

**Minutes of the Federal Aviation Administration (FAA) System Wide Information Management (SWIM) Industry Collaboration Workshop and SWIM Industry-FAA Team (SWIFT) Meeting #21  
November 9, 2023**

**1. Hybrid Session & Registration:**

- a. The SWIFT #21 meeting was a hybrid event held online, via Zoom Meeting conferencing system and in-person at the MITRE Campus in McLean, Virginia. The event occurred on November 9, 2023, at 10:30am ET.

**2. Introduction/Welcome:**

- a. Welcoming Remarks – Josh Gustin (FAA), David Almeida (LS Technologies) and Rob Goldman (Delta)
  - i. Mr. Gustin opened the welcome portion of the event by stating that this was the first hybrid event (in-person attendees) since pre-COVID. The hope is for continued in-person engagement with through the SWIFT in 2024. Ms. Calabrese and Ms. Crompton echoed the sentiment. Mr. Almeida led a brief industry listening session prior to the event, where representatives from airlines and aviation operators shared their current challenges in their operations and expectations/needs from the FAA SWIM Business services. Mr. Almeida and Mr. Gustin engaged in conversation about the direction of certain FAA Program investments such as FMDS (replacement for TFMS), TFD, and CSS-FD to provide additional insight/context on how the FAA has been listening to industry pain-points. The SWIFT provides a forum to come together to discuss issues or goals in a collaborative environment.
  - ii. Mr. Goldman shared industry updates and the status of industry operations. Aviation operations are back to full strength (from prior to COVID impacts), with some operations greater than pre-COVID levels. Mr. Almeida commented that staffing constraints continue to be a challenge that many airlines are working to mitigate. In addition, financial constraints are being worked through to maintain engagement and commitments, which speaks to the need for events like the SWIFT.

**3. Special Topic: Trajectory Management Overview, ATC Perspective - Steve Bradford (FAA)**

- a. Mr. Bradford began the presentation by giving an overview of ICAO and Trajectory Based Operations (TBO), which included a characterization of the environment marked by changes such as the shift from voice-based exchanges to automated, digital information sharing. The presentation included a video demonstrating how the TBO concept refines global ATM operational concept with detailed processes, procedures and information flows.
- b. The video outlined the operational values of the TBO paradigm: enhanced predictability, alignment of strategic planning and tactical actions, increased reliable flexibility and decreased uncertainty. Mr. Bradford voiced over a demonstration of a live flight executed route from Seattle to Southeast Asia, and back to Seattle. He followed the video with lessons learned during maturation of the TBO concept and information sharing across relevant stakeholders, which segued into the evolution of the Connected Aircraft concept and advances in the Electronic Flight Bag (EFB) technology.
- c. Mr. Bradford also presented three TBO use cases: enhanced Airspace User (eAU) tools, enhanced Airspace Service Provider (eASP) tools, and flight route amendments. He provided insight into the FAA Research and Development, NAS Critical, Administrative

and Financial systems/services and Mission Essential operating environments to highlight which environments are external facing to users or maintained for internal use.

- d. The presentation was concluded with a discussion on how the FAA will engage in safety risk management of TBO. He and the audience engaged in dialogue over FAA/Airspace User continuous data exchange, automated system monitoring, prognostic operations risk monitoring, implementing machine learning and alerting and response capabilities.

**4. TFDM Deep Dive: TFDM update on TTP, Program update and Demo** – Lidiya Gavrilenko (FAA), Sharon Ledgister-Reid (RAA) and Isaac Robeson (Mosaic ATM)

