Training for Fusion:

General Hawk Carlisle, ACC

Lieutenant General Darryl Roberson, AETC

David Buss, Cubic Global Defense

Mike Boera, Raytheon

Billy Pate, L3 Communications

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Moderator: I'm going to take just a couple of seconds up front to make some remarks to put this subject in context.

Now [inaudible] 21st century affected military solutions will be determined by how we're able to harness attributes in the information age relative to our potential adversaries.

It's critical to acknowledge that information and mismanagement is just as important today as the traditional tools of military power -- airplanes, satellites, infantry, and warships.

Information and data is a force evolving all these tools from isolated instruments of power into a highly integrated enterprise that will determine success of failure in future warfighting.

Fusion warfare is a concept that is interrelated with this whole notion of the combat cloud. In an operating paradigm where information, data management, connectivity and command and control are core missions [inaudible].

This means we not only need to get serious about faster and more capable networks, but we have to fundamentally change the paradigm of how we fight because information is now the dominant means of modern warfare.

As General Carlisle has remarked, "We need to understand that platforms like the F-22 are information machines, far above and beyond being killing assets." Operations over Syria validate this assertion. With F-22s employed as information nodes, dramatically increasing the situational awareness of the entire Joint Task Force.

The same will hold true of other aircraft and systems from the other services. Whether F-35s entering the Marine Corps and Navy, information centric platforms like the DDG-1000 destroyers, or the Army's reliance on improved technology to control disparate areas and assets on the ground.

Creating the realities of a combat cloud to conduct fusion warfare has major implications for how we train.

This morning we're fortunate to have with us a distinguished panel with [threats] and implications, and following their brief opening remarks, we'll engage them with your questions, so start thinking now. Because one of the things that we're going to change in this panel is we've arranged for this to spend more time on your questions and answers. The remarks up front are going to be pretty tight.

Copies of their bios are in your program. I'd like to briefly introduce our panel now. From your left to right we have General Hawk Carlisle, Commander of Air Combat Command; Lieutenant General Darryl Roberson, Commander, Air Education and Training Command; Retired Admiral Dave Buss, President, Cubic Global Defense; Retired Major General Mike Boera, Information, Intelligence and Services [Executive], Raytheon; and Mr. Billy Pate, Vice President of Engineering at L3 Communications.

General Carlisle, over to you.

Gen. Carlisle: Thanks, General Deptula, I really appreciate it. It's a great opportunity to be here and have this discussion, so we'll keep it fairly short. I'll kind of go back to that comment I made earlier today. We're the greatest Air Force in the world, in my humble opinion. We're the greatest nation in the world. And I think our advantage over time has always been the way we think. And whether it's our industry partners, our airmen and the tools we give them and what they're able to do with the tools. They exceed our wildest expectations. When you hand them something, they figure out better ways to use what we give them. So the real question in my training for the world that we're going to live in is, how do we unleash that thought potential inside these young men and women that are doing just amazing things for us? It's just truly astonishing in what they come up with when they have the wherewithal, the environment, the latitude to think about things in a way that we haven't previously.

We had a great discussion with all the leadership in the Air Force on training in the future and what we're going to do, and my good friend [OBD] here will tell you that you get competency and capability and readiness through a combination of training and education and experience.

So in the world that we live in, in fusion, as General Deptula talked about, you know, F-35s, the B-21 of the future, the F-22s, what our next JSTARS looks like, how we modernize our [inaudible] battle management system. How do you unleash the potential of

the minds of these young men and women that are going to use those airplanes? Synthetic is a big part of what we do because we can give them the latitude to understand things and experiment in a synthetic environment that has some attributes of its own. The combination of instructive and live and construction [of the] virtual. And then at some point we'll look at how well we're able to move from live, virtual, constructive and bring them all together.

But I really do believe, and our industry partners are great at helping us across the board is, give them the environment, give them the latitude and allow those incredible young minds we have in our Air Force and industry to examine all the different ways. And we will, invariably, come up with better ways to train and do things as we move forward.

From my perspective at Air Combat Command, get trained and ready forces to the combatant commanders. That's my job. And the more I can do to give all those folks from my [14A] intel folks, to my RPA pilots and my Raptor pilots, my AWACS controllers, an environment where they can continue to expand on the ideas that they have of how to take advantage of fusion and C2 and the OODA loop that is inside our adversaries' OODA loop.

