RTCA

THE GOLD STANDARD FOR AVIATION SINCE 1935

Airline Dispatchers Federation
"Leading the Way By Strategic Collaboration"

Orlando, FL
October 11, 2012

RTCA Membership
A Unique Public-Private Partnership

RTCA has 411 members:

- **Academia**
- **Aircraft operators – airlines (pilots, dispatchers), general aviation, DoD**
- **Airports**
- **Airspace users**
- **Aviation service providers**
- **Controllers**
- **Government organizations**
- **Manufacturers**
- **R&D organizations**
- **Suppliers of automation, infrastructure and avionics**

Purpose of RTCA Federal Advisory Committees

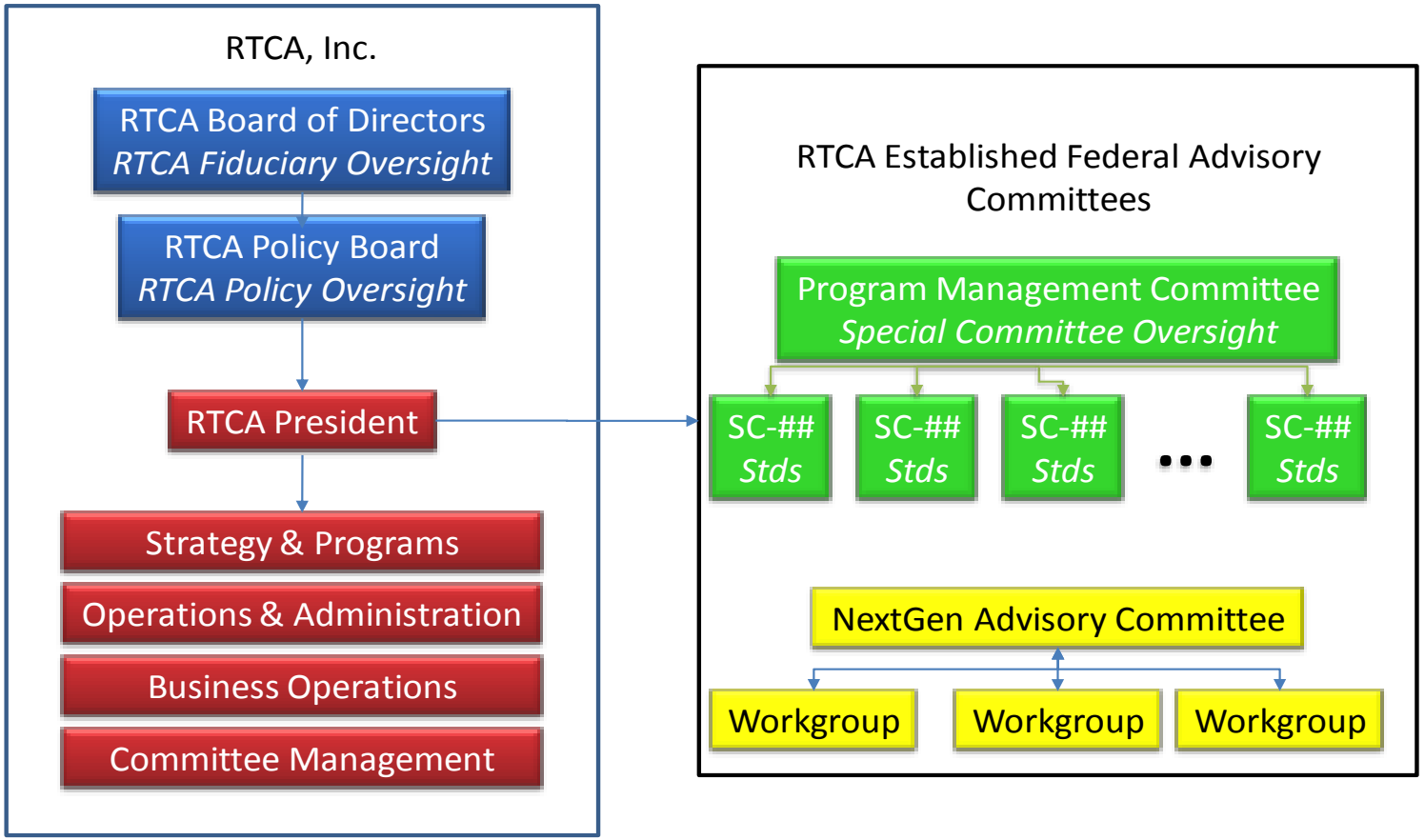
- Provides consensus-based recommendations
- Expands marketplace of solutions
- Provides anti-trust protection for sharing info

