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ICAO: UNITING AVIATION ON CLIMATE CHANGE

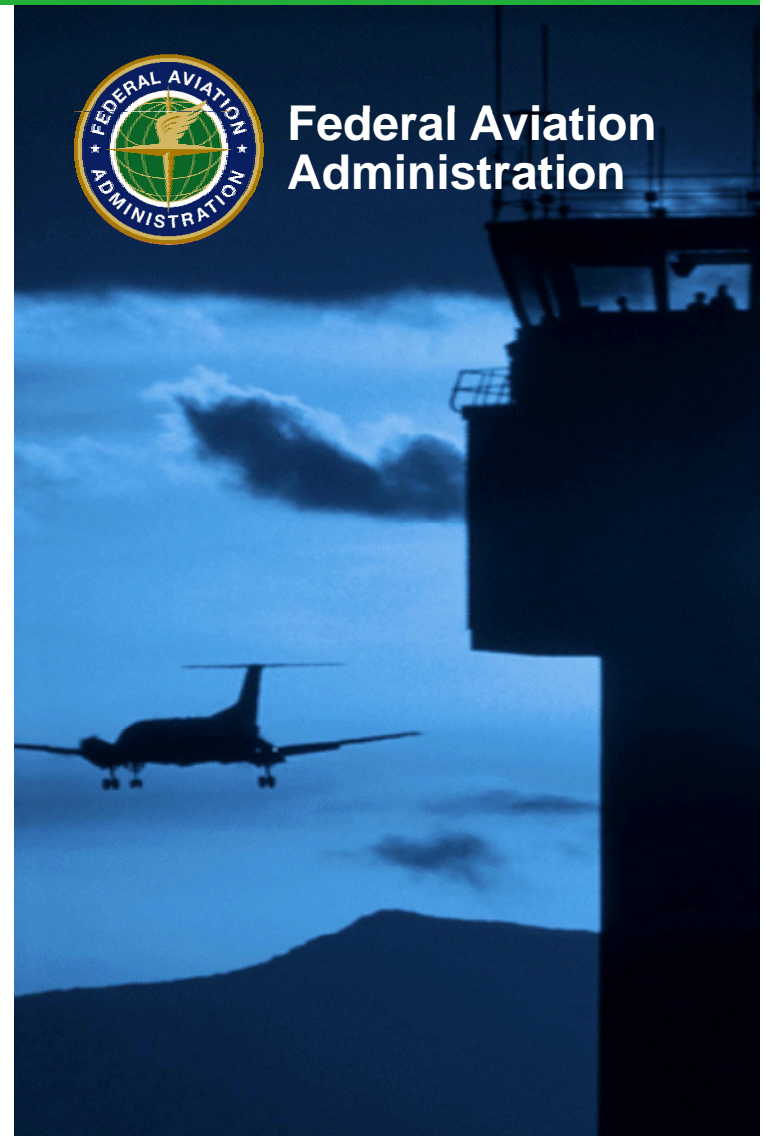
ICAO Colloquium on Aviation and Climate Change

NextGen and ASPIRE Environmental Initiatives

Presented to: ICAO Colloquium
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FAA, Air Traffic International
Office
Date: May 12-14, 2010



**Federal Aviation
Administration**





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NextGen Implementation Plan 2010

- **Primary goal to provide new capabilities to make air transportation safer and more reliable, improve the capacity of the National Airspace System (NAS), and reduce aviation's impact on our environment**
- **Greater emphasis on existing technologies and procedures**
- **Focus on dependencies and transformational programs**

