Adam Kress:

Hi everyone, I'm Adam Kress and welcome to a very special episode of Aerospace Unplugged. Now why is it special you ask? Well, we're in Washington, DC this week for Honeywell Aerospace's, American Aviation Leadership Summit.

We brought together hundreds of people from all across aviation, including regulators and lawmakers here in Washington. Transportation Secretary has been in attendance as well as the head of the FAA. Now they're all here to talk about American innovation and American leadership in aviation and how we can accelerate that.

We're going to provide you exclusive insights from today's event. I hope you enjoyed getting a look behind the scenes of the big event.

Adam Kress:

We kicked off the summit with a fireside chat between Honeywell Aerospace CEO Jim Currier and U.S. Transportation Secretary Sean Duffy. Secretary Duffy highlighted the administration's view on the modernization of American aviation and the steps that are needed to achieve that. Let's hear what they had to say.

Jim Currier:

So what I'd like to do, if it's okay with you secretary, is do a little fireside chat and ask you just a few questions, get your perspectives on what you see relative to the industry. So I have a couple things here that I'd like to talk about. First one being around air traffic control modernization. The need to modernize the US National Aerospace System has been identified as a national priority. Your department received a 12 and a half billion dollars down payment towards air traffic control modernization and the one Big Beautiful Bill. This issue has significant bipartisan support. Where does air traffic modernization efforts stand today and when do you expect to see major reforms to begin? And what should we look at in terms of what would success look like six months a year from now or two years from now?

Secretary Sean Duffy:

So with DCA happened, which was horrible, horrific. And after that we started to work on what would a plan look like to revamp our system. And we were near completion. And then we had Newark happen where we had the outages at Newark 32nd, two 32nd outages. The scopes had a reboot. So that was a minute and a half outage on those two situations. And so we rolled our plan out. We've asked for 31 and a half billion dollars. To your point, we have 12 and a half billion…

So what we have is money to upgrade our telecom. Again, we have most of the network is copper wires. We have to get to fiber, we have to go from analog to digital. We have new radars that we're able to deploy. We have money for a brand new center. We're able to buy new radios and voice switches as well.

And so I think as you look at what we're going to, first of all, the process has started. We had money at the FAA, so we're already doing the switchover from copper to fiber. I think the complication will be going from analog to digital. And our timeline has been by the end of 2028. So the FAA, no offense to those from the FAA who are here, they'll do projects over the course of 10 or 15 years. And by the time this technology is ready to be deployed, it's old, right? There's already two generations of new technology by the time we are ready to deploy the old technology, and so we are going to move as quickly as possible, we're going to move safely. We're not going to break the NAS in the process, but we are going to do it at a different speed, the speed of Trump. And so I think as you're looking at, we're going to do a good job communicating what we're doing.

The progress we're making. Maybe one other point on this, you guys have all heard about our integrator. We're going to select an integrator. We are at the final stages of that. I want the president to be involved in that selection. It was his idea to say, listen, I, I'm a builder. If I'm going to build, we have a project manager that's going to build for us. So we've embraced that and I think it's going to be helpful just because, and again, I'm going to say a lot of no offenses to the FAA, but the FAA does a great job on safety, but they're, they're not builders. This is not what they do. And so to bring in outside help to make sure we build on time and we build right is going to be critical. And so once Bryan and I are going to meet with the president and have him give us his feedback on who he thinks would be best to select for them. Yeah, so that's weeks away. So stay tuned.

Jim Currier:

Perfect. Perfect. I mean, to your point, technology is moving at a pace that we just really haven't seen in decades and the need to move this at pace as well. So we don't fall behind, to your point, 10, 15 years from now, it'll be a new generation of technology that is out there. That's a good point. As you think about accelerating innovation along those lines, as secretary of transportation, acting administrator of NASA, you have been a very strong advocate pressing to advance American aerospace innovation by challenging our industry to innovate. Also more importantly, to accelerate critical rulemaking for new entrants such as advanced air mobility, beyond visual line of sight, operations for drones, hypersonic technologies. How can the industry best support your efforts to accelerate rulemaking and innovation?

Secretary Sean Duffy:

So first off, as Americans, we'd love innovation. That's what we do here. That's how we improve the lives of the American people. That's how you improve your bottom line is by innovation. So I mean, from my perspective, I kind of have the Goldilocks theory with all this new technology. We can't move our regulations too far, because if something not great happens, we are going to be set back. We also can't go too slow, because our innovators will go somewhere else with their technology. We have to get it just right. And that's more of an art than a science. And so in this respect, I think it's important to give us feedback. We have a lot of really bright people here. What are we doing well? What could we improve upon? Is our speed right? Are our rules right? Because again, we're regulators, but we're also partners

and as partners, if we just said the only ideas can come from the FAA or the DOT, I think that would be foolish.

I think it has to be an environment where you're willing to partner with us. And again, you might give us 10 ideas. We might take one, we might take two. But those are two ideas that would've never seen the light of day and never been implemented, but for you having the willingness to share them with us. And so we've always asked, be a partner. Give us your best ideas.

And Bryan and I do a really great job at this. We take your ideas, we steal them, we make 'em our own, and then we sound really smart. So it's great for you and it's great for us.

Jim Currier:

More than happy to do that, trust me. As part of that process, however though, do you feel that there needs to be any type of reform around rulemaking to help accelerate that somewhat or…?

Secretary Sean Duffy:

Well, listen, I think I have some control, right? We have to do our work more quickly and not take a multi-year approach to rulemaking. We have to get good data, get good feedback, and make good rules. There's a structure we're forced to work in the government and we will work in that structure. But again, in that structure, I think we can move more quickly. When I was in Congress, what you realize is your time is limited. You don't make it to serve forever. You serve for a limited amount of time and you want to use your time really well. You don't get that time back. I look at this is a very limited amount of time. We're almost one year into our four years. And so to take our time and stroll on the beach as we're trying to do some big things, I think we'd waste our time. I want to maximize our time. I want to make the biggest impact and difference possible. And that means, again, move right, but move fast.

