Integrating the DAF Battle Network

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Brig. Gen. Luke C.G. Cropsey:

Well, good afternoon. Welcome to the panel today. I got to say, every time I show up to one of these, and this is I think number four for me since I started, I'm always amazed that people keep coming back for them. And I'm reminded actually of a quote that I heard General Colin Powell say once, he said, "Hey, if people aren't following you because of your leadership, they should at least follow you out of a morbid curiosity about what's going to happen next." So I'm wondering which side of this we're on some days.

But I think we actually have a really good panel for you this afternoon. I'm going to let each of the panelists introduce themselves here in a minute, but before we started, I just wanted to give everybody some scene-setter context for what follows, and a little bit of an update on where we are across the department when it comes to the C3BM and the DAF Battle Network. And I told you, I think, back in the September AFA that it's here and now. It's not a future construct. It's capability that we're hitting key milestones on. We're delivering key capability right here, right now. And so I just want to give you a couple updates on that.

First, the cloud-based command and control capability that we are putting into various air defense sectors is now operational at the Eastern Air Defense Sector. And we put that in in October. And it's now also operational at the Canadian Air Defense Sector, which happened last month. And we're just going to keep rolling it out, and we're just going to keep adding capability to that suite of tools so that we're providing our air battle managers and the folks defending the homeland with the tools that they need to keep us all safe. So that's super exciting.

The other thing that's already happening is we are delivering digital infrastructure out to the field today. Since we talked at AFA in September, we have now delivered 16 Tactical Operations Center-Light into the field. They're experimental units that we're using right now to kind of flesh out the details around what that looks like and how we're going to use them moving forward. And we'll talk some more about that in the Q&A coming up.

But I wanted to let folks know that there's real capability out on the street right now on the DAF Battle Network front. And it's not just theory at this point, it's happening and it's happening. In large part because of the absolutely incredible support and teamwork that we're getting between the government and our industry partners, and you're seeing three of them up here today.

As we're moving forward we're continuing to make contract awards. We recently just awarded track fusion, a set of contracts to Lockheed in Connecticut, as well as to SyTech. So they're on a six-month sprint right now looking at track fusion capabilities, and more to follow. So lots going on in this space, it's very dynamic. There's a lot of things that are happening in various exercises and events that are occurring across the department. We'll unpack some of that for you this afternoon as well.

So as we start in here, I've asked each panelist to just provide a couple minute brief intro in terms of who they are, what they're doing, and then we're going to dive into some, I think, really good conversation around the current state of affairs. I have over here to my right, Jon's going to kick off here, and then I'll pass the baton over to the next crew.

Jon Rhone:

Thanks, sir. It's an honor to be here and I appreciate the opportunity to share some thoughts. Jon Rohne, I go by Big Dog. I've been out of the Air Force for about two years now. Before that, 24 years as an air battle manager. And I proudly, at the time, took every opportunity to point my finger to industry and said, "You guys aren't giving us what we need or what we want." And so now I'm on the other side and there's a lot of people out there that I worked with or worked for who are ready to point the finger back at me now, so I completely feel that. I feel like I am still 100% operator until I get kicked out of the club.

And one of the things that I really try to focus on in the business side is remembering the human component, the human aspect. A lot of the technologies that we talked about, a lot of the things that we're trying to do are steeped in about 30 years of lessons learned. A lot of those lessons are not in the highly contested environment.

So we're thinking about technologies and we're thinking about ways to integrate that does not necessarily take the human factor into account. The individuals that General Cropsey talked about, the air battle managers, people who battle manage, who may not be air battle managers, people who have to control the fight, people who have to command the fight. And that was intentional not to put BMC2 all as one because they're different things, but those are the things that we try to focus on in industry. So I'm happy that we still get an opportunity to talk to some of the best and the brightest minds to let us and industry know what it is that not only they need, but what they want. Because if we deliver a system that people don't want to use, then it's not going to get used, they're going to find workarounds and ways around that.

