

### NextGen Advisory Committee (NAC) August 22, 2024, Meeting Summary

The NextGen Advisory Committee (NAC) was held on August 22, 2024, in a hybrid format, with inperson attendees convening at Federal Aviation Administration (FAA) Headquarters in Washington, DC. The meeting discussions are summarized below. Reference the attachments for additional contextual information.

List of attachments:

- Attachment 1: NAC Presentation Deck
- Attachment 2: Attendance List

### **Opening of Meeting**

The NAC Chair, Russell "Chip" Childs (SkyWest, Inc.), welcomed everyone attending the NAC meeting virtually and in-person and thanked the FAA for holding the meeting. Mr. Childs introduced himself as the Chief Executive Officer (CEO) and President of SkyWest, Inc., the largest regional airline company. Before moving forward, the NAC Chair spoke about the Secretary of Transportation, Pete Buttigieg's recent appointment of 20 members to the NAC. Mr. Childs then introduced himself as one of the reappointed members, and proceeded to introduce the following members and industry representatives:

Representing Operators:

- Mark Baker, President and CEO of Aircraft Owners and Pilots Association (AOPA)
- Ed Bolen, President and CEO, National Business Aviation Association (NBAA)
- Russell Childs, President and CEO of SkyWest and NAC Chair
- Alan Kasher, Executive Vice President of Daily Operations for Southwest Airlines
- Dave Mets, Vice President of Flight Operations for Alaska Airlines
- Jessica Tyler, Vice President of Integrated Operation Center for American Airlines

Representing Aircraft Manufacturers:

- Pete Bunce, President and CEO of General Manufacturers Association (GAMA)
- Craig Hoskins, Vice President of Safety, Security and Technical Affairs for Airbus Americas
- Howard McKenzie, Vice President and Chief Engineer for Boeing Commercial Airplanes

Representing Airports:

• Candace McGraw, CEO of Cincinnati Northern Kentucky International Airport

Representing Avionics:

- Vipul Gupta, Vice President and General Manager for Honeywell Aerospace Avionics
- Scott Pfeiler, Vice President of Product Development for Collins Aerospace

Representing Labor Unions:

- Jason Ambrosi, President of Air Line Pilots Association (ALPA)
- Rich Santa, President of National Air Traffic Controllers Association (NATCA)
- Dave Spero, President of Professional Aviation Safety Specialist (PASS)

Representing Environmental Interest:

• Emily Tranter, National Coordination and Executive Director for National Organization to Insure a Sound-Controlled Environment (NOISE)

Representing International Sector:

• Andreas Boschen, Executive Director for SESAR 3 Joint Undertaking

Representing NASA:

• Robert Pearce, Associate Administrator of Aeronautics Research Mission Directorate

Industry Representatives:

- Patrick DiMento, Vice President of Flight Operations, FedEx Express
- Ryan Gumm, Senior Vice President of Flight Operations, Delta Air Lines
- Joe Heins, Vice President of Network Operations, United Airlines
- Jeffrey Winter, Vice President of Flight Operations, JetBlue Airways

Mr. Childs then handed off to NAC Committee Manager, Ms. Kimberly Noonan (FAA), for administrative and housekeeping announcements.

### Chair's Report

Mr. Childs then called for motion to approve the March 21, 2024, NAC Meeting Summary Package.

**Outcome**: The NAC passed the motion to approve the March 21, 2024, NAC Meeting Summary Package.

Mr. Childs moved on by giving a brief industry overview before going into the full NAC agenda. He spoke about how industry has transported over 271 million passengers from June through August. He said the demand for air travel remains very strong and we expect it to continue setting records going forward. He talked about big challenges: staffing and capacity rebalances, multiple runway operations, supply chain issues, an active summer storm season, and a global IT outage that nearly grounded several operations last month.

Mr. Childs said that he and Mr. Tim Arel, Chief Operating Officer for the Air Traffic Organization (FAA), met prior to the NAC meeting and spoke about how the industry has been remarkable considering the recent challenges in the last three months. He mentioned how the opportunities and challenges that industry faces are reflected in the NAC. With the new NAC appointments, industry is excited to come together with the FAA and NAC stakeholders to continue making progress on NAC initiatives to advance safety, reliability, and efficiency for travelers worldwide.

He finished by thanking everyone for attending today and turned the meeting over to Mr. Andreas Boschen from SESAR 3 Joint Undertaking for an update on the European Air Traffic Management (ATM) Master Plan.

### European Air Traffic Management Master Plan Update

Mr. Andreas Boschen thanked Mr. Childs for giving him the opportunity to present his progress on the update of the European ATM Master Plan. He apologized for not being there in person due to a flight cancellation.

Mr. Boschen spoke about how in October 2023, the European ATM Master Plan is the agreed road map for ATM modernization in Europe and endorsed by all stakeholders with the goal of delivering what his team calls the Digital European Sky. He informed everyone that this past July, his team submitted the draft master plan for formal approval later this year and that his ambition is to make Europe the most efficient and environmentally friendly skies to fly in the world.

Mr. Boschen informed the meeting participants that EU ATM Master Plan is in a happy, constructive competition with the United States and other parts of the world about having the most efficient ATM system. He touched on how their new vision sees ATM as part of a multi-modal transport system, which provides seamless and sustainable door to door mobility. He also went on to say the aircraft will be able to fly according to their technical capabilities and each trajectory will be constantly optimized and the ATM system will have evolved into a new service delivery model integrating information technology features like Cloud computing, agility, cyber security and more.

Mr. Boschen thanked the high connectivity between all the participants in the air and on the ground for the huge amount of data exchange. He said that ultimately, certain parts of the flight will be fully automated, a tendency which is already present in the drone sector, and this means that the role of the human will evolve considerably, performing only the tasks that are too complex for automation to handle.

Mr. Boschen then discussed the timeline to fully implement the Digital European Sky by 2024. He reviewed the following slide with the remaining intermediate milestones for 2030 and 2035.

### The ambition is to fully implement the Digital European Sky by 2045 with 2 key intermediate milestones for 2030 and 2035



Mr. Boschen said that they will roll out and implement the SESAR solutions that have already been developed to improve ATM in Europe. He mentioned that in the first five years from 2025 to 2030, they will complete the remaining research activities which are required to build the Digital European Sky, and if all goes well by 2045, they will complete the implementation of all new solutions.

Mr. Boschen went on to talk about the SESAR's strategic deployment objectives to accelerate market uptake and drive the evolution of the regulatory framework. He focused on the transformation to Trajectory-Based Operations (TBO) and the transition towards performance of air-ground connectivity. He mentioned how both are highly relevant for international aviation and require close international coordination.

Mr. Boschen then talked about how in relation to their research, they have defined 12 strategic priorities grouped into different areas of technological readiness, industrial research, and exploratory research. He focused the audience's attention to industrial research #3: Future En Route and Terminal Maneuvering Area (TMA) ground platforms, and #4: Future Airport Platform. Under these two sections, they plan to develop the new ATM and airport platforms. He spoke about how they will establish the new service delivery model with high levels of automation in the new human machine teaming and it will launch calls for new research projects in early 2025.

Mr. Boschen acknowledged that this vision needs investment and has benefits. In terms of benefits, it has capacity, safety, efficiency, and sustainability benefits for air transport. When it comes to the monetary terms, for every Euro invested, the return on investment is projected to be  $\in$  7 by 2040 and increase to  $\in$  17 by 2050.

### **Investments and benefits**

- Investment needs calculated at €25.8 bn for the period 2025 – 2050
- Operational benefits estimated at €318 bn, rising to €427 bn if additional benefits (more flights become possible) are included
- The return on investment for investors is projected to be € 7 for every euro invested in SESAR by 2040, increasing to € 17 by 2050

#### PLUS:

 400 million tons of CO<sub>2</sub> could be saved with the rollout of the vision by 2050



He said in terms of the environment, expect to save 400 million tons of CO<sub>2</sub> over the next 25 years, which corresponds to the total emissions of European air transport over three years.

Mr. Boschen ended his briefing by addressing the formal adoption of the new European ATM Master Plan being rolled out by December 2024, and they will launch a new wave of research projects in early 2025. He went on to say they will work closely with their international partners. The FAA is a key partner, and they look forward to maintaining excellent cooperation as they move forward with their visions. A quote from Mr. Boschen; "In Europe, we call it Digital European Sky. In the U.S., we call it the Info Centric NAS, but we're doing this together."

He thanked everyone and passed it back to Mr. Childs. Mr. Childs asked if anyone has any questions.

Mr. Trent Dudley (Department of Defense) asked for the upcoming airspace rollout in Europe, will there be a specific exemption for military operations?

Mr. Boschen thanked Mr. Dudley for the question and then he went on to explain that this is a voluntary commitment for the stakeholders. Mr. Boschen said that at a later stage, they might see a European legislation and then of course they would go into the area of whether they need exemptions for military or not. He said at this level, the information that he has given about strategic deployment objectives is voluntary, and they have a very good cooperation with military. He talked about how they have a civil military coordination and Eurocontrol was also involved in the U.S. Air Force recently with a seminar on TBO. He then mentioned they have a good contact with the North Atlantic Treaty Organization, also European military forces. For the time being, all these deployment objectives are voluntary, counting on early movers and interested parties. Thank you very much.

Mr. Peter Bunce (GAMA) applauded Mr. Boschen's vision and what he is trying to accomplish, but he wants to know why he thinks he will succeed when European Sky is having challenges with the Air Navigation Service Provider (ANSP) of each nation, and the challenges with Data Comm have not been resolved.

Mr. Boschen informed Mr. Bunce that they have a high commitment from their stakeholders and industry, including the ANSPs. He said that recently, there have been declarations by the major European ANSPs and the major ground industries, Tallis, Indra, and Leonardo. Mr. Boschen said that he thinks Europe will see the urgency of dealing with it. We have a capacity issue, a climate issue, and we want that transport to grow, so there is no other way. We have to put in more technology, more innovation and we do our best to help the community getting there. But you are right, it's a fair question. Thank you.

Mr. Childs asked about the benefits and investments slide, and he stated that it seems like the Return on Investment (ROI) margin for most of these projects are higher in Europe than they are in the United States. He said we talk about ROI a lot on these projects, and it seems interesting to compare the two environments.

Mr. Boschen responded saying it's like looking a bit in the crystal ball 2050. Where are we with air transport? Where are we with everything? But I mean we have looked from all angles and even if it's just half or a third of it in terms of benefits, it's still worth while doing. Hopefully, if you are getting as good benefits as they are on the slide, then it's worthwhile doing it. Thank you. He handed it back to Mr. Childs.

