

NextGen Advisory Committee (NAC) March 21, 2024, Meeting Summary

The NextGen Advisory Committee (NAC) convened in a hybrid format on March 21, 2024, 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

NAC Chair, Mr. Russell "Chip" Childs (SkyWest, Inc.), opened the meeting and welcomed in-person and virtual attendees. He also welcomed Mr. Jeffrey Winter, Vice President of Flight Operations for JetBlue Airways, who attended on behalf of Mr. Warren Christie and Mr. Ryan Gumm, Senior Vice President of Flight Operations for Delta Air Lines who attended on behalf of Mr. Bryan Quigley. He then handed it off to NAC Committee Manager, Ms. Kimberly Noonan (FAA), for administrative and housekeeping announcements.

Chair's Report

Mr. Childs began by thanking the FAA Deputy Administrator and NAC Designated Federal Officer (DFO), Ms. Kathryn "Katie" Thomson for hosting today's meeting. He also thanked those who traveled to attend this meeting in-person.

Mr. Childs then called for motion to approve the October 4, 2023, NAC Meeting Summary Package.

Outcome: The NAC passed the motion to approve the October 4, 2023, NAC Meeting Summary Package

Mr. Childs then shared that since the October 2023 meeting, the NAC received a tasking letter from the FAA to form a Joint Analysis Team to measure the benefits of En Route Data Communications (Data Comm). The tasking letter directs the NAC to reach an industry consensus on operational benefits resulting from the implementation of En Route Data Comm. Mr. Childs sent the tasking to the NAC Subcommittee to work to analyze the task and to develop an approach on responding at the fall 2024 NAC meeting.

Mr. Childs then provided a state of the industry update. He said the aviation industry is seeing an incredibly strong demand resurgence for travel across all segments. Along with the increased demand, Mr. Childs emphasized that all stakeholders expect and deserve a commitment to safety. He said that recent events have reminded us of the critical nature of our commitment to safety, which is also foundational to this group.

He said as the NAC continues to work collectively towards the implementation of NextGen, along with its advanced technology and programs, the results will serve to enhance the safety of the National Airspace System (NAS). Mr. Childs is very confident in the work of the NAC.

Mr. Childs again thanked everyone for attending the meeting and asked the presenters to be mindful of the timing as there is a very full agenda today. He then handed it off to the FAA Deputy Administrator and NAC DFO, Ms. Thomson, for the FAA Report.

FAA Report

Ms. Thomson (FAA) began by thanking the NAC and members of the public for attending this meeting. She said since the October NAC meeting, Mr. Michael "Mike" Whitaker was confirmed as the Administrator for the FAA. She said Mr. Whitaker is a bright, nice, and pragmatic person with a deep knowledge of technology and broad knowledge of the aviation sector.

Ms. Thomson shared an update on the FAA's current priorities: safety, air traffic controller workforce, and data.

Ms. Thomson said safety and people will always be the FAA's first priority, as it animates everything that we do throughout the agency. The recent events, such as the near misses and the events revolving around Boeing 737 Max, have shown the FAA that we can never become complacent. We must continue to enhance safety throughout the NAS. She noted that last year the FAA saw an uptick in safety events, including runway incursions. In response, the FAA convened a Safety Summit in March 2023. In the Safety Summit, a variety of experts were asked to conduct a deep dive into the range of potential contributing factors. The FAA received the report in November 2023. She shared that the FAA is taking a methodical approach to implementing the recommendations. She said one of the recommendations includes looking at opportunities for enhanced safety funding, which is reflected in the FAA budget. Ms. Thomson then described some of the basic steps from the Safety Summit Report such as, changing the reporting structure of the Air Traffic Safety Oversite team to directly report to the FAA Administrator and the Associate Administrator for Aviation Safety. She noted that although events are trending down, the FAA will continue to remain vigilant with their goal of continuing to have zero significant safety events. She concluded her safety update by saying "safety is a sport, and we all are in this together."

Ms. Thomson then provided an update on the Air Traffic Controller (ATC) hiring process. She shared that she gives a lot of credit to the Air Traffic Organization and National Air Traffic Controllers Association (NATCA) for helping the FAA think creatively about how we can get ahead and build capacity for the future. The safety of the NAS is due in large measure to the skilled and dedicated workforce, including the air traffic controllers.

Ms. Thomson said that over the past six months, the FAA had doubled down on their efforts to make sure every seat at The Academy is filled and to reach out to a broader more diverse group of potential students. She said the FAA is expanding the use of advanced training in facilities across the country, including upgrading simulators in 95 towers. In January 2024, the FAA installed the first tower simulator system in Austin, Texas.

She said the FAA is working with the aeronautical colleges to enhance the training provided to the students and the quality of the programs the students are getting through the Air Traffic Controller

Academy. She said the elements of the new program will help augment the pipeline for students joining air traffic control.

Ms. Thomson said the FAA has initiated a year-round hiring for people who are retiring from the military. This will benefit the FAA controller pipeline by hiring former military who are interested at the time they are looking for their next employment opportunity. In April 2024, Ms. Thomson said the FAA will accept applications from the public to enroll in the FAA's Air Traffic Controller Academy in Oklahoma City, Oklahoma. The FAA has surpassed their goal of hiring 1,500 controllers in 2023 and are on target to exceed their goal of 1,800 in 2024. The President's budget calls for at least 2,000 controllers in 2025 and the FAA believes they have a strong program in place to meet those goals.

Ms. Thomson continued by saying the FAA and NATCA have reached an agreement to relocate the Newark airspace area to the Philadelphia Tower. She said this is an important part of restoring capacity in the New York region. What happens in the New York regions often has a ripple effect throughout the NAS. She thanked NATCA again for making this difficult decision. She said the FAA's plans are to make the move in June and hopefully increase the number of controllers and training that they have over the next year so the FAA can restore some of the capacity in the Northeast Corridor (NEC).

Next, Ms. Thomson addressed controller and pilot heath and said this is a major focus for the FAA. She noted there have been some recent incidents that renewed the focus on mental health for the pilots and the ATCs. She said the FAA Administrator stood up a panel of experts in December 2023 to look at the latest science on sleep needs and fatigue, and those implications on ATC work schedules and requirements.

Ms. Thomson was pleased to report that the aviation sector has been a leader in management systems, gathering data, and proactively identifying system risks. She said there is a need to refresh and to look at ways to better capture data trends. Ms. Thomson mentioned that the FAA is looking internally on how to capture better data trends with the data sets they currently collect and evaluate. She said she expects the FAA to have an outreach effort across industry and other stakeholders to look at opportunities to share more data to help us get even smarter at identifying and mitigating risk.

Ms. Thomson then discussed the FAA's funding. She said the FAA continues to struggle with inconsistent funding. She noted that the President's budget is an initial step to provide a sustainable level of funding and that this is a multi-year effort. She asked for the NAC's help to propose creative and viable solutions for maintaining the sustainable funding that the FAA essentially needs to modernize the NAS. She said the funding through the bi-partisan infrastructure law was a nice nugget of funding, however, it expires in fiscal year 2026.

She concluded by thanking the NAC for their support and said the work they are doing is greatly appreciated. Ms. Thomson gave credit to the NAC's Minimum Capabilities List (MCL) by calling it "one of the biggest significant accomplishments of the NAC in recent years". She said the MCL was tremendously helpful in creating the way for the future and allowing the FAA to leverage the investments that we are making today. Ms. Thomson concluded the FAA Report then handed over to Mr. Childs.

Mr. Childs thanked Ms. Thomson for the FAA Report. He echoed Ms. Thomson's statement that they can be creative when it comes to the budget items, however, he said the solutions must be viable especially in dealing with allocation and Congress.

