Safety

Oversee and operate the safest aerospace system in the world, all with a culture of continuous improvement

Safety Culture Commitment

Reinforce and promote “Safety Culture” across FAA and industry that integrates all aspects of Safety Culture (i.e., Just Culture, Reporting Culture, Learning Culture, Flexible Culture, and Informed Culture) to improve safety performance throughout the NAS. Safety culture commitment promotes safety policy, manages resources and invests in safety training, safety systems, and safety solutions; documents processes and procedures, and ensures accountability for safety.

Initiative: Advance the Safety Culture Surrounding Air Cargo

Advance our safety culture and capacity to manage safety risks by reaching across FAA LOBs to address safety risks in aircraft cargo.

Activity: Support Development of a Standardized Test of Cargo Containers to Withstand Fires

Cargo containers for use on aircraft (Unit load devices (ULD)) are utilized in most aircraft to hold and load cargo and baggage in aircraft cargo compartments. FAA has utilized the SAE International Aerospace Standard AS8992 to standardize the fire mitigation strategy for Fire Resistant Container Design, Performance, and Testing Requirements. FAA will conduct research to support the further development of testing procedures to allow differential levels of fire intensity and provide this information to the SAE International AGE-2 (Air Cargo) committee.

Target: Draft Specification for Lithium Battery Thermal Event Simulator

Compile data from previous lithium battery tests and identify gaps that require further testing. Perform lithium battery characterization tests and analyze the data collected. Develop a draft specification for the lithium battery thermal event simulator as part of a performance standard for evaluating fire-resistant cargo containers and fire containment covers. Circulate the draft specification for review to government and industry partners. Collect feedback and refine specifications, as necessary.

Initiative: Promote Positive Safety Culture

Promote a positive safety culture that involves proactively addressing safety issues early in the development phase to alleviate the advent of critical safety hazards during National Airspace System (NAS) implementation.

Activity: Perform NextGen Safety Culture Outreach

Perform outreach to bring awareness to NextGen (ANG) employees regarding safety culture and strategize phased approach for implementing organizational initiatives for establishing positive culture.

Target: Refine Multi-Year NextGen Safety Culture Strategy

We will collaborate with NextGen (ANG) safety focals to ensure that the multi-year plan aligns with the objectives of each directorate. We will also seek input from external stakeholders from other Lines of Business (LOBs) to incorporate their insights and lessons learned. Additionally, the ANG Safety Culture Steering Group (SCSG) will receive regular updates on our progress.

Target: Develop NextGen Safety Culture Biennial Employee Survey

Develop NextGen (ANG) Safety Culture Biennial Employee Survey questionnaire based on lessons learned from FY23's safety culture promotion and outreach activities to understand the baseline organizational safety culture and identify areas for further enhancement.

Target: Hold a Safety Culture Stakeholder Review

Once the multi-year plan is complete, we will organize a comprehensive stakeholder review event. At this event, we will officially present NextGen (ANG)'s detailed vision on safety culture. This will include the strategies, objectives, and key milestones we've set to promote and reinforce safety values and practices. The event will provide an opportunity for stakeholders to ask questions, provide feedback, and further understand the direction in which we're heading regarding safety culture.

Activity: New Entrant Focused Research and Development

Conduct ongoing research and development efforts to support the safe and efficient integration of Unmanned Aircraft System (UAS) into the National Airspace System (NAS).

Target: Validation of Visual Operation Standards for Small Unmanned Aircraft System (UAS)

Complete report for the 'Validation of Visual Operation Standards for Small Unmanned Aircraft System (UAS)' research project, to include summary results that measure Visual Observer & Remote Pilot performance (in maintaining visual separation), identify optical impacts (e.g. visual illusions and adverse conditions), and propose regulatory and training standards for Visual Observers.

Target: Disaster Preparedness

Complete report on lessons learned through mock event demonstration exercises for Unmanned Aircraft System (UAS) operations in disaster and emergency response scenarios that were conducted and the exercises that are to be conducted across the country. The mock event demonstration exercises include seminars, workshop/tabletop, drills and full-scale exercises. Type of event is determined based on the disaster type as follows: Seminar: Planned for all the disasters; Workshop/Tabletop Exercise: Hurricane/Flood/Tornado, Oil Spill, Wildfire: Prescribed Burn, Earthquake/Tsunami, Volcanic Eruption, Train Derailment Drill: Earthquake/Tsunami, Airport Terrorism ; Functional Exercise: Wildfire: Prescribed Burn, Hurricane/Flood/Tornado, Train Derailment, Medical Deliveries (Pandemic: Between Rural communities and Pandemic: Major Hub to Rural Community)

Target: Best Practices for Automated Systems

Complete preliminary Risk Assessments and Mitigations report for the ‘Best Practices for Automated Systems’ research effort. The report explores whether existing design principles, guidance, tools, and methods could have prevented the automation failures or whether they might have even contributed to these faults. It will provide updated guidance and methods for conducting risk assessments in order to properly assess the different types of automation failures.

Target: High-Bypass Live Engine Ingestion Test

Complete report on the Live Engine Test Event executed by the Naval Air Warfare Center (NAWC) following the test conducted at China Lake. Report will document findings of the damage caused by a Small Unmanned Aircraft System (sUAS) ingestion into a turbofan engine and takeoff conditions.

Target: Performance Specs and Guidance

Complete report to analyze findings and develop conclusions regarding the level of feasibility; develop a technical brief addressing all research goals; document minimum performance standards for using Small Unmanned Aircraft System (sUAS) for Foreign Object Debris (FOD) inspections.

Target: Commercial Air Carrier vs Unmanned Transport Operations

Complete report for the Investigate and Identify the Key Differences Between Commercial Air Carrier Operations and Unmanned Transport Operations research executed by Kansas State University. Report will document findings of the research and key differences between Advanced Air Mobility (AAM) and commercial air carrier operations as experienced today.

Safety and Security Risk Management

Ensure a formalized and proactive approach to aviation safety by identifying, monitoring, assessing, and managing safety and security risks through enhanced access to data and analytics, informed risk-based decision making, improved safety metrics and security measures, and increased system safety awareness and performance.

Initiative: Surface Safety Risk Reduction

AJI will utilize the surface safety metric to: Establish consensus among Runway Safety stakeholders on a policy to assess and quantify the risk in runway safety events. Address precursors, as well as latent risks by proactively providing event trend summaries and best practices to the field.

Activity: ANG Support of Runway Safety Office (AJI) Initiative of Surface Safety Risk Reduction

The Runway Incursion Reduction Program's (RIRP) objective is to continually discover, research, implement, maintain and innovate technologies that will detect the incorrect presence of an object in the Runway Safety Area and deliver a directive cue to the individual who can take corrective action.

Target: RIPSA Site Infrastructure

Complete installation of site infrastructure for prototype Runway Incursion Prevention through Situational Awareness (RIPSA) technology system at San Antonio International Airport (SAT).

Target: RIPSA Safety Risk Management

Conduct a local Safety Risk Management Panel in support of Operational Testing and Evaluation of the Runway Incursion Prevention Situational Awareness (RIPSA) technology system at San Antonio Airport (SAT) and support review and signature for the Safety Risk Management Document

Initiative: Aircraft Safety Assurance

Research and Development that assesses and improves aircraft safety systems and the safe introduction of new aircraft technologies. Aircraft centric research areas include composites/materials, propulsion and fuel systems, and fire protection and detection.

Activity: Safe Installation and Operation of New High Voltage Electric Aircraft Systems

In collaboration with the Technical Innovation Policy Branch – Propulsion & Energy (AIR-625), the Aviation Research Division are tasked with developing standardized test methods for evaluating the endurance, durability and reliability of electric engines.

Target: Conduct Partial Discharge Tests for High Voltage Electric Propulsion Networks

The Aviation Research Division will develop and construct a benchtop test rig capable of evaluating electric engines up to 10 kilowatts.

Target: Conduct Life-limiting Tests for High Voltage Electric Propulsion Networks

Researchers will conduct endurance tests on electric engines smaller than 10 kilowatts, with the goal of producing information utilized in standardized methods for the test rig design, instrumentation, data acquisition, and test profiles.

Target: Report on Environmental Effects in High Voltage Electric Propulsion Networks

The Aviation Research Division will report out lessons learned in the development and refinement of the benchtop test rig. Anticipated findings will be minimum requirements for the instrumentation and data acquisition sampling rates and/or filtering techniques.

Activity: Conduct Unleaded Aviation Gasoline Research

Conduct research to complete pre-screening tests of unleaded fuels. Conduct full-scale testing on pre-qualified fuels that will lead to Fleet Authorization in accordance with Section 565 of the 2018 FAA Reauthorization Act. (In February 2022 the FAA announced a goal to transition piston-engine aircraft to lead-free aviation fuel before 2031 under the FAA EAGLE (Eliminate Aviation Gasoline Lead Emissions) program. This research is performed under the Piston Aviation fuels Initiative (PAFI), which is conducted under and directly supports EAGLE.

Target: Pre-Screening Tests of Unleaded Aviation Gasoline for Entry into Piston Engine Aviation Fuel Initiative (PAFI)

Evaluate unleaded fuel endurance characteristics per 14 Code of Federal Regulations (CFR) Part 33.49, and conditions affecting engine operation and performance, by leveraging pre-screening tests at the William J. Hughes Technical Center Propulsion and Airpower Engineering Research (POWER) Laboratory. Fuel formulations that successfully pass pre-screening, will enter the full-scale test program that can lead to a fleet authorization.

Target: Pre-Screening Tests of Unleaded Aviation Gasoline for Entry into Piston Engine Aviation Fuel Initiative (PAFI)

Conduct full-scale performance and detonation testing to support Fleet Authorization of a pre-qualified unleaded fuel. Reports and data will be provided to Aircraft Certification Service policy stakeholders on testing conducted in an engine test cell, operating at sea level and simulated altitude conditions. Tests will be performed on a Piston Engine Aviation Fuels Initiative (PAFI)-identified test engine and measure engine detonation - and other operating characteristics - for compliance with applicable portions of 14 CFR Part 33.47 (Detonation Test) and American Society for Testing and Materials (ASTM) D7826. (Standard Guide for Evaluation of New Aviation Gasolines and New Aviation Gasoline Additives).

Initiative: Enterprise and NextGen Safety Management Systems

Conduct integrated safety assessment to determine National Airspace System (NAS) enterprise safety risk and develop safety requirements for mitigating potential hazards and improving safety benefit of the NAS modernization.

Activity: Conduct Data-Driven and Model-Based Safety Risk Management

Utilize the Hazard Enterprise Assessment Tool (HEAT), a decision support tool which enables conducting data-driven and model-based risk assessments, to support Safety Risk Management (SRM) panels. This is an ongoing effort for improving NextGen (ANG)'s SRM practices for better utilizing quantitative data and incorporating system of systems framework.

Target: Conduct Safety Risk Assessments for Supporting at Least Two Safety Risk Management (SRM) Panels Using the Hazard Enterprise Assessment Tool (HEAT)

Validate the operational use case of the Hazard Enterprise Assessment Tool (HEAT) and support FAA's Safety Risk Management (SRM) practices through data-driven, model-based risk analysis methodologies.

Target: Develop and Refine Requirements for Hazard Enterprise Assessment Tool (HEAT) v4.0 Based on Lessons Learned

Refine the functional requirements for enhancing the user experiences based on lessons learned from conducting Safety Risk Management (SRM) assessments utilizing the Hazard Enterprise Assessment Tool (HEAT).

Initiative: Enterprise Cyber Support for National Airspace System

Provide cyber testing capability to improve the cybersecurity posture of the FAA systems integrity, confidentiality, and availability.

Activity: Test and Evaluate FAA Critical Systems

This is a recurring activity that is required for FAA systems that are designated High Value Assets (HVA) for the agency. Information Security Branch (ANG-B31) is working to increase the number of Pen-tests for FY24 to improve the security posture of HVA systems.

Target: Enhance Penetration Test Standard Operating Procedures to Support FAA High Value Asset (HVA)Test

Document lessons-learned, programmatic requirements, and leading edge tools to maintain the strict requirements that are associated with conducting a penetration test on a High Value Asset (HVA).

Target: Conduct Pen-Test on FAA High Value Asset (HVA) Systems

Conduct penetration test on at least 12 FAA High Value Assets (HVA) systems to support FAA mission critical operations. Maintain spreadsheet with timeline for each HVA test activities.

Target: Provide Yearly Penetration Test Report to High Value Asset (HVA) Sponsor

Develop report for all the High Value Asset (HVA) tests conducted in FY24 containing metrics, findings, and recommendations.

Activity: Research and Development (R&D) Domain Cyber Risk Management

Collaborate with system owners of the Research and Development (R&D) domain to reduce information technology assets cyber risks that potentially disrupt business services provide to the customers.

Target: Enhance Information Security Monitoring and Detection Capabilities in the Research and Development (R&D) Domain and FAA Enterprise.

Enhance Cyber Threat Model (CTM) tool for use by the NextGen (ANG) Prototyping Network (NPN) Network Operations Center (NOC), Department of Transportation (DOT) Security Operations Center (SOC) and National Airspace System (NAS) Cyber Operations (NCO) to support cyber activities. Conduct quarterly user meetings and maintain a database of user requirements for enhancing the CTM tool.

Target: Enhance Information Security in the Research and Development (R&D) Domain Using Artificial Intelligence and Machine Learning (AI/ML)

Develop and evaluate use cases to add machine learning and artificial intelligence capabilities to the Cyber Threat Model tool for use in the NextGen Prototyping Network (NPN) Network Operations Center (NOC) to support enhanced discovery of network assets and vulnerabilities.

Target: Enhance Information Security Visual Display Capability in the Research and Development (R&D) Domain

Develop and evaluate use cases to add geospatial capabilities to the Cyber Threat Model tool for use in the NextGen Prototyping Network (NPN) Network Operations Center to support cyber activities.

Activity: Develop Enterprise Zero Trust Architecture (ZTA)

The Zero Trust Architecture (ZTA) will support agency enterprise adaptation of Zero Trust paradigm from concept to architectural design and technical implementation requirements.

Target: Evaluate the Integration of Micro Segmentation Solutions

Document the testing of the micro segmentation solutions with a trust score provider in the Research and Development (R&D) Operating Environment for the Mission Essential Operating Environment.

Target: Develop Zero Trust Identity Access and Authorization Deployment Plan for the Mission Essential Operating Environment

Perform Zero Trust Identity Access and Authorization testing in the Research and Development Operating Environment and deliver a test report.

Target: Update the Target NAS Requirements Document (TNRD) to Include Zero Trust Common Security Service Requirements

Integrate Zero Trust Enterprise Common Security Service Capability Requirements into the Target NAS Requirements Document (TNRD) to ensure harmonization with FAA enterprise requirements.

Initiative: Digital Systems and Technologies

Conduct Digital Systems and Technologies research to ensure the continued safety and security of enabling systems and technologies.

Activity: Assess the Safety of Artificial Intelligence/Machine Learning in Aircraft Software

Assess current software verification and validation approaches for use with Artificial Intelligence/Machine Learning (AI/ML) that is highly regarded by industry stakeholders and potential applicants (e.g. aircraft manufacturers, avionics suppliers, industry associations). The results will be used for future FAA guidance, standards, certification, and exploraton of safety risk mitigation approaches.

Target: Interim Report on the methodology to certify Machine Learning functions using Overarching Properties

Document a methodology utilizing well-defined argument structures specific to Artificial Intelligence/Machine Learning (AI/ML), justifying the claim that an AI/ML-based component will possess the desired Overarching Properties (OPs). The demonstration of the methodology will use the design and development of the Recorder Independent Power Supply (RIPS) system involving AI/ML functionality to assure reliable power to the unit.

Target: Interim Report on the application of alternative assurance of Artificial Intelligence/Machine Learning (AI/ML) through a Level 1 use-case.

Document the demonstration of Artificial Intelligence/Machine Learning (AI/ML) assurance using a Level 1 case study. Level 1 refers to AI/ML that is utilized to provide information to assist the crew in decision-making. This work focuses on the development of assurance cases for the Overarching Properties (OPs) using Rapid Assurance Curation Kit (RACK) software augmented by traditional Software Considerations in Airborne Systems and Equipment Certification (DO-178C)-based assurance approach where applicable for the Level 1 use case.

Activity: Explore Artificial Intelligence/Machine Learning to Mitigate Industry Cybersecurity Threats Within the Aviation Ecosystem

Explore the use of prototype AI/ML capabilities to mitigate cybersecurity threats with various aviation industry stakeholders. Make recommendations regarding cybersecurity guidance, standards development, and best practices based on industry use cases. Share findings with industry stakeholders.

Target: Application of Cyber Security Data Science (CSDS) Artificial Intelligence/Machine Learning (AI/ML) prototype capabilities to a specific industry use case

Conduct Artificial Intelligence/Machine Learning (AI/ML) prototype experiments and demonstrations with relevant algorithms and capability features. Apply results to key industry use case affiliated with aircraft log anomaly detection. Apply results, through a proof-of-concept demonstration, to key industry use case affiliated with aircraft log anomaly detection.

Target: Proposed Guidance for Industry

Document results from experimentation in the form of industry guidance, such as network architecture design, recommendations for standards development, data collection and formatting considerations, and best practices for application of Cyber Security Data Science and associated Artificial Intelligence/Machine Learning (AI/ML).

Initiative: Human and Aeromedical Factors

Conduct Human and Aeromedical Factors research to address human-system interactions in an evolving NAS as well as the impact of flight on humans.

Activity: Human Factors Evaluation Considerations for Connected Flight Deck Technologies

Research and data collection will be carried out to examine human-machine interface and interaction characteristics that assist pilot/crew identification of uncertified information from certified information.

