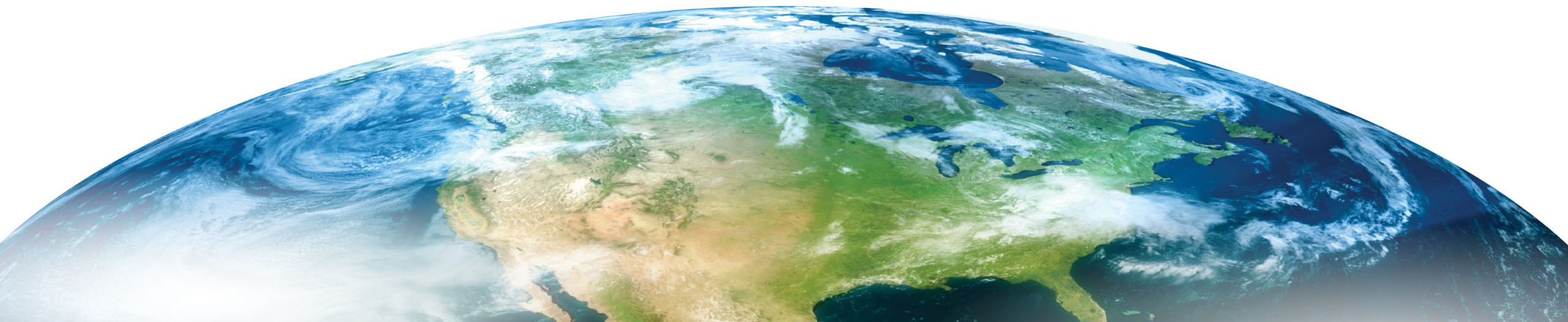




Next**GEN**

NAS 2035 Overview to The REDAC

September 2, 2020



NAS 2035 Vision

Highlights

- ✓ The NAS 2035 Vision utilizes innovative technologies and policies to build on the successes of NextGen
- ✓ Engaging with SMEs across the LOBs and SOs, ANG developed an informed vision of the future of the NAS by looking at operations, infrastructure and safety assurance.
- ✓ The result is a holistic and interconnected framework that supports the Administrator's efforts to chart the FAA's future.
- ✓ This briefing will show you the initial vision and framework for NAS 2035, update you on progress and preview the next steps.

NAS 2035 Vision

The Path to NAS 2035

- **Path to NAS 2035 (Advancing the NAS beyond NextGen)**

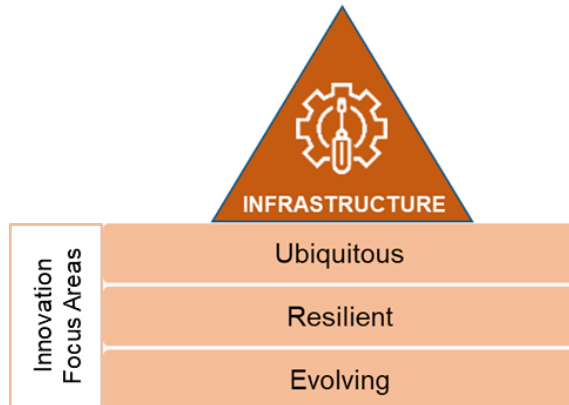
- ✓ Will build on the NextGen foundational infrastructure
- ✓ Will leverage NextGen and industry investments to provide additional capabilities to users beyond the Core-30
- ✓ Will address the key drivers of change in a manner that respects our principles of aviation while taking advantage of opportunities brought on by innovation and societal change.
- ✓ Will provide real-time safety analytics across all operations means safer skies for everyone
- ✓ Users will be more connected and information is readily available to support decision making.
 - Information is made available based on each participant's needs and access level

NAS 2035 Vision

The Three Pillars and Innovation Focus Areas



Operations in the 2035 NAS are characterized by collaboration among and within diverse traffic management services enabling the increased variety and number of new vehicles, missions, and operations. This collaboration is made possible through a fully integrated information regime with interoperable sharing of information. This can be leveraged to accurately estimate the current state and confidently predict the future state of the NAS, Increased agility in systems and services allows the NAS to adapt as needs evolve in unanticipated ways.



