

Surveillance and Broadcast Services

JPDO Airports Working Group

By: Vincent Capezzuto

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Federal Aviation
Administration



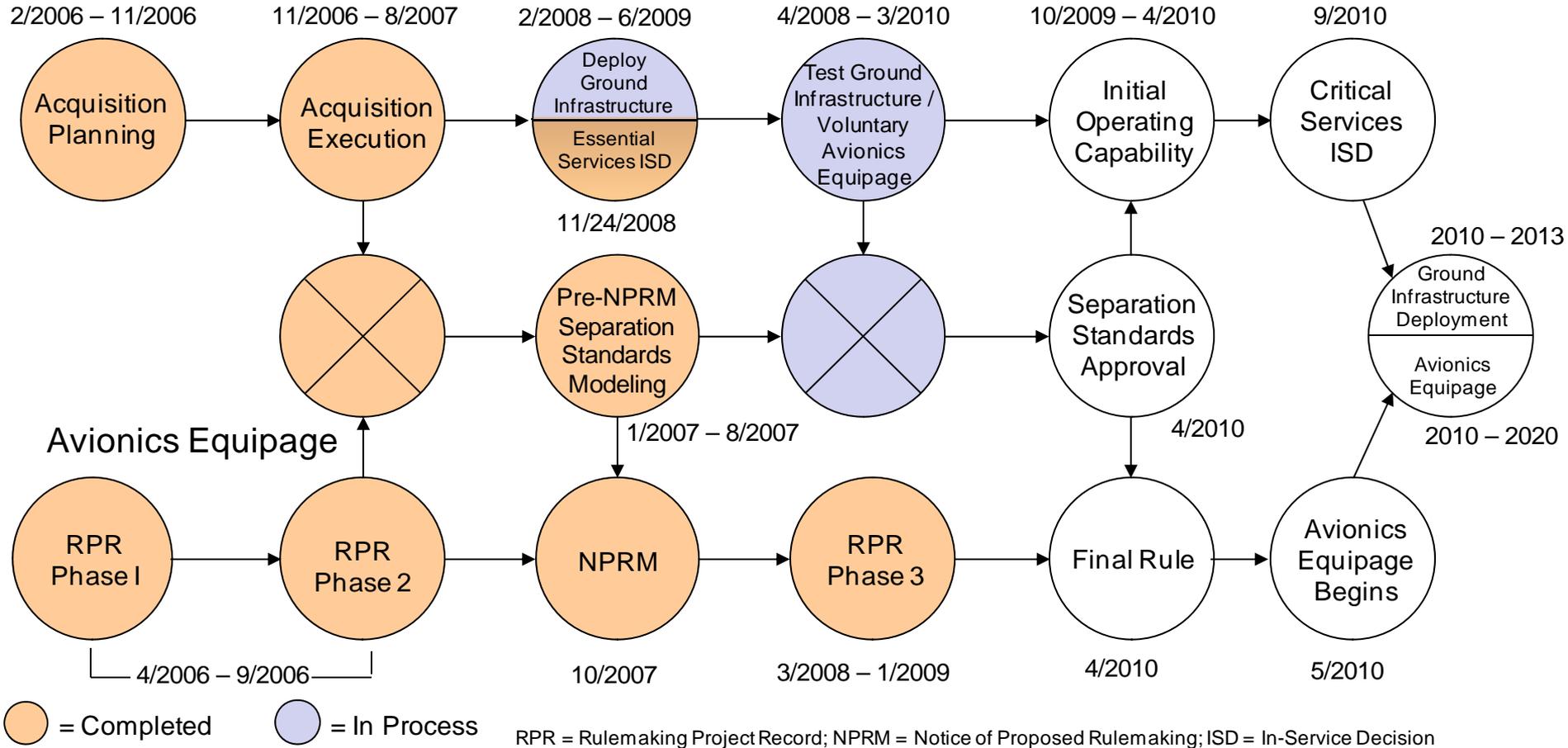
Agenda

- **Strategy**
- **System Architecture**
- **Program Status**
 - Essential Services
 - FAROA
 - ASSA
 - ATSA Surf with Conflict Alerting & Indications
 - Critical Services
 - Rulemaking
- **Next Steps**
- **Summary**