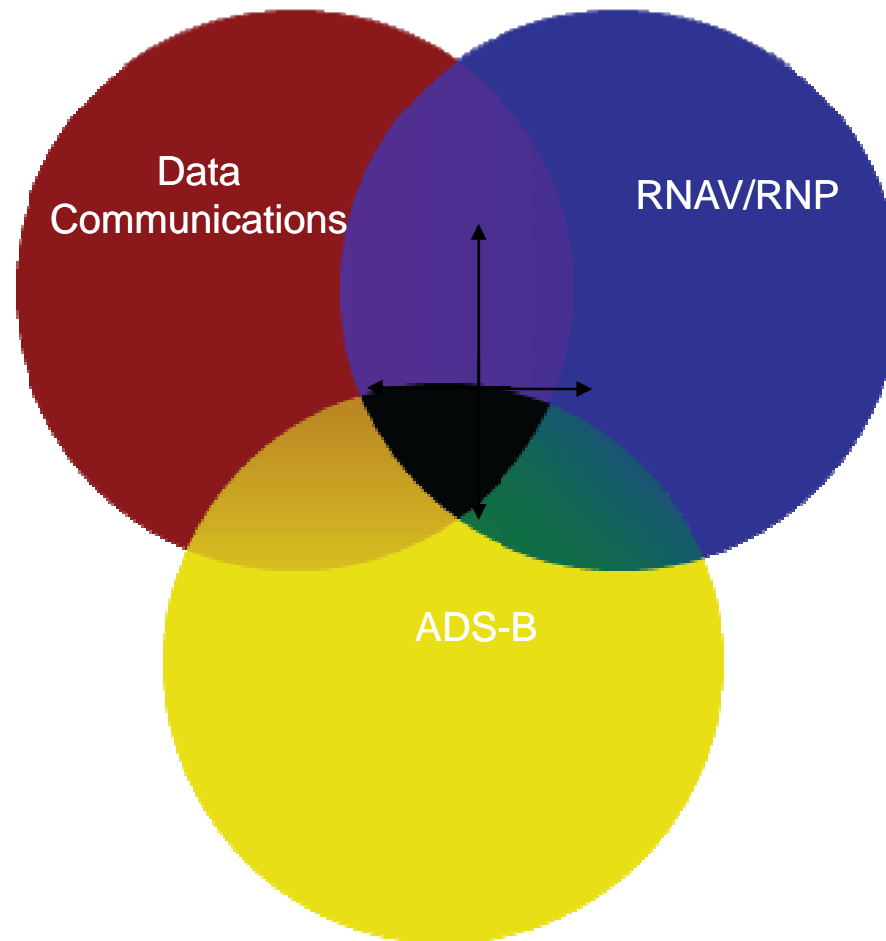




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NextGen Mid-Term Technologies....





NextGen Transformational Programs

Automatic Dependent Surveillance

– Broadcast (ADS-B)

- Infrastructure includes ground stations and aircraft avionics.

System Wide Information Management (SWIM)

- IT infrastructure program that makes it easier for FAA to create interfaces between systems.

Data Communications

- Communications Infrastructure where most functionality will flow through ERAM.

Network Enable Weather (NNEW)

- Provides weather data that can be shared by internal and external users

Stages of readiness:



