

“Combat Proven Integrated Air and Missile Defense – CENTCOM”

Mr. Riki Ellison:

Good afternoon, ladies and gentlemen. It's a wet, damp, cold, winter day here in Alexandria. This is our 48th round table that we've done. This is a great one on Integrated Air Missile Defense, and the only really combat proven AOR in the world that has done this for so long that we have the honor to bring that forward. I'm Riki Ellison. I am the founder and chairman of the Missile Defense Advocacy Alliance. We built this 20 years ago. I've been involved with missile defense 40 years, but our sole mission is to advocate for the deployment and evolution of missile defense systems around the world with our allies here in the United States, as we believe firmly, and the world has shown it, that this makes our world a safer place and gives us other options and helps deter us going to war. We have a great discussion today.

We are really honored to have the Deputy Combatant Commander for CENTCOM with us, Lieutenant General Guillot. We're honored to have the Head of Army Fires and Joint Director of Counter Unmanned Vehicles that's with us, Major General Sean Gainey, and we have the Head of Ops for CENTCOM, Rear Admiral Curt Renshaw with us. Today celebrates the month where we first had our first modern combat interceptor missile defense, and that was back in January 18th in 1991 in the AOR of CENTCOM in Saudi Arabia, protecting a US base and the first use of Patriot in combat. That was 30 years ago. And Patriot and air missile defense in CENTCOM have stayed there for 30 years. We've seen the evolution of every type of missile threat, rocket threat, mortar threat thrown at our forward operating bases and against our allies in that region.

We have done some remarkable movements here in development. We've created the C-RAM out of this. THAAD came forward with this. The sense and warning that's so important that's come out of this, the 360 missile defense capabilities, the breakdown of the ADA battalion into a battery, into an ICC placement around to distribute. This has been the place to develop and integrate and deploy defensive capability. And this defensive capability has been remarkable. We look at Ukraine, but we look at CENTCOM and the thousands and thousands and thousands of missile strikes, mortar strikes, rocket strikes that we have defended against and shot down. But more importantly, the sense of warning of being able to protect thousands and thousands and thousands of our allies in our foreign operating bases. So, today also is one year ago today, we had our first combat interceptor, the THAAD Interceptor system, along with the Patriots that protected UAE and Abu Dhabi. So, that's something to honor as well.

Also in celebration of that first combat shot by Patriot in 1991, our organization hosts the Missile Defender of the Year, and that's done every year annually. It'll be done this Friday here in Alexandria to recognize our best missile defenders from each of our five services. We have also done this in CENTCOM. We've also done this with the GCC. We've done it four times there in 2014 through 2018. And I'm pretty excited that we're looking to be able to do that once again to bring forward our allies and our joint forces to be recognized for what they've done there. I think it's really important to understand how powerful this missile defense capability is. When Qatar hosted the biggest sporting event in the world, the World Cup. Hundreds of millions of people watched that event.

And for the collective, both Qatar and GCC and our joint force to be able to have the capabilities put in place in an integrated fashion to deter and prevent any type of rocket or missile or mortar threat is to be commended. And it was wonderful to see a very safe place for everyone in the world. So I think that's one of the great testaments that has come up from that. So, today we want to explore and recognize and try to understand what has been done over those 30 years. I don't mean to go all the way back, but what we've done recently to be able to evolve our missile

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defense and I think the best Integrated Air Missile Defense AOR in the world. INDOPACOM, who's trying to create a future capability in Guam, it's not there yet. We have Europe that's still struggling with Integrated Air and Missile Defense architecture that connects both ballistic missile defense with its cruise missile defense all the way down.

And I think as you know, Ukraine is on its own with piecemealing parts and pieces to make that workable, but not a pure Integrated Air and Missile Defense capability. So I would say to you that CENTCOM is the leader on Integrated Air and Missile Defense, and it has to be. It is, and the lessons learned from here have to be able to be pushed out to the other AORs, other COCOMs, and especially the ability to be able to integrate it with our allies. I think CENTCOM probably has the most capacity of missile defense inventory than any other AOR with its GCC countries. And I also want to point out that I think last year we brought in Israel. Israel is now part of CENTCOM, so that capability, and they're part of this team. So, they have a lot to offer. And again, bringing this team together with all those different assets, it really falls under the leadership of CENTCOM, and they've done a remarkable job with them. So, our first speaker I'm honored to introduce. He's a fellow Tusconian. He went to high school right next to me. He's a saber cat, and went to the Air Force Academy. He's well experienced. He's been with NORTHCOM and INDOPACOM. He's your Deputy Combatant Commander for CENTCOM. Lieutenant General Guillot. We call him Gooley. That's his name. So, welcome sir.

Lieutenant General Gregory M. Guillot:

Thanks, Riki. Great to be here. So I don't forget to say it later, let me start now that we all appreciate your passion and your advocacy for this mission set, which is an extremely important mission set to all of Central Command. To give a brief overview from the combatant command level on how we look at IMD, I think we should start with our Commander General Eric Kurilla's priorities. Number one is to deterring Iran, two is to counter violent extremist organizations, and three is to manage strategic competition. And there is a lot of strategic competition in our AOR with Russia, China, and of course Iran there. But more tied to what we're going to talk about today is he has two functional priorities. One is integrated air and missile defense, and the other is counter UAS. And we see those as almost blended as counter UAS as a subset of IMD.