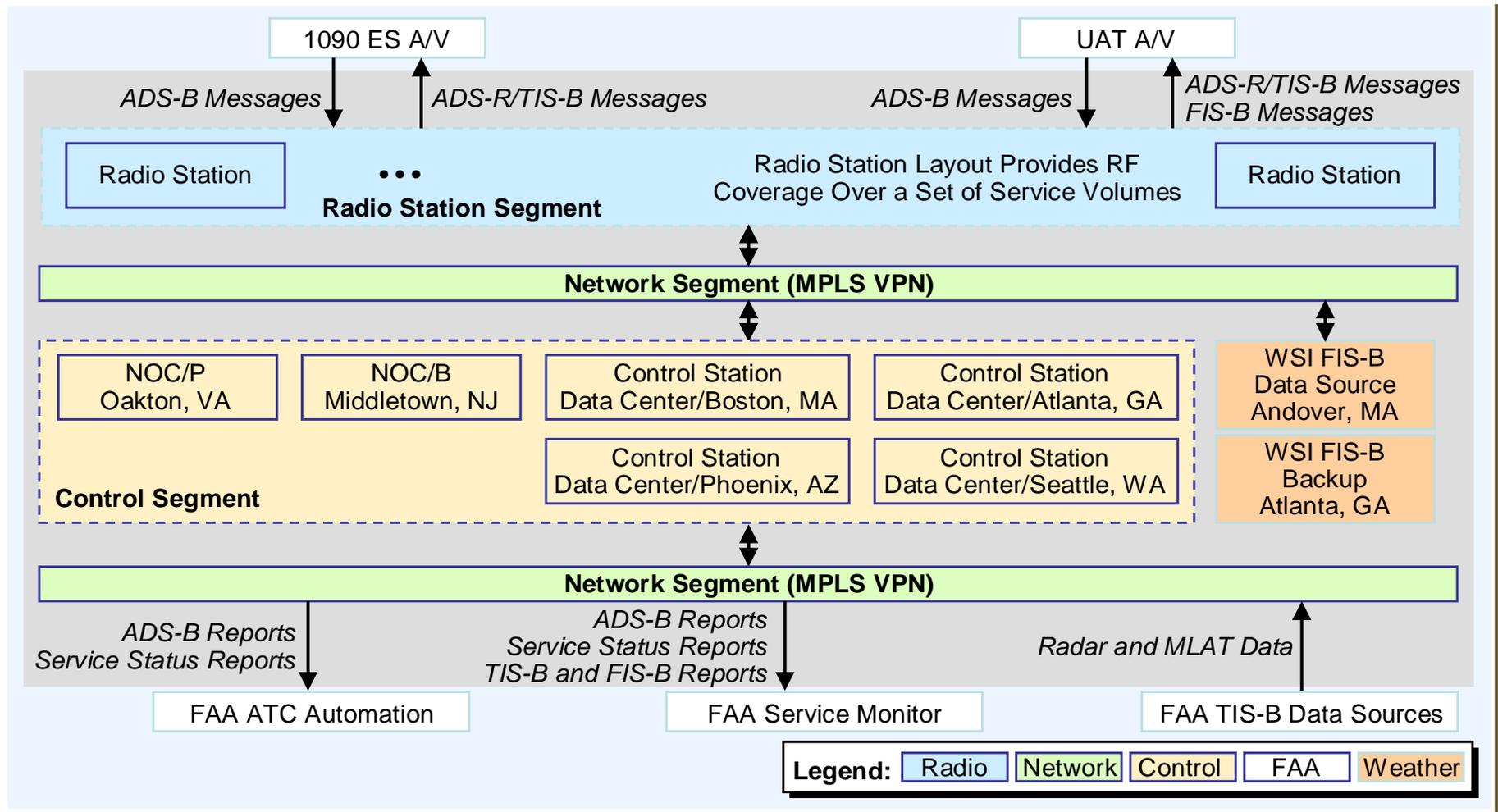


Strategy

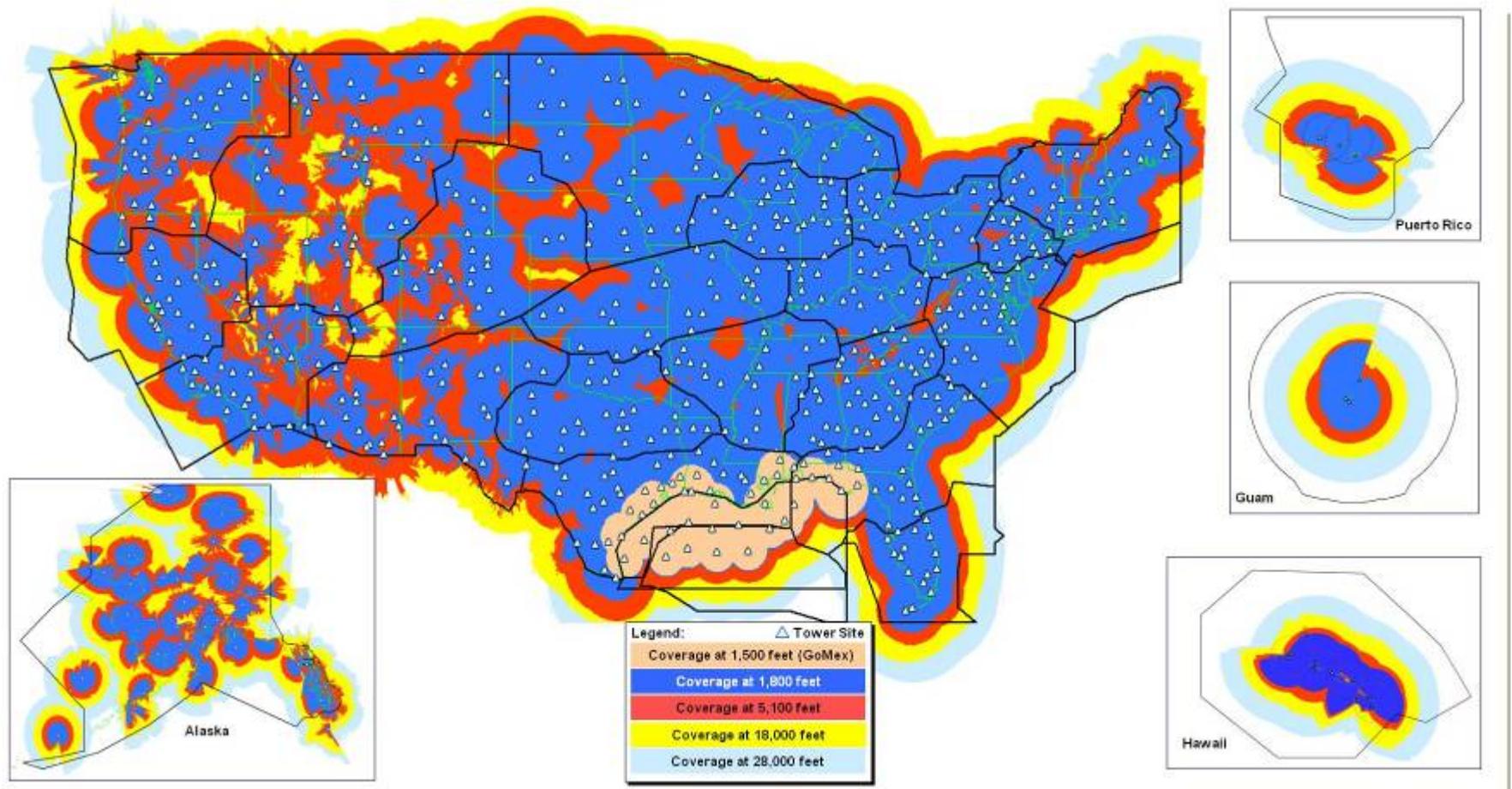
Ground Infrastructure



System Architecture

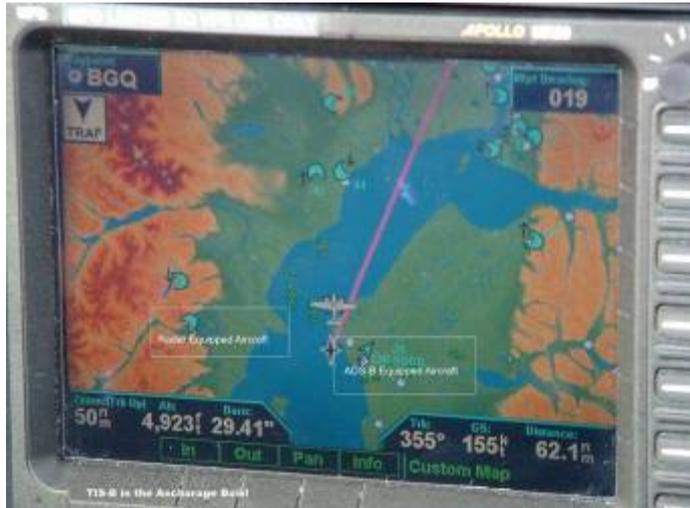


Ground Infrastructure: 794 Ground Station Solution Provides National Coverage



Essential Services: Traffic Information Service - Broadcast / Flight Information Service - Broadcast

