

Federal Aviation Administration

National Airspace System

Capital Investment Plan

Appendix D

Fiscal Years 2016 – 2020

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APPENDIX D

FAA CAPITAL PROGRAM INFORMATION FOR MAJOR PROGRAMS

Because of the criticality of on-budget and on-time acquisitions to the efficient transition to NextGen, The Government Accountability Office (GAO) was directed to determine the status of ATO's performance in acquiring ATC systems.

In December 2007 the GAO issued its report GAO-08-42 entitled, "AIR TRAFFIC CONTROL FAA Reports Progress in System Acquisitions, but Changes in Performance Measurement Could Improve Usefulness of Information". This report documented the findings and provided recommendations to the FAA.

One of GAO's recommendations was to identify or establish a vehicle for regularly reporting to Congress and the public on FAA's overall, long-term performance in acquiring ATC systems by providing original budget and schedule baselines for each program and the reasons for any baseline revision. The table provided in this section provides the most current information for FAA's Major Active Programs and is in direct response to the GAO's recommendation.

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**FAA Capital Programs
Current Information for Major Programs**

Programs	Original Baseline			Current Baseline			Current Estimate		Comments
	Original APB Date	Completion Date	Budget \$M	Current APB Date	Revised Completion Date	Revised Budget \$M	Completion Date	Budget \$M	
Automatic Dependent Surveillance Broadcast (ADS B) – Baseline Services & Applications FY14 - 20 ACAT 1	May-12	Sep-20	\$960.4	May-12	Sep-20	\$960.4	Sep-20	\$960.4	
Collaborative Air Traffic Management Technologies (CATMT) Work Package 2 ACAT 3	Sep-08	Sep-14	\$109.5	Sep-08	Sep-14	\$109.5	Mar-15	\$107.7	Current Estimate vs Current Baseline: The completion date for CATMT WP2 has slipped from Sep-14 to Mar-15 resulting in a 6 month schedule delay (-8.3% variance). The slip in schedule is associated with a delay in Operational Test & Evaluation (OT&E) of Traffic Flow Management System (TFMS) Release 8 scheduled for March-April 2013. The delay results from Sequestration impacting the air traffic controllers' availability to conduct testing. OT&E was rescheduled to the next available testing window in early October 2013 but was then delayed further due to the government shutdown. This results in a cascading negative effect on the development, testing and deployment of subsequent TFMS Releases which contain CATMT WP2 functionality. The TFMS Release 11 (final APB milestone) is now projected to be completed by March 2015, 6 months later than planned.
Data Communications (Data Comm) Segment 1, Phase 1 (S1P1) ACAT 1	May-12	May-19	\$741.4	May-12	May-19	\$741.4	May-19	\$741.4	
Data Communications (Data Comm) Segment 1, Phase 2 (S1P2), Initial Services ACAT 1	Oct-14	Feb-21	\$816.7	Oct-14	Feb-21	\$816.7	Feb-21	\$816.7	NOTE: New Addition to Appendix D. Final Investment Decision (FID) approved by JRC in Oct-14.

**FAA Capital Programs
Current Information for Major Programs**

Programs	Original Baseline			Current Baseline			Current Estimate		Comments
	Original APB Date	Completion Date	Budget \$M	Current APB Date	Revised Completion Date	Revised Budget \$M	Completion Date	Budget \$M	
En Route Automation Modernization (ERAM) ACAT 1	Jun-03	Dec-10	\$2,154.6	Jun-11	Aug-14	\$2,484.6	Mar-15	\$2,579.7	<p>Current Baseline vs Original Baseline: The completion date for ERAM has slipped to Aug-14 resulting in a 44 month schedule variance (-49%) to the original baseline. The budget has increased by \$330M (-15.3% variance). The budget and schedule variances are associated with the following factors: (1) project plan did not factor in the risks associated with the operational complexity at the selected sites; (2) insufficient testing environment failed to identify software issues before deployment to key sites; (3) insufficient communication between the Program office and field sites; and (4) uneven stakeholder engagement during development/deployment.</p> <p>Current Estimate vs Current Baseline: Cost Variance - \$43.9M of the variance results from transferring O&M funding to the F&E budget line to cover second level engineering cost. \$51.2M of this variance is related to the schedule slip of 7 months due to sequestration. This results in a total cost variance of \$95.1M (-3.8%) to the current baseline. The impact of the sequestration in March 2013 which reduced funding in the F&E and Operations accounts severely impacted the availability of resources to support site teams from March 2013 to May 2013. Specific impacts were to Subject Matter Experts (SMEs), program overtime, and travel funding, as well as the inability to proceed with any material re-planning until these teams were allowed to resume their work which occurred in late May 2013. These impacts have resulted in a schedule delay of 7 months (-5.2%) from the baseline schedule completion date of August 2014, approved by the JRC in June 2011.</p>
ERAM System Enhancements and Technology Refresh (SETR) ACAT 1	Sep-13	Sep-17	\$152.9	Sep-13	Sep-17	\$152.9	Sep-17	\$152.9	