And then, his last focus on the priorities is they have to be nested through partnership. And then, he has a strategic approach. And his strategic approach is people, partners, and innovation. And so, if you take deterring Iran, countering the VEOs, Integrated Air Missile Defense counter UAS, partnership and innovation, and lump them all together, you'll see that it fits really well with what we're talking about today. Because as you mentioned, we've had a lot of IMD capability in the theater, but the adversary's advancing very quickly and we need to keep up through innovation, and we need to get our partners involved as you also mentioned. So I think that this discussion today really helps bring all of those facets together for us. What I focus on from my position in CENTCOM on behalf of General Kurilla is advocating for a layered, Integrated Air Missile Defense capability, from the upper tier all the way down to the counter small UAS with a quadcopter flying 50 to 100 feet off the ground at 10 or 20 miles an hour and everything in between.

We start with the upper tier and the lower tier ballistic missile defense, and that's handled by our Area Air Defense Commander or the AADC. And that's the AFCENT Commander, Lieutenant General Grynkeiwich. And then next, you have the manned air threat. I'll just generically call it that as part of IMD, the manned air threat. And that's handled by the CFAC, who also is Lieutenant General Grynkeiwich. And at the small end on the small UAS, the group one, group two UAS, that's handled by the various base commanders. Whether it's an Army base, Air Force

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base, Special Operations base, those base commanders have to have the systems and operate the systems with the clearance to engage on those small UAS. And probably the toughest challenge is the seam between the small UAS and the manned air threat, which is the group three, four, and five UASs.

And both the CFAC and the base commander have a responsibility for those, and we have to be able to share information on it so we're not sending an F16 to shoot down something that a coyote could from one of our bases. And so, the way we look to that under General Kurilla's innovation front is to bring all of these different systems that give a commander situational awareness in the missile defense area onto a single pane of glass, and we're not there yet. We used to be in three or four, maybe five or more buildings on a base with different systems separated. We now have all of the systems in one room. Now sometimes, it's on five or six different screens, but all the feeds are at least coming into one room so that commander can make timely decisions. And then, we're working to innovate to get it all onto one pane of glass that everybody can share all information on there.

What we do to stay sharp is we have a lot of exercises and assessments, we call them IMD open door exercises there in the AOR where we'll bring a UAS that's operated by our own aggressor pilots, and try to bring them into an airfield and see if everything from the sensing layer, the fighters, all the way down to the BDOC commander can detect and at times on a live fire, kill these drones to make sure that we don't have any vulnerabilities. We're also using these drones to see if they can penetrate our bases and hold infrastructure like a Patriot radar or other aircraft at risk

And by doing that in an assessment, we're able to make sure that we don't have any blind zones that the enemy could exploit. We're bringing in what's called Red Sands, which is the Red Sands Experimentation and Integration Center where we're going to bring different capabilities that we have and our partners in to do live fire tests, mostly on counter UAS and LACM from that range down and try to get our partners to purchase and team with us with common capabilities to address the rapidly growing threats.

Where I think we've made the most progress out of all of these areas is in the counter UAS. Over the last couple of years, we've brought a lot of new capabilities to the AOR. As you mentioned, Riki, we'll take non-mission or non-fully capable systems that are still experimental and bring them into our AOR and try them out there. And we've been able to repurpose some systems with different capabilities and repurpose them for the counter UAS fight. You mentioned C-RAM, which was to take out indirect fire and then now they've been able to work it so it has a valid role in the counter UAS mission. And we need to do this because we have daily threats from the Iranian aligned groups that use Iranian produced UAVs to attack U.S. and coalition positions all across the region.

And so before I get off the stage of my intro comments, I want to say that none of this would be possible without perhaps the best partner in the world and that's Sean Gainey at the JCO, the Joint Counter UAS office. He spends a lot of time and effort on CENTCOM and delivers us capability ahead of schedule. He comes over to the AOR to make sure that we're able to integrate the systems that he's delivering for us. And as I mentioned, sometimes he'll give them before they're fully capable so we can try them out and give industries some feedback on what works and what doesn't work all while we're defending our forces. And so between the great airmen, sailors, and soldiers that we have deployed forward and Sean and the Pentagon helping us and then you with your advocacy, our teammates are really great and they've

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allowed us to make a lot of progress in a short period of time on the counter UAS part of the IAMD mission.

Mr. Riki Ellison:

Thanks, Gooley. I'm going to ask just one or two questions before we get over to seam. But you talked about that scene between the counter UAV stuff and the cruise missile defense and the other scene between the cruise missile defense and the ballistic missile defense because you're seeing that. You're getting all of that. So my question to you just jointly, just with our own group, what is your biggest challenge there? Are we all in sync with sensing and getting all the sensing to everybody that's involved? And the other one is your fire control. Are we on that page just with our own joint force before we bring in partners or allies in here? How are we at that, and where do we need to help?

Lieutenant General Gregory M. Guillot:

Riki, that's a really good question. I think that we've made a lot of progress in all areas. But if I had to focus on one area, I think I would always want more sensing, not necessarily better sensing. And I wouldn't say that it's a vulnerability in any way. We have a lot of good sensors, but the earlier and the further out you can sense anything gives you more time and more decision space to find the right asset to shoot it down, whether it's a air to air fighter all the way down to a kinetic or a non-kinetic capability at a base. So we're doing a really good job of tying everything from AWAC's radars to ground-based radars to very small systems that are designed only for the counter UAS roles, tying them all into that single pane of glass that I mentioned. So we get all of those systems.