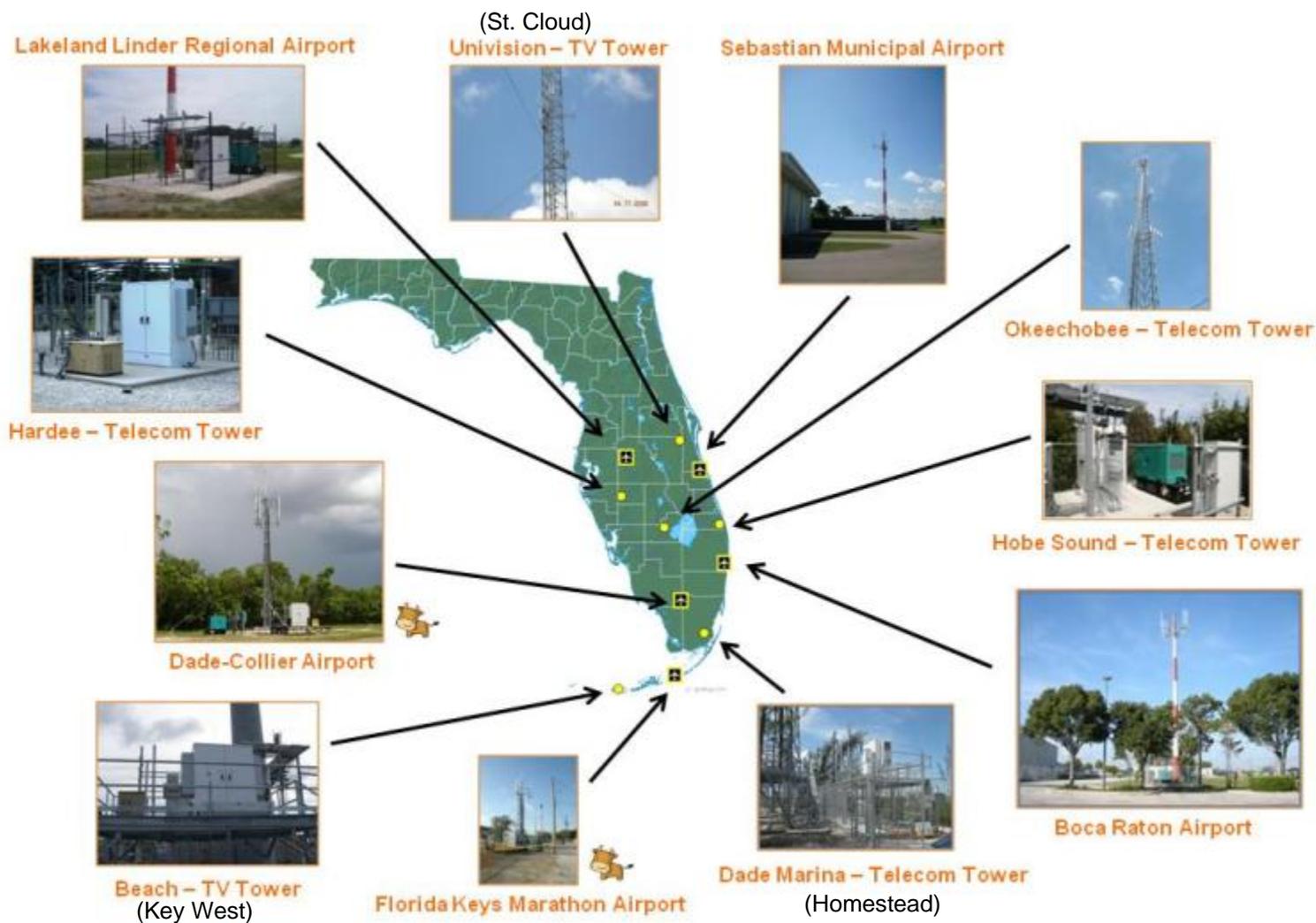
TIS-B is a service which provides ADS-B equipped aircraft with position reports from secondary surveillance radar on non-ADS-B equipped aircraft.