I look forward to your questions. Thank you very much.

And there's nobody to help me better than this man right here. We'll defer a lot of our questions to you, I'm sure.

Lt. Gen. Roberson: Good morning, ladies and gentlemen, Madame Secretary. Thanks to General Deptula and AFA for allowing us to spend a little bit of time talking about this. It is my pleasure to be here to talk to you about the great things that we're doing in Air Education and Training Command. The first command. It's the command where we recruit, we train, and we educate all of our airmen in the United States Air Force, the world's greatest Air Force.

We heard a little bit about anniversaries in the first session this morning, so we're celebrating the 70th Birthday Celebration for our Air Force and it was mentioned that it's been 100 years since World War I when we started our first squadron. This year is the 75th Anniversary, the birthday celebration for Air Education and Training Command.

Air power does start right here in AETC. What we're talking about is critical. And fusing air, space and cyberspace into

concentrated, highly lethal, precision superiority translates into combat power.

What I want to do is just spend a minute or two on what we're doing in AETC to get at this, some of the effects that we're looking for, and some of the thinking that we're doing right now.

So what we require overall continues to be agile airmen. Highly trained in their primary duty, but that understand how they can best synergize across multi-domains and in the joint environment. We have many examples of where we are, already doing this in our Air Force. Some being battlefield airmen in our Special Operations forces for sure; but we need to take this approach to all airmen. So our focus is not just on how to train for the many different Air Force domains, but how to train the joint mindset as well. To get to know your, infuse this information network with the maritime and the land domain as well.

And the premise behind this level of command and control is the ability between our services, our joint partners and even our coalition partners, to network and fuse the data to do it better and faster, as General Carlisle mentioned in his talk.

We in AETC must learn and prepare to fight at the highest level of integrated data fusion while also remaining proficient at fighting in the dark and with little or no technology at all. We need to develop our airmen into cross-domain, joint network integrated warfighters, and our approach basically is to bake it in, to start from the very beginning with this mindset and we're on that path. We're just starting on the path to do this for our Air Force. We want to do it throughout a whole career.

We need to encourage diversity of thought and establish joint collaborative environments where organic growth of a community of practice in multi-domain warfighting can flourish. We're confident it's the airmen who are really going to take it to the different levels.

AETC is already moving out a concept that will help train our airmen warriors with cross-domain experience through more agile training process. We just spent quite a few days talking about much of this.

One example is our cyber warriors. We have a cyber warrior training pipeline and we're currently working on, with Space Command, to establish a more agile process in training that gets to other domains as well.

Another example, obviously, is the F-35. A difference maker in how we can carry out command and control and fuse all the components of warfighting for future conflict. And in these future conflicts, the 5th generation fighter aircraft is our key to ensure air superiority for the United States. An example of how AETC is moving forward on this is bridging the technological gap between our current trainers and that 5th generation capability. So the T-X is critical for us. It's central to our ability to transition, to bring in more of its network warfare and fusion, and start training our students from the very beginning on what they're going to see when they get out operationally.

The 50-year old T-38s cannot meet the need for high-end sensor management the way the 4th and 5th generation airplanes demand. So the T-X is going to help us close this gap. It's going to be very important for us, and we will not only train our airmen in this networked multi-domain environment, but we're going to be able to produce better aviators, better pilots in a shorter period of time using all of this technology the T-X is going to bring to us.

So we see our Air Operation Centers as being central to being able to train and teach about this cross-domain environment as well. We're going to take full advantage of our Air Operation Centers and the work that goes on there. And we're going to expose more airmen to the network fused operations.

So for the future, successful [community] warfare will be possible through collaboration and integrating all of our military efforts, and also academia and industry with the innovation that you're able to bring along.

Right here, right now, this event is where we are having a step in the right direction in achieving our goal of moving forward in the future with fusion warfare. So I'm excited to be here. I look forward to your questions. Thank you.

Mr. Buss: Good morning Madam Secretary, Generals, I'm Dave Buss, recently retired three-star admiral from the United States Navy. In that regard I feel a bit like a fish out of water here at AFA. It's a pleasure to be here with you and I'm honored to be a part of a panel such as this.

I bring perhaps a two-part perspective to the discussion about training in fusion warfare and how we think about the future.