Adam Kress:

We also heard from Congressman Troy Nehls and Representative Sharice Davids on their perspectives on the importance of collaboration between the industry and policymakers.

Ed Bolen:

Congresswoman Davids, let me go to you. You and the chairman have been doing a lot of meetings, a lot of outreach with different sectors of the aviation community to get ideas for how best to both implement the FAA reauthorization bill that was passed, but provide insight into the brand new air traffic control system. Can you talk a little bit about how those round table meetings are going?

Congresswoman Sharice Davids:

So a couple of things. One, I do want to share a little bit about how I'm a nerd and process oriented and I'm actually really excited and appreciative of Chairman Nehls and the full committee chairman, Sam Graves and ranking member Rick Larson for introducing that legislation. My office is reviewing it and I have to wait for my memo to sign on. But I do want to say that to me that is actually such a great example of the way that the TNI committee is actually, I'm just going to use this word, functional, and that we have managed even when it's like we're obviously very different. I even personalities, but we are working together to try to actually get stuff done. And that to me is probably one of the most important messages that I hope you guys take away from this today, is that when it comes to things like aviation, when it comes to our country's infrastructure, when it comes to modernization, that we are trying to figure out how to be as pragmatic and realistic about the problems that are in front of us as possible. And that piece of legislation is one example. And this working group is another example.

Congresswoman Sharice Davids:

The actual working group meetings that we've been having, they're substantive, they're pragmatic. We're asking in the weeds questions that you want to see members of Congress asking about as we look for ways to actually bring our NAS into, not just to get up to date, but how do we make sure that we're thinking about the future and that we don't fall behind, that we don't fall behind any further. And so I can tell you that getting the chance to be part of the working group has been, it's been so informative, thank you to everybody who's participated in that and helped us. I really dig deep because that's what it's going to take.

Congresswoman Sharice Davids:

I think that when you [Congressman Nehls] talk about the listening and getting into having multiple people at the table, both from industry and from FAA and DOT, our government, the government stakeholders as well as industry stakeholders. I mean, you just start to see how, I mean, yeah, I'm a democrat, but I'm about to talk about red tape. So I think one of the things that we start to see and why this federal system gets so hard to actually upgrade is because we're constantly building on previous technologies, previous ways of thinking about these things. The federal government, everybody's sitting down, I'm glad, is siloed.

Congresswoman Sharice Davids:

We're trying to break down those silos. I remember at one of the round tables hearing from someone who's now in industry, but was at FAA and was able to talk about, so you mentioned the copper, and was able to talk about why it takes so long and how some of it is the regs, some of it is the way that the legislation is written. And when we're trying to modernize and we're working on legislation that required different technologies, we start to run into issues where it's like, oh, this line item, this is so federal, right? This line item doesn't match up and that's why we haven't installed X. And so I think that when he talks about things like getting copper out of the ground and replacing it with fiber, we're actually hearing

from people who have been the ones who have tried to modernize within the FAA and are now with industry stakeholders and can help people like me who, I mean it feels like 20 years, but I've only been here for almost 7, 25 years, I don't know.

Congresswoman Sharice Davids:

And we start to get a real understanding of how, if we are drafting legislation, we need to make sure that we're not creating more problems than we're solving. And unfortunately, that is what happens sometimes. And the only way to do that is to break down the silos, to get government stakeholders as well as industry stakeholders in the room at the same time. Because the copper thing is, it's crazy. It sounds like, of course, let's switch over to fiber. But it is something that because of the way that this place works, we have spent too long with too many silos, with too many unintended consequences because no one was talking to each other.

Ed Bolen:

So let's focus a little bit now on how we stay on top of the FAA reauthorization bill and its implementation, but also support and be able to help lead the implementation of the brand new air traffic control system. What are your thoughts in terms of hearings and other things that you will look to measure and kind of the cadence for the year ahead?

Congressman Troy Nehls:

We're going to have to have some metrics and we're going to have to have some very positive results. And I believe the people are in place to do this. I'm all about modernizing the NAS, the national airspace. We need to do it. Little concern about staffing issues with air traffic controllers. I mean they were on life support. And then all of a sudden we get the shutdown and now you've got people that weren't showing up to work. So I'm a little bit concerned, but I'm also want to make sure that we have the resources to do this. I'm concerned about timelines. Everybody says we want to get it done in three years. That's a little ambitious, a very lofty goal. Three years. I don’t know how you're going to do it. We will try. It will not get in the way, but we just got to make sure that permitting reform, it's going to take Congress in order for you to be successful.

Congressman Troy Nehls:

For the American people to be successful, it requires industry, it requires Congress and the administration, the FAA specifically to all come together. I think we've done that with the Modern Skies Coalition. This is bipartisan. I can't do it without Sharice. She knows it and she knows we got to work together and we're doing exactly that. But there also has to be some accountability in this because we can't fail this time. We can't fail. The American people deserve to be able to take their families and fly these 29 million miles of airspace that we have, and we must hold the administration accountable. And I believe we can and we will.

Adam Kress:

Panel discussions also dove into the topic of airspace integration and air traffic control modernization and why that's vital for safety and efficiency as new technologies emerge in the market. Let's hear what our panelists had to say on this topic.

Pete Muntean:

The airspace is becoming more crowded. You heard Sean Duffy talk today about the DCA mid-air. Obviously there is so much interest now in part 108 and beyond visual line of sight to integrate essentially drone delivery or sort of the next generation of drones in our aerospace. Obviously there's a lot of pressure to also integrate urban air mobility. The Trump administration's quite interested in seemingly having that by the 2028 Olympics is what I've heard. How do we do this in a safe way? How should this come into the fold in the conversation here when somebody off the street might perceive the airspace as being quite crowded?