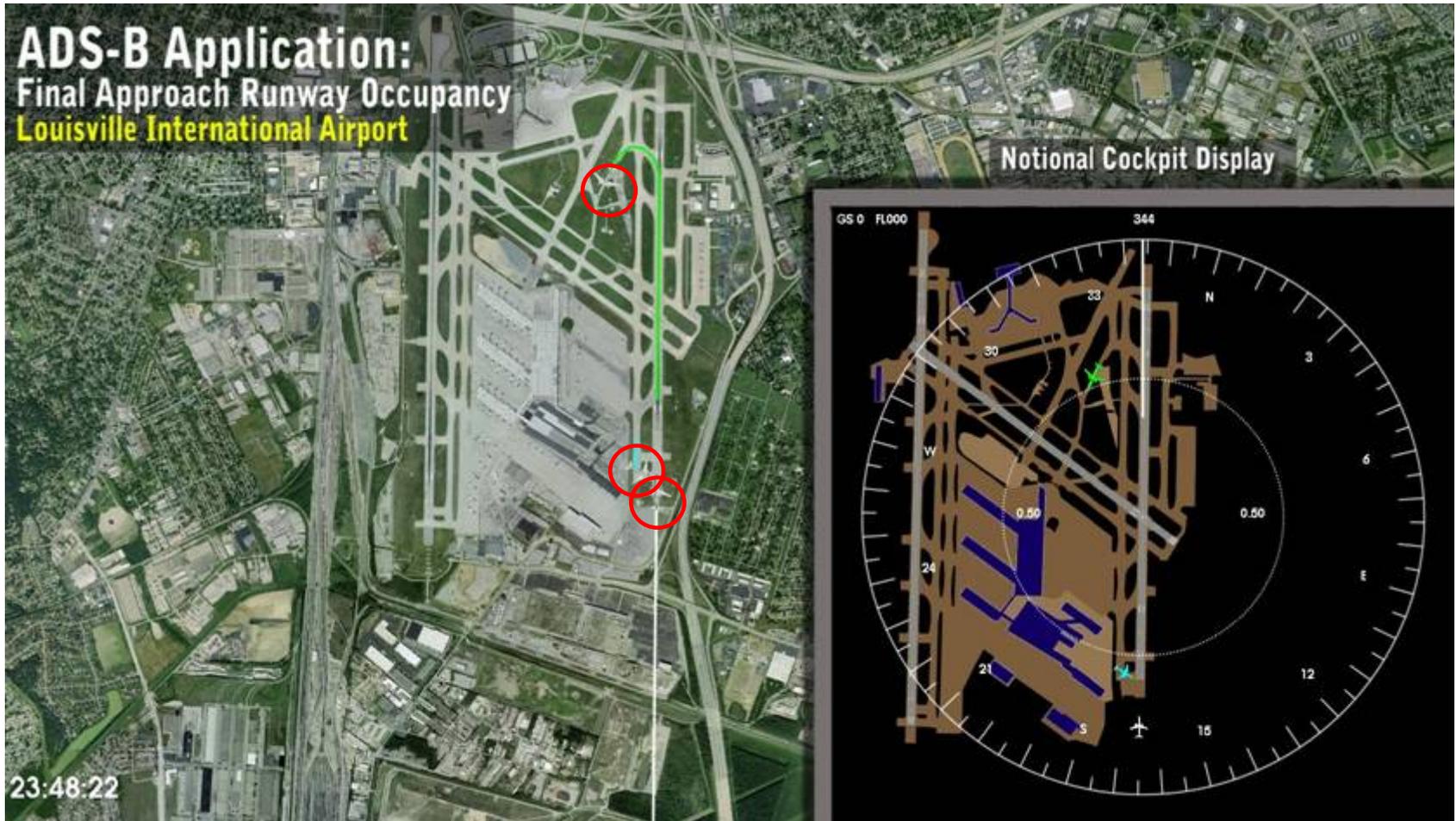
FIS-B transmits graphical National Weather Service products, temporary flight restrictions (TFRs), and special use airspace.



Essential Services: Miami



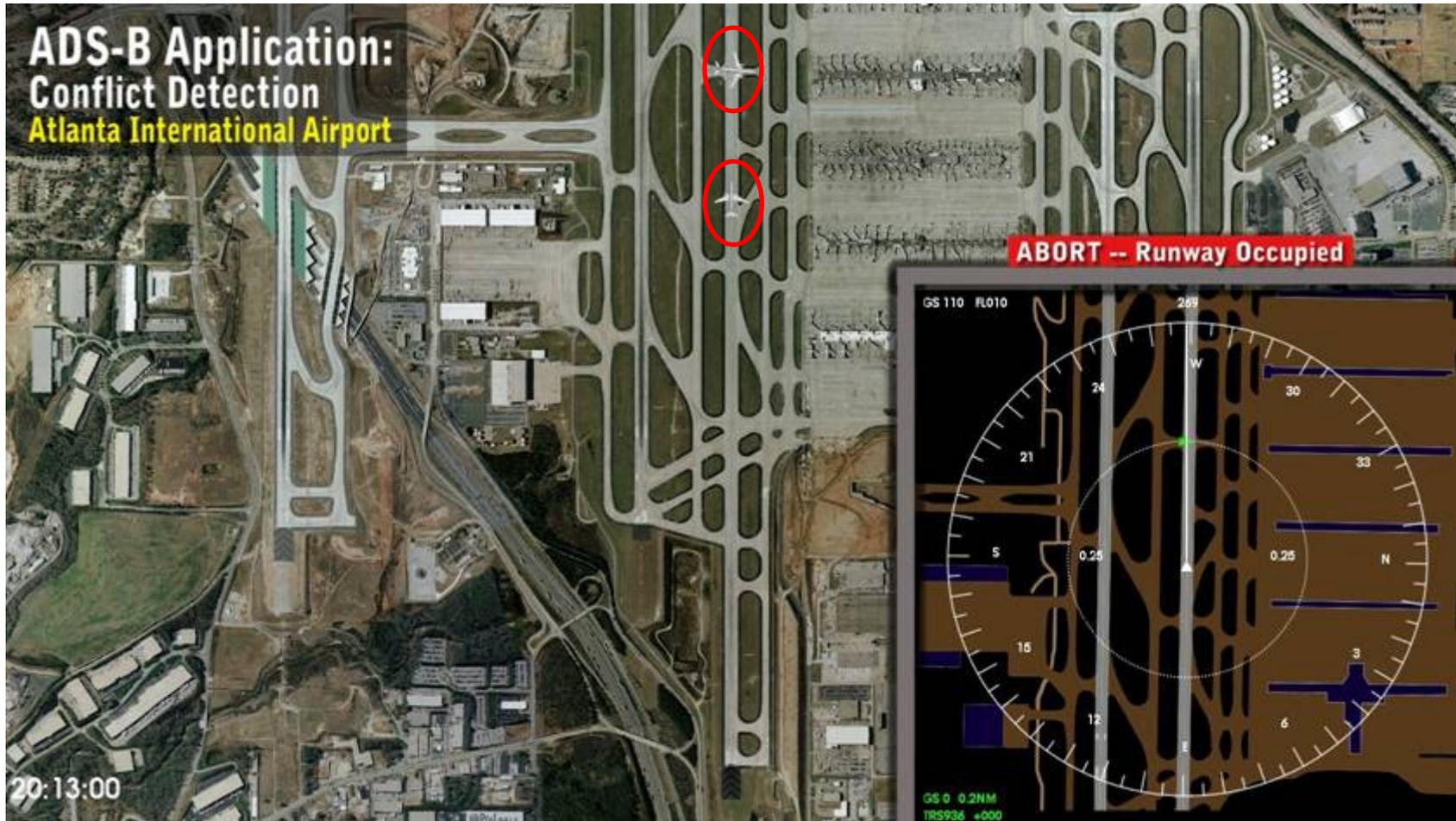
Airborne Applications: Final Approach and Runway Occupancy