RTCA Established as a U.S. Federal Advisory Committee

- Public Law 92-463
- Chartered by the FAA
- Deliver objective & independent advice to FAA
- Membership balanced representation from community
- Promote openness, accountability & balance of viewpoints

RTCA: Venue for Aviation Community Participation in Evolution to NextGen

RTCA Organization



RTCA Volunteers Produce

- **Policy & Investment Recommendations**
  - **Basis of joint Gov't & Industry commitments**
  - **Input to FAA implementation plans**
- **Technical Performance Standards**
  - **Basis for Certification**
  - **Assurance to meet the minimum operational, safety & performance requirements**

Special Committees

17 Active: 11 in Partnership with EUROCAE

- ADS-B
- Aeronautical Information Systems
- Aeronautical System Security
- Air Traffic Data Communications
- Airport Security Access Control Systems
- Airport Surface Wireless Communications
- Audio Systems Equip
- Enhanced Flight Vision Systems
- Environmental Testing
- GPS
- Inmarsat
- Lithium Batteries
- Mode-S Transponders
- PBN
- TCAS
- Terrain and Airport Databases
- Unmanned Aerial Systems

Congressional Interest in NextGen
T&I Committee, Aviation Subcommittee

- August Roundtable - Process Emphasis
  - 5 NAC Members
  - IMC Members
  - Work of RTCA – Policy & Technical, tasked
  - Work of IMC – Over the horizon, unsolicited

- September Hearing – Status/Content
  - NG Progress
  - TF5
  - NAC Recommendations

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NextGen Advisory Committee

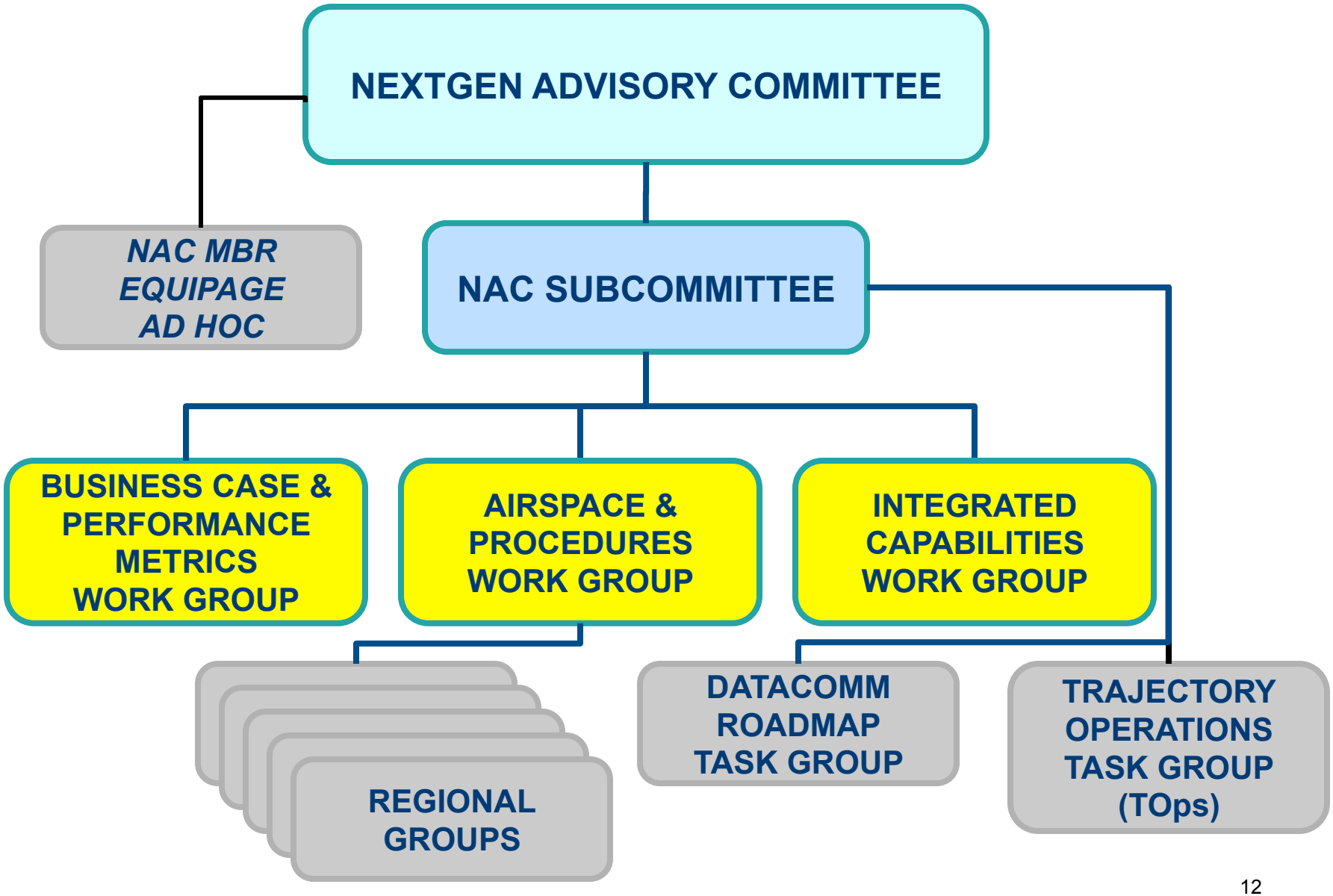
NAC Terms of Reference: "*The Business of NextGen*"