Brandon Lint:

Yeah, that's a good question. So I think one of the little unknown parts of the part 108 rulemaking was establishing part 146. Part 146 actually gives FAA the ability to now certify and authorize third party service providers to enable a lot of those operations that you were speaking of earlier. So this is a good opportunity, I think now to start testing out new architectures and new technologies in terms of enabling safe operations.

Pete Muntean:

David, same question for you. I mean you're kind of the other side of the coin on the same topic.

David Murphy:

Yeah, so the part 108, part 146 handles a major part of the equation, which is the certification governance oversight of these services to get them into the operational environment. So very excited to see that coming soon. The other piece is just the functional piece. What are these services that we're actually providing? And so in our drone world here with small drones and urban air mobility, large drones like people, taxis, we're starting to build out these services on demand capacity balancing, separation sequencing, these things that the legacy aviation folks in the room would hear and recognize. Of course we're building them for our autonomous vehicles, but they're analogous to what we're doing in legacy air traffic management. And so there is a pathway here to get from our drone world into the

manned aircraft world and bring it all together again with the certification oversight to ensure that safety is being maintained.

Sharon Pinkerton:

Well, I think that in order for the system to maintain safety, we have to have this brand new air traffic control system in place. And that's why I think we've created this Modern Skies Coalition in which A-U-V-S-I and all of the unmanned guys are a part of that working toward the next $19 billion. Because if we are not able to grow the system and grow the capacity of the system, it's going to be tough for new entrants. Quite frankly. We want a robust and diverse air traffic control system, but it's in everybody's interest to move forward with that integrator and get a new system in place to maintain safety and to be able to grow.

Adam Kress:

We also heard from a variety of industry leaders highlighting the critical role of modernizing infrastructure to meet the evolving needs of aviation. Check out what they had to say.

Sapan Shah:
Let's start talking with the infrastructure readiness. There's a lot of conversation about kicking off operations in Middle East next year when it comes to advanced air mobility and that having some sort of scaled operations by LA 28. Are the infrastructure ready to be able to support those operations, either initial operations or at scale or what's the bottleneck today?

Clint Harper:

I think the challenge now is we're only seeing the low scale VFR operations and that infrastructure being explored today. And if we want to see the scale, if we want to see the economies of scale that come with that, the networks and the multi mobility options and opportunities that exist out there, we got to start immediately transitioning into thinking, alright, what's the next thing that we need to look at on the infrastructure side that's going to create skill. And it's not just the infrastructure design, the business models operating a privately developed facility within a city is different than operating a public use airport. And even the airport integration pieces, all that still needs some work as well.

Justin Brokowski:

Yeah, just to lend the airport perspective here, I think there's a couple of things from our membership standpoint. We've been engaged on this for a very long time. Members are, our members are very excited about AAM. There's a lot of interest. We get asked all the time, “what's the latest on this?” They're following all the developments they've done. Many of them have done feasibility studies,

planning studies. How can we actually integrate these eVTOLs, other operators into our airport system? So there's a lot of interest, which is the good news, the good part.

The challenges that we see from our perspective are really twofold. The first is you're competing with a lot of other demands of the airport. There's car rental facilities, there's tons of other infrastructure needs. The FAA zone estimates, there's close to $70 billion and capital development projects that need to be done over the next five years at airports across the country.

Justin Brokowski:

Industry estimates are way over that. We are way behind on projects and there's not enough funding to fund those projects. So when you look at all of the airports priorities, this is up there, but it's competing with a number of other things. And all of these other projects need funding and is there going to be a return on investment? How many operations are there going to be? What's the demand? What's the business model? There's a lot of these questions that we're all trying to figure out before actually pull the trigger at the airport level. The second piece of it is the guidance from FAA, and we'll talk a little bit more about this, but we do need clear guidance. And I think this is a little bit of the chicken or the egg thing because the FAA and on the FAA's defense, they're working on Vertiport design stuff, design standards, but they're working with the operators. They need data from the operators to inform what the standards are. But we need the standards before we're willing to commit on infrastructure, but the operators need infrastructure and vice versa. So I think we need more clarity. I'm not trying to beat up on the FAA, I just think there's more clarity and standards that we need for airports to be able to pull the trigger and for these projects to be prioritized over all of the other demands at the airport.

Adam Kress:

We were also joined by Florida Secretary of Transportation, Jared Perdue. He spoke about what states such as Florida are doing to modernize around advanced air mobility, drones, the ATC system and efforts around public acceptance. Let's hear what he had to say.

Michael Robbins:

Jared, you and Governor DeSantis have been extremely vocal about how Florida's going to be the first state, the first mover in advanced air mobility. So what is Florida doing to sort of set the stage, develop the framework to ensure that the Governor DeSantis goal is met and Florida is first in advanced air mobility?

Secretary Jared Perdue:

Yeah, sure. So thank you and really appreciate the opportunity to be here and thanks to Honeywell for hosting this. They have a major portfolio in the state of Florida and we really do love the businesses,

especially in the aerospace community. It's been really hot and it's continuing to grow. And yes, Governor DeSantis has been a big leader in aerospace. I've even attended a few of the international air shows with him. And we've really focused in on growing that portfolio in Florida. We want to be the place where you want to do business. When it comes to transportation infrastructure, yeah, advanced air mobility has really become a key focus of ours. And when we began to see the market capital that was being raised for this potentially to become a new mode of transportation, we really got energized. And we realized that if it's going to be successful, first of all, it's going to be privately operated and if it's going to be successful, there has to be a framework for how it's going to work, how it's going to operate.

Secretary Jared Perdue:

And we've got to start figuring out what the public infrastructure component looks like. So the first thing we did in Florida was start a steering committee. We brought the industry together with the sole intent and purpose of developing a policy framework that could then be presented to our state legislature and ultimately be signed by the Governor into law. That's exactly what we did. And so starting right out of the gate, it's about putting thoughts and words into action. So we brought the steering committee together, put a policy framework together, finally got it across the finish line of the state legislature and established advanced air mobility as a mode of transportation in the state of Florida. Now at FDOT, we have a $15 billion annual budget. We invest in every single mode we own and operate the roads and bridges, but we're a financial partner with our airports specifically.

