

Delivering NextGen

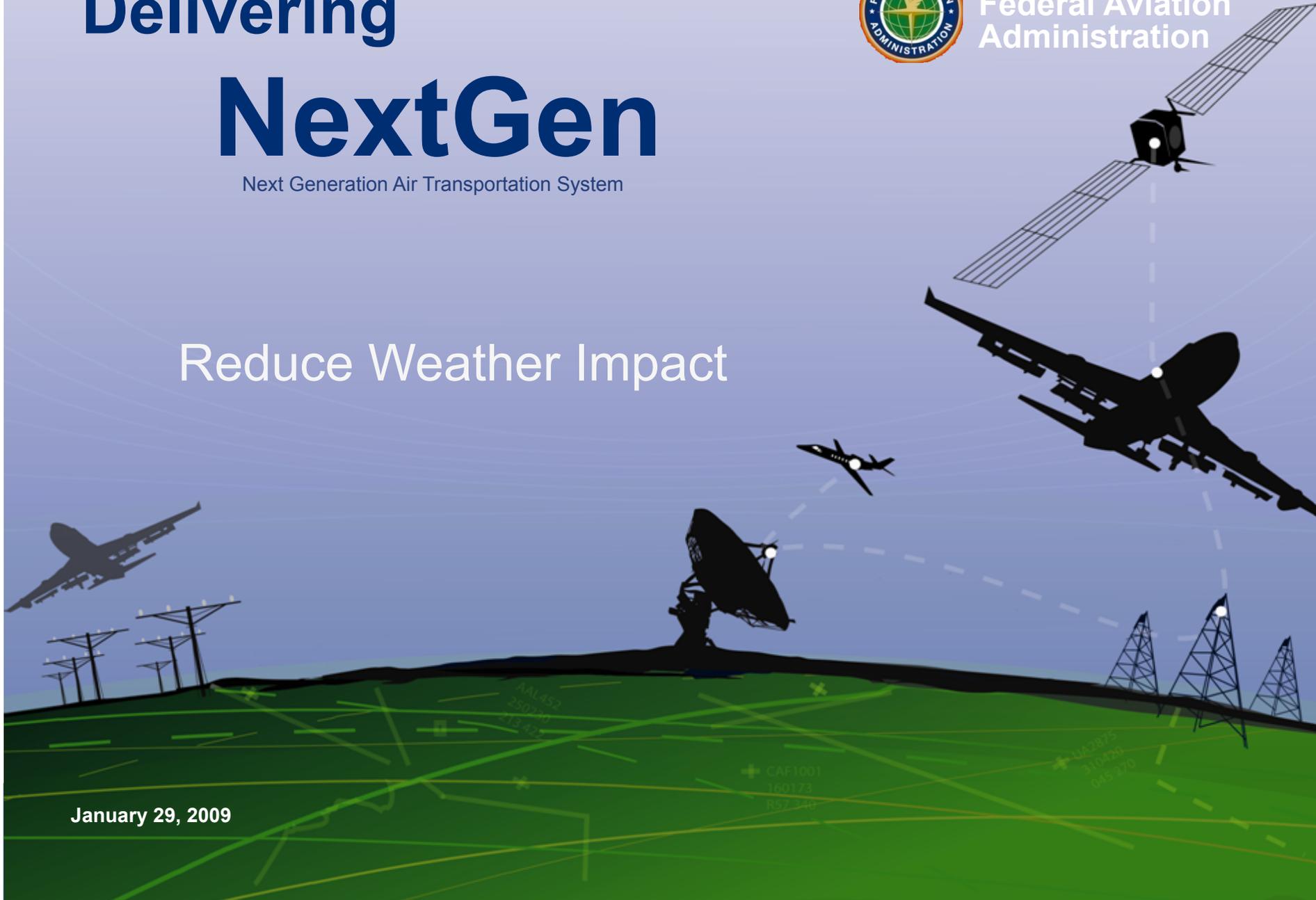
Next Generation Air Transportation System



Federal Aviation
Administration

Reduce Weather Impact

January 29, 2009



NextGen Mid-Term Reduce Weather Impact

Definition

Reduced Weather Impact set includes improvements to weather information and its use to improve safety, capacity, and efficiency.

