



CDM

Collaborative
Decision Making

Surface CDM Team (SCT)

CSG General Session – April 13th, 2022

Bryan Rogers and Paul Amen Co-Leads



CDM

Collaborative
Decision Making



SCT Team Members

Industry / FAA Members

- Bryan Rogers – IAH STMC / FAA Co-Lead
- Paul Amen – AAL / Industry Co-Lead
- Lee Brown – JetBlue
- Ron Foley - NATCA
- Keith Henry – FAA CSIT / AJR-13
- Dean Snell – NBAA
- Edwin Solley - SWA
- Dan Torres – FedEx
- David Uswajesdakul – UAL
- Tony Vassiliadis - Delta
- Kristen Wilson – NATCA

Airport Members / Partners

- Paul Eubanks –ACI
- Lisa Gahm – DFW Airport
- Curtis Hedgepeth - LAS McCarran / Reid
- John Howard - LAS McCarran / Reid
- Robert Kelley – FLL / Broward
- Chris Oswald – ACI
- Henry Smith – LAS McCarran / Reid
- Ralph Tamburro - PANYNJ
- Tim Toerber – SeaTac
- *Doug Swol – TFDMD PO / AJM-224
- *Leikny Johnson - Booz Allen Hamilton
CSIT / AJR-13



- **New Tentative Waterfall Released in Mar 2022**
 - Configuration A – Full suite of software tools. 27 large airports with the surface metering capability.
 - Configuration B – The remaining 62 airport ATC control towers that will only have electronic flight control strips...No surface metering capability.