And then putting them into the data link, putting them into Link 16. So instead of just that one base seeing what's flying around their base, now everybody can see that picture and the person on the base can see what's going on 50 to 70 to 100 miles away in the air instead of waiting until that threat gets within a shorter range from there. So we're getting better at it. We have really good sensors, but I think the more sensors you can get and the earlier you can sense, the better off we would be. I'd be really interested to see if Seam agrees with that or has a different approach.

Mr. Riki Ellison:

And I'll just follow up with that. Since your allies or your GCC partners have tremendous sensors, how are we now shifting from what we've got for joint into being able to share or they share with us all those sensors to make this a bigger picture for you and put it all on the same glass? Is that more challenging right now or how... Just want to leave that up.

Lieutenant General Gregory M. Guillot:

Yeah. I would say that that is... That's still a challenge. You're right, we have some partners with some great capability. And then we have a lot of different means to pass information, everything from pure voice, old school voice into shared radar systems into Link 16. But a lot of those as you know, are bilateral agreements between the U.S. and one country. And we'll always look to develop multilateral constructs where we can use technology and agreements to apply what may only work between the U.S. and individual countries, tie that under a single umbrella. And so we'll be working to do that here in the future.

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Mr. Riki Ellison:

Okay. Thank you. Thanks. And we'll be able to come back to you, Gooley. Our next speaker is Sean Gainey. He's been well qualified. We've met him in the Indo-Pacific region. He was a 108th Brigade commander. He is chosen precisely to be able to bring the joint force together. There's been no joint position like this to bring all our services together on the counter three and below unmanned capabilities. So he's done just a phenomenal job in making that happen here. And I'd like to introduce Sean Gainey to carry the conversation.

Major General Sean A . Gainey:

Thank you, Riki. And again, appreciate the intro and always great to partner up with you on any of these engagements because I know you want to spend the time to really get after the problems that are out there and share with the community what we're doing successful or what we can do better in the integrated air missile defense approach. Well, you heard a lot of discussion already on what we're doing inside of CENTCOM from an integrated air missile defense approach and specifically the counter UAS aspect of it.

I think General Guillot did a great job of overarching highlighting what's being done. And so what I'll do in my few minutes of discussion point, narrow in on some of those topic pieces and highlight for the group what we're doing specifically inside of the joint counter UAS office and the demo fires within headquarter DA to support CENTCOM and the other COCOMs moving forward.

Fortunately enough, I was able to do my annual visit into the CENTCOM AOR, specifically in OSS and OIR as I look at how can we at HQDA and the joint team support the COCOM with my three areas of focus: first being development of joint capabilities for our group one through three UASs, developing joint training and joint doctrine. And I think all those efforts we are working on moving forward has seen tremendous amounts of success. But we know we got a lot of work to do and I'll highlight some of that as I move forward.

You heard General Guillot talk a little bit about the single pane of glass and I would tell you from a perspective of counter UAS in the integrated air missile defense fight, to me that is... When I first took over this job, the first thing I said is, "Hey, we want a C2 system that's a common joint system that everybody rallies around and leverages against this fight," because you can bring in different pieces of technology, but if it doesn't integrate into that common C2 system, it may not be a better posture because you're not synchronizing that air pitcher together.

So what we put a lot of effort in is first we named the Army's THAAD C2 as the interim joint C2 system. And then immediately after that, my then partner in crime, General Thurgood, we said, "Hey, we're going to make sure everything's integrated into THAAD C2 that's newly developed and put out there in the war fighter, so they're not getting different pieces of equipment in different C2 systems so we can continually move to that single pane of glass that CENTCOM commander is forcing us to do.

And so what we've done is within THAAD C2, all of these systems that we down selected to... And when I mean down selected to when we did our initial assessment of the capabilities in the CENTCOM AOR, we selected certain capabilities that were performing the best at the time. And right now, we are able to integrate all of those systems into THAAD C2. Now as we move over the next few months, we'll have a software update that will allow the last few pieces of equipment to integrate into that. But we're moving in the right direction and all the new capability

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and the experimental capability is coming in with that capability. So continually getting to that effort.

Getting after the group three, so again, my charter is the focus and the joint counter UAS office is a focus on the group one through three. And for the sake of the integrated air missile defense discussion, I'll lean more towards the group three because that's the point where it has been also a natural bifurcation between counter UAS force protection and integrated air and missile defense, cruise missile type and above focus. So another piece that I felt was truly important is that when you look at the counter UAS fight, you have to develop capabilities that span into the group three arena so that you can transition capabilities. And what that also moved us towards is... What was highlighted earlier is you can't look at this fight as a counter UAS fight and as an integrated air missile defense fight. You got to look at it holistically as an integrated air missile defense fight.

So as these systems that may not have been put into theater to get after the counter UAS fight, we're looking at how do you tune radars to see smaller, slower, and how do you tune these systems to get after these smaller radar cross-section type capabilities at further distances? So that's some of the things that my office is doing. And I think CENTCOM has done a really good job of taking from a TTP and authority ability to get that operator what he needs to take the technology we're providing and put effects on target. And I think CENTCOM has done a really good job.