- a. Ms. Gavrilenko walked through the presentation by initially providing an overview and status report of the TFDM program. The discussion began with the FAA/industry drivers which led to conceptualizing TFDM, including enabling real-time flight data and airport resource updates, advance notice of flight movements between ATCT operation positions, the need for replacing legacy FAA systems at end-of-lifecycle, the shortfalls of verbal coordination reducing operation efficiency and safety. She also highlighted industry's role in collaborating with the FAA by submitting intent data to TFDM. This discussion was focused on how users can improve situational awareness from new data published by TFDM, TFMS and TBFM. Ms. Gavrilenko walked through a system overview of the program, describing TFDM as the surface management solution for NextGen and integrated TBO through its key functions and key benefits. The four main TFDM capabilities are enhanced electronic flight data exchange, enhanced traffic flow management data integration with TBFM and TFMS, departure scheduling using live data (e.g., departure metering capability, runway balancing) and systems consolidation/modernization by replacing other legacy NAS systems.
- b. Ms. Gavrilenko walked through TFDM configurations A and B which are projected to be available at 49 airports. Configuration A includes electronic flight data (EFD) exchange, electronic flight strip (EFS) displays, surface surveillance integration and surface scheduling and TFM data exchange/integration. Configuration B covers EFD, EFS in towers, some surface and TFM data and system consolidation. She continued by discussing the benefits behind adopting EFD, surface metering/scheduling and TFDM system roll-out overview. TFDM Build 1 had declared in-service decision at CLE airport in March 2023. TFDM Build 2 is targeting in-service decision at CLT airport January 2025. A near-term waterfall schedule roll-out was also provided for TFDM Builds 1 and 2.
- c. Ms. Gavrilenko discussed TFDM's SWIM Business service, the TTP service. She outlined the six business functions of the service: TFDM airport information, TFDM flight data, airport specific traffic management restrictions and impacted flights, airport specific flights in delay with information, airport based operational metrics and surface metering program information. The services will be available to consumers when TFDM sites reach Build 2. She encouraged the audience to test builds through the FNTB lab. She also provided an overview of the TFDM FOS Collaboration Service (TFCS). This service consists of two SWIM Request/Reply functions for CDM members only: flight substitution and airport resource or gridlock status.
- d. Mr. Robeson presented a virtual TFDM demonstration which showcased scheduling, airport configurations, TMIs and a surface metering program. Following the demonstration, Ms. Gavrilenko engaged the audience for industry input to TFCS permissions. This discussion was on user authorization for flight substitution and

challenges of TFCS resource status reporting permissions to users. Currently, the TFDM team is requesting additional stakeholder input and seeking feedback from airlines/airports to mature the service.

- e. Ms. Gavrilenko concluded the presentation with contact information for stakeholder outreach, TFDM familiarization or tech resources and on-boarding support.
5. **SWIFT Portal & SWIM Cloud (SCDS) Subscription Updates** – Waldo Ford (FAA)
- a. Mr. Ford began the presentation by discussing the FAA service budget challenges for maintaining SCDS at no user cost. Key takeaways are that in early 2024, all SCDS users will be required to sign new Service Access Agreements that contain new SCDS policy.
  - b. Mr. Ford walkthrough the cost-saving measures that the FAA is currently taking to ensure the FAA saves money while maintaining the service. This includes new data access policies around data compression, messaging APIs that support compression and internal redistribution for high data consumers. For these topics, Mr. Ford requested community engagement and provided the SCDS contact for outreach and further SCDS status communications to industry.
  - c. Mr. Ford concluded by providing a brief preview of the SWIFT Portal v4.0 page, where users can expect a streamlined and modern experience through expedient subscription approvals. He also pointed out new and legacy features on the Portal page. He also highlighted that users no longer need to visit a separate access page for subscription requests.
6. **SWIFT Topic: “Back to the Basics”: Ops Context Documents** – Xavier Pratt (LS Technologies)
- a. Mr. Pratt began the presentation by referencing the NAS Service Registry Repository (NSRR) website where industry can browse to discover information on SWIM services and the Ops Context documents pertaining to each service.
  - b. Mr. Pratt continued by presenting a near-term updated Ops Context Document release schedule (November – June 2024), in which the SWIFT team will be refreshing older documents to ensure information alignment with recent program releases/updates. Currently, TFMDData Flight and TFCS Ops Context documents are being finalized for release on the NSRR.
  - c. Mr. Pratt concluded by explaining the breakdown of documents available on the NSRR can be navigated based on SWIM service or on general user interests. Weather, Flight Data, Flow Information, Aeronautical or Surveillance Data documents are all available for download on the NSRR.
7. **SWIM Topic: FENS & Information Management Services for Cloud** – Jamie Greene (FAA) and Vik Chokshi (FAA)
- a. Mr. Greene began the presentation with an overview of the FENS Program, highlighting new and evolving FAA commercial telecom services. Per Mr. Greene, these services will support new NAS missions such as Information Management, Cloud Services, UAS/UAV and Commercial Space. Information Management Services in the Cloud (IMS-C) expands the FAA’s cloud messaging capabilities. The IMS infrastructure will be required by TBFM, TFDM, FMDS, CSS-FD and other SWIM programs to support efficiency critical level messaging. As of the November 2023 milestone, FENS has achieved Final Investment Decision, in which the FAA has established key sites in Indianapolis airspace to test operations services. FENS is segmenting the test approach to prioritize FAA TDM services in the test plan to provide a solution for future TDM discontinuances in the near term.

