that we want to do. We want to get back to doing cost schedule and performance really well. These, these upfront pieces are really important for us. It goes to your your profit and your your your standing as a, you know, as a corporation, but it's about delivering the capability. But if we do this upfront portion right and well, then we can focus on the things that we need to to execute and to do the program management piece. So it is an unbelievable time to be here in the Missile Defense Agency, like enterprise, very exciting in the agency itself. And hopefully you see that we're excited to really strengthen and improve the relationships that we've had with all of you for the last 15 or 20 years and expand the tenants. And that's all I had for you today. So thank you very much for the opportunity.

2:08:35

Okay, that's all we got to do. That's it. Let's go. First off, I want to tell a big thank you to Chandra.

2:08:44

Chandra, she

**Speaker 1** 2:08:51

was the lucky recipient of the pro Joe assignment from this our third planned industry Summit. She did not know what she was getting into, but great job. Thank you. As we go forward, well, first I just want to throw a few takeaways that I just were.