Implementation



Investment Analysis

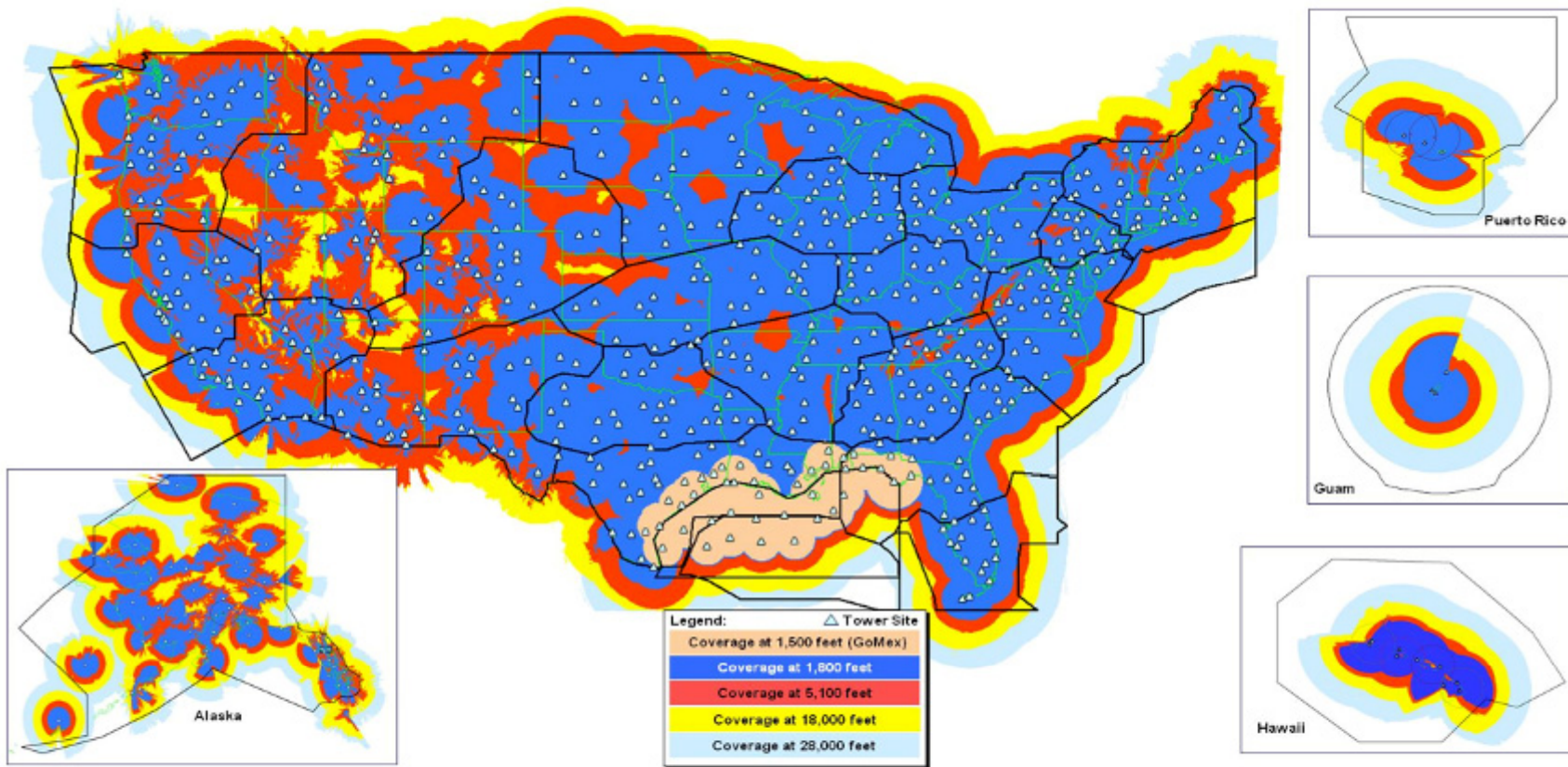


Concept Development



ADS-B: Nationwide Deployment with Extension to Some Non-Radar Areas

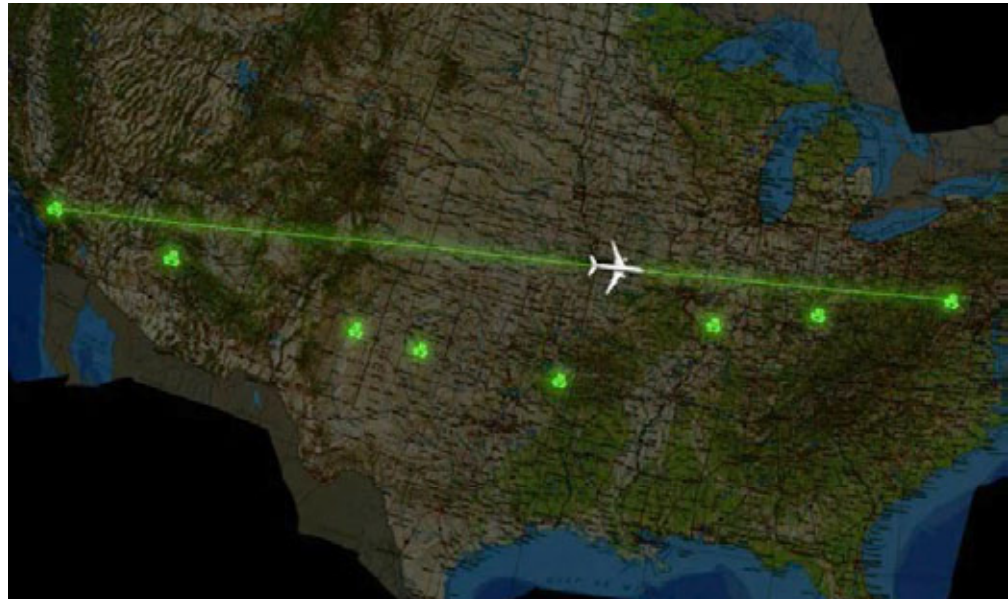
Nationwide build-out of ADS-B Ground Stations on track 2013 completion





