**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

# ASIA/PACIFIC REGIONAL FF-ICE/R1

# IMPLEMENTATION PLAN

Version X.X Month YYYY

This Regional Plan was developed by XXXXXXX

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# 1. SCOPE OF APAC REGIONAL FF-ICE IMPLEMENTATION PLAN

## 1.1 Alignment with Global Framework

1.1.1 This Asia/Pacific Regional FF-ICE Implementation Plan has been developed to complement the ICAO global framework and guidance. This Plan supplements the global FF-ICE concepts and objectives to the regional context of the Asia/Pacific, providing a practical roadmap for implementation in Asia/Pacific States while remaining aligned with ICAO's provisions. This Plan operates on established relevant ICAO materials and foundational concepts, principles, and guidelines of SWIM, Air Traffic Flow Management (ATFM) practices, and aviation information security requirements. Based on this assumption, this Plan does not duplicate fundamental explanations from ICAO Doc 9965 or other global manuals. Instead, it focuses on regional implementation aspects bridging the gap between ICAO's global guidance and the specific needs of Asia/Pacific stakeholders.

1.1.2 In accordance with other Asia/Pacific regional plans, such as the *Asia/Pacific Plan for Collaborative Aeronautical Information Management*, this Plan is not intended to duplicate or pre-empt global guidance issued by ICAO expert groups. Rather, it builds upon the issued guidance to outline how FF-ICE can be implemented across the Asia/Pacific region in a coordinated and harmonized manner. Please note that global reference documents (ICAO Doc 9965 Volume II, ICAO Doc 10039, etc.) contain these foundational concepts, and this Plan serves to apply those concepts in the regional implementation setting.

1.1.3 This Plan uses the terms "shall", "should", and "may" to indicate the level of compliance expected from States in following this document. This Plan recognizes that States retain control over their implementation decisions, while encouraging regional harmonization.

1.1.3.1 "Shall" indicates provisions that are compulsory for States to implement as these provisions are considered necessary for regional harmonization and interoperability.

1.1.3.2 "Should" indicates provisions that are recommended as best practices for regional coordination. States are encouraged to implement these provisions where operationally feasible.

~~1.1.2~~1.1.3.3 "May" indicates provisions that are optional and can be implemented at the discretion of individual States based on their operational requirements and capabilities.

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## 1.2 Asia/Pacific Regional Context and Guidance

1.2.1 The FF-ICE implementation in Asia/Pacific region is being undertaken in parallel with the region's broader air navigation modernization strategies. The ~~*Asia/Pacific Seamless ANS Plan*~~*Asia/Pacific ANP Volume III* ~~*Version 4.0*~~ explicitly identifies FF-ICE and TBO as key elements of future ATM enhancements. The ~~*Asia/Pacific Seamless ANS Plan*~~*Asia/Pacific ANP Volume III* calls on Asia/Pacific States to work collaboratively through ICAO and regional platforms towards a seamless ATM environment, including the implementation of SWIM, FF-ICE, and TBO to support future traffic growth and sustainability. Particularly, the implementation of SWIM, a key enabler for FF-ICE, within the Asia/Pacific region, should follow the regionally agreed guidelines, including *APAC SWIM Technical Infrastructure Profiles Version 1.0*, and the *APAC Common SWIM Information Services*. This will ensure interoperability and harmonized implementation.

1.2.2 Moreover, the *Asia/Pacific Plan for Collaborative Aeronautical Information Management Version 4.0* and the *Asia/Pacific Regional Framework for Collaborative ATFM Version 4.0* complement

the FF-ICE initiative by simultaneously addressing the Aeronautical Information Management (AIM) and ATFM improvements that are needed in parallel. The *Asia/Pacific Plan for Collaborative Aeronautical Information Management* provides guidance on the transition from aeronautical information services (AIS) to AIM and digital data exchange, which is a foundational element for successful FF-ICE implementation.

## 1.3 Mandatory and Optional FF-ICE Services

1.3.1 In accordance with ICAO Doc 4444, Filing Service and Flight Data Request Service are mandatory. Additionally, to support the sunsetting of FPL2012 and, at a minimum, DEP- and ARR-related ATS messages, the Notification Service is mandatory within the Asia/Pacific region. The FF-ICE Planning Service, Trial Service, and Publication Service are considered optional within the Asia/Pacific region.

## 2. EXECUTIVE SUMMARY

2.1 This Asia/Pacific Regional FF-ICE/R1 Implementation Plan provides regional strategy and guidance for the implementation of the Flight and Flow Information for a Collaborative Environment (FF-ICE) within the Asia/Pacific region. This Plan supports the transition from the traditional ICAO 2012 Flight Plan (FPL2012) to the modernized FF-ICE environment, enabling collaborative, service-based information exchange among Air Traffic Management (ATM) Service Providers (ASPs), Airspace Users (AUs), and other aviation stakeholders. It is aligned with the *Manual on Flight and Flow — Information for a Collaborative Environment (FF-ICE)* (ICAO Doc 9965), the *Global Air Navigation Plan* (GANP), and the ~~*Asia/Pacific Seamless Air Navigation Services (ANS) Plan*~~ *Asia/Pacific ANP Volume III*.

2.2 The implementation of FF-ICE represents a significant step towards achieving Trajectory-Based Operations (TBO) in the region. Through standardized information services and system-to-system interoperability, FF-ICE will facilitate the sharing and management of comprehensive flight and flow data throughout all phases of flight. This Plan defines the regional approach to implementing FF-ICE Release 1 (FF-ICE/R1) covering the pre-departure phase and lays the foundation for a future expansion to Release 2 (post-departure operations).

2.3 The Asia/Pacific region is adopting a harmonized approach to the use of global data standards, particularly the Flight Information Exchange Model (FIXM) version ~~4.3~~4.3.0, together with the Asia/Pacific FIXM Regional Extension to support cross-border Air Traffic Flow Management (ATFM) and Airport Collaborative Decision Making (A-CDM) integration. Mixed-mode operations between legacy and FF-ICE environments are expected during the transition period, and guidance has been included regarding translation mechanisms, validation procedures, and coordination processes necessary for maintaining seamless operation.

