

Federal Aviation Administration

Transforming the nation's air transportation system...

Michele Merkle

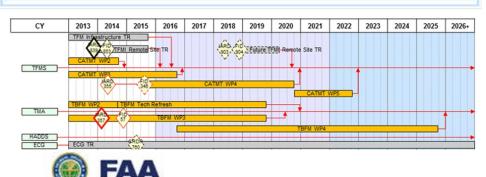
Director, Office of Systems Engineering for the National Airspace System

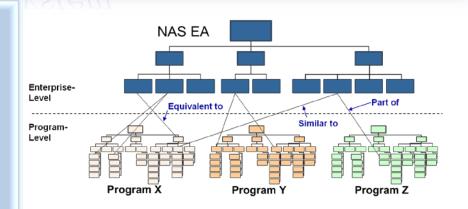


Office of NAS System Engineering

We architect the evolution of the National Airspace System (NAS) and provide Systems Engineering leadership in delivering the future Aviation System

- Enterprise Architecture (EA) & Requirements
- Enterprise Planning & Analysis
- Systems Engineering Information
 Management & Training
- Technical Standards Development
- Enterprise Safety
- Information Systems Security



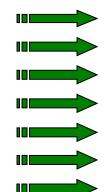




Next Generation Air Transportation System (NextGen)

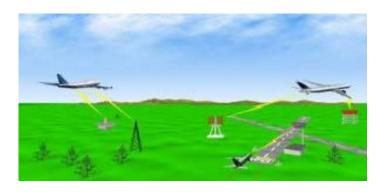
Legacy System

Radar Surveillance
Inefficient Routes
Voice Communications
Constrained Automation
Fragmented Weather Forecasting
Weather Restricted Visibility
Disparate Information
Nationwide Focus



NextGen

Performance Based Navigation
Voice & Digital Communications
Automated Decision Support Tools
Integrated Weather Information
Improved Access in Low Visibility
Enterprise Information Management
Focus on Congested Metroplexes







Delivers increased efficiency, flexibility, predictability, safety, environmental benefits.





How Do We Get There?

NAS Enterprise Architecture

National Airspace System Transition Roadmap

Current 2012



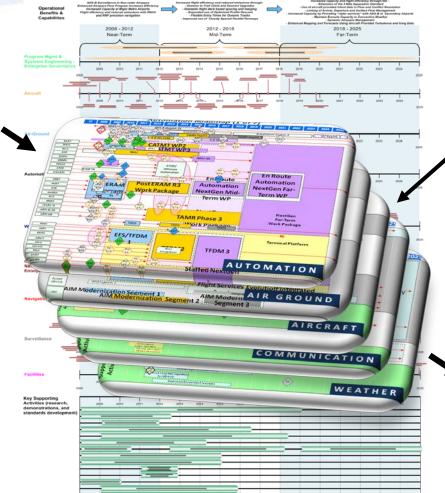
Airspace Redesign

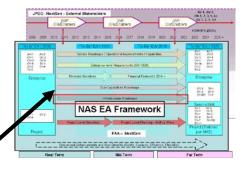
NextGen

Certification

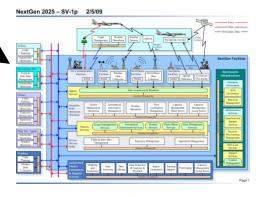
Technology

Research





NextGen 2025+





Rulemaking



Procedures

Avionics

Systems Engineering in the FAA

Safety Management System (SMS)

Service Analysis Concept & Requirements Definition

Investment Analysis Solution Implementation

In-Service Management

Systems Engineering Processes

Technical Management Disciplines Iteration as needed OCD FA RA ADS

Continuous application and adherence CM SEIM DA V&V

ConOps,
Functional
Architecture,
Program Req'ts,
Enterprise
Architectures

other supporting documentation

Process Legend OCD = Operational Concept Development ITM = Integrated Technical Mgmt

FA = Functional Analysis

RA = Requirements Analysis

ADS = Architectural Design Synthesis

IM = Interface Management

RM = Risk Management

CM = Configuration Management

DA = Decision Analysis

SEIM = SE Info Mgmt

V&V = Verification and

Validation





Complex Challenges Ahead



New Systems & Infrastructure

New Procedures

New Aircraft Capabilities

UAS & Commercial Spacecraft

Cyber Security
Threats

New Operational Practices

Discontinue Legacy
Operations