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

Mr. Childs then turned time over to Ms. Lee Brown (JetBlue Airways) who is sitting in for the NAC Subcommittee Chair, Mr. Warren Christie (JetBlue Airways). Ms. Brown thanked Mr. Childs and said that Mr. Christie sends his warmest regards.

Ms. Brown began by providing the following overview of the briefings that will be provided today:

- Highlights on Northeast Corridor (NEC) capability milestones
- Status of the Joint Analysis Team (JAT) efforts on two taskings
 - o NAC Task 19-3, NEC Phase 2 Implementation
 - o NAC Task 23-3, En Route Data Communications
- Continuation of readiness considerations of impending Terminal Flight Data Manager (TFDM) implementation
- Interim findings from NAC Task 23-2, NAS Airspace Efficiencies

Ms. Brown provided the status update on the following NextGen Integrated Working Groups (NIWGs):

- Data Communications (Data Comm)
 - o 15 en route centers operational with Full Services increment 1
 - o Cleveland Center is 24/7
 - o Los Angeles Center planned for Q2 calendar year 2024
- Surface and Data Sharing
 - Electronic Flight Strips operational at 7 sites with Charlotte and Los Angeles planned for May 2024
 - o Charlotte surface metering initial operational capability planned for May 2024
- Northeast Corridor and Performance Based Navigation
 - o Completed initial Trajectory Based Operation (TBO) commitment for Denver
 - o Time-based flow management implementation in NEC adjusted by FAA

Ms. Brown noted that the Surface and Data Sharing NIWG FAA subject matter expert, Mr. Ayaz Kagzi has retired. Mr. Scott Nagy (FAA) will replace him as the FAA subject matter expert.

Ms. Brown said that with the move of New York airspace into the Philadelphia TRACON, there are going to be adjustments with the commitments the NEC NIWG has around time-based metering. Ms. Brown then requested the NAC's approval to split the NEC commitment "Improve arrival Time-Based Metering to PHL and EWR" in the NextGen Joint Implementation Plan (NJIP) to two separate commitments with new completion dates. This commitment change will reflect as follows:

Milestone as shared during betober 2025 title								
Туре	Commitment/Milestone	Dates						
Implementation	Implement arrival time-based metering for PHL and EWR	Q4 CY2024						
Revised Milestones								
Туре	Commitment/Milestone	Dates						
Implementation	Implement arrival time-based metering for PHL-and EWR	Q4 CY2024 Q4 CY2025						
Implementation	Implement arrival time-based metering for EWR	Q4 CY2026						

Milestone as shared during October 2023 NAC

Ms. Brown opened the floor for questions. No questions or comments were received.

Mr. Childs then called for motion to approve the revised NEC NJIP milestones.

Outcome: The NAC passed the motion to approve the separation of the "Implement arrival Time-based Metering for PHL and EWR" commitment with the new forecasted dates.

Ms. Brown thanked the NAC.

Joint Analysis Team Update

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

Mr. Knorr began his presentation by providing an overview of the JAT since it has been a few years since this team has presented at the NAC. He said the JAT is a collaboration group with the FAA and industry to agree on the quantitative impacts of benefits. While the data and methodologies are clear, the industry and the FAA view things from different angles. He said that after working through the data sources, methodologies, and understanding the operational links, the group agreed on at least 13 complicated implications of implementation. Mr. Knorr said a lot of what the JAT focuses on is what drives delay and the changes in throughput, which is also a significant focus for industry and FAA.

One of the big things that happened in the JAT, which started in December 2015, is the need for the normalization of data demand changes. He said that when the team looks at data sets, they often look at 2019 versus 2023 and beyond. So much about the system has changed, including the demand, airport changes, and the systems. He said the JAT's goal is to come to an understanding of the benefit mechanisms, data sources, and formulas. He said the normalization for demand is a huge driver and will be a big player in determining the ACR benefits.

Mr. Knorr then provided the following overview of the JAT's past work that the team has come to a quantitative agreement on:

- North Texas Metroplex
- Wake RECAT (Recategorization)
- Northeast Corridor (NEC) Low-Level Escape Routes
- Philadelphia International Airport (PHL) Simultaneous Converging Instrument Approaches (SCIA)
- Data Comm Tower

- En Route Departure Capability (EDC) / Integrated Departure/Arrival Capability (IDAC)
- OPDs
- Established on Required Navigation Performance (EoR) at Denver International Airport (DEN)

Mr. Knorr then handed it over to Mr. Silverman to provide an update on the ACR and En Route Data Comm taskings.

Mr. Silverman displayed the tasking letter for the NAC Task 19-3: JAT ACR and noted the date on the letter is 2019. He said COVID-19 has added complexity to ACR and how to measure it. He said a less significant implementation of ACR occurred in mid-spring 2023 and the real benefits to ACR is to get away from ground-based navigation and move to Performance Based Navigation (PBN)-centric navigation. He continued by saying the goal posts have significantly changed since 2019 for those not in the operational world.

Mr. Silverman said Florida has a lot of traffic, commercial space, staffing issues, weather, and military operations. He said, you can imagine putting a big route implementation in place along the East Coast and then you have all this background noise going on that is making it very complex for the group to measure.

He noted that the team has had some good meetings over the last few months. Along with meeting with the FAA and Industry, they also met with the ACR post-implementation team, where they received a briefing on ACR, the big Metroplex, route implementation and the post-implementation process. He noted that there were no red flags and there will be tweaks to restructure the procedures. Mr. Silverman thinks that this challenge for the JAT is determining what is driving the system. He said there are many variables contributing to the system behavior that need to be considered with respect to ACR.

The group also received a briefing from Mr. Knorr's group on what they are seeing along the East Coast from a throughput perspective. He said that throughput is up, which is a byproduct of traffic being up.

Mr. Silverman said the group is starting to discuss the means and methods, how to measure what happened to the implementation in the spring 2023. He said the next six to nine months are going to be important to try to differentiate ACR benefit or not benefit from the rest of the noise in the system.

Mr. Silverman opened the floor to questions. No questions were asked.

Mr. Silverman continued by providing the update on the En Route Data Comm tasking that Mr. Childs referenced in the Chair's Report. He said the group is very excited about this tasking and noted that there were obviously huge benefits from Tower Data Comm.

The team has met twice, once with industry only and another time as an entire group, which received a briefing from L3Harris. Mr. Silverman said the team noticed that it will be complex to measure the benefits from Tower Data Comm versus En Route Data Comm because there is a significant benefit from Tower Data Comm.

Mr. Silverman said many more variables are at play with En Route Data Comm. He noted that the team will need to look at the means and methods of how the modeling is looking at benefits. The modeling looks at the initial route and when the pilot gets the new route and determines the time savings between the old and new routes. Mr. Silverman noted that there are some efficiency gains, mile savings, and quantitative gains of less workload in the cockpit, and there is a safety aspect for the controller too.

Mr. Silverman concluded his presentation by saying that the team is starting to peel the onion back on this task. He said at some point, the team is going to want to talk to controllers to get their feedback and pilots to get their perspective. This additional information will allow the team to mesh the quantitative and qualitative benefits together to really show the system and its worth.

Mr. Silverman opened the floor to questions and then handed it off to Ms. Brown.

Terminal Flight Data Manager: Industry Readiness

Ms. Brown handed it off to Mr. Doug Swol (FAA), Mr. Robert Goldman (Delta Air Lines), and Mr. Chris Oswald (ACI-NA) for a briefing on Industry Readiness for Terminal Flight Data Manager (TFDM).

