

International Civil Aviation Organization



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**Twenty Eighth Meeting of the Communications/
Navigation and Surveillance Sub-group (CNS SG/28)
of APANPIRG**

Bangkok, Thailand, 1 July – 5 July 2024

Agenda Item 4: Information Management (IM)

- 4.2 Proposal for Amendment to Annex 10 Vol II for initial implementation of the flight and flow information for a collaborative environment (FF-ICE) services provisions

**THE ICAO PROVISIONS IN VARIOUS ANNEXES AND THE PROCEDURES FOR AIR
NAVIGATION SERVICES (PANS) CONCERNING FF-ICE SERVICES AND SWIM- FROM
28 NOVEMBER 2024**

(Presented by the Secretariat)

SUMMARY

This paper presents information about the amendments of the ICAO provisions in various Annexes and the Procedures for Air Navigation Services (PANS) concerning the initial implementation of the flight and flow — information for a collaborative environment (FF-ICE) services and SWIM, applicable from 28 November 2024.

1. INTRODUCTION

1.1 The flight and flow- information for a collaborative environment (FF-ICE) concept was intended to address limitations and constraints of the current flight planning mechanism and enable the transition to a fully collaborative environment where a flight trajectory is shared and optimised during all phases of a flight (i.e. trajectory-based operations (TBO) environment). The FF-ICE concept has been transposed into ICAO provisions as six defined services (*planning service, filing service (mandatory service), trial service, flight data request service (mandatory service), notification service and publication service*), which can be implemented incrementally and voluntarily. Each service must be supported by an associated set of harmonised procedures and standardised messages. While focusing primarily on interactions prior to departure, these provisions are intended to cover broad areas of applicability in the lifecycle of a flight and allow for successive incremental additions to the provisions. Where the implementation is determined, two of the FF-ICE services (filing service and flight data request service) shall be provided as a minimum since these services are pre-requisite to replace the current flight planning mechanism, commonly known as the ICAO flight plan 2012 (FPL2012).

1.2 Furthermore, the FF-ICE services are required to use information services which, in the context of system-wide information management (SWIM), address machine-to-machine interaction in a service-oriented architecture.

1.3 This paper shares information about relevant amendments related to the implementation of FF-ICE services in various Annexes and PANS for Member States/Administrations information and necessary action.

2. DISCUSSION

2.1 Proposals for amendment (PfA) of Annexes 3, 4, 10, Volumes II and III, 15, PANS-ABC, PANS-AIM, as well as the publication of the first edition of PANS-IM, concerning aeronautical information management, system-wide information management and information security were shared through ICAO SL Ref.: AN 2/36-23/6 13 February 2023.

2.2 The proposals for amendment were raised from the second meeting of the Information Management Panel (IMP/2) organised by subject as they relate to aeronautical information management, system-wide information management and information security. The proposed first edition of PANS-IM provided the necessary interoperability and harmonisation of a modern means of exchanging information, based on a service-oriented architecture, to all members of the air traffic management (ATM) community following the character and temporality of the information and the specific needs of each member. Moreover, it included the removal of any barrier between systems and data domains so that unified interfaces can be used and, therefore seamless access to global information can be provided.

2.3 Information security is a fundamental aspect of information management. The loss of confidentiality, integrity and availability of the information may impact the safety of flight operations. For this reason, the newly proposed PANS-IM includes a series of information security procedures. The proposal also includes consequential amendments to Annex 10, Volumes II and III, and PANS-AIM.

2.4 The proposals for amendment of Annexes 2, 10, Volume II, PANS-ATM (Doc 4444), PANS-AIM (Doc 10066) and consequential amendments to Annexes 1, 6, Parts I, II and III, 9, 11, 16, Volume IV, PANS-OPS, Volume III (Doc 8168), and PANS-ABC (Doc 8400) concerning the initial implementation of the flight and flow — information for a collaborative environment (FF-ICE) services were shared through SL AN 13/2.5, AN 2/33.1-22/108 dated 29 December 2022.

2.5 The proposals focus primarily on interactions *prior to departure* as envisioned in the FICE thread of the Aviation System Block Upgrades (ASBU) framework. They were intended to cover broad areas of applicability in the lifecycle of a flight and allow for successive incremental additions to the provisions to cater for the evolution of the FF-ICE services. Regarding an appropriate document for hosting new requirements or procedures, the current structure of provisions related to “flight plans” and “flight planning” was used as a reference. Accordingly, the main proposals for amendment were made to Annex 2, Annex 10, Volume II, PANS-ATM (Doc 4444) and PANS-AIM (Doc 10066).

2.6 The major changes introduced to the flight plan provisions with the applicability date of November 2012 were meant to be an interim measure pending transitioning to implementing the FF-ICE concept. Therefore, no further intermediary investment related to the existing flight planning system was recommended. In this regard, the proposed amendment intended to ensure no impact on airspace users and air traffic services (ATS) providers unless they elect to provide and/or use the FF-ICE services to avoid the intermediary system modification that would generate significant cost and could delay transitioning to the implementation of the FF-ICE services.

2.7 The introduction of the FF-ICE services required a new term, “preliminary flight plan”, which can be submitted prior to filing a flight plan for a collaborative flight planning between a unit providing FF-ICE planning service and an operator or designated representative. Considering this new type of flight plan is not necessarily provided to an ATS unit, the proposal amended the definition of

“flight plan” to make it generic about to whom the information is provided to accommodate the anticipated filing of flight plans using FF-ICE services.