You don't hear a lot advertising. We don't advertise a lot about the successful engagement. Don't think that as our systems aren't having success. They are. And the way they're doing it is with the integration and the layered approach. And it's leveraging everything within a joint fight, whether it's defensive counter air capability, like I highlighted, some of our air defense systems that were traditionally used for cruise missiles or aircraft or helicopters, putting those into the fight and then developing a set of counter UAS capability that has been combat proven in, all of our systems right now are combat proven, to give them the ability to leverage a lower cost type interceptor or electronic warfare to help as you look at the cost curve.

What I would also like to highlight is if you look for a one to one match, you probably won't get that. But if you look at our ability to spiral capability and technology is forcing the adversary to increase their costs to get around some of the things that we are doing also. So you have to look at that. And I have the fortunate ability to watch this thing closely in watching the cost may start at a price point, but as we leverage some of our effects, it's going to cost them to do something differently to scale up their price as we move forward.

So partner capacity, I know there's a lot of discussion on partner capacity. Yes, critical in the integrated air missile defense aspect and the counter UAS. We are doing things with our partners. Specifically, I work very closely with the UK and they're doing a lot of things from a partnership perspective. And sometimes, I'm going to bring a system that's going to integrate into, sometimes it's, "Hey. What do you need? Do you need a better camera? Hey we can bring a better camera to augment the capability you have at a site as far as integration out there." So there's different ways to be able to do this and I think CENTCOM's doing a really good job of leveraging the partners and again will continue to mature that as we move forward.

Now finally the thing that I'd like to close on is a few lessons learned. So also as part of my trip to AOR, I also had a chance to get into CENTCOM AOR and share with them some of the things that's going on within CENTCOM and see some of the things that they're pulling out of Ukraine and things that we can apply or are being applied. And as you look across the common

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thread of this counter UAS/integrated air missile defense fight, it's integrating all of your sensors into some sort of C2, so you have an integrated air pitcher that can hold the custody of some of these targets from as far out as highlighted earlier as possible.

And as it comes in, there's a layer of effectors. And what we're finding out is, and some of the things I'm sharing with our partners is just because you may not have some of the latest exquisite technology like directed energy, high-powered microwave, or some of those other things, some of the older perceived outdated capability, 30 millimeter gun systems, 50 cal, all arms... We used to call it all arms air defense against some of these capabilities that have been flying, leveraging all of those systems in an integrated approach, we're seeing as being successful in some of the cases like in Ukraine and some of the things that as we get this capability back into our division sets, how we will leverage where it's not so much an air defense specific MOS, it's all MOSs playing inside of this fight because of the threat is so broad and the scope is so broad and where we can to create low-cost solutions to this problem set. So I think I've said enough right now, so I'll turn it back over to you as we get ready to get into Q&A.

Mr. Riki Ellison:

Hey, Sean, I know you have a dozen or so different types of capabilities that are effectors and you're saying all those effectors now fit into the THAAD C2 to be able to do what you said, bringing all the sensors in to be able to distribute with that. As you're the head of army fires, you've got IBCS coming. And IBCS is going to be the end all, be all with any sensor or any shooter. So are we going to have a period of time for THAAD C2 or to transition over to IBCS, and when is that going to happen and are you going to be the theater that's going to be first used for that capability to do best shooter, best censor from the Army perspective?

Major General Sean A . Gainey:

Riki, that's a great question and I like your question because I just had a conversation with Frank Lozano today about that, who's doing great work at PO missiles in space. And just to reiterate, all of the systems aren't integrating in the THAAD C2 yet. We're making a lot of progress. We're getting there. And we have a plan for all systems that CENTCOM approves to continue to use in their theater as primary systems integrated. We've integrated all of the systems that we down selected to and so there's some other systems that we're looking at this promising that were now integrating. In all future systems, you're correct, will be integrated.

As far as THAAD C2, so THAAD C2 will continue to look to find ways to put AI/ML type learning. And again, I said an interim solution. Eventually we have a plan for an enduring solution. But talking with Frank Lozano, the PEO has a plan where you're going to take THAAD C2 and it's going to eventually integrate into IBCS. Seamless integration. Right now there's a compatibility there, but there's going to be an integration from the software perspective still being able to maintain the hardware to do the short-range air missile defense in a counter-UAS fight. And the timeline of that integration is over the next few years. We know that as we integrate in IBCS, and looking at a timeline of IBCS becoming IOC around the April timeframe, and then fielding in the FY25 timeframe is the priority... But again, THAAD C2 is on a path to integrate into IBCS.

Mr. Riki Ellison:

Would you say you're the forward leader over Korea on THAAD C2? Over anywhere in the world, for us, you're the lead dog in creating that THAAD C2 transition into IBCS at CENTCOM Theater?

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Major General Sean A . Gainey:

Yeah, I would definitely say CENTCOM. And that's the reason I love working so closely with the CENTCOM team, is because we have the luxury of taking capability that we take out to demonstrations, test it. And again, we want to make sure it's all tested before we get it out there to the operators. But quickly getting it in the theater under an operational assessment. We have technology that's in the CENTCOM AOR that's not been used, I would argue, at any other COCOM. High-powered microwave capability on an interceptor, directed energy. And actually seeing effects with this capability. And then it was that three star right there. CENTCOM/DCOM was the one that said, "Hey, I want to take THAAD C2 and pure fleet it across the AOR." And he's an Air Force officer, and this is an Army system.