Target: Develop prototypes and collect feedback

A series of prototypes will be developed examining how certified information (e.g., avionics-sourced information) can be differentiated from uncertified information (e.g., electronic flight bag sourced information) on a single display approximating a flight deck display. Data is needed by Aircraft Certification on visual design characteristics that would aid pilot discrimination of information source. Examples may include borders, labeling, use of symbology, and other methods. The prototypes will be used to gather feedback from FAA and pilots to inform airworthiness human factors considerations when evaluating displays that co-locate certified and uncertified information.

Target: Complete draft report for examination of the prototype visual separation designs

The draft report will document the examination of the prototype visual separation designs for their usability, perceived effectiveness, and challenges experienced by pilots distinguishing certified and uncertified information.

Activity: Develop a Research Roadmap for Human-Automation Teaming

Human-Automation Teaming (HAT) is an application of artificial intelligence and related technologies to support human operators with "digital teammates". HAT concepts have been proposed for air traffic controllers, pilots, and maintainers. This activity will focus on safety-critical tasks. It will identify and describe knowledge gaps and key research questions. The research roadmap will guide future FAA investments in HAT research, including projects, personnel, and laboratories.

Target: Hold Technical Interchange Meeting with EuroControl on Human Readiness Levels (HRLs) and Human-Automation Teaming (HAT)

Conduct a Technical Interchange Meeting (TIM) with EuroControl on Human Readiness Levels (HRLs) and Human-Automation Teaming (HAT); ensure that TIM outputs are widely available to both agencies. The TIM will examine current research in HAT, the approaches being pursued by each organization, and methods for conducting and implementing HRL practices.

Target: Update Human-Automation Teaming (HAT) Research Agenda

Socialize Human-Automation Teaming (HAT) Research Agenda and Technical Capabilities documents to the wider community, including stakeholders and subject-matter experts in government, industry, and academia, to solicit expert feedback. Compare agenda to other FAA research agendas and other strategic documents to ensure consistency. Revise/update the agenda accordingly.

Target: Develop a Human-Performance Model for Human-Automation Teaming (HAT) Research

Develop a human-performance model of air traffic controllers as a proof-of-concept for using this technology in potential Human-Automation Teaming (HAT) studies described in the agenda. The model will be based on human-performance simulation technology created by the DoD. The model will incorporate important human factors such as workload, error, and fatigue, and is intended to allow researchers to examine proposed HAT concepts using the model rather than human-in-the-loop simulations. This will demonstrate the model's ability to respond to selected air traffic control situations and allow assessments of the realism and usefulness of the model's behavior and output.

Target: Develop and Evaluate a Digital D-Side Human-Automation Teaming (HAT) system

Using natural language processing, intelligent agents, cognitive models, or related technologies, create a "Digital D-Side" that can assume some of the Data Controller/Radar Associate air traffic controller (ATC) position tasks. These include updating flight plans, coordinating with adjacent sectors, and assisting a human radar controller ("R-Side") in identifying conflicts. Develop a methodology to evaluate the effectiveness of the Digitial D-Side, focusing on critical human factors issues of trust, reliance, skill degradation, and recovery from failures. Develop a human-performance model of R-side controller as a proof-of-concept for using this technology in potential Human-Automation Teaming (HAT) studies described in the agenda.

Target: Publish Human-Performance Model Technical Report

Publish a technical report describing the technical development of the human-performance model (including its benefits and limitations), its application to HAT research from the agenda, and recommendations for future development, improvement, and expanson of the technology.

Target: Publish Digital D-Side Technical Report

Publish a technical report describing the technical development of the Digital D-Side (including its benefits and limitations), the results of the evaluation activity, and recommendations for future development, improvement, and expansion of the technology.

Activity: General Human Readiness Level (HRL) scale and process to parallel the Technology Readiness Levels (TRL) structure

The Human readiness level (HRL) scale will provide a method to perform more objective and performance-focused assessments of systems' human factors maturity than is currently used. HRL is also an area of common interest FAA shares with Single European Sky ATM Research (SESAR). While the HRL working group has developed a general HRL process, research is needed to develop and tailor HRL for Enterprise-wide application to air traffic systems development and acquisition in the FAA.

Target: Complete Draft Report

The report will evaluate a method that will provide FAA programs undergoing acquisitions and concept development with a framework and guidance on when the system is ready for human use. This research will develop standardized criteria to assess the human readiness level (HRL) of FAA programs as the programs progress up the scale.

People

Strengthen our current and future aviation workforce by holding ourselves accountable, developing our people and planning for the aviation workforce of the future

Diversity, Equity, Inclusion, and Accessibility

Ensure a more conscious and inclusive culture that embraces the diverse talents of employees, ensures fair and equitable treatment, and advances broader gains in diversity, equity, inclusion, and accessibility.

Initiative: EEO/Diversity and Inclusion Action Committee (EAC)

Utilize the EEO Action Committee (EAC) to enhance, collaborate and support a diverse and inclusive workplace with existing employee workgroups and LOBs/SO. Collaborate with AHR's Corporate Recruitment Council to develop an annual outreach plan, targeting underrepresented groups within the agency.

Activity: Ensure a Diverse and Inclusive Workforce - Reasonable Accommodations

Support the FAA’s corporate goal to process 90% of the agencies Reasonable Accommodation request within 25 days or less.

Target: ANG - Reasonable Accommodations

Support the FAA’s corporate goal to process 90% of the agencies Reasonable Accommodation request within 25 days or less.

Activity: Ensure a Diverse and Inclusive Workforce - Mediation

Managers engage in the mediation/facilitation process when requested.

Target: ANG - Mediation

Ensure that 70% of managers engage in mediation when requested by employees.

Initiative: Train Managers and Employees across the Agency in Diversity, Equity, Inclusion, and Accessibility (DEIA)

ACR will lead collaboration with LOBs/SOs to train managers and employees in DEIA.

Activity: ACR will Lead Collaboration with LOBs/SOs to Train Managers and Employees in DEIA.

The Office of Civil Rights will provide LOB/SOs with a list of DEIA training courses approved by ACR and will provide monthly completion totals to support their efforts in achieving the goal that 75% of managers and 25% of employees attend one training course each fiscal year.

Target: ANG - Train Managers and Non-Managerial Employees in a Minimum of One DEIA Training Course

Ensure at least 75% of managers and 25% of employees attend a minimum of one training course from a menu of DEIA training courses.

Human Capital Management

Enhance FAA’s human capital management capabilities to support innovation and collaboration that will empower a synergetic, data-driven workplace. Leverage data and technology to continuously identify and address human capital management opportunities and efficiencies. Position the FAA as an employer of choice by promoting career opportunities to attract the workforce of the future, while maintaining a culture that enhances employee engagement and accountability. Ensure that the FAA retains a diverse and high performing workforce by providing varied learning opportunities and workplace flexibilities.

Initiative: Small Business Opportunities

Support small businesses and job creation by providing opportunities for small businesses to attain FAA contracts and purchase orders, with special emphasis on procurement opportunities for socially and economically disadvantaged small businesses (including 8(a) certified firms), service-disabled veteran-owned small businesses, and women-owned small businesses.

Activity: Contracting with Small Businesses

Utilize market analysis and acquisition strategies to provide opportunities for small businesses to compete for, and attain FAA contracts and purchase orders, with special emphasis on procurement opportunities for socially and economically disadvantaged small businesses (including 8(a) certified firms), service-disabled veteran-owned small businesses, and women-owned small businesses, economically disadvantaged women-owned small businesses, and historically underutilized business zone small businesses.

Target: ANG-A - Support ACQ's Small Business efforts

Support ACQ's efforts to ensure 25% of the Agency's total direct procurement dollars are awarded to small businesses.

Activity: Contracting with Small Disadvantaged Business (SDB)

Utilize market analysis and acquisition strategies to provide opportunities for Small Disadvantaged Businesses (SDB) to compete for and attain FAA contracts and purchase orders.

Target: ANG-A - Support ACQ's Small Disadvantaged Business efforts

Ensure at least 14% of the Agency's total direct procurement dollars are awarded to Small Disadvantaged Businesses (SDB).

Initiative: Strong Acquisition Workforce

Ensure FAA has the staffing and skill mix to successfully enable the NAS by implementing training, developing and certifying personnel in key acquisition professions.

Activity: Train and Certify FAA's Acquisition Workforce

Attain and maintain certification requirements of program managers (PMs) and contracting officers.

Target: Attain and maintain certification requirements (ANG)

Attain and maintain certification requirements: 90% of program managers (PMs) on Office of Management and Budget (OMB) major acquisition programs attain/maintain certification requirements for their positions.

Initiative: Workforce Development and Recruiting

Maintain a highly skilled workforce by recruiting and developing personnel to meet future demands and challenges while fulfilling technical and managerial needs.

Activity: Workforce Learning and Development

Promote and host developmental opportunities to enhance employee engagement while ensuring agency mandated training requirements are met.

Target: Enterprise Development Calendar and Resource Guide

Establish a calendar and resource guide of enterprise career and leadership development programs and offerings to promote to the ANG workforce.

Target: Communications Planning

Establish and launch a communications plan to promote the calendar and resource guide of development programs and offerings.

Target: Use and Participation Measurement

Measure ANG's use of and participation in programs and offerings by the launch of the communication plan and then again by the end of the fiscal year to assess impact of communications efforts.

Target: Mandatory Training Status Reporting

Provide accurate, complete and timely reporting on mandatory training requirements and completion status throughout the year that facilitates fulfillment by established deadlines.

Activity: MSI Program Activity

Plan and facilitate a series of MSI student engagement activities aimed at providing networking and learning opportunities to interns.

Target: Alignment of Efforts

Host meeting with WJHTC and AHR to coordinate Gateways and MSI intern activities to ensure alignment of efforts to maximize the intern engagement and learning experience, while avoiding schedule conflicts. Create schedule for the two programs and an accompanying description that highlights key milestones, similarities and differences, and unique benefits of each program.

Target: Kickoff Meeting

Host Meet and Greet for ANG's MSI interns.

Target: Engagement and Learning Activities

Conduct two aviation learning and engagement tours (e.g., DCA ATC and Air and Space Museum) for Office of NextGen (ANG) Minority Serving Institutions Program (MSI) interns.

Activity: NAS 2040 Workforce Planning

Identify workforce capabilities and labor categories needed to support realization of NAS 2040 vision and establish action plans aimed at filling identified gaps.

Target: NAS 2040 Domain Owners

Identify one existing domain owner to the extent available for each NAS 2040 domain and establish recruiting plan to acquire one domain owner for any existing gaps.

Target: Skills Analysis

Engage domain owners to identify technical competencies and skill levels for each NAS 2040 labor category.

Target: Gap Analysis

Conduct analysis to identify technical competency and skill gaps within the existing workforce and document the results.

Activity: Continue to Institutionalize the Technical and Research and Development Curricula

Collaborate across the NextGen (ANG) organization to institutionalize the technical and research and development curricula. Incorporate results of the Align Processes and Systems effort, as appropriate. The result of this effort will be an ANG organization that understands and utilizes the Technical and Research and Development Curricula as a tool for employee growth and development.

Target: Engage Workforce to Implement Technical and Research and Development Curricula

Develop and implement at least two targeted communications efforts to engage employees and managers to create accountability for further curricula implementation.

Target: Evaluate Effectiveness

Develop and execute a plan, based on metrics and feedback, to evaluate the effectiveness of the technical and research and development curricula.

Target: Optimize Processes and Systems

Review and continue to implement the institutionalization process by integrating curriculum components into the recruitment, onboarding, and performance management processes.

Target: Engage Workforce to Enhance Understanding of Operational Shortfall Analysis Through Machine Learning Implementations

Sponsor at least two information sessions on machine learning and data analysis related to operational shortfalls to engage employees, managers, and external stakeholders.

Activity: Recruitment - NextGen Gateway Program

Recruit and hire student Interns to assist in the agencies succession planning goals.

Target: Recruit Students to Gateways Program

Subject to position availability, recruit new students into the NextGen Gateway student internship program in order to assist in the agency's succession planning.

Target: Convert Gateways Interns to Full-Time Permanent Employees

Subject to position and funding availability, convert program participants to full-time permanent employees without further competition, after successful completion of the program.

Activity: ANG New Employee Onboarding

Ensure that all new hires to ANG are fully acclimated to the organization within their first 6 months through the ANG New Employee Onboarding process and develop a schedule of developmental opportunities and activities aimed at supporting the employee throughout the Employee Lifecycle.

Target: New Hire and Hiring Manager Outreach

Ensure that 100% of new employees (managers and non-managers) and their managers receive Onboarding pre-start documents and resources (i.e., ANG Onboarding Program Overview, New Hire Checklists, Resource Guide, and ANG-101) briefing no less than 3 business days prior to start date. Conduct follow-up outreach to candidates within 45 days of arrival to check if the materials were reviewed and answer any questions.

Target: New Employee Meet and Greets

Conduct at least 3 New Hire Meet and Greets spread throughout the year.

Target: New Manager Development and Performance Support

Conduct at least 3 lunch and learn sessions or workshops for new managers to enhance their performance of new managers on the job. Focus on avoiding common issues or challenges.

Target: IDP Workshop Participation

Achieve at least 65% participation rate for new managers and non-managers in AHR-led Individual Development Plan (IDP) workshops.

Activity: Promote and Encourage Test & Evaluation (T&E) Competency and Credentialing

Attract, develop, engage, and recognize a dynamic workforce by promoting continuous learning and development through a progressive T&E training framework with the ultimate goal of ensuring continued delivery of quality T&E services.

Target: Develop Test & Evaluation (T&E) Training Framework

Develop and implement a comprehensive test and evaluation (T&E) workforce development training framework by documenting a Training Plan, defining needed curriculum, identifying curriculum sources, and developing internal curriculum where needed. This training framework will support the delivery of a Training Program needed to support high quality and consistent T&E services for the FAA.

Target: Increase test and evaluation (T&E) FAA Credentialing Amongst Test Professionals

Foster and incentivize FAA test and evaluation (T&E) credentialing for test professionals through improved outreach and management practices in the T&E divisions. Increase the number of credentialed test professionals by at least 33%.

Activity: ANG-A Recruiting

Plan and execute in-person recruitment efforts at academic institutions to attract and hire new graduates.

Target: 2024 Recruiting Plan and Recruitment Planning Process

Establish a recruiting plan to include a schedule of recruiting engagements/visits, targeted degree candidates, and discussion topics to be executed in 2024. The plan will engage with at least two regional universities. Establish accompanying process for developing Office of NextGen (ANG) annual recruiting plan that includes leveraging the Gateways and Minority Serving Institutions (MSI) Intern Programs.

Target: Recruiting Materials

Collaborate with ANG-A6 to create at least one brochure, one briefing, and one infomercial, all with a one ANG perspective, to be shared with prospective recruits at universities.

Target: ANG Career Information Sessions

Conduct at least two ANG recruitment visits at regional universities, aimed at recruiting upcoming graduates.

Global Leadership

Advance global aviation safety, operational excellence and innovation by leading and collaborating with aviation authorities globally

Global Aviation Safety and Security Enhancements

Improve global aviation safety and security through targeted assistance and collaboration, partnerships on aviation system safety oversight, streamlining regulatory environments, and promoting higher levels of global airspace and cyber security.

Initiative: National Airspace System Global Information Security Standards

Collaborate with International Civil Aviation Organization (ICAO), EUROCONTROL, Single European Sky Air Traffic Management (ATM) Research (SESAR), and other international partners to plan and develop a cybersecurity proof of concept to inform ICAO of requirements and policies needed to realize a global trust framework and to integrate the cybersecurity concept of operations into the Global Air Navigation Plan.

Activity: Evolve National Airspace System (NAS) Global Information Security Standards

Collaborate with International Civil Aviation Organization (ICAO), EUROCONTROL, Single European Sky Air Traffic Management (ATM) Research (SESAR), and other international partners to develop a cyber-security proof of concept to inform ICAO of requirements and policies needed to realize a global trust framework and to integrate the cybersecurity concept of operations into the Global Air Navigation Plan.

Target: Document a Memorandum of Agreement Addendum for Operating a Trust Framework

Document a Memorandum of Agreement between the FAA, the European Community and EUROCONTROL for the implementation of a Trust Framework.

Target: Create FAA Certification Authority Test Report

Document the implementation testing of the FAA Certificate Authority in alignment with the International Civil Aviation Organization (ICAO) Aviation Common Certificate Policy (ACCP).

Initiative: Cybersecurity in the Aviation Ecosystem

The FAA will develop strong relationships with external and government partners to enable a more informed threat and defense capability, and leverage information and defense actions needed to protect FAA systems and networks.

Activity: Evolve National Airspace System (NAS) Global Information Security Standards

Collaborate with International Civil Aviation Organization (ICAO), EUROCONTROL, Single European Sky Air Traffic Management (ATM) Research (SESAR), and other international partners to develop a cyber-security proof of concept to inform ICAO of requirements and policies needed to realize a global trust framework and to integrate the cybersecurity concept of operations into the Global Air Navigation Plan.

Target: Define International Civil Aviation Organization (ICAO) Trust Framework Implementation Guidance

Coordinate with the FAA Lines of Business (LOBs), Interagency Group on International Aviation (IGIA) and select United States Government agencies to document the guidance for implementation of a Trust Framework (TF). Develop Trust Framework International Civil Aviation Organization (ICAO) presentation describing the guidance.

Initiative: Ensure a harmonized approach while leading the world in aviation safety R&D aimed at providing for the certification of the next generation of aircraft.