- b. Mr. Greene continued that IMS includes two-way communication functionality and sensitive data in addition to full SWIM services in the Cloud, and the FAA is partnered with 400+ consumer and 100+business service providers. Currently, IMS is in solution review with the vendor and the FAA will communicate transition plans to users to mitigate impacts.
  - c. Mr. Greene and Mr. Chokshi walked through the SWIM Segment 2D and FENS roadmap, which outlined targeted dates/milestones through FY 2030. Per Mr. Chokshi, FENS is an investment that will replace the FAA Telecommunications Infrastructure (FTI) while FTI NAS Enterprise Messaging Service (NEMS) infrastructure and associated services will be replaced by FENS IMS. IMS uses commercial appliances, tools and new software with significant development, configuration management and testing phases.
  - d. Mr. Greene also presented the FENS testing and transition plan timeline, which outlined FENS key site testing activities and FTI decommissioning/phasing out through CY 2030. This plan was followed by discussion on the FENS operational environment workflow, in which the boundary layers between internal FAA NAS systems, administrative services, network services and IMS services were presented to the audience.
  - e. The presentation concluded with FAA level setting user community expectations of FENS/IMS functions, where Mr. Greene provided contact information and resources for the community to receive notices of future/meetings on user transition.
- 8. SWIFT Focus Group Update – Xavier Pratt, John Kelley and Mark Hopkins (LS Technologies)**
- a. Mr. Pratt began the presentation with a recap of the SWIFT Widgets concept, which was first introduced in earlier SWIFTs. He explained that widgets have been developed to visualize SWIM data in operationally actionable ways. The widgets permit leveraging user SWIM subscriptions to develop community-driven solutions to solve real-world operational problems via relevant SWIM data.
  - b. Mr. Hopkins continued the presentation by recapping the ad-hoc Focus Group Flight Data & TBO case study that was initially presented at SWIFT #20 (March 2023). He summarized the JFK-MIA Flight Ops scenario and proposed a few constraints to analyze with the Focus Group. These constraints include planned space launch operations near JAX, TMI implementation via congested airspace resources (e.g., WAVEY, RBV fixes) and ground /departure congestion at JFK. Mr. Hopkins highlighted that the SWIFT team wants to explore ways to mitigate the challenges presented in the scenario by presenting an approach method. He proposed using SWIM data to create an aggregated view of data to correlate time elements with physical elements from departure to arrival. He also discussed how this aggregated view should permit users to correlate how TOS routes are impacted by constraints.
  - c. Mr. Pratt continued by walking through notional views of select SWIM services that can be used to support a user widget dashboard view – which combines messages/data elements from TBFM, TFMDData, SFDPS and STDDS.
  - d. Mr. Hopkins briefly discussed how the notional widget may be applied to address information gaps related to the JFK-MIA case study. He also asked the audience to provide feedback for other SWIM services topics or case studies to explore through the Focus Group.
  - e. Mr. Pratt concluded with announcement of the Focus Group teams page, in which group members can join to share information or provide feedback on the case study. Contact information for the ad-hoc Focus Group POCs were provided.

**9. TBFM Program status & update on Metering Information Service – Shakeela Bader (JMA Solutions)**

- a. Ms. Bader began the presentation by providing a brief overview of the TBFM Metering Information Service (MIS) SWIM Business Service. Per Ms. Bader, MIS products includes STAs/ETAs to airport runway threshold, meter fix and all arc as well as airport configurations in effect at all traffic centers. Subscribers to MIS can also expect to receive airport acceptance rates and flow settings in effect at all centers. Finally, En Route Departure Capability (EDC) aircraft departure times will be shared when/where adjacent center metering is occurring.
- b. Ms. Bader continued the discussion by providing information on MIS v4.15 (v4.3.2 being the current version active). Per Ms. Bader, MIS v4.15 provides new JMSDD properties for enhanced filtering, additional flight data, and additional documentation fixes. One key takeaway is the new identification information (Computer Identifier (CID), Global Unique Flight Identifier (GUFI)). The deployment schedule for MIS v4.15 was discussed, as Phase 2 mediation has occurred in mid-June 2023.
- c. She continued the presentation by providing a status update to TBFM data subscribers/consumers. Per Ms. Bader, NAS Enterprise Service Gateway (NESG) users had their subscriptions updated to receive an automated mediated feed for the current version of 4.3.2 if they didn't update to v4.15. SCDS users will need to update to v4.15, as they aren't being auto-mediated to v4.15. The automated mediated feed will be sunset at a future date. She commented that 1-hour of v4.15 data is available via the NSRR to support consumer testing.
- d. Ms. Bader concluded the presentation by providing the TBFM Program Manager and Program Lead contact information for further community questions.

