

# NextGen Accomplishments



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Presented to:  
Illuminating Engineering Society  
Aviation Lighting Committee  
Government Contacts Subcommittee

By:  
Pamela Whitley, Acting Director for  
NextGen Integration & Implementation

Date: April 19, 2011



# Delivering Benefits Today & Tomorrow

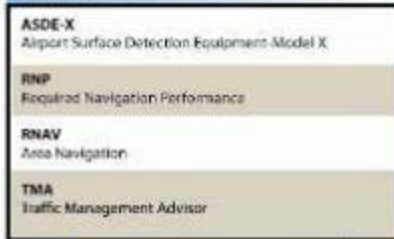


**\$22B in benefits**

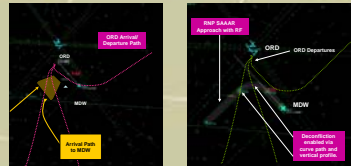
# Incremental Approach to Implementing NextGen

## *Produces Benefits and Builds a Foundation*

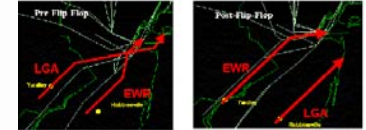
Wake Turbulence



RNAV/RNP Deconflict



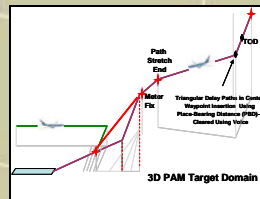
RNAV/RNP Deconflict



Surface Management



3D PAM



Tailored Arrivals

RNAV/RNP Deconflict



Surface Management



Surface Management



UAS

4-D FMS



Staffed NextGen Tower



ADS-B in the Gulf



Tailored Arrivals



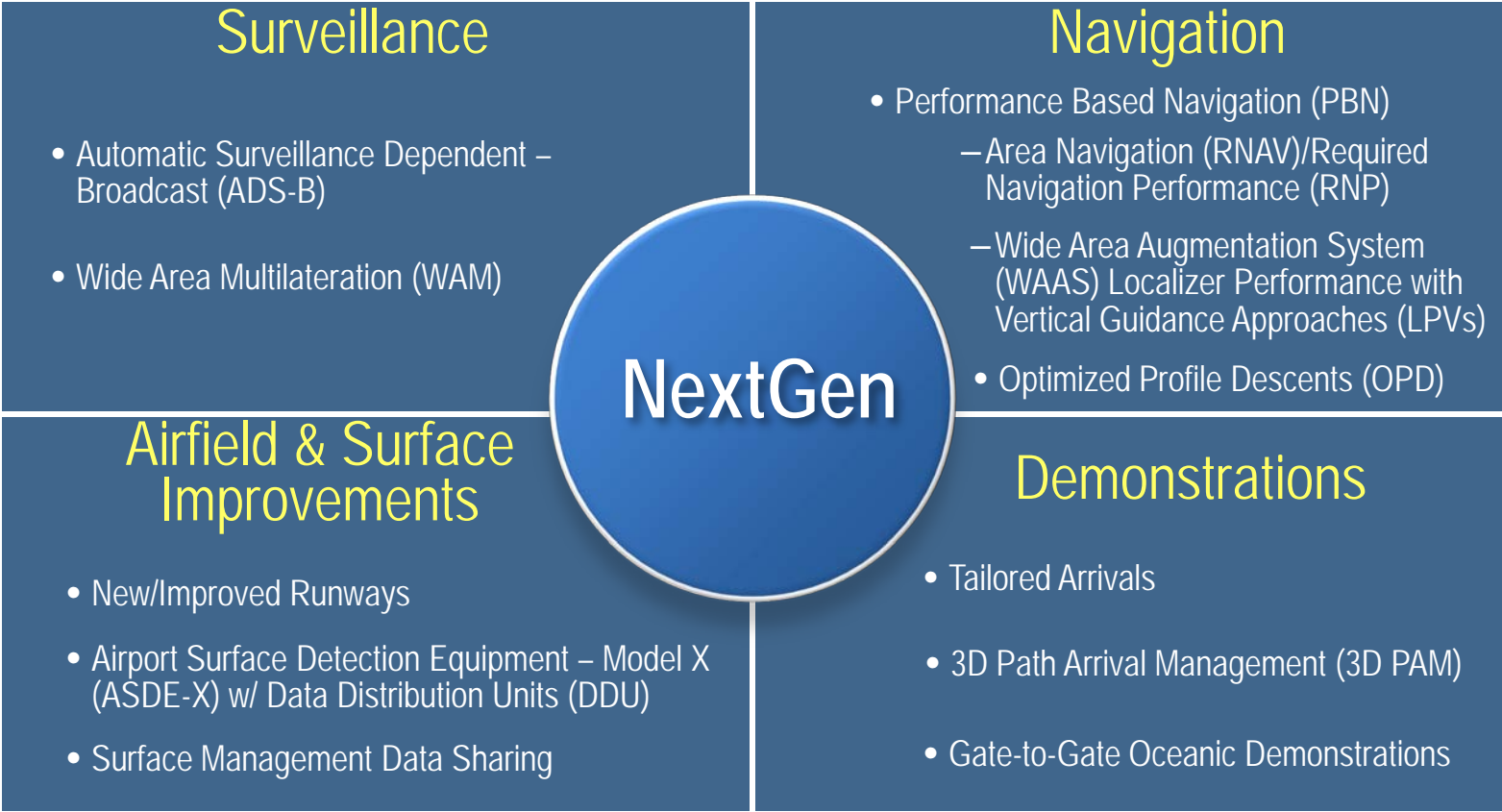
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# Significant progress is already being made...



...as we work with the aviation community toward a common goal



# What Does The System Look Like in 2018?



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**PHASES OF FLIGHT** *Mid-Term 2018*

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# Gate-to-Gate Oceanic Demonstrations Illustrate NextGen Value

*Average Fuel Savings 3% - 5% per Flight*



- **Fuel Savings:**  
5,659 gallons
- **Carbon Emissions Reduction:**  
19 tons to date



- **Fuel Savings:**  
27,000 gallons
- **Carbon Emissions Reduction:**  
2 tons per flight (238 tons to date)

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# Tailored Arrivals (TAs) and Optimized Profile Descents (OPD)