Secretary Jared Perdue:

And so when it comes to advanced air mobility, the next step for us was, okay, if we're going to start making investments, what is that going to look like? What is the public infrastructure component? And again, we had to develop a vision for where we want to go. And so we sat down and started brainstorming with the industry and realized, okay, first of all, this could potentially be a successful mode, but it's also going to be privately operated. So what can we do as government with public infrastructure focusing on speed to market and profitability for those private companies? What's going to be needed? What type of digital infrastructure is going to be needed? What type of vertiport infrastructure is going to be needed, and how do we begin to roll out the policy framework for all of the local governments and airports that are going to be working in this sector?

Secretary Jared Perdue:

So we started doing that. We also made the decision recently to pursue the EIPP program, which has already been mentioned several times here, and we've really began to understand that it is really truly a major effort. If you look at all of the different initiatives that are going on between operators and infrastructure providers and the management of the airspace, there's a lot of different stuff going on simultaneously. And so where we see ourselves in this as a catalyst is we kind set the path, we develop a

vision. Where do you want to get 5, 10, 15, 20, 30 years from now? We develop a path so that all of these other initiatives that are going on simultaneously can kind of support that pathway but still do their own thing. And so this is kind of where we're focused and we are going to be pursuing that EIPP and that partnership has become relatively large because of all of the different partners involved, and we've begun to see the complexities of it and see the value of state government being involved with it.

Michael Robbins:

Looking at the broader sort of aviation community in Florida, obviously it's a state that has a growing population. It's a state that has, it's probably number one in tourism I assume. I don't know if that's right, but with all the beaches and Disneyworld and Universal Studios and everything, there's just always tremendous interest in people traveling to Florida. And most people get there by airplane. Unless you're from the Midwest like me, then of course you drive in your minivan, but most people are flying because they're not crazy. And that puts stress on the system that as you get more and more people in the state and you get more fuel traveling the state that can challenge operations. So what is Florida doing to invest in its infrastructure at the airport level to sort of begin to enhance its ability to accept that larger volume of interest in travel into Florida?

Secretary Jared Perdue:

Yeah, sure. Thanks for that question. It's a big one and it's a big challenge right now in Florida, we have the second highest passenger boardings in the US but that's spread out across several commercial airports. And actually we are the only state with four. We have four large hub commercial airports. And so it becomes a very complicated system, and I'm a heavy user of the commercial aviation. And one of the things, and I happened to be the secretary of transportation, so maybe I have a little bit to say about it, but one of the things that's frustrating is the experience from start to finish is not owned by any one single entity. And how do we begin to improve this experience with regards to safety or customer satisfaction and those type things? When you get in a car and you drive a car, you are essentially the one that's responsible for your own customer experience.

Secretary Jared Perdue:

And our job is to build and maintain the road so that you can move around. In aviation, there's a lot of touch points, there's a lot of different opportunities to experience something. No one entity is fully accountable and controls that. And so in Florida, we kind of take the viewpoint, hey, we need to look at the whole network, the whole system, the whole experience, and start figuring out how can we bring partners together to really start to solve those challenges and bring it, aggregate it up into a consolidated framework so that we are owning and we are accountable for the experience that every single individual is going through. I think there's a lot of opportunity for that. Obviously safety is a top priority, but everything starts, even in safety, everything starts with infrastructure and workforce. And so as a state, we're looking at how can we make strategic investments in the right way as a partner with FAA, as a

partner with our airports to really bolster and be a catalyst for workforce and infrastructure so that the overall customer experience becomes better. And we see a lot of opportunity there. We've already started looking at that strategy and bringing those partners together, and we have tremendous partnership with our university system in our airports. And I think even the EIPP process for advanced air mobility is probably going to be a good model and a good framework for how you can solve a lot of challenges in aviation because you really got to bring those partners together and create a sense of ownership and accountability in what's happening.

Adam Kress:
We explored the critical role of aviation safety and how innovation can enhance it. For both advanced air mobility and traditional aviation, we discussed the new technologies needed to accelerate integration, improve safety and boost efficiency. Let's give it a listen.

Todd Giles:

The first topic we have today is runway safety. We've talked about this earlier. You heard it a couple times on a few other panels and with runway safety incidents, I guess you could say on the rise if you're counting 'em and watching over the last few years with those runway incursions, excursions, wrong surface operations, these items, excursions, incursions, incidents on runway and taxiways are now two of the top five high risk opportunity areas in ICAO's latest safety report. So for the panel, you know, what do you think for operators, OEMs, pilots, what are your thoughts on what is the next generation of technology or things we can leverage today that can help us address this issue?

Todd Sigler:

Well, before we get into what's next, I'd like to start with a reminder of what's already there today. Much work has been done by the industry on this particular type of hazard. As you mentioned, it ranks towards the tops and the types of incidents that we have and certainly hole losses. Thankfully we don't often see fatalities or injuries, but they do happen. The industry has done a lot in this space. And so I'd like to remember that and for it reinforce the need to continue to learn from the past and take up the recommendations that industry has partnered with and developed alongside with our regulators. But looking further down the runway, so to speak, pun intended, there are new technologies that are out there. There are certainly ones that we can leverage to today more so than are leveraged already. We talked a couple of times in the morning about ADSB.

Todd Sigler:

There are other applications of ADSB that could be used, but you go so far as even putting sensors on airplanes to detect not only other airplanes, but even ground equipment is certainly in the foreseeable future. And how we integrate that within the rest of the national airspace system, how we bring pilots,

crews, the airlines, the maintainers, all along on that journey is still in front of us. But there's quite a bit of technology that I think is on the not so distant horizon. And then even some more that's further out for us to continue to explore and develop to improve safety.

