International Civil Aviation Organization
North American, Central American and Caribbean Office (NACC)
Follow up Meeting/Workshop for the Implementation of the New ICAO Flight Plan Format for NAM/CAR Regions
(ACRONYM)
Mexico City, Mexico, 26 to 28 March 2012

Agenda Item: *Follow-up to Implementation of the Amendment 1 to the PANS-ATM*

STATUS OF FAA IMPLEMENTATION OF AMENDMENT 1 TO PROCEDURES FOR AIR NAVIGATION SERVICES / AIR TRAFFIC MANAGEMENT (PANS/ATM)

(Presented by *the United States of America*)

SUMMARY	
The United States Federal Aviation Administration (FAA) supports a harmonized, global approach for International Civil Aviation Organization (ICAO) regions during implementation of Amendment 1 to the *Procedures for Air Navigation Services — Air Traffic Management, Fifteenth Edition* (PANS-ATM, DOC 4444). This information paper provides a summary of FAA status relative to the agreed transition steps as of March 2012.	
References: •	
Strategic Objectives	*This working paper is related to Strategic Objectives *.*

1. Introduction

1.1 This paper provides an update and status of United States (U.S.) implementation of Amendment 1 to the PANS/ATM.

1.2 Attachment 1 provides the details of the systems impacted, expected schedule, and approaches to testing and training.

2. System Development

2.1 All affected systems have been identified and all system changes are underway or complete.

3. System Testing

3.1 Internal (system testing and FAA to FAA interface testing) is underway for most systems; all system testing is expected to be complete by June 2012 with the exception of the OASIS system used for Flight Services in Alaska, which is expected to complete in July.

3.2 Automated international interface and flight plan filer interface testing has begun on a limited basis. Testing is proceeding with systems that are complete and in some cases with systems that are partially complete but in a "known state" that is useful to support testing. Contacts have been set up with the relevant States (see Attachment for the list of automated interfaces) and planning is underway. The majority of international interface testing is expected to take place in July and August of 2012.

3.3 Flight plan filer testing will be done at the FAA Technical Center in New Jersey, using a capability to connect a testbed with an updated system to the Aeronautical Fixed Telecommunications Network (AFTN). This testing should commence in April or May 2012. As systems are deployed to operational facilities, flight plan filer testing with some facilities will be conducted prior to entering transition mode.

4. Training

4.1 Training development has begun and is scheduled to complete in time to start training personnel in June 2012.

4.2 Training will have both general and system-specific and position-specific aspects.

4.3 The training for Air Traffic Controllers will be task oriented, focusing on the data that they will need to use or modify.

5. Procedures and Documentation

5.1 Air Traffic Control Procedures (FAA Order 7110.65), Flight Services Procedures (FAA Order 7110.10), the Aeronautical Information Publication (AIP), the Aeronautical Information Manual (AIM), ICAO Flight Plan filing instructions, and other documents were evaluated for impacts. Document Change Proposals are in process for required changes.

5.2 The Attachment describes specific changes that were made.

6. Deployment and Transition

6.1 Systems containing the updated software will be deployed as they are ready and will be spread out over several months. All sites are expected to have upgraded software by September 2012.

6.2 As systems are deployed, each facility will conduct interface testing with relevant adjacent States and with flight plan filers.

6.3 The FAA will declare readiness for transition mode- when filers can shift all operations to NEW format if desired- when all sites are ready, expected in mid-September 2012.

7. Transition to NEW

7.1 Assuming operations in transition mode are successful, and filers are filing NEW format flight plans, the FAA will switch to NEW mode and start rejecting PRESENT flight plans on 15 November 2012.

7.2 The FAA proposes that users begin filing NEW flight plans only on November 12, to ensure only NEW format flight plans are present on November 15, and to allow proper evaluation that everyone has successfully transitioned to operations using NEW flight plans.

8. Conclusion

8.1 The meeting is invited to review the information in this paper and engage the FAA regarding any concerns relative to this testing and implementation plan.

— — — — — — — — — — —

APPENDIX

FAA

Air Traffic Organization

FAA Implementation of ICAO FPL 2012

Amendment 1 to PANS-ATM

2012 Planned Activities

Table of Contents

Introduction

Background

The Air Navigation Commission, acting under delegated authority, at the first and second meetings of its 177th Session, on 22 and 24 January 2008, approved Amendment 1 to the *Procedures for Air Navigation Services — Air Traffic Management*, *Fifteenth Edition (PANS-ATM, Doc 4444)* for applicability on 15 November 2012. The amendment was approved on 27 May 2008 by the President of the Council on behalf of the Council in accordance with established procedure.