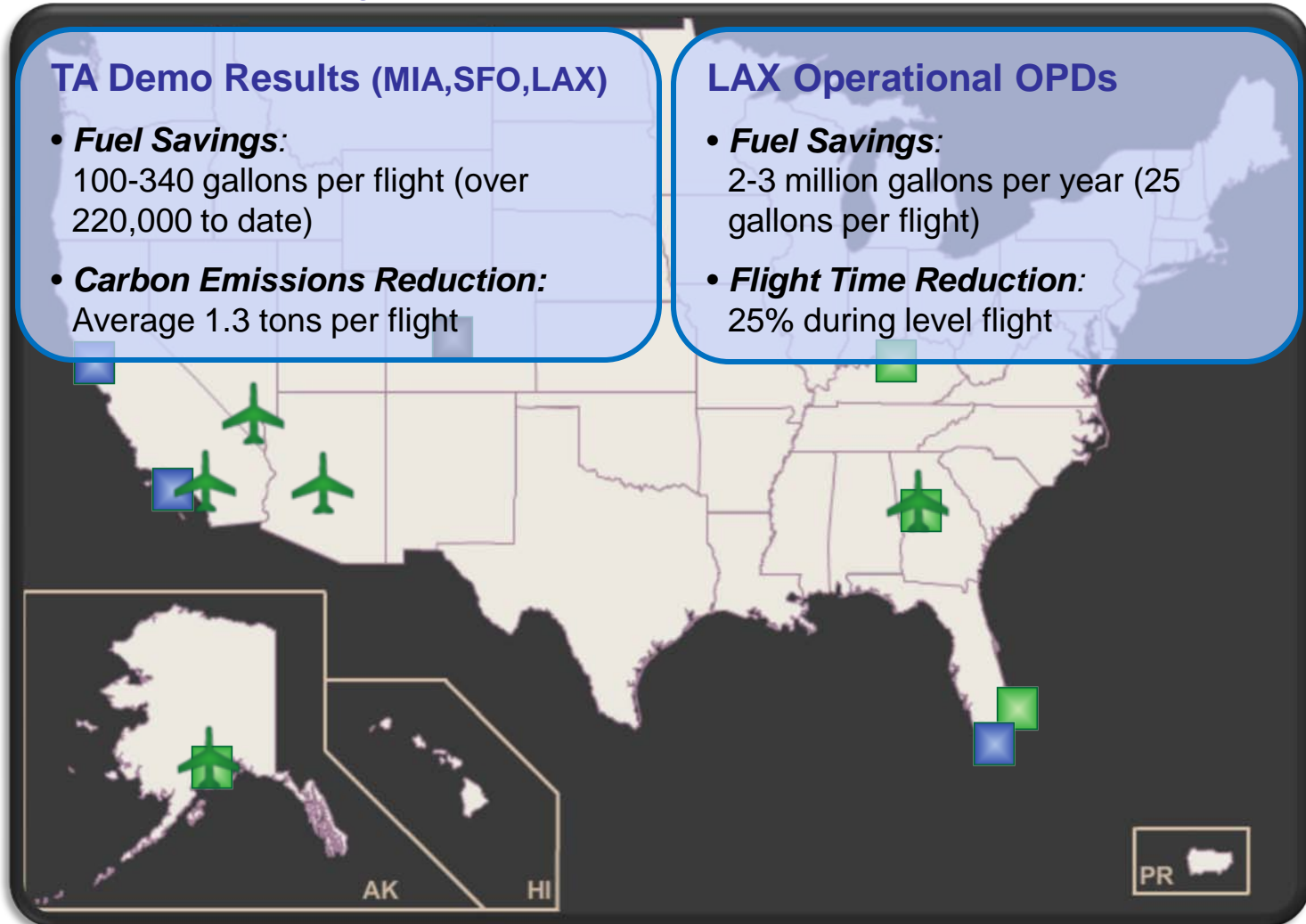
*Will Result in Significant Benefits When Operationalized Nationwide*

## TA Demo Results (MIA,SFO,LAX)

- **Fuel Savings:**  
100-340 gallons per flight (over 220,000 to date)
- **Carbon Emissions Reduction:**  
Average 1.3 tons per flight

## LAX Operational OPDs

- **Fuel Savings:**  
2-3 million gallons per year (25 gallons per flight)
- **Flight Time Reduction:**  
25% during level flight



3D PAM Demos

OPD Demos

TA Demos

Operational OPD

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Surface Traffic Management

Enhanced Surface Traffic  
Management

Enhanced Surface Traffic  
Operations



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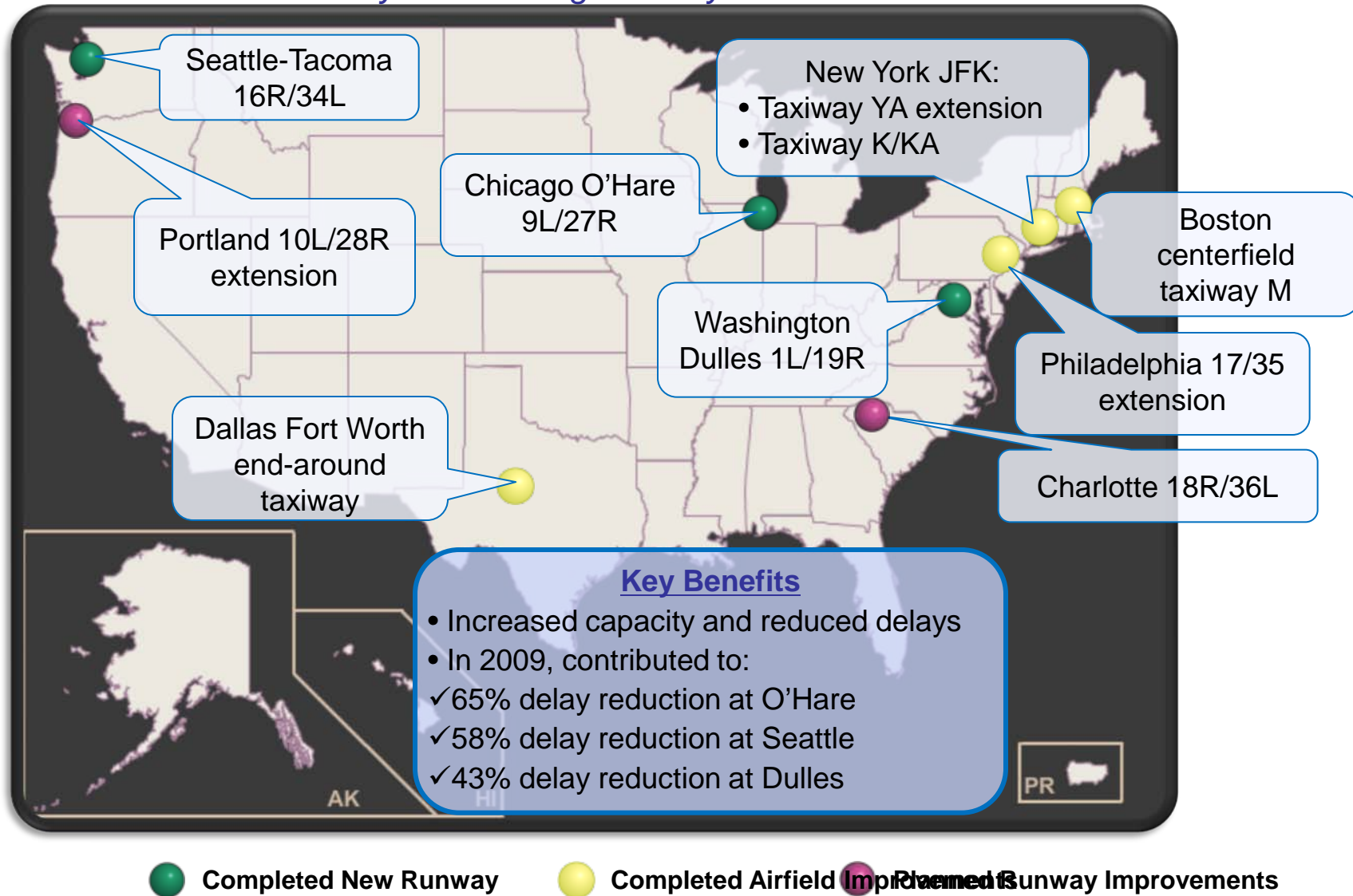