2.4 This Plan details the operational and technical requirements for the implementation of FF-ICE services. Filing Service and Flight Data Request Service are established as mandatory in accordance with *the Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, ICAO Doc 4444), with the Notification Service also identified as mandatory within the region to support the eventual retirement of the FPL2012 and related ATS messages. The Planning, Trial, and Publication Services are considered optional but is recommended to enhance collaborative decision-making and information availability.

2.5 Recognizing the importance of data integrity and operational assurance, this plan introduces a common validation process, standardized submission response codes, and uniform filing-status interpretations. It outlines cybersecurity considerations for FF-ICE operations, recommending implementation of secure communication protocols and promoting adherence to ICAO information security guidance.

2.6 Implementation of FF-ICE/R1 across the Asia/Pacific region will be achieved in phases. Technical trials and cross-border testing are targeted to begin in 2030, followed by operational testing in 2031. This will lead to full operational capability of the regionally mandatory FF-ICE/R1 services (Filing Service, Flight Data Request Service and Notification Service) by 2032. This timeline supports regional readiness for the planned global sunset of the FPL2012 in 2034. States and Administrations will report progress to the ICAO Asia/Pacific Regional Office annually to ensure synchronous advancement and to identify any areas requiring additional support or coordination.

2.7 This Plan will be maintained and updated in alignment with revisions to ICAO Doc 9965, GANP, and the ~~*Asia/Pacific Seamless ANS Plan*~~*Asia/Pacific ANP Volume III*. Post-implementation

coordination and performance monitoring will ensure continuous improvement and harmonization across the region. Through the collaborative and progressive implementation of FF-ICE, the Asia/Pacific region will advance towards a fully information-driven ATM environment that enhances safety, efficiency, and predictability in support of the global vision for a seamless and interoperable air navigation system.

## 3. DEFINITIONS (REFERENCED FROM DOC 9965)

~~***4D trajectory.*** A four-dimensional (x, y, z, and time) trajectory of an aircraft from gate-to-gate, at the level of fidelity required for attaining the agreed ATM system performance levels.~~

~~***Agreed 4D trajectory.*** The current 4D trajectory that is agreed between the airspace user and the ASP after collaboration, or imposition of pre-collaborated rules.~~

~~*Explanation:* The agreed trajectory is the trajectory that the airspace user agrees to fly. There is only one agreed 4D trajectory for any given flight at any time. As the ATM system has unpredictable or uncontrollable events and to allow flexibility, it is likely that it will be necessary to renegotiate trajectories. The agreed 4D trajectory therefore reflects the most recent instance (that is the current) agreement.~~

~~***Aircraft trajectory.*** The aircraft trajectory is the trajectory that the aircraft intends to fly (and has flown).~~

~~*Expected use*: The aircraft trajectory is always what the aircraft is intending to fly or has flown. It is not necessarily the agreed trajectory. In normal operations, it is expected that the aircraft trajectory will remain with the trajectory tolerances of the agreed trajectory. Airspace user trajectory constraint — Airspace user's trajectory constraint on the acceptable solutions.~~

~~***ATM community.*** See the *Global Air Traffic Management Operational Concept* (ICAO Doc 9854).~~

~~***ATM trajectory constraint.*** Trajectory constraint imposed by the ATM system.~~

~~***Coordinated airport.*** Any airport where, in order to land or take off, it is necessary for an aircraft operator to have been allocated a slot by an appropriate authority.~~

~~***Desired 4D trajectory.*** The current 4D trajectory that is requested and generated by the airspace user with knowledge of the ATM system's operational constraints and resource contention.~~

~~*Explanation*: The airspace user determines the trajectory that is best suited to meet their mission objectives. The airspace user may elect to pre-emptively circumvent operational constraints and resource contention — or engage in collaboration on the trajectory. There is only one desired 4D trajectory for any given flight at any time. To allow for flexibility and as the ATM system has unpredictable or uncontrollable events, it is likely that it will be necessary to renegotiate trajectories. The desired 4D trajectory therefore reflects the most recent request. Where the agreed 4D trajectory is not the desired 4D trajectory then the ASP will seek to provide the desired 4D trajectory as soon as possible. This has a corresponding requirement on the airspace user to ensure that the desired 4D trajectory is kept updated. Emergency service provider — Provider of emergency services, such as search and rescue organizations. .~~

~~***Flight and Flow – Information for a Collaborative Environment (FF-ICE).*** Flight and flow information necessary for notification, management and coordination of flights between members of the ATM community within the collaborative environment envisioned in the Global ATM Operational Concept. FF-ICE can refer to a single instance (an individual flight) and also to an aggregation of flights (each with their own flight information in FF-ICE).~~

~~***Gate-to-gate.*** Considers the operation of an aircraft not just from take-off to touchdown (the airborne segment) but from the first movement with intention of flight to completion of movement after flight; that is from the gate (or stand or parking position) to gate (or stand or parking position).~~

~~***Globally unique flight identifier (GUFI).*** A single reference for FF-ICE information pertinent to a flight that is unique globally.~~

~~***Information for a collaborative environment (ICE).*** Information necessary to enable the collaborative environment envisioned in the Global ATM Operational Concept. It contains, but is not limited to, information domains such as flight and flow information, aeronautical information and surveillance information.~~

~~***Negotiating 4D trajectory.*** A 4D trajectory proposed by airspace user or ASP as a potential agreed 4D trajectory.~~

> ~~*Explanation*: For trajectory negotiation purposes, multiple trajectories may be required during the negotiation process; however, each participant would be allowed only one negotiating 4D trajectory at a time which represents their most recent proposal in the negotiation. These trajectories may not necessarily be a gate-to-gate trajectory. These trajectories are intended to be transitory.~~

~~***Regional extensions***. FF-ICE will be based upon global information standards defining a core set of data. Regional extensions on data elements are permitted in accordance with harmonized global practices for defining and referring to these elements.~~