Amendment 1 stems from the work of the Flight Plan Study Group (FPLSG). The nature and scope of the amendment is to update the ICAO model flight plan form in order to meet the needs of aircraft with advanced capabilities and the evolving requirements of automated air traffic management (ATM) systems, while taking into account compatibility with existing systems, human factors, training, cost, and transition aspects.

The FAA has been working to modify systems and prepare for implementation in 2012. To this end, modifications to the following systems have been made or are in process:

1. Ocean 21
2. ERAM (En Route Automation Modernization)
3. Host
4. URET (User Request Evaluation Tool)
5. HADDS (Host ATM Data Distribution System)
6. OFDPS (Offshore Flight Data Processing System)
7. FDP-2000
8. AISR (Aeronautical Information System Replacement)
9. FS-21 (Lockheed Martin Flight Services)
10. OASIS (Operational And Supportability Implementation System
11. DUATS (Direct User Access Terminal System)-2 vendor systems

Plans for 2012

As system implementation is completed, the following activities will be key:

1. Testing with FAA systems, International ATC interfaces, and flight plan filers
2. Training for
    a. Tower, Terminal, En Route, and Oceanic Air Traffic Controllers
    b. Flight Data Communications specialists
    c. Flight Services Personnel
3. Changes to Procedures and documentation
4. Communication to flight plan filers on FAA-specific requirements for flight plan filing
5. Operation in Transition Mode
6. Transition to NEW flight plan only

This document addresses the FAA status and plans in each of these areas.