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# Airport Improvements (FY09-FY10)

*Already Contributing to Delay Reduction*



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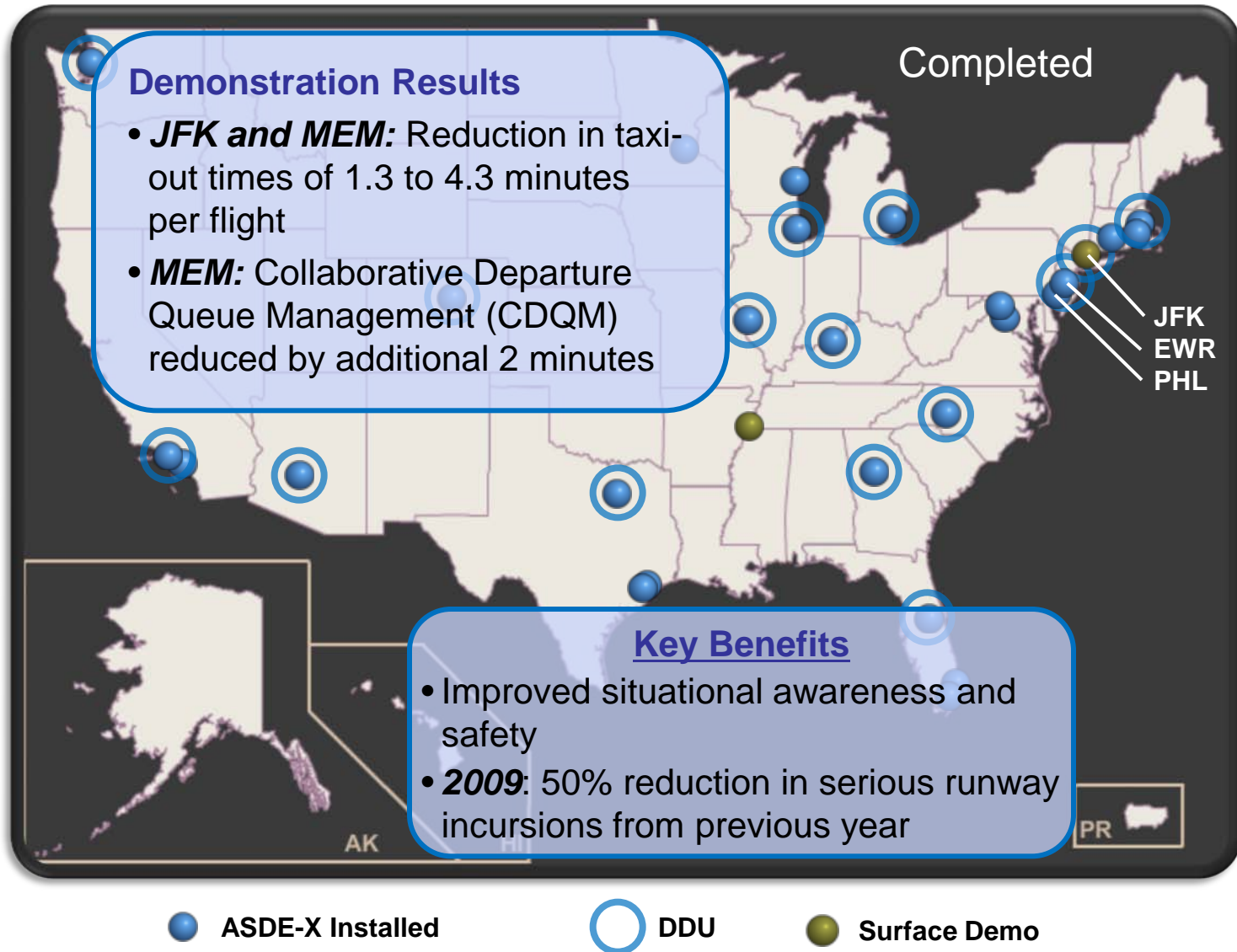
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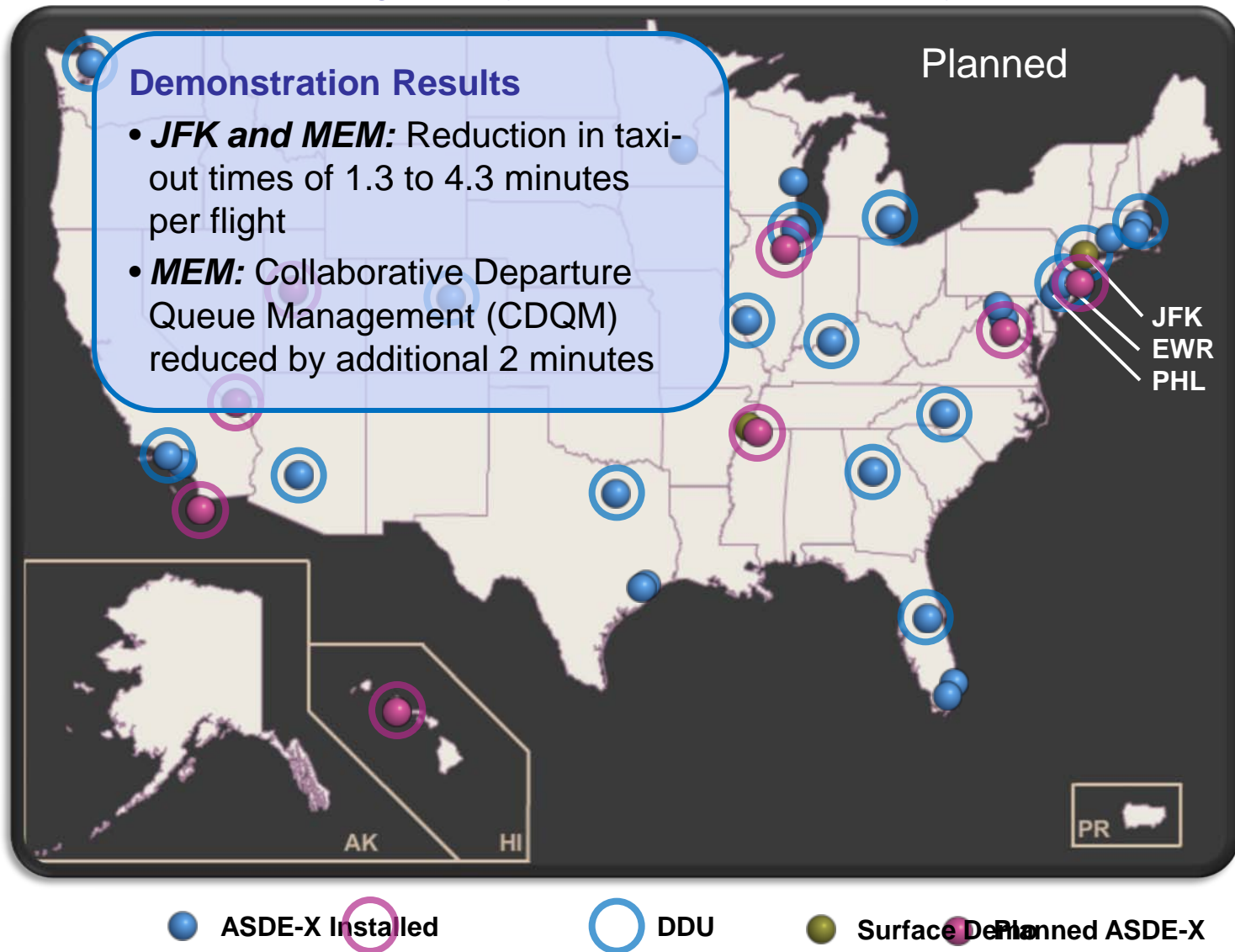
# Surface Management