So it takes attitudes like that and not be married to your services capability to say, "Hey, this is the right capability for the joint force. Now let's move out and do it." And I think that's why we've gotten a lot of leverage. And so when industry and our partners see that and see that as the path forward, it makes it a lot easier to integrate those systems because the commanders in that AOR want it all integrated into that capability. So absolutely they are leading from the front in that area with the THAAD C2 integration.

Mr. Riki Ellison:

And Sean, one of the great things you do is cost curve. You break the cost curve. You're breaking the cost of us having to shoot down our allies' \$1 million or \$4 million interceptors on a \$30,000 drone. You've been able to create directed energy or counter-UA electricity to be able to deal with this at a cost curve break. Can you talk a little bit about any of those capabilities that we're fielding successfully that is forcing the issue to go under the cost of what they do to send their drones at us?

Major General Sean A . Gainey:

Absolutely. And again, with my old partner in crime, I believe General Thurgood retired is on here. But we did a lot of work up front and he did a lot of really good work inside of RCCTO of the directed energy and with the aggressive attitude of, "Hey, let's not wait. Let's pull this stuff forward." Some of the work with Air Force and RCCTO did with DE allows us to have that capability in theater.

Now again, as we work through operational assessment and eventually get to the point where it's going to be something we're going to scale, we're having an opportunity to test it inside of theater and high-powered microwave inside of an interceptor or just the ability to leverage it on some sort of system are really the key technology areas. High-powered, microwave, directed energy, and low cost interceptor. An interceptor that has an onboard radar that's able to capture with a net or some other sort of device, these drones and take them to an additional location are the type of things that we're talking about. And what I'm talking to you are things that we are leveraging with the Warfighter out there right now.

Mr. Riki Ellison:

And that's having a direct effect on the threat that's coming at you, because you could shoot these things down cheaper than they can make them. Are we seeing a deterrence because of your ability to do this at a cost factor?

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Major General Sean A . Gainey:

Well, I wouldn't step out on a ledge and say that, but I will say having more layers in your approach is going to give us that ability to handle larger raid sizes and the ability to eventually, yeah, do it at a cost curve. But at this point I can't factually say that. But I would tell you that added more layers to the kitbag is actually where you want to be.

Mr. Riki Ellison:

But Sean, you're ahead of White Sands. You're in the game where you're at, so you can push development here quicker than anywhere. And doctrine, you've got an open desert. So there's a lot of things here that nobody else can do in the world. They can't do this in Europe. They can't do this in Korea. You've got the open space to do everything you can to reduce that. Yeah.

Major General Sean A . Gainey:

Yeah, absolutely. And what I didn't highlight earlier is my partnership with RCCTO allows us to do demonstrations. And for our next demonstration we're doing two demonstrations. One in January focused on UCOM against a group three threat. Low cost group three capability.

And then we're doing another one in June timeframe focused on CENTCOM AOR. Same thing with group three type of effectors working very closely with industry. And you heard earlier about events like Red Sands in theater. We're going to support the COCOMs inside of theater with their exercise and experimentation by leveraging what we know in our deep database of testing capability, looking at capability, and potential solutions to that problem set, and getting it out there. And hopefully, if it's exportable, our partners will jump all over it and help us move it from a cost perspective even further and more rapidly.

So I think it's a great partnership. And you're right. We are fortunate enough to have that ability. And with our partnership with RCCTO, to be able to look at... I could pretty much tell you there's probably a system I haven't seen out at Yuma, and we have data on it from a counter-UAS perspective because we open it up to anybody and everybody that complains, and I think that's one of the benefits. We try not to screen out people. We try to bring as many as we can, but focused on that technology area.

Mr. Riki Ellison:

Okay. Thank you, Sean. Our next guest speaker is the J3, the director of operations for CENTCOM, Rear Admiral Curt Renshaw. So hopefully we're going to get a little bit of a Navy perspective here. Some of it, I know we have a heck of an Aegis BMD fleet, and some of them are right there in the gulf there with you. So ladies and gentlemen, Rear Admiral Curt Renshaw.

Rear Admiral Curt Renshaw:

Hey. Thank thanks for all you do, Riki, for the advocacy for missile defense. And it's an ongoing challenge that's grown really over my time in the service. And if you look at the threat in our AOR, it's a true manifestation of the fact that long range precision strike weapons have been commoditized. And by that I mean it's no longer the province of a superpower to be able to deliver long range accurate fires. And so when we look at our AOR, ballistic missile threat, for example. 30 years ago, in the Desert Storm era, these were sort of inaccurate terror weapons

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that were thrown up ad hoc. And now within our AOR we have a huge proliferation of fairly accurate weapons that have to be engaged and encountered.

Similarly, cruise missiles for years were really only a superpower or superpower-like military could dabble in cruise missiles. And at this point there is both the land-attack cruise missiles and the ground-launch cruise missiles, anti-ship cruise missiles. And that's a good example of how things have changed over the last 10 or 15 years. In 2006, Lebanese Hezbollah was able to hit an Israeli light frigate, a SAR-5 with an Iranian-supplied anti-ship cruise missile.