One is my recent past as a combat aviator in the United States Navy, and the last job on active duty was as the Navy's air boss, [Inaudible] Command Naval Air Forces where I had Title 10 responsibility for the manning, training and equipping for the aviation side of the Navy. The aircraft carriers and the squadrons that made up the Navy's aviation arm.

And it was interesting listening to General Carlisle's presentation this morning because I think one of the common foundations that the other services and the Air Force have in common is the challenges and the foundation upon which we can build. General Carlisle showed the [OB-1] that showed a very complex battle space in the future with a lot of lines that connected different entities and platforms, and it's defining those lines and the information that is passed through those and the folks who make up the force and how they're going to be trained to operate in that environment that really is the key to unlock the success to the future of how we operate and win, fight and win in a contested environment. And so we did some pretty deep thinking about that while I was on active duty.

General Carlisle mentioned the NIFCCA this morning. The Naval Integrated Fire Control Counter Air which has two threads to it. Perhaps we can talk about that a little bit more. But I think there's an awful lot of joint application, and particularly joint training that's going to be required to be able to fight and win in that contested air space in the future.

More recently from the industry perspective, I've been with Cubic Global Defense now for almost two years, and as its president, I'm responsible for deriving and delivering the training solutions for our future warfighter.

So when we think about this contested multi-domain, cross-domain environment of the future, and how we will fight and win, what my mission now is to provide the training solutions that help each one of you succeed in that environment.

I believe there are a number of components that we could talk about today. Certainly the integration of live virtual constructive training entities in a way that makes sense for the warfighter as part of that solution. In fact, I would argue pretty strongly that the only way we can prepare adequately for the contested airspace and battle space of the future will be through this correct blend of live virtual constructive training entities. So we can talk more about that.

Again, it's a pleasure to be with you this morning. I look forward to your questions.

Mr. Boera: Madame Secretary, General Deptula, General Carlisle, [inaudible]. I'll say that enlisted, captains, majors, colonels in the audience today, and those that were with me as captains, majors, colonels that are now the generals in the audience today that took care of me when I was on active duty. It's a pleasure to be here. [Inaudible] could probably be in my stead here on this stage. It's a tough act to follow General Carlisle.

One story was when we went back to [inaudible], when I came into the building the first time, [inaudible] multiple times to sit down with me and go here's how this is going to work. So I very much appreciate that and have fond memories of that.

So there I was last night when General Deptula gave me the words about hey, you know, that five to seven minutes that I gave you? It's really one minute. So I went deja vu all over again. Remember that $604 billion that the Air Force was supposed to have across the POM? It's not $550 billion. So it's reliving the '15 POM, the sequestered BCA POM all over again.

And a theme back just a few years ago was, if I had one more dollar I'd give it to C2. The conversations were at the high end. Do we do the air superiority first? Do we do global precision strike? Do we do C2? And like General Carlisle, I have a little bit of a passion, having been the AOC Commander out at PACOM and then after PACOM the Deputy J3, about, you know, the real challenge here is C2 integration, the network, and basically ensuring that network superiority at a time and place of our choosing. I used to call it, my AOC was Operation Lightning Bolt, because all [inaudible] those Obi-Wan Kenobis that have all the lightning bolts, and the basic question was, which one of those actually are fielded, working? Okay, which ones of those ae feasible and budgeted. And then which ones of those are pure pipe dreams? And there was a lot of lightning bolts that went off the Obi-Wans once that happened.

I've been able to carry that kind of attitude over to industry with Raytheon where I've tried to bring an operational perspective to the [OC] effort, to our multi-domain [inaudible] sim effort, because it's a way to get after this. And so that integration piece that yesteryear might have been the, one [end] might have been [N]. It's great to see that now it's more like number one. So that we can maximize the capability that we bring to the fight.

So again, there I was, you know, the best ideas you have, you put on napkins. So I was on an aircraft coming out of [WEB TAC] and sat down and next to me, well first off, I pulled out my AFA magazine. Okay? No kidding. I'm sitting there. You know how you get in your seat and you're kind of settling in and you're going to be okay, this is my space, this is whatever, but there was a young man next to me and he spoke up first and said, sir, I'm going to guess that you're a colonel, a [SAS] grad, and a fighter pilot. I said well, he obviously got my attention, I looked at him and -- little did he know that I was just reading the captions in the AFA magazine, so he was confusing me with a [SAS] grad that actually can read a book a day, you know, and actually remember what they read.