Mr. Childs thanked Mr. Boschen for his report and turned the meeting over to the Designated Federal Officer (DFO) Delegate and Assistant Administrator for NextGen, Mr. Paul Fontaine for the FAA report.

### FAA Report

Mr. Fontaine started his report by greeting everyone and saying that the FAA Deputy Administrator, Ms. Katie Thomson, sends her regrets because she was unable to attend the meeting. Mr. Fontaine moved forward with welcoming and thanking all the recently appointed NAC members for taking time out of their busy schedules to attend the meeting. He also said that he appreciates their continued engagement and collaboration as they work to modernize the ATM system.

Mr. Fontaine went on to talk about the strategy behind the appointments and re-appointments and how the rebalancing of the NAC membership is pivoting from developing, defining, and implementing to operational capabilities that were put in place. He said that it requires the NAC's advice to evolve.

Mr. Fontaine broke down what has taken place with the rebalancing plan. He talked about how the FAA has balanced and modified the membership to increase operators, airports and avionics sectors and reduced some of the air traffic management, automation, and infrastructure sectors. He outlined the modifications below:

• FAA has increased the operator sector from ten to twelve seats. This will provide a broader perspective and understanding on the critical operator equities as NextGen technologies and infrastructure continue to operationalize.

- FAA has increased the airport sector from two to three seats. This will provide a broader perspective as they look at the infrastructure and environmental considerations for airport focus around the NextGen investments.
- FAA has increased the avionics sector from one to two seats. This will provide NextGen a broader perspective on the industry challenges with equipage which continues to be an area of risk.

Mr. Fontaine mentioned that the NAC is still in the process of appointing additional members, and that this is a lengthy process, but the NAC should be at full capacity in the near future.

He then transitioned to FAA's priorities which consist of the reauthorization, process improvement, NAS 2040, and funding.

He started off by mentioning how on May 16, 2024, President Biden signed the Reauthorization Act of 2024. This authorization runs through fiscal year 2028 and communicates congressional priorities for how the agency carries out its mission to provide the safest, most efficient aerospace system in the world.

Mr. Fontaine talked about how the legislation speaks very broadly to a lot of things that directly affect the FAA organizational structure and provisions for ways to bolster the agency's oversight processes and where to invest some of the resources to support those safety and efficiency for conventional users and for new entrants as well. He said that much of this legislation aligns with the agency's existing priorities and approaches but tells us where Congress is most interested in seeing adjustments to resources and timeline for various activities.

Listed below are some notable themes and directives Mr. Fontaine touched on from the 2024 FAA Reauthorization Act.

- NextGen will be sunset by December 2025
- Directs creation of an Airspace Modernization Office to ensure that the National Airspace System future, safety, mobility, efficiency, and capability needs of a diverse and growing set of airspace users, including operational improvements needed by 2040.
- It also directs the Advance Air Mobility (AAM) activities to the Office of Aviation Safety and creates a Chief Technology Officer within the Air Traffic Organization which will transfer the NAC to ATO.
- The Reauthorization also provided language to expand the NAC to include two additional seats, one representative from the Unmanned Aircraft System (UAS) industry and the other representative from the powered-lift industry.

Mr. Fontaine thanked Ms. Noonan for her continuous efforts and hard work that goes into making all these changes.

Then he went on to speak about staffing and how the reauthorization directs the FAA to conduct a review of air traffic controller staffing models and to find ways to expand capacity to support controller training. He also mentioned that with the review and revision of agency's aviation safety inspector staffing models, they created an aviation workforce mental health task group.

Mr. Fontaine moved on to the next topic about how air traffic safety and efficiency require the deployment of surface safety equipment and require the deployment of NextGen related technologies and services along with the direction to plan and address equipage, and any necessary rulemaking.

Mr. Fontaine made everyone aware that all of this is fairly new and there is a formal process that they go through to assure that they are complying with the guidelines they were given. Mr. Fontaine stated that this is why they have established agency wide working groups to determine how they will implement most of these provisions.

Mr. Fontaine then started talking about NAS 2040. He let everyone know that there has been much growth in the Commercial Space. He shared his excitement for the upcoming drone operations and air taxis that will be sharing the skies. He also shared how the FAA is committed to safely integrating drones, advance mobility, and Commercial Space with following the aviation safety statements.

He informed everyone that they are making great progress implementing the remote identification regulations and enabling Beyond Visual Line of Sight (BVLS) through rules rather than one off waivers and exemptions. Mr. Fontaine said that this is a tremendous challenge, and the FAA works hard every day to make sure that they are getting this right.

Mr. Fontaine than explained how the drone community has moved on to a strategic rule making plan and working on the Special Federal Aviation Regulation (SFAR) for powered-lift. He said that he knows a lot of people are focused on how they will certify advanced mobility operations and pilots.

Mr. Fontaine explained that the SFAR is a regulatory framework with a built-in expiration date. He said that SFAR is used to acquire more data on how to safely integrate new and novel aircrafts into the system, while still providing a regulatory path for powered-lift in the future. He also acknowledged that they have taken the consideration of smaller rural and historically disadvantaged communities that need to be part of the ever-evolving NAS.

Mr. Fontaine transitioned to discuss funding. He talked about striving for more consistent funding as they move forward. He went on to say when they have varying levels from year to year, it makes multiyear planning very difficult. He said that despite these challenges, they will meet the commitments they have with the NAC as documented in the NextGen Joint Implementation Plan (NJIP).

Mr. Fontaine concluded his remarks by saying how much he appreciates all the NAC's support and engagement as they all work together to modernize and advance the nation's airspace. He then turned the meeting over to Mr. Tim Arel for remarks on behalf of the ATO.

Mr. Arel started off by greeting everyone and then he went right into referencing the comment Mr. Childs made earlier about the traffic this summer is 1% above 2019 levels and he mentioned that certain reginal markets like Florida remain well above that.

Mr. Arel went on to say despite the challenging weekends that the Northeast endured, the delays are down 33% for the summer compared to pre-Covid and down 24% overall compared to between 2017 and 2019 as the baseline for that three-year moving period.

He mentioned the comment that Mr. Fontaine made that they have until 2025 to transfer the NAC, and he said that he will be working with Mr. Fontaine and Mr. Childs to make that transition by the end of this calendar year. He informed everyone that Congress had tasked them with a long list of things and will be working closely with NextGen and the Airspace Modernization Office throughout the next year.

Mr. Arel said as they move forward with this process, he will be pushing for ATO support. He also mentioned a quote from Administrator Whitaker saying, "there are no new runways being planned that we are aware of from DC to Boston". Mr. Arel said that they have continued challenges in the New York metro area and several other areas where they are reaching capacity.

Mr. Arel then talked about how he looks forward to working with the DFO to ask when and where they should look at mandating Best Equipped-Best Served (BEBS) during peak periods to enable and optimize the airspace. He said with no new runways, he knows they cannot run more traffic, but he knows that they can run the airspace more efficiently at those runways. He then mentioned Required Navigation Performance (RNP), saying that there is a lot to be debated through industry.

Mr. Arel then started to talk about the near future and current efforts. He said a lot of talk has been made about needing more controller staffing, but not only do they need more controllers, they need more technicians, engineers, and pilots. He said that there is a wave of trainees coming through the system. He said they are not only focused on greater hiring but working with all their partners across the FAA to improve the hiring process. Compared to last year, they have 90 more certified controllers across the system and 39 more supervisors, as well as several other additional staff and more people in training. He went on to talk about how the Administrator has committed to at least three years of maximum hiring and Congress is now directing at least five years of maximum hiring. He informed everyone that they expect to hit their goal of 1,800 controllers being hired or controller trainings this year and 2,000 next year. Mr. Arel ended this topic by saying 90 and 39 may not sound like a lot, but it is significant and there are a lot more trainees behind those.

The next topic Mr. Arel discussed is the struggle in the Northeast. He said the most difficult task they have taken on in the NAS in 20 years has been moving the Newark area airspace from New York TRACON (N90) to Philadelphia. He mentioned there are nine people that have been certified in the Newark area and will remain at N90. To boost staffing, those nine people that were certified in one of the most difficult areas in N90 will be certified in other areas. Mr. Arel then made comments about how the training pipeline has begun at Philadelphia and how the team from New York has been moved and temporarily reassigned to Philadelphia is working well with the Philadelphia team and the trainees are starting to get in the classrooms and labs. He said that his team is in the process of selecting more controllers to send there. He informed everyone that their goal is to have at least 30 people in training in that area by the spring.

Mr. Arel stated that it will be at least two years before they have a healthy staff. He said that they are working with individual users that have questions and being transparent in this effort. He and his team appreciate everyone's understanding and patience. He acknowledged that this is a decades long challenge, saying that he and his team will continue to explore all the ways possible within the law to hire in the New York area, even though that is a continuous challenge for them.

Mr. Arel moved onto his next topic stating how humble and proud he was of everyone at the Administrator's call to action meeting on surface safety and the many other issues. One of the outcomes from this meeting was that they discovered they needed a new surface awareness tool. He mentioned how some said that Airport Surface Detection Equipment (ASDE-X) was the solution. The cost is prohibitive and it's a 1980-90's program. He said that there was mention of Airport Surface Surveillance Capability (ASSC), which is similar to ASDE-X, but was deployed and still includes radar, so only 44 of U.S. airports have surface surveillance.

Mr. Arel said that thanks to the Automatic Dependent Surveillance – Broadcast (ADS-B) mandate, they do not need radars everywhere. He said they need to improve the situational awareness of their personnel in the tower and they need to get it to multiple locations. He was happy to report that in 12 months, they acquired and deployed the technology to four locations this summer, Austin, Indianapolis, Dallas, and Nashville, and how all the feedback has been amazing. He went on to say that it has improved situational awareness and there are three vendors working at four sites and has produced a consistent product and provides the same display and looks the same no matter who the vendor is in each tower. Mr. Arel continued by stating how the team just released the next round of deployment in this effort. He stated that the vendors will continue to work with his team to advance the product they are providing. Unfortunately, it does not currently have all the things they were able to leverage with ASDE-X, but that would have required this to be a five-to-eight-year program. He talked about how ADS-B does not have radar but if they did get that, the cost would be prohibitive, and they could possibly max out at 10 facilities.

Mr. Arel announced that ADS-B is going to 14 additional facilities by the end of the year and that would be 18 facilities in total. He added that they are working on a qualified vendors list and meeting with airport executives with towers and airport owned facilities to see if they are interested in procuring the technology and if they can afford to put it in the contract tower or a sponsored home tower.