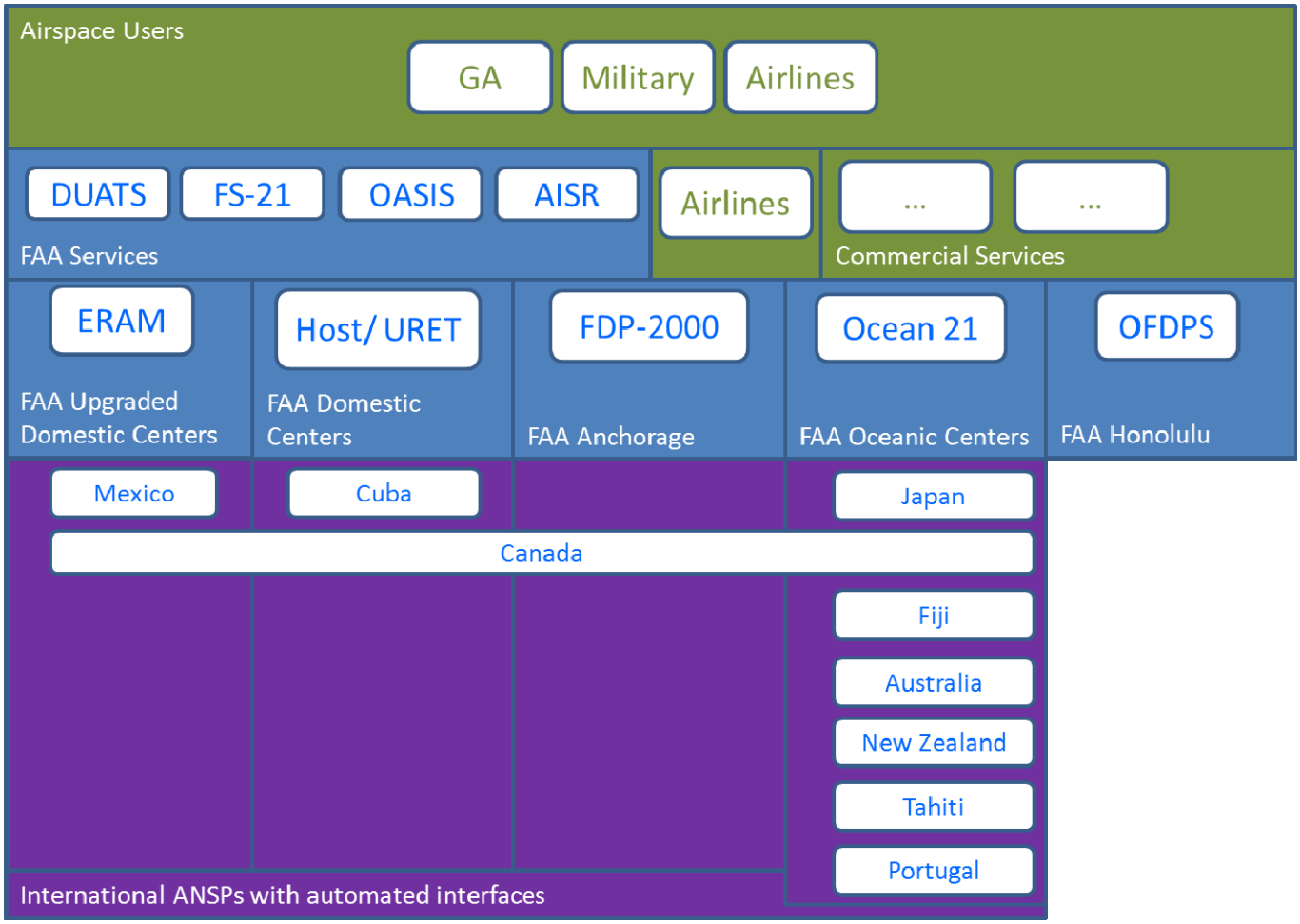

Figure 1. FAA impacted systems and interfaces

Most Airspace Users file flight plans through a service provider- in the U.S., either an FAA-provided service or a commercial service provider. Some airlines can file flight plans directly with FAA center computers, and do not use a service provider.

FAA services for filing flight plans include the following, all of which must be modified and tested:

1. File flight plans directly over the Internet using one of two FAA funded services: DUAT or DUATS
2. Contact FAA flight services via phone. Flight plan is entered by a specialist using the FS-21 system
3. In Alaska, contact a flight service station. Flight plan is entered by a specialist using the OASIS system.
4. Some users have access to an Aeronautical Information System Replacement (AISR) terminal.

A flight plan is filed with an FAA center computer. The FAA has 25 Air Traffic Control facilities that process Flight Plans, using the systems shown. Once again, all of these systems must be modified and tested.

Finally, FAA center computers have automated flight plan coordination with selected neighboring facilities. The countries with which the FAA has automated interfaces- all of which must be tested- are shown. Each country is shown beneath the system or systems with which it will be interfaced in November 2012.

Note: Under current plans, all centers (Houston, Albuquerque, and Los Angeles) that interface to Mexico will be using ERAM in November 2012, while Miami Center- which interfaces to Cuba- will be using Host/URET.

Since the transition to ERAM for Houston, Albuquerque, and Los Angeles are not yet complete, the deployment progress will have to be monitored closely. If there is any risk of ERAM not being operational on schedule at those facilities, testing with Host to Mexico will be required.

Since Miami Center will transition to ERAM later, the interface to Cuba will have to be tested with both Host and ERAM.

Note: HADDS is not shown in Figure 1. It is located at the 20 domestic En Route centers. HADDS accepts flight and surveillance data from Host or ERAM, stores it, and distributes it to non-ATC applications including Traffic Flow Management applications, and offline analysis tools. The changes to HADDS are minimal, and include definition of new data fields. Field 10 equipment and capability data will be output to HADDS in both PRESENT and NEW format, and client applications will be able to step up to the new definitions on their own terms.

Overall Schedule

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Development and Testing						Extern. Testing		Transition		Operations	

Figure 2. 2012 Schedule Overview for implementation of Amendment 1

Development and Testing Phase

- Host, ERAM, OFDPS, FDP-2000 completing development and internal FAA testing with available systems (including flight services systems)
- ATOP starts testing international ANSP interfaces
- Some limited testing with select flight plan filers begins
- Flight plan filer guidance is finalized (has been ongoing)

External Testing Phase

- All international ANSP interfaces are tested. Testing will be with systems at the Technical Center, or at operational sites depending on deployment status of the software.
- FAA Technical Center is used to support testing with Flight Plan Filers
- FAA Personnel are trained (ATC, Flight Data, Flight Services)

Transition Phase

- Testing and Operations in Transition Mode. FAA plan is to start accepting NEW flight plans operationally when ALL centers are ready to accept NEW format- projected to be mid-September
- ANSP to ANSP testing at operational sites will occur