Purpose: Responding to FAA Taskings by providing guidance on policy-level issues facing the aviation community in implementing NextGen

- 28-member Federal Advisory Committee
- Formed in 2010 at the request of the FAA
- Top level executives
- Complex policy issues
- Committing their organization to the consensus recommendations

NAC Members -- Cross Section of Aviation Community Execs

Current NAC Structure



NextGen Advisory Committee

Dave Barger,
President & CEO,
JetBlue *Chairman*

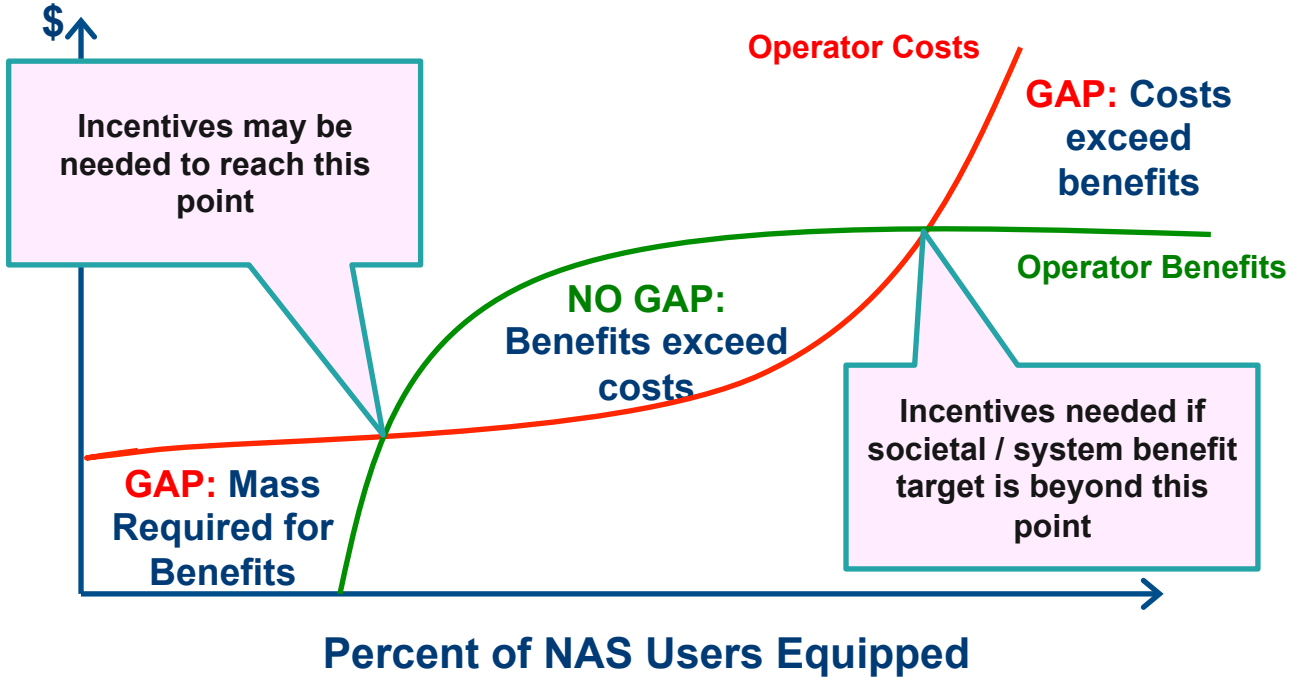
Michael Huerta,
Acting FAA Administrator
Designated Federal Official