## Leverage Safety Infrastructure for Efficiency



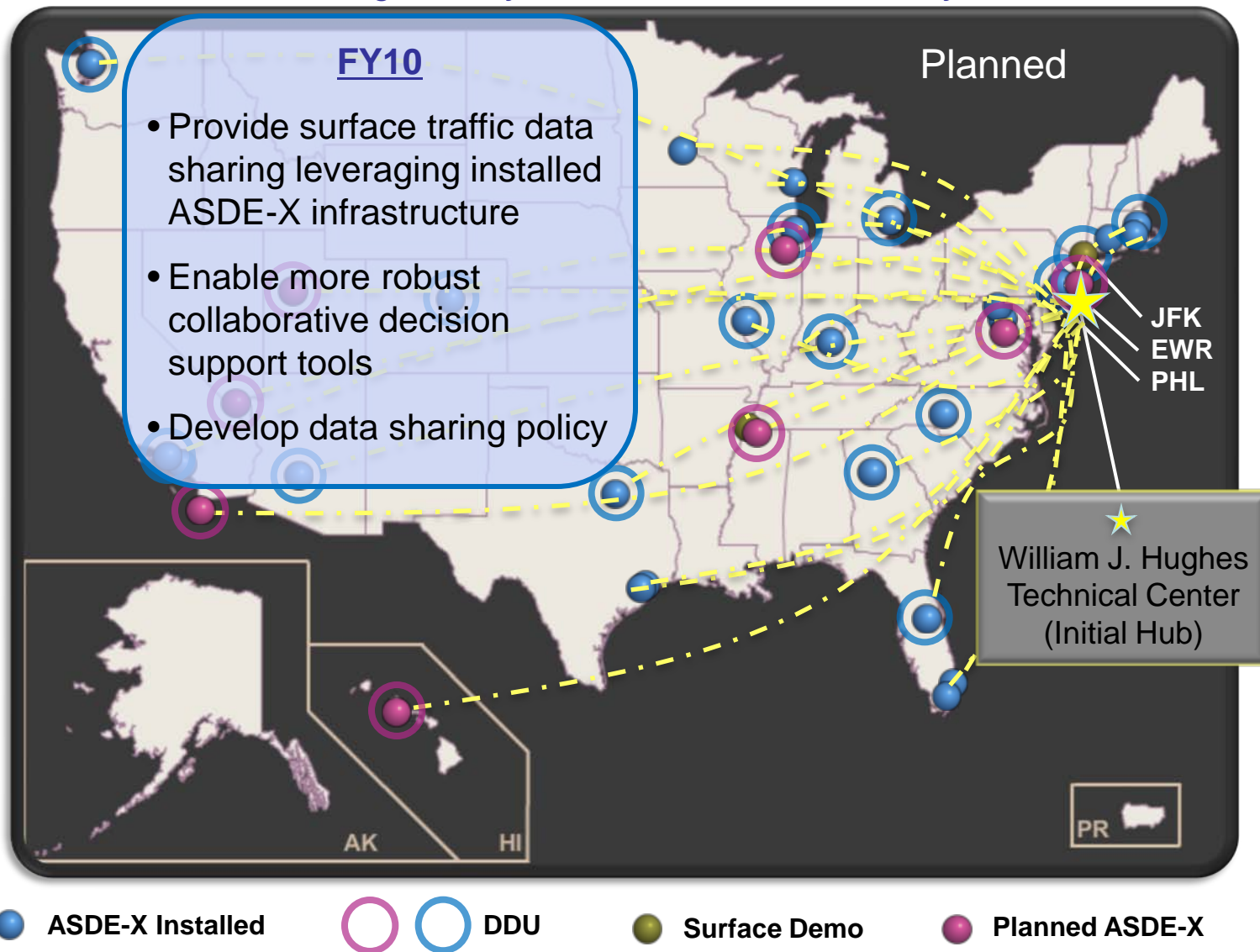
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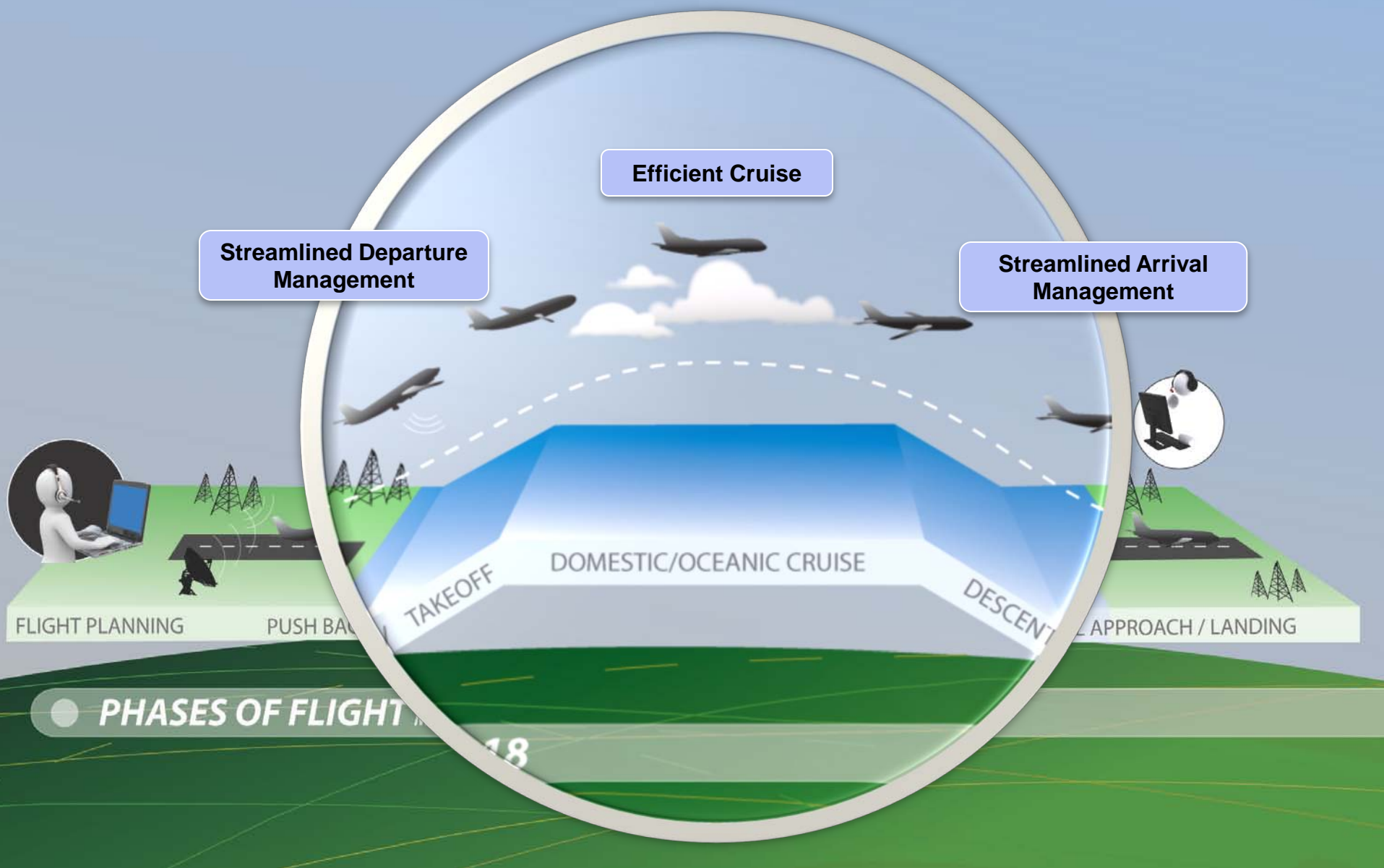