Capabilities

Trajectory-Based Weather Impact Evaluation [103119]

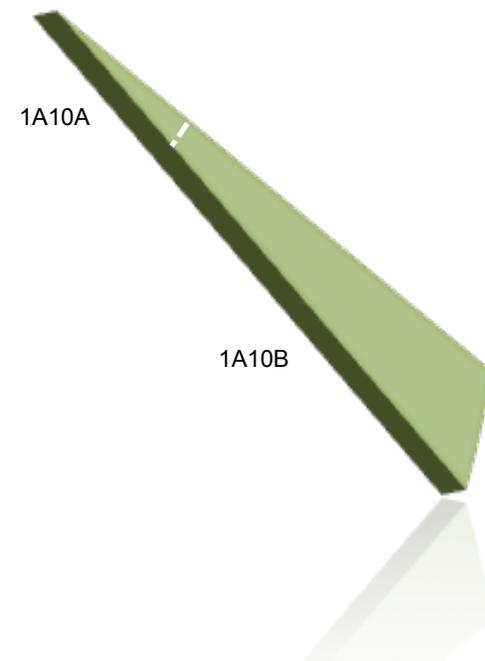
Operational Objectives

- Improved Efficiency
- Enhanced Safety
- Improved Throughput
- Reduced Fuel-burn and Engine Emissions

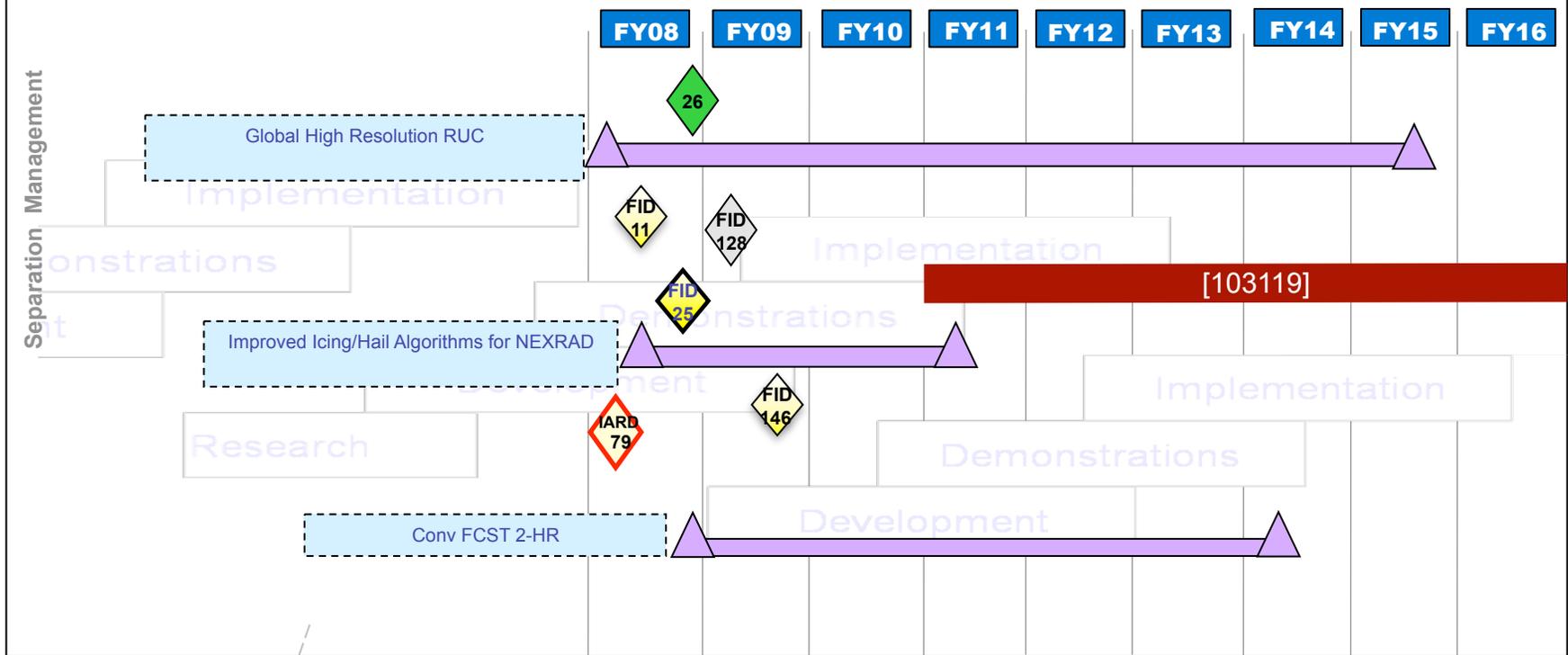
FY09 Activities

- 1A10A Weather Observation Consolidation
- 1A10B Weather Forecast Improvements

Funding

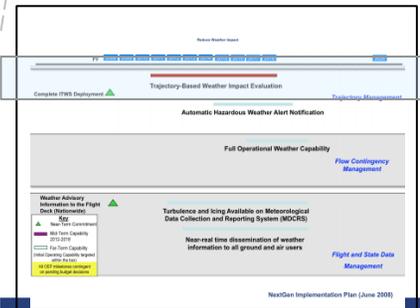


Improve Reduced Weather Roadmap to Improvements



Capability Description

103119- Trajectory-Based Weather Impact Evaluation - Weather information and its expected impact on individual 4D trajectories will be integrated into decision-support tools, where it will be translated into operational impacts to support tactical and strategic decisions on individual and group flights. This stands to improve overall flight efficiency and increase the effective use of capacity. Decision-support strategies include automation-to-automation integration of Air Navigation Service Provider (ANSP), and decision-support capabilities with those of users, where appropriate.