18 Recommendations Resolving Issues Critical to NextGen Implementation

- Operational capabilities
- Policies (incentives; airspace; best-equipped, best-served)
- Performance metrics and business case
- Investment methods and priorities
- Deployment approach and timing

- Bridging the confidence gap
- Holding all parties accountable

Business Case Gaps



A combination of financial and operational incentives should be made available for aircraft that are the first to equip

Headquarters U.S. Air Force

Integrity - Service - Excellence

Oct 4th NAC Meeting Wright-Patterson AFB

U.S. AIR FORCE

Key Agenda Items

- NextGen Implementation Metrics
  - Executive-level metrics - NextGen implementation
  - Key city pairs for NextGen metrics
  - Data Sources for Measuring NextGen Fuel Impact
- New Taskings – PBN & Environmental
- Non-Technical Barriers to NextGen Implementation
- Environmental Issues Impacting NextGen implementation
- Next Meeting – Feb 6/7, 2013, Salt Lake City, Utah

Metrics Tasking

Original FAA tasking letter (October 2010):

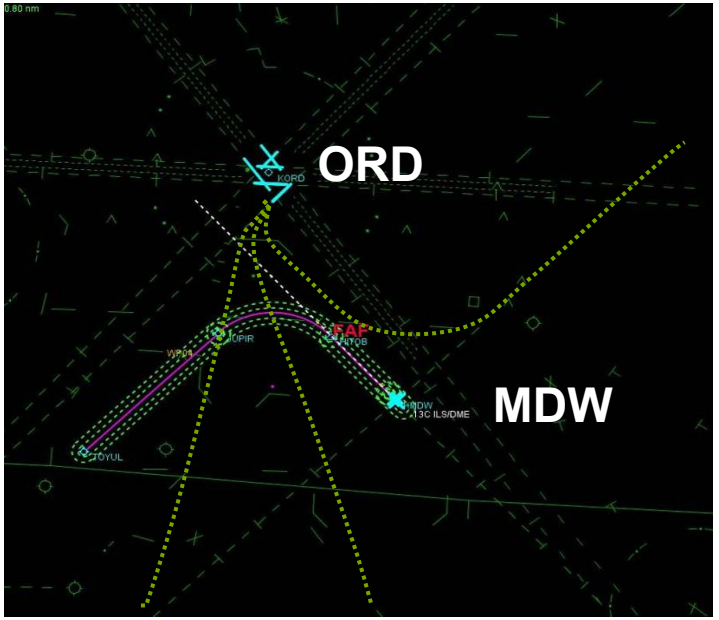
"…provide consensus recommendations on a suite for operational performance measures, to ensure NextGen implementation is producing desired results."

NAC High Level Metrics Suite

Performance Area	NextGen High-Level Outcome Metric	Where Measured
Flight Safety	Change in Airborne/Ground Separation Alert Rate	NAS-Wide
Operational Efficiency	Mean Aircraft Operation Time	Key City Pairs
Fuel Efficiency	Fuel Efficiency Normalized by Weight and Distance	Key City Pairs
ATC Cost Efficiency	ATC Cost per IFR hour	NAS-Wide
Metroplex Capacity	Metroplex Peak Allowable Throughput	OAPM Metroplexes
Metroplex Access	Metroplex Achieved Utilization	OAPM Metroplexes

Access Metric Recommendation

Metroplex Achieved Utilization measures the percentage of unconstrained capacity** in the Metroplex that is used in periods of high demand