Eric Holmberg:

Just a little plug for the role of business aviation and general aviation. We have kind of a unique opportunity to develop and innovate a lot of technologies perhaps before our commercial partners, in part because our customers are willing to pay for it. And in part our flight crews are a little less resistant to change on the flight deck. We've developed a number of technologies. I was talking to Steve, getting to and from the runway taking off safely, there's a lot of things that go into that. Situational awareness of the pilot, it's really what we want to focus on. And some of the simplest things are equipping all our airplanes with big colorful moving maps where you can see exactly where you are. You have a great understanding of not going on the runway. The ADSBN is a backstop to losing situational awareness and warning you on that.

Eric Holmberg:

And while we're talking about runway safety, I think it's important to note that runway excursions are really responsible for 80% or 90% of the runway safety incidents, which involve accidents. And that is still a problem in business aviation and other aviation with runway excursions and systems that… I think there is an EASA mandate next year for what we call ROAAS or runway overrun and awareness systems. We've implement that in our latest airplanes that it dynamically tells you where it'll think you're going to stop the runway… on the runway if you get fast, if you get long. It will even warn you to go around, so incorporating those types of technologies across the field to really take that hesitant pilot and give him the poke to go around and not try to save the landing is important as well.

Captain Steve Jangelis:

Yeah, very good. You hit it on the head when you said situational awareness for the pilot. I think that's most important, but we also have to keep a focus on situational awareness for the controller as well. I think our air traffic control partners would appreciate any new equipment as we're talking about this modernization path, new equipment that can keep them up to speed on exactly what is on their pavement, what is on their taxiways. I think that's very important. When you talk about runway incursions, I'm a statistic, okay, I'm going to bear my soul a little bit here. I was in an airplane that landed over the top of a 737 in position in Fort Lauderdale. We were clear to land twice. It was a dark and stormy night. The controller put us out on the runway and forgot. Now that controller did not come to work that day to cause a problem or cause an accident, by all means.

Captain Steve Jangelis:

But if we had the equipment that Honeywell is working with, the technology that's out there, and I've flown the demonstrator as a 757 and 767 pilot, I've seen it upfront that will save lives. We had 303 people on board my airplane and we had 64 on the 737. That would be the number two accident next to Tenerife. Did we hear anything about it? Not so much. But that's what got me involved at this work. And so I appreciate the efforts of our OEMs, the avionics OEMs as well, getting involved and getting in the mix of exactly how do we create equipment and technology that will support the pilot and the controller and their situational awareness.

Todd Giles:

So with the increase of jamming and spoofing of this critical infrastructure on the aircraft, you know, what do you guys think is out there for whether it's resilient navigation or ways to handle and deal with, let's just call it GNSS outages, anywhere in the world for what could be considerable amounts of time depending on what the rest of the aircraft and how the rest of the aircraft systems function on GPS, it could be significant. So we'll start at the end here with Steve. What do you think is out there next and what should be those next steps to keep investing in?

Captain Steve Jangelis:

I think one of the, and this is going to be hard for a regulator or for a country or a member state of ICAO to stomach, but I think we're going to have to keep relying on ground-based systems. I know for the last two decades we've been full forward, straight ahead with satellite navigation. But I think at the end of the day, if we do get to a situation where GPS spoofing and jamming becomes global, I mean worldwide everywhere, we're going to have a tough time navigating. And so yes, resilient navigation is important. Again, leaving the ground-based equipment that we've been trying to leave as modernization, maybe we still need to rely on that a little bit. But I think the toughest part as a pilot is we're used to getting a flag when something doesn't work, when something shows up on our screen or shows up on our gauge, it says “this gauge isn’t up.” The toughest part about GNS spoofing and jamming to a pilot is it's not always obvious.

Captain Steve Jangelis:

And so we've been relying on the OEMs to tell us, Hey, this is what you may see if you've been spoofed. Example would be you're flying from Capmandu to Nepal to Denver, both have mountains. You get GPS spoofed on the way back, you're landing at one of those airports. Either you're going there or coming back. Either way, you're in the mountains. How do you know that your collision avoidance, terrain avoidance system is working? Is it obvious? And that's what we're trying to do is to gather that information, make sure our pilots have that, and also hold our airlines accountable to training to it. Because you can't just hand out a memo and say, this is what happens when there's GPS spoofing or jamming. So we are very reliant on our OEMs to help us out and give us that information so we can pass it on to pilots.

Eric Holmberg:

If you're interested in the topic, ops group did a really detailed report on it last year. They estimated 1500 flights a day are subject to GPS jamming and spoofing. As an OEM, I would say in 23 and 24, 2023 and 2024, we were getting a lot of calls from our customers and observing this for the first time, seeing effects on the flight deck that they weren't expecting, wanting to know how to deal with it. I would say we get very few calls this year, and I'm not positive why that is. I don't think it's because the jamming stopped. I think in part we've published flight procedures for them in their checklist on how to deal with it, how to take GPS out of the navigation solution on the flight deck. And maybe more importantly for them to be aware that the gyp whiz failures that they're seeing, I mean they could be at 40,000 feet and they're getting pull up, pull up because the train system is spoofed.

Eric Holmberg:

So crew awareness and procedures in dealing with it is a bandaid. It's not the fix. Obviously, as OEMs, we're looking at advanced antennas that can null signals from the ground and look up electronic systems that go with those antennas that compare timestamps and looks at different constellations. And who knows in the military technology, when you develop one counter technology, they develop a counter counter technology. And we might be right where Steve says back to relying on ground types of navigation ILS systems and things like that. And if it ever gets domestic and terminal that it's going to be a lot bigger of a deal than it is at 40,000 feet over the Black Sea where we're not that worried about it.

