Questions/Answers of the Federal Aviation Administration (FAA) System Wide Information Management (SWIM) Industry Collaboration Workshop and SWIM Industry-FAA Team (SWIFT) Meeting #19

August 31, 2022

Zoom Meeting Conferencing System Virtual Event.

1. Special Topic: AES Update and the Developers Workshop Results – Kevin Long (MITRE)

1.1. *Will the setup for the Developers Workshop be made available, for others that couldn't attend, can follow along after the fact?*

1.1.1. Yes. There are processes in place to release the documentation.

1.2. *Was anyone able to leverage Kafka to correlate data from multiple streams during the development sessions?*

1.2.1. The Continuous Development Software (CDS) that was running was the one that fused them into a common message stream which is what the API's were listing.

1.3. *What does "193 runs" mean as a service?*

1.3.1 As we were working at different rates during the workshop, developers were able to push their code to the platform. A user could switch which API they are looking at, dynamically. This allows for a very modular and iterative process - working together - but not at the exact same time/rate.

1.4. *Was there any construct to address security around having so many participants contributing/providing code at once?*

1.4.1. We did some prework leading up to the Developers Workshop. Access to the API building platform was limited to some of the components to ensure security. Regarding integrating data streams, the way it was set up limited the ability to a specific system. Only authorized users could access the table.

2. Special Topic: TFMS Request/Reply: Ops Technical Training - Chris Burdick (FAA) & James Nicolini (GDIT)

2.1. *Some questions regarding reroutes / TMI messages: Given a Reroute message, how can we link it to the affected flights? Are Reroutes TMIs linked to AFP TMIs? How can we link them? If the flight list impacted by a TMI program changes, how is that list updated? By issuing a new TMI message with the new list, by issuing a TMI_FLIGHT_LIST message, or by other means? What is the purpose of the TMI_FLIGHT_LIST messages ; they appear to be aircraft/flight updates? How often are they used? Does a single TMI_FLIGHT_LIST can update multiple aircrafts/flight simultaneously?*

2.1.1. What is available is raw data. We can show the fields needed to recreate the ADL; it may not be the exact temporal information (i.e. 4DT). So, you may need to recreate it;

it is hard to come with the exact same demand prediction we have in our ADL. We think some future APIs would be good to produce demand prediction.

2.2. *For TOS and CTOP, how many airlines are using this? Flight operations, service provider, etc.*

2.2.1. TOS allows collaboration. Even if FAA doesn't implement TMI, TOS is still very powerful. With a Coded Departure Route (CDR) you can use a TOS that can be used.

2.2.2. We must distinguish CTOP from TOS. TOS is important to industry to getting out of airports and what can be accepted for reroutes.

2.3. *Does the Public TMI resync options (monitor All or monitor for a Major) apply to AFPs or both AFPs and FCAs?*

2.3.1. Currently, its public GDP and FCA public TMIs. Resync does apply across.

2.4. *In the schema, which Reply is associated with the Airport Monitor Request? Is resync limited to 1 request per hour?*

2.4.1. Yes, that is the configuration we have today based on load. You might get the list but pay attention to the subscript service. You are welcome to do a resync also and you can be much more dynamic. TMI Resyncs are currently restricted to 1 request per TMI per hour, operationally.

2.5. *What portions of TFMS data needs to be restricted to CDM members only? Is there a process to apply for sensitive information clearance, linked to our SWIM user connection? How can we use the Flight List? Can we [airlines] get clearance due to the sensitivity?*

2.5.1. External user (SUI) is NOT available to external non-government users. There is other restricted data that is proprietary, CDM-related, such as EDCT, which is only available to CDM members. That branches out to industry if they are sponsored by a CDM member. Request/Reply services are only available to CDM members. Industry can get if sponsored by CDM member. SUI is not available.

2.6. *Currently, GA operators who have requested to block their tail number have certain fields obfuscated in the ADL. Will that be the same with SWIM subscriptions or will those blocked flights be removed from messaging?*

2.6.1. Flight block and LADD are information that is blocked completely and would not go out. If you are a GA pilot or operator and you want to see your own flight, third party users like ARINC Direct have a responsibility to remove that data. So, there are two different forms. [Continue this discuss via email/offline]

2.6.2. The tail numbers are different in ADL, there is still a line item but information is masked. In a flight list, the flight would not show up at all if it is blocked.

2.6.3. LADD comes out weekly.

2.7. *Is there a recommended way to associate data between TFMS and other SWIM services (e.g. STDDS and SFDPS)?*

2.7.1. TFMS has ERAM data as well. We fuse the data to Flight Object from authoritative sources. Other than looking at Flight IDs, this is a method.

2.7.2. We do publish the ERAM GUFI when we have it. We provide the data we typically use, but it is currently unknown of an easier way to associate it with a STDDS message.

2.7.3. *This question came up in the Developers Workshop sessions: fusing of data. Is data fusion a need? Common data elements? Identify potential keys to enable the fusion.*

2.7.3.1. One of CSS-FD capabilities is assigning a GUFI. Still in conversations with ERAM due to different ICAO standard of a GUFI. In CSS-FD, we are trying to fuse the related data as a Flight Object.