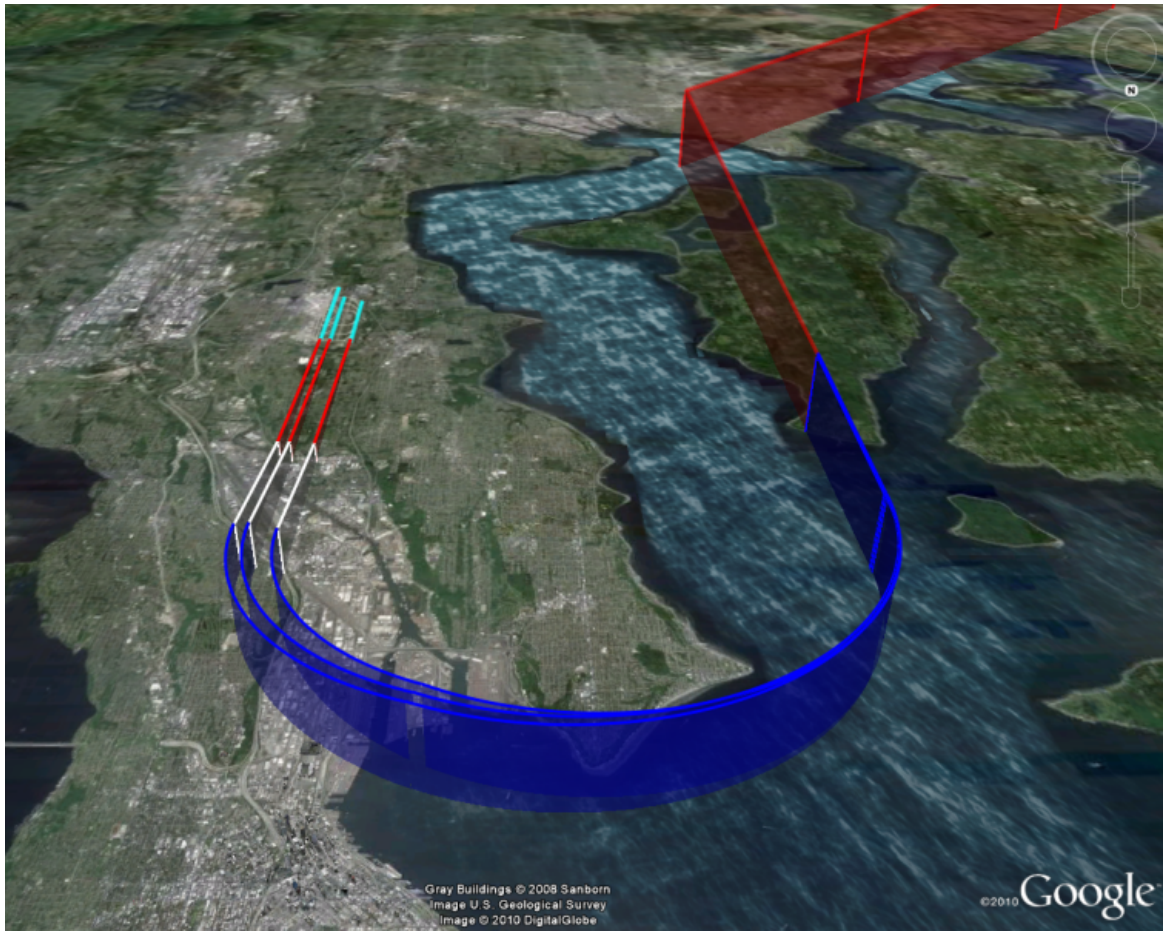


Deconflicting airports and increasing IMC throughput improves Metroplex utilization

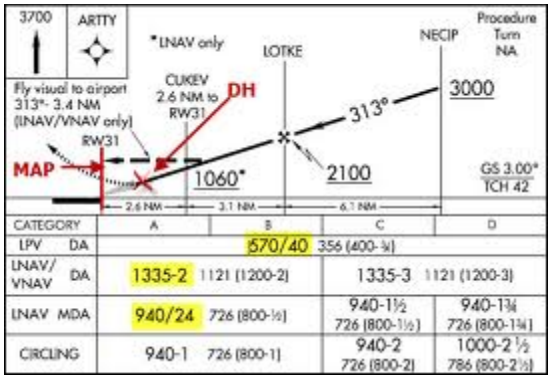
**Metroplex Maximum Capacity is the sum of the airport capacities, as defined in the FAA Airport Capacity Benchmark report, “optimum weather condition rate”.

Access: Greener Skies over Seattle

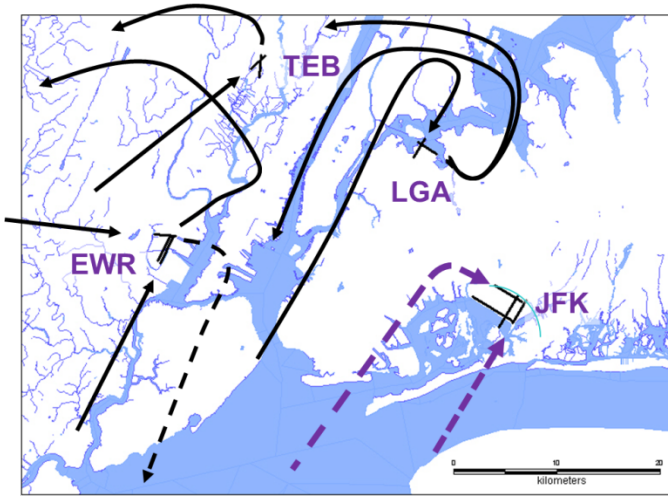
Airlines estimate that industry would save over 2 million gallons a year, or $6.8 million