Todd Sigler:

Well, the industry's dealt with malicious threats before and it is one of the hardest things to try to tackle. It takes an extraordinary amount of partnership to do it. I go back to I think first and more about the source. We think about the constellations that are up there, the satellites. We shouldn't forget about them and how to make them more robust. There are changes, advancements in that technology that's up in space where the US is not necessarily at the forefront. And I think that's something that we should be looking at, protect the source. Also think more about reporting. So airlines and OEMs have been, as Steve and Eric described, helping react to this threat that rose a couple of years ago and started really spiking up in the Middle East. But there are other reporting sources that I think have been overlooked in the other sectors like airports or ANSPs, air navigation service providers. What's ICAO's role in trying to collect all of that from a global perspective and try to help then make alerts and awareness more easily accessible to the operators, et cetera.

Todd Sigler:

But as Eric already touched on, and Steve, a lot of work has been done in this space to try to equip operators with procedures. We've been doing it in partnership. Again, it's relatively new threat if you think about it in terms of the age of the industry. So we needed to work together to keep us all aligned even on just terminology, what is a spoof, what is a jam? We went through a learning curve, et cetera.

But we as OEMs of the airplane partnering with avionics OEMs as well, all working diligently to make the systems as resilient as possible and looking towards what the future might provide in terms of an alternative or as you described, Steve, how long should we keep hold on our long-held land-based systems?

Adam Kress:

We also have the opportunity of an exclusive keynote from FAA Administrator, Bryan Bedford. He discussed what's next for the future of national airspace.

FAA Administrator Bryan Bedford:

So innovation, how do we think about innovation at the FAA? If I'm being perfectly honest, the FAA's innovation cycles about the same as Boeing, right? We innovate on decades long timelines. And as we heard a lot today, the pace of innovation is moving much, much faster. So how do we change the FAA from a sort of a aircraft design and execution strategy to more of an iPad application strategy? And so that's the goal. That's the goal of how we're going to move FAA into the future. We don't actually have to own and develop and design and build requirements for everything we can rely on commercially off the shelf products in order to improve safety and agility in the NAS.

FAA Administrator Bryan Bedford:

But in order to do that, we can now talk about modernization a little bit because we can't get to that sort of iPad iteration cycle using the tools that we have today. You've heard a lot about copper. Copper lines versus digital fiber versus LEO, low earth orbits satellite opportunities, or even relying on five and soon to be six G opportunities. So we've got a lot more tools that we can use today to solve some of these problems without just having to dig around trenches and pull up copper and put in fiber. But in order to get a lot of these solution opportunities, we do have to move from an analog NAS to a digital NAS. That really is the fundamental change. Now, how we deliver the data is, it's important because it's time consuming, but how we deliver the data is less relevant than how we start re-architecting the systems that we have that run the NAS.

Adam Kress:

In our afternoon session, attendees heard the different pathways in aviation certification and what the needs are in both the civil and defense sectors.

Erin Rivera:

I wanted to talk a little bit about, while we're talking about how do we make sure that America remains a dominant player in this industry. One of the things is we also want to be like the dominant manufacturing sense, but at some point our aircraft are probably going to be desired by other countries and so forth. And so one of the things I want to talk about real quickly is harmonization of our standards, what we're working on here in the US, is it going to be a fragmented framework in the sense that EASA and GACA are going to be developing their own? Or are you guys seeing some type of harmonization amongst the different CAAs, civil aviation authorities? Anyone want to talk about that?

Cindy Comer:

Yeah, we saw, I think it was earlier this summer maybe in June, CASA in Australia launched an NAA agreement and it was harmonization for advanced aviation amongst five different countries. And I think that is a really good start and countries need to talk about, or different regulators need to talk about do they really want harmonization? Do they want validation or do they want acceptance? And all of these things can be acceptable and it's just a matter of navigating which way various regulators want to go With the FAA and EASA for example, it's felt a little bit on and off. Sometimes they're working towards harmonization, sometimes we hear that they're not really talking about it or hearing lately that they are talking about harmonization and maybe acceptance activities. So I think it benefits everybody because you don't want people to have to make a different aircraft to fly in a different country, and the more disjointed regulations are, the worse the safety outcomes are going to be. We're going to have way better safety outcomes if we're all driving to the same goals.

Erin Rivera:

It makes the entire sense to me. We've got ICAO out there that is supposed to be kind of this harmonizing organization for rules. Any thoughts on their role to play here?

Scott O'Brien:

I think in this administration there's some questions about the value of ICAO and I will just say I think there's a lot of value in ICAO and we have articulated that to Secretary Duffy and others. So I want to make sure we as an industry continue to say that I don't think it's a given that people that are new to aviation policy understand the value of ICAO, especially in the political world we're in now. There's a lot of work ICAO has a remotely piloted aircraft systems panel, which is making a lot of progress on the worldwide standards for our paths. And if the US isn't involved, that means that countries like China can just take the standards and go use them, and we're sitting here still not implementing them. So I think there's a lot of progress. I think there does need to be a continued foot stop in my industry that ICAO is valuable and that this is where global collaboration happens and aviation is maybe different than other forums and that we thrive on a system that has some consistency across regulators, and that's why that's an important venue.

Adam Kress:

Attendees heard from a panel of Advanced Air Mobility CEOs on how the sector is evolving. You can hear more from them here.

Taylor Alberstadt:

Maybe not everyone in the audience or even the three of you would define what you're doing as advanced air mobility I think depending on where you draw that ring fence. But relative to use cases and benefits, if we double click on maybe the differentiators that you all were talking about, is everyone trying to solve the same problem or do you see yourselves as unique in what you're trying to do in terms of the missions?

Mark Allen:

I'll jump on that for a second, Taylor, if I can. We describe what we're trying to do here is create this balanced algorithm that solves for the deep desire that we've all had for generations for direct aviation to fly from where you are to where you want to go, it's about wildly expanding the use of the air to move people and goods. And so what does it take to expand the use of the air to move people in goods? And we think it's these six core elements. It starts with access. You have to be able to get in like a helicopter if you're going to get close to where people live, work and play. You have to be quiet, you have to be quiet. Remember all those 1970s helicopter airlines that were shut down? A lot of them were shut down because of noise ordinances, safety was the other one, right?

