



Federal Aviation
Administration

REDAC / NAS Ops

*Review of FY 2022
Proposed Portfolio*

*Operations Concept
Development and
Infrastructure (ATDP)*

BLI Number: 1A01C

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Date: 3/24/2020



Operations Concept Development and Infrastructure (ATDP)

1A01C

What are the benefits to the FAA

As new concepts evolve, this program identifies operational gaps and potential technologies that could address these gaps. It conducts studies and analyses in operational focus areas to include Integration of Space Operations into the NAS, Evolution of Trajectory-Based Operations, and Time-Based Metering Operations with Advanced Rerouting. This program ensures that potential enhancements are operationally sound and captured in the Architecture plans for the NAS.

What determines program success

Success is measured by the completion of the goals identified in multi-year plans developed for each activity. Initiatives that successfully complete all the project goals identified are then presented as candidates for acquisition.

ATDP/ BLI# 1A01C: Overview Capabilities

People:

- Program Managers: James Wetherly
- Subject Matter Experts: Traffic Managers, ATC, Discipline Experts, Airspace User Community
- Research Partners: ANG, NASA, MITRE, Lincoln Labs, Volpe, Academia

Laboratories:

- WJHTC, MITRE/CAASD, NASA, Volpe, DAB Test Bed

ATDP – Focal Areas FY (20)

- Future Traffic Flow Management Operational Analysis
- Preconditioning of Flows for Arrival Metering Operations
- iTBO Gate-to-Gate Strategy
- Strategy to Achieve Flight Deck-Based Time Based Management
- Space Operations Strategic Vision and Action Plan for NAS Integration
- NAS Operations Dashboard

Future Flow Management (FFM) Operational Analysis

Project Description

Summary Project Description

Provide operational analysis support for the FFM Strategy Development in partnership with ANG, AJM, AJT, AJR, and AJI.

Target Outcome

Prioritized operational opportunity space

Target Completion Date

Q4 FY 2021

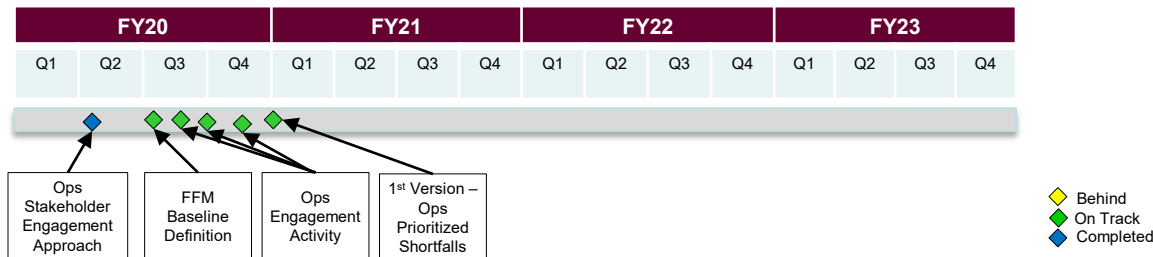
Major Accomplishments

Presented CDM tasking at CSG for operational stakeholders' engagement

Project Risks/Opportunities

Outcome: Inform the TFM baseline definition, operational gap analysis, and operational prioritization

Schedule



Preconditioning of Flows for Arrival Metering

Project Description

Summary Project Description

Assessment on the application of the current set of TFM tools to manage the flow into an arrival metering operations. Leverages NASA's Integrated Demand Management (IDM) research.

Target Outcome

Recommendations for improved arrival TBM

Target Completion Date

Q4 CY2020

Major Accomplishments

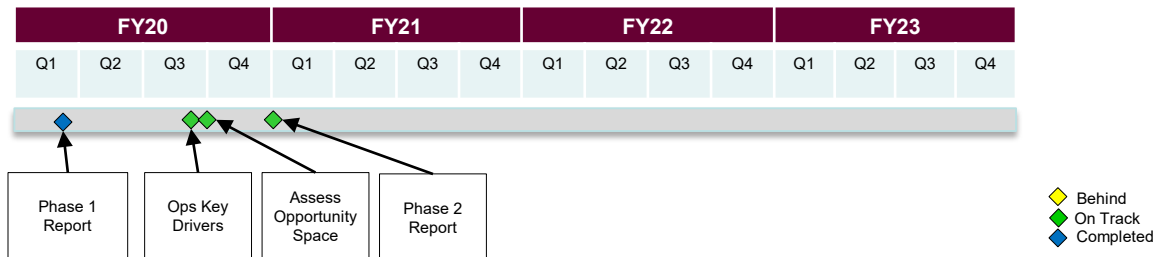
Completed Phase 1

Project Risks/Opportunities

Phase 1 Outcome: benefits of applying the strategic preconditioning concept for arrivals in PHL was limited given the proposed TBFM extended metering design.