> ~~*Explanation:* The global information standard for the FF-ICE will be defined through published XML schemas under version control and maintained by ICAO. If operationally needed and viable, regional extensions to the information standard may be considered. These regional extensions would then also be published as regional XML schemas with version control. As information is provided, use of different namespaces can allow valid schemas from multiple regions to be unambiguously referred to in a single XML message. Regional extensions cannot be created for data already defined within global FF-ICE that are from any other region already registered with ICAO.~~

> ~~Regional variation required for performance reasons will be implemented by use of different subsets of the standard information elements. New elements will be introduced regionally as needed, but will not be mandatory for other regions, will not provide duplicate information of existing elements, and should be intended to become part of the global standard. A formal process will be introduced for migrating successful new elements into the standard.~~

~~***Regional requirement.*** Regional requirements specify conditions regarding data items within a region if necessary. Explanation: For example, a Quality of Service requirement. Trajectory update requirement — The trajectory update requirement specifies displacement values that require an aircraft, when it is displaced by at least one of these values from the last trajectory advised to ATM, to provide updated trajectory information to the ATM system.~~

> ~~*Expected use*: In order to minimize data exchange bandwidth, it is not expected that every change to an aircraft's trajectory is communicated by the aircraft to the ATM system; instead, only those changes of a particular displacement need to be communicated. These values include longitudinal, lateral, and vertical displacements; time (estimate) and speed changes may be included as well. An update does not necessarily mean that a new agreed trajectory is required as the aircraft may be operating within the agreed trajectory tolerances. The update requirement values are set depending on the need of the ATM system to monitor the aircraft's progress and are therefore related to surveillance. An example use is to monitor trends; for example, if the aircraft is progressively operating towards the limit of its existing agreed trajectory tolerances. Another possible use is when new constraints need to be imposed, then the aircraft trajectory rather than the agreed trajectory~~

~~(which could be a significant difference when there are large trajectory tolerances) could be taken into consideration. It is expected that the FF-ICE aircraft trajectory will be initialized to the agreed trajectory and so the first aircraft trajectory update will be displacement from the agreed trajectory, but would then be based on the last advised aircraft trajectory.~~

~~*Consideration*: The update is currently defined as an event when a specific displacement is achieved. It is not a requirement to update at particular time intervals. The definition will need to change if it is expected that "routine" reports are required. Another consideration is if other aspects of the trajectory should also be subject to update requirements.~~

~~***Restriction.*** Restrictions are documented rules that are aimed at managing the ATM system, which act on, and reduce the freedom of a group of flights (i.e. flights with certain common characteristics). Restrictions result from ATM system limitations and can take many forms. *(ATMRPP WG/35 WP/811 – Restrictions and Constraints Terminology)*~~

~~***Flight Constraint.*** A Flight Constraint results from applying a Restriction to a particular flight and describes bounds (e.g. in altitude, speed, time, and route) that constrain free movement of the flight. The set of constraints for a flight can be thought to describe an envelope within which the flight must operate. When a flight's desired trajectory does not stay within the required envelope, adjustments must be made. *(ATMRPP WG/35 WP/811 – Restrictions and Constraints Terminology)*~~

***Air Traffic Management (ATM)*** — The dynamic, integrated management of air traffic and airspace including air traffic services, airspace management and air traffic flow management — safely, economically and efficiently — through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions.

***ATM community*** — The aggregate of organizations, agencies or entities that may participate, collaborate and cooperate in the planning, development, use, regulation, operation and maintenance of the ATM system.

***ATM configuration*** — The arrangement of the non-flight elements of the ATC System. The ATM Configuration imposes constraints on flights through such factors including military airspace reservations and releases, sector configurations, runway combinations and runway usage.

***ATM Service Provider (ASP)*** — A Unit involved in performing Air Traffic Management responsibilities as introduced in the PANS-ATM.

***ATM system limitations*** — Inherent characteristics that limit its ability to support desired aircraft operations or effectively accommodate demand on resources.

***Coordinated airport*** — Any airport where, in order to land or take off, it is necessary for an aircraft operator to have been allocated a slot by an appropriate authority.

***Effective flight constraints*** — The subset of flight constraints that actually affected the flight's unconstrained trajectory.

***Emergency Service Provider (ESP)*** — Provider of emergency services, such as search and rescue organizations.

***Flight and Flow - Information for a Collaboration Environment (FF-ICE)*** — Information necessary for planning, coordination, and notification of flights exchanged in a standardized format between

members of the ATM community, including those involved in flight operations and aerodrome operations.

*FF-ICE can refer to a single instance (an individual flight) and also to an aggregation of flights (each with their own flight information in FF-ICE).*

***Flight and Flow - Information for a Collaboration Environment (FF-ICE) services*** — A set of services established for the purpose of facilitating the exchange of flight and flow – information for a collaborative environment, more accurate assessment of demands, appropriate resource planning, and optimum flight planning and execution.

***Flight constraint*** — Results from applying a restriction to a particular flight and describes bounds (e.g. in altitude, speed, time, and route) that constrain free movement of the flight.

*Note: Throughout this document, the term 'constraint' should be understood as 'flight constraint' unless explicitly indicated otherwise.*

***Flight plan*** — Specified information relative to an intended flight or portion of a flight of an aircraft.

*Note 1: The term flight plan may be prefixed by the words "preliminary", "filed", "current" or "operational" to indicate the context and different stages of flight.*

*Note 2: When the word "message" is used as a suffix to this term, it denotes the context and format of the flight plan data as transmitted.*

***Operational flight plan***. The operator's plan for the safe conduct of the flight based on considerations of aeroplane performance, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.

***Preliminary flight plan (PFP)***. The flight plan submitted by an operator or a designated representative to conduct collaborative planning of a flight, prior to filing a flight plan for use by ATS units.

***Filed flight plan***. The latest flight plan as submitted and updated by the pilot, an operator or a designated representative for use by ATS units.