Operations Phase

- Operations using 2012 flight plan only
  - We will ask filers to file NEW only starting November 12, 2012
  - Starting November 15, 2012, only NEW format will be accepted

Schedule Notes

- The transition to Phase 3 depends on having the software deployed and ready at all sites, which includes 25 En Route and Oceanic sites. The FAA does not intend to start Transition operations until all sites are ready to support it. Some testing in Transition Mode may occur at limited sites.
- The FAA is in the middle of ERAM deployment. Some sites will be in a transition mode with respect to Host and ERAM, meaning that they may be conducting operations using both systems.
- The FAA Technical Center will be used to connect systems to AFTN for testing with flight plan filers.

FAA Testing

This section describes the systems and interfaces that need to be tested, and indicates the time frames for various tests. Note that because of the overlapping dates for system development, and the plan for early testing of partially implemented systems, there is no simple breakdown of test phases—some amount of each type of testing will be ongoing simultaneously for quite some time.

System and FAA Internal Testing

ATC Systems Requiring Testing	FAA Filing Systems Requiring Testing
• ATOP – Oceanic centers • HOST – En Route centers • ERAM – En Route centers • OFDPS – Hawaii/Guam control facility • FDP2000 – Anchorage Domestic center	• AISR – All centers, some military facilities, some international ATC units • FS21 - Flight Services • OASIS – Flight Services in Alaska • CSC DUATS – Direct file over the internet • DTC DUATS – Direct file over the internet

Test Steps for validating FAA systems and intra-FAA interfaces

1. Test system to validate new functionality (System, Acceptance and Regression Testing)
2. FAA ATC system to adjacent FAA ATC system testing (HOST to ERAM, HOST to HOST, ERAM to ERAM, ERAM to ATOP, ATOP to FDP2000, ATOP to OFDPS, ERAM and Host to HADDS)
3. Filer systems to individual FAA ATC systems

International ATC Interface Testing

Adjacent FIRs with which we have automated flight planning interfaces will need to be tested prior to operations. The countries with these interfaces include Mexico, Cuba, Canada, Japan, Australia, New Zealand, Portugal, Fiji, and Tahiti.

Test Steps for validating Interfaces to International ATC facilities

1. Test interface using a version of the system installed on a Testbed at the FAA Technical Center in New Jersey; connecting to Testbed in each international ANSP or to operational facilities as needed. FAA Testbed systems can connect to the AFTN.
2. Test interface using the operational system deployed to each site; connecting to operational system in the adjacent FIR

ERAM Interface Testing

- From Testbed to Mexico– Tentatively scheduled for April 25/26
- From LA ERAM facility to Mexico– Late June/Early July (Based on ERAM system schedule and ANSP availability)
- From Testbed to Canada Testbed – Late June/Early July

- From Miami ERAM center to Cuba – July/August (Based on ERAM system schedule and ANSP availability)

Host Interface Testing

- From Testbed to Mexico – Late June/Early July
- From Testbed to Cuba – July/August
- From Testbed to Canada – Late June/Early July

ATOP Interface Testing

- From Testbed to Gander ACC (Beginning March 8, 2012)
- From Testbed to New Zealand (Tentatively scheduled for April)
- From Testbed to Australia, Bermuda, Canada, Fiji, Portugal and Tahiti (Dependent on availability of ANSP systems)

Flight Plan Filer Testing

The FAA will conduct multiple flight plan filer testing in the April/May time frame, using the Testbed at the FAA Technical Center in New Jersey. AFTN addressing was defined to re-route multiple filer flight plans to the FAA Testbed which will occur on designated test dates beginning in the late spring and continuing through the fall. Multiple FAA ATC systems (Host, ERAM, ATOP, etc.) will be used during this testing.

Initially, this Testbed testing will begin with the ATOP system (April/May). ERAM and HOST will be available in June/July. Specific dates will be published as they become available. A user registration form is available and filers have been asked to submit their intentions for testing.

Filer testing at operational facilities is planned to begin in September 2012. Specific date ranges prior to entering Transition Mode when limited tests can take place will be published.

Test Challenges

- Schedule

Due to system development dates, particularly our en route systems (HOST and ERAM), the US will not make the proposed ICAO transition date of July 1, 2012. The last FAA system to be available to support transition mode is ERAM, which has a scheduled date of early September.