Phase 2 Outcome/Opportunity: assess the potential operational benefits at other NAS sites; Identify operational needs for consideration under FFM

Schedule



iTBO Gate-to-Gate Strategy

Project Description

Summary Project Description

Describe an iTBO integrated operational view, on a position-by-position basis, by key operations for specific ATM roles, accounting for applicable procedures.

Target Outcome

Source to describe and inform field communications, training development, and site-agnostic guidance for SOPs and LOAs

Target Completion Date

Q3 CY2020

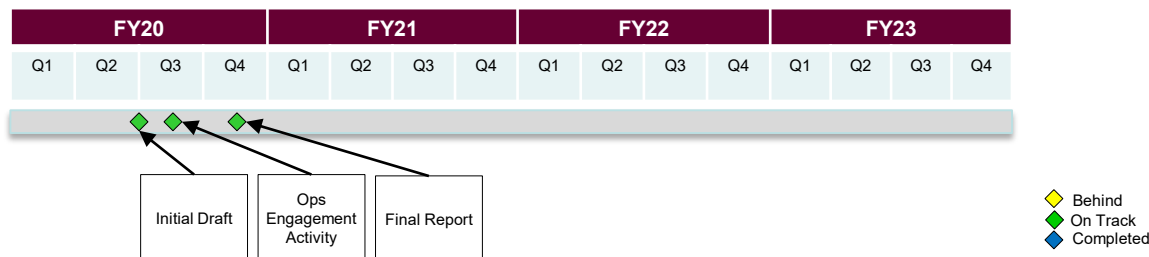
Major Accomplishments

None

Project Risks/Opportunities

Opportunity: Informs the TFM baseline definition; Identify latent gaps for consideration under the Future Flow Management (FFM) Strategy

Schedule



Strategy to Achieve Flight Deck-Based Time Base Management (TBM)

Project Description

Summary Project Description

Define strategy to achieve flight deck-based (e.g., FMS RTA, EFB based apps, etc.) Time Based Management (TBM).

Target Outcome

Recommendations for resolving the technical and operational issues, propose sequence, timeline, and required actions for FAA & Industry.

Target Completion Date

Q3 CY2020

Major Accomplishments

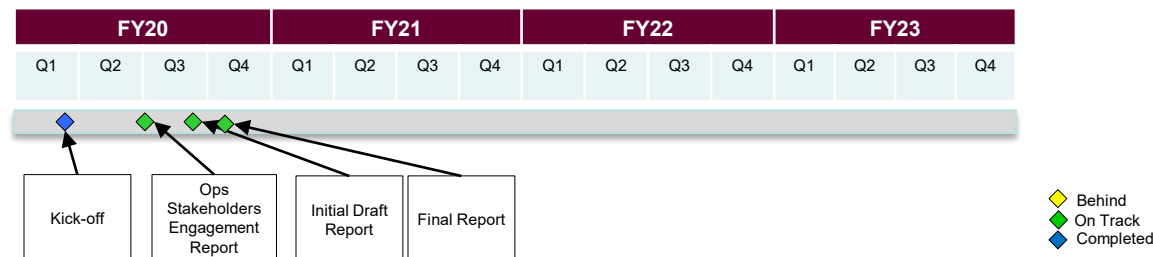
None

Project Risks/Opportunities

Opportunity:

- Identify operational challenges & implications to both ATC & Airlines, certification/policy considerations
- Inform the FFM operational gap analysis

Schedule



Strategy & Action Plan for the Integration of Space Operations into the NAS

Project Description

Summary Project Description

Understand Government/Industry enterprise plans as they relate to integration of space operation into the NAS; Gain concurrence on an FAA unified vision and strategy, and develop the ATO Action Plan

Target Outcome

Action Plan that articulates the full range of ATO activities to support execution of the strategy and the dependencies with other FAA offices and external organizations