*Note: The FPL denotes a filed flight plan exchanged using aeronautical fixed services while eFPL denotes a filed flight plan exchanged using FF-ICE services. The eFPL allows for the exchange of additional information not contained within the FPL.*

***Current flight plan (CPL)***. The flight plan that reflects changes to the filed flight plan by subsequent ATC clearances.

***Repetitive flight plan (RPL)***. A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator or a designated representative for retention and repetitive use by ATS units.

***eFPL.*** A symbol used to designate a filed flight plan exchanged using FF-ICE services.

***FPL.*** A symbol used to designate a filed flight plan exchanged via aeronautical fixed services (AFS).

***Flight plan originator*** — An operator or the operator's designated representative that has flight planning responsibility for the flight.

***Gate-to-gate*** — An expression that describes the ground and airborne segments of aircraft operations from the first movement with intention of flight (from gate, stand or parking position) to completion of movement after flight (gate, stand or parking position).

***Globally unique flight identifier (GUFI)*** — An unchangeable data element associated with a flight that allows all eligible members of the ATM community to unambiguously refer to information pertaining to the flight.

***Message*** — A discrete unit of communication, expressed electronically, and intended by the source for consumption by some recipient or group of recipients. The term "message" is thus not limited only to ATS messages over AFTN, but can include communication via other technologies including those described in ICAO Doc. 10039.

***Message originator*** — An operator, their designated representative, or an ATS unit that transmitted a message.

*Note: This is equivalent to the use of Originator in PANS-ATM Chapter 11.*

***Operator*** — The person, organization or enterprise engaged in or offering to engage in an aircraft operation.

***Procedure*** — A procedure is an established practice or prescribed method of proceeding with an action, normally non-systematic, under given circumstance or situation, in the provision of a service or part thereof.

***Process*** — A process is an operation or series of operations performed in a definite manner, normally systematically, in the provision of a service or part thereof.

***Ranked trajectories*** — A series of desired trajectories organized in the order of preference, with tolerances supplied if necessary by the airspace user to define when the next ranked trajectory should be used.

*Note: Tolerances are used to express the bounds of variation on the trajectory triggering a preference for the next ranked trajectory.*

***Relevant ASP*** — Unit(s) designated by the appropriate ATS authority to which the flight plan for a particular flight needs to be provided and includes:

- The Area Control Centre (ACC) or flight information centre serving the control area of the Flight Information Region (FIR) within which the departure aerodrome is situated;
- The centres in charge of each FIR or upper FIR along the route;
- For flights along specified routes or portions of routes in close proximity to FIR boundaries, the centres in charge of each FIR or upper FIR adjacent to such routes or portions of routes;
- When a potential re-clearance in flight (RIF) request is indicated in the flight plan, the additional centres concerned and to the aerodrome control tower of the revised destination aerodrome;
- The aerodrome control tower at the destination aerodrome;
- Flow management centres responsible for ATS units along the route.

- Flight and flow – information services unit along the route of the flight.

***Restrictions*** — Documented rules that are aimed at managing the ATM System, which act on, and reduce the freedom of a group of flights (i.e., flights with certain common characteristics). Restrictions result from ATM system limitations.

*Note*: A published restriction, in addition to the cause and applicability criteria, may also include the constraint. For example, "due to congestion all flights departing ABCD between Monday and Friday during the hours from 07:00 to 17:00 and routing via AWY1 to destination WXYZ must remain below FL250".
Typically an Air Traffic Flow Management (ATFM) measure, which is a type of restriction, will require a specific flight constraint to be issued to each impacted flight. For example, "between 09:00 and 14:00 the airspace <airspace ref> can only accept 15 aircraft per hour. Flights planned to enter the airspace during this time period will be issued with an ATFM slot".

***Runway Visual Range (RVR)*** — The range over which the pilot of an aircraft on the centre line of a runway can see the
runway surface markings or the lights delineating the runway or identifying its centre line.

***Service*** — A service is the provision of a pre-defined set of work including any associated information intended to benefit the customer.

***Trajectory*** — The representation of an aircraft continuous path, both in the air and on the ground, comprised of position (x, y, z) and time.

***Desired trajectory*** — The trajectory that is requested and generated by the airspace user with its knowledge of the ATM system's configuration and published restrictions and that reflects the most recent request of the airspace user.

*Note: There is only one desired trajectory for any given flight at any time. To allow for flexibility and as the ATM system has unpredictable or uncontrollable events, it is likely that it will be necessary to renegotiate trajectories leading to a revision in the agreed trajectory. The desired trajectory therefore reflects the most recent airspace user request. Where the agreed trajectory is not the desired trajectory then the ASP will negotiate to obtain a revised agreed trajectory.*

***Negotiating trajectory*** — A trajectory proposed by eAU or eASP as a potential agreed trajectory.

*Note: Each participant would be allowed only one negotiating trajectory at a time which represents their most recent proposal in the negotiation. These trajectories may not necessarily be a gate-to-gate trajectory and are intended to be transitory.*

***Agreed trajectory*** — The trajectory that reflects the most recent agreement between the airspace user and the ASP after collaboration, and/or imposition of pre-collaborated rules.

*Note: There is only one agreed trajectory for any given flight at any time.*

***Executed trajectory*** — The actual trajectory of the aircraft from the start-up to the last known position.

*Note: The executed trajectory is what was executed and is not necessarily the desired or agreed trajectories. The executed trajectory relates only to the current flight of the aircraft (and does not contain information from previous flights, even with an en-route to en-route perspective). The executed trajectory information can be used for performance and operational analysis.*

***Trajectory synchronization*** — The process of aligning the trajectories for a single flight held by operationally relevant entities (including ground and airborne) such that remaining differences are operationally negligible for the execution of the flight.