Mr. Arel shared his goal of having this technology put into well over 100 towers and significantly improve the situational awareness. He added that the greatest amount of focus is on surface which is where the most risk is. Mr. Arel said that there is interest in their smaller towers that do not have Standard Terminal Automation Replacement System (STAR) displays and radar, but a lot of facilities would benefit from seeing these potential airborne conflicts. He ended by saying they are focused on improving their surface awareness.

Mr. Arel finished his briefing with his last topic, infrastructure, and how 91% to 92% of the ATO's budget is going to sustain their current system. He said that they are not able to modernize at the rate they expected to and that is becoming more and more difficult as they move forward. He expressed his excitement about President Biden's FY 2025 budget submission, which is Facility Replacement and Radar Modernization (FFRM) and Surveillance Strategy.

Before handing off to Mr. Michael Freie (FAA) for a briefing on FRRM and Surveillance Strategy, Mr. Arel opened the floor for questions.

Mr. Bunce applauded Mr. Arel for what he has been able to do on the surface side, but he really wanted to emphasize his comments about towers and the awareness of airborne traffic that do not have their own radar. He also said that he believes that they could save lives mid-air by pushing radars out more rapidly to smaller towers that do not have them currently.

Mr. Arel agreed with Mr. Bunce and he said that is why the greatest risk right now is on the surface, that is why they are prioritizing it that way. He said that they have a dual effort to look at it going beyond the airborne awareness area that will be budget driven. He expressed that his desire would be to get it to every tower.

Mr. Bunce said this is good important stuff that we are rolling out with technology, and not letting perfect be the enemy of the good. He thanked Mr. Arel again.

Mr. Arel commented how this has been a significant collaborative partner effort. One of the things that he touched on is figuring out what the price point is, and this is just the beginning because previous efforts have been proven to be cost prohibitive to put it everywhere they would like to. He talked about the changing of prices and the benefits that are available in commercial off the shelf and when requirements are added the prices go up and they are not able to distribute as far as they would like.

Mr. Arel handed off to Mr. Freie for a briefing of the FRRM and Surveillance Strategy.

### Facility Replacement and Radar Modernization and Surveillance Strategy

Mr. Freie started off by thanking Mr. Arel and letting him know that when Mr. Arel committed him and his team to having FRRM in place within one year, he did not think it was possible. He said how good it was and how it was a challenge, but his team did a fantastic job, and he thanked Mr. Arel again for pushing on that.

Mr. Freie started his briefing with an introduction of himself by saying that he works in the surveillance directorate. He went on to say as part of surveillance, they deliver ADS-B, the cooperative and the non-cooperative radars and surface that support the NAS. He then said how he will give an overview and background of FRRM and review different charts and budgetary challenges. He said that he will give reasons as to why they think this is important to the agency and the user communities represented by this body.

Mr. Freie gave a brief background of the FAA. He said that the FAA has a lot of equipment and a lot of facilities that are old and need to be updated. He said that the air traffic control towers are averaging about 40 years old, and the Air Route Traffic Control Centers (ARTCC) are averaging about 61 years old. He then started talking about how they received \$5 billion as part of the bill and the Infrastructure Investments and Jobs Act (IIJA), but that combined with the FRRM proposal only addresses 15% of the facilities and replacements, which is just a start. He said that the scope that is included in the FRRM, if they were to recapitalize and replace it today, would be a \$70 billion investment. He said that was how much money was invested over the previous decades and in current day is how much it would be to replace all the systems. Mr. Freie said that with their existing equity budget, they would only be able to afford one facility a year and that with 370 systems, that would talk a long time, but he confirmed that they really need to get moving on replacing the systems.

Another challenge that Mr. Freie brought up is that they are not only required to sustain the NAS, but they are also required to update the NAS introducing possible new entrants. He mentioned that doing this with a tight budget is a significant challenge. He also brought up the unfunded requirements that the agency must address, like mandated cybersecurity and IPV6.

Mr. Freie gave more information about previous budgets. He said that the equity budget in 2002 was \$2.95 billion and in 2023, it was \$3.1 billion. So, the budget has been flat over the last 20 years. He stated that if you consider inflation over these last 20 years, the F&E budget, just to account for inflation, not including the new entrants and updates, should be \$5.4 billion a year. He said that they have created a large technical debt that needs to be addressed. The FRRM proposal is the FAA's way to initiate that conversation to get them out of the constrained budget challenge that the agency has. Mr. Freie warned that the reality is that with these aging systems, there is an increased operational risk as well as an increased operational cost to sustain these systems that are not sustainable.

Mr. Freie brought up some good news that Mr. Arel touched on earlier and that was the operational performance perspective. He said that the agency is doing well and that is primarily because they have built a very layered NAS. He explained that if ADS-B goes down, they have a cooperative and non-cooperative radar to back it up. He then informed everyone of the bad news that those layers are becoming higher levels of risk, specifically the older facilities and the radars that support NAS. Mr. Freie said that they need to look across the board and see their risk elements and where their systems are. He then went on to say they have 182 systems across the NAS, and they do not want to see another Notice to Air Missions (NOTAM) like event that was unseen and unplanned. He noted that from that assessment they identified facilities and radars at the top of the list. These are the systems that have the largest risk of unplanned outages and longer outage durations, and this is where they need to focus their investment. He mentioned that the safety review team was last commissioned in 2003 and identified a lot of basic findings; they have old systems, they need stable funding and the risk around the makeup layer is increasing. Mr. Freie said that the layers are a good thing but with the increased risk they need to really invest in those systems.

Mr. Freie continued his discussion on radars and why he thinks they are important. He said ADS-B equipage has been increasing year after year. He said that there are users not required to be equipped. He talked about how ADB-S is an airspace rule, part 121 and part 135 operators flying in the Class B and C airports are required to have ADS-B. He believes that ADS-B performs extremely well. He continued by saying that there are users and airspaces that do not have full equipage and the Department of Defense and other law enforcement operators do not operate with ADS-B due to operational security ranks. So, the NAS needs the combination of ADS-B, cooperative, and non-cooperative radars.

Mr. Freie transitioned to the proposal topic.

FRRM Proposal:

- \$8.0 billion in mandatory funding over five fiscal years, funding:
  - Replacement of 20-25 Air Traffic Control Towers Terminal Radar Approach Control (TRACON) facilities
  - > Recapitalization of 2 Air Route Traffic Control Centers
  - > Modernization of up to 377 radars
- He mentioned that the radar element of the proposal would fund the replacement of all the cooperative radars, and get a head start to replace the Airport Surveillance Radar (ASR) and non-cooperative radars in the NAS.

Mr. Freie opens the floor for questions.

Mr. Joe Heins (United Airlines) thanked him for all the information and asked where the facility consolidation is in this strategy and what is the scope of that.

Mr. Freie said that the facility consolidation is not specifically part of FRRM, but it is part of the reauthorization.

Mr. Arel said that we did set aside money to study what it would look like to combine facilities. He said we have not had a new center in over 60 years. He let Mr. Heins know that in order to replace facilities, they will need to estimate the cost of two things; a new national voice switch, which is the capability to

route and reroute around certain circuits rapidly for different geographical areas and a new automation system because the ramps are 20 years old. He continued saying that there are ongoing efforts under an old Reauthorization Section 804, to combine a small terminal facility, but they are experiencing a lot of resistance around political boundaries for bringing facilities together, that is why there is so much discussion around this effort. He said we can learn from what it was like for the Department of Defense to combine bases and accept recommendations.

Mr. Arel explained that this is a separate effort. This is more aimed at replacing facilities towers that need to be replaced or particularly the radars. He went on to say that radars are probably their lowest priority because the team does a phenomenal job at replacing and maintaining the systems within their budget. He mentioned that this is considered mandatory funding because it is outside of their appropriations, therefore, it would not be in addition to their appropriation, and they would still follow the direction of F&E and OPS budget to do their maintenance. Mr. Arel said that this would be the start, to be able to fix a lot of the aging infrastructures. It is separate from spending caps and scoring, which would really be a game changer. He went on to say that this is the first time it has been proposed, and it is not the only example of this kind of Federal Government budget system, but he says it is the first time he has been aware.

Mr. Bunce touched on how the Administrator asked several others in the room to help right size the NAS. He wanted to know when they pull all of this together who is going to be able to do the science that says, if we lived in the perfect world, how many centers would we need? He said, looking at modern day switches and the telecommunications capability, what could we do if we were successful? What is the number?

Mr. Arel replied that is what the unknown is, but there are several efforts that are going forward. The first one is transforming our telecommunications network from FAA Telecommunications Infrastructure (FTI) to FENS. Right now, we are replacing Time Distance Multiplexing (TDM) going to Internet Protocol (IP), but this affects many things like weather stations out of small airports. Mr. Arel stated we do not want to lose the capability of weather reporting and NAV-A monitoring. He explained that this is the urgent part. They want to show that the telecommunication capabilities, voice switch capabilities, and automation is very different than in the 1950's when the centers were designed.

Mr. Freie added information from the radar perspective saying that back in the day, they would control aircrafts with binoculars and there was a radar at every airport. He talked about the opportunities to right size the radar portion. They could get newer technologies to allow them to disengage, but they must resolve an architectural design from that legacy where the primary radars rely on co-located cooperatives. They can bring in ADS-B instead and turn off the co-located cooperatives. He stated that this funding enables that. He ended with, not only can we reduce our procurement costs but also their long-term sustainment costs.

Mr. Edward Bolen (National Business Aviation Association, NBAA) asked as the plan stands now, is this the FRRM proposal that you laid out?

Mr. Freie said this is what was submitted as part of the FY 2025 submission. The conversation is currently with Congress, the appropriators, and authorizers and that there is an appropriate oversight element that we know exists. This is really an authorization element because it is allowing access to the trust fund. Mr. Freie informed Mr. Bolen that the \$70 billion is an estimate for facilities and radars if they were

doing one big replacement of everything. He reminded him that the combined bill only gives them 15% of that which is a start and opens a door to a new revenue stream. Not being stuck with the year after year constrained appropriation process but getting access to the trust fund and letting NAS users pay for it.

Mr. Childs expressed that there is so much money that it is stuck in the process, is a bit upsetting and it does not make any sense. He touched on how he had a conversation with Tim before the meeting about how this is an evolutionary process of not just efficiency but safety, which is most important. He said that he finds more small communities that do not have towers, lack of ADS-B more than anybody else. He talked about eventually, the technology is going to be so advanced and ironically the dollars are there, but they just cannot unlock it the way they need to.