# Surface Management

## *Leverage Safety Infrastructure for Efficiency*







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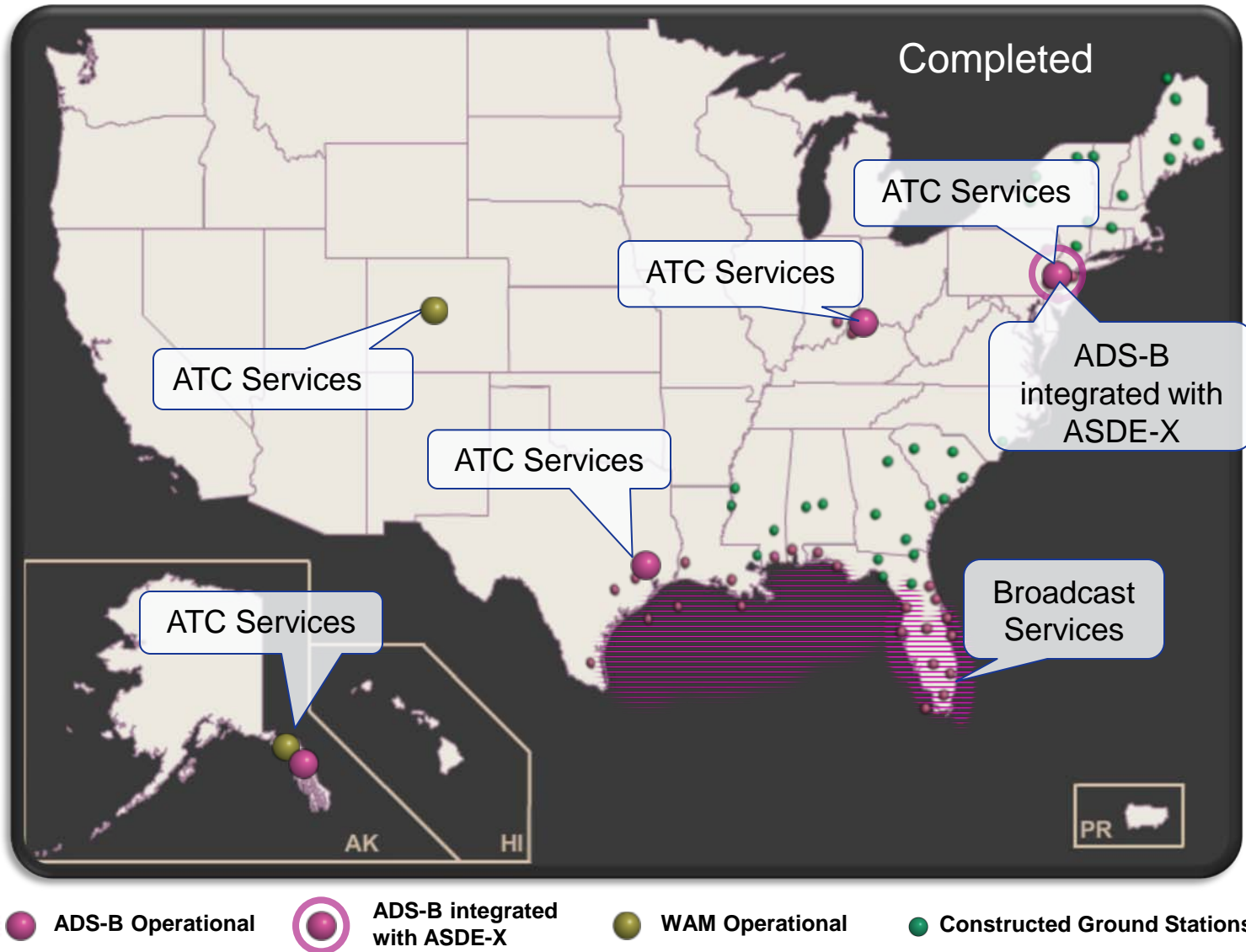