Performance-Based Navigation RNAV & RNP

- 211 RNAV routes
- 331 RNAV standard departure/approach procedures
- 193 RNP SAAAR procedures

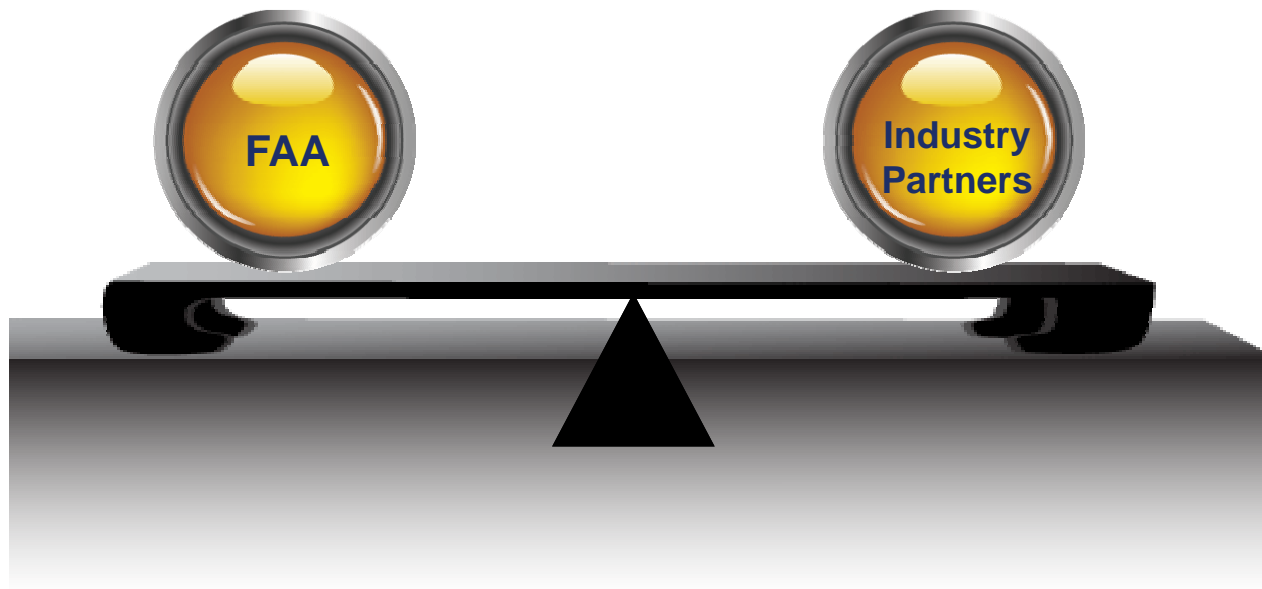




Industry Engagement

FAA is committed to:

- ✓ Mitigating the business risk
- ✓ Assume some of the risk
- ✓ Work with industry on the scheduled rollout