Mr. Fontaine added that when the FAA talks to the appropriators, the reason that they are so receptive to this is because the FAA could tell the story that industry helped put together. He believes that they have momentum to do the next chapter. He said they are being asked questions like what kind of radars are they, are they modern scanned radars or are they the old rotating radars. He said when we start getting the technical questions, it would help to understand so we can explain some of these technical aspects on radar modernization. He went on to say that the story works, so once there is a new Administration in the spring and the budget comes out, we can tell the next chapter of the story and the sooner we can get together on all these various advisory groups that are working on this problem and come to a consolidated plan for what's the next crunch, let's do it.

Mr. Freie talked about how they have been in briefings with Congress, the House, and the Senate, and they've been receptive. He thinks 2025 will be a challenge. He thinks collectively this is a very important message that they can bring.

Mr. Freie appreciated the surface awareness effort. He said this was initially a perfect example of something where the risk was growing too great. He said they didn't have time to wait for future year funding because that would take three years to build into their budget. Mr. Freie said that they carved it out of other things and slowed other projects down to prioritize it. Hopefully, efforts like this will help them be able to respond in a timelier fashion to their regular appropriation for the other issues, including airport surveillance. Mr. Freie said he looks forward to new technology there. They would have to do a study to figure out what the best technology to use or other government agencies that utilize our system.

Mr. Arel concluded this discussion by thanking Mr. Freie for the presentation. Mr. Arel then provided the NAC with an update on the recent ATO leadership changes. He noted that Ms. Rebecca Guy, long time Program Management Officer and Vice President, as moved on to become the Vice President of Technical Operations (Tech Ops) and she will be working with Mr. James Linney as her Deputy Vice President. Mr. Dan Murphy, who was leading Tech Ops for a short time, has gone back to lead Systems Operation (SysOps) where Ms. LaKeisha Price is acting Deputy Vice President. Ms. Alyce Fleming-Hood from SysOps is now the Vice President for Mission Support, and Mr. Greg Schwab is her Deputy Vice President. He mentioned familiar faces just in different seats and he hopes everyone is still collaborating and no communication has changed.

Mr. Arel turned the meeting back over to Mr. Childs.

### NAC Subcommittee (SC) Chair's Report - NAC Taskings Status

Mr. Childs then turned time over to Mr. Jeffrey Winter (JetBlue Airways) the NAC Subcommittee Chair.

### Terminal Flight Data Manager Program Update

Mr. Winter handed it off to Mr. Doug Swol (FAA), Mr. Robert Goldman (Delta Air Lines), and Mr. Chris Oswald (ACI-NA) for an update on the Terminal Flight Data Manager (TFDM) Program.

Mr. Swol began by saying that he was not going to give a status update, but instead, speak a little bit about the demonstrations that occurred that morning separate from the NAC meeting. He went on to say that the TFDM capabilities are not the future technology, but today's technology that are operational now at Tech Air. He ended his update by saying that they have Initial Operating Capability (IOC) in Los Angeles, Charlotte, and Tampa, with more sites becoming IOC within the upcoming years.

Mr. Swol finished his presentation by saying that this will be his last NAC meeting and that his program manager, Robert Hanes, will be taking his role in the NAC, the NAC Subcommittee, as well as in the Surface and Data Sharing NIWG Team. Mr. Swol said that Mr. Hanes knows TFDM very well and that he will do a tremendous job once he leaves. He wrapped everything up by thanking everyone on the NAC, the NAC SC, and the Surface and Data Sharing NIWG Team. He said that the success of TFDM takes a lot of hard work on the FAA side, as well as a lot of collaboration with industry. He thanked his co-chairs Mr. Rob Goldman and Mr. Chris Oswald for their outstanding work and collaboration over the years and then handed it over to Mr. Goldman.

Mr. Goldman welcomed Mr. Hanes and said to Mr. Swol that it has been a long road, but he enjoyed the partnership they created over the past few years. He went on to say that they have been through a lot; government shutdowns, the pandemic, but through it all, they were able to still come together and create a lot of success. Mr. Goldman thanked Mr. Swol and wished him good luck in his new endeavors.

### Surface & Data Sharing Development Timeline



Mr. Goldman stated that today's TFDM demos were really important because it showed a wider understanding of what TFDM is and the benefits that it will bring to us, including surface metering. He said that TFDM is an integrated system that is a part of the modern ATC system. Mr. Goldman went on to say that in the beginning of the meeting we spoke about the new Airspace Modernization Office and that the NAC will be transitioning under ATO. He said that Mr. Arel mentioned something about surface safety tools, and he thought that was a great example of where they want to go in industry, to deliver their benefits quicker. Mr. Goldman ended by saying that the flight today from LaGuardia to Orlando is result focused versus programmatic focused and he asked how do we bridge the gap between the tactical world and the strategic world. He said we have to run our operations today and bring in new technology and processes that will help with that in the future. He thanked Mr. Swol one last time and then handed it off to his co-chair, Mr. Oswald.

Mr. Oswald started his briefing by referencing what Mr. Goldman previously stated about their continuing focus and how at the beginning of the year, their project has been to move surface metering, which is one of the many capabilities of TFDM. TFDM offers increased industry readiness with the key focus on airports. Mr. Oswald thinks that as they conduct TFDM with new active players in the U.S, such as airport operators and flight operators, it will look at the need to recognize variations in the way the airport operators and possibly some of the plant operators will interact with the TFDM system and understanding it. This will be reflected in how they deal with surface metering, and Mr. Oswald said that this should be pulled together for the fall NAC meeting.

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## Setting the Stage for the Fall NAC Meeting

- Surface/Data Sharing NIWG continues its focus on way to enhance industry readiness for surface metering at the 27 airports where this capability will be available
- · Areas of focus for readiness include:
  - > Roles and responsibilities of key stakeholders
  - > Policies and procedures
  - > Enabling technologies
- Also focusing on the benefits that TFDM provides beyond surface metering including at the 22 additional "non-surface metering" airports
  - > Reduced controller workload
  - > Improved surface management flexibility
  - > Improved flight operator and airport situational awareness
  - > Improved during- and after-event analytics, including those dealing with compliance
  - > Setting the foundation for information-centric NAS operations and trajectory-based operations
- · Fall NIWG briefing will focus on our findings and recommendations in both areas



Mr. Oswald turned his focus onto the TFDM demonstration that occurred that morning separate from the NAC meeting. He said that focusing on the benefits of TFDM is providing beyond that, for really establishing foundational capability. He referenced Mr. Goldman's comment from earlier about data sharing, and how bringing surface elements into the broader, not just kind of tactical on site at the airport facility management of our traffic, but into a more strategic view of sharing those data and the ability to more effectively manage flights. He said, managing departure times is their core focus right now. All of these elements are pieces that they are pulling into a capstone document that they are planning to be ready for the next NAC meeting, this December.

Mr. Oswald opened the floor for questions. No questions were received. He then handed the meeting off to Mr. Winter for the next presentation.

### En Route Data Communication

Mr. Winter then handed off to Ms. Kathy Torrence (FAA) and Mr. Chris Collings (L3Harris) for an update on En Route Data Comm. Ms. Torrence began by saying that this will also be her last NAC meeting as she will be moving to a different organization.

Ms. Torrence began referencing the chart below saying that they now have 16 centers that are operational 24/7. She went on to say that their En Route Full Services Increment 1 has four more holes

to fill in on the chart. Ms. Torrence stated that Albuquerque is going to be coming up there and that there is a training taking place next week as she spoke. She went on to explain that they will be coming up at the end of September, followed by Boston, Memphis, and then finally, New York will be their last site.

## Data Comm NIWG Update (August 2024)

### En Route Data Comm Deployment

- + 16 centers operational 24/7
- + En Route Full Services Increment 1 active at all active centers
- + Planning En Route deployment to remaining 4 centers.
- + 10 centers declared IOC



### Upcoming Center Start Dates (Initial Testing):

Albuquerque: 26 Sep 2024 | Boston: 6 Nov 2024 | Memphis: Dec 2024 | New York: Feb 2025

### **Industry Updates**

- + Over 38% of En Route air carrier traffic used Data Comm in June 2024
- + Installation of avionics updates 77% complete
- + Continue to receive positive user feedback as 5000 usage grows 4000
- GA/BA NOTAM lifted revised En Route participation list published May 2024



Ms. Torrence pointed out some more exciting news that the color of the map above has changed because over the summer, they had five sites declare IOC which is a huge accomplishment for their team, and it is improving their support to the facilities as they work through some of the interop and networking issues they have encountered. Because of that, their dates for the remaining sites have not changed.

Some of the issues they are dealing with right now that many people are aware of, according to Ms. Torrence are their 737 airplanes. She stated that there have been situations where they have had reroute messages that they were sending, has the same name in the U.S. as it does in another area of the world which are causing some reroute issues. She also stated that there have been some calculations that were done that were not according to their standards, so they are continuously working with Boeing to resolve this issue. They took a trip to Seattle to meet with industry to increase awareness.

Ms. Torrence transitioned her presentation to an industry update. She said they have 38% of their air carrier traffic now using Data Comm again, meaning their usage continues to climb. The avionics

updates are underway, and Ms. Torrence agreed with Mr. Swol about how important partnership with industry is. Ms. Torrence referenced the last NAC meeting when she briefed, she said that they are looking to get data off of the actual aircrafts themselves to help them with their analyses. She said she just got word that Southwest Airlines has equipped 688 of their airplanes with Data Comm, so it helps them get to the bottom of some of the issues they are facing.

Ms. Torrence continued to emphasize how important partnership with industry is and that they are working with American Airlines as well and how JetBlue has been a great partner looking through some issues that are occurring on the East Coast and the BWI area. Ms. Torrence ended by saying that they continue to get positive user feedback.

Ms. Torrence ended her presentation by saying that they were looking at the numbers since they had lifted the GA/BA NOTAM about a year ago. She said now they have over 3000 eligible General Aviation (GA) and Business Aviation (BA) aircraft that are able to participate in the En Route Data Comm as well. She said they are very excited about finishing up with their initial services and then next, they will transition to starting on their full services waterfall, which will start to be deployed in 2025. Ms. Torrence handed it off to her co-chair, Mr. Chris Collings.

Mr. Collings began his presentation by saying that they have been giving a lot of progress on their avionics updates. He referred to Ms. Torrence's statement that they are a little more than <sup>3</sup>/<sub>4</sub> of the way down there and that the rest of the projects are in various stages of completion, either from the avionics side or from the installation on the air.

Mr. Collings then began to reference the chart below. He said that they broke out specifically the U.S air transport operators, both passenger and cargo so that it is clear who is participating in Data Comm at the tower. He stated that the first column is the DCL participation, and the right column is the En Route participation. He pointed out that some of the operators do not have 100% of their fleets yet, only a couple do. Many of them have mixed fleets where maybe their 737 participate, but only part of their Airbus fleet participates for various reasons.