***Minutes in Trail (MINIT) / Miles in Trail (MIT)***~~:~~ — -MINIT/MIT are tactical ATFM measures and are expressed as the number of minutes or miles between each successive aircraft at an airspace boundary point. (Doc 9971)~~MINIT/MIT are ATFM measures to be applied on a flow or a group of traffic, expressed as the number of minutes or miles between each successive aircraft at an airspace boundary point. *(ATMRPP-WG47-WP1076)*~~

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## 4. INTRODUCTION

4.1 FF-ICE is a global ICAO initiative to modernize flight planning and trajectory management through enhanced information exchange methods and collaboration. At the global level, FF-ICE is designed to address the limitations of the traditional FPL2012 by enabling a fully collaborative TBO environment. This means that a flight's 4D trajectory can be shared, managed, and ~~optimized~~ adjusted among stakeholders in all phases of flight, improving predictability and efficiency in line with the TBO concept. By exchanging more comprehensive flight and flow data (such as detailed route trajectories and aircraft performance information) in a standardized, system-wide manner, FF-ICE aims to increase airspace capacity and flight efficiency while maintaining safety. This is a key objective identified in the ICAO Doc 9854 for future ATM systems, and a critical goal for the FF-ICE effort overall.

4.2 ICAO's FF-ICE concept is documented in the ICAO Doc 9965, which is organized into two volumes. Volume I outlines the overall FF-ICE Concept, covering how information for flight planning, flow management, and trajectory management will support a collaborative ATM environment. Volume II, *FF-ICE Implementation Guidance,* provides detailed guidance to ASPs and AUs for implementing FF-ICE in the pre-departure phase, particularly the Release 1 (FF-ICE/R1) capabilities. According to this ICAO guidance, FF-ICE/R1 introduces a set of new services including Planning, Filing, Trial, Flight Data Request, Notification, and Publication, which collectively enable stakeholders to file collaborative flight plans, perform trial trajectory analyses, update or cancel plans, share flight event updates, and request flight information through standard System Wide Information Management (SWIM)-based messages. Each service is defined ~~with~~ through agreed procedures and message formats to help ensure consistent information exchange among FF-ICE participants, while allowing flexibility in interface implementation~~pre-established procedures and message formats to ensure that all FF-ICE participants exchange information in a consistent, interoperable way~~. The subsequent FF-ICE Release 2 (FF-ICE/R2) will extend these principles into the post-departure phase by supporting in-flight trajectory updates and collaborative adjustments between ASPs and AUs, further building on the foundation established by FF-ICE/R1.

# 5. BACKGROUND

## 5.1 SWIM as an Enabler for FF-ICE

5.1.1 The implementation of FF-ICE is fundamentally supported by the concept of SWIM. SWIM provides the technical infrastructure, standards, and governance needed to allow seamless information exchange among ATM stakeholders.

5.1.2 In the FF-ICE environment, flight data sharing is accomplished through SWIM-based information services rather than traditional point-to-point messaging. FF-ICE operates within a SWIM operational environment where the key flight planning processes are described and offered in terms of services.

5.1.3 These services are published and discovered via SWIM, enabling authorized stakeholders to exchange flight and flow information in real time using common formats and protocols. SWIM ensures that all FF-ICE messages are exchanged on a secure, interoperable network with agreed-upon data exchange models and service interfaces. Crucially, SWIM's service-oriented architecture means that FF-ICE information exchanges are standardized at the service level, even as the underlying technologies and implementations may differ between States.

5.1.4 Guidance on implementing SWIM information services, such as those to support FF-ICE, are provided in *the Procedures for Air Navigation Services – Information Management* (PANS-IM, ICAO Doc 10199) requirements and *Manual on the SWIM Implementation* (ICAO Doc 10203).

~~5.1.1~~5.1.5 As the SWIM technical infrastructure evolves over time, the focus for FF-ICE will be on creating and maintaining adaptive operational services and data exchanges, ensuring that any State's system can communicate using the standard FF-ICE service definitions. The exact hardware/software implementation within each State can be flexible and technology-agnostic on the condition that the State can provide and consume the defined FF-ICE services and related information services through SWIM.

## 5.2 FIXM and Regional Extensions

5.2.1 FF-ICE's information exchange relies on standardized data formats. Most notably, it relies on the Flight Information Exchange Model (FIXM) for encoding flight information. While FF-ICE defines what flight information needs to be exchanged among stakeholders, FIXM defines how that information is structured for digital exchange within a System Wide Information Management (SWIM) environment. As the globally standardized information exchange model, FIXM provides the rich, detailed, and structured flight and flow information required by the FF-ICE concept, representing a major advancement from the traditional teletype-format FPL (FPL2012).

5.2.2 Asia/Pacific stakeholders implement FF-ICE using the globally defined FIXM standard for flight data. However, in recognizing certain regional operational needs, the Asia/Pacific region has developed its own endorsed extensions to FIXM to accommodate additional information specific to this region. An Asia/Pacific FIXM extension was developed to include flight-specific data attributes necessary for cross-border ATFM operations, A-CDM, ATFM/A-CDM integration, and traffic synchronization. The Asia/Pacific FIXM extension adds fields for information such as target take-off time, target time over, and other collaborative decision-making parameters that are crucial for coordinating operations across Flight Information Regions (FIRs) within the region.

5.2.3 This approach allows Asia/Pacific States to exchange all necessary flight and flow information, including regional specifics, under FF-ICE, supporting the implementation of regional initiatives while still adhering to the global standards and ensuring interoperability between Asia/Pacific and other ICAO regions.

5.2.4 Appendix A provides guidance on translating FF-ICE FIXM information to ATS messages, and the structure of the legacy FPL 2012, which may be needed to support ingestion of the FPL2012 flight plan. Appendix B maps the FIXM Core v4.3.0 data attributes required to support cross-border ATFM information exchanges.

## 5.3 Mixed-Mode Operations During Transition

5.3.1 As the Asia/Pacific region begins implementing FF-ICE, there is expected to be an extended transition period during which legacy and new systems will operate in parallel. Not all States or ASPs will be ready to switch to FF-ICE/R1 on the same date; system upgrades and operational readiness will vary. Consequently, a mixed-mode environment will exist for several years, wherein some flights will be filed and managed using traditional FPL2012 procedures, while others will use the new FF-ICE services.