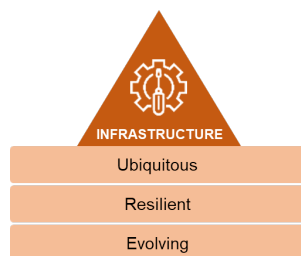
Infrastructure increasingly leverages commercial assets, services, and new technologies in support of operations across diverse traffic management services. This public and private infrastructure delivers traffic management services that are ubiquitous (available everywhere and always), resilient to unanticipated changes, and agile to respond to future user needs. Where necessary, public/private partnerships are established to help ensure any unique government requirements can be met through commercial services and technologies.



Safety Assurance for traffic management establishes tailored safety assurance to achieve acceptable safety based on operational characteristics. With big data, the NAS assures real-time safety through continuous monitoring, modeling, and verification to detect anomalies and correct for real-time spikes in risk. The compliance philosophy, including the use of the Safety Management System, assures each organization accounts for interoperability across a variety of new interactions including public vs private services, air vs ground systems, and automated vs manual control functions, all supporting increased diversity of operations.

NAS 2035 Framework

The Landscapes and Function Areas



Operational Landscape

- Concepts – ANG/AJV/AJT/AFS/AUS/ARP
- Diverse operations – ANG/AJV
- Airspace Design and Use – AJV/AJT/ANG

Technologies Landscape

- Adopt new technologies – Infrastructure (e.g., LEO, cloud) – ANG
- Re-architect existing infrastructure - e.g., microservices – AJM/ANG
- Cybersecurity in a full IP environment – information assurance, microsegmenting, zero trust, etc. – ANG/AJW/AIT

Information Landscape

- Integrated Information Regime – architecture – collection and management – AIT/AJM/AVS/ANG
- Policy and Use – what information from airlines, airframe, etc. – APO/AVS/ANG
- Technologies – machine learning and AI – ANG/AVS

Safety Landscape

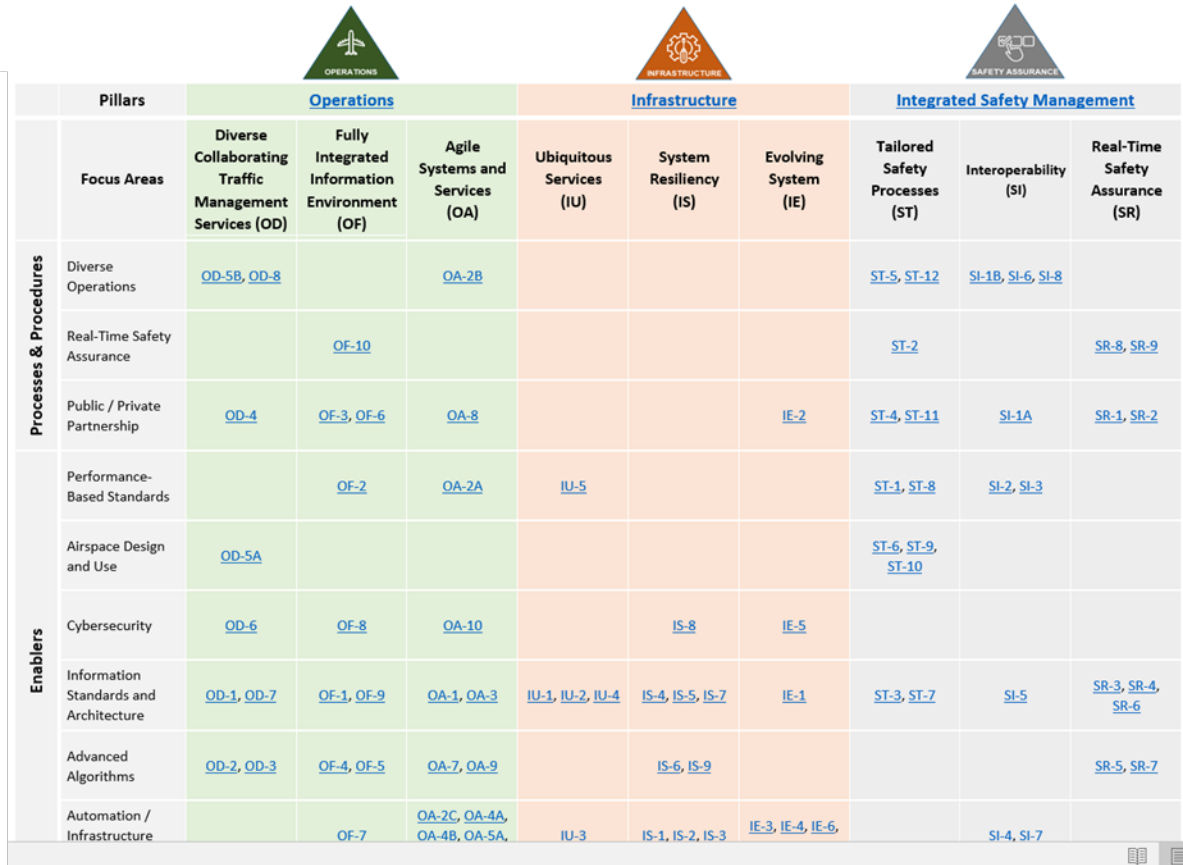
- Real time safety assurance – AVP/AJI/ANG