## Data Comm Equipped Capable Fleet

US Air Transport Operators	DCL Participating	En Route Participating		
American Airlines	$\checkmark$	$\checkmark$		
ABX Air	$\checkmark$	$\checkmark$		
Amerijet International	$\checkmark$			
Alaska Airlines	$\checkmark$	$\checkmark$		
Air Transport International	$\checkmark$	$\checkmark$		
Kalitta Air	$\checkmark$	$\checkmark$		
Delta Air Lines	$\checkmark$	$\checkmark$		
Eastern Airlines	$\checkmark$			
FedEx	$\checkmark$	$\checkmark$		
Atlas Air	$\checkmark$			
Hawaiian Airlines	$\checkmark$			
JetBlue	$\checkmark$	$\checkmark$		
National Air Cargo Group	$\checkmark$	$\checkmark$		
Spirit Airlines	$\checkmark$			
Omni Air	$\checkmark$			
Polar Air Cargo	$\checkmark$		Ko	
Republic Airways	Initial ops with s	elect crews and aircraft	Participating	y 🗸
Southwest Airlines	$\checkmark$	$\checkmark$	Farticipating	
United Airlines	$\checkmark$	$\checkmark$	Future User	
UPS	$\checkmark$	$\checkmark$		
Western Global Airlines	$\checkmark$			+
Business Aviation Fleet Size	4,619	3,095		NIA O
Non-US Air Transport Operators	74	38		NAU
				36

Mr. Collings then pointed out that on the right side of the chart, a large number of operators have started to participate in En Route, but there are still a few who are still waiting. The ones that are waiting either have some equipment updates that need to be made, some pilot training, or other various reasons like getting their crews trained or just getting to the critical mass that they have enough aircrafts that are ready to start on En Route operations. He said down at the bottom of the chart, they characterize the business jet fleet as business and general aviation as the fleet size because it is a little harder to characterize that as far as operators.

Mr. Collings stated that right now they have a little over 3,000 aircrafts that are participating in that route and a little over 4,000 that participate today in the tower side of things. He said that the delta symbol symbolizes that there is primarily equipage and not having updated radios and those sorts of things to meet the minimum requirements for the En Route environment.

Mr. Collings ended his presentation by noting that the Non-U.S. air transport operators has probably been their second biggest growth area after GA in the last year. He stated that now that more centers are up and running, they will have a lot more Non-U.S. operators that will be participating. Mr. Collings expects that number to continue to grow over time as they train their crews and get ready for operation.

Mr. Collings opened the floor to questions. Mr. Ed Bolen (NBAA) stated that it is amazing how quiet the radio is on the West Coast, particularly in front of yourself. He said we do have to figure out their general

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aviation solutions because there are tens of thousands that have not had that for years. Mr. Collings responded by agreeing and saying that most of these are on the higher end of the business, but they are starting to see additional fleets come online and it is very exciting.

Mr. Bolen stated that the business aviation fleet is a big deal, and that they are pleased to be participating in it, seeing its benefits particularly at airports that have DCL. He said that a lot more airports are interested now and that they want to be funded, so they should do everything they can to enhance it. Ms. Torrence jumped in and said they have a list of airports that they are tracking of requests and are trying to keep track of who is requesting them. After that, they have to sort through them to see which ones are a priority based on the business base and the usage, but the funding could be a setback. She stated that they are not going to be adding Anchorage or Honolulu as part of the offshore program, they will be coming around 2027/2028, so as of right now, they do not have any additional funding for towers for free.

Mr. Bunce said in response to Ms. Torrence that the number of miseries is down, so they have a big safety benefit. He went on to say that in his opinion, the FAA does not toot their horn enough on the success of Data Comm and how it is essentially the backbone for everything else. He went on to ask how can they quantify that and tell the story about the benefits they are receiving from using Data Comm. He referenced the Reauthorization Bill and mentioned that Congress said that they are going to do pre departure clearances, start to enable GA but also AM in particular, how are they going to pick those five sites and is industry going to be involved. He said this should be done so that they can maximize its initial use.

Mr. Fontaine responded and asked if Mr. Bunce was asking about relative. Mr. Bunce responded, saying he was referring to the relative of what Congress told them to do. Congress told them to essentially pick five sites that they can issue GA pre departure, just clearances. Mr. Bunce said right now, just think how AM will be sitting within the class using his cellphone, trying to get a departure time. He said it is not going to be practical over the long term, but as they continue to make progress, Congress could agree that it was originally more.

Mr. Winter opened the floor to questions. No questions were asked. Mr. Winter thanked Ms. Torrence once again and wished her luck in her new role. He said how much he appreciated these presentation slides and notices the amount of work it takes to make these things happen. He said he loves to see New York moving left selfishly.

### Joint Analysis Team Update

Mr. Winter handed off to Mr. Eric Silverman (American Airlines), Mr. Alex Burnett (United Airlines), Mr. Dave Knorr (FAA), and Ms. Torrence for an update on the Joint Analysis Team (JAT) En Route Data Comm efforts.

Mr. Silverman began the presentation with congratulating Ms. Torrence on her new position. He then touched on NAC Tasking 19-3: JAT Assessment of Atlantic Coast Routes. The JAT team held their first in-depth meeting this week and plans to have several meetings with industry and the FAA leading up to the December NAC meeting.

Mr. Silverman then discussed En Route Data Comm and said if you have used Tower Data Comm then you will love En Route Data Comm. The purpose of the En Route Data Comm JAT tasking is to look at

the quantifiable benefits. He said that the JAT agrees that they can extract the qualitative benefits, but the quantitative benefits are tricky. The JAT had a common agreement on how to look at the benefits from the measurement perspective, but it is hard to extract from the benefit perspective. Mr. Silverman handed off to Mr. Knorr for additional insight.

Mr. Knorr began his presentation by saying the JAT has been through 13 different taskings and are currently trying to come up with a monetary value of return on investment (ROI). Mr. Knorr said there is a lot of data but turning that into monetary value is tricky. He then discussed how Ms. Torrence and her team are looking at city pairs, airports, and different aircraft types and looking at when an aircraft receives a Data Comm clearance on route. They are estimating approximately a two nautical mile savings. When Mr. Knorr talks to the airlines, they are usually asking about the block time change which he estimated to be approximately 17 seconds.

Mr. Knorr said the JAT will come back to the December meeting with more value around En Route Data Comm and the read back errors. He then said that with Data Comm, when you get your clearance faster, you begin moving towards where you need to go, not always where you want to go, but where you need to go faster and that adds up. Mr. Knorr said the team will come back to the NAC with more meaty examples with sizable benefits.

Mr. Knorr then discussed his experience working in Europe, which he said is a lot easier to model and project, but now with this JAT tasking they are seeing more of a spread with the benefits. Mr. Knorr turned the time back over to Mr. Silverman to close out the briefing.

Mr. Silverman said the team has a path forward and they will continue deliberations into the Fall. The team is honing in on the calculations and are peeling the onion back and coming to an actual number. He noted the interesting things is they have real time examples. He said down the line, they may want to do another analysis as the system and technology comes more mature. Right now, the team wants to reach out to industry through Airlines for America (A4A) to understand what they are seeing, hearing, and recommending going forward.

Mr. Silverman opened for questions:

Mr. Vipul Gupta (Honeywell) asked as they look to quantify those benefits, is this a model anyone to plug in say these routes and get the expected benefits?

Ms. Torrence replied that when they discuss big data, it is an average. We are looking at every city pair to come up with an average. If they are looking for specific savings for your airline, that is something the Data Comm team will have to look at and provide.

Mr. Gupta said when they talk to operators, they are getting questions about what Data Comm will do for their operations, which they find even harder to answer.

Ms. Torrence said that is good feedback and they will be taking that into consideration.

Mr. Winter opened the floor for further questions. No questions were asked.

### NAC Tasking 23-2: NAS Airspace Efficiencies Update

Mr. Winter handed off to Ms. Lee Brown (JetBlue Airways) to begin to the presentation for NAC Task 23-2: NAS Airspace Efficiencies.

Ms. Brown began her presentation discussing the work the team has done since the March NAC meeting, which includes:

- Tracking the RNP utilization
- Expanding the Minimum Service Level (MSL) definitions and comparing it with the completed case studies
- Reviewing "barriers" to the Section 547: Enhanced Air Traffic Services Report and the LAX work
- additional work on the case studies to harden what they have already put forward
- Aligning with FAA IFP streamlining efforts

Ms. Brown then turned time over to Ms. Heidi Williams (NBAA) and Mr. Jim McClay (AOPA) for a briefing on NSG 3 and 4 case studies.

Ms. Williams and Mr. McClay discussed the underlying assumptions, lessons learned, and criteria the FAA should consider as part of the review process.

- Underlying assumptions:
  - These criteria may need to be applied to all airports, regardless of NSG level
  - o Low utilization does not equal no need
- Lessons learned:
  - The end state may differ from the initial impression
  - o Robust coordination will be required between FAA, state and local stakeholders, and pilot communities
- Criteria:
  - Is this the only IAP at the airport?
  - o Is this airport susceptible to unusual weather conditions?
  - Are there specific flight training considerations? What is the closest alternate procedure for training purposes?
  - Are there commercial operating requirements do OPSEPECS or SOPs stipulate precision or vertical guidance?
  - Is this procedure a designated MON airport procedure? (VOR or ILS)
  - Will removal eliminate lowest landing minima to an individual runway?
  - Does this procedure exist because of high terrain or an obstacle that makes a straightin procedure unfeasible or which would result in the straight-in minimums being higher than the circling minima?
  - Is this circling-only procedure (1) at an airport where not all runway ends have a straightin IAP, and (2) does it have a Final Approach Course not aligned within 45 degrees of a runway which has a straight-in IAP?

Mr. McClay said that the first four items were added to the earlier NPA criteria.

Ms. William then went on to the work that was put into the case studies. They started with aggregate dates on each airport (KHUT and KPVD). As they looked at the data, there were some candidates for divestiture due to the low number of procedures used. She said this is a good first step, but they need to coordinate with their stakeholders. She said they need to keep in mind that just because there is low usage, does not equate to no need, because there may be some circumstances where it is needed. She

said this bears additional detail and a closer look because there might be some other procedures at this airport that actually gets the pilots to lower minimums and greater access that are utilized.

Ms. Williams said the group will be spending the remainder of the Summer and Fall looking into ensuring there is alignment of the MSL and Minimum Capabilities List (MCL) and analyzing the data a bit more. Mr. McClay added that they feel there needs to be robust communication added and make sure the airport and pilot communities are being adequately notified and offered the opportunity to comment if a procedure is considering to be removed.