~~5.3.1~~5.3.2 Section 6.1.8 ~~6.1.7~~ provides regional implementation considerations for mixed-mode operations.

# 6. APAC REGIONAL IMPLEMENTATION PLAN

## 6.1 General

### 6.1.1 Information Exchange Standards

6.1.1.1 FF-ICE operations, as described in ICAO Doc 9965 Volume II, are performed through FF-ICE services. Each FF-ICE service is encompassed with a set of FF-ICE messages for exchanging flight information between stakeholders. These messages are constructed using FIXM, a globally standardized information model for flight and flow information exchange.

6.1.1.2 ATM Information Reference Model (AIRM), a standardized dictionary for ATM information, shall be used as a reference for ATM vocabulary in digital information exchange among stakeholders within the FF-ICE/R1 processes to prevent ambiguities. To ensure semantic interoperability and consistency across information domains, AIRM also underpins the development of FIXM, Aeronautical Information Exchange Model (AIXM), and the ICAO Meteorological Information Exchange Model (IWXXM).

6.1.1.3 FIXM is comprised of the following components:

a) FIXM Core – providing globally harmonized flight data structures;

b) FIXM Applications – built upon FIXM Core to provide specific flight data structure such as FF-ICE messages and FF-ICE message templates; and

c) FIXM Extensions – Extending FIXM Core to support additional local, national, or regional information exchange requirements.

6.1.1.4 To ensure harmonized ~~inter-regional~~ FF-ICE operations, the FF-ICE message templates specified in ICAO Doc 9965 Volume II and published on the official FIXM website (www.fixm.aero) shall be used for FF-ICE implementation ~~in the Asia/Pacific region~~. Use of these templates will ensure consistent validation of data fields across stakeholders.

6.1.1.5 FIXM version 4.3.0 shall be used as the standard format for FF-ICE/R1 services implementation in the Asia/Pacific region starting from Q3/2026, as agreed by APANPIRG/35 through its Conclusion APANPIRG/35/4.

6.1.1.6 The Asia/Pacific regional FIXM version 4.3.0 Extension shall be used for cross-border ATFM operations, A-CDM, ATFM/A-CDM integration, and traffic synchronization within the region, as agreed by APANPIRG/36 through its Conclusion APANPIRG/36/12.

6.1.1.7 The change process for the cross-border FIXM operating version utilized to support system-to-system information exchange via SWIM shall follow the procedure agreed by ATM SG/13 through its Conclusion ATM/SG/13-5.

~~6.1.1.4~~6.1.1.8 It is recommended that the FIXM version used within the Asia/Pacific region for FF-ICE services implementation and cross-border ATFM information exchange be aligned to ensure effective communication and interoperability across ATM operation support systems throughout the region.

~~6.1.1.5 The Asia/Pacific regional FIXM Extension is available and recommended for cross-border ATFM information exchange and ATFM/A-CDM integration when performing cross-border operations in Asia/Pacific region.~~

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### 6.1.2 Globally Unique Flight Identifier (GUFI)

6.1.2.1 Under the current operational format multiple fields are used to identify a specific flight, such as aircraft identification, departure aerodrome, destination aerodrome, date of flight, and Estimated Off-Block Time (EOBT). However, this method may not always uniquely identify a flight, for example, when a flight is delayed. Automation will play a critical role in the FF-ICE environment where large volumes of simultaneous transactions and message exchanges are expected.

6.1.2.2 To avoid ambiguity in flight identification and accurate correlation of flight data, GUFI shall be used. The GUFI provides a unique reference to each flight and ensures clear distinction between flight with otherwise similar information.

6.1.2.3 When a flight plan is cancelled and a new flight plan is submitted, a new GUFI shall be assigned, even if the flight is considered the same by the operator. Alternatively, in place of the cancel and refile option, a new filed flight plan message can be provided with the same GUFI but with an incremented flight plan version and as a consequence it will be treated as a complete replacement of the existing data

6.1.2.4 It is recommended that the current flight association practices continue to be applied in parallel with the use of GUFI during the initial implementation of FF-ICE. This approach will provide more robust data correlation and support operations in a mixed-mode environment.

### 6.1.3 Flight Plan Differentiation

6.1.3.1 In the early stage of FF-ICE implementation and the introduction of using GUFI as an additional field to differentiate a flight, it is possible that two flight plans with two different GUFIs may refer to the same flight. One of the scenarios is a system failure causing incomplete cancellation but followed by re-filing of eFPL. It is therefore recommended to also perform typical flight plan differentiation using aircraft identification, departure aerodrome, and EOBT, in addition to the check using only GUFI.

~~6.1.4~~6.1.3.2 During transition period, the eASPs are encouraged to verify that no multiple eFPLs with distinct GUFIs refer to the same flight. Once such incidents are detected, manual resolution may be required.~~In the early stage of FF-ICE implementation and the introduction of using GUFI as an additional field to differentiate a flight, it is possible that two flight plans with two different GUFIs may refer to the same flight. It is therefore recommended to perform flight plan differentiation using GUFI, as well as typical checks using aircraft identification, departure aerodrome, and EOBT.~~

### ~~6.1.5~~6.1.4 GUFI Allocation Criteria

~~6.1.5.1~~6.1.4.1 For GUFI allocation, the operation of an aircraft is considered "a flight" from the submission of its first flight plan – whether a Preliminary Flight Plan (PFP) or a Filed Flight Plan (eFPL) – until the aircraft is in-block at the destination aerodrome. For multi-leg operations, a different GUFI shall be allocated for each leg, as the departure aerodrome differs.

~~6.1.5.2~~6.1.4.2 A key consideration in determining a flight is whether the aircraft becomes airborne. Once airborne, and subsequently ~~in-block~~landed at an aerodrome – whether the intended destination aerodrome, a diversion aerodrome, or even the departure aerodrome – the flight is deemed complete. If the aircraft intends to continue its operation, a new flight plan with a new GUFI shall be required.