Mark Allen:

Big crashes, headline news, and then cost. You have a really small market when it costs a lot and helicopters cost a lot. So there you have access, noise, safety, and then what does that leave you with? Well, it leaves you with what you always have. And I think Dómhnal already started to really point to this, payload. If it's an air business, it's about what you can carry, range, it's about payload and range, how far can you go? And then what's the last most important point? You can all yell it out with me. Cost. How much does it cost? This has to be dirt cheap. And so what we're building, it's a nine-seat airplane, nine passenger airplane, two crew station up front. So 11 souls on board, but with nine passengers, it's the up gauge if you will from Uber. And so it's dirt cheap. And so while Uber is $2 a mile, this product, once its retail price is a buck 50 a mile. So dirt cheap is critical for us. But if you can do access, quiet, safety, payload, range, cost, you've got, in my view, the 2007 iPhone moment. The balanced algorithm comes all together and that's why we're so excited about this airplane that we're building.

Taylor Alberstadt:

So you're doing it all.

Mark Allen:

Well, it's a balanced algorithm. You have to put these pieces together. But like any airplane designer, you constantly face constraints. So for example, one of the hardest constraints we've been battling about inside our four walls is the cargo bay. I love our cargo bay. It's huge, right? Nine golf clubs, nine skis, nine bags. The whole point is to let passengers take what they want. If the passengers can't take their luggage, they're not going to use your aircraft to go anywhere. But that comes at the cost, right? The bigger the compartment becomes, the more it is at war with access. And so we have to ask ourself how small does our landing and takeoff footprint have to be to still provide access to getting close to where people live, work and play. That trade is one we're constantly working on. That's where the hard work of airplane design lives.

Eloa Guillotin:

So we built the company four years ago because I strongly believe one day aviation will be electric. And I think us today we are all part of that wave. For sure, every single company has different argument, different technical approach or different clientele. For example, at Beyond, we really do more corporate shuttle between the main hubs. So I'm based in LA so we do LA, San Francisco, Las Vegas and Phoenix, back and forth, back and forth. So we have enough range to back and forth without refueling. And that's really, like you said, we've interviewed 312 different type of clients and I asked them, we did different questionnaires and everything and so what they want, obviously electric is part of the wave, but it's not a differentiator. I think right now it's almost like a baseline. What we focused really on was operating cost. How much does it cost to operate a hydrogen electric plane?

Eloa Guillotin:

So that means what the maintenance costs. So we have very different models, depends on the suppliers on a lot of things. But right now that was really our angle from day one is what daily hourly rate that it's going to cost? What's the price of the fuel? Is it gray, hydrogen, green hydrogen? Do you produce it onsite? Do you buy it? We've modeled all of that and now we have secured a business model where we know we are drastically competitive on cost, plus every other advantages of being electric. So obviously emissions, but like you said, the quiet and all of that. So cost was really our goal because it's driven by the client's need, which for us was a shuttle, a corporate shuttle of back and forth from an operating fleet operator.

Dómhnal Slattery:

So just maybe very quickly, I spent 35 years traveling around the world to the mega cities of the world trying to convince airlines to buy his product leased by me. And I'd arrive in first class feeling like King of the hill and I'd get in a car and I would spend the next two hours, sometimes three in Sao Paolo trying to get to my hotel. So that's what we're trying to solve is to try and give people back their time. And when you think about the scale of the opportunity globally for EVTOLs, sometimes when you're in the United

States, you think through the prism of this jurisdiction, which is fine. But the reality is the United States only has two of the top 50 mega cities in the world, LA and New York, spend a bit of time in Seoul, spend a bit of time in Tokyo, spend a bit of time in Istanbul, and the list goes on.

Dómhnal Slattery:

And so I think there's just an unbelievable opportunity to take people out of their current mobility in cities, in cars and take them into the highways. And if we flash out 50 years from now, these mega cities are only getting bigger. There's no more room for bigger highways, and so everything will go up into the sky. And to do that, we have to do it in the safest possible way at the lowest possible price.

Adam Kress:
To close out the summit, Congressman Jay Obernolte and David Dunning from GAMA addressed regulatory needs for AI innovations in aviation. Let's hear more.

David Dunning:

So with that, we were just talking just outside here that AI is a relatively nebulous kind of fuzzy, massive two letter word. So with that, and in your years of experience, congressman let's level set and what do we mean for today when we say AI, what is AI? What is it not versus advanced automation?

Congressman Obernolte:

Right. I think it's a really pertinent question and as a computer scientist, I could give you a really super technical definition about what AI is and what it is not. But I think that sometimes we get too hung up on technical definitions. So I'll give you the colloquial definition that I like, which is when we talk about AI, we're talking about things that a machine does that seem human-like to people. And that changes the way that we interact with machines and with automation because we interact with it at a human level instead of a technical level. So when we make a machine, things we do to make a machine behave like a human, that's what I call artificial intelligence.

David Dunning:

So as a tool, AI is working its way into our day to day. And earlier in the morning, Secretary Duffy referenced we're using AI decision aids now to scrape airspace modernization proposals. He mentioned the identification of hotspots in the national airspace. So pilots, you can voluntarily self-report when you have a near miss in the airspace, and that generates large amounts of volume as to where these events are happening. And AI would very seems reasonably scan through that data and identify those hotspots nearly instantly. So are there areas through the aviation lens, congressmen, where you see AI as being ripe to accelerate and really increase our capability?

Congressman Obernolte:

Sure, absolutely. That's what AI is for. But I think we have to be mindful about the things that AI does well and the things that it doesn't do well and the ways that it's going to enhance our abilities. So for example, if you might take a look at an air traffic controller screen and say, why don't use AI to do better traffic prediction? Well, that's silly because the air traffic controller has, I fly above 18,000 feet almost all the time. I'm required to do what ATC tells me to do and he knows exactly what he's told me to do. So 99.999% of the time he knows exactly where I'm going to be a minute, five minutes from now, 10 minutes from now. It doesn't take AI to take a screen full of aircraft that that's true of and predict where they're going to be in the future.