Similarly, the Houthis have been able to deliver land-attack cruise missile attacks against Saudi Arabia. So no longer is it that we have just one kind of small threat. We've got a high altitude, exoatmospheric threat, we've got the air raiding threat, we've got the MAN threat. And now in the last five years or so, the UAV threats. And as Sean mentioned, they go the spectrum. You go from a group three, four, five, which is almost like a cruise missile in terms of range and in warhead capability, just at a slightly slower speed, which can pose some challenges on its own.

And then in the group one and two level we're talking, if you've got an Amazon card and access to a hand grenade, you've now got an over-the-horizon weapon capability. So we've got to be able to work through all of those threats. And really, the challenge for us is that spectrum. That broad spectrum of overlapping capabilities that they present to us. And at the same time, the large numbers of threats that can be thrown against us.

And back to as General Guillot talked about, the people and partners and innovation. We can get after some of the capacity challenges that presents with good partners and the ability to integrate them. We can get after that with some of the things that General Gainey talked about in terms of the innovation of capabilities so that we can get the interoperability and the integration to work against that spectrum of threats.

And just a couple of examples: we've got a disparity of capacity and capability in the region, but we do have a lot of good capability beyond what just the US provides. And you mentioned Israel's down the AOR. If you go from the Iron Dome system through David's Sling, Arrow, Arrow 2, a pretty good spectrum. You mentioned the anniversary of the attack against UAV, where we had their Patriot systems, our Patriot systems, THAAD. All of that contributing with a partner.

And then you mentioned the World Cup. Again, Qatar, a partner who is growing, they've got the capability. Now they're growing the Patriot capacity as they take the systems they have and start to train and apply the manpower. So a lot of the pieces are there, and I think for us now the important part is, how do you make the whole greater than the sum of those parts?

And as we've mentioned a little bit with THAAD C2, that system is a good example. We at CENTCOM do what's called a Command and Control Interoperability Board. So we work with each partner and ally and then we work together with, "Hey, what data can we do? What technical solutions can we compare?" And this is a really hard bureaucratic process because you're talking about technical aspects, you're talking about releasable information, proprietary. Across the board this can be a challenging process. But if you have the ability to have that single pane of glass where all I'm doing is I'm asking you for your data and what data you're going to share, and then I'm telling you what data I will provide, we can get that into that layer.

We can take THAAD C2 really as just a counter-UAS system, roll that data up, and then we can work that into a larger command and control system that the ADDC would have at AFCENT

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throughout the AOR. Where now we can look at, where are we doing an air-to-air engagement? Who's got the right track quality? We have the management to have the defense in depth, but not wasting fires also. You can sometimes use a lot of interceptors that are pretty valuable on one target, where if you had a really good integration you get a depth of fire.

So you're able to take the shot with somebody in the outer battle layer, and then as it proceeds inbound you get that defense in depth against the leakers until you get to something like the LPWS. So for us, the leveraging of the technology where you can just take data, share that data, and then have that command and control fire. And we're really moving along really fast, I think, to take those steps. And it does create then challenges for the adversary when we have those sorts of depth of fire.

The other thing that General Gainey touched on is it's not just about the kinetic aspects of this. The ability to use passive defense systems, non-kinetic engagements will give us, again, more fires to apply to the problem. So there's no homogenous threat out there. It really goes from the exoatmospheric all the way down to just over the horizon with low end threats. And what is homogenous is all of that data is being sucked up into something. So if that data gets out, then we have this array of sensors and shooters that can be applied.

And if you get more sensors, then the secret sauce is those sensors are integrated into that system. If you get more shooters, they're able to integrate in that system. And you mentioned the Aegis capability. The beauty of Aegis is, if you can get that fire control track or you can queue that Aegis, it can be in an optimal position. But with the right data coming from up in the air, an elevated sensor or a sensor that's against an air-breathing threat or a sensor that is able to get a high data rate against that exoatmospheric threat, then Aegis becomes that more productive in terms of that depth of fire.

And that's the same with the Patriot all the way down to these counter-UAS systems and some of the indigenous systems that are in the region. So we're really looking forward to continuing the partnership not just with General Gainey and the Army, but really all of the services and all of our industry partners and all of our regional partners as we get into this era of innovation, data, and really using... not resting on our laurels, looking back 30 years ago when only we had this precision strike. Now we've got to have the capability to negate that and still employ our capabilities. Subject to any questions.

Mr. Riki Ellison:

No. I just want to follow up with you because when we think CENTCOM we think land-based capabilities and air-based capabilities. We don't think sea-based capability. And you have the best 360 degree platform in the world ever made right now to do missile defense 360 from the sea all the way up to space. And are you leveraging that the best you can? Or are you asking, like INDOPACOM is to put some of that on land, or not, or use the massive real capability that works today on that? So I'm just putting that forward to you because I don't think people relate Aegis BMD to the CENTCOM theater that much.

Rear Admiral Curt Renshaw:

Yeah. So we actually have Aegis BMD integrated into our planning for integrated air missile defense. We routinely do joint integrated air and missile defense exercises. We've mentioned some of the things we do with partners. We also integrate that Aegis BMD with the air defense commander for the region and now in routine exercises and drills. And we actually have some

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requirements for how much Aegis BMD capability we have in our theater. But we tend to focus on the shipboard, not fixed tight Aegis.