Mr. Swol began his presentation with the achievements from TFDM since the October NAC meeting. He noted that they achieved IOC at seven Build 1 sites. The sixth site, which was Las Vegas (LAS), was deployed in October 2023 and the team was able to stress test TFDM because of the Formula One race in November as well as the Super Bowl in February. He said the system has performed remarkably well even under tremendous loads of traffic that were far higher than what is typically seen in Las Vegas. The seventh site was San Jose International Airport (SJC).

Mr. Swol said that the FAA continues to work with industry to prepare for TFDM. There are collaborative site implementation team meeting kickoffs. Those meetings are a combination of industry from the airlines, airport operators, vendors, and the FAA to help sites begin the process and discuss the potential impacts to their operations. These meetings are being held at George Bush Intercontinental Airport (IAH), Miami International Airport (MIA), and Hartsfield-Jackson Atlanta International Airport (ATL). Mr. Swol said they continue to receive good engagement from industry at those events.

Mr. Swol then went on to discuss the near-term activities of implementing TFDM. He said Build 2 installment, which contains TFDM service management capabilities, moved from March to May 2024 at Charlotte Douglas International Airport (CLT). The date was pushed back because a few software patches were identified during the testing period. He said the team is making good progress with Build 1 at Los Angeles International Airport which is scheduled to go IOC in May 2024.

Mr. Childs asked what the difference is between Configuration A (Config A) and Configuration B (Config B). Mr. Swol reviewed the following graphic which explains the difference between the equipment and capability of the two Builds.

Key TFDM Capabilities



He concluded his explanation by saying that the difference between Config A and Config B is in the software adaptation and what functions are turned on.

Mr. Swol then reviewed the three remaining Surface and Data Sharing NIWG milestones:

- TFDM program will achieve the key site IOC for Build 2 at CLT on track for Q2 CY2024 completion.
- TFDM program will achieve ISD for Build 2 to allow additional deployments of the full TFDM capabilities into the NAS on track for Q4 CY2024 completion.
- TFDM program will achieve IOC at 5 additional sites on track for Q4 CY2025 completion.

Mr. Childs asked if Las Vegas is the largest TFDM operating airport right now. Mr. Swol said yes. Phoenix International Airport (PHX) will likely be the second largest, then Los Angeles International Airport (LAX) will go live in April/May. He said now that they are comfortable with the system, they are ready to start implementation with larger sites.

Mr. Swol then reviewed the following charts showing the upcoming Config A sites that are planned and where they fall on the TFDM waterfall and the score for industry readiness. The readiness score is based on 4 categories: sufficient surface data, accurate surface data, System Wide Information Management (SWIM) on-ramping, and surface tools.

FAA Industry Readiness Assessment

	IOC	10/2023 3/2024				
	Date	Readiness Level	Readiness Level		Rea	adine vel Le
CLT	5/2024	Medium	High*		_0,	Suffi
PHX	12/2024	Very Low	Low		(u)	Surfa
LAS	2/2025	Very Low	Very Low		(b)	Accu
SEA	3/2025	Low	Low		(~)	SUIT
LAX	4/2025	Low	Low Low		(C)	Ram
SFO	5/2025	Low Low			(d)	Surfa
IAH	6/2025	Low	Low			
MDW	7/2025	Very Low	Low		,	Assessn
MIA	10/2025	Low	Low			
BOS	3/2026	Very Low	Low			
ATL	4/2026	Low	Medium			Targe
SLC	7/2026	Low	Low			Achie
SAN	8/2026	Very Low	Low			Each
DEN	9/2026	Low	Low			
DFW	10/2026	Low	Low			

Readiness Level Legend		High	Medium	Low	Very Low	
(a)	Sufficient Surface Data	>90%	>80%	>= 60%	<60%	
b)	Accurate Surface Data	Accurate	Accurate	Inaccurate	Inaccurate	
(c)	SWIM On- Ramping	Complete	In Progress	Not Started	Not Started	
(d)	Surface Tools	Ready	In Progress	In Progress/ Not Ready	Not Ready	

Assessments based on FAA SWIM data analysis, CSIT discussions and surveys

	High	Medium	Low	Very Low
Target to Achieve Each Level	~2 months before IOC	~6 months before IOC	~ 12 months before IOC	N/A

*CLT: On-Ramping complete, testing of SWIM services and surface tools in progress. Surface Work Group in Progress.



Mr. Swol noted that industry has made progress since the October meeting. He said LAS is unique because of the large amount of general aviation traffic and the large number of low-cost carriers who are not as proficient in providing data. He said there is extra outreach in that area from the FAA and the local airport authority to figure out how they can get better data from these communities.

Mr. Childs asked if there is an issue with data collection or data volunteering. Mr. Swol answered and said it is a bit of both. Mr. Paul Fontaine (FAA) added that if the general aviation is not providing good data, the predictions are not going to be accurate. Mr. Swol agreed and noted that this a big challenge for LAS and they have begun working with the FAA's NextGen Organization to develop a mobile application to engage general aviation pilots to use.

Ms. Brown chimed in and added that NBAA has done several outreach efforts in the LAS area with education sessions with the general aviation pilots and bring more awareness of TFDM.

Mr. Swol then handed it off to Mr. Goldman and Mr. Oswald for industry readiness.

Mr. Goldman thanked Mr. Swol and his team for their engagement on TFDM. Mr. Goldman said that industry supports TFDM and all aspects including Config A and Config B. He said that NATCA is supportive as there is a big efficiency gain and safety gain. He also noted that the data exchange is huge with integrating new entrants.

Mr. Oswald provided the following key implementation elements from a stakeholder perspective:

- Stakeholder engagement
- Roles and responsibilities
- Enabling technologies
- Policy and procedures

Mr. Oswald concluded the TFDM Industry Readiness update with a review of what is up next. He said the Surface and Data Sharing NIWG team are meeting monthly with plans to deep dive into the four implementation elements. He said the team's goal is to identify both "day 1" expectations for surface metering (Config A) sites and the likely progression at these sites to steady-state operations. The additional goal is to identify systemic implementation issues that could impact long-term benefit expectations.

Ms. Brown added that for the summer or fall NAC meeting, they would like a presentation that showed the TFDM capability.

Mr. Oswald opened the floor for questions. No questions were received. He then handed it off to Ms. Brown for the next presentation.

NAC Tasking 23-2: NAS Airspace Efficiencies Update

Ms. Brown introduced herself and her co-chair Mr. Ron Renk and the FAA subject matter expert, Mr. Greg Schwab, who will provide an update on the NAS Airspace Efficiencies tasking.

Ms. Brown began by saying the group looked at the tasking a couple of different ways at the last NAC. She said that the team wanted to figure out how we are managing the resources that we currently have and how to use what was already invested in, which is why they are looking to increase the use of task elements 1, 4, and 8. She said as they look at building a NAS NAV Strategy, they have to look at what they keep from the legacy system, which means looking at divestures. She noted that from the operator side and the FAA side we cannot maintain multiple versions of the NAS and continue to move forward. Ms. Brown said, with the increase of utilization and the divesting from what we don't need, there will become a need for standards that make sure we are doing the right thing and not adding or cutting services.

Ms. Brown then provided the following overview of the how the work has progressed since the last NAC meeting:

How the work has progressed



Mr. Schwab added that the FAA is very excited about the work this tasking group is undertaking. He said the FAA is eager to get the Minimum Service List (MSL) project. He said this project will utilize what we have, then having the conversation about divestures to get the NAS to the right size. The MSL will be equivalent to the Minimum Capabilities List (MCL), which Katie talked about earlier.

Mr. Renk then went on to describe the MSL. He started by saying that the group defined MSL based on airport Navigation Service Group (NSG) as defined in the FAA PBN Roadmap. The 5 NSG airports are below.