Ms. Williams and Mr. McClay opened the floor for questions:

Mr. Bunce asked when you have multiple GPS approaches in a runway, is the cost for GPS approach based on how many times you have to flight check it over time versus if you do the cost benefits analysis of a GPS approach versus having a traditional Instrument Landing System (ILS) and the cost of maintaining that ILS. What is the balance here of what we get the most bang for our buck of what we divest from? How much does it cost to maintain it versus how many times do we utilize it versus can we do the training in the simulator? Where are we coming up with those trade-offs?

Ms. Brown answered that they are not explicitly looking at the cost side of this, but we did get some preliminary or high-level information from the FAA in terms of the basic components of procedure maintenance and a rough order of magnitude around what the annual cost would be. We are looking at functionality, service, and consistency with the NAS NAV Strategy based on the type of service associated with the airport types. To the extent we have the data available, looking at the equipage to see what level we are at with the MCL at the airports. If we have the equipage at the airport with the procedures, we are really doing a disservice to everybody. We are not paying back on the operator and FAA investments. However, the cost explicitly is not something that is in the scope of this tasking.

Mr. Childs asked how hard that would be to do.

Ms. Brown replied that they have the basic numbers.

Mr. Childs said that this group has talked about budget constraints, so we have to address cost and reinforce safety, so we can prioritize and put all of our eggs in the basket. It would be nice, at some point to have an evaluation of the cost.

Mr. Arel said that the data is there. Whether it is flight check, the staff hours doing quality assessment review, or the procedures and the technician. We've been trying to bring cost down, but the total cost of procedure, I'm not sure that all the pieces add up to the whole.

Ms. Brown responded that they have received some preliminary information shared by Mission Support which touches on the qualitative components to the cost of procedure maintenance. She said some information is from procedure development, which is in terms of time and number of people involved. Ms. Brown said they could certainly, at a high level, probably pull that together and have that part of the final report. There is a burden back on the operator side because we have also been very clear there is a cost that we have in terms of what we have to do on our NAV databases and what we are training. She said there is a component we have not talked about but that is something Mr. Renk and herself can take back on the operator side.

Mr. Ron Renk (United Airlines) added that there is the cost of certain things, but there are also some unknowns.

Ms. Brown concluded that the report will include what we know at the moment and will identify the things that the group doesn't know. She said herself and Mr. Renk are focused on bringing the tasking to conclusion in the December timeframe.

Mr. Winter thanked the NAC Subcommittee for getting the meeting back on time. He then handed off to Mr. Childs to close out the meeting.

### **Review of Action Items / Other Business**

Mr. Childs then handed the meeting over to Ms. Noonan to review action items and present any administrative announcements.

Ms. Noonan said her team will send out a report with the action items captured.

### **Closing Comments and Adjourn**

Mr. Childs thanked the NAC and opened the floor for questions.

Mr. Bunce asked what is the plan for the Drone Advisory Committee?

Mr. Fontaine answered that he believes the work for that committee will continue. He said the intentions behind the Reauthorization Act is that are moving to more diverse operations and there is recognition that we need some additional voices at this forum. He said we will continue to look at all different forums and for now we will compel to the direction we are given, and it may evolve. He mentioned that the one group that the FAA was not directed to add was Commercial Space. He said that Commercial Space may be another voice as they are growing in operations and sharing the airspace as well.

Mr. Childs thanked everyone for their participation and adjourned the meeting.



# Attachment 1

## **Administrative Announcements**

**Note:** Only NAC Members, FAA Executive Participants, and Pre-Approved Presenters and Speakers will have panelist/video/speaking capabilities. All other participants will be view-only without speaking/video capabilities.

- When called upon to speak by the Chair:
  - > Please announce your name and organization
  - > If using Zoom computer audio, click the Mute/Unmute button in the bottom left corner
  - If using the phone line audio without a participant ID, dial \*6 to unmute, as well as your phone's mute button if enabled
  - If using a phone line and entered a participant ID, click the Zoom Mute/Unmute button, dial \*6 to unmute your phone line, as well as your phone's mute button if enabled

In lieu of a roll call, all meeting participants will be captured in the meeting summary.

If you have any issues, please contact Antionette Johnson, via e-mail: Antionette.CTR.Johnson@faa.gov





## NextGen Advisory Committee Meeting August 22, 2024



## **Opening of Meeting**

Chip Childs, NAC Chair President & CEO (SkyWest Airlines)



## **Reappointed NAC Members**

## Representing Operators:

- Mark Baker, President and CEO of Aircraft Owners and Pilots Association (AOPA)
- Ed Bolen, President and CEO, National Business Aviation Association
- Russell "Chip" Childs, President and CEO of SkyWest and NAC Chair

## Representing Aircraft Manufacturers:

- Pete Bunce, President and CEO of General Manufacturers Association (GAMA)
- Craig Hoskins, Vice President of Safety, Security and Technical Affairs for Airbus Americas

## Representing Airports:

• Candace McGraw, CEO of Cincinnati Northern Kentucky International Airport

### Representing NASA:

• Robert Pearce, Associate Administrator of Aeronautics Research Mission Directorate



## **New NAC Members**

### **Representing Avionics:**

- Vipul Gupta, Vice President and General Manager for Honeywell Aerospace Avionics
- Scott Pfeiler, Vice President of Product Development for Collins Aerospace

## Representing Environmental Interest:

• Emily Tranter, National Coordination and Executive Director for National Organization to Insure a Sound-Controlled Environment (NOISE)

### **Representing International Sector:**

• Andreas Boschen, Executive Director for SESAR 3 Joint Undertaking

## Representing Labor Unions:

- Jason Ambrosi, President of Air Line Pilots Association
- Rich Santa, President of National Air Traffic Controllers Association
- Dave Spero, President of Professional Aviation Safety Specialist



## **New NAC Members**

Representing Aircraft Manufacturers:

• Howard McKenzie, Vice President and Chief Engineer for Boeing Commercial Airplanes

## Representing Operators:

- Alan Kasher, Executive Vice President of Daily Operations for Southwest Airlines
- Dave Mets, Vice President of Flight Operations for Alaska Airlines
- Jessica Tyler, Vice President of Integrated Operation Center for American Airlines



## **Industry Representatives**

- Patrick DiMento, Vice President of Flight Operations, FedEx Express, Industry Representative for Cargo Operators
- Ryan Gumm, Senior Vice President of Flight Operations, Delta Air Lines, Industry Representative for Main Line Operators
- Joe Heins, Vice President of Network Operations, United Airlines, Industry Representative for Main Line Operators
- Jeffrey Winter, Vice President of Flight Operations, JetBlue Airways, Industry Representative for Main Line Operators





## **Public Meeting Announcement**

Kimberly Noonan, NAC Committee Manager (FAA)

## **Public Meeting Announcement**

NextGen Advisory Committee August 22, 2024

This is the public meeting announcement for the NextGen Advisory Committee meeting convening today, August 22, 2024.

This meeting is being held pursuant to a notice published in the Federal Register on July 15, 2024. The agenda for the meeting was also included in the notice. The Assistant Administrator for NextGen, Paul Fontaine, who is the delegated Designated Federal Officer responsible for compliance with the Federal Advisory Committee Act, under which this meeting is being conducted.

On June 14, the U.S. Secretary of Transportation renewed the NAC's charter with the purpose of the NAC to receive advice on NextGen relating to the future of the Air Traffic Management System and the integration of new technologies.

Today's meeting is open to the public. Members of the public may provide written comments in advance if they wish for them to be considered by the Chair for inclusion into the record of the meeting.





## **NAC Chair Report**

Chip Childs, NAC Chair President & CEO (SkyWest Airlines)
## **Motion for NAC Approval**

• March 21, 2024 – NAC Meeting Summary Package Draft





## **NAC Chair Report**

Chip Childs, NAC Chair President & CEO (SkyWest Airlines)



### European Air Traffic Management Master Plan Update

Andreas Boschen, Executive Director, SESAR 3 Joint Undertaking (FAA)

# Our vision: making Europe the most efficient and environmentally friendly sky to fly in the world



**Traffic management will be integrated into a multimodal transport system**, including innovative solutions like air taxis, facilitating seamless, timely, and eco-friendly door-to-door passenger travel.



The continuous optimisation will be the new norm thanks to a **new service delivery model** and **high connectivity** with large volumes of data flowing in an effective and secured manner across trusted users.



All flights will operate to maximise aircraft capabilities, reducing aviation's overall climate impact (CO2 and non-CO2).



For certain phases of flight, the system will be fully automated and able to handle both nominal and nonnominal situations.



Air traffic management processes and services will optimise each flight trajectory. This optimisation is systematic, continuous and extremely precise.



In this new environment, **the role of the human has significantly evolved**, performing only the tasks that are too complex for automation to handle.

#### The ambition is to fully implement the Digital European Sky by 2045 with 2 key intermediate milestones for 2030 and 2035



10 Strategic Deployment Objectives to accelerate market uptake of SESAR Solutions by early movers and drive the evolution of the regulatory framework



#### ALERT FOR REDUCTION OF COLLISION RISKS ON TAXIWAYS & RUNWAYS



SDO 6

OPTIMISING AIRPORT AND TMA ENVIRONMENTAL FOOTPRINT



VIRTUALISATION OF OPERATIONS



**TRANSFORMATION TO** 

**TRAJECTORY-BASED** 

**OPERATIONS (TBO)** 

CNS OPTIMISATION, MODERNISATION AND RESILIENCE sdo 10

**SDO** 



IMPLEMENT INNOVATIVE AIR MOBILITY (IAM) & DRONE OPERATIONS



DYNAMIC AIRSPACE CONFIGURATION



TRANSITION TOWARDS PERFORMANCE OF AIR-GROUND CONNECTIVITY (MULTILINK)



INCREASED AUTOMATION SUPPORT



SERVICE-ORIENTED DELIVERY MODEL (DATA DRIVEN AND CLOUD BASED)

# 12 strategic development priorities for future research activities in ATM from 2025



#### **Investments and benefits**

- Investment needs calculated at €25.8 bn for the period 2025 – 2050
- Operational benefits estimated at €318 bn, rising to €427 bn if additional benefits (more flights become possible) are included
- The return on investment for investors is projected to be € 7 for every euro invested in SESAR by 2040, increasing to € 17 by 2050

#### PLUS:

 400 million tons of CO<sub>2</sub> could be saved with the rollout of the vision by 2050