General Cropsey mentioned CBC2 happened to be associated with a company who had a successful delivery of CBC2. I think a lot of that success had to do with the access that we had to the operators and to the right kind of operators. We're going to go after, along with Boeing and GC2IT, TOC-L, and I think the success of TOC-L is also going to be based on how much access we get to the right operators who can use this capability.

If we had opportunity to go on every training exercise, tell some of our engineers and our technical folks that there's nothing like watching the chaos of a bunch of air battle managers or people make a decision, and it's one of the most complicated things that we do. And I'm happy to have an opportunity with Elaine and Steely to talk about the best way to get that to you. Thanks.

Brig. Gen. Luke C.G. Cropsey:

All right, thanks, Jon. Elaine, over to you.

Elaine Bitonti:

Thank you, also happy to be here. Thanks for having me, General Cropsey. So my name is Elaine Bitonti. I work for Collins Aerospace, which is a division of RTX. I really have two roles in my job at RTX. One is to develop advanced S&T capabilities for JADC2, and the second is to carry out large force exercises, which is a big focus of our JADC2 campaign and how, like Big Dog mentioned, we really get the very important feedback that we need from the operator in order to inform our S&T developments and our rapid capability developments.

One of our big focus areas at Collins is the intersection of C2 and comms, and so that's why we're very happy to be here with C3BM. I think it's really important to remember the network is equally as important as the C2 decisions that are being communicated. And if we don't have the right network, none of those decisions that are made can actually be communicated and none of the war fighters can actually execute on those commands. So it's a big challenge. Excited to talk here today about what we've been doing to get after it.

Brig. Gen. Luke C.G. Cropsey:

Great. Steely.

Tyler VanSant:

Hey, thanks, sir. Thanks to AFA for letting me represent Lockheed Martin on the panel and to you. We just saw each other six months ago, so hopefully we have some updates. But I'm Tyler VanSant, go by Steely. I work for Lockheed Martin Skunk Works and my primary job is ABMS customer requirements. Air Battle Manager by trade. Was active duty until 2017 and then transitioned to the reserves, so I still get to put on the flight suit on the weekends/

But excited that General Cropsey mentioned the deliver of the TOC-L capability, that's Lockheed Martin's product, but it's not just a Lockheed Martin proprietary product. We've taken pride in integrating a lot of different things. We use an RTX product called Solipsys TDF, we're going to subscribe to SAIC product in CBC2. So we've really put down the proprietary guards because we want to bring the best capability to the war fighter. Having been in that position and still in that position on the weekends, I understand that and get to do that on the industry side. So I'm excited to talk about the here today. Thanks.

Brig. Gen. Luke C.G. Cropsey:

Okay. We've got a great panel, and as Steely mentioned, both Steely and Elaine were on stage with me at the September AFA. Jon's a new ad on this go around, but it's all in. And I think you'll see that there's going to be some pretty pointed pieces of this conversation around maybe what I need to work on a little bit on my side of the fence, which is great. And then right where we're at with actually getting deliveries out, which at the end of the day is fundamentally what matters. Talk is cheap, what have you done for me lately? And that shows up in terms of capability actually getting into the war fighter hands.

So as we go through the next 20 minutes, looking forward to unpacking a few of these themes as we get after it. Steely, I'll start with you. You mentioned the TOC-L. Can you give us any specifics around lessons learned that you've seen to date with where you've deployed them, and any observations about where and how you think the concept operations are starting to get mashed up better with the technology?

Tyler VanSant:

Yeah, sir, thanks for that question. I've been fortunate enough to deploy with the TOC-L when we delivered the capability, but the real story here is we were put on contract to deliver these 16 systems just 13 months ago, and proud to say that we got that capability out at TRL level nine, so it's performing ops today.