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# Surveillance:

## Automatic Dependent Surveillance-Broadcast (ADS-B) & Wide Area Multilateration (WAM)



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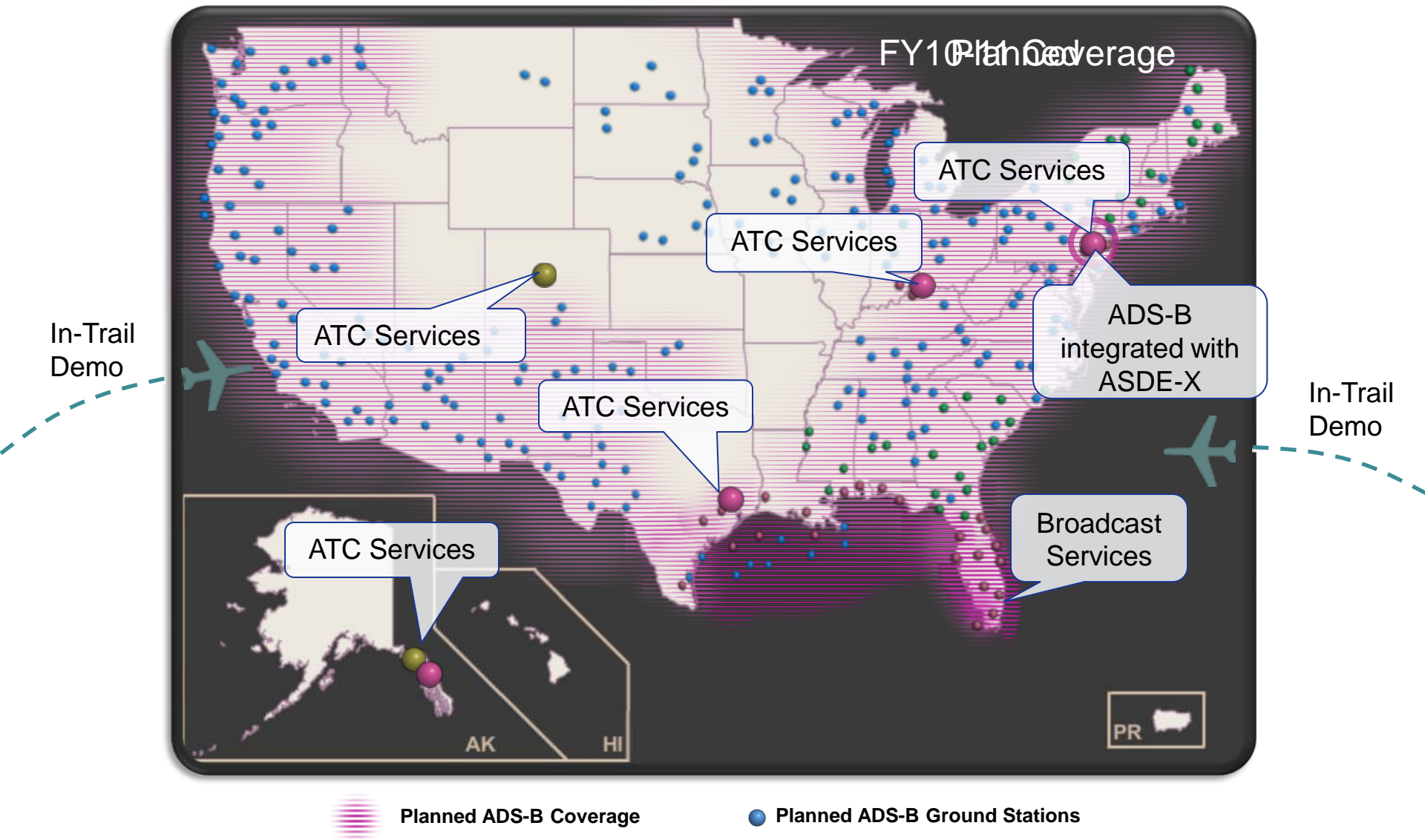
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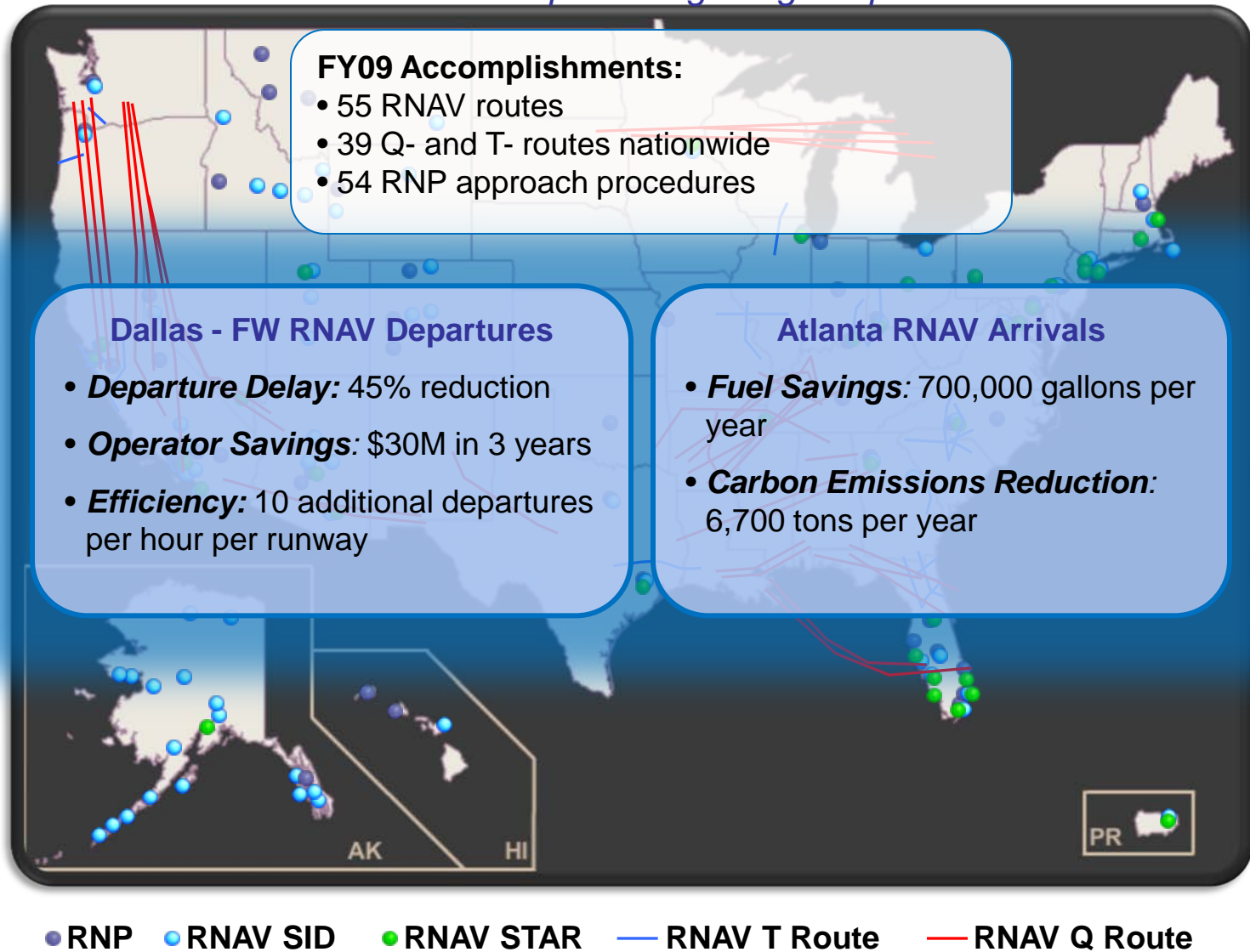