Congressman Obernolte:

That's just simple math. But what AI can do very well is when I'm coming down into the traffic pattern in an uncontrolled airport and I'm looking at my traffic display, I've got air traffic that air traffic control is not talking to, and no one is talking to them and no one knows what they're doing, they're just ADSB targets on a screen. Well, AI can look at that and based on the airport the time of day, the speed of the target, what the target has been doing for the last couple of minutes, it can say, you know what, this is a student doing pattern work and so you better be aware because I predict that he's going to be on the downwind leg just the same time you're entering on the 45. That's useful information to know, and it's something that only AI can do. So those are the ways that AI can help.

David Dunning:

And so getting back to how we deploy this, aviation has a rich history of proving new technologies and test beds and sandboxes and the space is moving quickly. I think throughout the day you're going to hear mixed reviews in terms of, yes, AI is here, and yes, we're moving forward. And yes, it's already implemented in various use cases. And then you'll also hear that, hey, this is a decade to two decades out. Personally, I disagree with that position, and I think we need to do everything we can to put ourselves in a place where we can maintain pace and deploy this intelligently and safely. So with that, what's your approach to that test bed sandbox type of proving ground? Do we have time for that and how can we really cross this bridge in a way where we can capture value today that exists and not defer the safety benefit that is imminent?

Congressman Obernolte:

Sure. Well, I mean, I think it all hinges on our approach and the approach we ought to take, particularly in aviation is risk management. We never ever assume that AI is doing exactly what we think it is going to do. We never assume that the output of AI is a hundred percent correct. We always verify, and I mean the example we were talking about a few minutes ago where I've got a traffic prediction tool and it's in flight built into my avionics, this doesn't exist right now, but I'm just saying this is a use of AI that I think

would be, would really enhance my capabilities as a pilot is look at a bunch of VFR traffic that ATC isn't talking to and predict where they're going to be and whether or not there're going to be a conflict for me when I'm flying into an uncontrolled airport. Well, I'm never ever going to assume that just because AI tells me that this target is going to be here five minutes from now, that that's actually where it's going to be. And neither should AI. AI is obviously going to update this on a second-by-second basis, and sometimes it's going to be wrong and we have to build a system that recognizes that fallibility.

David Dunning:

And then what's your sense on, I guess, your own personal take, the capability for so much to be achieved and for the human to be augmented by AI exists right now, and then we have the monolith of the regulatory structure that we have to work through and move in order to achieve these benefits. How do we balance that and what would be the best pathway forward from your position?

Congressman Obernolte:

Sure. Well, I think you use the right word balance, right? We need to create a regulatory framework that balances the need to protect Americans against the malicious use of AI and some of the harmful effects of AI, while at the same time creating an environment that enables all of the beneficial uses of AI to occur and the benefits that go along with them to be accrued to our society and our economy. And those two ideas are definitely intention. We could follow the lead of the European Union, which has never seen a technology. It doesn't want to regulate and create regulation for the sake of regulating, which is a fool's errand, but definitely is an approach. But that would have the consequence of suppressing a lot of the benefits that go along with AI. And I also think we need to be mindful of what a post AI world looks like.

Congressman Obernolte:

And I think as human beings, we are not very realistic about that. In fact, if you take an American off the street even today, and you ask them what's the worst thing that can happen? What should I be afraid of when it comes to artificial intelligence? You will get an answer out of the terminator or you'll get hell, 9,000 or something, an evil army of robots rising up to take over the world. And we know that that is not a realistic view of what the harmful effects of AI. But I mean, there's a bunch of things we do worry about. We worry about the spread of mis and disinformation. We worry about cyber fraud and cyber criminals. We worry about biological and radiological harms. We worry about job displacement, we worry about re-skilling, we worry about geopolitical competition, military applications. When you take all of those together, it's pretty consequential.

Congressman Obernolte:

It might be equal to an army of evil robots, but the things we have to do to mitigate those harms are very different. So another thing that while we're on the topic I think that we do a terrible job of is articulating the upside of AI. I was at an AI conference feels like a month ago, but I guess it was a week ago in my district, and we were talking about the potential harms of AI and how you mitigate them. At the end of it, a constituent came up to me and said, Congressman, if all of these harms are so consequential, why are we even doing this? Why don't we just ban AI? And I thought my head would explode, but she had a point, I mean, really she'd heard about all this bad stuff and we hadn't articulated why we're doing this. So we as a society need to also be evangels of the upside of AI.

Congressman Obernolte:

We need to be always mindful about what this can do for us. The two things that I always tell people, number one, AI is already the most powerful tool for the dissemination of human knowledge that mankind has ever invented. It can already teach anyone anything that they want to learn in any learning style that is optimal for them. And that's going to accelerate in the future with incredibly potent consequence for human empowerment. It's going to democratize access to not only education, but knowledge, information, and expert opinion in ways that are going to profoundly transform our society. But also AI will shortly be the most powerful tool ever invented for the enhancement of human productivity. And if you think back to the founding of our country, every single major expansion of our gross domestic product has been heralded by a corresponding increase in the productivity of our workforce. I mean, workforce productivity drives GDP, there is no way around that. And yet in the last few years, we've had a gradual decline in worker productivity ever since COVID. So I mean, this I think is going to be the next big catalyst that creates not just increase in GDP, but a rising wave of prosperity that could literally lift all the boats in America. So we need to articulate that more often because that's why we're doing this.

Adam Kress:

Well, I hope you enjoyed getting a look behind the scenes of this year's big event. It was jam packed with leaders from all across aviation, all with the goal of ensuring American leadership in aviation, but we can't do that without partners. So I want to thank all the partners that joined us at this year's event, and if you want to learn more about it or Honeywell Aerospace in general, make sure to check out aerospace.honeywell.com. Thanks again for joining us and we'll see you on the next episode of Aerospace Unplugged.