2.8 The proposal considered the flight plan evolving into different types (operational, preliminary, filed and current flight plan), each of which had a specific audience and purpose, as this was an essential foundation for the FF-ICE and TBO concepts. In addition, the proposal intended to clarify the difference between the existing terms “filed flight plan” and “current flight plan”, which often led to different interpretations among controllers and pilots.

2.9 All provisions concerning “flight plan” and “flight planning” contained in Annexes and PANS were reviewed and consequential amendments were proposed to various Annexes and PANS. These amendments were to support the mixed-mode operation where the existing flight planning mechanism and FF-ICE services co-exist and ensure the correct use of the term “flight plan” and when applicable, specific types of the flight plan.

2.10 Following the consultation of the proposals for amendment concerning both FF-ICE and SWIM with States and international organizations (as described in 2.1 and 2.2), the proposals for the amendment were further modified to accommodate the comments received during the consultation. These amendments were reviewed by the Air Navigation Commission and adopted/approved by the ICAO Council.

2.11 State Letters informing the adoption and approval of relevant Annexes and PANS concerning FF-ICE services and SWIM were shared by following Letters:

1. Amendment 179 to **Annex 1- SL 2024/28**
2. Amendment 48 to **Annex 2- SL 2024/29**
3. Amendment 49 to **Annex 6 Part I- SL 2024/34**
4. Amendment 41 to **Annex 6 Part II- SL 2024/35**
5. Amendment 25 to **Annex 6 Part III- SL 2024/36**
6. Amendment 93 to **Annex 10, Vol II- SL 2024/24**
7. Amendment 92 to **Annex 10, Vol III- SL 2024/25**
8. Amendment 53 to **Annex 11- SL 2024/31**
9. Adoption of Amendment 43 to **Annex 15: SL 2024/40**
10. Approval of Amendment 34 to the Procedures for Air Navigation Services- ICAO Abbreviations and Codes (**PANS-ABC, Doc 8400**)- **SL 2024/46**
11. Approval of Amendment 12 to the Procedures for Air Navigation Services — Air Traffic Management (**PANS-ATM, Doc 4444**)- **SL 2024/41**
12. Approval of Amendment 3 to the Procedures for Air Navigation Services — Aeronautical Information Management (**PANS-AIM, Doc 10066**)- **SL 2024/42**
13. Approval of the first edition of the Procedures for Air Navigation Services — Information Management (**PANS-IM, Doc 10199**)- **SL 2024/39**
14. Approval of Amendments 11, 10, 3 to the Procedures for Air Navigation Services — Aircraft Operations (**PANS-OPS, Doc 8168**), Volumes I, II, III respectively- **SL 2024/45**

2.12 The ICAO provisions in various Annexes and the Procedures for Air Navigation Services (PANS) concerning FF-ICE services and SWIM are expected to become applicable on **28 November 2024**. The guidance material is also expected to become available for this applicability date.

2.13 Toward regional efforts to support APAC States/Administration for initiating work on FF-ICE R/1, the APANPIRG/34 Meeting held from 11-13 December 2023 in Hong Kong China

acknowledged **Decision ATM/SG/10-3: Establish FF-ICE Operational Requirements Ad hoc Group**, to prepare a set of harmonised operational requirements of Flight and Flow Information for a Collaborative Environment (FF-ICE) and recommend an approach to devise an FF-ICE implementation strategy for Asia/Pacific, aligned with Asia/Pacific Seamless ANS objectives. The decision was an outcome of ATM/SG/11 meeting from 2-6 October 2023 in Singapore.

2.14 It was noted that FF-ICE would require changes in operational processes and flight planning procedures. New processes would be required to cater to a mixed-mode environment where both the current flight plan (FPL2012) and the FF-ICE flight plan co-exist. The interaction of FF-ICE with other ATM initiatives, such as Air Traffic Flow Management (ATFM), also needs to be studied.

2.15 The first meeting of the FF-ICE Operational Requirements Ad hoc Group was held from 18 to 21 June 2024 at the ICAO Asia and Pacific Regional Office in Bangkok, Thailand. A total of 47 participants from Australia, Cambodia, Hong Kong China, Japan, Philippines, Singapore, Thailand, United States, Viet Nam, IATA, Industry, and ICAO attended the meeting. The key topics covered during the meeting were FF-ICE Developments, FF-ICE's role in TBO, and FF-ICE/R1 Services. In addition, a Tabletop Exercise and discussion on mixed mode considerations along with sharing of FF-ICE implementation plans and timeline by ANSP and industry, were deliberated. The meeting materials are available on the ICAO Asia/Pacific (APAC) Regional Office webpage at <https://www.icao.int/APAC/Meetings/Pages/2024-FF-ICE-and-WS-with-TTX.aspx>. The meeting outcomes and future plans will be reported to the ATM/SG/12 (23-27 September 2024 in Bangkok).

2.16 To enjoy the full benefits of FF-ICE services, all States are encouraged to implement the minimum set of FF-ICE services as soon as possible following the ICAO provisions that become applicable on **28 November 2024**.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) implement the minimum set of FF-ICE services as soon as possible in accordance with the ICAO provisions; and
- c) discuss any relevant matter as appropriate.