Performance Based/Strategy Landscape

- Private and public strategy – APL/AJM/AVS/ANG

NAS 2035 Key Activities

Dashboard Overview



Identifier	Pillar	Focus Area	Processes & Procedures / Enablers	Description
OF-1	Operations	Fully Integrated Information Environment	Information Standards and Architecture	Develop information architecture to store, transport and manage access to meet specific application needs.
OF-2	Operations	Fully Integrated Information Environment	Performance-Based Standards	In a quality of service perspective, establish performance on the information services to enable fit for purpose use and achieve the operational service performance defined in OD-1.
OF-3	Operations	Fully Integrated Information Environment	Public / Private Partnership	Utilizing meteorological (MET) data from private and public sources to support diverse operators (e.g., GA, UAS) in their operations
OF-4	Operations	Fully Integrated Information Environment	Advanced Algorithms	NAS infrastructure continuously reports status in a consumable format (e.g. digital and organized)
OF-5	Operations	Fully Integrated Information Environment	Advanced Algorithms	Current and projected state of the operating environment, including airspace and aerodrome, are known to support operator's planning and operations
OF-6	Operations	Fully Integrated Information Environment	Public / Private Partnership	Similar to USS/PSU, third party providers to support operator's planning and operations
OF-7	Operations	Fully Integrated Information Environment	Automation / Infrastructure Architecture	Establish a digital twin of the NAS with access to the NAS data. This would be the foundation for the research community. It can also be a mean for NAS monitoring.
OF-8	Operations	Fully Integrated Information Environment	Cybersecurity	All information exchanges are verified through the use of digital identities. The aviation system is micro-segmented into individual virtual enclaves with access to the enclave and the constituent applications supported by digital identities.
OF-9	Operations	Fully Integrated Information Environment	Information Standards and Architecture	Define the standards and mechanisms to ensure operating vehicles and operators continuously share position, intent and status information.
OF-10	Operations	Fully Integrated Information Environment	Real-Time Safety Assurance	To be effective, real-time safety assurance must not only identify potential safety concerns in real-time but must alert the appropriate actor (human or automation). This actor, together with the appropriate responses to the alerts, must be clearly identified.

NAS 2035 Vision

Summary

- Key elements of the NAS 2035 Vision concepts are in the FY22 budget request
 - Mapped current NextGen technologies to foundation of future NAS 2035 initiatives.
- Socializing the NAS 2035 Vision to SMEs across the Agency starting on July 6th
- Briefed the NAS 2035 Vision to NextGen Management Board on July 27th
- Working with AOA-3 to integrate the NAS 2035 Vision into the new FAA Strategic Plan
- The NAS 2035 Vision Document will be available for publication by Q1/Q2 of FY21

**THE FUTURE OF THE
NAS STARTS HERE**