Airborne Applications: Airport Surface Situational Awareness



Airborne Applications: ATSA Conflict Detection on the Surface



Critical Service: Automatic Dependent Surveillance - Broadcast (ADS-B)

- **Automatic**
 - Periodically transmits information with no pilot or operator input required
- **Dependent**
 - Position and velocity vector are derived from the Global Positioning System (GPS)
- **Surveillance -**
 - A method of determining position of aircraft, vehicles, or other asset
- **Broadcast**
 - Transmitted information available to anyone with the appropriate receiving equipment



Critical Services: Eastern Service Area

- **Louisville Terminal Service Volume (#85) / Surface Service Volume (#211)**
- **SDP: Louisville TRACON / SDF ATCT**
- **Automation: CARTS**
- **Key Milestones:**
 - ITT SDP Installation: Complete on December 7, 2008
 - Telco Installation: Complete January 5, 2009
 - Service Integration Testing: January 29, 2009
 - Complete Service Acceptance Test: April 2009
 - Completion of Formal Integration Testing with Automation: October 2009
 - Initial Operating Capability: October 2009



SDF Rack Delivery

Critical Services: Eastern Service Area

- **Philadelphia Terminal Service Volume (#28) / Surface Service Volume (#207)**
- **SDP: Philadelphia TRACON / Philadelphia ATCT**
- **Automation: STARS**
- **Key Milestones:**
 - ITT SDP Equipment Installation: May 2009
 - Service Integration Testing: May 2009
 - ASDE-X Installation with UAT Upgrades: August 2009
 - Service Acceptance Test Complete: August 2009
 - Completion of Formal Integration Testing with Automation: February 2010
 - Initial Operating Capability: February 2010



Philadelphia Airport

Critical Services: Central Service Area

- **Gulf of Mexico Service Volumes (#179 and #180)**
- **SDP: Houston ARTCC**
- **Automation: ERAM R1 delays impacted ADS-B EVM**
 - Earned Value Replan underway
 - ADS-B to HOST for IOC
- **Key Milestones:**
 - VHF Air-Ground Communications
 - 3 shelters delivered
 - 3 new Frequencies on-line
 - ITT Radio Station Siting:
 - ADS-B Shore: Completed
 - ADS-B Platforms: Completed
 - AWOS Platforms: 31 of 35 Approved
 - ITT SDP Equipment Installation: February 9, 2009
 - Service Integration Testing: May 2009
 - Complete Service Acceptance Test: June 2009
 - Completion of Formal Integration Testing with Automation: September 2009
 - Initial Operating Capability: December 2009



Houston ARTCC

Critical Services: Western Service Area

- **Juneau En Route Service Volume (#178)**
- **SDP: Anchorage ARTCC**
- **Automation: MEARTS**
- **Key Milestones:**
 - ITT/Alascom meeting- January 2009
 - ITT Installation: July 2009
 - System Integration Test (SIT): July 2009
 - Service Acceptance Test (SAT): October 2009
 - Completion of Formal Integration Testing with Automation: March 2010
 - Initial Operating Capability: April 2010



