Airspace Modernization Group Industry Day Update

Presented to: TBO and Airspace Modernization Industry Day
Presented by: AJV-S3

Federal Aviation Administration

Airspace Modernization Group (AJV-S3)

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Airspace Modernization Roadmap

Presented to: TBO and Airspace Modernization Industry Day
Presented by: Jim Arrighi, Program Control Manager, AJV-S3

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Overview

Where are we today?

Where do we need to go?

What do we need to get there?

PBN NAS Navigation Strategy

Airspace Modernization Roadmap

National Strategic Oversight — FAA Headquarters leadership and direction on strategic priorities, integration, resources, and messaging

A vision document which lays-out a desired end state and high-level commitments through 2030

A national roadmap to continuously evaluate and/or modernize our airspace infrastructure and processes

Regional Execution — Regional prioritization, collaboration, and resource deployment, based on local considerations and aligned with the national strategy

Airspace Modernization: Key Objectives

- Develop Airport Portfolios for NSG 1 and NSG 2 airports

- Stand-up Service Area Leadership Teams

- Develop a recurring, integrated schedule of modernization activities by Service Area (airspace infrastructure)

- Better align airspace reviews, IFP reviews, modernization activities, and other programs
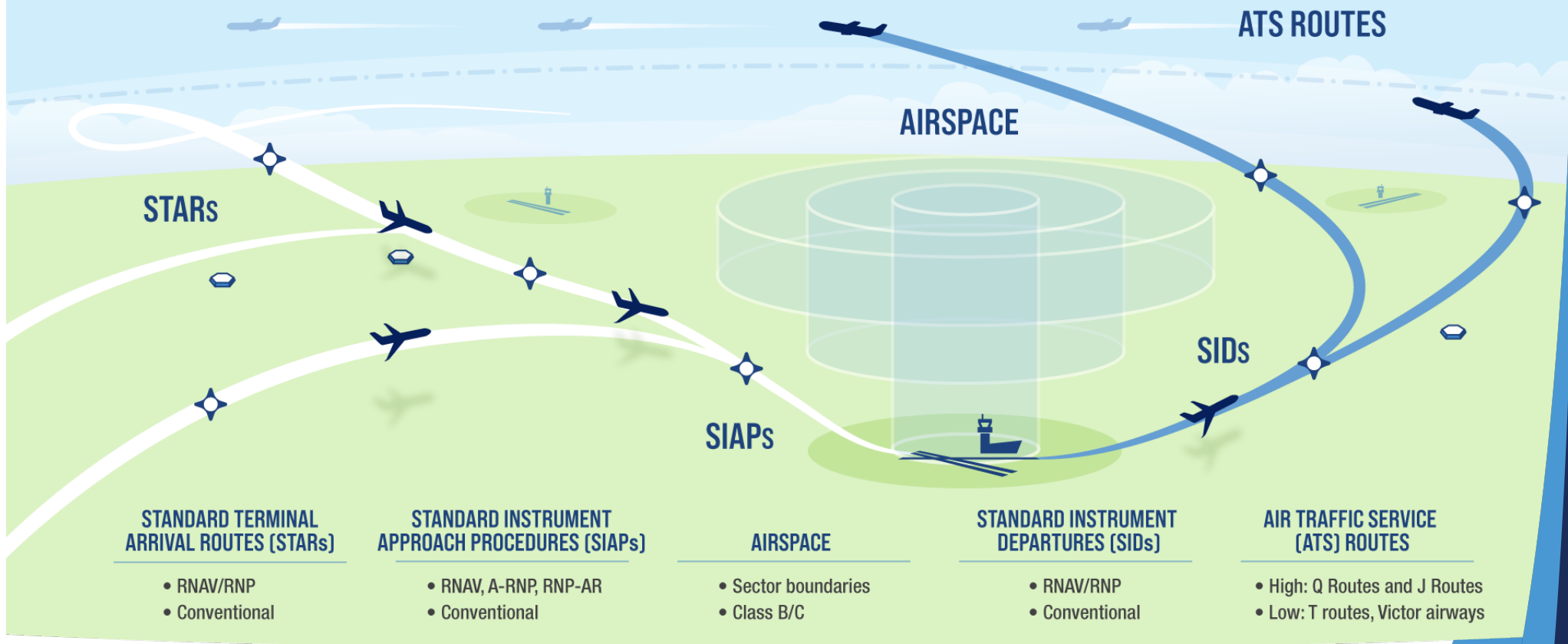
Airspace Modernization Strategy
New way: Integrated, Sustainable, Agile

National Strategic Oversight

FAA

Overall goals and objectives developed at the senior executive level.