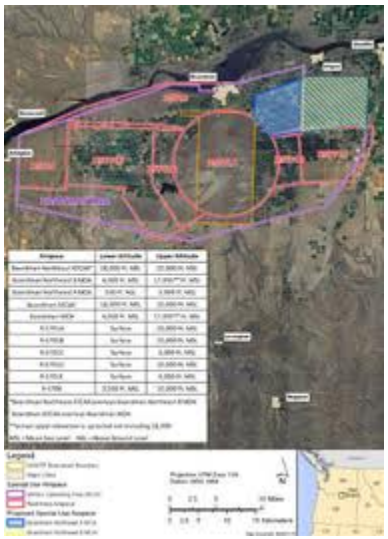
NextGen Capabilities Improving Access



LPV approaches that expand landing opportunities



Airport deconfliction



Improved scheduling of SAA

Expansion of surveillance to non-radar airspace

FAA Modernization & Reform Act of 2012
PL 112-95

SEC. 214. PERFORMANCE METRICS

Three of the Twelve Congressional Metrics Address Key City Pairs

- fuel burned between key city pairs
- the average distance flown between key city pairs
- flown versus filed flight times for key city pairs

Key City Pairs Recommendation

What?

- 24 City Pairs (Metroplex Pairs)

How to Measure?

- Must be done at airport level
- Selected top airport pairs contributing to 50% of the overall delay within the Metroplex
- 84 specific airport pairs that have the greatest potential based on the number of delays that were contained in the 24 City Pairs

Key City Pairs Methodology

Criteria:

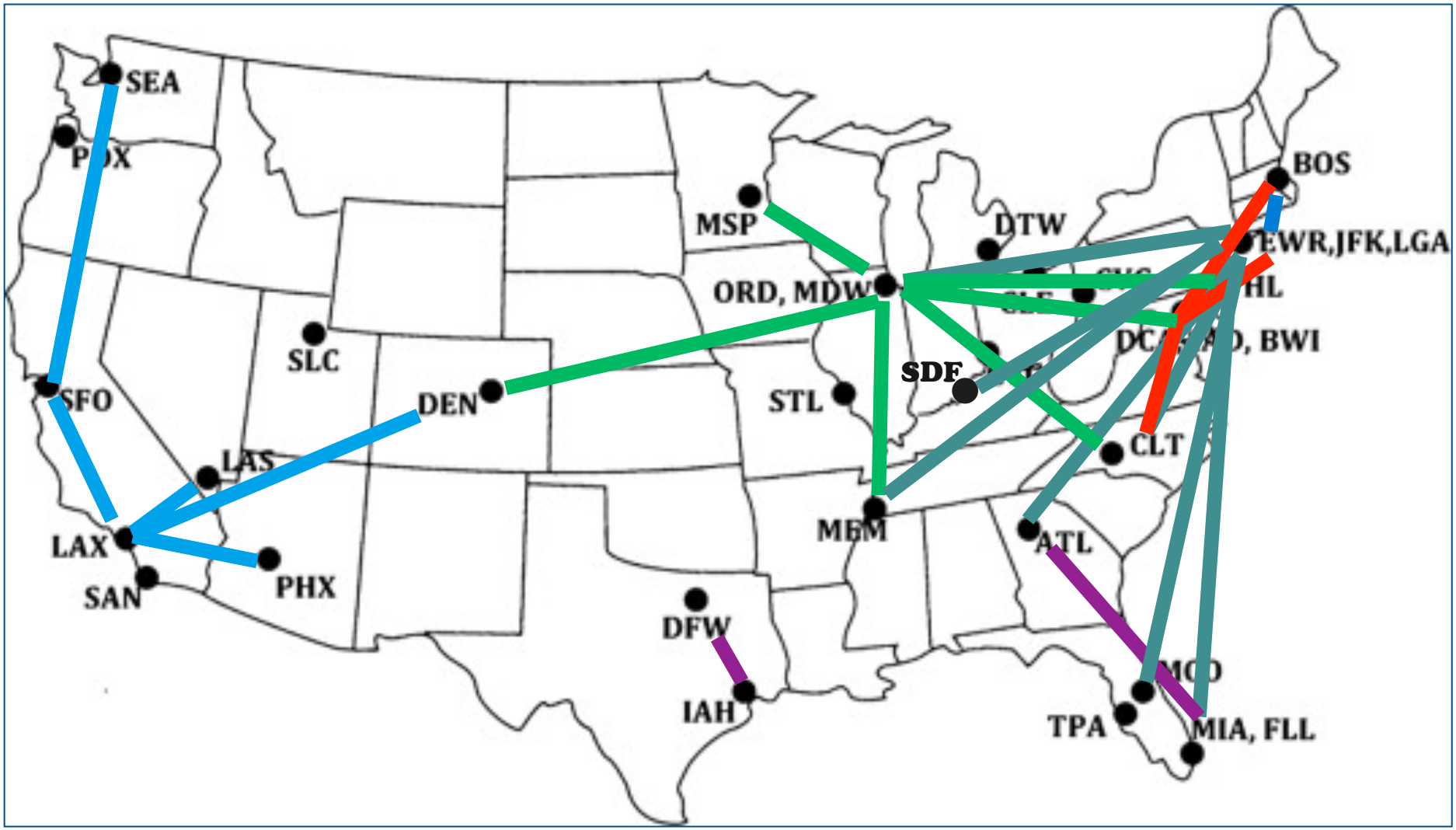
- City pairs (or Metroplex pairs) should be within the contiguous US
- The Metroplex is expected to have a measurable NextGen impact between 2010 & 2015 (each Metroplex will include the associated airports)
- Consider the ICWG tier 1 Metroplexes (7)
- Consider sites from the FAA/Industry Optimization of Airspace and Procedures in the Metroplex (OAPM1) initiative that are scheduled to begin implementation of capabilities no later than FY2015
- Number of operations (traffic) between city pairs should be considered
- Demand between the city pairs should be considered. The Task Group used ‘amount of delay’ as an indicator of demand.