The FAA will lead the international community In R&D needed to support the certification of fire safety in new and existing aircraft. This will be accomplished through international coordination, cooperation and harmonization of fire safety research programs and plans.

Activity: Collaboration, cooperation and harmonization with international regulators in the area of aviation fire safety research

The FAA, through a series of meetings, conferences and forums, will present its research in aircraft fire safety and solicit input from international regulators and industry. Research programs, in the area of fire safety, will be coordinated and harmonization with those regulators.

Target: Develop a draft, hazard based, classification plan for lithium-ion cells.

A classification plan for lithium-ion cells will be developed, and a presentation compiled for use at the UN Dangerous goods meeting.

Target: Collaboration, cooperation and harmonization with international regulators and aviation industry in the areas of aviation materials and systems fire safety research

The FAA Fire Safety Branch will present its research in aircraft fire safety and solicit input from international regulators and industry at the Materials and Systems Fire safety forums. The forums will be conducted in the US, in Atlantic City, in October, and in Europe, in Cologne, Germany in the spring.

Target: Collaboration, cooperation and harmonization with international regulators to develop a preliminary plan for research to safely use hydrogen as the primary fuel on transport aircraft.

The FAA will work with EASA and other international aviation regulators to develop a draft, preliminary plan for R&D needed to support the safe introduction of Hydrogen as the primary fuel on transport aircraft. Meetings will be conducted with industry to solicit input.

Seamless and Sustainable International Operations

Promote seamless, harmonized, and sustainable international operations by improving operational excellence in delegated airspace and neighboring FIRs, international capacity building, research and innovation, and environmental sustainability.

Initiative: NextGen International Harmonization

In alignment with the FAA and the NextGen International strategy, promote the international acceptance of NextGen policies, procedures and technologies. Work with identified air traffic modernization partners, through established bilateral and multilateral mechanisms, to harmonize identified efforts with NextGen and assess opportunities to establish new opportunities.

Activity: NextGen International Collaboration

In alignment with the NextGen International Strategy and in anticipation of the incorporation of the FAA's Info-Centric National Airspace System (ICN) vision internationally through multi/bilateral cooperation, assess and identify NextGen Tier 1 partners to pursue establishing NextGen international agreements with for collaboration in the development and propagation of NextGen technologies.

Target: Tier 1 Partners

In coordination with our Tier 1 partners, attend established bilateral and multilateral meetings and events. Promote NextGen programs and policies into global plans and standards, promoting harmonization with NextGen.

Target: Tier 2 Partners

In coordination with the FAA international LOB/SOs, identify engagement opportunities for bilateral and/or multilateral meetings and/or events with Tier 2 partners pursuing Air Traffic Management (ATM) modernization that could be harmonized with NextGen and participate as necessary.

Target: Tier 3 Partners

In coordination with the Office of International Affairs (API), assess opportunities to pursue bilateral and/or multilateral meetings and/or events with Tier 3 partners to promote ATM modernization and participate if possible.

Initiative: Separation Standards and Analysis

Provide separation standards and analysis for U.S. sovereign airspace and international airspace where FAA has delegated authority to provide air traffic services.

Activity: Provide Analytical Studies and Safety Related Monitoring Services in Support of Separation Reductions

Conduct and participate in separation standards and transportation system analytical studies, reviews, and meetings to provide recommendations and solutions to continually improve safety in the National Airspace System (NAS).

Target: Participate at the International Civil Aviation Organization (ICAO) Separation and Airspace Safety Panel (SASP)

Report on key Separation and Airspace Safety Panel initiatives significant to the FAA. Initiatives include study of Reduced Vertical Separation Minimum (RVSM) above Flight Level 410 and analysis of maximum risk scenario included within existing separation standards.

Target: Participate at the International Civil Aviation Organization (ICAO) Regional Airspace Safety Monitoring Advisory Group (RASMAG)

Provide yearly calculated risk data for the vertical and horizontal standards for Oakland and Anchorage oceanic airspace, identifying any significant trends.

Activity: Monitor Reduced Vertical Separation Minimums

Provide the Reduced Vertical Separation Minimum (RVSM) Regional Monitoring Agency (RMA) functions for two RMAs. Provide details of the US monitoring programs, safety reports, and yearly audit results. Share Altimetry System Error (ASE) and Assigned Altitude Deviation (ADD) software to assist other RMAs.

Target: Participate at the International Civil Aviation Organization (ICAO) Regional Monitoring Agency Coordination Group (RMACG)

As the Regional Monitoring Agency Coordinating Group (RMACG) Chair, provide technical leadership on monitoring requirements and capability, and details of the US monitoring programs, safety reports, and yearly audit results.

Target: Monitor and Share Reduced Vertical Separation Minimum (RVSM) Performance Results

Calculate Altimetry System Error (ASE) and Assigned Altitude Deviation (ADD) data from domestic and international traffic within US airspace. Respond to flight plan audits from other Regional Monitoring Agencies (RMAs) regarding approved Reduced Vertical Separation Minimum (RVSM) capability. Conduct audits of aircraft filed capabilities for RVSM and Performance Based Communications and Surveillance (PBCS) against the approved capabilities identified in the RMA shared database.

Enterprise Global Leadership Approach

Foster an FAA enterprise approach to the prioritization of FAA international engagements.

Initiative: NAS / Global Standards

Collaborate with industry to establish Standards for Aviation Community.

Activity: Exchange Model Harmonization

Continue to conduct analysis and establish processes to inform the further development of exchange models and information management related projects and services within the NAS.

Target: Air Traffic Information Exchange Conference (ATIEC) Coordination Report

Generate a report that details all aspects of coordination for the Air Traffic Information Exchange Conference (ATIEC). It will include briefing material, action items, lessons learned, and notes captured, among other elements.

Target: Development of NAS Exchange Model Reference Document

Document the development of a reference model that allows NAS exchange model (XM) extension developers to easily review existing NAS XM extensions, filter, and search elements in existing NAS XM extensions, and provide context for the development for XM extension updates or new XM extensions. The report will include, but will not be limited to, the documentation of approach, conclusions, outcomes of analysis, lessons learned, and recommendations for next steps.

Target: Complete the flight information exchange model status update paper to the International Civil Aviation Organization (ICAO)

Complete the Flight Information Exchange Model (FIXM) status update paper to the International Civil Aviation Organization (ICAO) for communication with the Air Traffic Management Requirements and Performance Panel (ATMRPP). The status paper will include a schedule of FIXM activities, recent developments for the model, and communication with the community.

Target: Release flight information exchange model NAS Extension v4.4 Release Candidate

The release candidate will be used for final coordination and testing for the flight information exchange model release. The release will include an updated model, and UML diagrams.

Target: Complete the Flow Information Exchange Model Traffic Flow Management Analysis.

This work should identify any elements or gaps that flow information exchange model needs to address in the next release.

Target: Flow Information Exchange Model (FLXM) Development

The Flow Information Exchange Model (FLXM) release will contain enhancements such as air traffic flow management daily plan (ADP), as well as additional traffic management initiative elements. The flow information exchange model releases are composed of UML models, XML schema, and best use documents.

Target: Research Development - Operating Environment (RD-OE) ready Flight Object Management Capability (FOMC)

Perform gap analysis of the current Flight Object Management Capability (FOMC) infrastructure and underlying applications with respect to the Research Development - Operating Environment (RD-OE) requirements and offerings. The identified gaps will be resolved in collaboration with the RD-OE team and the product of this activity is a FOMC that is ready to be deployed in the RD-OE environment.

Target: Proof of Concept 5

Complete the software development activities and associated documentation of Flight Object Proof of Concept #5 (POC#5) as defined by the scope and conduct a demonstration to showcase the POC#5. The development activity, the demonstration, and lessons learned will be captured in the POC#5 Final Report.

Target: Weather Forecast Improvement Terminal Precipitation on the Glass Implementation Strategy and Planning Document (ISPD).

Complete Terminal Precipitation on the Glass Implementation Strategy and Planning Document (ISPD). The ISPD specifies the overall strategy for obtaining, fielding, and supporting Terminal Precipitation on the Glass (TPOG) over its service life. The ISPD is needed for the capability to be approved and funded for implementation by the Joint Resources Council at the final investment decision. The document illustrates the strategy for implementation and will be used to drive post Final Investment Decisions (FID) activities.

Operational Excellence

Operate the world’s most efficient aerospace system through daily execution, continuous improvement and infrastructure investment.

Mission Efficiency and Support

Optimize efficiency and support mission requirements through daily execution, continuous improvement, planning, infrastructure resiliency, and investment. Effectively plan for and manage finances, procurement, information technology, and other mission support services.

Initiative: Modernization of William J. Hughes Technical Center’s Operations and Infrastructure

Modernization of The Technical Center’s infrastructure to ensure facilities operate efficiently and effectively by initiating, continuing and completing the design and construction of Capital Investment projects. Such projects include: Remove Mold and Replace Air Conditioning Units 4 & 5 in the Technical Administrative Building 300; Building 300 Floor Replacement; Sustainment of Electrical Distribution Feeder on the West side of the campus; and Replacement of the Roofing System at the Cockpit Simulation Facility Building 201.

Activity: Remove Mold and Replace Air Conditioning in the Technical Administrative Building

Complete mold removal and replace air conditioner units 4 and 5 on floors 1 and 2 for the administrative areas in the Technical and Administrative Building to alleviate health and safety concerns. Project will remove suspected contaminated ductwork, extend the life cycle of the heating ventilation, and air conditioning system by replacing two 30-year-old air handling units, and improve energy efficiency by replacing fluorescent lights with new light -emitting diode lights.

Target: Complete 1st Floor Construction

Complete construction in the administrative area of the 1st floor of the Technical and Administrative Building (associated with mold removal and AC Units 4 & 5 replacement project.)

Target: Complete 2nd Floor Construction

Complete construction in the administrative area of the 2nd floor of the Technical and Administrative Building (associated with mold removal and AC Units 4 & 5 replacement project.)

Activity: Modernization/Sustainability of the FAA William J. Hughes Technical Center Hangar (Building 301) Electrical Substation and Implement Power Monitoring and Control Capabilities.

Complete replacement and modernization of the FAA William J. Hughes Technical Center Hangar's (Building 301) electrical substation. Implement Power Monitoring and Control System (PMCS) capabilities to 1. allow the monitoring of energy consumption at the Hangar in real-time; 2. provide insight into how much energy the building is using; and 3. help operations and maintenance personnel implement energy saving measures and support overall agency sustainability goals.

Target: Replacement and Modernization of the FAA William J. Hughes Technical Center Hangar (Building 301) Electrical Substation

Replace and modernize Hangar's (Building 301) obsolete electrical substation to increase the reliability and resiliency of the building's electrical infrastructure. The upgraded system will also make the substation more sustainable for the future and more energy efficient.

Target: Implement Power Monitoring and Control Capabilities in the new FAA WJHTC Hangar Electrical Substation.

Deploy Power Monitoring and Control System (PMCS) capabilities with the new Hangar electrical substation. The PMCS monitors energy consumption and provides real-time insights into the building's energy performance. PCMS lets operations and maintenance personnel take proactive steps to ensure efficient energy use, helping the agency meet its sustainability goals. The PMCS comprises several components, including metering and control relays, data communication devices, software applications, and a user interface. The system can be used to monitor energy consumption in the substation, analyze usage patterns over time, and make informed decisions about when to use power-saving measures. Additionally, it provides support for predictive maintenance of Hangar equipment by proactively identifying any potential issues before they become a problem. This comprehensive system is critical for achieving the agency's sustainability goals and will help ensure that energy consumption remains as efficient as possible.

Initiative: Research and Development Management

A vibrant aviation sector relies on a safe, efficient, and cost-effective aerospace system. To that end, the FAA will invest in and manage a research and development portfolio that engages aviation stakeholders across industry, academia, and federal partners to promote aviation technology innovation, enable new entrants, leverage non-federal research investments and prioritize FAA investments to address critical industry needs and drivers.

Activity: Implement Reimbursable Partnership Program

Actively pursue external partners to access federal personnel, facilities, and expertise. Extend lab use availability to industry, academia and government to mature innovative technologies and to maximize laboratory use rates.

Target: Activate website for reimbursable partnership program.

To promote the FAA's laboratories and their unique capabilities the website will be public-facing. The website will be used to monitor, engage, and track interested potential partners, ultimately to enter into partnership agreements. These partnerships will enhance the William J Hughes Technical Center's local, regional, and international impact on aviation.

Target: Implement enterprise wide communication plan

Execute the enterprise-wide communication plan through promoting the Tech Centers capabilities, exploring communication channels and expanding employee awareness of the Technical Center. This plan highlights and illustrates the William J Hughes Technical Center's global contributions in operating, sustaining, and modernizing the NAS. Executing the plan will raise internal and external awareness of the Technical Center's mission.

Target: Implement Outreach and Partnership Strategy

Increase the Technical Center's partnership opportunities and leverage partnership resources that support the region's influence on the aviation industry by establishing relationships with global aviation stakeholders and partners. This will allow the Technical Center to promote and showcase its capabilities through enhanced communication tools to increase partnership opportunities.

Activity: Manage FAA’s Research and Development Portfolio

Manage key processes and activities for the agency's research and development (R&D) portfolio. Develop and submit research, performance and funding plans and reports per legislative mandates in compliance with statutory research planning requirements. Ensure FAA research enables and safely advances aviation and reduces the overlap of research areas with other DOT modal agencies. The plans and reports, including the National Aviation Research Plan and the Annual Modal Research Plan, highlight planned research for the upcoming fiscal year and communicate research impacts that facilitate government and private sector partnerships, leading to the commercialization of aviation ideas, concepts, and products.

Target: Share information and technologies among Federal laboratories, private industry, and academia

Deliver FAA technology transfer metrics including all FAA Cooperative Research & Development Agreements, patents, licenses, and royalties to the Department of Transportation (DOT). This input is mandated by the Federal Technology Transfer Act of 1986, Utilization of Federal Technology (15 U.S. Code 3710(f)), and related legislation. DOT requests the data from all modes in April, DOT then compiles it, and delivers it to the National Institute of Standards for inclusion in their annual Technology Transfer report to the President of the United States and Congress. The report is a critical metric to assess the success of the United States Federal Government technology transfer legislation.

Target: Draft annual fiscal year 2026 RE&D budget formulation package for distribution to Congress.

Coordinate development with research stakeholders across the FAA to submit the Research, Engineering and Development budget formulation request to the Office of Budget Programs. Describe Research, Engineering and Development budget line items and proposed investment requests for the fiscal year 2026 President's Budget. Ensure proposed research priorities meet FAA strategic goals and objectives in coordination with the FAA Research and Development Executive Board.

Target: Fiscal Year 2024 Annual Modal Research Plan

Draft and deliver the statutorily required annual DOT modal plan to the Assistant Secretary of Research and Technology. Outline research and development program plans across the Research, Engineering and Development, Facilities and Equipment and Airport Improvement Program funding accounts for fiscal year 2025. Outlook plans for fiscal year 2026 in accordance with legislative mandates.

Target: National Aviation Research Plan 2025-2029

Draft and deliver the congressionally required, annual National Aviation Research Plan (NARP) that charts the course for the agency's five-year plan to ensure continued capacity and maintain the safest, most efficient airspace system in the world. Describe how FAA investment in research and development address national aerospace priorities, drive innovation, represent areas of congressional or public interest, and have a global impact.

Initiative: Contract Administration, Agreements, and Grant Management

Proactively manage ANG's portfolio of contracts, agreements and grants by monitoring progress and deliverables, providing financial oversight, and ensuring compliance with all FAA regulations. Administers contracts to provide effective communication and customer service.

Activity: Contracts and Grants Forecasting and Reporting

Institute process and frequency for contracts and grants forecasting and reporting to enable proactive portfolio management, decision making, and issue mitigation and resolution.

Target: FY25 Contracts and Grants Forecast

Develop a consolidated contracts and grants forecast report (execution plan) that shows all anticipated actions and their expected execution timing during FY25. Coordinate with pertinent program managers and/or stakeholders to develop the best forecast possible within time constraints.

Target: Contracts and Grants Status Report

By 8/30/24, scope, design, develop, socialize, and be prepared to implement in October 2024 a consolidated contracts and grants status report that shows status of all contracts and grants in the ANG portfolio. By 6/30/24, evaluate current reporting processes and establish a single process with standardized analysis across all contracts and grants, including variance from planned or target award schedule. Socialize the draft report across ANG before finalization and implementation.

Activity: Center for Advanced Aviation System Development (CAASD)

Proactively manage the Center for Advanced Aviation System Development (CAASD) contract vehicle by monitoring progress and deliverables, providing financial oversight, and ensuring compliance with all FAA regulations.

Target: Center for Advanced Aviation System Development Work Plan

Develop proposed strategy and development schedule for the Center for Advanced Aviation System Development (CAASD) FY25 Work Plan by the end of the second quarter of the fiscal year and award the work plan in accordance with the proposed development schedule.

Target: Product Review Board (QPRB) Meetings

Schedule, design, develop and facilitate at least two QPRB meetings with FAA outcome managers and MITRE stakeholders to collaboratively identify potential strategies and solutions to improve current and future systems and operations. Feedback from participants indicates the meetings were productive and well executed.

Activity: Technical Service Contracts

Proactively managing the ANG portfolio of Technical Service Contracts by monitoring progress and deliverables, providing financial oversight, and ensuring compliance with all federal regulations.

Target: Systems Engineering and Technical Innovative Solutions (SETIS) Transition

Transition 25 existing task orders from SE2020 and SE2025 to SETIS in FY24. The transition of these task orders will result in the awarding of approximately 6 task orders per quarter (12/30/23, 03/30/24, 06/30/24, 09/30/24).

