TFDM Tech Talk: TFDM Testbed Demo

Presented to: TFDM Industry Stakeholders

By: FAA TFDM Collaborative Site Implementation Team

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Introductions

Keith Henry	FAA	TFDM CSIT Lead
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Agenda

- TFDM & Surface Metering Program Overview
- TFDM External Data Flow & Governance
- Surface CDM Enabling Data & Submission
- CDM Flight Times
- CDM Flight Information
- Stand Availability & Conflicts
- CDM Additional Intent Information
- Terminal Flight Data Not Currently Used in TFDM
- Other Flight Operator Data
- TFDM TFCS Data & Submission
- Additional Resources & Next Steps

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Terminal Flight Data Manager (TFDM) Overview

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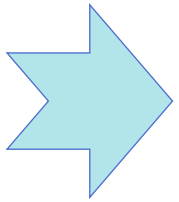
TFDM Program Overview

TFDM is the surface management solution for NextGen and iTBO.

https://www.faa.gov/air_traffic/technology/tfdm/

- TFDM will provide an integrated tower flight data automation system, which will improve situational awareness.
- TFDM will improve efficiencies on the airport surface and terminal airspace by providing:

- Electronic Flight Strips in the Tower
- Collaborative Decision Making for the Surface
- Traffic Flow Management Integration
- Systems Consolidation



Key Benefits:

- Fuel Savings
- Carbon Emission Savings
- Improved Situational Awareness
- Pre-scheduling flights

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TFDM Program Roll-Out Overview

Build 1 **Key Site - PHX**

- Full hardware development to support the deployment of Build 1 & 2
- Improved Electronic Flight Data Exchange and Electronic Flight Strips
- Runway Assignment Predictions
- Maintenance tools for life cycle support
- B1 TTP Service Offered

- **Initial Operating Capability:** ~~June 2020~~
- **In-Service Decision:** ~~September 2020~~

Dates being replanned due to COVID-19 Impacts
B1 IOC will not occur before Spring 2022

Build 2 **Key Site - CLT**

In addition to the Build 1 capabilities

- Surface Scheduling
- Surface Metering
- Runway Load Balancing
- Metric Reporting & Analysis (MRA)
- B2 TTP and TFCS Services Offered

- **Initial Operating Capability:** ~~May 2021~~
- **In-Service Decision:** ~~September 2021~~

Dates being replanned due to COVID-19 Impacts
B2 IOC will not occur before Spring 2023

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Surface Metering Program (SMP) Overview

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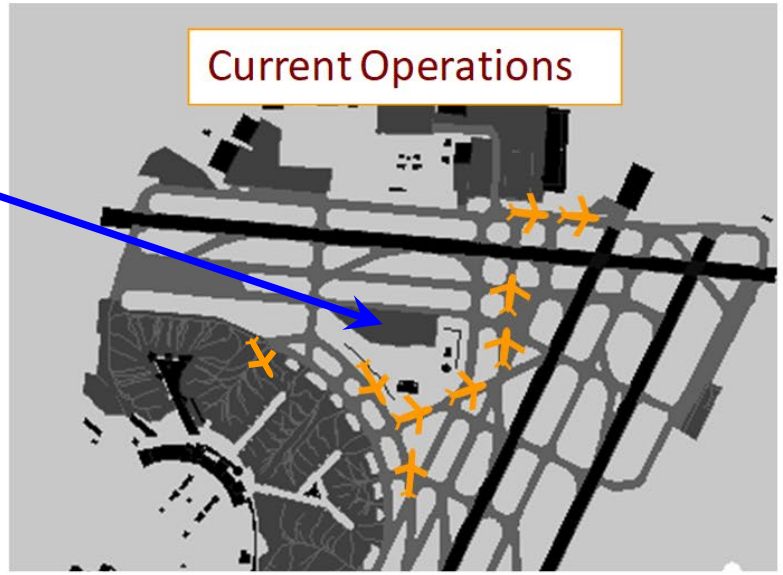
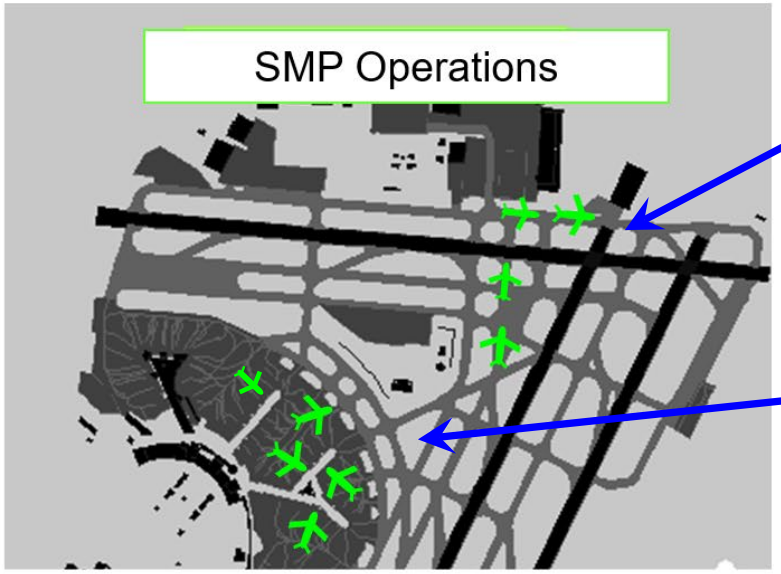
The TFDM SMP Concept