Key City Pairs Methodology

Other Considerations:

- Data availability
- Ease of reporting (i.e. data that is recorded in an automated and accessible format and a viable approach to reporting the performance can be developed)
- Diversity – as a final review, evaluate the key city pairs for diversity of operations/different stakeholders (e.g., cargo, GA, multiple air carriers)

24 Key City Pairs (Metroplex Pairs)



Key City Pairs Recommendation

Northern California - Southern California
New York - South Florida
Chicago - New York
Boston - Washington DC
New York - Orlando
Atlanta - New York
Charlotte - New York
New York - Washington DC
Las Vegas - Southern California
Boston - New York
Dallas - Houston
Charlotte - Chicago
Charlotte - Washington DC
Chicago - Washington DC
Phoenix - Southern California
Chicago - Philadelphia
Chicago - Denver
Atlanta - South Florida
Chicago - Minneapolis
Denver - Southern California
Northern California - Seattle
Chicago - Memphis
Memphis - New York
Louisville - New York

One Example of Airports Identified to Measure Key City Pairs

Five Airport Pairs = One City Pair

LAX SFO Northern California – Southern California

SAN SFO Northern California – Southern California

LAX OAK Northern California – Southern California

SFO SNA Northern California – Southern California

LAX SMF Northern California – Southern California

Fuel Data Benefit

Many NextGen improvements have a direct impact on fuel use through more efficient procedures

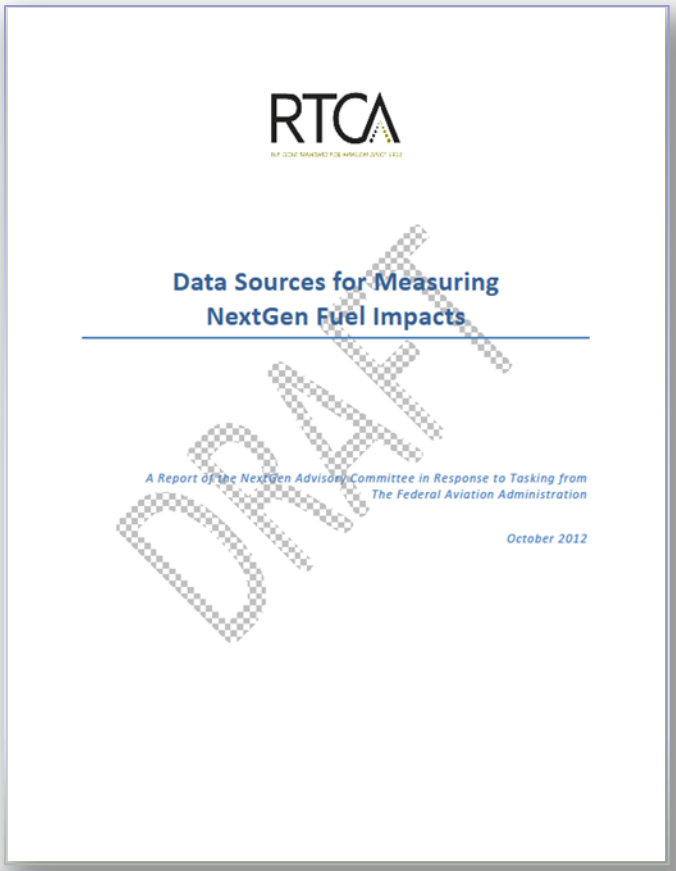
- FAA Reauthorization Bill, section 214, specifies the reporting of fuel use between “key city pairs”
- FAA should report on weight and normalized distance fuel efficiency for key city pairs
- Key data elements needed are fuel use and aircraft weight on a flight-by-flight basis