Activity: Grant Management Planning, Awarding and Reporting

Proactively manage ANG’s portfolio of grants with a lifecycle approach that encompasses planning, awarding, executing, administering and reporting in a timely manner.

Target: FY 2023 Centers of Excellence Annual Report to Congress

Deliver Fiscal Year (FY) 2023 Centers of Excellence (COE) Report to Congress by September 30, 2024, that depicts grant awards and financial data to meet the FAA Administrator's annual requirement of 49 U.S.C. § 44513(h). Develop the report in coordination with each COE Program Manager to gather all required data and information.

Target: Quality of Grant Application Packages

Develop and implement at least two new procedures, practices or tools to improve the quality of application packages received from program offices and transmitted to the Chief Counsel (AGC) for legal review.

Target: Round 3 Aviation Workforce Development Grant Awards

Issue Notice of Agreements to Aviation Workforce Development (AWD) Round 3 Grant Recipients.

Initiative: Financial Management and Planning

Implement improvements to enhance NextGen financial management. Ensure all funds are executed in accordance with federal guidelines and FAA procedures.

Activity: Budget Formulation, Execution and Financial Planning

Lead development of annual budget submissions (OST, OMB, and President's) and execute enacted budget in accordance with agency policy and regulations.

Target: Budget Formulation

Collaborate across ANG Directorates to ensure timely delivery of annual budget submissions in accordance with FAA timelines. Develop an annual framework/schedule for aligned execution and ANG management review and approval of budget formulation data calls.

Target: Budget Execution

Perform fund certification activities within three business days of receipt of obligating documents that comply with FAA policy and regulations for 85 percent of randomly selected transactions averaged over the fiscal year. Statistical analysis is conducted once every quarter. (Due dates: 10/31/23; 1/31/24; 4/30/24; 7/31/24)

Target: Budget Reporting

Create a monthly report of Facilities & Equipment, Operations and Research Engineering & Development OMB budget obligation rates and expenditures. Leverage and integrate existing reports and data rather than simply creating a new report to the extent possible.

Target: Budget Forcasting

Conduct personnel affordability analysis after the annual performance increase and based on the results provide ANG leadership with hiring guidelines for the rest of the year. Document and standardize the process for implementation twice a year.

Activity: NextGen Portfolio Management

Collaborate with stakeholders to continually improve NextGen planning and benefits delivery. Ensure all funds are executed in accordance with Federal guidelines and FAA procedures.

Target: First Quarter Report Status of Project Level Agreement

Coordinate advancement and enterprise alignment of NextGen and Info-Centric NAS priorities through Project Level Agreement (PLA) development. Ensure achievement of decision points that further shape the direction of the NAS, NextGen, and Info-Centric NAS through PLA deliverables. Ensure 100% tracking of all deliverables.

Target: Systems Engineering Portal

Complete all Systems Engineering Portal changes to 2024 NAS Segment Implementation Plan (NSIP) Information.

Target: Second Quarter Report Status of Project Level Agreement

Coordinate advancement and enterprise alignment of NextGen and Info-Centric NAS priorities through Project Level Agreement (PLA) development. Ensure achievement of decision points that further shape the direction of the NAS, NextGen, and Info-Centric NAS through PLA deliverables. Ensure 100% tracking of all deliverables.

Target: Third Quarter Report Status of Project Level Agreement

Coordinate advancement and enterprise alignment of NextGen and Info-Centric NAS priorities through Project Level Agreement (PLA) development. Ensure achievement of decision points that further shape the direction of the NAS, NextGen, and Info-Centric NAS through PLA deliverables. Ensure 100% tracking of all deliverables.

Target: Fourth Quarter Report Status of Project Level Agreement

Coordinate advancement and enterprise alignment of NextGen and Info-Centric NAS priorities through Project Level Agreement (PLA) development. Ensure achievement of decision points that further shape the direction of the NAS, NextGen, and Info-Centric NAS through PLA deliverables. Ensure 100% tracking of all deliverables.

Target: First Quarter semi-annual Stakeholder Portfolio Management Review

Foster communication, transparency, and collaboration among stakeholders through semi-annual Stakeholder Portfolio Management Reviews. Deliver an overview and status of the portfolio, a review of the programs in the portfolio, and provide an opportunity for stakeholders to ask questions and have discussions about the portfolio and programs to help address challenges and make adjustments for successful execution.

Target: Third Quarter semi-annual Stakeholder Portfolio Management Review

Foster communication, transparency, and collaboration among stakeholders through semi-annual Stakeholder Portfolio Management Reviews. Deliver an overview and status of the portfolio, a review of the programs in the portfolio, and provide an opportunity for stakeholders to ask questions and have discussions about the portfolio and programs to help address challenges and make adjustments for successful execution.

Initiative: ANG Strategic Business Planning and Resource Management Program Review (RMPR)

Develop the fiscal year NextGen Business Plan and execute by identifying a snapshot of the available resources, staffing, and financials.

Activity: Office of NextGen (ANG) Fiscal Year 2025 Business Planning

Coordinate and develop the Office of NextGen's (ANG) Fiscal Year 2025 Business Plan to identify agency priorities and linkages to work units.

Target: Office of NextGen (ANG) Fiscal Year 2025 Business Plan

Develop a comprehensive ANG Fiscal Year 2025 Business Plan.

Facilitate discussions to align objectives and initiatives to the corporate framework; deliver guidance, requirements, and timelines to ANG planners; and receive ANG senior leadership approval of the plan after ANG-1/2 and ANG Directors agree upon activities supporting DOT, FAA, and ANG priorities.

Business Plan Framework Due: 4/30/24; Business Plan Kickoff Due: 5/31/24: Directorate One-on-One Business Plan Reviews Due: 6/30/24.

Target: Office of NextGen (ANG) Directorate-level Resource Program Management Review

Conduct annual Resource Program Management Review (RPMR) for all directorates by Q3, to capture specific personnel and fiscal resources allocated in executing FY25 Business Plan priorities and targets.

Target: Quality-based business plan commentary and contents

Develop and begin to implement a two-part action plan to improve the quality of progress commentary in FY24 and business plan contents in FY25.

Climate, Noise, and Sustainability

Lead aviation sector efforts to improve sustainability, mitigate the effects of aviation noise, and reduce greenhouse gas emissions.

Initiative: Sustainability - Promote Sustainable Aviation Fuels (SAF)

Promoting sustainable aviation fuel (SAF) is a critical step towards reducing the aviation sector's sizable carbon footprint. SAF offers a tangible way to reduce greenhouse gas emissions, ensuring both the health of our planet and the sustainability of the aviation industry. As the global spotlight intensifies on climate change, embracing SAF becomes an essential and strategic move for a cleaner future.

Activity: Enable Sustainable Alternative Fuel (SAF) scale-up and deployment.

Support government-wide initiative to meet the near-term goal of 3 billion gallons per year of SAF by 2030 and place the U.S. on a trajectory to meeting 100% of aviation’s fuel needs by 2050 (an estimated 35 billion gallons per year).

Target: Fueling Aviation's Sustainable Transition (FAST) sustainable aviation fuel (SAF) Grant Application Reviews

Coordinate application reviews, including eligibility, technical, and risk assessments for the Fueling Aviation’s Sustainable Transition (FAST) sustainable aviation fuel (SAF) Grant Program

Agile Services across the NAS

Develop a comprehensive and agile set of requirements and processes to integrate traditional and emerging users of the National Aerospace System and to evaluate appropriate infrastructure and operational needs of any given facility or airspace.

Initiative: Enterprise Systems Engineering and Integration

Develop and maintain Systems Engineering Guidance Material and conduct key National Airspace System (NAS) Enterprise Integration studies. Provide enterprise systems engineering expertise to execute NAS enterprise integration studies to realize the future of the NAS vision.

Activity: Enhance the National Airspace System (NAS) Enterprise Architecture (EA)

Sustain, enhance, and evolve the National Airspace System (NAS) Enterprise Architecture (EA) Roadmaps and NAS Segment Implementation Plan (NSIP), including digital transformation where possible. The Architecture Evolution Plan, developed annually, articulates specific efforts of the NAS Enterprise Planning and Analysis Division (ANG-B2) to sustain, enhance and evolve the NAS EA.

Target: Update the National Airspace System (NAS) Enterprise Architecture (EA) Roadmaps and NAS Segment Implementation Plan (NSIP) in Partnership with Key Stakeholders

In support of National Airspace System (NAS) modernization, update the NAS Enterprise Architecture (EA) Roadmaps, NAS Segment Implementation Plan (NSIP), and associated datasets and publish on the NAS Systems Engineering Portal (SEP).

Target: Develop Infrastructure Domain Strategies for National Airspace System (NAS) Enterprise Architecture (EA)

Develop draft strategies describing the current state, capability shortfalls, future state, dependencies, potential risks, and opportunities for the surveillance, and commercial space infrastructure domains in the National Airspace System (NAS) Enterprise Architecture (EA).

Target: Improve the Architecture Change Notice (ACN) Process

Further enhance Architecture Change Notice (ACN) product and data quality by developing an internal Architecture Change Notice (ACN) business process prototype that includes process automation, data visualization, and collaboration capabilities.

Target: Link Architecture Change Notices (ACNs) with Related All View 1 (AV-1s)

Develop a draft plan to establish and automate the linkages between an Architecture Change Notice (ACN) and the most recent applicable All View 1 (AV-1), NAS Enterprise Architecture (EA) artifact, if available.

Target: Develop Infrastructure Domain Strategies for National Airspace System (NAS) Enterprise Architecture (EA) Weather and Communications Domains

Develop draft strategies describing the current state, capability shortfalls, future state, dependencies, potential risks, and opportunities for the weather and communications infrastructure domains in the National Airspace System (NAS) Enterprise Architecture (EA).

Activity: Amplify Integrated Systems Engineering Information

This activity builds awareness and improves access to high quality National Airspace System (NAS) Enterprise Architecture (EA) and Systems Engineering (SE) information. As the steward for NAS EA, the NAS Systems Engineering and Integration Office (ANG-B) works to design and plan the future NAS. The successful integration of new visions e.g., NAS 2040 rely on expanding awareness across the stakeholder community and the use of high-quality information to inform acquisition, integration, and implementation decisions tied to delivery of a safe improved National Airspace.

Target: Enhance Visibility of National Airspace System (NAS) Enterprise Architecture (EA) and Systems Engineering Information

Enhance visibility of National Airspace System (NAS) Enterprise Architecture (EA) and Systems Engineering information to design, plan, communicate, and safely integrate innovations from NAS 2040 into the current NAS.

Target: Deliver the FY24 Capability Architecture Tool Suite (CATS) Roadmap

Develop stakeholder driven strategic and tactical applications needs within Capability Architecture Tool Suite (CATS) (e.g., National Airspace System (NAS) Engineering Portal, Systems Engineering and Architect Toolset, and the Unified Information Architecture Knowledge Platforms applications). Develop and integrate new capabilities, functions, and features to educate, improve collaboration, and support NextGen (ANG)'s data management function for FAA organizations engaged in the technical design, planning, and safe integration of the NAS 2040 vision into the NAS.

Activity: Coordinate FAA Navigation Plans with Key Stakeholders

Develop FAA's inputs into the next update for the Federal Radionavigation Plan (FRP), which will serve to coordinate FAA navigation needs across the federal government and update the FAA's policy on system timing requirements to support compliance with federal directives.

Target: Develop Draft FAA Inputs to the Federal Radionavigation Plan (FRP)

Develop draft updates to the next Federal Radionavigation (FRP), the official source of positioning, navigation, and timing (PNT) policy and planning for the Federal Government used by FAA to ensure NAS systems are aligned with federal policy and coordinate with internal FAA stakeholders.

Target: Develop Draft Updates to FAA Timing Order

Develop draft updates to FAA Order 1770.68, "Selection and Use of Time and/or Frequency Sources for all Systems, Services, and Applications Supporting National Airspace System (NAS) Operations", outlining system timing requirements for NAS system timing sources that are not solely dependent on Global Positioning System (GPS), and initiate coordination with internal FAA stakeholders.

Activity: Enhance and Deepen the National Airspace System (NAS) Enterprise Architecture (EA) Model and Target NAS Requirements Document

Incorporate results of enterprise analyses into the National Airspace System (NAS) models and requirements as they become available from NAS stakeholder organizations (e.g., Technical Operations (AJW), Mission Support Strategy (AJV-S), Program Management Office (PMO)) in support of the NAS 2040 Concept using systems engineering best practices.

Target: Retire Legacy Requirements Documents

Continue coordination with FAA approval boards to baseline revised National Airspace System (NAS) Requirements Documents defining Current (As-Is) and Target (To-Be) requirements. Upon approval, publish revised versions and retire legacy requirements documents.

Target: Model-Based Enterprise Architecture (MBEA) Guide

Using the Unified Architecture Framework (UAF) White Paper, Info-Centric NAS (I-CN) and Automation Evolution Strategy (EAS) documents, produce a guide for transitioning to a model-based Enterprise Architecture that utilizes digital engineering best practices.

Target: Utilize Communication Line Redundancy Analysis to Provide Actionable Alternative Architectures

Align surveillance coverage and communication line analysis with FAA Network Enterprise Services (FENS) to analyze alternatives for reduction in communication lines to radar sites without reducing reliability.

Target: Model-Based Enterprise Architecture (MBEA) Migration Collaboration

Gain approval for institutionalizing and migrating to the digital engineering environment by collaborating with stakeholder organizations as they develop a representative set of transitioned Enterprise EA) products from their current form to Model-Based Enterprise Architecture (MBEA) using the guide and adjusting and incorporating their requirements into and updating the guide.

Activity: Develop NAS Systems Engineering and Integration Office (ANG-B) Digital Transformation Strategy

Work with NAS Systems Engineering and Integration Office (ANG-B) divisions to develop and implement a strategy that digitally transforms current manual processes, databases, and workflows. This effort will assist the organization in working more efficiently, proactively identifying risks, and helping reduce the time between concept development, build, and implementation. The strategy will support the completion of the major segments of the digital transformation effort.

Target: Develop Strategic Plan to Engage NAS Systems Engineering and Integration Office (ANG-B) Divisions in Digital Transformation

Develop a strategic plan that provides a viable approach to the Digital Transformation (DX) effort, for the NAS Systems Engineering and Integration Office (ANG-B) divisions. The plan will highlight, structure, and outline a proposed, phased methodology for transitioning to a digital engineering environment within ANG-B.

Target: Develop Draft Proof of Concept for Digital Transformation Plan and Socialize within NAS Systems Engineering and Integration Office (ANG-B)

Develop a draft plan for digital transformation proof of concept and socialize it within the NAS Systems Engineering and Integration Office (ANG-B). The proof of concept will demonstrate how digital transformation can be successfully implemented, providing realistic examples of how it will work and highlighting its potential benefits to ANG-B and its stakeholders.

Target: Measure Effectiveness

Measure the effectiveness of the Digital Transformation (DX) effort, using metrics that are identified and captured throughout the implementation effort. This information will be used to assess the viability and provide fidelity to the Digital Transformation Strategy being developed for the NAS Systems Engineering and Integration Office (ANG-B).

Initiative: Remote Towers

The FAA will work with commercial vendors to support approval of Remote Tower Systems. These systems will potentially provide more cost effective solutions to traditional brick and mortar towers, especially for smaller rural communities.

Activity: Remote Towers

Remote Tower program will continue to work with the vendors on System Design Approval (SDA) process and complete the construction of a Remote Tower Testbed at William J. Hughes Technical Center (WJHTC). In addition, the program will begin the operational evaluation for the first system being installed at the WJHTC testbed.

Target: Develop Remote Tower Draft Operational Viability Validation & Verification Process

Complete the Draft Operational Viability Validation & Verification (OVVV) Process. The OVVV Process will outline the activities that will be conducted at each airport site that is installing a remote tower system that has obtained System Design Approval. The OVVV Process will be executed, and a positive Air Traffic Viability Decision will need to be obtained, at each airport prior to the RT system commissioning.

Target: Complete Remote Towers Functional Acceptance Evaluation Plan Safety Risk Management Document

Complete the Safety Risk Management Document (SRMD) to assess hazards associated with executing the Remote Tower Functional Acceptance Evaluation (FAE) Plan at the remote tower testbed at Atlantic City International Airport (ACY). The FAE Plan outlines the scripts that will be executed at ACY while the ACY air traffic control tower controls traffic and data is collected passively from the Remote Tower Center (RTC) located adjacent to the airport at the National Aerospace Research & Technology Park (NARTP)

Initiative: Info-Centric NAS (ICN)

The Info-Centric NAS (ICN) initiative includes activities for the research & development, concept exploration/maturation, and technology transfer of air traffic capabilities to build towards FAA's goal of accommodating increased diversity and operations within the NAS by bringing improvements to air traffic services. These activities focus on increasing collaboration with various diverse traffic management services/users through enhanced information sharing and will be accomplished by adopting new technologies to create agile services, tailored safety assurance and applying real-time safety for traffic management. These activities are anticipated to deliver benefits in terms of efficiency, flexibility, throughput, safety, and predictability for all of air traffic management, including access for new entrants.

Activity: Execute Advanced Air Mobility (AAM) NAS integration activities to safely enable AAM Operations at Key Sites (Innovate28 and beyond) and to prepare for longer-term AAM operations.