When I took the kits to Northern Edge 23 TAC-1, I walk into the building up at Eielson and I see a coffee pot and everybody's hanging out in chairs in a nice warm building. I said, well, "This isn't really ace, this is not how we agile combat employ. Let's put this thing in some minivans and go up on the hill and see what we can get." So we did that. We put it in minivans, we called them the "minivans of war." We loaded the TOC in the back, we put the Starlink on the top, and we were able to control aircraft on the inbound there to Eielson. And that's just one sort of example.

The next example is when I went out to Kadena with the 623rd ACF, they were using a system called Torque, and it was a good stopgap before the Tactical Operations Center-Light showed up in theater. But they weren't able to control higher headquarters missions from PACAF, which is a problem. So when we delivered their kit, they were automatically able to operate at the Secret, No Foreign level, and perform those higher headquarters missions, so their capability went up 100%.

The concept of operations are changing I would say with every delivery. We've delivered to PACAF, we've delivered to ACC units, and we've delivered to a guard unit up in Connecticut, and the way they're going to operate is going to be different. So it's exciting times to see how this flows out. I'll be heading to Guam for Cope North here on Friday, so we'll probably have lessons learned from that.

But there's a requirement that's written for TOC and people would say, well, it seems like it's a lot of stuff, it's a lot of cases. Well, compared to a CRC, it's way less. And a good lesson learned coming out of Bamboo Eagle was the JTAC, the ASOS squadron said, "We don't need every piece of this, we just need a secret enclave, we need a generator, we need a Toughbook, and a Atarlink, and we're going to go with that. And they were able to operate in their battle management area as appropriate. So you can piecemeal things together, but it's really operator-driven and we're excited to deliver that capability.

Brig. Gen. Luke C.G. Cropsey:

Jon, you want to pile on with CBC2?

Jon Rhone:

I do. One of the things that I think is going to be key for TOC-L's ability to ingest data sensors in a manner that is, one, easily digestible, and is able to speed decisions. I think CBC2 offers an environment that will be able to bring in third parties or agnostic and future sensors.

We've all heard of a bad guy country, we'll make it up and call it China, that we have trouble getting access to. So if you don't have overhead sensors, space-based sensors, space-based MTI, both air or ground, how do we have the ability to close the decision loop, gain and maintain decision advantage? I think we all recognize we're not going to have decision superiority through the entire fight, but without access and finding and fixing and tracking and targeting, all of the things that scare us, if we don't find those left of launch, then we're at a significant disadvantage.

How we get those sensors integrated, how we spiral for those sensor upgrades, is going to be key. And we believe that CBC2 is the environment that has already been demonstrated as the boss said, both up at the CADs and EADs, getting that into the everyday lexicon, the testing environment, the training environment and the operational environment's going to be key.

Brig. Gen. Luke C.G. Cropsey:

Jon, let's maybe follow up on that thread a little bit. Obviously any conflict that we would engage in is going to be one where we go with our friends and partners, allies, across the board. Can you unpack a little bit more your thoughts around how we do that by design, so that we're not bolting something on at the end of this that doesn't give us the level of integration that we're going to need for this mission set.

Jon Rhone:

Absolutely. CJADC-2, the first letter, whether that was intentional or not, is "C" for our partners. I firmly believe that the partners, when it comes to networking, when it comes to command and control, when it comes to battle management, when it comes to employing effects, they're underrated, they're underappreciated.

My last time deploying was 2017-ish so I realize this is a little bit dated, but we had what we call the red card holders. A few of the countries had the ability to literally hold up a red card and say, "We're not going to execute this task." This is extremely important for our dynamic tasks, and by dynamic I mean things that are not pre-planned. So when somebody holds up the red card, we have now slowed our

decision process, we have to have a meeting, we have to talk about why they did not want to execute a task, and our decision cycle has expanded, our OODA loop has expanded. We can't do that in a highly contested environment.

So one of the things that I believe is going to be key is if we can ever get machine-to-machine coalitions, or coalition discussions, coalition coordination, take the humans out of the loop. If we have a network and we have an architecture that allows the coalition to be partners and to provide input to the command and control, provide input to whatever battle management decisions need to be made, we have to be able to set that network up now. And this isn't a network-based architecture, but a data-based architecture, one that centers around the data, one that centers around accesses, one that centers around the zero-trust capabilities that we all need.