- Regression test up-level

An issue that was identified by most FAA ATC systems concerned the large effort to modify existing regression tests to incorporate the new ICAO flight plan format.

- En Route deployment of ERAM

Another unique challenge has been to coordinate the transition from our existing en route system, HOST, to the new ERAM system. The current schedule has multiple HOST sites transitioning to the ERAM system during the ICAO transition period and close to the November 15th ICAO 2012 flight plan date. This has required a large coordination and training effort – while also supporting the additional training requirements needed for the new ICAO flight plan format.

Training

Subjects to address

The primary changes introduced by the amendment are new indications of equipment and capability in Field 10, new categories of “Other Information” in Field 18, and changes to some existing Field 18 categories.

Training will include primarily the following subjects:

- **New flight data definitions of interest.** The information of interest will differ according to the personnel and their job. For example, the equipment and capability relevant to Oceanic controllers differs from the relevant capabilities for a domestic en route controller.
- **How to access flight data not displayed automatically.** There is only limited display space for continuous display of information for a flight. Much of the new flight data will be accessed through menus or readout commands.
- **How to modify equipment / capability.** For the vast majority of flights, the filed data is never changed by Air Traffic Control. However there are infrequent cases where a capability is lost due to equipment failure, or incorrect filing requires addition or deletion of a capability.

Personnel requiring training

Anyone who works with flight plan data will require training. For the FAA, this includes at a minimum the following personnel:

- Tower/Terminal Air Traffic Controllers
- En Route Air Traffic Controllers
- Oceanic Air Traffic Controllers
- Flight Data Communications
- Flight Services Specialists

Training Challenges

- The training regarding display and modification of flight data is System-Specific, so a number of different training packages will be required.
- We have noticed a growing difference between Phraseology for communication between pilots and controllers and the flight data that must be modified (e.g. pilot will discuss RNAV-1 capability; flight data is PBN/D1, D2, D3, or D4). This will complicate training, and we are looking at evolving system CHI towards phraseology
- New equipment and capability is complicated. Sometimes an unrelated failure (an Auto Pilot, an Altimeter, an FMS) can have wide ranging impacts on PBN or other capability. It is growing increasingly difficult to pilots and controllers to understand the full impact of a failure.

Procedures and Documentation

The FAA has several areas where air traffic control procedures and documentation were affected.

Use of “Reasons for Special Handling”

The amendment changes STS/ in Field 18 to permit only specific flight status items. After analysis of FAA procedures, we concluded that some of these items do not identify conditions for which the FAA provides any different procedures or special handling.

We also found that the Amendment did not specify when it is appropriate to include any of the specified items. Therefore, we are putting out flight plan filer guidance to indicate when to use these items and what, if any, special handling the FAA will apply when they are filed.

Procedures for Medical Flights (HOSP and MEDEVAC)

Existing FAA procedures and filing involve use of the term “Lifeguard” for life-critical medical flights. To comply with the amendment and better harmonize with surrounding States, the FAA is changing documentation to reference MEDEVAC in lieu of Lifeguard. We are also addressing use of HOSP, for which there is currently no equivalent item. The FAA will automatically provide priority to MEDEVAC flights, but a flight filing HOSP will not receive priority unless it is requested.

Non-RVSM Procedures

The amendment permits filing of “STS/NONRVSM” by a flight that is not RVSM approved but intends to operate in RVSM airspace. The FAA has specific procedures that identify only certain types of flights that may be approved for such operations. FAA guidance will make it clear that STS/NONRVSM should be used only by flights that meet the criteria in the AIP. We recognize that different States may have different rules, so that an international flight could have STS/NONRVSM in Field 18 yet not meet the FAA requirements. For that reason, STS/ is not considered to be adequate coordination and verbal procedures will still be required.

FAA Differences from PANS-ATM (to be published in AIP)

The FAA has been using a non-standard indicator, IRMK/, in Field 18. Existing FAA procedures require that the indicator “FRC”, for “Full Route Clearance” be used when a flight plan has been modified after filing (but before departure). FRC must appear in a specific place, and using the indicator IRMK/ ensures that it does. The FAA would like to end use of IRMK/ but cannot before November 2012. Therefore it will be carried in our AIP as a difference.