So we got to talking, and he was a fighter pilot in UASFE, and had just come out of [WEB TAC], had worked the operations over there. So although I've been retired for a couple of years now, I try to stay in touch with the front-line folks, so I started asking some questions, knowing I'm going to be on this panel.

He said an interesting thing about C2. He said it's "mother may I" C2. And so this is all about training. We dug into it some. And it was because of the environment that we've been fighting in now, the COIN, the CT, the permissive environments, that not all the forces are trained equally. You have the fighter pilot that may be trained to a certain level out there, kind of independent minded. As General Carlisle said, the best thinkers that we have. And then you have the air battle managers and others that are in the C2 loop. Are they all trained at the appropriate level? And will they be trained for that high end C2? And I it's a "mother may I" C2, are our enlisted and our battle managers trained for the commander's intent the same way that our fighter force, combat force is? And vice versa, are the combat forces, those 5th gen platforms that are out there that are providing battle management command and control, do they have the temperament for that aspect? Is there a module of training within their training that actually has that battle management temperament? And how do they divide and conquer if they're the tip of the spear clearing the lane, and they also may be the only voice in a distributed control type of environment?

Those are great training questions to try to come to grips with.

There's a couple of key pieces here, and General Deptula, I've had experiences with him on a couple of things. Some take-aways. This trust. In multi-domain fusion warfare and such, and the

Chief has spoken about it. You know, command and control can become command and coordination when you talk about the IC and with different authority folks. How do we build the trust among them?

I've had this discussion with General Salzman and we've shared experiences of okay, at one time General Deptula wanted to bring some NSA folks down and why [inaudible] the AOC? And some of us were having the conversation about well how did [inaudible], this, that and the other thing? And overnight, we basically had the conversation, hey it's about getting that person next to this person and start building relationships. Because the sharing of information that needs to come in fusion warfare is going to be, the collaboration of such is going to be facilitated by trust. So can we build those trusts to actually have that true fusion warfare? Can we get to that multi-domain capability where we can actually model [and experiment], working operationalized multi-domain by the Air Force Future Operations Concept of the 2030 time frame?

The captains and the majors and lieutenant colonels and such in this audience today, 13 years from now are going to be the generals making those decisions of fusion warfare. And they're going to come with a five-year period where they did not get the training to the max extent that some of us on this stage did because of sequestration and the BCA. That's a bubble that's going to go through. How do you catch up? Red Flag just happened. Red Fag used to be the norm in the [CBO] environment, happening once a year or once every two years for everybody. Is that the case for those high end Red Flags today? Probably not. So there's going to be a void, and how do we make up that training for that void?

So to get off the stage, I think C2, we need to get that first dollar when you're doing [inaudible]. You've got to build trust across organizations and that will take time. There's no explicit solution out there, so using a crawl, walk, run process there's tools to get after this and start putting it in the [light]. And then I'm going to echo General Carlisle's words that I have faith in the future. My son-in-law is flying the F-35A now. My son is on his way to Beaufort to fly the F-35B. I have faith in the airmen out here to get the job done. We just need to give them the tools and prioritize some of the things correctly now if we're going to maximize to get in and out at a time and place of our choosing.

Thank you.

Mr. Pate: Good morning. First, I'd like to thank everybody involved in putting this together and giving me the opportunity to speak today. It's a privilege and an honor, and I appreciate it.

My name is Billy Pate. I'm the Vice President of Engineering at L3 Communications, Simulation and Technology. I'd like to take a moment to give you a little bit of my background. I recently joined the simulation community, about seven months ago. Prior to that, for the last 20 years I dealt in UAVs, and so when I thought about fusion with respect to UAVs, it was always taking multiple disparate information, trying to glom them together, trying to put the right data in front of the right person at the right time so that the right decisions are made.

And so when I came over to the simulation and training world, we build pilot simulators. And so a big part of that is making sure that the simulator replicates the airplane as exactly as possible. We go to great lengths to make sure the seat is right, to make sure the buttons and everything are right. The throttle feels right. All that. So I didn't initially see a lot of fusion in what we do. As it turns out, I was maybe a little bit wrong in that assessment. Where our fusion takes place is feedback to the instructor.