Implementation of stated goals are executed at the regional team level.

Service Area Leadership Team

Diagnostics   **Service Centers**   **Regional Execution**

Identify Needs   **Airports & ATC Facilities**   **Service Delivery**

Airspace Infrastructure Scope

ATS ROUTES

AIRSPACE

STARs

SIDs

SIAPs

STANDARD TERMINAL ARRIVAL ROUTES (STARs)	STANDARD INSTRUMENT APPROACH PROCEDURES (SIAPs)	AIRSPACE	STANDARD INSTRUMENT DEPARTURES (SIDs)	AIR TRAFFIC SERVICE (ATS) ROUTES
• RNAV/RNP • Conventional	• RNAV, A-RNP, RNP-AR • Conventional	• Sector boundaries • Class B/C	• RNAV/RNP • Conventional	• High: Q Routes and J Routes • Low: T routes, Victor airways

OTHER CAPABILITIES   Trajectory Based Operations (TBO) • Established on RNP (EoR) • Multiple Airport Route Separation (MARS)

What is an airport portfolio?

An airport portfolio provides full awareness of current and future plans, activities, and operations at a specific airport and its corresponding airspace, enabling regional prioritization, scheduling, and execution aligned with FAA national priorities and strategies.
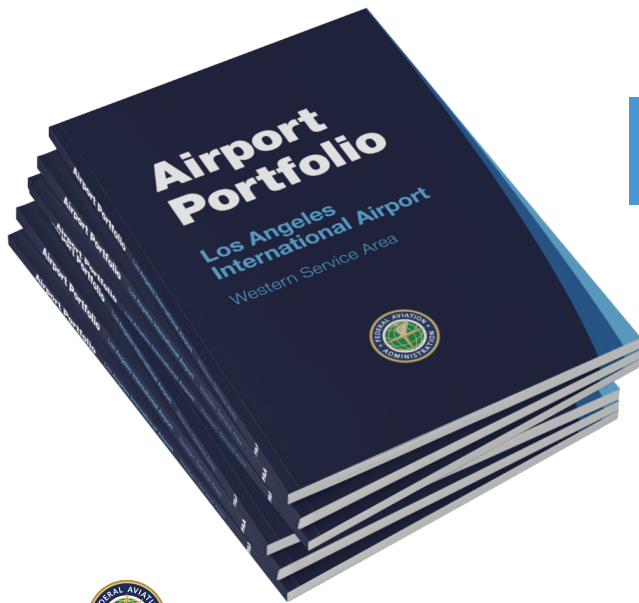
Current and Expected Infrastructure Elements
- Regulatory and non-regulatory airspace and procedures
- ATC automation systems
- CNS infrastructure

Current and Expected Operational Performance
- Emerging safety issues
- System efficiencies
- Evolving capabilities

Current and Expected Airport Operations
- Changes in services
- Infrastructure improvements

Where do we need to go?

From:

- Modernization activities conducted tactically by stakeholder request, and individual programs (separate, uncoordinated requests at a single location)

- Resources deployed according to individual requests and programs (assigned tactically)

- Responsive, reactive messaging developed by FAA organizations to address inquiring stakeholders/Congress
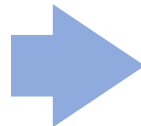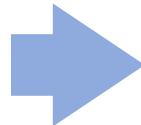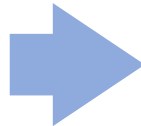
To:

- Modernization activities are planned and integrated to align with national strategy and priorities (enabling multiple capabilities in a holistic and coordinated manner)

- Resources are planned and deployed according to national strategy and priorities (long-term planning enables agile, sustainable execution)

- Messaging is developed from an agency perspective to ensure consistent, credible communications and responses to stakeholders/Congress

Airspace Modernization Roadmap Initial Steps

Developed the draft *PBN NAS Navigation Strategy Implementation Plan Update* ✅

Socialize the draft *Airspace Modernization Roadmap*

Establish and operationalize Service Area Leadership Teams (SALTs)

Initiate recurring Airspace Modernization activities by Service Area

Transition to airport portfolios

Identify opportunities for national integration process and automation

Expand ability to plan and manage IFP publication capacity

Implement national integration automation solutions

Airspace Modernization Focus Concept Overview

Presented to: TBO and Airspace Modernization Industry Day
Presented by: Juan Narvid, Strategy and Prioritization Manager, AJV-S3

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Airspace Modernization: Focus Areas

- Airspace Evolution
- Inventory Optimization
- Concept Advancement
- Process Streamlining

Airspace Evolution

Presented to: TBO and Airspace Modernization Industry Day
Presented by: Mark Phipps, Airspace Evolution Lead

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Airspace Evolution

What does it mean?