I think one of the things that we see value in is a little bit of mobility and flexibility. And so we have a fairly large defended asset list, and at the same time the threat just evolves very fast over time. We really now have almost a 360 degree threat in the region. And so to have a fixed-site Aegis at least to date hasn't made a lot of sense. It may be something we would negotiate with partners later on. But the Aegis capabilities and really the later baselines that have come online with both the SM 3 later versions, the SM 6 versions really give us a lot of flexibility as we design an air defense plan. Not just around a fixed capability, but the dynamism of what the enemy is presenting and then where we need to defend. I think, I, as a former commander of an Aegis ship, totally appreciate the value that Aegis brings and it certainly is incorporated in all of what we got in here.

Mr. Riki Ellison:

Your sense of data from these just goes on that paint in the glass that you want. You bring in all that and wherever they're to go and so forth.

Major General Sean A. Gainey:

Absolutely.

Mr. Riki Ellison:

I think we're going to ask a couple questions if I can, and I'll just open up to the group. I think the most popular question right now that I've got is the the NASAMs if they're good enough for Ukraine and they're doing very, very well right now and you've got partners in your region that have that NASAM capability, and I might go to Sean, but why isn't NASAM being looked at to be put in your theater?

Major General Sean A. Gainey:

I can answer that. Again, as we look at counter UAS capabilities, we've heavily gone in with a counter group three capability that we're very, very comfortable with and it's performed very well. And not that we've excluded, I mean we use NASAMs in the NCR area. We do leverage the NASAMs capability. It's just as we look at a counter cruise missile capability, the Army has done a selection process and has a capability that's being developed right now and it will eventually be the choice for the Army. That's why NASAMs hadn't been selected for the CENTCOM AOR.

Mr. Riki Ellison:

The cruise missile threat you've got handled until that transition comes, Sean? Do you feel comfortable with that or we're never comfortable?

Rear Admiral Curt Renshaw:

Yeah, I don't think we're ever comfortable against all the range of threats, but from a capability standpoint, again, our system that we're going to leverage against the counter cruise missile

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threat is the IFPC system that we've selected. And also, although we don't want to shoot Patriot, this Patriot also has a very good counter cruise missile capability also.

Mr. Riki Ellison:

Thank you. Here's another question. It's about the GCC partner contributions to AMD in the region. KSA is buying eight THAAD batteries, Qatar and UAE have made incredible investments in missile defense. The question, is there any movement in trying to integrate these capabilities among the GCC states and then with the United States?

Major General Sean A . Gainey:

I think the integration among the GCC, and I think it's important to note the GCC is not a structure like NATO. There isn't sort of that, an attack on one is an attack on all. Each country has their own individual relationships. To us the thing that makes sense is going back to that we take the data, we distribute the data and we really focus on that and not some of these interoperabilities. If we can get past the technical interoperability, that's how we see this working is we have a common picture that can be provided by our CAOC and so it's ingesting by whomever wants to share the data and then agnostic of where the data came from, we'll scrub the data in whatever way it needs to be and then share that with the other countries.

I think under the right constructs everyone's going to collaborate under a common threat and so day-to-day, although that bilateral sharing between individual countries may not be there, if we have that structure, we can build that over time and we've come a long way in doing that. And General Guillot has vast experience with it, so let him chime in too.

Lieutenant General Gregory M. Guillot:

The only thing I'd add on that is that the most important pieces for them is to buy interoperable systems. Patriot, Link 16, THAAD being able to have the systems that could be integrated into a common operational picture if the individual agreements between nation to nation permitted is the key there. And so as the partners you mentioned all have interoperable capabilities we're always working with them to see how we can better exchange information for stability across the region and it'll always be a primary focus of General Karilla.

I think if you recall I said having a all of these works nested through a partnership concept in building people, partners and innovation, we're always going to look to build agreements and arrangements where we can exploit our interoperable systems across more than one country.

Mr. Riki Ellison:

To basically say, will C-RAM be effective in Ukraine. And you've seen the group three drones, the Iranian, Shaheed 136 being used in Ukraine and you've encountered them here in your AOR. Is there anything that we can transfer or share with Ukraine that you're doing to counter those things?

Lieutenant General Gregory M. Guillot:

Go ahead.

Major General Sean A . Gainey:

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I mean I'll take that. The C-RAM system's highly capable. You look at the high volume of bullet rounds and the ability to be effective against some of these slow, low type group three UAS. Yeah, I think it would be highly effective system that I won't get into the details of what type of equipment we select to provide to our partners, but I would tell you it's a very good system and from the lessons learned piece might have highlighted earlier, it demonstrates the ability to use more than just an interceptor against some of these capabilities. Sometimes the ability to use high volume bullets or precision bullets can work just as effectively, but it comes back to the sensing piece, being able to see it to put effects on the target set.

Lieutenant General Gregory M. Guillot:

Riki, one other aspect to build on what Sean just said is that with the Ukraine and the US involvement over there in Europe, we've established a lessons learned work group. And what that does is it takes our knowledge of that very specific threat that you mentioned and when those became a threat to that region, we gave them everything that we had from our several years of trying to counter that threat with the systems that Sean provided for us. And then they are using those TTPs as well as new innovative ways that they've come up with and they have a routine board lessons learned board discussion group and we participate in that. And so we gain all of their knowledge and pass whatever we can to build a broader community of capability and it's worked out really well for both their command and for ours.