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# Performance Based Navigation (PBN)

*FY10: Initiate Transition to Metroplex Integrating Airspace and Procedures*

Examples



Examples

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# Performance Based Navigation (PBN)

*FY10: Initiate Transition to Metroplex Integrating Airspace and Procedures*

Examples

## Dallas - FW RNAV Departures

- **Departure Delay:** 45% reduction
- **Operator Savings:** \$30M in 3 years
- **Efficiency:** 10 additional departures per hour per runway

## Atlanta RNAV Arrivals

- **Fuel Savings:** 700,000 gallons per year
- **Carbon Emissions Reduction:** 6,700 tons per year

Examples

● RNP ● RNAV SID ● RNAV STAR — RNAV T Route — RNAV C Route

PR

AK HI

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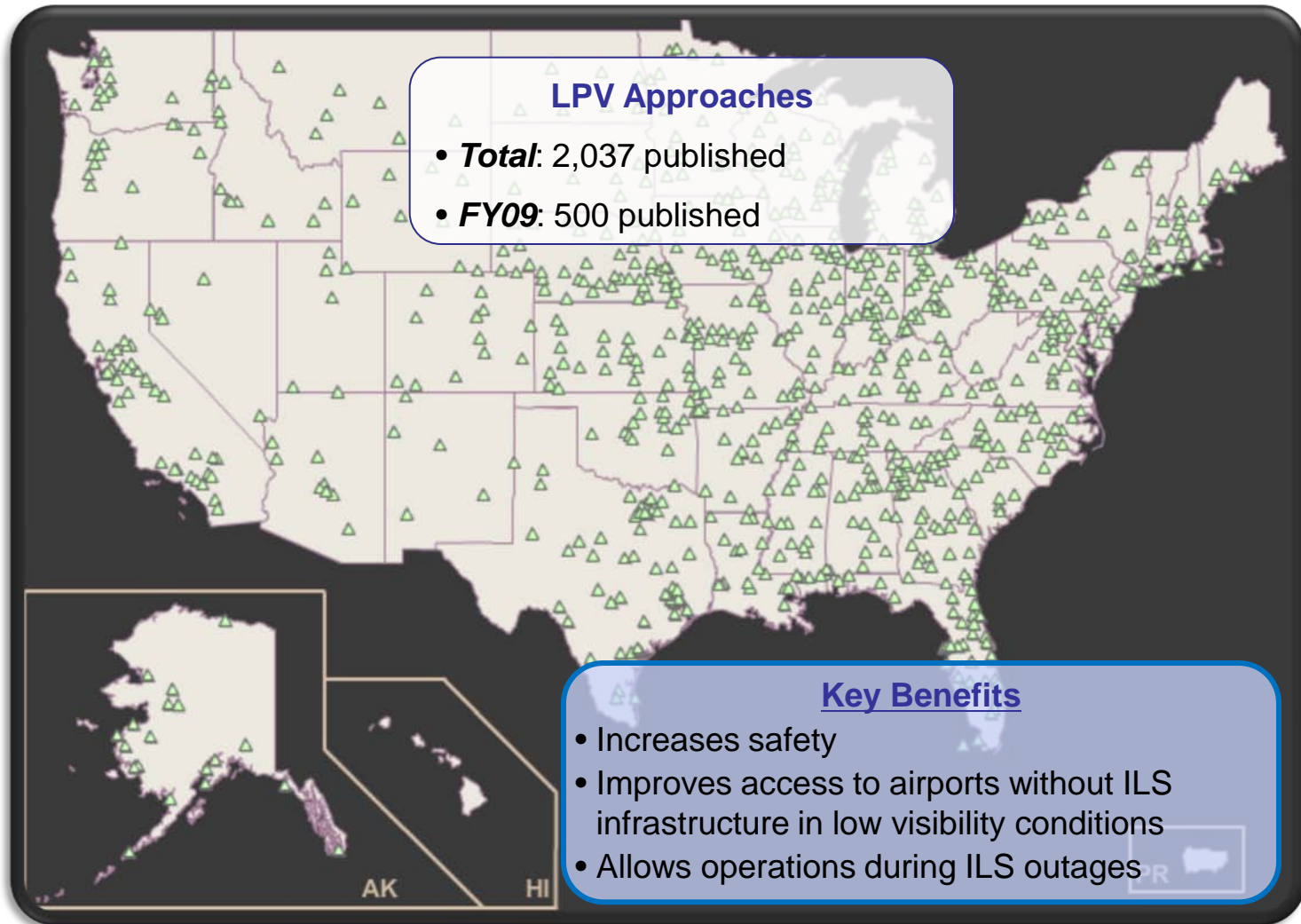


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# WAAS/LPVs

## *Facilitates General Aviation Access*



Wide Area Augmentation System (WAAS) Localizer Performance with Vertical Guidance Approaches (LPVs)