<u>NSG 1</u> - Low visibility (<200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures <u>NSG 2</u> - Low visibility (<=200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures <u>NSG 3</u> - CAT I mins, redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals/departures where needed <u>NSG 4</u> - Instrument approaches to ensure runway access, procedures to meet operational needs of primary airport users. <u>NSG 5</u> - Instrument approaches (where users equiped) to ensure runway access, procedures to meet operational needs of primary airport users. Consideration for equipage should given to ensure any approaches available are useable by airport users. Mr. Renk then reviewed the following chart which shows the percentage of the capabilities at the different NSG airports.

Minimum Service Level

Category	Percent with ILS Appr	Percent with RNAV (GPS) Appr	Percent with RNAV (RNP) Appr	Percent with VOR Appr	Percent with NDB Appr	Percent with RNAV SID	Percent with RNAV STAR	Percent with CONV SID	Percent with CONV STAR
NSG 1 - Low visibility (<200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures	100%	100%	100%	20%	0%	87%	100%	100%	93%
NSG 2 - Low visibility (<=200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures	100%	100%	85%	32%	5%	76%	88%	90%	78%
NSG 3 - CAT I mins, redundancy (spaced- based/ground-based, DEP/ARR runway), arrivals/departures where needed	86%	98%	16%	63%	6%	12%	10%	27%	9%
NSG 4 - Instrument approaches to ensure runway access, procedures to meet operational needs of primary airport users.	57%	97%	2%	42%	8%	19%	26%	19%	25%
NSG 5 - Instrument approaches (where users equipped) to ensure runway access, Approaches to meet operational needs of primary airport users. Consideration for equipage should given to ensure any approaches available are useable by airport users.	6%	75%	0%	19%	4%	2%	2%	1%	2%
									H



- ILS's shouldn't be retired if:
 - o Considering aircraft equipage, it is the only vertically guided approach
 - o Provided significant reduction in approach minima (ceiling or visibility)
 - Resilience for GPS jamming/spoofing
 - o Training (flight school)
- RNAV (RNP) shouldn't be retired if:
 - o Contains a curved Radius to Fix (RF) segment
 - Provides significant reduction in approach minima (ceiling or visibility) versus RNAV (GPS)
 - Part of a NextGen program (EoR, MARS, Fuel/Noise/Time efficiency)
 - o Airport Access (only public approach type that works)
 - o Resiliency for ILS outages and no RNAV (GPS)
- RNAV (GPS) shouldn't be retired if:
 - o Considering aircraft equipage, it is the only vertically guided approach
 - o Resiliency for ILS outage

o Training (flight school)

Mr. Trent Dudley (Department of Defense) asked who is going to make sure that we have resiliency? Mr. Renk answered by saying that is the purpose of having ground-based services. He said we can't just make an airport all space-based in case there is a jamming spoofing event, that would cause us to lose all access to that airport. He said that is why they want to have space-based approaches at a given airport to be redundant for the ground-based infrastructure.

Ms. Brown continued with the briefing by discussing how the group plans to increase utilization of what we already have. She said the following:

- Increase utilization ties to invest and equipage
- Several previous taskings have resulted in findings and recommendations around increase utilization and other opportunities, such as:
 - o PBN NIWG Barriers to EoR
 - NEC NIWG RNP, EoR and MARS priorities
 - PBN Clarification RNP, EoR and MARS priorities
 - Enhanced Air Traffic Services A-RNP and EoR
- How do we increase utilization? Through more awareness and measurement?
 - Can use tools and data that have been introduced as part of this tasking
 - Pick a few sites to look at and start to look at sites that have been identified in previous taskings

Mr. Childs thanked the NAC for being engaged in the meeting and the briefing topics.

Review of Action Items / Other Business

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

Ms. Noonan captured the following actions:

- Approval of the revised NEC commitment
- Provide a briefing on the benefits story for TFDM Build 1, electronic flight strips.

Closing Comments and Adjourn

Mr. Childs thanked the NAC and said he will see everyone in July for the summer NAC.

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 March 21, 2024



Opening of Meeting

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



Public Meeting Announcement

NextGen Advisory Committee (NAC) March 21, 2024





NAC Chair Report

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

Motion for NAC Approval

• October 4, 2024 – NAC Meeting Summary Package Draft





NAC Chair Report

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



FAA Report

Katie Thomson, Deputy Administrator & NAC Designated Federal Officer (FAA)



NAC Subcommittee (SC) Chair Report

Lee Brown, NAC SC Member (JetBlue Airways)

NAC Subcommittee Overview and Topics

- Highlights on capability milestones
 - NAC approval requested for NEC milestone adjustment
- Status of Joint Analysis Team (JAT) efforts on two taskings
 - > Task 19-3, Northeast Corridor Phase 2 Implementation
 - > Task 23-3, En Route Data Communications
- Continuation of readiness considerations for impending Terminal Flight Data Manager implementations
- Interim findings from Task 23-2, NAS Airspace Efficiencies



NIWG Milestone Update and Status

Data Communications



- Fifteen en route centers operational with Full Services increment 1
- Cleveland Center in now in 24/7 use
- Los Angeles Center planned for Q2 2024

Surface and Data Sharing



- Electronic Flight Strips operational at seven sites; Charlotte and Los Angeles planned for May
- Charlotte surface metering initial operational capability planned for May

Northeast Corridor and Performance Based Navigation



- Completed initial TBO commitment for Denver (previously briefed)
- Time-based flow management implementation in NEC adjusted by the FAA



Motion for NAC Approval – Adjusted NEC/PBN Milestones

Milestone as shared during October 2023 NAC

Туре	Commitment/Milestone	Dates
Implementation	Implement arrival time-based metering for PHL and EWR	Q4 CY2024



Revised Milestones

Туре	Commitment/Milestone	Dates
Implementation	Implement arrival time-based metering for PHL- and EWR	Q4 CY202 4 Q4 CY2025
Implementation	Implement arrival time-based metering for EWR	Q4 CY2026



Implementation milestones are jointly shared by FAA and Industry for the NEC efforts

Motion for NAC Approval

• Approve the revised implement arrival time-based metering for EWR milestone





Joint Analysis Team Update

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



JAT Purpose-Past Work (Review):

Joint Analysis Team (JAT)

An FAA / industry collaboration forum established to reach a consensus on methodologies and results regarding NAS performance changes resulting from <u>NextGen</u> implementations

Focused on measuring performance impacts in key metrics

- Throughput
- Block time, including variability
 - Taxi-out time
- Arrival performance (A0)
- Fuel burn
- Gate departure delay
- Completion Factor (added by NEC)

Additional metrics and normalization applied as appropriate



JAT Purpose-Past Work (Review):

- Sample JAT Past Evaluations:
 - North Texas Metroplex
 - Wake RECAT
 - Northeast Corridor-NEC Low Level Escape Routes
 - PHL SCIA
 - Data Comm Tower
 - EDC/IDAC
 - OPDs
 - EOR at DEN



JAT NEC Phase 2 Tasking

2

U.S. Department of Transportation

Office of the Deputy Administrator

800 Independence Ave., S.W. Washington, D.C. 20591

Federal Aviation Administration

December 19, 2019

Mr. Russell "Chip" Childs President and Chief Executive Officer, SkyWest, Inc. 444 South River Road St. George, UT 84790

Dear Mr. Childs:

The Federal Aviation Administration (FAA) requests the NextGen Advisory Committee (NAC) continue the Joint Analysis Team (JAT), under a new task, focused on reaching industry consensus on the performance impacts and benefits resulting from Northeast Corridor (NEC) Phase 2 implementations.

Task 19-3: Northeast Corridor: Joint Analysis Team (JAT) Assessment of Phase 2 Improvements

The NAC is asked to continue the JAT, to reach an industry consensus on the performance impacts and benefits in the NEC resulting from implementation of Phase 2 commitments.