#### Conclusion

Formal adoption of new Master Plan in December 2024, built with strong stakeholder involvement and commitment

#### Roll-out as from 2025 (new research calls and implementation of strategic deployment objectives)

In partnership with ICAO and bilateral partners such as FAA (in particular on TBO and new air/ground connectivity)



## THANK YOU FOR YOUR ATTENTION

Andreas Boschen Executive Director SESAR Joint Undertaking Andreas.Boschen@sesarju.eu

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## **FAA Report**

#### Paul Fontaine, Assistant Administrator, NextGen & NAC DFO Delegate (FAA)



## FAA Report

Tim Arel, Chief Operating Officer (FAA)



## Facility Replacement and Radar Modernization and Surveillance Strategy

Michael Freie (FAA)

## Facility Replacement & Radar Modernization (FRRM) Proposal

#### Background

- FAA owns over 370 air traffic control facilities
  - > Air Traffic Control Towers (ATCT), with an average age of 40 years
  - > Terminal Radar Approach Control (TRACON) Facilities, with an average age of 27 years
  - > Air Route Traffic Control Centers (ARTCC), with an average age of 61 years
  - Infrastructure Investment and Jobs Act (IIJA) and FRRM will replace 15% of FAA's air traffic control facilities
- FAA owns 618 radars with an average age of 36 years

#### FRRM Proposal

- \$8.0 billion in mandatory funding over five fiscal years, funding:
  - > Replacement of 20-25 ATCT/TRACON facilities
  - > Recapitalization of 2 ARTCCs
  - > Modernization of up to 377 radars
- Build on the success of the Bipartisan Infrastructure Law (BIL)
  - Leverage mandatory funding from the Airport and Airway Trust Fund



# National Airspace System | Surveillance Criticality

- Aging facilities and radars add risks to the system, including risk of service disruptions (delayed or cancelled flights)
- NORA was initiated to assess all operational NAS Systems likelihood of failure and severity of impact to Safety and Efficiency
  - > The Highest Risk Area identified Facilities and Cooperative and Non-cooperative Surveillance Systems



- NAS Safety Review Team (SRT) Report:
  - "The age of the FAA's crucial air traffic control systems is so advanced, it makes any private sector comparison difficult."
  - > Insufficient Funding Levels, "Without more funding, the FAA will be unable to address these needs."



## FRRM Strategy For Surveillance Radars

- The safety and efficiency of the national airspace system relies on:
  - > The condition of our facilities and equipment
  - > Redundancy
- Radars play a critical role in NAS operations
  - > ADS-B added a layer of surveillance with safety and efficiency benefits but did not eliminate radars
- This proposal includes funding the procurement and installation of up to 377 radars across the nation (60% percent of the radar portfolio by system count)
  - > Reduced sustainment cost through consolidation of many different systems
  - > Provides an opportunity for optimized surveillance services



## **Airspaces and Surveillance Coverage**



ADS-B Equipage Required Airspace

#### ADS-B Equipage Required Airspace

Class B Mode C Veil Up to 10,000' Class C (and up to 10,000' above) Class E along Gulf Coast (12 NM from coastline from 3,000' up to 10,000') Class E over CONUS (10,000' up to 18,000') Class A (18,000' up to 60,000')

Orange: 1,500' ADS-B Coverage

Blue: 1,500' Radar Coverage





## NAC Subcommittee (SC) Chair Report

Jeffrey Winter, NAC Subcommittee Chair (JetBlue Airways)



## **NAC Subcommittee Report Topics**

- Today's NAC Subcommittee report will outline the team's key activities, highlighting work completed over the last five months, including:
  - > Tower controller situational awareness and airport data enhancements readiness activities for Terminal Flight Data Manager
  - En route data communications operator status and update on benefits analysis for currently available services
  - Steps being made to reduce reliance on legacy procedures update on the findings from NAS Airspace Efficiencies workgroup





# How are recently completed milestones contributing to operations?

An example using JetBlue JFK to LAS flight





## **Terminal Flight Data Manager Program Update**

Rob Goldman (Delta Air Lines) & Chris Oswald (ACI-NA)



## Surface & Data Sharing Development Timeline





## Setting the Stage for the Fall NAC Meeting

- Surface/Data Sharing NIWG continues its focus on way to enhance industry readiness for surface metering at the 27 airports where this capability will be available
- Areas of focus for readiness include:
  - > Roles and responsibilities of key stakeholders
  - > Policies and procedures
  - > Enabling technologies
- Also focusing on the benefits that TFDM provides beyond surface metering including at the 22 additional "non-surface metering" airports
  - > Reduced controller workload
  - > Improved surface management flexibility
  - > Improved flight operator and airport situational awareness
  - > Improved during- and after-event analytics, including those dealing with compliance
  - Setting the foundation for information-centric NAS operations and trajectory-based operations
- Fall NIWG briefing will focus on our findings and recommendations in both areas





## **Data Communication NIWG Update**

Chris Collings (L3Harris) & Ed Evans (Southwest Airlines) Kathy Torrence (FAA)

## Data Comm NIWG Update (August 2024)

#### En Route Data Comm Deployment

- + 16 centers operational 24/7
- + En Route Full Services Increment 1 active at all active centers
- + Planning En Route deployment to remaining 4 centers.
- + 10 centers declared IOC



#### **Upcoming Center Start Dates (Initial Testing):**

Albuquerque: 26 Sep 2024 | Boston: 6 Nov 2024 | Memphis: Dec 2024 | New York: Feb 2025

#### **Industry Updates**

- Over 38% of En Route air carrier traffic used
  Data Comm in June 2024
- + Installation of avionics updates 77% complete
- Continue to receive positive user feedback as a usage grows
- + GA/BA NOTAM lifted revised En Route participation list published May 2024



#### Data Comm En Route Aircraft Equipage

## **Data Comm Equipped Capable Fleet**

US Air Transport Operators	DCL Participating	En Route Participating	l
American Airlines	$\checkmark$	$\checkmark$	
ABX Air	$\checkmark$	$\checkmark$	
Amerijet International	$\checkmark$		
Alaska Airlines	$\checkmark$	$\checkmark$	
Air Transport International	$\checkmark$	$\checkmark$	
Kalitta Air	$\checkmark$	$\checkmark$	
Delta Air Lines	$\checkmark$	$\checkmark$	
Eastern Airlines	$\checkmark$		
FedEx	$\checkmark$	$\checkmark$	
Atlas Air	$\checkmark$		
Hawaiian Airlines	$\checkmark$		
JetBlue	$\checkmark$	$\checkmark$	
National Air Cargo Group	$\checkmark$	$\checkmark$	
Spirit Airlines	$\checkmark$		
Omni Air	$\checkmark$		
Polar Air Cargo	$\checkmark$		
Republic Airways	Initial ops with select crews and aircraft		Participating
Southwest Airlines	$\checkmark$	$\checkmark$	
United Airlines	$\checkmark$	$\checkmark$	Future User
UPS	$\checkmark$	$\checkmark$	
Western Global Airlines	$\checkmark$		
Business Aviation Fleet Size	4,619	3,095	
Non-US Air Transport Operators	74	38	

✓ ▲

Key





### NAC Task 23-3: Joint Analysis Team: En Route Data Comm Update

Eric Silverman (American Airlines) & Alex Burnett (United Airlines) Dave Knorr (FAA) & Kathy Torrence (FAA)

## **Two Active JAT Taskings**

# Main focus through 2024 spring/early summer has been Enroute Data Comm



# We all believe in en route Data Comm benefits



- Agree with the underlying benefit tenets
- <u>But</u> quantifying the benefits is complex (qualitative easier than quantitative)
- Similar but different from tower data comm
- Still early in the Data Comm program
  - Ongoing issues continue to be worked between FAA/industry
  - En Route Full Services beginning deployment
  - **o** Additional complexity on measurement



# Looking at two approaches to quantifying benefits



#### **Big Data Approach (L3Harris)**

- Similar to Tower Benefits in comparing transaction times (flights with data comm re-route versus those with voice)
- Expect signal to increase with more Data Comm ARTCC implementation, full services, and more flights + once ongoing issues are resolved
- To include comparisons at the city pair level
- May need more tweaks for consensus agreement on metrics, data sources, and methodology

#### **Scenario Based Analyses**

- Identify and build out examples of that
- illustrate direct operational benefits e.g., space launch/convective WX/military-SUA airspace



# Working through data contributing to quantified benefits



#### Statistically-based efficiency analysis is complex

- Estimates small savings from faster transition from current to new route
- Small percentage of flight time/distance
- Often unrelated to the "efficiency" of the reroute

Cor

2 3



#### Error rate and time saved may be more straightforward

Complexity and Error Rate			
	<u>Estimates</u>		
nplexity	Error Rate		
	0.00%		
	4.08%		
	5.83%		
	Comm Time Saved = Voice Message Time – CPDLC Message Time Controller T CPDLC Message Time Voice Message Time		
	Pilot Comm Time Saved		



1,038,875 readback errors mitigated



3,924,215 minutes of comm time saved



# Next Steps for Task 23-3 (En Route Data Comm)

- Continue deliberations to reach consensus approach to measuring operational impact of en route data communications
  - > Additional follow up on the statistical-based benefits calculations
  - > Explore complementary methodologies, scenarios and illustrative examples
    - Build out more direct operational benefits e.g., space launch/weather
    - Provide interim analysis for Fall 2024 and highlight opportunities for value from a future secondary analysis
  - > Potential Industry led pilot survey through A4A Ops Council in August
    - Gain insights on what industry pilots are experiencing may be a more qualitative look





## NAC Task 23-2: NAS Airspace Efficiencies Update

Lee Brown (JetBlue Airways) & Ron Renk (United Airlines) Greg Schwab (FAA) & Chris Southerland (FAA)

# **Plan for Addressing Task Elements**



44

# **Considering Expansion of EoR Sites**





# **Additional Case Studies**

Examining other airports will harden divestiture process and MSL recommendations

#### <u>Category</u>

- Military use: HNL, VPS
- NSG 3/4: HUT, PVD
- NSG 1/2: **DEN, DTW**
- HPN, MMU, SWF, FRG, ISP

#### **Selection Logic**

- Look at operations that include heavy number of military flights
- Sample general aviation operations and equipage
- Examine a full NSG 1 airport along with NSG 2 hub
- NY area: JFK, LGA, EWR, TEB,
  Consider a large network of airports; varying equipage and PBN procedure inventories


## NSG 3&4 Airport Case Studies (HUT & PVD)

Procedures will continue to be reviewed through the established IAP periodic review process. As part of that review process, the FAA should consider the following assumptions, lessons learned, and criteria:

- Underlying assumptions
  - These criteria may need to be applied to all airports, regardless of NSG level
  - Low utilization does not equal no need
- Lessons learned
  - $_{\odot}~$  The end state may differ from the initial impression
  - <u>Robust</u> coordination will be required between FAA, state and local stakeholders, and pilot communities



## NSG 3&4 Airport Case Studies

#### Criteria

- 1. Is this the only IAP at the airport?
- 2. Is this airport susceptible to unusual weather conditions?
- 3. Are there specific flight training considerations? What is the closest alternative procedure for training purposes?
- 4. Are there commercial operating requirements do OPSPECS or SOPs stipulate precision or vertical guidance?
- 5. Is this procedure a designated MON airport procedure? (VOR or ILS)
- 6. Will removal eliminate lowest landing minima to an individual runway?
- 7. Does this procedure exist because of high terrain or an obstacle that makes a straight-in procedure unfeasible or which would result in the straight-in minimums being higher than the circling minima?
- 8. Is this circling-only procedure (1) at an airport where not all runway ends have a straight-in IAP, and (2) does it have a Final Approach Course not aligned within 45 degrees of a runway which has a straight-in IAP?



