

# Questions and Answers on SFDPS

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1. Will SFDPSConnect work with a Weblogic message broker?

SFDPSConnect works with ActiveMQ or the Solace Message Router, based on user configuration. Users can modify the source code provided if they wish to connect to a Weblogic message broker (provided they on-ramped to do so); however please note that, in general, users will be required to connect to the Solace Message Router for SFDPS 1.3.0 and beyond.

2. Per the slides on Peak Bandwidth and Message Rates presented at the SFDPS User Forum on August 18th ([SFDPS User Forum 20160818.pdf](#)) what accounts for the higher data rates (roughly double) on the producer side as compared with the consumer side?

SFDPS provides flight data to NEMS in FIXM and Simple XML formats, and airspace data in AIXM and Simple XML formats. The consumer client, however, receives flight data from NEMS in only one of Simple XML and FIXM formats, and airspace data in only one of AIXM and Simple XML formats, accounting for the difference.

3. Have you considered removing whitespace by not formatting the XML in order to save bandwidth? Testing shows that you can save 4% by not including whitespace. STDDS and TFMDData do not send formatted XML.

Yes, we have considered this, and found that the savings were not significant in comparison to the batching. This may be done in the future.

4. Will SFDPS data be available to external consumers in the Simple XML format?

Today, NEMS publishes flight data to external consumers in FIXM format, airspace data in AIXM format, and general message data in Simple XML format. With SFDPS Release 1.3.0, coming in February, external consumers can choose to receive flight (airspace) data in Simple XML format instead of in the FIXM (AIXM) format.

5. How do I subscribe to receive SFDPS User Forum notifications?

SFDPS User Forums are announced on [www.faa.gov/nextgen/programs/swim/sfdps/](http://www.faa.gov/nextgen/programs/swim/sfdps/). If you would like to receive invitations to these forums, please [contact us](#) with your request.

6. As far as the 12 second update rate goes, we were wondering if that means that the individual track updates will be 12 seconds apart, or if the messages that arrive in each batch every 12 seconds will be asynchronous to that 12 second timer and perhaps contain much more frequent track updates for a single target.

Track messages for a flight are 12 seconds apart. That is the way that ERAM generates them. Another way to look at this is that a flight appears only once in each of the 12 second updates that SFDPS receives from a given ERAM. One possible deviation from this pattern is that if a flight is being tracked by two centers, one the controlling center and one the center the flight just exited, for example, then the tracks from the two centers might very well arrive at different times and so appear more than once every 12 seconds. So, to be more precise, there is no asynchronicity within the tracks messages of the controlling center. That's one reason why we identify non-authoritative messages.

7. Where can I find the SFDPSConnect tutorial videos?

The tutorial videos for SFDPSConnect can be found in the **SFDPS Documents** section at [www.faa.gov/nextgen/programs/swim/sfdps/](http://www.faa.gov/nextgen/programs/swim/sfdps/).

8. Since not all of the En Route Airspace Data Publication Service messages received from HADDSS and published by SFDPS in the Simple XML format are published in the AIXM format, can a consumer receive messages in both formats for this service?

We suggest that clients who need all of the airspace information receive their data in Simple XML.

9. What is the difference between the FDPS\_GUFI and the gufi values in a FIXM message?

The FDPS\_GUFI is derived from the ERAM GUFI (in reality a flight plan identifier). SFDPS uses the ERAM GUFI from the initial flight plan and modifies it into a unique flight identifier. SFDPS has two instances. Both receive all messages from all ERAMs and populate separate databases. Only one publishes to NEMS. Because each instance of SFDPS receives the same data and because the SFDPS GUFI is derived from data in the flight plan, each instance of SFDPS will create the same FDPS\_GUFI.

The uuidGufi(gufi) is compliant with FIXM; the FDPS\_GUFI is not. Because the UUID GUFI relies on randomly generating a very long string of characters, each instance of SFDPS will generate a different UUID GUFI. As long as all of the data for a flight comes from the same SFDPS producer, it will be consistent. But if there is a change

from one producer to the other, then the UUID GUFIs will not be consistent for the flights current at the time of the switch. To guarantee consistency, use the FDPS\_GUFI.

10. What does it mean when SFDPS data lacks a GUFI entirely? Examples of this are on messages for flights that seem to be helicopters (too low and slow to be planes) and a transatlantic British Airways flight.

A message will not have a GUFI, or other flight level data, when it does not match to an existing flight in the database and the message itself does not create a flight.

In the normal sequence of messages, a flight plan will arrive first from ERAM and SFDPS will create an entry in the database, including the GUFI. Subsequent messages for that flight will be matched to that entry and will be published with the GUFI and other data for that flight. Flight matching relies on the flight ID, the ERAM flight plan identifier (ERAM GUFI), the Computer ID (CID), the Site Specific Plan Identifier (SSPID) and, if necessary, the origin and departure airports and departure and arrival times.