- Departure operations in the NAS are largely managed on a first come, first served basis
- The result is often long departure queues, surface congestion and excess fuel burn
- The goal of SMP operations is to manage the departure queue length by assigning equitable off block times without reducing departure throughput

Long departure queue develops as flights begin taxi as soon as they are ready





SMP operations result in shorter queues…

…through the control of pushback times

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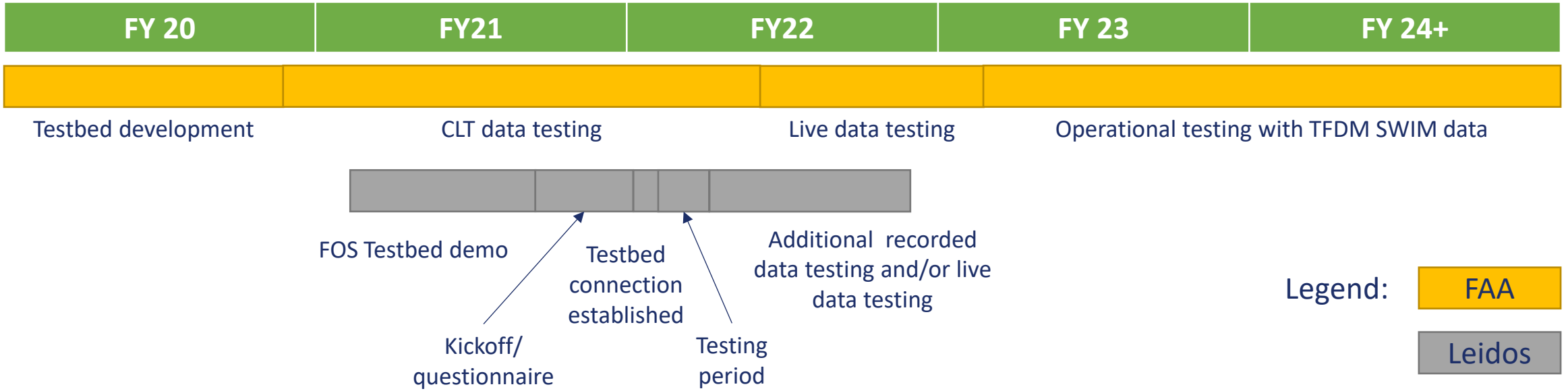
FOS Testbed

Testbed Overview

- The FAA has developed a laboratory testbed with an instance of TFDM Build 2 software (surface metering)
  - It will allow flight operators, airport operators, or 3rd party vendors the ability to test their connections to the TFDM system in advance of TFDM's deployment.
- The goal is to ensure flight operators, airport operators and 3rd party vendors are able to utilize TFDM's two SWIM services: TFDM Terminal Publication (TTP) and TFDM Flight Operator System (FOS) Collaboration Service (TFCS).
- The testbed can support adaptation for ATL and PHX in addition to CLT

Phases of TFDM testing

- Based on Charlotte, more data available later as more sites are operational
- Notional timeline:



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TFDM Testbed

- Open to airports, airlines, and 3rd party vendors to test connections to TFDM prior to TFDM B2 being deployed in the field

- If interested, contact Lidiya Gavrilenko (Lidiya.Gavrilenko@faa.gov) or CSIT (csit@faa.gov)

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Additional Resources & Next Steps

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TFDM Data Exchange Resources

- TFDM has available interface resource documentation for guidance on exchange of data to/from TFDM and stakeholders available on the NAS Service Registry and Repository (NSRR) [nsrr.faa.gov]
  - TTP JMSDD
  - TFCS JMSDD

- TFDM has additional resources to guide stakeholders in the purpose, use, and exchange mechanisms on the CDM website [https://cdm-staging.infinaweb.com/surface-cdm-team/]
  - TFDM Data Operation User Guide (DOUG)
  - TFDM S-CDM User Guide

Questions & Upcoming CSIT Events

- Tech Talk #6: Deep dive on adaptable parameters
  - Proposed Date: Wednesday, December 8 @1pm ET

- DOUG, User Manual, and Previous Tech Talks and other CSIT resources available at: https://cdm.fly.faa.gov/?page_id=3152

- Follow-up questions: csit@faa.gov

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