~~6.1.5.3~~6.1.4.3 If an aircraft that is compelled to return to its parking stand prior to becoming airborne, such as in a "ground return" or "aborted take-off", the original flight plan and GUFI may be retained provided the intention is to continue the same flight. Otherwise, the flight plan shall be cancelled.

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### ~~6.1.6~~6.1.5 GUFI Procedure

~~6.1.6.1~~6.1.5.1 An operator, or its designated representative, shall generate and allocate a GUFI to each flight plan. The operator should also ensure that all flight data submitted for that flight uses the same GUFI, and that no GUFI is reused for any other flight.

~~6.1.6.2~~6.1.5.2 Upon receipt of either a PFP or an eFPL, the eASP shall verify it against the flight plan differentiation checks to ensure that:

a) The same PFP with a different GUFI does not already exist in the system;

b) The same eFPL with a different GUFI does not already exist in the system; and/or

c) A different PFP or eFPL with the same GUFI does not already exist in the system. If such a case exists and the newly received PFP or eFPL contains a later version number, it should be treated as a complete replacement of the existing data.

~~6.1.6.3~~6.1.5.3 An eFPL should carry the same GUFI as its corresponding PFP, if submitted, but with an incremented version number.

~~6.1.6.4~~6.1.5.4 Upon receipt of a Flight Plan Update message or a Flight Cancellation message, the eASP shall use the GUFI to retrieve the associated flight plan information before performing the required actions. It is also recommended that the eASP perform verification using other key fields in the received messages (e.g. aircraft identification, departure aerodrome, destination aerodrome, EOBT, etc.) to ensure accurate flight plan association.

### ~~6.1.7~~6.1.6 GUFI Composition and Validation

~~6.1.7.1~~6.1.6.1 A GUFI shall include a version 4 Universally Unique IDentifier (UUID) that has been standardized by the Open Software Foundation (OSF). The UUID specification is published by the Internet Engineering Task Force (IETF) as RFC 9562.

~~6.1.7.2~~6.1.6.2 The UUID used in a GUFI shall be supplemented with the following additional information: ~~include the following supplementary information~~:

a) Namespace Identifier: Capturing the originator of the GUFI. Recommendations for constructing the namespace are as follows:

i) eAU should use the three-letter designator as per the *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services* (ICAO Doc 8585);

ii) eASP should use the four-letter location indicator as per the *Location Indicators* (ICAO Doc 7910); and

iii) Other GUFI originators should construct their namespace based on the Fully Qualified Domain Name (FQDN) of their organization.

b) Creation Timestamp: Providing increased uniqueness of the generated GUFI. The timestamp should be in the Coordinated Universal Time (UTC), as per FIXM version 4.3.0 schema ~~format~~.

~~6.1.7.3~~6.1.6.3 The namespace portion of the GUFI should be static for a given originator. The UUID portion of the GUFI should be validated ~~both~~ for proper formatting. In addition, the UUID portion should also be checked ~~and~~ for duplication against existing UUIDs both generated by its own system and

previously received from external systems. ~~The timestamp portion should be checked to ensure it is utilizing the correct format.~~

6.1.6.4 The sole use of UUID as a GUFI is not recommended as it may lead to interoperability issues among stakeholders and potential GUFI collisions.

6.1.7 **Cyber Security**

6.1.7.1 eASPs and eAUs shall ensure that their FF-ICE systems are protected against any cyber-attacks and that all exchanged information is authentic. Network and server protections such as a firewall shall be implemented. Cybersecurity recommendations provided in Aviation Common Certificate Policy (ICAO Doc 10169) and Manual on Aviation Information Security (ICAO Doc 10204) should be utilized.

In the absence of a regionally agreed Public Key Infrastructure (PKI) framework, a TLS self-signed certificate should be implemented at minimum.

~~6.1.7.4~~6.1.7.2

6.1.8 **Mixed Mode Operations**

~~6.1.8.1 **Regional Implementation Considerations**~~

~~6.1.8.1.1 The use of a common version of FIXM, including the regional Extension, for FF-ICE services implementation is crucial to ensure cross-border interoperability within the Asia/Pacific region. This applies not only between FF-ICE systems but also between FF-ICE and existing systems (e.g. ATFM systems) implemented across the region.~~

~~6.1.8.1.2 FIXM version 4.3 shall be used as the standard format for FF-ICE/R1 services implementation and cross-border ATFM operations in the Asia/Pacific region starting from Q3/2026, as agreed by APANPIRG/35 through its *Conclusion APANPIRG/35/4*. Additionally, for cross-border ATFM operations, A-CDM, ATFM/A-CDM integration, and traffic synchronization within the region, the Asia/Pacific regional FIXM version 4.3 Extension shall be used, as agreed by APANPIRG/36 through its *Conclusion APANPIRG/36/12*.~~

~~6.1.8.1.3 The change process for the cross-border FIXM operating version utilized to support cross-border ATFM system-to-system information exchange via SWIM shall follow the procedure agreed by ATM SG/13 through its *Conclusion ATM/SG/13-5*.~~

~~6.1.8.1.4 It is recommended that the FIXM version used within the Asia/Pacific region for FF-ICE services implementation and cross-border ATFM information exchange be aligned to ensure effective communication and interoperability across ATM operation support systems throughout the region.~~

~~6.1.8.2~~6.1.8.1 **eASP Responsibility**

~~6.1.8.2.1~~6.1.8.1.1 An eASP may provide a translation service to convert eFPL into FPL2012 to support the varying capabilities of AUs and ASPs within the APAC region during mixed-mode operations.