Juneau

Aviation Rulemaking Committee Status

- **The Aviation Rulemaking Committee (ARC) was chartered in July 2007**
- **The NPRM comment period closed on March 3, 2008**
- **Once the NPRM had been published and reviewed by the ARC, the ARC would make specific recommendations to the FAA about any changes that should be made to the proposed language in the NPRM.**
- **The ARC provided NPRM recommendations to the FAA on September 26, 2008.**

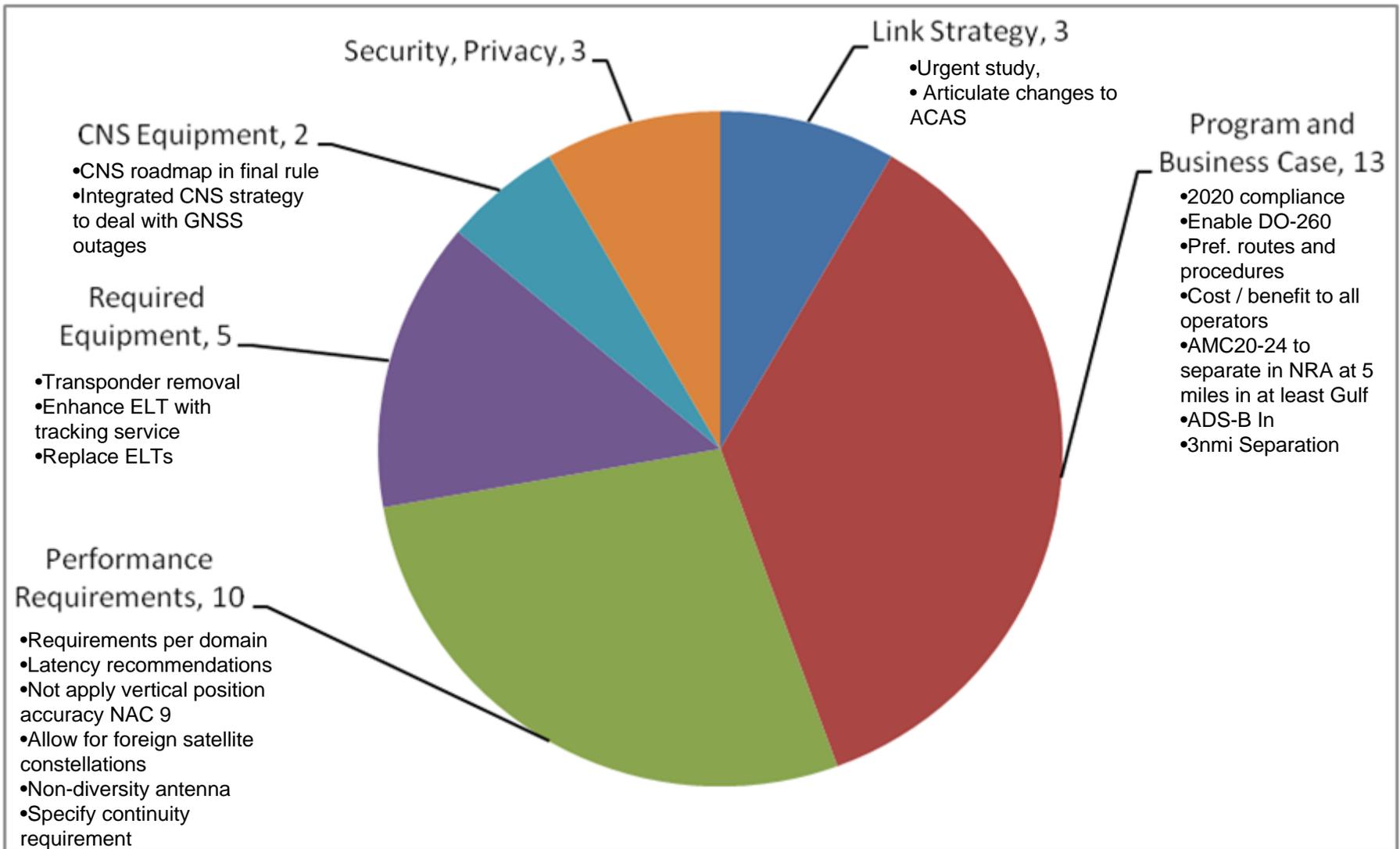


ARC Report Overview

- **The ARC made 36 summary recommendations divided into two broad categories:**
 - Recommendations to be resolved before any rule is adopted = 26
 - ADS-B Link Strategy
 - ADS-B Program and Business Case
 - Performance Requirements
 - Required Equipment
 - Communication, Navigation and Surveillance Equipment
 - Recommendations for future = 10
 - ADS-B Program and Business Case
 - Required Equipment
 - Communication, Navigation and Surveillance Equipment
 - Security, Privacy, and Malicious Use

The ARC emphasizes its support for ADS-B Out implementation in the NAS by 2020.