Implement the right airspace infrastructure to meet the need

How will we do it?

Identify the holistic portfolio of airspace infrastructure improvements and implementation timeframes

- Focused on airspace infrastructure needs at NSG 1 and 2 airports

- Airspace infrastructure needs at NSG 3+ airports addressed on a recurring basis through biennial airspace reviews, IFP periodic reviews, and traditional requests through the IFP Gateway process

Prioritization & Scheduling

- Safety is our number one priority

- Initial prioritization of NSG 1 and 2 airports for airspace redesign using safety, efficiency/emissions, and operations metrics.

- Ultimately, quantitative metrics will be considered alongside qualitative and scheduling inputs to determine prioritization and scheduling of modernization activities.

Airport Prioritization

Next Steps

- Develop Airspace Modernization Playbook describing processes, roles, and responsibilities for execution of Airspace Evolution activities

- Continue to develop quantitative and qualitative prioritization information as well as NSG 1 and 2 airport portfolios

- Establish SALTs to lead integration, prioritization, and execution of modernization activities in alignment with national strategies

Inventory Optimization

Presented to: TBO and Airspace Modernization Industry Day
Presented by: John Bordy, Inventory Optimization Lead

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Inventory Optimization

- Inventory Optimization is a systematic approach to modernize and improve our IFP inventory to maintain safety and an acceptable level of service, with an initial focus on retiring underutilized IFPs.

- The IFP inventory has quadrupled in the last 20 years, without any system in place to regularly assess the usage of procedures.
  - Analysis indicates approximately 20% of the inventory has limited benefit to the NAS when factoring costs to retain those IFPs.

- The benefits of retiring IFPs with minimal usage include:
  - Cost reductions related to the recurring maintenance of IFPs
  - Reduced charting costs
  - Eliminates requirement for periodic flight validation
  - Decreases the number of IFP NOTAMs
  - Allows resources to be allocated towards new IFPs and amendments

Inventory Optimization – Next Steps

- Integrating optimization activities with existing processes.
    - NPA, VOR MON, biennial airspace reviews, proposed amendments, etc.

- Establish a process to review and optimize IFP inventory on a regular and recurrent basis.
    - Analyze usage of IFP before conducting a periodic review

- Leveraging technology and automation to quantify IFP usage.
    - Quantify usage using the IFP Retirement Analytics module
    - APWS, Periodic Review Application

- Improve IFP Inventory management process

Concept Advancement

Presented to: TBO and Airspace Modernization Industry Day
Presented by: Nick Tallman, Concept Advancement Lead

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Concept Advancement Purpose

- Identify, promote and advance innovative concepts needed to meet airspace modernization strategic objectives

- Some identified concepts are noted in PBN NAS Navigation Strategy 2016 and others have emerged more recently

- Concepts vary in state of maturity and operational readiness

- Concept development and implementation must deliver capabilities linked to Airspace Modernization Roadmap

Selected Concept and Capabilities Examples

PBN Modernization Strategies

Advanced RNP (A-RNP) applications

RF/TF Overlay

ADS-B Supported Concepts

5-to-3 NM Separation below FL230

PBN-Supported Separation

ELSO

EoR – Independent and Dependent

Multiple Airport Route Spacing (MARS)

PBN Approaches with Visual Separation

Established on Departure Operations (EDO)

Vertically Established Operations (VEO)

Process Streamlining

Presented to: Industry Day
Presented by: Juan Narvid, Strategy and Prioritization Manager, AJV-S3

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Process Streamlining

- Focus Area Outcome: streamline processes to enhance analytics, improve automation & project management
- Define airport portfolios & design process for bringing in data/analysis

Questions?

Juan Narvid, Strategy and Prioritization Team Manager, AJV-S3

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