The amendment requires that ANSPs accept flight plans up to 120 hours before departure. The FAA is unable to support this service, and has found no customer need for it. Flight plans will continue to be accepted up to 24 hours in advance.

Flight Plan Filing Instructions

The FAA publishes guidance for filing ICAO flight plans on a web site (http://www.faa.gov/ato?k=fpl). There is also a page specifically addressing FAA implementation of Amendment 1 at http://www.faa.gov/go/fpl2012.

The key document containing FAA instructions for filing a valid 2012 FPL is called the "FAA ICAO Flight Planning Interface Reference Guide". A draft updated version is out for review and is published on the website. You can navigate to it at the above links, or find it directly on the following page: http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/enroute/flight_plan_filing/General/ICAO_2012/presentations/.

In addition, a file of flight plan samples covering a range of expected typical cases has been published on the web site (same page as the reference guide, above). This file also includes examples of erroneous flight plans. As different questions are fielded from flight plan filers, additional illustrative flight plans and other messages (CHG, DLA, CNL) may be added.

Flight plan filing guidance is provided monthly on an open teleconference. Details can be found on the web page (http://www.faa.gov/ato?k=fpl). Click on "General Information" on the left side of the page, and then click on "Flight Plan Filer (FPF) Telcon". To be included on the monthly invitation and receive materials, the page instructs users to send an e-mail to donald.ctr.schraub@faa.gov or ray.ahlberg@faa.gov .

Deployment and Operation in Transition Mode

As noted above, there are many systems being modified and being delivered on different schedules. Deployment of the Amendment 1-capable systems will similarly be staggered. Complete deployment of the updated software is expected to complete to all sites by early September, 2012. The key risk area concerns overlap with deployment of the new FAA En Route Automation Modernization (ERAM) system. Because this system is being deployed to sites throughout 2012, and changes continue to be made to that system based on operational evaluation, tight coordination between ERAM deployment and FPL 2012 activities will be required. All sites operating on ERAM need to be updated to a build containing the FPL 2012 software by September. The sites expected to be on ERAM for the transition are listed in the FITS database and include (as of March 2012):

- Seattle (ZSE) (interface with Canada)
- Salt Lake City (ZLC) (interface with Canada)
- Albuquerque (ZAB) (interface with Mexico)
- Houston (ZHU) (interface with Mexico)
- Denver (ZDV) (no international interfaces)
- Chicago (ZAU) (no international interfaces)
- Los Angeles (ZLA) (interface with Mexico)
- Minneapolis (ZMP) (interface with Canada)
- Oakland domestic (ZOA) (no international interfaces)

As sites receive the new software, they may conduct limited controlled operational tests, including interface tests between neighbors. We will consider case-by-case situations (e.g. turn on transition mode in Oceanic centers) as plans are coordinated with neighboring ANSPs.

The current plan is that the FAA will declare readiness for operation in Transition Mode (i.e. the date when filers are told they can switch operations to NEW if they are ready) when all sites are prepared to accept NEW format flight plans. The current expected date to enter transition mode is mid-September 2012.

Before the FAA enters transition mode, it will coordinate with neighboring ANSPs to ensure only PRESENT format plans are coordinated.

In transition mode, both NEW and PRESENT flight plans will be accepted and processed. Coordination with adjacent ANSPs will be conducted to ensure the proper format flight plan is sent to them. As needed, manual coordination procedures will be reviewed to ensure critical flight data is coordinated.

Plans for Transition to NEW Flight Plan

Assuming successful operation in transition mode, and testing is complete, the FAA expects to transition to NEW mode on November 15th, as scheduled.

While only NEW flight plans are supposed to be filed starting on November 15th, whenever filers first switch over there will be PRESENT format plans that had been filed prior that need to slowly work their way out of the system. For this reason, we plan to ask filers to target a date of November 12th.

When all flight plans in the system are NEW format, the system can move from Transition mode to NEW mode. Filed flight plans will be monitored closely in the days and hours leading up the 15th, to determine whether all users have switched over.

If filers continue to file PRESENT format plans after the 15th, the FAA will initially remain in Transition mode. We would like to develop a plan for cooperative deliberations with ICAO to determine the extent of the problem and the outlook before deciding whether to exit Transition mode (and start rejecting non-compliant flight plans) or extend Transition mode.