So a very simple example of this is if you're going through a mission and one of the things we want to monitor is how active is the student on the rudder pedals during this operation. Well this might not be something that the instructor can see. They're set back, they maybe can't see the feet. So you give that feedback back to the instructor after the maneuver is made. You go back and say the computer says here's a plot of the rudder, we think that was excessive. We recommend these remediation steps. The instructor can come in and say no, in fact it looks good. Or, agreed, let's do these two things and move forward.

So a lot of what we do in the fusion world is to try to improve the effectiveness of the instructors.

So at length we look at fusion from three different perspectives. We have a [human] centric perspective, we have a technology centric perspective, and a [inaudible] centric perspective.

From the human centric perspective, we create models of the brain. So we try to figure out when we take information and put it in, is it the right situational awareness? Is it going to

create the right decision-making activities? We look at metrics. So metrics, there's [easy] metrics, there's mission level metrics. Did we meet our objectives? Did we spend too much time? Did we spend too much money? Did we lose the [assets]? Those things are pretty easy to measure.

And you can get into a little more of the esoteric metrics, looking at things like biometrics. Did we overload anybody? Are they too stressed out trying to do this operation? Would this really be effective on a day-to-day basis?

Then you can get into the higher level metrics of is the team communicating well? Are the right decisions being made at the right time? Those are some of the more esoteric metrics that we look at.

When we get into the technology, one of our products is a [right brain] technology that has an adaptive learning engine, it's got a rules-based engine, and it's got algorithms that take, ingest a lot of the [data]. And we give that high-level value back to the operator.

We also work in the live virtual constructive environment that's been noted before. We did a demonstration back in November where we had live vehicles flying around all around the world, we had a simulator flying back in Arlington, Texas, at Wright-Pat, all networked in over the DMO, talking DLS, HLA, whatever the interface. And all that data coming into the central location.

So for testing we have something we call the Ideation Center. It's much like a command center. It's got the standard 20 [foot] screen so you can't possibly consume all the information from it, so it's a really good place where we try to measure how good we're creating our dashboards.

So when we fuse data, we fuse information together, we'll put it into some kind of a dashboard and give it back to an operator.

So you can look at, you can have somebody trying to watch the 20 screens and see what's going on and you can have a different student watch the dashboard and see who comes back with more effective information.

So that's really the way we attack the fusion [inaudible] simulation and training. Thank you for the opportunity to speak.

Moderator: Okay, let's hear what's on the audience's mind. First question for General Carlisle.

What are the institutional and organizational obstacles that are preventing us from implementing a 21st century model command and control across all domains that enable multi-domain fused warfare faster than any adversary's?

Gen. Carlisle: That's kind of the million dollar question. I think the impediments are pretty obvious. We bought and procured and fielded systems kind of in a stovepipe way. The classic example is we have a different datalink on our 4th generation airplanes and two different ones on two 5th generation airplanes.

Working with our Navy brethren, as Admiral Buss talked about, at NIFCA CA and [PTSE] which was part of the datalink plan for the Air Force, and [inaudible]. So I think the biggest impediment is the fact that we built all these stovepipe capabilities, all in good meaning, fully [inaudible] intent, but not interoperable at the level that can [get to] the fusion engines and taking advantage of the sensor suite, and we have the right data languages and we have [open mission] systems, no power [projection]. So those have all created the environment that we're in.

And then I think organizationally the things that have been a challenge I think are, even within our own, you know, tribes and in our Air Force, tribes in our sister services, be it the Navy or the Army, and whether it's the submariners or the air [inaudible] or the surface guys or it's the infantry versus the armor, we had a tendency to modernize within those individual tribes and we didn't have the organization that's integrated across all of those.

So what we need to do in the future, in my opinion, is open mission system, [inaudible] architecture, common standards, common approaches to the data networks that you're operating on, and I think General Pawlikowski and the folks at AFMC and our national lab as well as our FFRDCs are really helping.

Cross-service we have to do that as well. The JO organizations, the joint air dominance organization at the Pentagon is one. We need to take advantage of that. And then I think [tribally] within all the services, we've got to get that integrator that drives the common architecture that isn't making decisions, but they will stop something if it's not fitting in line with the rest of the architecture.

So there's an integration piece to that at the cross, multi-domain, when our Chief and Secretary have been talking about multi-domain and command and control. Multi-domain fusion, the things I talked about this morning. You know, the TLAM network is totally different than the data network for air platforms, yet if you have a sensor suite airborne and a TLAM that's coming out of a submarine, the ability to integrate across there is huge.