Target Completion Date

Q2 CY2021

Major Accomplishments

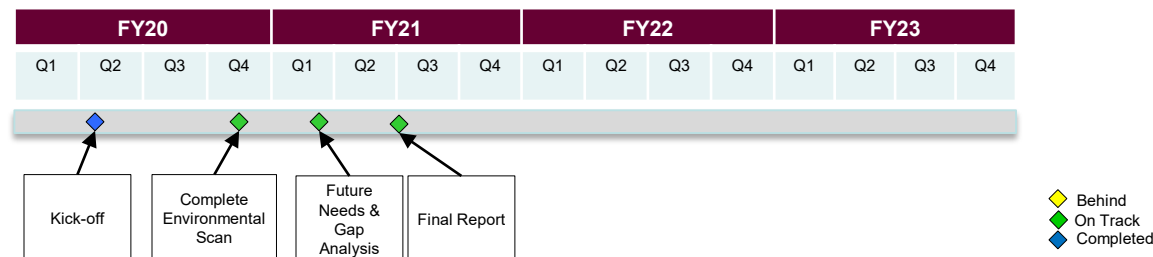
- Stakeholders kick-off (Jan 2020)

Project Risks/Opportunities

Opportunity: Identify key challenges for space operations; internal/external drivers of changes in services needed; key initiatives; gaps for meeting future services

Outcome: Unified vision for space operations; Identify FAA services needed to support the vision; rolling 5-year ATO action plan for alignment, synchronization, and inform enterprise decisions; External communications for collaboration/partnerships

Schedule



NAS Operations Dashboard (NOD)

Project Description

Summary Project Description

The NOD concept provides a display of performance metrics and alerts for Traffic Management (TM) to support improved situational awareness and collaboration

Target Outcome

Initial Capability Tech Transfer Package and evolution plan

Target Completion Date

Q4 CY2021

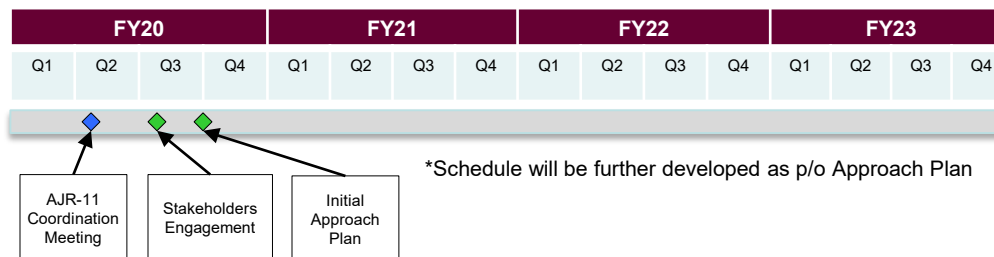
Major Accomplishments

None

Project Risks/Opportunities

Opportunity: Provide operational Traffic Management support through a common platform for shared situational awareness, customizable traffic flow management monitoring and alerting, for enhanced coordination and proactive collaboration to solve operational traffic management issues.

Schedule*



Anticipated Research in FY21

Planned Research Activities

- Operational Integration Analysis: Conduct analysis of potential operational integration issues as emerging concepts evolve in areas such as Space Operations and UAS
- Advanced Rerouting and Time-Based Management (TBM) Operations: In collaboration with internal and external stakeholders, conduct concept validation activities, support technical transfer activities, and artifact development for the integration of advanced rerouting and TBM,
- Trajectory-Based Operations (TBO): Leveraging previous trajectory-related elements/activities (e.g., PBN, T/S/S Tools), and international activities, mature TBO concepts through operational scenario development and simulation activities.

Expected research Products

- Identification of operational opportunities and challenges as emerging concepts evolve,
- Simulation activities, mature Concept of Operations, and risk mitigation recommendations,
- Tech transfer packages.

Emerging FY22 Focal Areas

- **Operational Integration Analysis as emerging concepts evolve,**
- **Enhanced synchronization of strategic and tactical capabilities to optimize Time-Based Management.**

Operations Concept Development and Infrastructure (ATDP)

Research Requirement

As new concepts evolve, this program identifies operational gaps and potential technologies that could address these gaps by conducting studies and analyses in operational focus areas

Outputs/Outcomes

Concept validation supports development, analysis, and simulation of new concepts to assess requirements and to evaluate the impact of the concept on system capacity, efficiency, safety and human performance potentially leading to investment decision.

FY 2022 Planned Research

Analysis and refined concepts leading to enhanced synchronization of strategic and tactical capabilities to optimize TBM operations

Analysis and concept generation on operational issues as they arise

Out Year Funding Requirements

FY20	FY21	FY22
\$ 5M	\$ 5M	\$ 6M