The FAA has established an ecosystem for enabling the safe and efficient integration of Advanced Air Mobility (AAM) into the National Airspace System (NAS) through the utilization of innovation teams (iTeams) and cross-agency coordination via the AAM Inter-agency Working Group. The activities cover key areas of interest (aircraft certification, operational certification, airspace and air traffic management, vertiports, automation, environment, security, community outreach, safety, and people) that span across a multitude of business units within the FAA as well as outside in other agencies. Overall, the FAA is working to enable near-term AAM operations at key site(s) by 2028 and allow for future AAM growth beyond.

Target: Initial assessment of the cooperative operating practices (COPs)

Complete initial assessment of the digital infrastructure business rules for the Urban Air Mobility (UAM) ecosystem.

Target: Initial Flight Planning Needs Report

As part of this goal, the team will define the initial essential data required for Urban Air Mobility (UAM) flight planning, achieved by assessing existing flight planning processes and identifying gaps in the envisioned UAM process. The report will take a high-level approach to set the scope for subsequent work by establishing the parameters for further analysis.

Target: New aircraft type wake separation final report

Complete the final report for new aircraft type wake separation recommendations delivered to the Air Traffic Organization (ATO) for Beta CX300.

Target: Coordination meetings with 5 Advanced Air Mobility Manufacturers

Complete initial coordination meetings with 5 Advanced Air Mobility Manufacturers for wake-related specifications.

Target: Broad interagency coordination with the DOT-lead Advanced Air Mobility (AAM) Interagency Working Group (IWG) on FAA perspectives

Conduct broad interagency coordination with the DOT-lead Advanced Air Mobility (AAM) Interagency Working Group (IWG) on FAA perspectives.

Target: Integrated Master Schedule (IMS) for one Advanced Air Mobility (AAM) operator

Complete development of an Integrated Master Schedule (IMS) for one Advanced Air Mobility (AAM) operator

Target: Urban Air Mobility (UAM) Airspace Management Demonstration Final Report

Complete the Urban Air Mobility (UAM) Airspace Management Demonstration Final Report

Target: Evolution Framework for Autonomy to Support Near-Term Integration Report

Complete the Autonomy Working Group framework to support the development of autonomy for future aviation operations.

Target: Kick off initial Autonomy Working Group Meeting

In order to allow for continuous progression towards autonomy, a kick off meeting will be conducted for the FAA stakeholders for the initial Autonomy Working Group activities.

Target: Industry feedback on Advanced Air Mobility Implementation Plan v1.0

Share and receive industry feedback on Advanced Air Mobility Implementation Plan v1.0

Activity: Automation Evolution Strategy (AES)

Identify key operational and infrastructure needs for the NAS computing, platform, and mission software layers to enable the proposed Automation Evolution Architecture. The activity will integrate Operating Environments, Information Security and Mission and Common Service perspectives.

Target: Develop initial security documentation, research tools and identify processes to support automation of Research & Development Operating Environment (RD-OE) security authorization process.

Identify security processes and tools for tailoring the security requirements for a research environment within FAA.

Target: Research and develop draft Automation Evolution Strategy design handbook

Research and develop draft Automated Evolution Strategy design handbook that provide common design patterns and references for future and legacy NAS services to align with Automated Evolution Strategy principles and architecture. Research, identification, and categorization of various architecture/design patterns, best practices and adaptation of these principles and patterns for NAS services and guidance on how to architect applications and services to ensure alignment with Automated Evolution Strategy principles.

Target: Develop initial compilation of information on the NAS systems put into a common representation that provides functions, interfaces, and data flows.

Develop initial compilation of information on the NAS systems put into a common representation that provides functions, interfaces, and data flows. Perform systems engineering analysis to develop a preliminary list of mission services and common mission services. Develop an evolutionary architecture approach that provides a path for evolving the systems into a services-based architecture approach.

Activity: Cloud ERAM in a Box (Cloud-EIB)

The Cloud En Route Automation Modernization in a Box (Cloud-EIB) effort will continue prototyping and testing efforts to verify performance metrics once the EIB goes thru a lift and shift process to an FAA cloud environment. In addition, a Transition Strategy and Final report document will be developed which delineates the path toward enabling the EIB as a cloud service in the R &D domain (e.g. Research & Development Operating Environment).

Target: Develop a Final Report

Develop a final report for transitioning of the Cloud-En Route Automation Modernization (ERAM) -in-a-Box (Cloud-EIB) prototype into a Cloud service available for future research and development projects. This report will detail solutions for connections and data flows between the Cloud-EIB and FAA resources and include use cases for the Cloud-EIB.

Activity: Extensible Traffic Management (xTM)

Safe and efficient integration of xTM operations with existing air traffic management operations in the NAS.

Target: Extensible Traffic Management (xTM) Concept of Operations

A narrative/document that updates and defines the high-level Concept of Operations for proposed Extensible Traffic Management (xTM) operational flights, under the xTM framework in terms of overall conceptual principles and assumptions, including those associated with operations, supporting architecture, information flows and exchanges, FAA, xTM service supplier, and operator roles and responsibilities.

Target: CRUISE - Complete validated use case wildfire simulations

A set of operational use cases will be developed that explore wildfire operating environments, including airspace of varying operational complexity (e.g., airspace classes, operational tempo, airspace structure), encounters between manned/unmanned aircraft, transit to/from cooperative areas, and interactions between ATM and xTM actors. Use cases will include information exchanges / flows between actors and systems across ATM and xTM service environments. This deliverable will serve as input for the Wildfire Airspace Operational Environments Report, and simulation activities for this project.

Target: CRUISE Report - Extensible Traffic Management (xTM) Cross-Domain Services Comparison and Reconciliation

This report summarizes the results of stakeholder engagement activities conducted under this milestone. It analyzes feedback to identify recommendations for alignment / harmonization of cross-domain and domain-specific Extensible Traffic Management (xTM) service definitions. Points of consensus and those requiring further review/discussion/analysis will be identified. This document will inform next steps for coordination among government and industry stakeholders as standards development continues across UTM, UAM, and ETM.

Activity: Flight Data Input/output Data Processing Tool

Following on from the previous Flight Data Input/Output data analysis task, this effort will prototype a software capability to automate processing of FDIO operational capture files, enabling future FDIO data analysis efforts in support of flight data modernization.

Target: Establish Flight Data Input/output (FDIO) Data Processing Tool development environment.

Establish a virtual environment which meets the security and access requirements of the Flight Data Input/output (FDIO) data to be analyzed as part of the FDIO Data Processing Tool development process

Target: Develop Flight Data Input/output (FDIO) Data Processing Tool

Develop the prototype Flight Data Input/output (FDIO) Data Processing Tool, the goal of which is to automate processing of FDIO capture files to enable future FDIO data analysis efforts.

Activity: Airspace Performance and Operations (AP&O)

The Airspace Performance & Operations (AP&O) project is one of the evolving concepts that will shape Cooperative Areas (CAs) to meet future NAS needs and challenges. These concepts rely on sharing intent information across airspace users. AP&O will focus on 1) defining and disseminating CA characteristics and attributes to NAS users; 2) integrating CA establishment with FAA automation and decision support tools; 3) enabling system-to-system interoperability with international exchange models (e.g., AIXM, FIXM, FLXM) .

Target: Analysis on Publication/Charting of Cooperative Area's (CA's) Characteristics and Attributes (C&A) to Airspace User (AU)

The Air Performance & Operations (AP&O) team will explore the different methods by which the Cooperative Areas (CA) Characteristics and Attributes (C&A) would be made available to the Airspace User (AU) and third-party service providers, in order to foster a Collaborative Decision Making (CDM) environment among Unmanned Aircraft System operators in planning operations.

Target: Initial Cooperative Area (CA) Proof of Concept

The Airspace Performance & Operations team will establish a prototype environment that can be leveraged to describe and display the characteristics of the Cooperative Areas (CA) in exchange model (XM) language. The AP&O team will leverage existing international exchange models (AIXM/FIXM/FLXM) to facilitate the display of CA information for stakeholders.

Activity: Flight Deck Collaborative Decision Making (FD CDM) Enhanced Digital Taxi Instruction (eDTI)

Speech recognition technology offers a unique opportunity to revolutionize voice radio communication and bridge the gap between voice and the digital environment. The FAA has established multiple initiatives as part of its digital transformation to leverage flight deck connectivity and improve collaboration and air traffic management services. This endeavor aims to integrate speech recognition technology, allowing verbal entry of taxi instructions for digital delivery. A lexicon will be developed, defining a comprehensive collection of phraseology used by Air Traffic Control (ATC) to communicate with flight crews, supporting the development of speech recognition software logic and training. The project includes a technology demonstration, planned after software development and integration completion.

Target: Development Design Review Report 3

As the final of three review reports that captures the outcomes of progress reviews conducted throughout the period of performance, this review will serve as a measured progress review. In addition to in-person meetings, it will showcase the prototype development through live demonstrations of the technology.

Target: Prototype and Technology Lessons Learned

Over the duration of the project, the team will document any procedural improvements, or recommendations for further study and development in order to influence future work and provide the basis for the next body of work.

Activity: Implement the NAS 2040 Workforce Development Roadmap

Implement the NAS 2040 Workforce Development Roadmap, which provides a pathway for learning and development activities in areas such as data analytics and Artificial Intelligence/Machine Learning (AI/ML), cloud technologies, cyber security, microservices architecture, digital engineering/transformation, and enterprise information system to prepare NextGen (ANG) employees to respond to innovation, societal change and other key drivers of change in the National Airspace System (NAS).

Target: Evaluate and Plan the Continuing of Implementing the Micro-Credentialing Program

Evaluate offering Micro-Credentialing program in the same or a unique format, using feedback obtained from previous program participants. Develop plan to implement program in a way that most benefits the NextGen (ANG) workforce.

Target: Develop NAS 2040 Training

Review and update the NAS 2040 Workforce Development Roadmap and develop training opportunities as defined on the Roadmap to prepare NextGen (ANG) employees to respond to innovation, societal change and other key drivers of change in the National Airspace System (NAS).

Target: Implement the Micro-Credentialing Program (Based on Organizational Needs)

Implement the follow-on effort to the data analytics and Artificial Intelligence/Machine Learning (AI/ML) Micro-Credentialing program that best meets the needs of the NextGen (ANG) workforce as determined by data and metrics collected throughout the implementation of the initial (FY20-23) Micro-Credentialing program.

Activity: Flight Deck Collaborative decision making (CDM) Taxi Instruction Guidance Platform (ITGP) Enhancement

The FAA is driving the evolution of the US National Airspace System (NAS) towards a Collaborative Decision Making (CDM) environment, leveraging advancements in aviation technologies for fully connected aircraft. The Intelligent Taxi Guidance Platform (ITGP) Enhancement project aims to refine and enhance prototype applications that enable proactive collaboration between Airspace Users (AUs) and the FAA, improving traffic management decisions and enhancing safety and operational flexibility. Building upon the existing Taxi Instruction Guidance Platform (TIGP), the project will develop new Electronic Flight Bag (EFB) applications with corresponding Mobile Application Services (MAS) to assist AUs with identity and access management. These applications will transmit Digital Taxi instructions to AUs, regardless of their service provider or application developer. The project's design aligns with the FD CDM Concept Development and will collaborate with the FD CDM eDTI team to incorporate Speech-to-Text (S2T) capability.

Target: System Interface Requirements Document

The team will compile a document that outlines hardware, software, and data interface requirements between Intelligent Taxi Guidance Platform (ITGP) and Electronic Flight Bag (EFB) applications, including data exchanges for ITGP and Flight Deck Collaborative Decision Making (FD CDM) Enhanced Digital Taxi Instruction (eDTI) speech-to-text capability. The requirements will specify data formats, connection protocols, hardware components, and more for seamless information exchange between FD CDM components and external services, with ongoing refinements throughout the project's duration.

Target: Intelligent Taxi Guidance Platform (ITGP) and Electronic Flight Bag (EFB) User Manual Updates

The aim of this goal is to update the existing technical manuals for Intelligent Taxi Guidance Platform (ITGP) and Electronic Flight Bag (EFB) applications with new functionalities resulting from completed enhancements. The manual will provide comprehensive guidance on operating, setting up, and maintaining the Flight Deck Collaborative Decision-Making system, potentially being integrated within the software or provided as printed materials.

Activity: Urban Air Mobility Demonstration

Within the realm of advanced air mobility (AAM), the Office of NextGen will concentrate on managing the Urban Air Mobility (UAM) airspace. This research will validate the concepts outlined in the UAM Concept of Operations document by building upon previous and concurrent research efforts. Collaborating with industry partners, this project will demonstrate the establishment and management of UAM corridors and architecture components that facilitate information exchanges in the ecosystem. Upon project completion and demonstration, a UAM Demonstration Architecture document will be formulated. This document will define the integration of systems and identify the technologies necessary for creating a detailed technical architecture design document. The architecture design document will serve as a guide for constructing an integrated prototype, encompassing all the essential components, software, and Service Suppliers.

Target: Updated Data Management Plan

The team will provide an updated version of the Data Management Plan report to build upon the previously outlined processes surrounding how and what data will be managed thought the body of work, along with all the necessary measures of effectiveness and performance attributes. This report will incorporate any lessons learned from the previously submitted document to better detail the data to be collected for further analyses.

Target: Lab and Systems Integration Memorandum

For this target goal, the Test Site (e.g., William J. Hughes Technical Center), will collaborate with industry partners to integrate, configure, and test systems and service providers to ensure complete functionality. System integration will be conducted cohesively to accommodate the heightened complexity of CFM/TFM interactions based on updated use cases and scenarios.

Activity: Responsible artificial intelligence (RAI) for Air Traffic Management (ATM)

Engage with NASA and leading industry vendors from artificial intelligence (AI) domain to develop an aviation-specific responsible AI framework. The framework will include identifying principals applicable to the Federal Aviation Administration operations, defining the selected principles, identify behavior rules and criteria for each principle, and guidelines for test and validation.

Target: Responsible Artificial Intelligence (RAI) Framework Development Roadmap

Develop roadmap for milestones needed to reach the initial Responsible Artificial Intelligence (RAI)Framework. The roadmap provides further detail description and definition of the major steps (and their constituent sub-element). In addition, building on the product identified on the roadmap undertake development of a list of the specific tasks, products, and entities responsible for execution.

Target: Aviation-specific Use Cases for Responsible Artificial Intelligence (RAI) Framework

Develop aviation specific use cases that describe how Artificial Intelligence (AI) based application is used in Air Traffic Management (ATM) operation. These use cases will be used to facilitate working session with NASA and industry vendors specialize in AI technology to formulate aviation specific RAI framework.

Activity: Flight Deck Data Exchange Requirements

This project will conduct research to identify cybersecurity risks and considerations associated with implementing the hyper-connected Air Traffic Management (ATM) concept. As well as leverage previous cybersecurity work and coordinate with associated projects to produce mechanisms to aid in identifying and mitigating cybersecurity risks for projects implementing hyper-connected ATM. The products of this research will be socialized and edited based upon the resulting feedback.

Target: International Civil Aviation Organization (ICAO) Cyber Security Literature Identification

The team will review existing and in progress work, International Civil Aviation Organization (ICAO) Procedures for Air Navigation Services (PANS), Annexes, and guidance to identify documents that could be impacted by Cyber Security controls of the Hyper Connected ATM environment. The team will then produce a document that captures the identified ICAO documents and their associated panels. This effort will be high-level data gathering that will inform a future deliverable effort.

Target: Connected Aircraft Security Controls tool Socialization Report

The team will socialize the Connected Aircraft Security Controls (CASC) tool with various groups throughout the FAA. These engagement activities will introduce the work performed to develop the tool as well as allow the team to gather feedback. Based upon this feedback, in-depth review and vetting of the tool with be completed as required to ensure that the next iteration of the CASC tool is complete and correct. The team will then consolidate the feedback received and the changes made to the tool into a report. The final deliverable will be an updated CASC tools and the report.

Activity: Evaluating Performance and Advancing Communication for Unmanned Aircraft Systems (EPAC-UAS)

The primary aim of the Evaluating Performance and Advancing Communication for Unmanned Aircraft Systems (EPAC-UAS) project is to assess communication methods between traditional and new entrant aircraft (e.g., Remotely Piloted Aircraft) and Air Traffic Controllers (ATC) using new technologies like VOIP and New Voice Switches. Ground-based solutions will be explored to connect remote pilots and operators with air-ground voice communications, enhancing UAS communication systems with ATC for safety and effectiveness. The architecture will utilize FAA Enterprise Network Services (FENS) to enable two-way voice communication between remote actors, ensuring standardized and secure interconnectivity. Live flight demonstrations, in collaboration with industry stakeholders, will validate communication systems' performance and provide valuable insights for further exploration. The project's outcomes will drive advancements in UAS communication protocols, technologies, and operational practices, contributing to the safe and efficient integration of UAS into the national airspace while fostering the growth of the UAS industry.

Target: Telecommunications Architecture Analysis Report

The team will use this activity to outline the comprehensive strategy for creating the system architecture and essential components to involve the industry in project execution and analysis. The project team will detail the incorporation of existing systems and prototype features that facilitate connectivity among stakeholders. The document will encompass technological requirements, procedures for integrating FAA and industry elements, as well as testing protocols to guarantee operational functionality.

Target: Unmanned Aircraft System (UAS) Connectivity Use Cases and Scenarios Document

The team will outline operational use cases showcasing communication possibilities between Unmanned Aircraft System (UAS) operations and PSU/ATC , utilizing both current and evolving capabilities. The preliminary use case report will establish the initial demonstration operations for the project, subject to later enhancement through collaboration with industry partners. The team's aim is to exemplify potential communication pathways and refine the report based on partner input for future stages.