 The JAT will present updated findings on a semiannual basis or approximately every other NAC meeting. These updates will continue until nine months after the last NEC milestone implementation.

Thank you for your leadership as Chairman, and for the valuable contributions of the entire committee toward successful implementation of NextGen.

If you have questions, please contact Pamela Whitley, Acting Assistant Administrator for NextGen, at pamela.whitley@faa.gov.

Sincerely,

Daniel K. Elwell Deputy Administrator



Current JAT Tasking ACR & Roadmap

- Complexity of Atlantic Coast Routes (ACR):
 - Last significant phase of ACR implemented mid-spring 2023
 - ACR post implementation design meeting held earlier in fall with several issues identified
 - Challenge to measure benefit (or non benefit) given complexity/variables
 - FAA Focus on changes in throughput, demand, and new constraints
- Two Joint Industry/FAA Meetings held since January
 - Met with FAA ACR Leads to discuss purpose and Post Operational Design Review
 - FAA/MITRE briefed backup data regarding changes in Atlantic Coast demand/delays
 - Challenge how to attribute changes in demand, throughput, and delays to ACR?



JAT "New" En Route Data Comm Tasking



U.S. Department of Transportation Federal Aviation Administration Office of the Deputy Administrator

800 Independence Ave., S.W. Washington, DC 20591

December 21, 2023

Mr. Russell "Chip" Childs President and Chief Executive Officer SkyWest, Inc. 444 South River Road St. George, UT 84790

Dear Mr. Childs:

The Federal Aviation Administration (FAA) requests consensus advice from the NextGen Advisory Committee (NAC) to help measure the benefits of En Route Data Communications (Data Comm). The FAA requests the NAC to develop industry consensus on the benefit mechanisms, benefit methodologies, and quantified performance impacts from the implementation of En Route Data Comm.

Task 23-3: En Route Data Communications: Joint Analysis Team Assessment

The NAC is asked to work with the Data Comm NextGen Integration Working Group to form a Joint Analysis Team (JAT) to reach an industry consensus on the operational benefits resulting from the implementation of En Route Data Comm.

The NAC advice should include the following:

- Identified benefit mechanisms of En Route Data Comm
- · Identified data source(s) and data validation steps
- Description of the benefit methodologies of En Route Data Comm
- Quantified operational benefits of En Route Data Comm

The program scope for this tasking shall include the following:

- All Air Route Traffic Control Centers with active En Route Data Comm
- All relevant data source(s)

The FAA requests the JAT to provide an update at each of the NAC meetings through calendar year 2024, with the final report by the Fall 2024 meeting.



Industry En Route Data Comm Meeting

- Held meeting with Data Comm Team to introduce proposed method to arrive at quantitative value
 - o Good initial brief by L3Harris team analyzing benefits
 - More work needed to explain data behind analysis and operational connection to distance savings
 - More discussion data needed linking on how time savings for both pilots and controllers translates to savings/efficiency
- Next meeting planned for late March/April
- Industry SME participation-confirm who from industry should be involved
 - Individual industry participation-pilots/dispatch
 - Possible controller feedback





Terminal Flight Data Manager: Industry Readiness

Doug Swol (FAA) & Scott Nagy (FAA) Rob Goldman (Delta Air Lines) & Chris Oswald (ACI-NA)

Surface & Data Sharing – TFDM Update

Key TFDM Achievements

- 7th IOC at San Jose (SJC) achieved Feb 27, 2024
- Completed Collaborative Site Implementation Team Meetings:
 - > Houston (IAH) December 6-7, 2023
 - > Miami (MIA) January 24-25, 2024
 - > Atlanta (ATL) February 22-23, 2024

Near Term Activities

- CLT Build 2 IOC date move March 25 to May 14, 2024
 - > Additional software patch needed
 - > Air traffic training started in January 2024
- LAX Build 1 IOC (9th site) on May 14, 2024



Key TFDM Capabilities

		8	NOLEXTE NOTES	STATUS VETUS						East			GCNGCS	1	6:5	2:13
	MULTI ALL	1 :	LIP	Q	(00)	ACID		HEACIDA	ana -			ATIS	+	9	0	4
1.	0 ^	DEFAULT	ACID	1 X	+ 4 ~		ACTIVE	м	anual - 🗙	~	0 ^	PENDIN	G/PUSH	BACK	Manual	- X
		-			10 CA	1.							_		- 12	
		PTI 17	ME EOBT 15 1715	TOBT	AOBT 1648	TMAT	AMAT 1650	EFTT	TAXI 1650	ATOT	EDCT	ADDT 0010	Posn			
			DAI 23	54 4	122	KPHX	ECLPS1	PHASE ELI	.1.		3					
		- L	FILDO		715 7	KATL										
		C-ix	F/A321/	L PI	/15 /	L						LC-7L	<u>}</u>			
1	0	INACT in	178	3	50	0	RP WXRTE			1656	3		4			
													\sim			
		E E	S INHIRT	000		APREO	SWAP	STOP	GS	NRA	FRC					
				000	neg cin	rained	Store	5101								
		EM	ERG PRIORIT	Y RESUME	DEICE	ABORT	RTN	PUSH	GH	FDLY		ROUTE				
				E	DAL2354	4122	PHIX ECLIPET PHATE	E 829.71		1		N				
				1.10	F/A321/L 178	912115 7L 358	-889 10072		1659 I.C.R.							
				H	SWA385	2642	PNK GOLPET PHAGE DAL	E ENM. F.	3							
				T. inst	SHA385 F/8737/L 655	2642 5 H1716 7L 308	PHK GOLPET PHAGE DAL	: DMM./.	3 1958							
				T. Maria	SWA385 F/8737/L 555	2647 H1216 7L 398	PHK COLPET PHAGE	E DANCES .	3 1958 LC-3.							
				Tani 20	SWA385 F/8737/L 555 JSX421 G/E135/L 587	2642 11216 7L 398 2832 11215 7R 368	PHX COLPET PHAGE DHL PHX HEEMEZ HERME DHX]OJEX EQUICS EX	E DIRE. F.	3 1958 LC-3, 3 1948 LC-3,	-						
	SET SUPPORT IN	New Court	TANE DANE	14, 14, 14, 14, 14, 14, 14, 14, 14, 14,	SWA385 F/8737/L 655 JSX421 G/E135/L 687	2842 1 11213 7L 398 2 12832 1 11215 7R 388 4 ALL 1641	PHA EELPET PHAGE DHE PHA HEDHES HEREF THAT OJER EQUICE EE	C DW. /	3 1858 JLC.3. 3 1849 LC.38 1849 R	5 N/5	8/5	1/15 H	/1 M	1/2	5/3	

Electronic Flight Data and Electronic Flight Strips (Build 1 Config B, Build 2 Config A or B) <complex-block>

Surface Management and Metering Decision Support Tools for ATC (Build 2 Config A Only – starts in 2024)

Traffic Management Initiative (TMI) Integration

(Build 1 Config B, Enhanced in Build 2 Config A or B)



Airport Configuration Management (Build 1 Config B, Build 2 Config A or B) Data Sharing with Flight and Airport Operators

(Build 2 Config A and B)



Surface NAC Milestone Status

IMPLEMENTATION COMMITMENTS	New Date
TFDM program will achieve key site IOC for Build 1 at CLE	Complete (10/24/2022)
TFDM program will achieve the in-service decision (ISD) for Build 1 to allow additional TFDM system deployments into the NAS	Complete (3/1/2023)
TFDM program will achieve IOC at 3 additional sites	Q4 CY2023 Complete (7/24/2023)
TFDM program will achieve the key site IOC for Build 2 at CLT	Q2 CY2024 On Track
TFDM program will achieve ISD for Build 2 to allow additional deployments of the full TFDM capabilities into the NAS	Q4 CY2024 On Track
TFDM program will achieve IOC at 5 additional sites	Q4 CY2025 On Track