NextGen and the Environment

- **NextGen's Vision is to provide environmental protection that allows sustained aviation growth**
 - Through quieter, cleaner and more fuel efficient flights
 - Through use of alternative fuels, new equipment and operational procedures to lessen the impact on the climate
 - Through more precise flight paths to lessen the impact of noise



The ASIA and Pacific Initiative to Reduce Emissions (ASPIRE)

- ASPIRE is a regional approach to environmental stewardship
 - Accelerate and promote the development and implementation of operational procedures
 - Reduce the environmental footprint for all phases of flight on an operation by operation basis from gate to gate
 - Facilitate regional interoperability of environmentally friendly procedures and standards





The ASIA and Pacific Initiative to Reduce Emissions (ASPIRE)

- Emphasizes
 - Best Practices for ASIA-Pacific international flights
 - Shared performance measurement
 - Collaborative efficiency improvement through enhanced procedures and technologies
 - Shared operational demonstration exercises





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ASIA AND PACIFIC

INITIATIVE TO REDUCE EMISSIONS



AIRSERVICES AUSTRALIA

AIRWAYS

NEW ZEALAND



Federal Aviation Administration



JCAB
Japan Civil Aviation Bureau



Civil Aviation Authority of Singapore



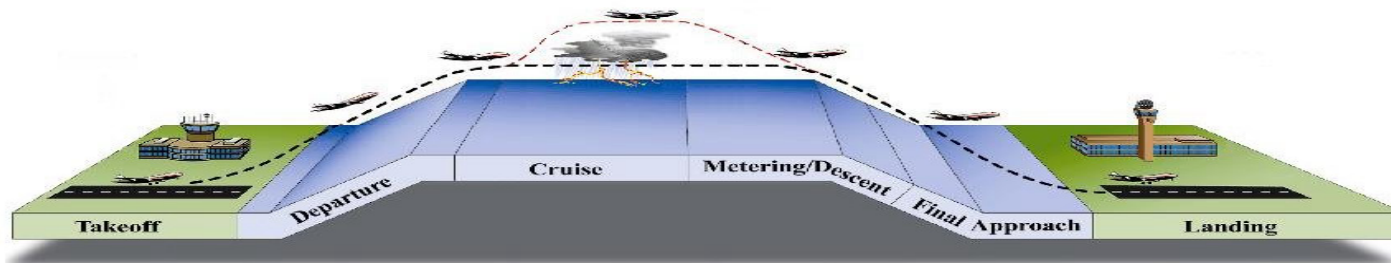


ASPIRE Recommended Best Practices

- Asia and Pacific procedures, practices or services that have *demonstrated* success in the reduction of fuel burn and emissions
- Examples include:
 - User Preferred Routes (UPR)
 - Dynamic Airborne Reroute Procedures (DARP)
 - Performance Based Navigation (PBN) Separation
 - Reduced Vertical Separation Minima (RVSM)
 - Optimized Profile Descents



ASPIRE Flight Concept



- The ASPIRE Partners Have Conducted Five Gate to Gate Green Flight demonstrations, involving:
 - No-Delay Taxi to Runway / No-Delay Taxi to Gate
 - Unimpeded Climb-out on Departure
 - User Preferred Routes for Oceanic Phase of Flight
 - Dynamic Airborne Reroutes (DARP)
 - Reduced Vertical Separation Minima (RVSM)
 - Cruise Climb
 - Variable Optimized Speed
 - Tailored Arrival to the Approach