Fuel Data Attributes

Insufficient data granularity is available for FAA to generate either high-level or diagnostic metrics

- Airline data is collected at a national level of aggregation
- Data from other operators not routinely collected
- Even more data granularity needed for diagnostic analysis

Data Sources for Measuring Fuel Use



1. Assemble a technical team to establish the technical requirements for airline fuel and aircraft weight reports in support of high-level fuel efficiency metrics
2. Explore use of the ASIAS infrastructure to support both high-level and diagnostic-level metrics

Sept 2012 NAC Taskings – PBN/OAPM

Identify Obstacles to Performance Based Navigation Utilization – technical/non-technical

- Review FAA internal analysis
- Identify additional issues
- Develop remedies and action steps

Develop Criteria for Prioritizing PBN Procedures

- New PBN procedures
- Modifying existing
- Eliminating those not providing measurable benefits

Validating criteria for selection & prioritization of Optimization of Airspace & Procedures in Metroplexes (OAPM) Sites

- Review/revalidate OAPM selection & prioritization criteria

NAC Tasking: Implementation of Categorical Exclusion in FAA Reauthorization, Section 213(c)(2)

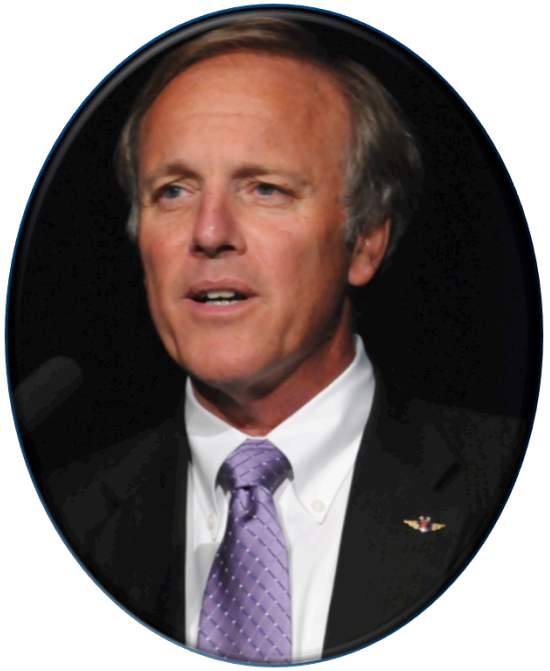
Sept 2012 NAC Taskings – "CatEx 2"

Explore how to implement Congressional authority for Categorical Exclusions under National Environmental Policy Act requirements (CatEx2)

- Review FAA internal analysis
- Recommendations for per flight basis to measure impacts
- If CatEx2 doesn't have desired impact - offer practical/ legislative recommendations for streamlining environmental reviews

Changes in NAC Leadership

Bill Ayer, Chairman, Alaska Air Group
New Chair NextGen Advisory Committee



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Next Meeting

Wednesday/Thursday

February 6/7, 2013

Salt Lake City, UT

International Harmonization

EASA

FEDERAL AVIATION ADMINISTRATION

SESAR JOINT UNDERTAKING

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EUROCAE

ICAO • OACI • ИКАО
国际民航组织 • ايكاو

EUROCONTROL

Tomorrow's Global Aviation System

- What is an Aviation **Block** Upgrade?
  - *Operational Improvement/Metric* to determine success
  - Necessary *Procedures* - Air and Ground
  - Necessary *Technology* - Air and Ground
  - Positive *Business Case* per Upgrade
  - *Regulatory Approval* Plan - Air and Ground
  - *Well understood* by a Global Demonstration Trial
    - All synchronized to allow initial implementation
    - Won't matter ***when or where*** implemented

Similar to Task Force 5 Approach and Recommendations

2013 Annual Symposium

Mark Your Calendars:

June 5 & 6, 2013

Wednesday - Thursday

Washington Convention Center

DISCUSSION