FAA Industry Readiness Assessment

	IOC Date	10/2023 Readiness Level	3/2024 Readiness Level
CLT	5/2024	Medium	High*
PHX	12/2024	Very Low	Low
LAS	2/2025	Very Low	Very Low
SEA	3/2025	Low	Low
LAX	4/2025	Low	Low
SFO	5/2025	Low	Low
IAH	6/2025	Low	Low
MDW	7/2025	Very Low	Low
MIA	10/2025	Low	Low
BOS	3/2026	Very Low	Low
ATL	4/2026	Low	Medium
SLC	7/2026	Low	Low
SAN	8/2026	Very Low	Low
DEN	9/2026	Low	Low
DFW	10/2026	Low	Low

Rea Lev	diness el Legend	High	Medium	Low	Very Low
(a)	Sufficient Surface Data	>90%	>80%	>= 60%	<60%
(b)	Accurate Surface Data	Accurate	Accurate	Inaccurate	Inaccurate
(c)	SWIM On- Ramping	Complete	ln Progress	Not Started	Not Started
(d)	Surface Tools	Ready	In Progress	In Progress/ Not Ready	Not Ready

Assessments based on FAA SWIM data analysis, CSIT discussions and surveys

	High	Medium	Low	Very Low
Target to Achieve Each Level	~2 months before IOC	~6 months before IOC	~ 12 months before IOC	N/A

*CLT: On-Ramping complete, testing of SWIM services and surface tools in progress. Surface Work Group in Progress.



Industry Efforts to Address TFDM Readiness

- Working Group Focus is on surface metering (e.g., Configuration A, Build 2)
 - > Requires timely flight-level data from flight operators
 - Some airports or terminal operators will have roles in facilitating data exchange and possibly operational decision making (e.g., managing flight substitutions for non-CDM carriers)
 - Will change traditional roles of key stakeholders in real-time surface management and departure scheduling
 - Also requires carrier and airport investments in enabling technology, stakeholder engagement, and new policies & procedures

• Perspective is important

- > TFDM will provide substantive benefits outside of surface metering
- Even with ideal implementation, there shouldn't be an expectation of 100% of surface metering benefits on Day 1
- > Benefits will improve incrementally as air traffic controllers, flight operators, and ramp controllers gain experience with metering capabilities
- > "Success will breed success"



Key Implementation Elements—Stakeholder Perspectives

Stakeholder engagement

Roles & responsibilities

Enabling technologies

Policies & procedures



What's Next

- Surface/Data Sharing NIWG meeting monthly
- Planning deep dives into the four implementation elements as well as early implementation site experiences to date
- Goal is to identify both "Day 1" expectations for surface metering (Configuration A) sites and the likely progression at these sites to steady-state operations
- Additional goal is to identify systemic implementation issues that could impact long-term benefit expectations





NAC Task 23-2: NAS Airspace Efficiencies Update

Lee Brown (JetBlue Airways) & Ron Renk (United Airlines) Greg Schwab (FAA), Chris Southerland (FAA) & Wendy O'Connor (FAA)

NAC Task 23-2: NAS Airspace Efficiencies

The FAA requests NAC advice on ways to achieve greater airspace efficiencies as we collaboratively attempt to reduce reliance on and divest from legacy systems and procedures and move to a reliance on a more modernized NAS.

The FAA offers the following suggestions as a way to begin the efficiency discussions:

- 1. Within the scope of current FAA automation capabilities, explore opportunities for increased utilization of existing Performance Based Navigation (PBN) procedures.
- 2. Identify opportunities for industry to leverage efficiencies gained from their avionics and dispatch systems investments while simultaneously allowing the FAA to divest from legacy NAS elements that do not contribute to those efficiencies.
- 3. Identify opportunities for the FAA to remove existing and infrequently used Instrument Flight Procedures (IFPs).
- 4. Identify opportunities to potentially modify existing IFPs/Standard Instrument Departure Procedures (SIDs)/Standard Terminal Arrival Procedures (STARs) to gain overall airspace efficiencies.
- 5. Identify a recommended baseline PBN and non-PBN IFP infrastructure to provide the minimum service level and airport access for both non-Global Positioning System/Area Navigation equipped aircraft and aircraft with advanced avionics for each Navigation Services Group Airport Category (1-5).
- 6. Identify any trends in IFP/SID/STAR inventory suggestions that might be used as a national standard.
- Explore opportunities for even greater efficiencies with the use of Advanced Required Navigation Performance (A-RNP) as is being pursued by the Performance Based Operations Aviation Rulemaking Committee.
- 8. Work with the NAC Subcommittee Minimum Capabilities List (MCL) Team to capitalize on any cross- cutting issues that might support both taskings and industry achieving MCL-level of equipage.



Approaching the Tasking Elements

Increase use Task element #1, #4, #8 Divest prudently Task element #2, #3

Build "standards" to guide decisions Task element #5, #6, #7



How the work has progressed



Mar 2023 – Aug 2023

- Intro to IOAA data
- Focused on review process using FLL case study, helped inform all parts of the tasking



Sep 2023 – Jan 2024

- Finished up FLL case study and developed interim findings
- Preliminary look at service levels
- Leadership discussion on related FAA efforts (i.e., IFP streamlining)



Feb 2024 – Jul 2024

- Align closer with IFP Streamlining efforts
- Flesh out Minimum Service Level definitions
- Highlight specific locations for utilization



Why Define Minimum Service Levels?

• To assist the FAA's review of an airport, we defined Minimum Service Levels based on airport Navigation Service Group (NSG) as defined in the FAA PBN Roadmap.

<u>NSG 1</u> - Low visibility (<200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures

<u>NSG 2</u> - Low visibility (<=200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures

<u>NSG 3</u> - CAT I mins, redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals/departures where needed

<u>NSG 4</u> - Instrument approaches to ensure runway access, procedures to meet operational needs of primary airport users.

<u>NSG 5</u> - Instrument approaches (where users equiped) to ensure runway access, procedures to meet operational needs of primary airport users. Consideration for equipage should given to ensure any approaches available are useable by airport users.



Minimum Service Level

Category	Percent with ILS Appr	Percent with RNAV (GPS) Appr	Percent with RNAV (RNP) Appr	Percent with VOR Appr	Percent with NDB Appr	Percent with RNAV SID	Percent with RNAV STAR	Percent with CONV SID	Percent with CONV STAR
NSG 1 - Low visibility (<200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures	100%	100%	100%	20%	0%	87%	100%	100%	93%
NSG 2 - Low visibility (<=200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures	100%	100%	85%	32%	5%	76%	88%	90%	78%
NSG 3 - CAT I mins, redundancy (spaced- based/ground-based, DEP/ARR runway), arrivals/departures where needed	86%	98%	16%	63%	6%	12%	10%	27%	9%
NSG 4 - Instrument approaches to ensure runway access, procedures to meet operational needs of primary airport users.	57%	97%	2%	42%	8%	19%	26%	19%	25%
NSG 5 - Instrument approaches (where users equipped) to ensure runway access, Approaches to meet operational needs of primary airport users. Consideration for equipage should given to ensure any approaches available are useable by airport users.	6%	75%	0%	19%	4%	2%	2%	1%	2%



Minimum Service Level

Category

NSG 1 - Low visibility (<200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures

NSG 2 - Low visibility (<=200' HAT), redundancy (spaced-based/ground-based, DEP/ARR runway), arrivals, departures

NSG 3 - CAT I mins, redundancy (spacedbased/ground-based, DEP/ARR runway), arrivals/departures where needed

NSG 4 - Instrument approaches to ensure runway access, procedures to meet operational needs of primary airport users.