Major General Sean A . Gainey:

And I would add from if you read media reports, I have no reason to doubt those. They've gotten very effective against the UAS threat. And so lots of stuff that we can take away from their use of some of the same systems that we have that will benefit all of us in that regime.

Lieutenant General Gregory M. Guillot:

Yeah, absolutely.

Mr. Riki Ellison:

I think I'd like to wrap it up and to have you give a conclusion summary of what you would like to end the conversation with, but thank you very much for participating. Sean, you want to go first?

Major General Sean A . Gainey:

Just quickly, again, Riki, thank you for this opportunity. I appreciate any time you give us the opportunity and a platform to highlight some of the great work being done by not only the team within the joint counter US office demo fires, but also the soldiers, sailors, airmen out there taking whatever gear we give them and then applying, working hard to understand it's capability and putting it in effects and then the COCOMs for the partnership working with us. I just want to focus my comments on that and defer the remainder of my time to the CENTCOM team.

Mr. Riki Ellison:

Sean, you guys play with what you got and you've done a phenomenal job of playing with what you've got with capability that works and you've bounded that together. You've used it, you've leveraged it, and you've stayed ahead of the threat and you've done it for 30 years and everything is evolving that way and it sometimes seems that our other AORs or other COCOMs

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are trying to create a different way. You are the lead on this and we would love to get you out more to be able to move what you're doing successfully and the other AORs that need this capability right off the mat. I congratulate you on what you're doing with the joint counter three and below. We got to obviously get that joint above that and to include those seams. There's no seams with hypersonic defense all the way down to IMD and ballistic and cruise and you're the guy. I thank you for what you've done in that aspect of it. Curt, you want to wrap up?

Rear Admiral Curt Renshaw:

Yeah, thanks again for hosting this and I'll just close by saying that it's been a phenomenal partnership with General Gainey, the Army and really all the services to push things into our region that don't get hung up in programmatic design time. And there's an important aspect of testing evaluation, but if it's good enough, once we get it out here, we get it in the hands of our people and American ingenuity kicks in and now we've got the partners and going down that road as well.

But I will tell you, I think every week we get an update from one of our component commanders, whether it's Air Component, the Naval, our commander in operation inherent resolve in Iraq and Syria of something new they've done with old stuff or something where they've taken new stuff and integrated it with old stuff to get that capability out there. I have a lot of confidence in the way forward and it's really just based on a good partnership with the services, a good partnership with our allies and partners in the region and then the flat out ingenuity of our people.

Mr. Riki Ellison:

Thank you, Greg?

Lieutenant General Gregory M. Guillot:

This was great. And the fact that you do this year after year is really beneficial for us to participate in these forms. I'll go back to General Karilla's strategic approach of people, partners and innovation. And that's really been the difference in our ability to improve the capability of our defenses faster than the adversary can develop new offensive capabilities. We wouldn't be able to do that if we didn't have really great people and by that I mean our soldiers, the sailors, the airmen, the Marines and the guardians that bring in a lot of the space look for us finding new and innovative ways of solving problems.

And then the partners, not only our current partners, partners like you and our regional partners, but Sean being a great partner. Sean and I worked side by side when he was the double AMDC in the Pacific. And so he and I talked every day about a completely different problem set and it's really great working with him again on a different problem set in a different theater. But the result is the same is he's full throttle trying to get us capability and he's doing a great job of that.

What I think you'll see in the future, if we were to have another one of these talks months from now or a year from now, I think we would be talking about the accomplishments of the Red Sands integration and experimentation center that we're establishing in Saudi Arabia where we can bring our regional partners in to live fly shoot downs of group three simulated LACMs and build on some of that partnering and picture sharing that you mentioned earlier.

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And then we didn't talk about it, but we routinely, at least once a month, we have live fly exercises with five different partners where we have UASs flying through. Can we detect them? Can we talk about them? Can we pass them off to the next guy and go in for a simulated kill on them? And I think in a year between with what Sean has given us on new capabilities, our ability to test it and experiment it with in the Red Sands range in Saudi Arabia and then practicing that with our partners in the various sands exercises, I think that we'll have a good story to tell you six months from now and a year from now, even better than what we've been able to tell you today.

Mr. Riki Ellison:

Thank you, Greg. Hey, what a great dynamic you're in. You've got the joint part really ahead of everybody and that bilateral relationship of trust now with all that capacity and resources already in your theater, in joining that together, including Israel, to be able to play at a level that is so layered and so good that there's no way nothing can get through. That's where we got to go. It's close and it's difficult, but you're doing it because you're proving it out at the three drone below. You've got to continue to get that one pane with all that sensor information from them so it doesn't harness our resources and enables them to pay for their defensive capabilities and be able to work with us to do it.

And again, this is a model for Europe, this is a model for Indo-Pacific and it is challenging and that level of trust and leadership is huge for you and your team because that's what this is about, bringing that team together and the diversity of that team, that they've got a common threat there. And I think you keep doing what you're doing and applying those lessons that you've learned directly to Europe, to Ukraine to enable you to even be better or stronger and so forth.

Hey, thank you. I really appreciate the time that you've given us to be able to educate us on what you're doing. Greatly appreciated Sean and Greg and Curt. Thank you very much.

Lieutenant General Gregory M. Guillot:

All right, thanks Riki. Appreciate it. We'll talk to you soon.

Mr. Riki Ellison:

Okay, thank you.