NextGen Mid-Term Relevant EA Decisions

Reduce Weather Impact		
Decision Point (DP#)	Decision Point Description	Target Dates
11	Final Investment Decision for WARP WINS dissemination via publish/subscribe via SWIM Seg 2 as component of NNEW	2009
25	FID to baseline NEXRAD and fund science evolution on NEXRAD, including Dual Policy	2008 Q4
26	EC Strategy Decision to outsource existing ASOS maintenance Contract [with NWS]	2008 Q4
79	Investment Decision (IARD) for NextGen Wx Processor WP1 and NNEW WP1 functionality to enter IA	2008 Q4
128	Final SWIM 1 Ground Decision	2009
146	Final Investment Decision to integrate CIWS functionally into TFM or incorporate functionally into NextGen Wx Processor WP2; also Includes decisions to implement Convective 6-8 hour forecast and enhanced aircraft Obs into NWP WP2	2009 Q4



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BLI -1A10A

Weather Observation Consolidation

<u>FY09 Milestones</u>	Q1	Q2	Q3	Q4
Multi-function Phased Array Radar Technology Research Plan				
Update Enterprise Architecture Products				
Right-sizing Sensor Networks Plan (See Section 8.1)				
Custom Transmit/Receive Chip Pre-Prototype				
Multi-function Phased Array Radar RFI				



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Weather Forecast Improvements

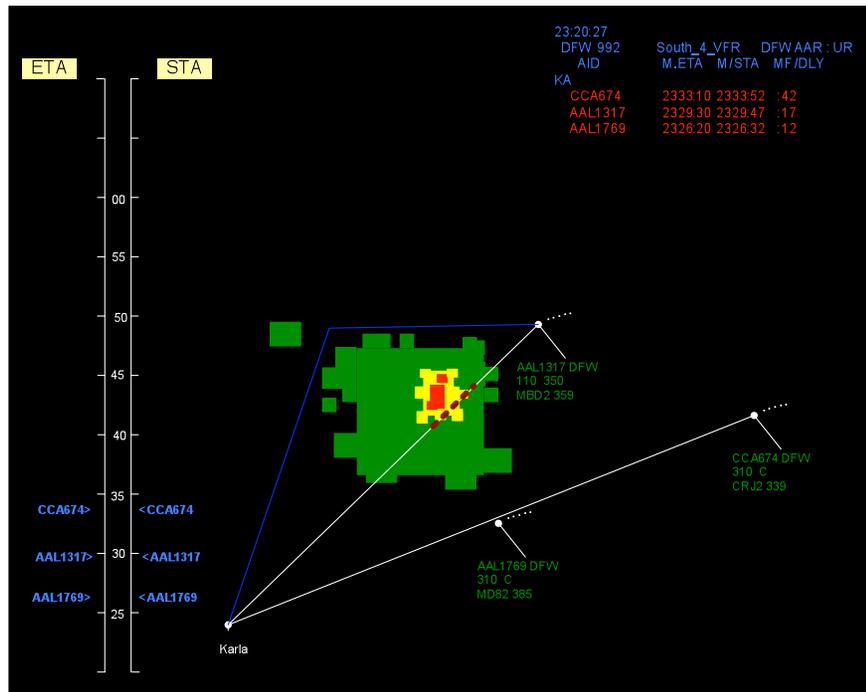
<u>FY09 Milestones</u>	Q1	Q2	Q3	Q4
NAS Legacy System Migration Architecture Study				
Preliminary OMB-300 Update PPR and BCAR (attachments 1 and 2)				
Update Enterprise Architecture Products				
Evaluations of Advance Weather National Ceiling and Visibility Analysis and Forecast Icing Products				
Establish Advanced Convective Forecast Summer Demonstration				

Date: January 29, 2009



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Demonstrations: Weather Integrated into TMA / ERAM



- **Initiative:** Initial demonstration showed incorporation of convective weather data into Traffic Management Advisor (TMA) and EnRoute Automation Modernization (ERAM) to maintain better airport arrival rates
- **Benefits:**
 - Alleviate weather impacts through advanced planning tools
- **Partners:** Embry Riddle, Lockheed Martin, CSC
- **Status:**
 - Laboratory demonstration Nov 08
 - Final Report delivery Jan 09
 - Planning for potential follow-on FY09 demo by Apr 09