Summary of ARC Recommendations



Next Steps: FY2009 / FY2010 Schedule

Milestone	Planned Date of Completion / Status
FY2009	
Louisville Service Acceptance Test (SAT)	April 2009
Gulf of Mexico Weather Service Acceptance Test (SAT)	June 2009
Gulf of Mexico Service Acceptance Test (SAT)	June 2009
Philadelphia Service Acceptance Test (SAT)	August 2009
Gulf of Mexico Comm. and Weather Initial Operating Capability (IOC)	September 2009
FY2010	
Juneau Service Acceptance Test (SAT)	October 2009
Louisville IOC of Surveillance Services	October 2009
Gulf of Mexico IOC of Surveillance Services	December 2009
Philadelphia IOC of Surveillance Services	February 2010
Juneau IOC of Surveillance Services	April 2010
Final Rule Published	April 2010
Critical Surveillance Services ISD for ADS-B	September 2010



Summary

- **ADS-B will improve airport efficiencies**
 - Arrival Rate
 - Taxi Time
- **ADS-B will improve surface safety**
 - Aircraft to aircraft
 - Aircraft to vehicle
- **ADS-B rollout offers opportunity to airport community**
 - Expand services to 2nd tier airports

Backup



Overview: Free Products

Free Products	Update Interval	Transmission Interval
AIRMET	As Available	5 minutes
Convective SIGMET	As Available then at 15 minute intervals for 1 hour	5 minutes
METAR / SPECI	1 minute (where available) as available otherwise	5 minutes
NEXRAD Reflectivity (CONUS)	~ 5 minutes (10 minutes for clear air mode)	15 minutes
NEXRAD Reflectivity (Regional)	~ 5 minutes (10 minutes for clear air mode)	2.5 minutes
NOTAMs - D/FDC	As Available	10 minutes
PIREP	As Available	10 minutes
SIGMET	As Available, then at 15 minute intervals for 1 hour	5 minutes
SUA Status	As Available	10 minutes
TAF / AMEND	8 hours	10 minutes
Temperature Aloft	12 hours	10 minutes
Winds Aloft	12 hours	10 minutes

Other Agreements: NextGen

- **January 13, 2009 agreement between FAA, US Airways and ACSS**
 - Agreement establishes a public-private collaboration to develop a plan and endeavor to establish subsequent agreements to integrate implementation of Next Generation Air Transportation System (NextGen) capabilities in selected locations in the National Airspace System (NAS)
 - First Agreement Implementation Committee (AIC) meeting is scheduled for February 2, 2009

\$9.3M Acquisition

- **The FY08 Conference Report accompanying H.R. 3074 has provided additional funding to the ADS-B program "specifically to expedite air to air capabilities"**
- **FAA intends to utilize this funding to demonstrate ADS-B capabilities in the areas of surface conflict detection and cockpit alert capabilities**



\$9.3M Acquisition: Awards

On November 3, 2008 the FAA announced awards to two different vendors



\$9.3M Acquisition: Honeywell Award

- **Award:** \$3M
- **Proposal:** Develop requirements, standards and human factors analysis
- **Location(s):**
 - Seattle Tacoma
 - Snohomish County Paine Field
- **Aircraft (experimental):**
 - 1 Cessna Sovereign
 - 1 Beechcraft King
- **Display:** EFB and MFD
- **Pilots:**
 - JetBlue Airways
 - Alaska Airways



\$9.3M Acquisition: ACSS Award

- **Award:** \$6M
- **Proposal:** Create standards, flight demonstrations and prototypes
- **Partner:** US Airways
- **Location:** Philadelphia
- **Aircraft (2 experimental, 19 revenue service):**
 - King Air C90 (1)
 - Airbus 330 (20)
- **Display:** Class 2 EFB / AGD



Schedule to Final Rule

Milestone	Planned Date of Completion	Status / Comments
FAA Rulemaking Team finalizes RPR Phase 3	January 14, 2009	Complete
RPR Phase 3 Submitted to ARM	January 21, 2009	Complete
Rulemaking Council Approval of RPR	January 27, 2009	Complete
Rulemaking Team Drafts Final Rule	May 2009	
Final Rule Economic Assessment	August 2009	
Final Rule Concurrence through Directors	October 2009	
Final Rule Concurrence through Associates	November 2009	
Final Rule Concurrence through Administrator	December 2009	
Final Rule Approved through OST	January 2010	
Final Rule Approved through OMB	April 2010	
Final Rule Published in Federal Register	April 2010	

RPR = Rulemaking Project Record