We have been part of the INDOPACOM Mission Network. We've been part of the SYNCOM partner environment, and the discussions there have allowed us to leverage, going back to CBC2, leverage what's needed for NORAD NORTHCOM to have a coalition, cloud-based command and control environment. That I believe will help leverage what SABRE ... If you're familiar with SABRE, Secret and Below Releasable Environment, I believe, essentially that's going to be the network environment for the combatant commanders if we do this right.

But the data and all of the connections and the decisions have got to be made and got to be worked through in an environment where we have a lower level of risk that we have right now in peacetime, because the inevitable level of risk, the allowable level of risk, is going to increase the minute that somebody has to make a decision in combat, the minute that somebody has to make a decision in a highly contested environment. We then just have to be able to turn up the rheostat, be able to understand that the decisions that are going to be made have already been thought through, the network has already been aligned, the people that are going to make the decisions and the people that are going to contribute the technology to those decisions, are already handled and already worked through in the exercises.

This goes back to the person, this goes back to the individual making that battle management decision, making the command decision, making the control decisions. If we put them at the very edge of this fight and we're trying to figure this out now, we failed them, we're going to have to explain to a bunch of good people why they're not coming home or their families are not coming home. And I know that's probably a little bit of hyperbole or it seems like it's a little bit dramatic, but after being there and watching and being a part of and failing myself in plenty of environments where the bad things have happened, you have to answer to those, we don't want to put anybody in those positions.

The human factor is something that we have to consider. We will never go into a fight by ourselves. We will never make an important decision in combat in a highly contested environment by ourselves. One man's opinion, I think is based on some experiences, and I'm happy to discuss that. But I think, sir, the best way to do that is to work on data, get the data connected, get an architecture that we, as a coalition, can work through, train through, and build to.

Brig. Gen. Luke C.G. Cropsey:

Okay, great thoughts. Elaine, I'm going to pick up a thread that we've been on for a little bit now on the intelligent gateway path. We had a great conversation a couple of weeks ago and you gave me some great feedback on what you think industry needs out of me in order to deliver on the things that we need. Can you just talk through some of your thoughts around what we need to do on our side of it from a government perspective to better enable industry to show up with kit that matters?

Elaine Bitonti:

Yeah, I'm happy to. And thanks for being open to the feedback, I appreciate that. I think one thing to pick up on Big Dog's point on the last question, one of the things is yes, it is about the data, the architecture, et cetera, but the business environment also has to be right. So when we think about the majority of us here, the majority of our business, is around USDOD, and then we also want to make sure that the coalition partners can be there.

But how many times in the acquisition environment for the acquisition of USDOD capabilities, is it being valued if we already connect to the coalition partners, if we understand those interfaces, if we have a data architecture that allows that. Is that being valued when the systems that our DOD is procuring are being bought? I think that's one thing from an acquisition perspective that's equally as important as the technical architecture.

The other thing you and I had a lot of discussion around is how do you balance the need to move quickly, to have readiness now, which we heard a lot about from the secretary yesterday, with alignment to the long-term vision. What does that type of solution look like and how do you develop that modularity in a way that allows you to maximize both of those things? I think some of the things I shared with you, is a few things, we need to think about the software modularity and the hardware modularity differently. They are different things. I think industry has been working a lot longer on the software piece. We can port that to many different types of hardware.

The second thing you and I talked about is making sure that we don't overs specify, especially the hardware, to the lowest common denominator, to the most SWaP-C constrained platform, because that's going to drive up your cost, it's going to overly constrain you. And that's going to hurt the war fighter in getting incremental capability out there sooner.