**10. Common Support Services – Flight Data (CSS-FD) Update – Lucas Curns (FAA)**

- a. Mr. Curns began the presentation by providing an overview of CSS-FD role in the FAA's plan for Flight Data modernization. Per Mr. Curns, CSS-FD is the set of services that will deliver modern flight information management and facilitate the transition to the new FF-ICE information exchange environment. This objective is achieved by establishing a standards-based flight planning and filing environment, early constraint evaluation and flight specific feedback through trial requests and providing a single common reference for flight data sharing and management.
- b. Mr. Curns also discussed how CSS-FD FF-ICE (R1) services planned will align with ICAO FF-ICE guidance. Attention was called to the ICAO mandatory filing service and optional trail service. The filing service includes messages related to filed flight plan, updates, cancellations, status, submission response. Users should also receive similar information through the flight data request service. CSS-FD Phase 1 implementation will feature the filing service with re-evaluation, flight data request service, trial service and a data publication service. CSS-FD Phase 2 implementation will feature a preliminary flight planning service and expanded integration with other FAA systems and enhancements to the data publication service.
- c. Mr. Curns explained the benefits of CSS-FD Phase 1 implementation. He highlighted how users can expect more accurate/robust flight plans to create better trajectories. More efficient flow planning is achieved through additional data elements, 4DT and performance models while trail requests will facilitate improved planning. One key takeaway is the reduction of duplicate flight plans through use of the GUFI.

- d. Mr. Curns provided a status timeline of CSS-FD activities. In February 2023, the engineering team had completed the Risk Reduction activities. Currently the team is working through Phase 1 investment decision activities by defining architecture, scope, scheduling and services. Phase 1 design, development and implementation is targeted for FY 2026 through 2029, while Phase 2 scope and schedule will commence in FY 2026.
- e. Mr. Curns discussed the need for community engagement during CSS-FD development. The team has received feedback from FIXMCCB-CFSP Round table and from the CSS-FD RRA continues to drive discussions regarding harmonization between EUROCONTROL and the FAA. Per Mr. Curns, these discussions will assist the community in understanding how FF-ICE implementation will impact them.
- f. Mr. Curns concluded with providing communication channels for the audience to engage in future discussions as well as providing SWIM Program and CSS-FD POC contacts.

**11. Special Topic: FAA-Industry Panel on the “T” Programs & Information Services – David Almeida (LS Technologies), Mark Hopkins (LS Technologies), Lidiya Gavrilenko (FAA), Josh Gustin (FAA), Shakeela Bader (JMA Solutions), Tracey Coleman (FAA), Isaac Robeson (Mosaic ATM), Xavier Pratt (LS technologies)**

- a. The *conversational* format of this listening session allowed for panel members to mic up and provide any system-level, or operational-level context to the “T” Programs discussion, potentially addressing the types of uses for the data. The panel members were encouraged to engage with the audience to help them understand the system, operational value data from the system has, operational context of the information from that system, and how it can be integrated for broader application for airspace user operational improvements.
- b. Mr. Almeida began the listening session by introducing the TFMS, TBFM TFD system spokespeople to provide a brief high-level description of the systems from the perspective of NAS user flight trajectory management. Mr. Coleman, Ms. Gavrilenko, Mr. Robeson and Ms. Bader highlighted the system automation function and purpose, which level set the audience on what each system does, who it serves, and how it’s used.
- c. Mr. Hopkins provided operational context from an airspace user perspective. He described why each system matters to the airspace user, how it affects their operational decision-making. Mr. Pratt also described the information services that are available in the Ops Context documents. He brought attention to the information services available on SWIM.
- d. Mr. Gustin provided commentary about the integration of data across all three of the systems and the implications to operations. The panel solicited comments from the audience following the discussion of each system.

**12. Closing Remarks:**

- a. Closing remarks were provided by Ms. Cropf, Mr. Gustin, Ms. Calabrese, and Mr. Almeida. At the conclusion of SWIFT #21, Ms. Calabrese thanked attendees for their support and reaffirmed SWIFT #22 will be targeting the Spring 2024 timeframe; the March timeframe marked as the preferential date. Audience feedback on the SWIFT event topics as well as ideas for future ad-hoc Focus Groups and other SWIM topics were encouraged. More details on the SWIFT event and the SWIFT Portal can be found via links below:
- b. [https://www.faa.gov/air\\_traffic/technology/swim/swift/](https://www.faa.gov/air_traffic/technology/swim/swift/)
- c. <https://community.swim.faa.gov/>
- d. <https://portal.swim.faa.gov/>