NSG 5 - Instrument approaches (where users equipped) to ensure runway access, Approaches to meet operational needs of primary airport users. Consideration for equipage should given to ensure any approaches available are useable by airport users. Considerations when something looks ripe to retire:

ILS's shouldn't be retired if:

- Considering aircraft equipage, it is the only vertically guided approach
- Provides significant reduction in approach minima (Ceiling or Visibility)
- Resiliency for GPS jamming/spoofing
- Training (flight school)

RNAV (RNP) shouldn't be retired if:

- Contains a curved Radius to Fix (RF) segment
- Provides significant reduction in approach minima (Ceiling or Visibility) versus RNAV (GPS)
- Part of a NextGen program (EoR, MARS, Fuel/Noise/Time efficiency)
- Airport Access (only public approach type that works)
- Resiliency for ILS outage and no RNAV (GPS)

RNAV (GPS) shouldn't be retired if:

- Considering aircraft equipage, it is the only vertically guided approach
- Resiliency for ILS outage
- Training (flight school)



Increasing utilization of what we have

- Increased utilization ties to investment and equipage
- Several previous taskings have resulted in findings and recommendations around increased utilization and other opportunities, examples include:
 - > PBN NIWG Barriers to EoR
 - > NEC NIWG RNP, EoR and MARS priorities
 - > PBN Clarification RNP, EoR and MARS priorities
 - > Enhanced Air Traffic Services A-RNP and EoR
- How do we increase utilization? Through more awareness and measurement?
 - > Can use tools and data that have been introduced as part of this tasking
 - > Pick a few sites to look at start to look at sites that have been identified in previous tasking



Next Steps

Identify sites for Required Navigation Performance (RNP) utilization tracking and regular reporting



Obtain Instrument Flight Procedures (IFP) streamlining updates and briefings to full workgroup

Complete additional case studies to inform streamlining alignment and Minimum Service Level (MSL) definition





Review of Action Items & Other Business

Kimberly Noonan, NAC Committee Manager (FAA)



Closing Comments & Adjourn

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



TFDM Back Up

TFDM Waterfall (2022-2024)

ATCT - Configuration - Functionality Deployed	АТСТ	TRACON	SERV AREA	IOC
ATCT 5 (CLE) Key Site - Config B - Build 1	CLE	CLE	NC	10/24/2022
2023				
Build 1.5 ISD				
ATCT 4 (IND) - Config B - Build 1	IND	IND	NC	4/24/2023
ATCT 1 (PHX) - Config A - Build 1	PHX	P50	SW	6/5/2023
ATCT 3 (RDU) - Config B - Build 1	RDU	RDU	SE	7/24/2023
ATCT 20 (CMH) - Config B - Build 1	CMH	CMH	NC	9/11/2023
ATCT 26 (LAS) - Config A - Build 1	LAS	L30	SW	10/23/2023
2024	-			
ATCT 19 (SJC) - Config B - Build 1	SJC	NCT	NW	2/27/2024
ATCT 8 (CLT) - Build 2 Key Site - Config A - Build 2 SW (incl Build 1 functions)	CLT	CLT	SE	5/14/2024
ATCT 6 (LAX) - Config A - Build 1	LAX	SCT	SW	5/14/2024
ATCT 30 (TPA) - Config B - Build 1	TPA	TPA	SE	7/23/2024
Build 2.2 ISD				9/30/2024
ATCT 5 (CLE) Key Site - Config B - Full TFDM SW, Adapt Build 2 func.	CLE	CLE	NC	10/22/2024
ATCT 4 (IND) - Config B - Full TFDM SW, Adapt Build 2 func.	IND	IND	NC	11/18/2024
ATCT 1 (PHX) - Config A - Full TFDM SW, Adapt Build 2 func.	PHX	P50	SW	12/9/2024

Completed Site Site Step Up from B1 to B2



TFDM Waterfall (2025-2026)

ATCT - Configuration - Functionality Deployed	АТСТ	TRACON	SERV AREA	IOC
2025				
ATCT 26 (LAS) - Config A - Full TFDM SW, Adapt Build 2 func.	LAS	L30	SW	2/17/2025
ATCT 29 (SEA) - Config A - Full TFDM SW	SEA	S46	NW	3/18/2025
ATCT 6 (LAX) - Config A - Full TFDM SW, Adapt Build 2 func.	LAX	SCT	SW	4/12/2025
ATCT 15 (SFO) - Config A - Full TFDM SW	SFO	NCT	NW	4/29/2025
ATCT 3 (RDU) - Config B - Full TFDM SW, Adapt Build 2 func.	RDU	RDU	SE	5/12/2025
ATCT 16 (IAH) - Config A - Full TFDM SW	IAH	190	SC	6/3/2025
ATCT 20 (CMH) - Config B - Full TFDM SW, Adapt Build 2 func.	СМН	СМН	NC	6/23/2025
ATCT 34 (MDW) - Config A - Full TFDM SW	MDW	C90	NC	7/15/2025
ATCT 19 (SJC) - Config B - Full TFDM SW, Adapt Build 2 func.	SJC	NCT	NW	8/4/2025
ATCT 28 (OAK) - Config B - Full TFDM SW	OAK	NCT	NW	8/26/2025
ATCT 30 (TPA) - Config B - Full TFDM SW, Adapt Build 2 func.	TPA	TPA	SE	9/15/2025
ATCT 35 (MIA) - Config A - Full TFDM SW	MIA	MIA	SE	10/28/2025
2026				
ATCT 38 (BOS) - Config A - Full TFDM SW	BOS	A90	NE	3/3/2026
ATCT XX (AUS) - Config B - Full TFDM SW	AUS	AUS	SC	3/31/2026
ATCT 17 (ATL) - Config A - Full TFDM SW	ATL	A80	SE	4/28/2026
ATCT 21 (HOU) - Config B - Full TFDM SW	HOU	190	SC	6/2/2026
ATCT 42 (SLC) - Config A - Full TFDM SW	SLC	S56	NW	7/7/2026
ATCT 31 (SAN) - Config A - Full TFDM SW	SAN	SCT	SW	8/4/2026
ATCT 40 (CVG) - Config B - Full TFDM SW	CVG	CVG	SE	9/1/2026
ATCT 33 (DEN) - Config A - Full TFDM SW	DEN	D01	NW	9/29/2026
ATCT 37 (DFW - 3 ATCTs) - Config A - Full TFDM SW	DFW	D10	SC	10/27/2026

Completed Site

Site Step Up from B1 to B2



TFDM Waterfall (2027-2028)