Viewing Dave Mattioli's screen

Surface Manager - CHARLOTTE/DOUGLAS INTL

Operations Dashboard

17:37:04

Viewing Dave Mattioli's screen

Viewing Dave Mattioli's screen

Standard CD 17:38:26

PROPOSED

RPA5662 3107 KCLT BARMY4 ROJ J55 HPW
E170/L P2355 36R J191 PXT KORRY4 KLG

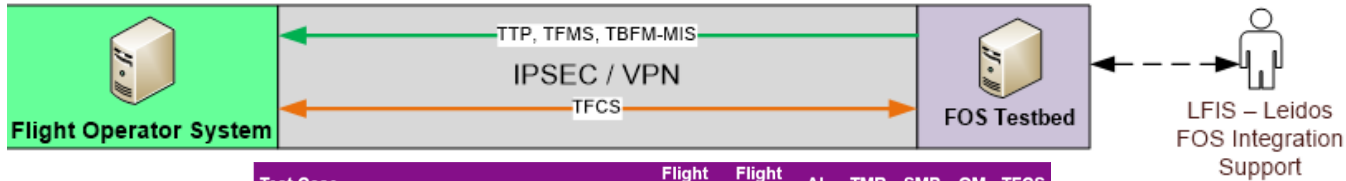
350 KLGA

KCLT.BARMY4.ROJ.J55.HPW/191.PXT.KORRY4.KLGA/0123

Viewing Dave Mattioli's screen

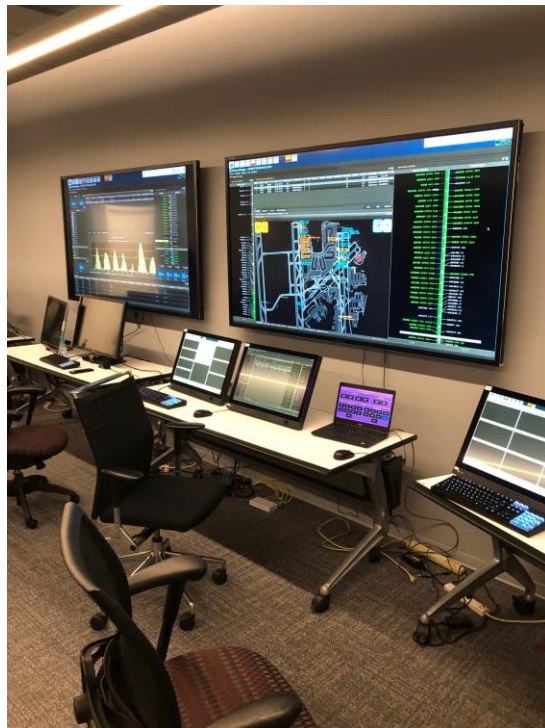


- **SCT Team Members Visit to Leidos Lab – Tuesday 04/12/2022**
 - TFDM B2 software to allow flight operators, airport operators, or 3rd party vendors the ability to test their connections to the TFDM system in advance of TFDM’s deployment.
 - Ensure flight operators, airport operators and 3rd party vendors can utilize the TFDM Program’s two SWIM services: TFDM Terminal Publication (TTP) and TFDM Flight Operator System (FOS) Collaboration Service (TFCS).



Test Case	Flight Data	Flight Delay	AI	TMR	SMP	OM	TFCS
Week 1 - FOS receives TTP messages							
Flight Departure – simple	x						
Flight Arrival – simple	x						
Airport Information – initial set			x				
Operational Metrics – initial set						x	
Operator System Start Up	x	x	x	x	x	x	x
Week 1 - FOS sends/receives TFCS request/response							
NMA Closure							x
NMA Gridlock			x				x
Week 2 - FOS receives TTP messages							
Flight Departure - ATC commands	x					x	
Flight Departure – Delay	x	x					
Closure in AMA			x				
SMP Params/Config					x		
Traffic Mgt Restrictions (& effect on departure)	x			x			
Recommended SMP (& effect on departures)	x				x		
Affirmed SMP (& effect on departures)	x				x	x	
Recommended SMP Adjustment (& effect on departures)	x				x		
Completed SMP						x	
Week 2 - FOS sends/receives TFCS request/response							
Flight Substitution	x				x		x

- SCT Team Members Visit to Leidos Lab – Tuesday 04/12/2022



Task 82: Collaborative Site Implementation Teams (CSIT)

- TFDM Tech Talks to Industry / Stakeholders
- CSIT Site Visits are an integral part of preparing non-FAA stakeholders for TFDM implementation (~18 months prior to IOC).
 - Site Visit Goals:
 - Educate any local stakeholders that may be impacted by TFDM implementation
 - Inform local stakeholders of their role TFDM Surface Metering
 - Introduce the local Surface Working Group concept as it relates to surface metering
 - Collect additional information for the TFDM Program Office to aid in site adaptation

Site Visit Overview

Day 1	Day 2	Day 3	Day 4
FAA-only	FAA-only	CSIT & Local Stakeholders	CSIT & Local Stakeholders
CSIT briefs FAA Tower: <ul style="list-style-type: none"> • Provides an overview of stakeholder presentations • Introduces local Surface Working Group Concept 	CSIT tours local facility to provide context to previously collected site data May include: <ul style="list-style-type: none"> • Airport authority operations • Ramp tower(s) • FBO 	Stakeholder Briefing Day 1: <ul style="list-style-type: none"> • Provide an overview of TFDM • How data exchange fits in • How Surface Metering has worked in practice 	Stakeholder Briefing Day 2: <ul style="list-style-type: none"> • Site-specific TFDM implementation information • Roles and responsibilities in Surface metering