I think the last thing is to make sure when we're thinking about modularity, if you have those portable pieces of software, you may be able to feel the entire capability now and you could take pieces of it apart later and swap it out. I think one of the biggest challenges I've seen on the industry side is that while the government has a real desire and a need to go fast because of our threats, there is a real fear that we're going to get it wrong. And so we're going to keep waiting until we have it perfect instead of incrementally improving. And if you have the modularity, you can swap out the pieces as things improve and go on.

Tyler VanSant:

Sir, if I may add onto that, and back to Big Dog and Elaine's point about the coalition, I haven't really seen from the PMO the talks with SAF/IA. And I think we should be in lockstep with SAF/IA and work through the anti-tamper and those sorts of issues that may come up at the Tri-Service Council, because I can tell you, as we get to the final solution, quote, unquote, our partners and fellow nations are going to want that capability and they're going to need that capability.

I think there's going to be, if it's completed out, 700 F-35s in Europe, 70 of which will be US, and how are we going to move data around in that coalition fight. And so I think that SAF/IA should be partners along with us in this journey.

Brig. Gen. Luke C.G. Cropsey:

Yeah, okay. Great observations, and maybe I'll offer a couple on my side of it. The feedback matters a lot and we take it very seriously. And we've had the benefit here, both in December and then last month in January, to do two classified sessions, industry sessions. And we had roughly about 250 unique companies show up between those two sessions, and we did them at the classification level where we could get down to specifics.

Those conversations have, I'd say, uncovered a couple of key points that Elaine just brought up. One is that we have to figure out how to match the business models for what we're trying to do in this now very much disaggregated kind of a way where we're separating the software from the hardware, we're looking at the tech stack differently. We're looking to go really, really fast down software pipelines in ways that, quite frankly, the DOD hasn't exactly been able to pull off in the past. And that's definitely changing some of the way that we're looking at some of this.

But the other piece that Elaine and I were talking about had to do with, hey, what is the level of modularity that you actually want to design in order for us to kind of span that space between being able to go really fast, people being able to take more risk on smaller things, and being able to protect IP. And Elaine's point, that looks different between software and hardware and even between different types of software.

So I have the action, this one's on me to do some more thinking and some more work around what that looks like so that we can give you on the industry side better targets to go hit so that when you're coming back to me, you're not getting the, "Hey, I'm not buying that." I need to give you better specific and concrete targets on what that looks like for software, what that looks like for hardware, how we want to buy those specific things that we want to be able to change out. So what do you want to change out? What components should be swappable, and then what are the interfaces that you're building that I need to be able to match up to so that I can do that effectively and efficiently.

That's been a very valuable conversation and one that, again, we got to go work out together. This is one of those things that it's not an either or, it's an and. And so as we continue to work through that, I will continue to look for feedback on our thinking around what and how does this approach to doing this mean with regards to your business model, the way that you look at it. Because we also recognize that not every company is structured the same way and you're not postured to go after new business the same way. Just like I keep saying on the technology side, there isn't going to be one ring to rule them all. There isn't going to be one business model to rule them all either. So keep that feedback coming and let's keep that dialogue open because I think that's going to be really important as we move forward.

Okay, so we got about five minutes left here, and I just want to open it up to the three of you to maybe hit on a couple of bell ringers. So for anybody that's been in this business for any amount of time, you know that there's a potential friction point when it comes to being able to move data around and we all acknowledge how central that data is. I'm just going to tee it up. How is industry accounting for the Title 10 and Title 50 dynamic when it comes to our ability to get things out of one side of that pipe into the other side of that pipe? And are there any design principles that we could be implementing maybe more effectively that would help in that particular conversation? So I'll just throw it open.

Jon Rhone:

I don't believe that you can have a fight in a dynamic ... A dynamic environment, you cannot make dynamic decisions in combat without first getting tipping or queuing from the intel community, whether that's national, whether it's defense. The TC-PEP process, the F2T2EA construct at some point have got to be integrated. Until we do that.