ATCT - Configuration - Functionality Deployed	ATCT	TRACON	SERV AREA	IOC
2027				
ATCT 47 (DAL) - Config B - Full TFDM SW	DAL	D10	SC	3/2/2027
ATCT 39 (MSP) - Config A - Full TFDM SW	MSP	M98	NC	3/30/2027
ATCT 49 (SDF) - Config B - Full TFDM SW	SDF	SDF	SE	4/27/2027
ATCT 27 (ORD - 3 ATCTs) - Config A - Full TFDM SW	ORD	C90	NC	6/8/2027
ATCT 48 (BNA) - Config B - Full TFDM SW	BNA	BNA	SE	7/6/2027
ATCT 41 (IAD) - Config A - Full TFDM SW	IAD	PCT	NE	8/3/2027
ATCT 54 (MEM) - Config B - Full TFDM SW	MEM	M03	SE	8/31/2027
ATCT 43 (FLL) - Config A - Full TFDM SW	FLL	MIA	SE	9/28/2027
ATCT 32 (MCO) - Config A - Full TFDM SW	MCO	F11	SE	10/26/2027
2028				
ATCT 56 (SAT) - Config B - Full TFDM SW	SAT	SAT	SC	2/29/2028
ATCT 45 (DTW) - Config A - Full TFDM SW	DTW	D21	NC	3/28/2028
ATCT 24 (ISP) - Config B+ - Full TFDM SW (+ TFDM/DSP Interface)	ISP	N90	NE	4/25/2028
ATCT 46 (BWI) - Config A - Full TFDM SW	BWI	PCT	NE	5/23/2028
ATCT 62 (PBI) - Config B - Full TFDM SW	PBI	PBI	SE	6/20/2028
ATCT 50 (DCA) - Config A - Full TFDM SW	DCA	PCT	NE	7/18/2028
ATCT 65 (PDX) - Config B - Full TFDM SW	PDX	P80	NW	8/22/2028
ATCT 7 (PHL) - Config A - Full TFDM SW (+ TFDM/DSP Interface)	PHL	PHL	NE	9/26/2028
ATCT 11 (EWR) - Config A - Full TFDM SW (+ TFDM/DSP Interface)	EWR	N90	NE	10/24/2028



TFDM Waterfall (2029)

ATCT - Configuration - Functionality Deployed		TRACON	SERV AREA	IOC
2029				
ATCT 13 (LGA) - Config A - Full TFDM SW (+ TFDM/DSP Interface)	LGA	N90	NE	2/27/2029
ATCT 18 (TEB) - Config B+ - Full TFDM SW (+ TFDM/DSP Interface)	TEB	N90	NE	3/27/2029
ATCT 12 (JFK) - Config A - Full TFDM SW (+ TFDM/DSP Interface)	JFK	N90	NE	4/24/2029
ATCT 23 (HPN) - Config B+ - Full TFDM SW (+ TFDM/DSP Interface)	HPN	N90	NE	5/22/2029
ATCT 66 (PIT) - Config B - Full TFDM SW	PIT	PIT	NE	6/19/2029
ATCT 67 (STL) - Config B - Full TFDM SW	STL	T75	SC	7/17/2029





NextGen Advisory Committee (NAC) March 21, 2024, Attendance List

Last Name	First Name	Affiliation
Abilla	Walter	Federal Aviation Administration
Ambrosi	Jason	Air Line Pilots Association
Armstrong	Merrill	Federal Aviation Administration
Arrighi	James	Federal Aviation Administration
Baker	Jodi	Federal Aviation Administration
Barry	Timothy	Government Accountability Office
Bechdolt	Anne	FedEx Express
Bertapelle	Joe	Joe Bertapelle, LLC
Bolen	Edward	National Business Aviation Association
Brandt	John	The MITRE Corporation
Brown	Lee	JetBlue Airways
Bunce	Peter	General Aviation Manufacturers Association
Burdick	Chris	Federal Aviation Administration
Burnett	Alex	United Airlines
Butler	Steven	Concept Solutions
Cebula	Andrew	Airlines for America
Childs	Russell	SkyWest Airlines
Chow	Martha	Government Accountability Office
Cointin	Rebecca	Federal Aviation Administration
Collings	Chris	L3Harris Technologies
Craig	Lynae	Alaska Airlines
Crandall	Kathy	L3Harris Technologies

Last Name	First Name	Affiliation
DeHart	Scott	Southwest Airlines
DiMento	Patrick	FedEx Express
Dodgen	Joey	Delta Air Lines
Donnelly	Kurt	Professional Aviation Safety Specialists
Dudley	Trent	Department of Defense
Fontaine	Paul	Federal Aviation Administration
Fraser	Bobby	United Airlines
Goldman	Robert	Delta Air Lines
Govender	Shereen	Southwest Airlines
Gumm	Ryan	Delta Air Lines
Gupta	Vipul	Honeywell Aerospace
Guy	Rebecca	Federal Aviation Administration
Hamilton	Dan	National Air Traffic Controller Association
Harris, Jr	Charles	Federal Aviation Administration
Heins	Joe	United Airlines
Hennig	Jens	General Aviation Manufacturers Association
Норе	Chris	Federal Aviation Administration
lversen	Jennifer	Regional Airline Association
Johnson	Antionette	Federal Aviation Administration
Joly	Pascal	Airbus
Jones	Jessica	Federal Aviation Administration
Kasher	Alan	Southwest Airlines
Kelly	Christopher	Southwest Airlines
King	Dennis	Department of Defense
Knorr	Dave	Federal Aviation Administration
Кпох	Andrew	Government Accountability Office

Last Name	First Name	Affiliation
Kujawa	Christine	Boeing Co
Landesmann	Jennifer	Member of the Public
Lawler	Rebecca	United Airlines
Litke	Paul	United Airlines
Loring	Christopher	Federal Aviation Administration
Lunsford	Lynn	Southwest Airlines
Maffei	John	Federal Aviation Administration
Marks	James	Federal Aviation Administration
Mathur	Rajat	U.S. Senate
McDowell	Michael	Collins Aerospace
McIntosh	Frank	Federal Aviation Administration
McKelligan	Mark	National Air Traffic Controller Association
Mets	Dave	Alaska Airlines
Militello	Anthony	Department of Defense
Mitra	Trin	Mitra
Morrow	Bernadette	Leidos
Morse	Glenn	Member of the Public
Morse	Eric	Delta Air Lines
Mulligan	Jessica	SkyWest Airlines
Nadarski	Nick	Government Accountability Office
Nagy	Scott	Federal Aviation Administration
Narvid	Juan	Federal Aviation Administration
Noonan	Kimberly	Federal Aviation Administration
O'Connor	Wendy	Federal Aviation Administration
O'Kelly	Caitlin	Federal Aviation Administration
Oswald	Chris	Airports Council International - North America

Last Name	First Name	Affiliation
Pennington	Darrell	Air Line Pilots Association
Perez	Karina	Aerospace Industries Association
Pinkerton	Sharon	Airlines for America
Quinn	Cheryl	National Aeronautics and Space Administration
Renk	Ron	United Airlines
Rice	Colin	Port of Seattle
Ris	Patrick	United Airlines
Santa	Rich	National Air Traffic Controller Association
Santos	Philip	FedEx Express
Schwab	Greg	Federal Aviation Administration
Silverman	Eric	American Airlines
Smith	Elly	The MITRE Corporation
Snow	Marissa	SkyWest Airlines
Southerland	Chris	Federal Aviation Administration
Spero	Dave	Professional Aviation Safety Specialists
Subramanian	Prakash	The MITRE Corporation
Surridge	David	American Airlines
Swol	Doug	Federal Aviation Administration
Sypniewski	Jessica	Federal Aviation Administration
Tamburro	Ralph	Port Authority of New York and New Jersey
Thomson	Katie	Federal Aviation Administration
Torrence	Kathy	Federal Aviation Administration
Townsend	Brian	Allied Pilots Association
Turner	Trey	Southwest Airlines
Tyler	Jessica	American Airlines
Vincent	Jeffrey	Federal Aviation Administration

Last Name	First Name	Affiliation
Walters	Terry	Alaska Airlines
Warren	Nicole	Federal Aviation Administration
Wilkins	Aaron	Federal Aviation Administration
Williams	Heidi	National Business Aviation Association
Wilson	Jamie	Concept Solutions
Winter	Jeffrey	JetBlue Airways
Yates	Kyndra	Federal Aviation Administration
Yates	Vaughn	Federal Aviation Administration
Zamora, Jr.	Raul	Federal Aviation Administration