So that's where I think both organizationally we have to get that integration capability. The Air Force is looking at some ways to do it in our Air Force. We talked about some organizational changes that we may look at with [inaudible] integration capability. And I think we need to do that across the services because all six domains -- sub-surface, surface, land, air, space, cyber -- are all going to have to be integrated to get to the C2 fusion level inside the OODA loop that is an adversary that's attacking every one of those domains at a [inaudible] level.

Moderator: Thanks very much, sir.

General Roberson, the first plane you ever flew was the F-4 with one radar sensor and truly stick and throttle. Since then you've flown F-15s, F-16s, and then F-22s. What do you see as the biggest differences between there aircraft in terms of how we integrate them into the battle space?

Lt. Gen. Roberson: Just a little difference between the F-4 and F-22. But that really shows my age as well.

When I started flying the F-4, one sensor really was the radar [inaudible] eyeballs of the pilot and the back-seater. The transition during my 33 years from flying that F-4, where really we had a mission, we planned that mission before we went on it. We knew our strike line. We knew our target. And we were going to do it regardless of what else was going on around us.

The transition through the F-15 and F-16 and then to the F-22. To me it's kind of like going from the first time I opened a cell phone or put a cell phone in my hand that wasn't attached by a cord to the wall, I couldn't believe it, to what we have today which is, and I'll just use one example, but networked Apple ecosystem, if you will, where you have your phone and apps can tie into it, you can access whatever you want, you can get whatever information you need. We're striving to get there in the warfighting domain as well.

So the F-22, now I haven't flown the F-35, but the F-22 brings in so much more information from so many more sensors, and the key thing was that that information was fused for the pilot before it was even presented.

So in the F-4, even F-15 and F-16, it was federated, so you had to do a scan, you had to get your information from the radar, get your information from the RAW receiver, put it all together in the pilot's brain, and figure out what you needed to do next. Now with the fusion system of the F-22, it's all presented there. So you become a different level of player in the F-22 and F-35, like what we're going to do. More like an AWACS than a single fighter. So you're able to integrate on the battlefield, you're able to understand what's happening in a much better way. The situational awareness is much higher. And in fact our 5th generation airplanes today are really becoming battle managers for everyone else that's in that playing field. So it's incredible. Thirty-three years, it's unbelievable the change, and I can't wait to see what's going to happen in the next 30 years.

Moderator: Thank you very much.

This will be our last question in the interest of time, so Admiral, if you can tighten it up we'd appreciate it. But Admiral Buss, as the Navy's most recent former air boss, can you give us any insights into what the naval aviation community is moving towards regarding fusion warfare, and how to best prepare for a [inaudible].

Mr. Buss: Thanks. I'll be a little bit circumspect and careful with my response because I'm a couple of years now out of uniform, but I mentioned a few of the items already in my opening remark. I think the ConOps that are being worked on, the TTPs that will be derived from those ConOps with thinking about integrated fire control not only in the maritime domain but in cross-domain I think is an important first step.

Generally speaking, and I think most in the room would probably agree with this, our training infrastructure generally lags the development of ConOps and TPPs. That's both a blessing and a curse. The blessing in this, I think it provides us great opportunity to do all the things that General Carlisle kind of talked about earlier this morning in terms of how we think about training for the future fight.

The other point that I would make, is I think that integration is one of these terms that kind of rolls off the tongue. When you think very deeply about what integration means, not only among the services and the joint fight or combined fight with our partners and allies, but also within capabilities that you already have and will for some period of time, and integrate them with something new in that battle space.

So for example in the air domain, the integration of 4th gen and 5th gen fighters and how to pass information not just via datalinks and how we work our way through that, but how we think differently about the concept of employment for those assets in this contested environment of the future is something that my service has given an awful lot of thought to. And you couple that with the reemergence of, it's almost back to the future in terms of some of the Cold War attributes of the [denied environment], and you think about the reemergence of electronic warfare and the importance of being able to manage the electromagnetic spectrum, both from a defensive perspective and also offensively, that adds a whole new flavor, again, to how you train and think about your training for this contested environment.

Moderator: Thanks very much, Admiral. And thanks to all of the panel members for taking the time to be here. To the audience, thank you for participating.

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