**FAA Capital Programs
Current Information for Major Programs**

Programs	Original Baseline			Current Baseline			Current Estimate		Comments
	Original APB Date	Completion Date	Budget \$M	Current APB Date	Revised Completion Date	Revised Budget \$M	Completion Date	Budget \$M	
Facility Security and Risk Management (FSRM) 2 ACAT 2	Jun-11	Sep-22	\$182.5	Jun-11	Sep-22	\$182.5	Sep-22	\$182.5	
Logistics Center Support System (LCSS) ACAT 2	Apr-10	Feb-14	\$67.4	Apr-14	Apr-16	\$79.4	Apr-16	\$79.4	Current Baseline vs Original Baseline: The schedule delay of 24 months (-50% variance) and cost increase of \$12M (-17.8% variance) is associated with the following factors: 1) Business processes developed during the Business Process Reengineering (BPR) phase did not address system interactions between functional areas; 2) delays in developing interfaces with legacy systems; 3) complexity of the tool integration required for interfaces; and 4) changes in contract and program management. In April-14, the JRC approved a Baseline Change Decision (BCD) for LCSS.
NAS Voice System (NVS) Demonstration and Qualification Phase	Sep-14	Mar-20	\$294.2	Sep-14	Mar-20	\$294.2	Mar-20	\$294.2	NOTE: New Addition to Appendix D. Final Investment Decision (FID) approved by JRC in Sept-14.
Next Generation Air-to-Ground Communication System (NEXCOM) - Segment 2, Phase 1 ACAT 2	Sep-11	Sep-18	\$285.9	Sep-11	Sep-18	\$285.9	Sep-18	\$285.9	
Regulation and Certification Infrastructure for System Safety (RCISS) - Segment 2 ACAT 3	Oct-10	Sep-16	\$90.7	Oct-10	Sep-16	\$90.7	Sep-16	\$90.7	

**FAA Capital Programs
Current Information for Major Programs**

Programs	Original Baseline			Current Baseline			Current Estimate		Comments
	Original APB Date	Completion Date	Budget \$M	Current APB Date	Revised Completion Date	Revised Budget \$M	Completion Date	Budget \$M	
Runway Status Lights (RWSL) ACAT 1	Jan-10	Oct-15	\$327.4	Jul-13	Sep-17	\$366.7	Sep-17	\$366.7	Current Baseline vs Original Baseline: In July-13 the JRC approved a Baseline Change Decision (BCD) for the RWSL program. The JRC has determined to minimize the cost exposure to the baseline, deployment will be limited to the 16 airports that have been fully committed to date and San Francisco International airport. This results in a reduction of 6 airports (-26.1% variance) from the original 23 airports approved at the FID in Jan-10. The cost (\$39.3M, -12%) and schedule (-26.1%) variances are attributed to the following factors: (1) construction plans changed due to costlier techniques by Airport Authorities; (2) limited runway/taxiway surface availability to meet installation schedules; (3) requirement changes that included increases in the light count, the switch from incandescent lights to LED, and the increased supportability for these requirements; (4) costly duct bank and shelter installations; (5) under estimation of site and depot spares costs; and (6) additional engineering development for supportability enhancements.

**FAA Capital Programs
Current Information for Major Programs**

Programs	Original Baseline			Current Baseline			Current Estimate		Comments
	Original APB Date	Completion Date	Budget \$M	Current APB Date	Revised Completion Date	Revised Budget \$M	Completion Date	Budget \$M	
System Approach for Safety Oversight (SASO) Phase IIa ACAT 3	Sep-08	Sep-13	\$88.0	Sep-13	Jan-16	\$126.9	Jan-16	\$126.9	Current Baseline vs Original Baseline: The completion date for SASO Phase IIa has slipped to Jan-16 resulting in a 28 month schedule delay (-46.7% variance). This is associated with: (1) the initial development of the prototype version of the Safety Assurance System (SAS) failing to meet user expectations; (2) subsequent SAS redesign; (3) software development delays; and (4) a new incremental testing strategy that was implemented that added additional testing to the schedule. As the issues were raised, concerns at the executive level were addressed through several means. A SAS Executive Review Board and SAS Steering Committee were established for guidance and oversight, a Technical Status (TechStat) Review of the Program was conducted and a new program management team was assigned to the program. During development testing and bug fixes it was determined that an increase in FAA automation requirements was needed to achieve the desired functionality. In addition, software development delays have led to an increase in costs, resulting in a -44.2% cost variance. In Sep-13, the Joint Resources Council (JRC) approved the Baseline Change Decision (BCD) for SASO Phase IIa.
System Wide Information Management (SWIM) Segment 1 ACAT 2	Jul-09	Sep-15	\$310.2	Jul-12	Sep-15	\$310.2	Sep-15	\$306.4	
System Wide Information Management (SWIM) Segment 2A ACAT 2	Jul-12	Dec-17	\$120.2	Jul-12	Dec-17	\$120.2	Dec-17	\$120.2	