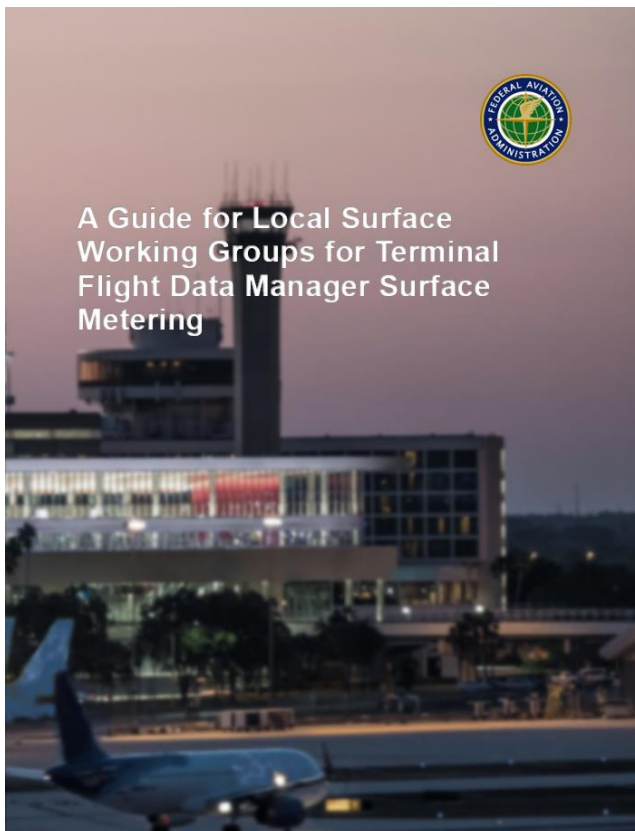
TFDM CSIT Site Visit Calendar

2022		2023		2024		2025		2026	
May	CLT	February	SEA	January	SAN	April	DFW	March	BWI
August	SFO	March	LAS	March	PHL	May	MCO	May	FLL
October	IAH	April	ATL	April	EWR	September	IAD	October	DCA
November	PHX	May	MIA	May	DEN	October	DTW		
		August	LAX	August	BOS	November	SLC		
		September	MSP	September	JFK				
		October	MDW	October	LGA				
				November	ORD				



Task 82: Collaborative Site Implementation Teams (CSIT)

- Resources
 - Surface Working Group Guide
 - TFDM User Guide
 - TFDM Data Operational User Guide
 - Post Site Visit Support
 - Developing Local Surface working Groups
 - TFDM Open Forums



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Task 100: Real Time Coordination, Collaboration and Information Exchange

- Joint Tasking with FET / SCT
 - National Operations Dashboard (NOD)
- Final Brief Out in September 2021
- The MITRE Alternate Route Exercise with ZDC TMU and Area Airports

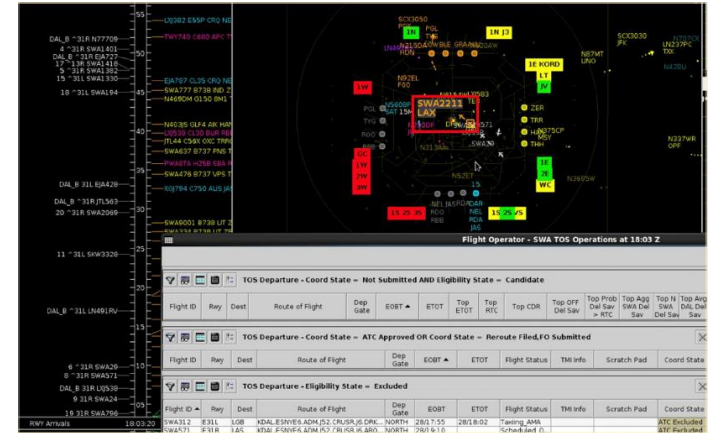
The screenshot displays the CDM software interface. On the left, the 'Enter Candidate Flight Information' form is visible, with fields for Reason (Pathfinder), Region (Washington), NAS Element (OTTO), FlightID (NJS1780), Origin (KBWI), and Destination (KIAH). A blue callout box labeled 'Route Options selection tools' points to the 'Route Options' button and the 'KBWI-KIAH CDRs' table. The table lists various flight candidates with checkboxes, including BWIAHH1 and BWIAH43. A second blue callout box at the bottom states 'Industry provided candidates for reroute with industry internally coordinated route options'. The right side of the interface shows a map and a table with columns for Fix, Status, Taxi, Origin, Dest, FixETA, and Route. A table above the map shows flight counts for various fixes (1515, 1530, 1545, 1600, Hour 1, 1615, 1630, 1645, 1700, Hour 2) for OTTO, with values like 8, 3, 2, 0, 11, 1, 1, 1, 0, 3.