2.7.3.2. NASA DIP is publishing code to FUSER. FAA does not have one way yet to do this; but we should look at DIP. ERAM GUFI would be your best bet. If GUFI is not available, ACID/DEP/ARR/IGTD is next best method. More information about the NASA Digital Information Platform (DIP) can be found here: https://nari.arc.nasa.gov/atmx-dip

2.7.3.3. STDDS publishes enhanced data to correlate between services. There is a collection of correlated fields derived from SFDPS flight plan data including En Route Automation Modernization (ERAM) Globally Unique Flight Identifier (GUFI), SFDPS GUFI, Departure Airport, and Destination Airport.

2.7.3.4. The global FID would be linked to any active TMI.

3. Special Topic: Early Planning for Disruptions Case Study Update - Chris Gottlieb (JetBlue), Xavier Pratt (LS Technologies) & Nguyen "Dao" Vu (LS Technologies)

3.1. *Are there any historical datasets for these feeds?*

3.1.1. We used NASA assistance from their database of years' worth of recorded of SWIM data for our historical data needs.

3.2. *What is the Uber Library? Is that a public domain?*

3.2.1. It is Uber's indexing geospatial library. https://h3geo.org/

3.3. *What are the hexagon dimensions?*

3.1. We used a sizing of 31 miles diameter.

4. NAS Programs: Weather Programs - Douglas Murphy (FAA)

4.1. *Will web-enabled clients be able to obtain, say weather map tiles, through something like SCDS or some other non-VPN required mechanism?*

4.1.1. No, those web users would have AWD-like output that would only have small set of products, not the full suite of products available through SWIM.

4.2. *Does the weather suite of swim products provide which active flights, navigation fixes, facilities, etc. are affected by any convective systems being monitored?*

4.2.1. We do not integrate any flight information into our output stream.

4.3. *As a follow-up, SCDS is "SWIM without VPN", so would some weather products would be available through a similar means?*

4.3.1. Right now, it's a version available through NESG. As far as cloud is involved, we are still working on that. [Continue discussion offline]

4.4. *What HRRR products are available?*

4.4.1. It is limited to the sub-hourly VIL and echo tops. Every 15 minutes HRRR run has integrated liquid and convective echo tops. More updates to come.

4.5. *Do you have plans for to provide RRFS?*

4.5.1. We are planning on accommodating that. Tracking that in early 2024. We are working with weather service to mitigate impact to us, since HRRR is going away.

4.6. *Who are the right external users? CDDS, ITWS and WARP? When do they have to be on the products? When is the deadline? How big is the user base?*

4.6.1. The initial deployment will address WARP and CDDS. The only consumer of WARP is TFMS; no external. CDDS users of Adam feed is not a big user base. We have been in touch with every user of that data before we transition: Early 2024. Decommissioning for WARP is not until the displays out: 2027. CIWS has web display for external user. We need to establish the AWD web server: 2026. We have to figure out individual transition plans. CIWS web feature does have lots of web users, not through SWIM AWD. But ITWS will continue running for quite some time. Probably towards the end of the decade before we consider that.

4.7. *Will overlays be identifiable and available in CSS-Wx when its online?*

4.7.1. Yes. Pretty early in investment process. CSS-Wx may take in raw data themselves but this is uncertain.

4.8. *We [airlines] have done some work on an ITWS widget and have really struggled with decoding the messages. Is there documentation available besides what was on NSRR 12 months ago (I have not looked recently). It is great info but the messages are somewhat cryptic.*

4.8.1. [Action: Presenter will check with ITWS experts]

5. NAS Programs: TFDM - Doug Swol (FAA) & Lidiya Gavrilenko (FAA)

5.1. *Will TTP be available on SCDS?*

5.1.1. We do expect it to be available on SCDS. We must coordinate with the SWIM Program Office.

5.2. *Will TFDM provide flight departure gate data to external users? (Non-CDM members) If not, can you explain why, as this data is available via many paid services?*

5.2.1. We will not provide CDM sensitive data, which I believe departure gate information is a part of that. This issue can be circumvented, as third-party vendors offer it. It's up to the airlines what they want to provide/publish.

5.3. *So, for clarification, is CLE the only site that will have TTP Build 1? So TTP would only have CLE data until CLT comes online with Build 2 in 2024?*

5.3.1. We will have 9 sites CLE, IND, PHX, LAX, TPA, SJC, RDU, CMH, LAS and CLT…as they come online in 2023-2024. Starting with CLT, we will start Build 2, and the rest will still be on Build 1: late 2024 early 2025. The goal is mid 2025 for all sites to be using TTP Build 2 schema. Build 1 is only two years and comprised of a limited set of data to get you adjusted to the data. We will on-ramp Build 1 to SWIM or go straight to Build 2. We have not talked to the SWIM office about this yet.

5.4. *Will some of these services be available for Build 1 TTP?*

5.4.1. TTP: Flight Data, Flight Delay, Airport Information and Ops Metrics will be available in Build 1; Traffic Management Restrictions and Surface Management are Build 2-only capabilities.

5.5. *What flights are affected by what TMI? We want to know both, the wheels up time but also the contributing source.*

5.5.1. We can tell you wheels-up time based on MIT in TTP: Traffic Management Restriction.

5.5.2. Link to the SWIFT Portal: https://portal.swim.faa.gov/