**FAA Capital Programs
Current Information for Major Programs**

Programs	Original Baseline			Current Baseline			Current Estimate		Comments
	Original APB Date	Completion Date	Budget \$M	Current APB Date	Revised Completion Date	Revised Budget \$M	Completion Date	Budget \$M	
Terminal Automation Modernization and Replacement (TAMR), Phase 3, Segment 1 (P3, S1) ACAT 1	Dec-11	Oct-17	\$438.0	Dec-11	Oct-17	\$438.0	Oct-17	\$526.7	Current Estimate vs Current Baseline: The cost increase of \$88.7M (-20.3% variance) is associated with the following factors: 1) A number of new software requirements (gaps) have been identified from deploying to the first sites. These first deployments demonstrated the significant complexity of transitioning to STARS at large TRACONS which had not been considered with the original baseline and are critical for operational suitability; 2) In addition, the complexity of operations and over a decade of CARTS tailoring by sites was not understood and under-estimated; and 3) Costs were underestimated and not considered for support costs and site spares. During FY14, the Joint Resources Council (JRC) was notified of the current estimate to complete the program.
Terminal Automation Modernization and Replacement (TAMR), Phase 3, Segment 2 (P3, S2) ACAT 1	Sep-12	Aug-19	\$462.5	Sep-12	Aug-19	\$462.5	Aug-19	\$505.7	Current Estimate vs Current Baseline: The cost increase of \$43.2M (-9.3% variance) is associated with the impact of higher prime costs and a funding reduction in FY16, which may require additional funding to complete the program. The Program Office is reviewing the overall program and assessing potential mitigation actions to minimize the impact to the baseline. Assessments and estimates are being validated to project the amount and years of any potential shortfall. During FY14, the Joint Resources Council (JRC) was notified of the current estimate to complete the program.
Terminal Automation Modernization and Replacement (TAMR), Phase 1 Technology Refresh ACAT 1	Sep-12	Feb-20	\$531.5	Sep-12	Feb-20	\$531.5	Feb-20	\$531.5	
Wide Area Augmentation System (WAAS) Phase IV, Segment 1 - Dual Frequency Operations (DFO)	May-14	Sep-19	\$603.2	May-14	Sep-19	\$603.2	Sep-19	\$603.2	NOTE: New Addition to Appendix D. Final Investment Decision (FID) approved by JRC in May-14.

**FAA Capital Programs
Major Programs with Completed Acquisition Phase**

Programs	Original Baseline			Current Baseline			Actual Results		Comments
	Original APB Date	Completion Date	Budget \$M	Current APB Date	Revised Completion Date	Revised Budget \$M	Completion Date	Budget \$M	
Automatic Dependent Surveillance Broadcast (ADS-B) Segments 1 & 2 ACAT 1	Aug-07	Sep-14	\$1,681.5	Mar-11	Sep-14	\$1,695.1	Sep-14	\$1,711.9	Actual Result vs Current Baseline: In September 2014, IOC of Surface Advisory Services was achieved at JFK, Las Vegas, and Honolulu, the final 3 sites of 35 ASDE-X sites, completing the schedule baseline. The ADS-B program is completing with a -1.0% variance to the cost baseline. The increase is due to a \$6.8M funding earmark in FY 2009 to conduct a Target Level of Safety study to obtain approval for 3 nautical mile separation standards for En Route; a funding earmark of \$9.3M in FY 2008 to accelerate Future Air to Air
Time Based Flow Management (TBFM) WP2 ACAT 3	Apr-10	Nov-14	\$115.0	Apr-10	Nov-14	\$115.0	Nov-14	\$114.3	Actual Result vs Current Baseline: The national System Support Modification (SSM) for Release 4.3 was issued November 26, 2014, completing the TBFM WP2 functionality deployment.

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