Then we're going to have, I'll go back to deployment, where you have to walk 300 yards into a room behind three or four doors to talk to somebody, who may or may not be there, to get the information on a dynamic target or a high-value target which needs to be hit. Then you come back on the sticky pad and if you're write like I do, you don't remember what the hell you wrote. And then you have to come back and try to have somebody fat finger that in to a computer, and maybe get out to the radio or through three or four different cells.

I know that's, again, extreme to make a point. Until we have a network that allows the data to be moved back and forth, I think we're going to continue to struggle with this. I think that the solution area is challenged. I'm going to make up some numbers. 70% of that is policy, 30% of it is actually the technology, but we have to find the policies, obviously out of our purview. And then we also have to have the technologies. If you're familiar with the Assault Breaker II, which is some experimentation that led to JFN, I know there's questions about JFN and scalability and how it's going to be used, but the point is that that is a great example. That architecture is a great example of how you can take the intelligence community, the Title 50 information, combine it with the Title 10, and make a decision.

And I'll go back to the person or the people in the loop, we don't train to that. People just do not train to that across the department, across different domains and across the services. So until we understand the characteristics of the intelligence community information, the latency, what it looks like, if you ever try to look at something that comes across a data link or a chat room and convey that and translate that into something that can go into something that's executable on the Title 10 side, it's a challenge. So the architecture and the training.

Elaine Bitonti:

I think the policy, as you said, is really a big hurdle. And we had a really good discussion actually at AFA last year with a senior leader and we were talking about this same challenge. And one of the things he said to us is, "From an industry perspective, what you should be focused on is you guys bring me OVs and you show me how you're going to connect these things and solve it. At the same time, I want you to bring me a policy map of all the policies that are inhibiting you from connecting those things or moving that data."

And I thought he was right, that is not something we're typically doing in industry. And I think that's something we can do better to help the government see, "This is really where we're stuck." And Big Dog said, policy is not in our purview, but we can be more clear with you on how we do that. And so that's something we've been trying to do a better job on our side.

Brig. Gen. Luke C.G. Cropsey:

Yeah, great. Anything you want to add, Steely?

Tyler VanSant:

Yeah, sir. I think it's proving to the government that we can do it right. It's the tagging of that data and being able to strip out the pieces that can't be shared down to the lowest levels, and how are we going to prove it?

I think we should look at shock ShOC-N, we should get both communities together. And we can be at the appropriate level and go out there and prove it in exercises, and show that there is technology that makes that sharing available. Now you go fix the policy. So let's go from a bottom up approach. Not you sir, specifically, but someone's got to do it, right, and that's-

Elaine Bitonti:

I think we've shown that you can do that in exercise. I mean, we have shown that in Northern Edge. So it can be done, it is not a technical challenge. It is acceptance of the policy and then confidence that the technical approach is working and protects the data.

Tyler VanSant:

And a little bit of risk, right, Elaine? I think that's the biggest thing, is what risk are we willing to accept? I mean, just putting the TOC in a Sienna minivan, well there's Bluetooth there. Well we'll disconnect the battery. I mean, if we're really going to go fast, we have to take accept some risk.

Jon Rhone:

If I can add one last thing, the training, we have to train to failure. We've all been part of exercises where the outcome is given and we always win. But what happens when we don't win? What happens when we screw it up? How do we train the failure, not just white card that, but fix what we failed at in order to do it better the next time? Find the root cause, find the contributing factor, and execute.

Brig. Gen. Luke C.G. Cropsey:

Yeah. Great observations across the board. I think one thing underneath of all of this that I think continues to be highlighted as I dive into more of these details, is that no matter what we're doing, if we're not closing the feedback loop between what we're trying and the results that we're getting, there's no way to improve it. So a little bit to your point, Jon, there has to be across the whole team this construct where we're humble enough to realize that, "Hey, we're not going to get it right exactly. Let's go figure it out together and then let's improve it as we're going forward."

Again, my thanks to the whole team. Again, really appreciate the partnership across the industry and government enterprise here on this. And I look forward to continuing, pardon me, continuing engagement as we move forward. Thank you.