If SFDPS receives a message, a track message, for example, before a flight plan, then it will not create a flight entry in the database and it will not match to an existing flight entry and so it will publish the message without a GUFI. This could happen with the helicopter if no flight plan was filed in ERAM. For oceanic flights, it is quite possible that the first message might not be a flight plan, and would be published without a GUFI. The center into which the flight enters, or the Oceanic centers, should send out a flight plan message when it nears US airspace from which point other messages should match.

There are also a few known problems which can cause a message to not match a flight entry when it should. This will leave message without a GUFI. If you come across issues, please send us the details. Having concrete examples of actual data is helpful. When an issue is identified a trouble report (PTR) is opened up.

We do not yet have a scheduled release for fixes to these few matching problems but will keep you posted.

11. In TFMS, we get positional data in degrees/minute/second with seconds being optional and frequently omitted. Does SFPDS data have the same lack of precision? How is this expressed, given that it's in decimal degrees? Could we possibly receive 12 second positional updates that might be exactly the same, for this reason?

The value in the lat/long field in the CMS message that SFDPS receives from ERAM is represented as ddddddL/dddddddL where the numbers are degrees, minutes, seconds and

the letters are directions. ERAM always fills in the degrees, minutes, and seconds. SFDPS transfers each field, as is, into the SimpleXML TH message. For the FIXM formatted message, it translates the measurement into decimal degrees. As long as the ERAM data is complete, down to seconds, the SFDPS data will also be complete. This will apply to all track messages, whether 12-second updates or not.

12. Does the ERAM HOLD message include the Expect Further Clearance (EFC) time?

Yes. In the HH message (Simple XML), the holdDataTime\_21d element specifies the time the flight can expect further clearance at the holding location specified in the element holdDataFix\_21a. This element can only be included in the HH messages if the element holdDataFix\_21a is also included.

In the HH\_FIXM, the flight/enRoute/expectedFurtherClearanceTime/@time element specifies the time the flight can expect further clearance at the holding location specified in the element flight/agreed/route/holdFix. This element can only be included in the HH\_FIXM messages if the element flight/agreed/route/holdFix is also included.

13. Do you have documentation that maps SFDPS messages to HADDS CMS messages? If so can you make it available to us?

The [JMSDD](#) corresponding to SFDPS 1.3.0 maps each Simple XML message and its contents to its FIXM 3.0 representation. The Simple XML schema, a custom schema developed for SFDPS, was itself developed to directly reflect the contents of Common Message Set (HADDS) messages. The names of the elements in the Simple XML schema correspond to the names of fields in CMS messages. The mapping is also available in [SFDPS Data Consumer Reference Manual v2.1.3.docx](#). The JMSDD however contains more detailed descriptions of the data elements.

14. We did not find Track Information Messages (HADDS TH messages) in the SFDPS data feed; is there a plan to provide 12 second updates of Track Information Messages?

The current operational feed provides one minute track updates in FIXM 3.0 format (message type TH\_FIXM). The R&D feed contains one minute or batched 12 second track updates in FIXM 3.0 or Simple XML, depending on what you on-ramped for (message type of BATCH\_TH\_FIXM or BATCH\_TH).

15. Is it possible to get a sample of recorded 12 second (track) SFDPS data? We would like to be able to play it back for testing the high rate feed prior to it being turned on?

You could test with the SFDPS feed in R&D (make sure you on-ramped for 12 second updates of track data). Batched track data in FIXM or Simple XML format (message

types BATCH\_TH or BATCH\_TH\_FIXM) containing 12 second or one minute track updates depending on what the consumer on-ramped to receive is published in this environment.

16. Does SFPDS provide terminal # and gate # info for arr/dep aircraft in this feed?

SFDPS does not receive terminal or gate number information in any of the messages it receives from ERAM, and therefore cannot publish this information.

17. I had a question about SFDPS messages that provide information on aircraft hold status. I believe these are of message types HH and HO from what I see in the documentation. But we do not ever find the above two messages in our SFDPS topic. Could this be a problem on our end, or is it that these messages are optional/not operational right now? If so, would you recommend any other way to determine hold status in real-time using the SWIM data?

The operational feed only includes messages in FIXM format for flight data currently, and so the relevant messages are HH\_FIXM and HO\_FIXM. The HH\_FIXM message was not being published until recently due to an issue in the NEMS message taxonomy, but this issue was recently resolved (in August, 2016).

All the HO\_FIXM messages we see are marked as 'sensitive' and so are not published to external users.

The HH message is the appropriate message for acquiring hold status information on flights.