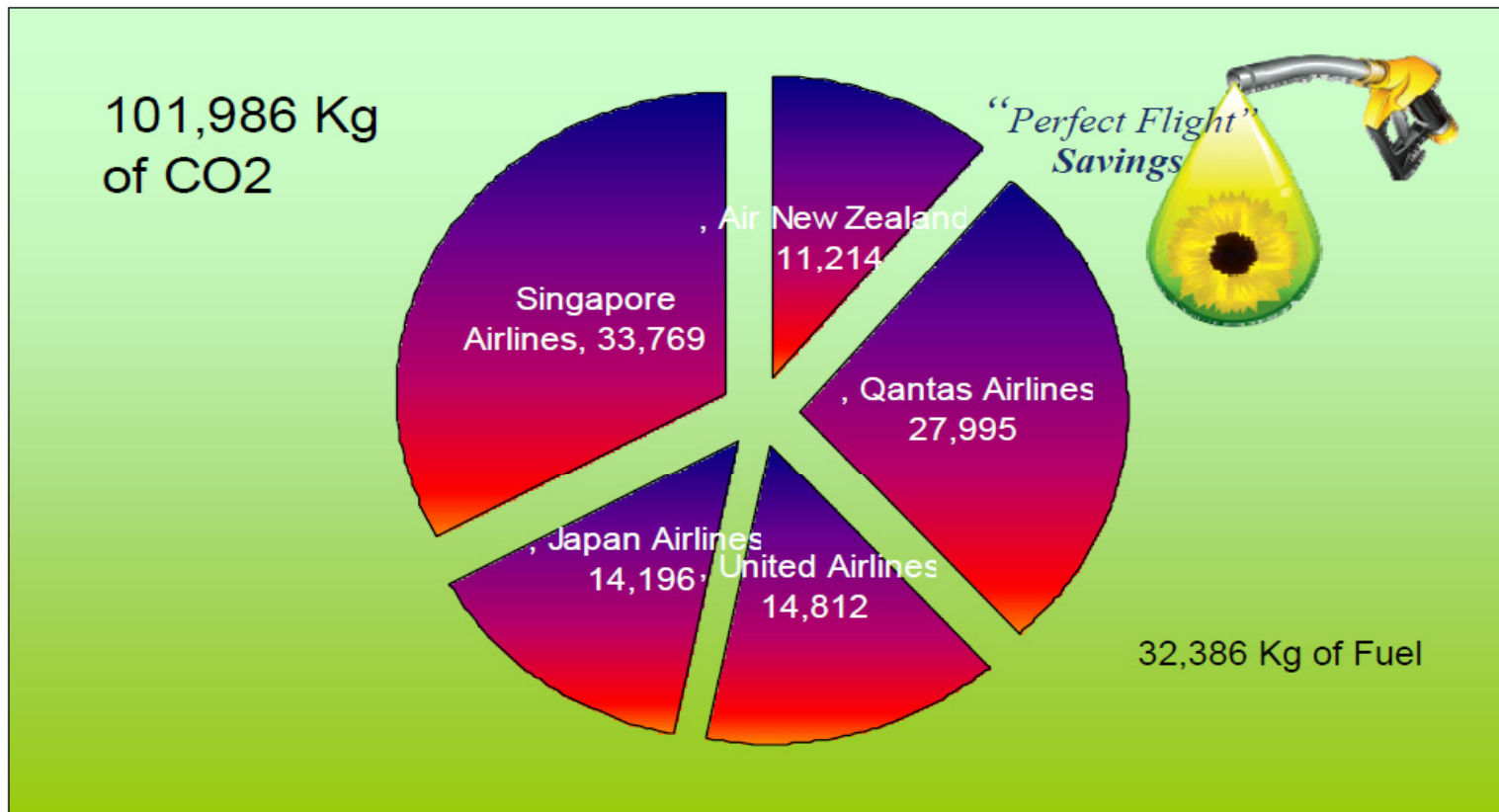
ASPIRE Flight Success

- Demonstrate snapshot of best environmental efficiency:
 - Using today's technology and procedures, and
 - Removing controllable constraints

ASPIRE One	Air New Zealand	B777	Auckland to SFO
ASPIRE Two	Qantas Airlines	A380	Los Angeles to Melbourne
ASPIRE Three	United Airlines	B744	Sydney to SFO
ASPIRE Four	Japan Airlines	B744	Honolulu to Osaka
ASPIRE Five	Singapore Airlines	B744	Los Angeles to Narita to Singapore



ASPIRE Flights Summary Fuel Savings





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Find further information on

ASPIRE at:

www.aspire-green.com