Activity: Flight Deck Collaborative Decision Making (FD-CDM) Evaluation and Assessment

The Flight Deck Collaborative Decision Making (FD CDM) project was launched to improve flight deck automation and support collaborative decision-making on the airport surface. Previous efforts involved creating prototype applications enabling aircrew to receive digital taxi instructions and navigate with turn-by-turn guidance. Integrating new technologies has enhanced the CDM process, allowing information sharing through digital transformations and increasing situational awareness, as demonstrated in the initial proof of concept. The project has been expanded to include additional EFB application manufacturers and MAS, showcasing the ITGP's ability to transmit Digital Taxi instructions in a solution-agnostic manner. The next phase will integrate FD CDM capabilities in a HITL simulation and live environment, highlighting how they enhance information exchange for optimized airport surface operations and collaborative decision-making.

Target: Flight Deck Collaborative Decision Making (FD CDM) Use Cases and Scenarios

The team will outline operational use cases, showcasing potential operations and necessary flight information exchanges, utilizing both current and emerging capabilities. The preliminary use case report will act as a foundation for demonstrating operations in a later project stage and will undergo refinement based on input from industry partners.

Target: System Architecture Interface Document

The team will create a document that outlines specifications for hardware, software, and data interfaces connecting Intelligent Taxi Guidance Platform (ITGP) and Electronic Flight Bag (EFB) ITGP and EFB applications, along with data ingestion by ITGP and Flight Deck Collaborative Decision Making (FD CDM) Enhanced Digital Taxi Instruction (eDTI) speech-to-text feature. The requirements encompass data format, connection protocols, hardware components, and more, enabling efficient information exchange between FD CDM elements and external services, with ongoing refinement throughout the project's duration.

Activity: NextGen Information Management Concepts Enhancement

Investigate emerging development tools, concepts, and technologies for best practices to guide future NAS usage in modernization efforts.

Target: Reliability, Maintainability, and Availability (RMA) for modern systems Guidance Document

Document providing guidance to development teams on how to best plan for Reliability, Maintainability, and Availability (RMA) by using modern approaches.

Activity: Natural Language Processing (NLP) for Traffic Flow Management (TFM)

Advanced Methods work focuses on expanding prototyping activities to further develop new technologies, record lessons learned, and describe use cases surrounding the use of the new technologies for Traffic Flow Management TFM.

Target: Complete the Natural Language Understanding (NLU) Intent Classification Report

Complete the Natural Language Understanding (NLU) Intent Classification Report, which details the progress made in establishing a working intent classification functionality to go along with the Named Entity Recognition (NER) tool.

Target: Complete Speech Recognition Custom Model Report

Complete Speech Recognition Custom Model Report which contains details on the custom Whisper model.

Activity: Common Support Services Flight Data (CSS-FD) Engineering Analysis

The Common Support Services - Flight Data (CSS-FD) Engineering Analysis will identify and define candidate capabilities for CSS-FD Phase 2; additionally, artifacts and documentation submitted during CSS-FD Investment Analysis Readiness Decision (IARD) and Phase 1 Initial Investment Decision (IID) will be reviewed to identify changes required as a result of Phase 2 scope, engineering analysis, and/or system design.

Target: Operational Assessment of Flight Plan Changes

Perform a comparison assessment that would identify whether additional automation, changes to the current systems, or workflow modifications would benefit the operations (today and/or in the future). In order to conduct this assessment, the Common Support Services - Flight Data (CSS-FD) team would develop operational scenarios that would detail the flight plan changes within the predetermined lockout period prior to departure. These scenarios will be developed while considering the operational environments both today and in the future.

Activity: Connected Aircraft Trajectory Information (CATI)

Significant advances in avionics, communication and information management support the envisioned use trajectory exchange as the mechanism to align airspace user intent and NAS strategic planning. To realize the envisioned future NAS environment supported by specific services, analysis of data available by what mechanisms is needed. This project will undertake an iterative approach to analysis and demonstration to ensure the operational viability of planned NAS information management infrastructure, including services applicable to trajectory management.

Target: Flight/Flow Information Data Analysis Report

Activities include conducting the necessary analysis to identify, describe, and develop the necessary documentation to support assessment and implementation of flight/flow information services to be offered by the FAA through the agency’s planned information sharing infrastructure. The deliverable will be a report contains the results and findings.

Target: Flight/Flow Information Services and Demonstration Report

Documentation of demonstration activities including description of all operational scenarios, use cases, technical support towards Information Services, demonstration planning, preparation, execution, and final report.

Activity: Low-Density UAS-Ops Communication Evaluation (LUCE)

Low-Density UAS-Ops Communication Evaluation (LUCE) project will continue FAA's effort to evaluate the integration of Beyond Visual Line-of-Sight (BVLOS) operations in the NAS using large (>55 lbs.) UAS as a platform above 400ft (AGL). This project will include simulation and modeling analysis along with live flight evaluations centering on operational implications and potential requirements associated with communications. The specific focus being on the current NAS, direct pilot-controller requirement of 250ms-300ms. Some of the research areas include:

• Communication requirements viable/feasible for remotely piloted vehicles operating in the NAS
• Current (or projected innovative) technical communication capability gaps
• Broadening of the current communication requirement based on the specific operating environment

Target: Low-Density Operational Use Case Report

A report documenting candidate Air Traffic Control – Remote Pilot in Command (ATC-RPIC) interactions for LUCE operations. Operational use cases reflecting a range of voice communication mechanisms, communication latency, and performance. These use cases will be developed and incorporated into flight scenarios for execution in a mixed live and simulation environment.

Target: Low-Density Unmanned Aircraft Systems Ops Communication (LUCE) Demonstration Final Report

The Project team will coordinate all demonstration activities and collect gather data for further analysis, record. Project team will document any update to the current simulation and demonstration systems to streamline demonstration execution. At the end of demonstration, the Project team will prepare a Low-Density Unmanned Aircraft Systems Ops Communication (LUCE) Live Flight Evaluation Execution Report that shows compliance with the Live Flight Evaluation execution plan and capture all deviations with justifications. The LUCE Live Flight Evaluation Execution Report will also include lessons learned from the trials and propose future improvements based on the analysis of data gathered during the trials.

Activity: Digital Constraints

Explore advance technology for example Machine Learning and data analytics techniques to support extraction and digitization of flight constraints embedded in NAS heritage documents such as Letters of Agreement (LOAs). In addition, conduct additional analysis and develop a standardized digital schema of these flight constraints information for use on systems/platform to better capture the information as they are input and can be directly exchanged with minimum processing.

Target: Develop Static Procedural Operational Constraint (SPOC) Representations for flight constraints from ATRCC LOA

The Concept of Use (CONUSE) will describe the operational needs for digital constraints, who and how this digital constraint is intended to be used, and under what conditions it is intended or expected that they will use the capability. The CONUSE also identifies stakeholders, their interests in the capability, and future technical requirements necessary to maintain and improve this capability.

Target: Develop initial origination tool for Procedure section of the LOA

Complete the software development activities and associated documentation of initial Origination Tool for Procedure Section of the Letters of Agreement (LOA) and conduct verification of the tool. The development activity, the demonstration, and lessons learned will be captured in the Origination Tool Final Report.

Activity: Unmanned Aircraft System Traffic Management (UTM) Research and Development Cloud Operating Environment (RD-OE)

The Office of NextGen will incrementally build an Research and Development Cloud Operating Environment (RD-OE) cloud environment with the initial infrastructure supporting current FAA/NextGen R&D initiatives as well as support Automated Evolution Strategy layered services-based architecture. The Research and Development Cloud Operating Environment (RD-OE) will provide the foundation for incremental enhancements. The Unmanned Aircraft Systems FIMS prototype is planned to be the first project/use case to be deployed in this cloud environment.

Target: Research and Development Cloud Operating Environment (RD-OE) Initial Architecture and Design for Research Environment

The Research and Development Cloud Operating Environment (RD-OE) cloud environment team along with Automated Evolution Strategy stakeholders will develop a comprehensive architectural overview of the system, using several different architectural views to depict different aspects of the Cloud Environment. The design document will capture and convey the significant architectural decisions which have been made through technical discussions with stakeholders and future tenants.

Target: Research and Development Cloud Operating Environment (RD-OE) Service Catalog for Research Environment

The Research and Development Cloud Operating Environment (RD-OE) Service Catalog will document curated trustworthy solutions and enable developers and cloud administrators to make their solutions discoverable to internal enterprise users. Cloud administrators will also document how solutions will be distributed and the process for ensuring compliance and governance.

Activity: Unmanned Aircraft System Traffic Management (UTM) Key Site Operational Evaluation

The Unmanned Aircraft System Traffic Management (UTM) Key Site Operational Evaluation will utilize a key site to operationally evaluate and validate the implementation and use of a federated network, industry-proposed standards in support of operations Beyond Visual Line of Sight (BVLOS), and requirements to inform methods for compliance to BVLOS rulemaking. The program will establish partnerships with operators and UAS Service Suppliers (USSs) and work with suitable participants in attaining the necessary exemptions to operate BVLOS using UTM services. These services will be provided by multiple USSs and utilized by multiple operators to carry out BVLOS operations, providing a means for operators to collaboratively deconflict and enable predictable and routine BVLOS operation in the National Airspace System (NAS).

Target: Federated Network Application Programming Interface (API) Connectivity Memorandum

The Network Application Programming Interface (API) Memorandum will be recorded to indicate the completion of prototype software development of API(s) to support data exchange among industry Diverse Operations Network stakeholders.

Target: Key Site Flight Operations Preparedness Document

This artifact serves as documentation of assessment of key functionalities such as data exchange and access management in preparation for live flight operations

Activity: Innovate 28 Advanced Air Mobility (AAM) Modeling and Simulation (M&S)

Assess the feasibility of initial Advanced Air Mobility (AAM) operations for site specific use cases. This will be conducted via modeling and simulation using the suite of Technical Center tools and capabilities. The research will support the AAM I28 Implementation Plan Near-term (Innovate28) objectives for initial entry into service at key sites, and serve as the basis for future AAM studies.

Target: Initial Los Angeles International Airport (LAX) Airspace Integration Feasibility Assessment

Assess the feasibility of three vertiport locations at Los Angeles International Airport (LAX) and proposed airspace operations using agreed upon assumptions. Document all modeling and simulation (M&S) quantitative and qualitative results based on air traffic controller subject matter expert inputs and fast-time modeling metrics.

Target: Refined Los Angeles International Airport (LAX) Airspace Integration Feasibility Assessment

Assess the feasibility of agreed upon vertiport locations at Los Angeles International Airport (LAX) and proposed airspace operations incorporating refined simulation inputs and assumptions. Document all modeling and simulation (M&S) quantitative and qualitative results based on air traffic controller subject matter expert inputs and fast-time tool metrics.

Target: Real-time High Fidelity Los Angeles International Airport (LAX) Airspace Integration Feasibility Assessment

Assess the feasibility of agreed upon vertiport locations at Los Angeles International Airport (LAX) and airspace operations within a higher fidelity real-time simulation environment with air traffic controller subject matter expert participants. Document simulation results from quantitative and qualitative metrics collected and analyzed to inform decisions for operational integration of Advanced Air Mobility (AAM).

Activity: Class E Upper Airspace Traffic Management

The Class E Upper Airspace Traffic Management (ETM) project will demonstrate the feasibility of integrating new entrants into Class-E Airspace by developing ETM concepts, scenarios, and engineering analyses in conjunction with NASA and Industry to validate the overall approach to managing this airspace. To mature cooperative ETM conceptual principles and operational practices the program will work to define FAA and ETM operator roles and responsibilities.

Target: Class E Upper Airspace Traffic Management (ETM) Flight Plan Filing Use Case

The Flight Plan Filling Use Cases will be developed to promote discussion with Class E Upper Airspace Traffic Management (ETM) stakeholders (users and system developers) at a Tabletop. The use cases will include an overview of the user and system developer perspectives, scenarios covering filing flight plans methodology, questions to engage stakeholders, and provide input to enable ETM integration with ATM practices.

Target: Class E Upper Airspace Traffic Management (ETM) Flight Plan Filing Tabletop

Report Related to the CNS White Paper Update Package, and more so on the Class E Upper Airspace Traffic Management (ETM) Adjacent Airspace Analysis, this work will evolve the Preliminary Modeling and Simulation paper delivered July 2021 to incorporate more and different simulations, leveraging outputs from the airspace analysis, mentioned above. This effort may entail several iterations or outputs, perhaps smaller in scope, as the project progresses

Activity: Air/Ground SWIM Connected Aircraft

The Connected Aircraft (CA) concept describes a richer set of information to be exchanged with the aircraft and automation to improve operational awareness and decision-making. An integrated CA framework will further advance concepts that leverage information exchanges based on applicable performance standards. The establishment of an Application Registry and Distribution Platform “App Store” allows for the organization and distribution of relevant software applications. To support the necessary applications the program will continue to establish a data distribution platform to host a centralized application database with the necessary access for internal and external users to discover and download applications. This phase of work will analyze the technical and programmatic needs necessary to release live versions of the App Store. Engagement with relevant stakeholders (including the Research & Development Operating Environment) will be conducted to determine needs.

Target: Application (APP) Store User Guide

The App Store team will document how developers and users can utilize the App Store platform. The guide will be used as a reference for the initial Research & Development Operating Environment Store planning and requirements development.

Target: Software Environment Migration Package

A roadmap documenting the development plan, needs, and timeline associated with Release 1 based on stakeholder feedback and planned updates to the build/deploy pipeline.

Performance of the National Aerospace System

Develop and implement a comprehensive roadmap to guide the evolution of the National Aerospace System as the foremost data-driven Air Navigation Service Provider (ANSP) in the world.

Initiative: Strategic Messaging & Information Management

Develop strategic messaging capabilities and information management tools to enhance leadership decision making in support of evolving the national aerospace system.

Activity: Strategic Messaging

Effectively communicate to stakeholders the NextGen products that support the modernization for the National Airspace System (NAS).

Target: Website Updates and Maintenance

Ensure completion of monthly web content reviews by directorate as required per the ANG web policy and timely execution of content changes to address outdated or incorrect information. Contribute a combined total of at least 50 ANG Forward articles, bi-weekly executive messages, and ANG executive presentations released or delivered during the fiscal year.

Target: NextGen Annual Report for Fiscal Year 2024

Develop the draft NextGen Annual Report for Fiscal Year 2024.

Target: Webinar and Conference Coordination

Develop and maintain a calendar of webinars and conferences of interest to ANG senior leadership. Publish the initial calendar by March 31 and communicate updates each month thereafter, adjusting focus and content based on senior leadership feedback as appropriate.

Target: ANG Stakeholder Engagement Requests

Track, manage and execute requests for ANG executive engagement from ANG stakeholders. Maintain accurate log of requests and their disposition.

Activity: Information Management and Decision Support Tools

Leverage information resources to allow senior leadership to make business intelligent decisions to support strategic messaging and visualize performance to support the modernization of the National Airspace System (NAS).

Target: UAM/AAM Dashboard

Deliver first release of the approved and socialized UAM/AAM Dashboard and supporting populated database.

Target: Acquisition Workforce Dashboard

Complete first release of the approved and socialized Acquisition Workforce Dashboard (PM and COR module) and supporting populated database. Coordinate with ANG-A2 to ensure complete and accurate data and with ANG-A62 to ensure users and other stakeholders have access, awareness, desire and knowledge to use functionality.

Target: Federal Staffing Dashboard

Develop and demo first release of new federal staffing dashboard (module) within the ANG Enterprise Portfolio Management System in collaboration with ANG-E.

Target: Aviation Industry Newsletter

Provide at least fifteen (15) issues per month of the ‘Aviation Industry Newsletter,’ which is a compilation of the latest media articles about the latest developments on activities, research, key developments, and stakeholders in the aviation industry both domestically and internationally. Conduct annual assessment / survey to identify improvement opportunities and update the mailing list.

Initiative: National Airspace System Laboratory Facilities and Services

Provide a set of world class laboratory facilities and services to support research, engineering and development; test and evaluation and maintenance of air navigation; air traffic management, and future air transportation system capabilities.

Activity: Provide High Quality Laboratory Services

Provide high quality laboratory services to Program Office sponsors and customers for acquisition programs and projects. Evaluate the performance and effectiveness of the services and products provided by the division using the quality management systems and objective measures of customer satisfaction. This activity will ensure that the Laboratory Division maintains its International Organization for Standardization (ISO) 9001 Certification.

Target: Customer Satisfaction

Monitor the level to which customer needs and expectations are being met by regularly collecting customer feedback in our Customer Feedback Application and meeting with customers to gauge whether our efforts are successful and to ensure our documented process capture their needs and expectations. Customer expectations are monitored to ensure they are being met by the rating in the Division's Customer Feedback Application and through Customer meetings.

Target: Analysis and Evaluation

Analyze the performance and effectiveness of the services and products provided for the division's quality management system to evaluate its effectiveness in meeting the division's quality objectives metrics for customer satisfaction or if corrective action is required. The manager is given a Corrective Action Request to address the performance and effectiveness of the services provided. This involves the manager meeting with the customer to determine how to improve the products and services provided to ensure it meets the division's quality objective metrics for customer satisfaction.

Target: Increase Auditor Resources

Laboratory Services Division, ANG-E1, will increase the number of skilled auditor resources to successfully complete the organizations two required audit cycles and to attain feedback on the auditing services provided.

Activity: Execute Laboratory Master Plan & Projects

This activity sustains, maintains, and improves the William J. Hughes Technical Center (WJHTC) National Airspace System (NAS) laboratory facilities. Multiple projects for fiscal year 24 are described in the Space and Infrastructure Master Plan and 75% will be initiated. The shell for the Priority One Electronic Equipment Room will be completed.