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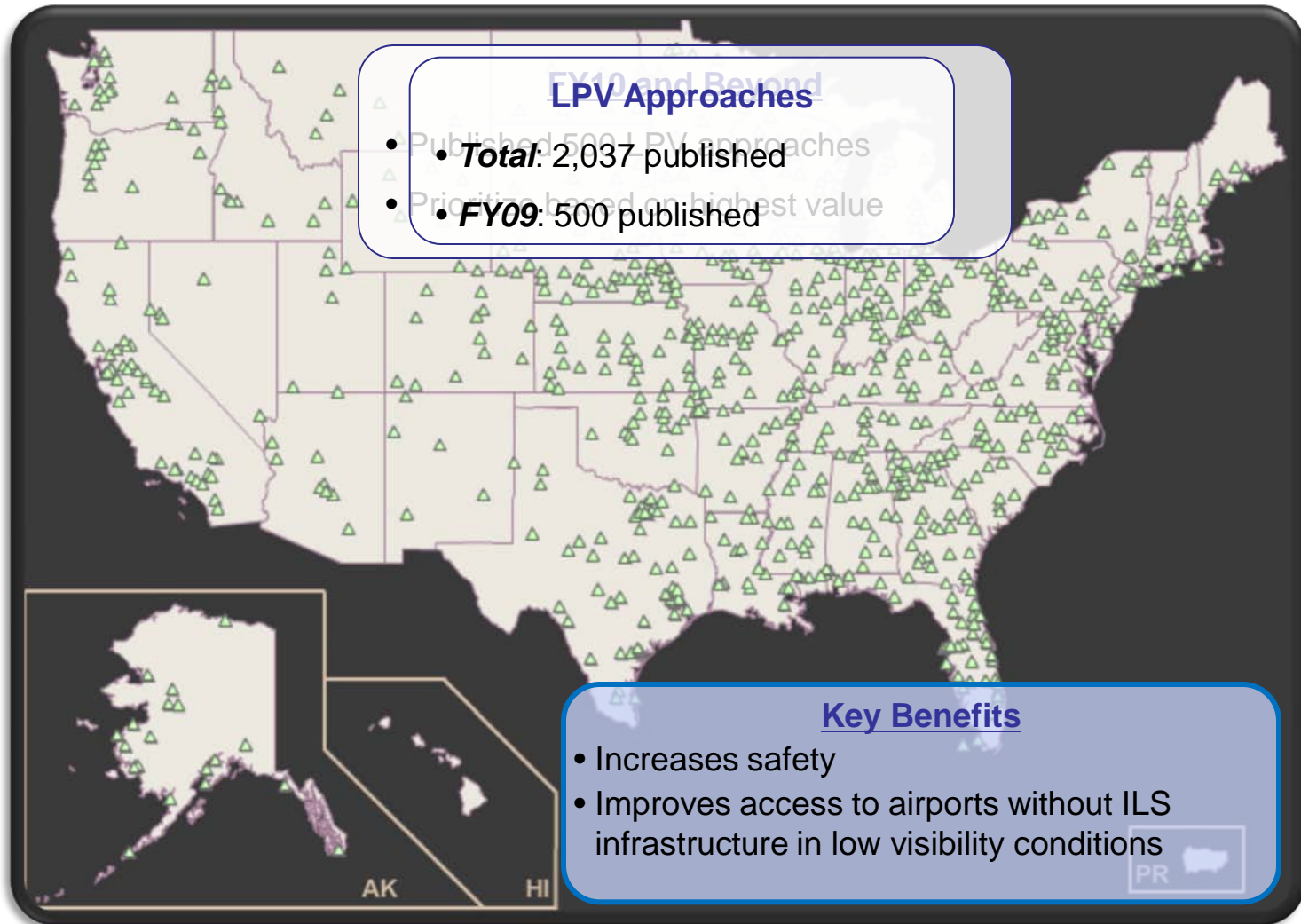


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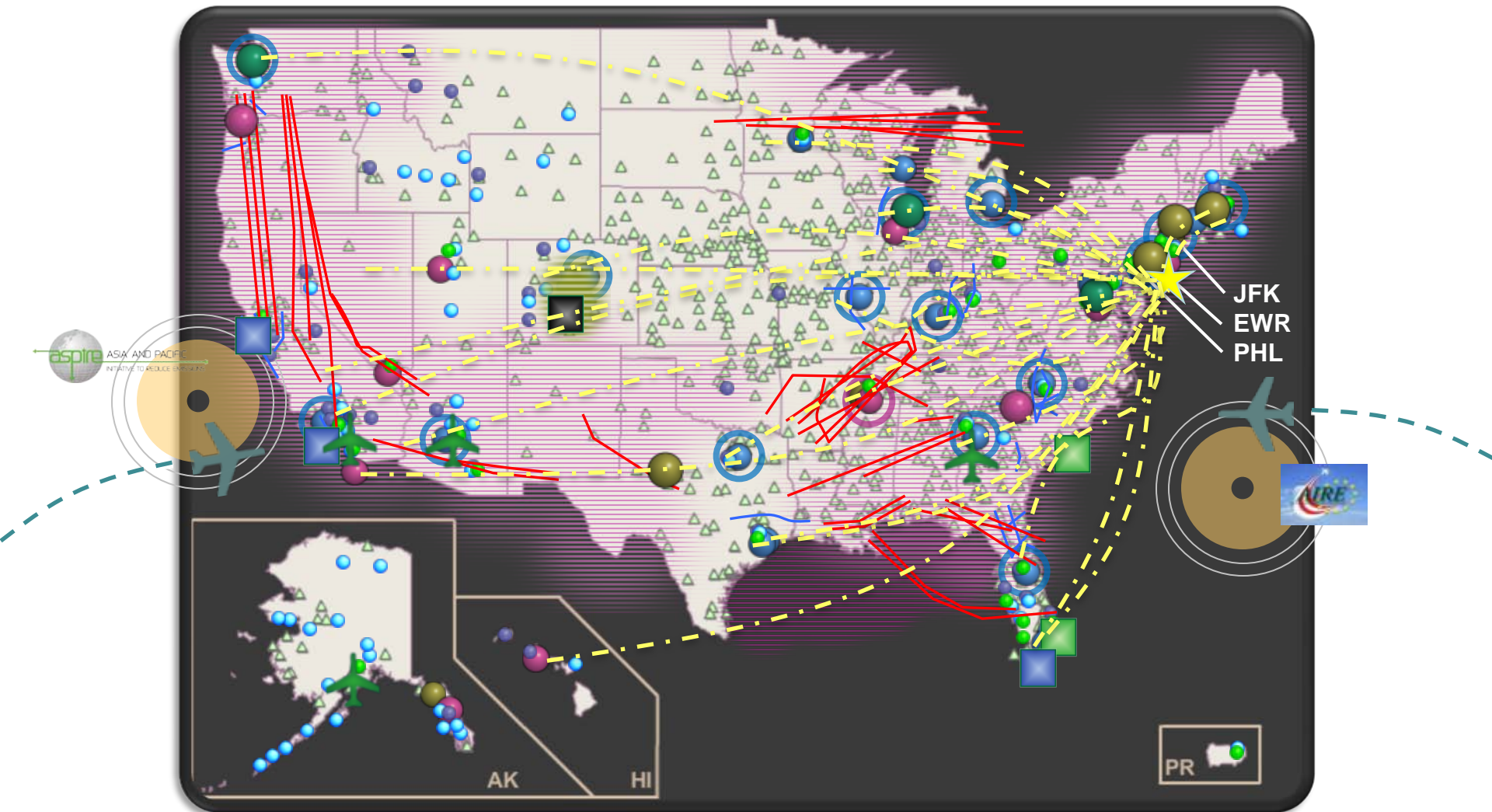
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# NextGen Implementation is Advancing



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