### NSG 3&4 Airport Case Studies

Name				HUTCH	SON KANSAS				Data Source					
ICAO Cod	2			KHUT										
Nav Servi	e Group			4 - Mini	mum Capabilities - I	LS, RNP APCH,	VOR, NDB		FAA					
MON AIRE	PORT			NO										
NPIAS	Runway	Length (LD	A) Lighting Ai	ds Procedure Tit	e RNP APCH REQ	ILS or LPV	LNAV/VNAV	LNAV or S/I	Utilization Rate	In Complia	nce In Compli	ance With	For Noise	
FAR 139 Ir	ıde					Minima	Minima	Minima		With Curre	nt Current A	irport	Abatement	
Airspace C	on					(SM - HAT)	(SM - HAT)	(SM - HAT)		TERPS Crite	ria Design St	d.		
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roced	SWA	4,002	STA	R		15.810	STAR			2	A330	1 947		
pecial		1,341	4000040				APPROACH	12			AJ20 B738	1,047		
ontin Isan D		1,317	APPROAC	H 009			Grand Total			14	BCS3	1,132		
Ser K		1,237	Grand Tota	al		16,419					CDIG	1,055		
edun		877									CRI7	1,024		
roced	IBU	812	Route Type	Procedure Type P	rocedure Name						E145	836		
IOCEU		708	CONV	APPROACH II	S OR LOC RWY 05						B38M	770		
	PDT	542			S OR LOC RWY 34						A321	674		
	ENY	450		V	OR RWY 05						A319	623		
	EDV	316		V	OR Z RWY 34						E170	587		
	UCA	276	ILS	APPROACH		2					E75L	483		
	EJA	270			S OR LOC RWY 05	123					E195	411		
	AAY	251			S OR LOC RWY 23	122					B752	364		
	UPS	242	1.04		5 OR LOC RWY 34	10					E75S	297		
	GJS	163	LDA	APPROACH	S OD LOC DWAY 22	3					B712	256		i.
	UAL	157	DNAV	STAD		э				11 760	C56X	181		
	ASH	152	NNAV	JIAK J			4.041			11,703	C750	156		
	FDX	121			IN ON THREE (RIVAV)	24	4,041				F2TH	148		
	SKW	107		air nuaun	NAV (GPS) RWY 05	54					E190	142		
	LXJ	96			NAV (GPS) RWY 16	4					C68A	121		+
	JRE	57			NAV (GPS) RWY 34	3					E55P	105		
	HRT	53				10					CL35	81		
	SCX	49	6	F	NAV (RNP) Z RWY 23	9					G280	76		NEXTGEN
	SHH	46	VISUAL	APPROACH	ISUAL	229					GLF4	74		(LA
-	EJM	35	VOR	APPROACH V	OR/DME RWY 23	1					H25B	62		15
	FTH	29				1					C700	56		

## **Schedule to December Deliverables**

August	September	October	November				
RNP Utilization: Select sites & metrics coordination EoR: Formalize feedback & status check on barriers report Case studies: Initiate remaining cases							
RNP Utilization: Review & baseline metrics EoR: FAA update on FY2025 plans Case studies: Complete remaining cases MSL: Incorporate case study inputs							
		Formulate recommendations and start documentation	Review report with NACSC and prepare for Dec 10 NAC				
			NEXT DEL ADVISATE COMMITTEE				



#### **Review of Action Items & Other Business**

Kimberly Noonan, NAC Committee Manager (FAA)



#### **Closing Comments & Adjourn**

Chip Childs, NAC Chair President & CEO (SkyWest Airlines)



# Attachment 2



#### NextGen Advisory Committee (NAC) August 22, 2024, Attendance List

Last Name	First Name	Affiliation			
Ambrosi	Jason	Air Line Pilots Association			
Arel	Timothy	Federal Aviation Administration			
Armstrong	Merrill	Federal Aviation Administration			
Arrighi	James	Federal Aviation Administration			
Ayelomi	Precious	Federal Aviation Administration			
Baker	Mark	Aircraft Owners and Pilots Association			
Baker	Jodi	Federal Aviation Administration			
Batchelor	David	SESAR Joint Undertaking			
Вее	Lisa	Viasat			
Bertapelle	Joseph	Joe Bertapelle, LLC			
Bolen	Edward	National Business Aviation Association			
Boschen	Andreas	SESAR Joint Undertaking			
Brandt	John	MITRE CAASD			
Braxton	Keisha	Federal Aviation Administration			
Breitenfeldt	Rick	Federal Aviation Administration			
Brown	Lee	JetBlue Airways			
Buckley	Kerry	MITRE CAASD			
Bunce	Peter	General Aviation Manufacturers Association			
Burke	Gregory	Federal Aviation Administration			
Burnett	Alex	United Airlines			
Butler	Steven	Concept Solutions			
Cady	Michelle	Federal Aviation Administration			

Last Name	First Name	Affiliation			
Cebula	Andy	Airlines for America			
Challan	Peter	L3Harris Technologies			
Childs	Russell	SkyWest Airlines			
Crandall	Kathy	L3Harris Technologies			
Dalton	Rick	Southwest Airlines			
Davis	Barry	Aviation Management Associates			
DeHart	Scott	Southwest Airlines			
Denning	Jana	Professional Aviation Safety Specialist National			
Desing	Clark	Federal Aviation Administration			
DiMento	Patrick	FedEx Express			
Dudley	Trent	Department of Defense			
Ellis	Robert	Hennis, Rothstein & Ellis LLP			
Evans	Edward	Southwest Airlines			
Fontaine	Paul	Federal Aviation Administration			
Fraser	Bobby	United Airlines			
Gagnon	Darcy	Federal Aviation Administration			
Green	June	Federal Aviation Administration			
Griffin	Shannetta	Federal Aviation Administration			
Groce	Jeri	Federal Aviation Administration			
Gumm	Ryan	Delta Air Lines			
Gupta	Vipul	Honeywell Aerospace			
Gusky	Amy	Federal Aviation Administration			
Hall	Katrina	Federal Aviation Administration			
Hayman	Gene	Stratify Aerospace			
Hennig	Jens	General Aviation Manufacturers Association			
Hood-Fleming	Alyce	Federal Aviation Administration			

Last Name	First Name	Affiliation
Норе	Chris	Federal Aviation Administration
lvers	Ben	The Boeing Company
Johnson	Antionette	Federal Aviation Administration
		ISR, Cyber, Homeland Security and Disruptive
Johnson	Daniel	Technology Solutions LLC
Julian	Carrington	The Boeing Company
Kasher	Alan	Southwest Airlines
Kasher	Alan	Southwest Airlines
Kauffman	Don	Honeywell Aerospace
Kenagy	Randy	Air Line Pilots Association
Kotler	Scott	Lockheed Martin
Kovalcik	Luanne	Leidos
Kraus	Dalton	FAVES
Land	Matthew	Eve Air Mobility
Leopold	David	Federal Aviation Administration
Litke	Paul	United Airlines
Loring	Christopher	Federal Aviation Administration
Maffei	John	Federal Aviation Administration
Mailhot	Julie	International Air Transport Association
Mathur	Rajat	U.S. Government
McCarty	Eric	NetJets
McClay	James	Aircraft Owners and Pilots Association
McClay	Jim	Aircraft Owners and Pilots Association
McDowell	Michael	Collins Aerospace
McGraw	Candace	CVG Airport
McKenzie	Howard	The Boeing Company
McLean	Andrew	Southwest Airlines

Last Name	First Name	Affiliation			
McNeal	Dale	Federal Aviation Administration			
Mets	David	Alaska Airlines			
Mitchell	Tiffany	Federal Aviation Administration			
Mitra	Trin	Mitra Aviation Consulting			
Morse	Wendy	Air Line Pilots Association			
Morse	Eric	Delta Air Lines			
Mulligan	Jessica	SkyWest Airlines			
Nadarski	Nick	U.S. Government Accountability Office			
Narvid	Juan	Federal Aviation Administration			
Newman	Philip	American Airlines			
Noonan	Kimberly	Federal Aviation Administration			
Oswald	Chris	Airports Council International			
Pennington	Darrell	Air Line Pilots Association			
Pfeiler	Scott	Collins Aerospace			
Pierce	Brad	National Organization to Insure a Sound-Controlled Environment			
Pinkerton	Sharon	Airlines for America			
Pytlik	David	NetJets			
Reinsch	Nobuyo	Regional Airline Association			
Renk	Ronald	United Airlines			
Riso	Michael	Professional Aviation Safety Specialist National			
Rocheleau	Chris	National Business Aviation Association			
Rogalski	Chris	JetBlue Airways			
Rogers	David	NetJets			
Rogers	Christopher	Raytheon Technologies			
Santos	Phillip	FedEx Express			
Schultz	James	Federal Aviation Administration			

Last Name	First Name	Affiliation		
Silverman	Eric	American Airlines		
Snow	Marissa	SkyWest Airlines		
Southerland	Christopher	Federal Aviation Administration		
Tamburro	Ralph	Port Authority of New York and New Jersey		
Townsend	Brian	Allied Pilots Association		
Tyler	Jessica	American Airlines		
Walters	Terry	Alaska Airlines		
Warren	Nicole	Federal Aviation Administration		
Warren	Jennifer	Lockheed Martin		
West	Steve	Southwest Airlines		
Winter	Jeffrey	JetBlue Airways		
Yates	Vaughn	Federal Aviation Administration		
Yates	Kyndra	Federal Aviation Administration		