Target: Space and Infrastructure

Depending on the availability and timing of ANG-E1 CIP line funding, initiate the design for 75% of planned Space and Infrastructure Master Plan (SIMP) projects scheduled for FY24, ensuring the overall Laboratory SIMP projects remain on schedule and laboratory building infrastructure is maintained and improved.

Target: Priority One Electronic Equipment Room

With the ANG-E1 CIP line funding or other potential sources, use various procurement avenues available to reconfigure the existing lab space and building utilities to substantially complete the new Traffic flow Processing Center (TPC) area, including the surrounding corridor for the Priority One Electronic Equipment Room, 2nd floor, Building 300.

Activity: Create Virtual Air Traffic Control Simulation Capabilities

Create virtual Air Traffic Control (ATC) simulation capabilities in the Technical Center Research Development and Human Factors Lab that support both low- and high-fidelity simulations and scenario development, adding flexibility to future Human-in-the-Loop (HITL) research by allowing remote scenario development, remote verification of system changes, remote shakedowns and lowering overall project costs.

Target: Remote Keyboard and Trackball Capability

Create interfaces for the Standard Terminal Automation Replacement System (STARS) and En Route Automation Modernization (ERAM) keyboards and trackballs that will allow them to operate with generic Microsoft Windows keyboard and mouse drivers. These new interfaces may be software, such as custom-written drivers, or hardware, such as a small electronic interface box between a STARS or ERAM keyboard/trackball and a Windows computer. Context: These interfaces will facilitate remote human-in-the-loop simulations of air traffic control operations using STARS and ERAM while minimizing hardware requirements at the remote sites by allowing the remote sites to use standard Windows computers. Remote simulations will allow research studies and tests to be conducted with fewer controllers traveling in-person to the Technical Center, which will facilitate larger and broader samples for studies and tests.

Target: Remote Human Factors Performance Devices

Evaluate and prototype virtual performance devices, such as Workload Assessment Keyboards (WAK) and Easy Buttons, that can be used during remote Human Factors data collection. Current devices are physical pieces of hardware which reside in the laboratories. We will develop software solutions to replace the hardware devices using touch screens or other virtual means.

Target: Remote Voice Communication

Create a capability for remote voice communication between controllers and pilots. This effort will also include the ability to send remote Push To Talk (PTT) from the Air Traffic Controllers (ATC) to allow for the use of agent simulation pilots. The capability must also allow for recording to support Human-in-the-Loop (HITL) simulation data collection.

Activity: Upgrade the Visual System for the Helicopter Simulator

Working with the Contracts Office; Market Survey for a Request for Information (RFI) which has been completed. The data from the RFI has been gathered to finalize a Statement of Work to submit a Request for Purchase (RFP) This is to be completed by Contracts. Once this is completed, and vendor is selected, that vendor will install.

Target: Procurement to relocate the high fidelity visual system for Boeing 737 and Airbus 320

Sole Source contract award for the relocation to move the current visual system (B201) to the new Simulation Lab (B301). Inclusive of: Site visit; disassemble Boeing visual system; reassembly of visual system in new Simulation Lab; disassemble Airbus visual system and reassemble Airbus visual systemin Simulation Lab.

Initiative: Aerospace Planning and Performance

Research and development investments are balanced between strategic research initiatives to enable transformative change, and tactical research initiatives aimed at incremental improvements to current systems, while maintaining or improving operational safety. The FAA's Research, Development, Test & Evaluation (RDT&E) function at the William J. Hughes Technical Center, and supporting laboratories, provide a comprehensive approach to discovering, validating, and advancing technologies for a safer, more efficient, and more economically accessible NAS.

Initiative: Stakeholder Engagement & Outreach

Enhance domestic and international stakeholder confidence in NextGen and engage stakeholders in NextGen through collaboration and messaging.

Activity: Stakeholder Collaboration

Enable and facilitate collaboration throughout the FAA, aviation community and interagency partners by sharing resulting actions, outcomes, and information.

Target: Stakeholder Engagement Forum Plan

Develop a plan for transitioning to a new stakeholder engagement forum to include all airspace users traditional, advanced air mobility, and upper E.

Target: Stakeholder Engagement Forum Execution

Develop a Stakeholder Forum Charter and Membership Solicitation Announcement for the Federal Register Notice.

Initiative: Operations and Cost Benefits Analysis and Reporting

Inform FAA/NextGen Stakeholders on the Enterprise level shortfalls and potential benefits of new capabilities as well as assessing post-implementation benefits of key implementations to further inform NextGen Advisory Committee (NAC) and other Stakeholders on value. Improve data analysis, modeling, and visualization capabilities to better inform stakeholders on implementations with more complex benefit cases.

Activity: Post and Future Implementation Analyses to Support FAA Executive Leadership and NextGen Advisory Committee

In support of the FAA, NextGen Advisory Committee (NAC), and other stakeholders, both recent implementations and future operational shortfalls will be evaluated using detailed data analysis and normalization to assess multiple performance goals. Operational shortfall analyses will include data analysis to support prioritizations of new capabilities and locations. As appropriate, we will assess completed implementations in support of NAC and updated implemented benefits on the NextGen website. Additionally, Minimum Capabilities List (MCL) equipage scenarios will be completed as necessary.

Target: Joint Analysis Team Northeast Corridor Analyses

Finalize initial post implementation analysis for Atlantic Coast Routes as part of Northeast Corridor (NEC) and work with Air Traffic Organization (ATO) on baselining data for Time Based Flow Management (TBFM) at Philadelphia International Airport (PHL). Assist with other NextGen Advisory Committee (NAC) implementation analyses as appropriates.

Target: Additional Post Operational Analyses

Complete post operational analysis beyond what has been assigned to the Joint Analysis Team (JAT) and include normalizations necessary to adjust for any COVID related demand changes. Also, update NextGen's estimate of implemented benefits (including those contained on the NextGen Website) as directed by the Assistant Administrator for NextGen (ANG-1).

Target: Equipage Benefit Analysis

Coordinate with the Assistant Administrator for NextGen (ANG-1) and Human Factors Division (ANG-C1) and develop updated analysis of key future Minimum Capabilities List (MCL) equipage benefits combined with applicable Trajectory Based Operations (TBO) tool implementations.

Activity: Trajectory Based Operation (TBO) Shortfall and Benefit Analyses

Conduct Trajectory Based Operation (TBO) shortfall and benefit analyses using historical data and modeling tools to inform dynamic TBO enterprise planning. We will identify applications for the Trajectory Based Operations- Simulation (TBO-SIM) tool and will work toward making an initial version of the tool available to select users outside of NAS Systems Engineering and Integration Office (ANG-B).

Target: Trajectory Based Operation (TBO) Enterprise Level Shortfalls and Benefits for Arrivals

Continue to identify shortfall gaps between the integration of strategic systems, such as the Traffic Flow Management System (TFMS), and tactical systems such as Time-Based Flow Management (TBFM), that occur during a Ground Delay Program (GDP). The Shortfall analysis will include contributions from departure conformance and flight time predictions, including analyses of Carrier flight substitutions made during the Collaborative Decision Making (CDM) process, to inform future implementation prioritizations and research. As appropriate, make enhanced data and findings available through Enterprise Information Management (EIM) or the System Engineering Portal (SEP).

Target: Develop Trajectory Based Operation (TBO) Initial Traffic Flow Management System (TFMS), Trajectory Based Flow Management, Terminal Flow Data Management (3T) Shortfall/Benefits in Off-Nominal Conditions

Building off data analyses in Target 24Ez.15C1, develop refined benefit modeling to reflect the impact on multiple performance objectives from reduced uncertainty during Ground Delay Programs (GDPs) and under Trajectory Based Operations (TBO). Identify use cases for TBO-Simulation (TBO-SIM) related to the NAS 2040, including investigation of valuing new Carrier-related performance measures and ties to overall NAS performance. Socialize TBO-SIM and identify potential users outside of the NAS Systems Engineering and Integration Office (ANG-B).

Target: Departure Shortfall for Key Airports During Convective Weather

Continue to expand departure and arrival shortfall analysis during convective weather beyond the Northeast Corridor (NEC). Enhance analyses of study airports including Fort Lauderdale (FLL), Jacksonville (JAX), Miami (MIA), Tampa (TPA), Orlando (MCO), and Charlotte (CLT).

Target: Future Benefit Analyses

In coordination with the Portfolio Management and Technology Development Office (ANG-C), conduct future benefit analyses of Air Traffic Management initiatives to inform implementation priorities and future research.

Activity: Analyses of Operational Shortfalls for National Airspace System (NAS) Future Vision

Conduct analysis of FAA research activities mapping to operational shortfalls including integration of Space Vehicle Operations (SVO) to understand current and future impacts on traditional airspace users. This product will inform valuation of the NAS 2040 future benefits.

Target: Unmanned Air Systems (UAS) Enterprise Architecture (EA) Automation Tripwire

Given refinements in Unmanned Air Systems (UAS) concepts of operation, investigate the appropriateness of the Enterprise Architecture (EA) automation tripwire framework. Also, through data analysis, modeling, and simulation, assess potential National Airspace (NAS) performance impacts from projected growth in UAS.

Target: Impact Analyses of Space Vehicle Operations

Collect historical info and future projections of Advanced Air Mobility/Unmanned Air Systems (AAM/UAS) data and estimate future impact on traditional traffic using applicable forecast. This product will help inform NAS 2040 benefits.

Target: The Assistant Administrator for NextGen (ANG-1) Support for NextGen Benefits and Related Information supporting Stakeholder Requests

Provide the Assistant Administrator for NextGen (ANG-1), and/or FAA executive leadership continued support for responding to stakeholder requests regarding NextGen benefits and related information. These products include briefs on NextGen and NAS 2040 future benefits.

Initiative: National Airspace System Test and Evaluation

Collaborate and meet with Flight Program Operation Office (AJF) and other stakeholders to develop a Con-Ops for the use of drone technology in acquisition test programs. Collaboratively define roles and responsibilities of all stakeholders and identify required equipment and funding.

Activity: Deliver High Quality Test and Evaluation Services to Support Acquisition Programs

Enable William J. Hughes Technical Center organizations and other Air Traffic Control stakeholders to effectively and efficiently execute their missions by delivering high quality test and evaluation services, processes, and methods that support key acquisition investment and operational readiness decisions for designated programs or projects. This includes using human-system integration design and evaluation practices in an agile development program to ensure usability, effectiveness, trainability, and user acceptance of the resulting product.

Target: Develop FAA Enterprise Network Services (FENS) final Test & Evaluation Master Plan (fTEMP)

This document describes the test strategy and scope of the FENS test program. Once all the information needed to complete the document per FAA standards is compiled and documented, the final document will be delivered to the Program Office and is one of the documents needed for Final Investment Decision.

Target: Assess the usability of existing Automated Maintenance Management System (AMMS) features and functions developed using Agile system development processes

Engage with the Automated Maintenance Management System (AMMS) Program Office, vendor, and user team to conduct a usability assessment of AMMS functions that have already been developed and implemented through its Agile process as part of earlier program phases, known as epics, which represent an increment of completed software development. Identify potential usability, trainability, and user acceptance issues and make recommendations for mitigations.

Target: Conduct NextGen Weather Processor (NWP) Operational Test.

Complete NextGen Weather Processor (NWP) Key Site Operational Test (OT-2) activities at the Atlanta, Salt Lake City and Oakland locations. Deliver NWP OT final test report to the Customer Program Management Office (PMO) organization (AJM-333).

Target: Develop NEXCOM Emergency Transceiver Replacement (ETR) Battery Evaluation Special Support Activity Plan/Report

"Description: Complete data collection and develop NEXCOM Emergency Transceiver Replacement (ETR) Battery Evaluation Special Support Activity Plan/Report, for delivery to the Air to Ground Communications Team (AJM-313), to assist with:
a. Ensuring the closure of all battery-design related FAT PTRs using FAA-developed test processes.
b. Identifying the repeatability of the issues highlighted in the FAT Test Report.
c. Assisting General Dynamics Missions Systems (GDMS) initiatives for root cause discovery of ETR battery issues.
d. Discovery of any battery-related operational conditions that did not appear during FAT conduct or were not reported to the FAA.
e. Performance characterization of the battery charge and discharge cycles that FAA technicians and air traffic controllers will encounter while maintaining and operating the URC-300E."

Target: Support Operational Modeling and Data (OMD) Enhancement-1 (WILBUR) Final Investment Decision (FID)

"Lead the development of test-related documentation as required by the Joint Resource Council in support of final investment decision for the operational modeling and data enhancement-1 (aka, WILBUR). Complete the development and deliver both approved initial Test & Evaluation Master Plan (iTEMP) and Section 9 of the Integration Strategy and Planning Document by 04/30/2024.

Target: Conduct data analysis on Wide Area Augmentation System (WAAS)

Report Wide Area Augmentation System (WAAS) performance during Dual Frequency Operations WAAS Release 1 field test. During WAAS Release 1 the receivers at the Ground Uplink Stations (GUS) will be replaced with a new design. This receiver change cannot be tested fully in the WAAS shadow system (test system for WAAS). Therefore, a field test is necessary to fully test this change before it becomes operational.

Target: Elevate the T&E Handbook as the FAA Standard and Industry Model

Update the FAA Test and Evaluation (T&E) Handbook to address a wider range of T&E stakeholder needs and future FAA acquisition requirements. Socialize with FAA stakeholders and present the updated T&E Handbook to the Acquisition System Advisory Group for approval and incorporation into the FAA Acquisition Management System to help ensure progressive quality T&E standards are put into practice.

Target: Conduct Operational Testing for Terminal Flight Data Manager (TFDM)

Lead, conduct, and deliver test products of Terminal Flight Data Manager (TFDM)[IH(98]. Build 2 Operational Test (OT) results to support initial operational capability at the Charlotte Air Traffic Control Tower (CLT) in Fiscal Year 2024 including: complete Site Acceptance Test by 04/30/2024; deliver Build 2 pDT Test Report with required approvals by 06/30/2024; complete OT at William J. Hughes Technical Center Terminal Flight Data Manager (TFDM) Test Lab by 07/15/2024 and at Charlotte Air Traffic Control Tower (CLT) by 07/31/2024; support Independent Operational Assessment and In-Service Decision as scheduled by 09/30/2024.

Target: Complete Testing of Vantis Data Sharing Solution in support of System Operations Security (AJR-2)

Collaborate with National Airspace System Defense Programs and System Operations Security Division (AJR-2) to develop the Test Plan be by 03/30/2024 to verify requirement for the planned solution. The objective of test effort is to verify that no sensitive data is released to the Vantis program, a North Dakota statewide network enabling UAS flights beyond visual line of sight (BVLOS). The test will verify that the data sharing solution meets the requirements defined by National Airspace System Defense Programs and System Operations Security Division (AJR-2) and is suitable for operational use by the Vantis program by 09/30/2024.

Target: Apply Human-System Integration Practices to Automated Maintenance Management System (AMMS) Epic 1 and Epic 2

Develop use cases, user interface/functionality requirements, test procedures, and test results for upcoming Automated Maintenance Management System (AMMS) Epics. Epic 1: Logging data entry; Epic 2: Control center event coordination to conduct a usability assessment of the functions in each Epic.

Target: Develop Air-to-Ground Protocol Converter (APC) final Test & Evaluation Master Plan (fTEMP)

Complete and deliver Air-to-Ground Protocol Converter final Test & Evaluation Master Plan.

Target: Develop High Intensity Approach Lighting System with Sequenced Flashing Lights (ALSF-2) Service Life Extension Project (SLEP) final Test & Evaluation Master Plan (fTEMP)

The High Intensity Approach Lighting System with Sequenced Flashing Lights (ALSF-2) Service Life Extension Project (SLEP) final Test & Evaluation Master Plan (fTEMP) supports the sustainment of ALSF-2 systems in the NAS.

Activity: Apply Technology Advancements and Other Innovative Test Approaches

Affect the future and maximize capabilities through technology advancements, innovation, exploration and the implementation of enabling and emerging technologies. Implement advanced test tools, methods, and capabilities, leveraging technology advancements to automate manual processes while seeking opportunities to incorporate new innovative solutions.

Target: Conduct NEXCOM V3 Radio Operational Capability Test.

Description: Use automated transmitter and receiver test beds to evaluate NEXCOM V3 radios during Operational Capability Test (OCT). Results of the OCT will be used by the Air to Ground Communications Team (AJM-313) to determine scoring for Factor 1 (Technical) as part of the NEXCOM V3 contract award process.

Target: Develop Con-Ops for using Drone Technology in Acquisition Test Programs.

Collaborate and meet with Flight Program Operation Office (AJF) and other stakeholders to develop a Con-Ops for the use of drone technology in acquisition test programs. Collaboratively define roles and responsibilities of all stakeholders and identify required equipment and funding.

Target: System Wide Information Management (SWIM) FAA Continuous Testing Service test suite.

This test suite will provided automated test tools that will be used to collect, analyze and report data during test activities in a more efficient way. The software development required to construct this test tool suite will be a continuous effort throughout FY24.

Initiative: Environment and Weather Impact Mitigation

Conduct Environment and Weather Impact Mitigation research to develop mitigations to the environmental impacts of aviation operations as well as the impact of weather on air transportation safety and efficiency.