Fix	1515	1530	1545	1600	Hour 1	1615	1630	1645	1700	Hour 2
OTTO	8	3	2	0	11	1	1	1	0	3

Name	DepFix	Route	ARD
<input type="checkbox"/> BWIAH00	MAULS	MAULS Q40 AEX	1081
<input checked="" type="checkbox"/> BWIAHH1	MAULS	MAULS Q40 BFOLO	1110
<input type="checkbox"/> BWIAHH4	MAULS	MAULS Q40 NIOLA	1114
<input checked="" type="checkbox"/> BWIAH43	GLANC	GLANC COLZI Q52	1120
<input type="checkbox"/> BWIAH50	GLANC	GLANC COLZI Q52	1125
<input type="checkbox"/> BWIAH42	OTTO	OTTO Q80 FAREV	1136
<input type="checkbox"/> BWIAH51	GLANC	GLANC COLZI Q52	1139
<input type="checkbox"/> BWIAH53	GLANC	GLANC COLZI Q52	1139
<input type="checkbox"/> BWIAH5A	GLANC	GLANC COLZI Q52	1154

Name	DepFix	Route	ARD
BWIAH00	MAULS	MAULS Q40 AEX	1081
BWIAHH1	MAULS	MAULS Q40 BFOLO	1110
BWIAHH4	MAULS	MAULS Q40 NIOLA	1114
BWIAH43	GLANC	GLANC COLZI Q52	1120
BWIAH50	GLANC	GLANC COLZI Q52	1125
BWIAH42	OTTO	OTTO Q80 FAREV	1136
BWIAH51	GLANC	GLANC COLZI Q52	1139
BWIAH53	GLANC	GLANC COLZI Q52	1139
BWIAH5A	GLANC	GLANC COLZI Q52	1154
BWIAHH2	GLANC	GLANC LYH COLZI	1155

- Joint Tasking with FET / SCT
- Phase 2
 - NASA TIM Single Airport IADS Presentation – Sept 2021
- Phase 3
 - Stormy 21 – DFW / DAL Metroplex
- Closed in September 2021



ATD2 Status of ATD-2, Phase 3 Testing (Stormy 21)



- Testing began in summer of 2019 (crawl/walk)
- Final testing phase (run) was scheduled to be conducted in 2020 and be completed by September 30, 2020 but Covid traffic levels prevented robust testing
- Phase 3 testing extended to September 30, 2021
- Cut off dates for data collection are August 31, 2021 for TIM; September 17, 2021 for Technical Transfer



InsideAmes Centerwide Announcement

Wednesday, July 07, 2021

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Airspace Technology Demonstration 2 Selected as **NASA Software of the Year Runner-up**

Office of the Center Director

I am excited to announce that **NASA's Ames Research Center was selected as a runner-up for the 2021 NASA Software of the Year award for Airspace Technology Demonstration 2 (ATD-2).** The agencywide annual competition rewards high-quality, innovative, and robust software using efficient software engineering processes that meet NASA's stringent safety and reliability standards. Sponsors of the competition include the NASA Chief Engineer, the NASA Chief Information Officer, and the NASA Office of Safety and Mission Assurance.

Please join me in congratulating the ATD-2 team, made up of about 150 contributors from across Aeronautics and Technology directorates, for this recognition by the agency and aviation industry; and special kudos to the fantastic final presentation done by Jeremy Coupe. The ATD-2 project is comprised of technology development and demonstration activities geared toward delivery of near-term benefits to air transportation systems. **Arrival, departure and surface activity including terminal sequencing and spacing, and air traffic flow management are several of the projects NASA is working on to make air travel safer and more reliable.**