Activity: Weather Forecast Improvements (WFI)

The Weather Forecast Improvements (WFI) program addresses the need to improve weather prediction and the use of weather information in the future NAS. National Weather Service (NWS) forecast models will be integrated into models that forecast weather impacts for aviation purposes. In today's NAS, traffic managers and users must mentally interpret weather conditions and the potential impact of weather on ATC decisions. WFI will improve the accuracy of aviation weather information, to include the automated objective indication of the constraints placed on the NAS and incorporate this data into collaborative and dynamic The Weather Forecast Improvements (WFI) program addresses the need to improve weather prediction and the use of weather information in the future NAS. National Weather Service (NWS) forecast models will be integrated into models that forecast weather impacts for aviation purposes. In today's NAS, traffic managers and users must mentally interpret weather conditions and the potential impact of weather on ATC decisions. WFI will improve the accuracy of aviation weather information, to include the automated objective indication of the constraints placed on the NAS and incorporate this data into collaborative and dynamic decision-making.

Target: Interagency Council for Advancing Meteorological Services (ICAMS) Federal Meteorological Enterprise Budget and Coordination Report (BCR)

Complete and submit FAA’s draft inputs to FY24 Interagency Council for Advancing Meteorological Services (ICAMS) Budget and Coordination Report (BCR). The budgetary information provides an enterprise look, across all federal agencies, at the meteorological funding requested in the President’s Budget Request and the funding enacted over the previous two fiscal years

Activity: Weather Research Transition

This activity identifies research concepts and capabilities that have appropriately matured and transitions them from Research, Engineering &Development to Facilities & Equipment funding. It supports the transition of weather capabilities to FAA operational platforms, to include development of Pre-Concept & Requirements Definition Readiness Acquisition Management System artifacts. This activity also supports the transition of aviation weather research to the National Weather Service (NWS) for operational production of weather capabilities to FAA platforms.

Target: Weather Requirements Near-term Product Report

Document all new products identified by the research-to-operations (R2O) program, as well as add all new weather needs submitted via the Weather Needs Portal and other established forums to the existing Weather Requirements Service (WRS) Near-term Roadmap

Target: Echo Tops Information for Controller Concept Development Report

Provide an in-depth look at issues regarding the lack of echo top information on the controller's primary display. The report will provide a narrative description of the weather need including a detailed problem statement that documents known impacts. It will also include a literature review and known documentation from interviews in the applicable program area. Any known weather-related thresholds and frequency of exceedance aligned with the need will be discussed.

Activity: Aviation Weather Research

Applied weather research is conducted to advance the state of weather forecast and diagnosis information such that it can be exploited for integration into Air Traffic Management decision-support processes. Hazardous weather phenomena such as turbulence, inflight icing, thunderstorms, and low ceilings and visibility undergo research in order to forecast the timing and intensity of these conditions better, or to mitigate the impacts of these conditions on the NAS.

Target: Current Icing Product (CIP) version 2.0 code to the National Weather Service (NWS).

Complete and provide Current Icing Product (CIP) version 2.0 code to the NWS for implementation. CIP version 2.0 uses higher resolution numerical weather prediction data (going from 13-kilometer horizontal spacing to 3-kilometer and 50 vertical levels to 62), enhanced weather satellite and weather radar techniques, and improved internal algorithmic techniques for the diagnosis of inflight icing conditions.

Target: Complete development of Gridded Localized Aviation Model output statistics Program (LAMP) 15-min guidance for ceiling and visibility (C&V)

Complete development of Gridded LAMP 15-min guidance for Ceiling and Visibility (C&V) for transition to the NWS for implementation. This enhancement, targeted for implementation in Localized Aviation Model output statistics Program (LAMP) v2.6, will increase the temporal resolution of the LAMP C&V forecast products from hourly to every fifteen minutes for the first six hours.

Target: Complete Phase II of the Weather Information Modernization and Transition (WIMAT) and Convective Weather Research

The Aviation Weather Demonstration and Evaluation (AWDE) Services Team will document results based on exploratory research to identify convective weather products available to the aviation community. Once identified, aviation community feedback will be gathered on the overall usefulness and suitability of each of the identified convective weather products. In addition, feedback will be obtained to determine overall aviation community preferences of the products when compared to each other. Feedback contained in the final briefing will be used to aid in the development of new requirements, identify gaps or shortfalls, help determine if streamlining the convective weather product suite is needed, and aid in focusing convective weather research efforts moving forward.

Activity: Cockpit Weather Technology Advances

Addresses the need for enhanced cockpit weather technology, information, and human factors principals to achieve objectives of improved aviation operational efficiency and safety, reduced flight delays, and reduced greenhouse gas emissions due to adverse weather.

Target: Identify enhancements to incorporate into Flight Profiler Software

Identify enhancements to incorporate into Flight Profiler that have potential to enhance its capability as a preflight weather briefing tool and incorporate the selected enhancements into the Flight Profiler software to enable its use in a benefits assessment.

Target: Assessment of potential benefits of incorporating weather cognitive decision support functions into MITRE's Digital Copilot

Perform an assessment of potential benefits of incorporating weather cognitive decision support functions into MITRE's Digital Copilot and obtain recommendations for additional specific weather cognitive decision support functions to incorporate with potential to provide benefits to pilots.

Initiative: NextGen

Support National Airspace System (NAS) modernization and evolution through infrastructure improvements, technology, information sharing, and community engagement.

Activity: Dynamic Airspace

Dynamic Airspace will continue to perform research and analysis that allows dynamic reconfiguration of the existing NAS automation infrastructure. The project will continue to explore options to utilize cloud environment and micro-services architecture the enable the availability of flight and surveillance data necessary in the Automation Evolution Strategy (AES) Research and Development Operating Environment (RD-OE) to support the future proof of concept activities.

Target: Conduct an analysis of Controller Pilot Data Link Communications (CPDLC) for Dynamic Airspace

This analysis will examine Controller Pilot Data Link Communications (CPDLC) in the context of Dynamic Airspace and the potential benefits CPDLC may have for Dynamic Airspace capabilities. This task will also focus on investigating future areas of growth and integration for communications data between Dynamic Airspace and CPDLC

Target: Develop Terminal Airspace Use Cases

This task will build on the previous activity to further explore the application of Dynamic Airspace to the Terminal environment by identifying new scenarios and the complexity of Dynamic Airspace use cases in the TRACON. This task will result in the analysis of Air Traffic Control (ATC) and Air Traffic Management (ATM) data elements in Terminal use cases where the flow of information can be identified to support Dynamic Airspace capabilities in the Automated Evolution Strategy Research & Development Operating Environment.

Activity: Established on Required Navigation Performance

Established on Required Navigation Performance (EoR) utilizes the accuracy of Required Navigation Performance (RNP) instrument approach procedures (IAPs) to call aircraft established earlier in the final approach. The project will continue to collect data on facilities recently implementing EoR, engaging with additional candidate facilities, developing a strategy for upcoming safety analyses, and new EoR configurations.

Target: Established on Required (EoR) Los Angeles International Airport (LAX) Project FLY IT Timeline

Prepare the project Work Breakdown Structure (WBS) timeline for a future Established on Required (EoR)Navigation Performance (RNP) application to commence operations at Los Angeles International Airport (LAX). This timeline includes required activities for all National and local stakeholders including Southern California, LAX Tower, Mission Support (AJV) , Flight Standards (AFS), flight procedures and LAX operations. This effort will finalize a detailed “EoR LAX Project Timeline” identifying all required EoR FLY IT activities including procedures, waivers, automation, training, and operator dependencies into a single integrated timeline.

Target: Established on Required (EOR) with xLS update to Concept of Operations

As the Established on RNP (EoR) application evolves the use of EoR with Any Landing system (xLS) needs to be researched and documented. Note: xLS is a generic landing system and includes Instrument Landing System (ILS), Global Positioning Landing System, or Microwave Landing System. The EoR Concept of Operations (ConOps) needs to be reviewed and updated with specific xLS language. An EoR with xLS concept section will be vetted with stakeholders including Flight Standards and an xLS update to the EoR ConOps will be completed.

Activity: Post-departure Coordination and Airborne Negotiation (PCAN)

Post-departure Coordination and Airborne Negotiation (PCAN) continues to mature the International Civil Aviation Organization (ICAO) Flight and Flow Information for Collaborative Environment Release 2 (FF-ICE/R2) concept. PCAN will build upon the outcomes and lessons learned of previous projects including Release 1 (FF-ICE/R1) Demonstration (i.e., International Interoperability Harmonization and Validation - IIH&V), FF-ICE/R2 Demonstration (i.e., FF-ICE/X Demo 1 and 2), and 4DT Live Flight Demonstrations (4DT LFDs) and develop outcome that will inform ICAO FF-ICE Implementation Guidance. To support and help verify the engineering analysis, the project will include guided discussion and tabletop exercises with operational subject matter experts, technical subject matter experts, and potentially international partners.

Target: Post-departure Coordination and Airborne Negotiation PCAN & Flow Information for Collaborative Environment Release 2 (FF-ICE/R2) Concept

Develop a report to capture proposed input to the International Civil Aviation Organization (ICAO) Flow Information for Collaborative Environment (FF-ICE) Implementation Guidance based on FF-ICE/R2 concepts, which have been matured through PCAN project in FY23. This activity will include conducting working group (WG) sessions with the ICAO Air Traffic Management Requirement and Performance Panel (ATMRPP) members (volunteers to be on the working group) to review and adjust the input. The FF-ICE/R2 Implementation Guidance Input, after the review with the WG, will be presented to the ATMRPP to begin the process of incorporation into the FF-ICE Implementation Guidance.

Activity: Multiple Airport Route Separation

Multiple Airport Route Separation (MARS) leverages is the Established on Required Navigation Performance (EoR) concept of considering aircraft established on a Performance Based Navigation (PBN) procedure and extends it to flows of traffic to and from multiple airports in close proximity. The project will complete MARS Phase I safety analysis and conduct a MARS Phase II Human in the Loop (HITL) testing.

Target: Multiple Airport Route Separation (MARS) Phase I National Airspace Document Change Proposal Plan

Complete the Multiple Airport Route Separation (MARS) Phase I National Air Space (NAS) Document Change Proposal (DCP) Plan on how best to assess safety hazards associated with implementing the MARS Phase I safety analysis results/safety criteria. This includes collaborating with AJV to strategize the DCP Plan and gathering the proper Safety Risk Management (SRM) artifacts to support a National SRM panel. A “MARS Phase I NAS DCP Plan” will be drafted outlining what is needed to complete this effort.

Target: Multiple Airport Route Separation (MARS) Phase I Candidate Outreach Report

After Multiple Airport Route Separation (MARS) Phase I draft safety analysis criteria is known, the next steps are to begin the process to identify candidate airports as potential launch sites. Launch sites are needed to conduct the related concept validation activities. The team will meet with potential candidate sites to perform a deeper look and understanding of local operations and procedures. A “MARS Phase I Candidate Outreach Report” will be compiled with findings and recommended candidate launch sites.

Activity: Separation Automation System Engineering - Separation Services Engineering

Separation Services Engineering (SSE) is a pre-implementation project that matures emerging NextGen Separation Management automation capabilities and develops automation enhancements for En Route, Terminal, and Oceanic domains to support NextGen and the emerging NAS Future Vision. In accordance with the goals of the NAS Future Vision that seek to leverage technological advancements, SASE-SSE effort will include additional service-based design, develop additional prototypes to evaluate the feasibility of independent micro-services related to separation management in a diverse ATM environment, deploy service prototypes in the FAA Research and development lab environment and focus on service interoperability and interfaces.

Target: Reroute Planning and Trajectory Modeling Service Decomposition and Design Report

Enhancing the trajectory modeling components from FY22 services created to maintain the current Aircraft Trajectory (e.g., with track and flight data updates) and form it into a standalone TM Service that provides the required trajectory information to the CP Service. A Reroute Planning Service to support separation management planning will also be created using existing lab capabilities; this service will use the TM and CP Services to respectively model and probe the reroute plans. Other functions will be included as required. These new services will be designed to align with the MSA, provide algorithm-level design information, and map to current En-Route Automation Modernization (ERAM) functionality. This task will also coordinate with ongoing FAA work aimed at the cross-domain definition of Reroute Planning and Trajectory Modeling services and ensure that the services being prototyped are compatible and extensible to these definitions. A report will be delivered that includes service design documentation for both RP and TM services.

Target: Service Prototype Demonstration at an FAA Research and Development Lab

Demonstrate the operation of the SSE Service Prototypes at the William J. Hughes Technical Center, using DESIREE as the Service Consumer. This could entail physical integration into the William J. Hughes Technical Center, or a cloud-based service to be accessed from one or more William J. Hughes Technical Center (or other FAA) labs. A demonstration at the William J. Hughes Technical Center of this system will be conducted and a technical briefing summarizing the results will be provided.

Activity: Flow Object

Today's NAS has many exchanges of flow information, but there is no common reference for how that information is shared. Without a common picture of the flow domain, it will be difficult to modernize components of the NAS or to enable future technologies and information exchanges. A "Flow Object" concept developed in this project will represent a common reference for Flow information.

Target: Complete Flow Object Engineering Checkpoint

Complete Flow Object Engineering Checkpoint with project stakeholders. Results of the checkpoint will be captured as slides containing information discussed.

Target: Complete Flow Object Proof of Concept 1.0 demonstration

Complete Flow Object Proof of Concept 1.0 demonstration to prove out the use cases that will utilize the various Flow Object functions.

Activity: Traffic Management Initiative (TMI) Recommender

Advanced Methods work focuses on expanding prototyping activities to further develop new technologies, record lessons learned, and describe use cases surrounding the use of the new technologies for Traffic Flow Management

Target: Traffic Management Initiative (TMI) Recommender Development

Complete Traffic Management Initiative (TMI) Recommender Metrics Analysis and Report. This document will discuss the importance of each metric, metric prioritization depending on the operational situation, and situational nuances to consider during TMI evaluation.

Target: Complete Novel (Traffic Management Initiative) TMI Parameter Machine Learning Prototype Capability 3.0

Complete Novel Traffic Management Initiative (TMI) Parameter Machine Learning Prototype Capability 3.0 Progress Report. This report will contain development activities and findings

Activity: Surface Tactical Flow Program

The Surface Tactical Flow (STF) program will provide the tools necessary to achieve a fully collaborative surface environment where the input of airspace users, airports, and air traffic controllers are all used to provide a shared surface situational awareness and improved predictability.

Target: Implementation Plan for Pacer in Current Automation Environment

Complete an Implementation Plan for the implementation of Pacer between the FAA and a third-party pilot app provider in support of a key implementation. The implementation plan will describe a potential operational test and evaluation in support of risk reduction.

Target: Simulation and Evaluation Report for the High-Fidelity Simulation at Williams J. Hughes Technical Center (WJHTC) of Electronic Call for Release (E-CFR) Time Coordination and Mobile Clearance Delivery

The simulation and evaluation report will include simulation test plan and test scenarios, description of anticipated simulation risks and opportunities, simulation software and architecture, metrics collection and data analysis, recommendations for next steps, and identification of needs and recipients for potential E-CFR technological transfer with consideration of other mobile services and initiatives.

Activity: Closely Space Parallel Operations

Closely space parallel operations (CSPO) explores concepts to increase airport capacity through reduced separation standards, expand applications of dependent and independent operations, and enable operations in lower visibility conditions. Will focus on conducting safety and engineering analysis as well as stakeholder outreach activities for implementational options of various CSPO separation reduction concepts.

Target: Develop Memo documenting facility briefing and feedback from Air Traffic facilities on the change to the 7110.65z- Para 5-8-3 Successive or Simultaneous Departure

The closely spaced parallel operations team will coordinate with stakeholders to draft a message of the procedure change that was published in the Air Traffic Control (ATC) handbook in November of 2022 to notify Air Traffic of the new standards that can be leveraged at qualifying airports. The program will provide support and gather feedback from participating stakeholders.

Target: Develop Memo to document findings from the final Stakeholder Meeting for Extension combined with Reductions in Minimum Radar Separation

The closely spaced parallel Operations (CSPO) program will review and provide analysis with stakeholders associated with the evaluation of Extension combined with Reductions in Minimum Radar Separation concept. This analysis will provide the CSPO team an opportunity to review the final results of the collision risk safety analysis conducted on this concept and gather feedback on next steps for the project.

Activity: Notice to Airmen Aircraft Category Information

Conduct additional analysis and develop strategies for additional updates to the NOTAM operating environment and apply modern techniques to support future capabilities.

Target: Enterprise Services Infrastructure Framework (ESIF) Report

Identify and document all functions within the Notice to Airmen Modernization (NOTAM) system. To be used for identifying which systems can be converted into microservices and which systems need to be updated to be made digital.

Activity: Wake Turbulence Enhancement of Arrivals and Departures Collaboration

International working groups are looking at enhanced methods of providing wake turbulence mitigation utilizing currently available technology. ANG-C will lead the development of wake turbulence mitigation separation standards, procedures, processes, and enabling technology research. The program will perform analysis, modeling, concept development, and data collection activities necessary to accomplish the NextGen Wake Turbulence research in the areas such as new aircraft entry into service, Closely Space Parallel Operations (CSPO) separation reduction concepts, and new entrance operations (e.g. Advanced Air Mobility, Urban Air Mobility)

Target: Shortfall Analysis of Wake Hazard controller Decision Support Tools (DST) Design Using available Weather Data

Develop and document shortfall analysis for terminal and en route airspace real-time weather requirements for wake hazard mitigation Decision Support Tools (DSTs).

Target: Complete assessments for new aircraft type wake separation recommendations requested by the Air Traffic Organization (ATO) through the agreed upon Memorandum of Understanding process.

Complete assessments for new aircraft type wake separation recommendations requested by the Air Traffic Organization (ATO) through the agreed upon Memorandum of Understanding (MOU) process requested by the Air Traffic Organization (ATO) through the agreed upon MOU process and document memo requests received and response delivered to ATO by the Wake program.