~~6.1.8.3~~6.1.8.2 **eAU Responsibility**

~~6.1.8.3.1~~6.1.8.2.1 An eAU or its designated ~~unit~~ representative shall submit eFPL to all relevant eASPs and FPL 2012 to aASPs in accordance with ICAO Doc 4444 Chapter 17. The eAU or its designated

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representative shall ensure that all flight plan updates are submitted to all relevant eASPs and aASPs using the appropriate message type:~~as follows~~:

- If any changes are made after submitting eFPL (e.g. aircraft, route, delay): the eAU shall submit a Flight Plan Update to all relevant eASPs, and a CHG or DLA message to aASPs.
- If a flight is expected to be delayed by more than 30 minutes: the eAU shall submit a Flight Plan Update to all relevant eASPs and a CHG or DLA message to aASPs.
- If a flight is cancelled: the eAU shall shall submit a Flight Cancellation to all relevant eASPs and a CNL message to aASPs.

~~6.1.8.4~~6.1.8.3 **Translation**

~~6.1.8.4.1~~6.1.8.3.1 Translation between legacy FPL2012 and other relevant ATS messages in the current flight planning process into FF-ICE messages will play an important role in accommodating different implementation timelines during the transition to full FF-ICE/R1 operations. ASP may need to consider implementing the legacy-to-FF-ICE translation function to support its internal automation.

~~6.1.8.4.2~~6.1.8.3.2 Translation ~~service~~ is, however, only considered an interim solution. FF-ICE operations represent not only a change in flight plan format, but a paradigm shift in flight information exchange and management among ATM stakeholders

~~6.1.8.4.3~~6.1.8.3.3 Potential data loss may occur during translation between eFPL and FPL2012, as eFPL contains significantly more information than the legacy FPL2012. eAUs and eASPs are therefore encouraged to leverage the full benefits of FF-ICE services rather than prolonging reliance on translation.

~~6.1.8.4.4 When a translation service is used to convert from eFPL to FPL2012, the same service shall be used to translate any FF-ICE messages to other relevant ATS messages for any unique flight.~~

6.1.8.3.4 For translation guidance, reference should be made to ICAO Doc 9965 Volume II Section 12.

6.1.9 **Access Management for FF-ICE Services**

6.1.9.1 All FF-ICE services should implement robust access control mechanisms to ensure that only authorised parties can access FF-ICE services and receive flight data, safeguarding the confidentiality and integrity of sensitive information.

6.1.9.2 The following security safeguards should be implemented for all FF-ICE services:

a) Authentication mechanisms to verify the identity of service users;

b) Authorization controls to ensure users can only access data and services appropriate to their role;

~~6.1.8.4.5~~6.1.9.3 All FF-ICE service usage should be logged for operational monitoring, troubleshooting, and accountability purposes.

~~6.1.8.5~~1.1.1 ~~Cyber Security~~

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~~6.1.8.5.11.1.1.1.1 eASPs and eAUs shall ensure that their FF-ICE systems are protected against any cyber attacks and that all exchanged information is authentic. Network and server protections such as a firewall shall be implemented. Cybersecurity recommendations provided in *Aviation Common Certificate Policy* (ICAO Doc 10169) and *Manual on Aviation Information Security* (ICAO Doc 10204) should be utilized.~~

~~6.1.8.5.21.1.1.1.1 In the absence of a regionally agreed Public Key Infrastructure (PKI) framework, a TLS self-signed certificate should be implemented at minimum.~~

## 6.2 Common Validation Process for FF-ICE Services

### 6.2.1 Submission Response Message

6.2.1.1 Submission Response Messages are responses provided by the message recipient for every message submitted to them to acknowledge that they have received and whether they are able or otherwise unable to process the messages. Submission Responses are used in a similar manner for five of the FF-ICE/R1 Services (Filing Service, Flight Data Request Service, Notification Service, Planning Service, and Trial Service). A Submission Response shall be "ACK", "REJ" or "MAN", where:

~~a)~~c) ACK: indicates the message will be processed by the eASP.

~~b)~~d) REJ: indicates the message cannot be processed and no data will be retained by the eASP.

~~c)~~e) MAN: indicates that manual intervention is required before processing can be completed.

6.2.1.2 Status response messages (Filing Status, Planning Status, and Trial Response) are only provided when the Submission Response status is ACK. If an eAU receives a Submission Response of REJ, no status response will be provided. The eAU must address the issues identified in the Submission Response explanation and resubmit the message until an ACK Submission Response is received, after which the appropriate status response will be provided.

### 6.2.2 General Validation Requirements

6.2.2.1 Upon receipt of any messages, the message recipient shall perform the following checks before returning a Submission Response. These include~~ but are not limited to~~:

~~a)~~ Basic syntax and semantic validation including~~;~~

~~b)~~a) FIXM version ~~4.3~~4.3.0 schema compliance and applicable FIXM FF-ICE Applications; and~~including mandatory fields; and~~

~~c)~~b) Other validation checks specific to the individual FF-ICE/R1 services.

*Note: these are explained in greater detail in subsequent sections under each of the relevant FF-ICE/R1 services.*

### 6.2.3 Submission Response "REJ"

6.2.3.1 When validation fails, the message recipient shall provide a Submission Response of "REJ" and include an explanation in the explanation note field. While harmonization of explanation notes is not required, eASPs should ensure that explanations are precise enough for eAUs to rectify their original message if necessary. **Table 1~~Table 1~~~~Table 1~~** provides a sample template for eASPs to use within the

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explanation note regarding the various types of validation checks that might result in a Submission Response of "REJ".

**Table 1: FF-ICE Submission Response Feedback for General Validation**

| Checks | Explanation Note |
|---|---|
| Syntax and Semantic Check | Wrong data format in field <X> |
| FIXM schema compliance | Field <X> not compliant to FIXM version ~~4.3~~4.3.0 |
| Mandatory Fields | Mandatory field <X> missing |

### 6.2.4 Manual Processing Requirements

6.2.4.1 While FF-ICE processes are expected to be predominately automated, manual processing may be required for specific operational needs. eASPs should clearly document their manual processing procedures and criteria and make them available to AUs.

6.2.4.2 When manual processing is required, eASPs shall send a "MAN" Submission Response to the message originator.

6.2.4.3 No action is required of the message originator on receipt of a "MAN" Submission Response from the eASP. The message originator should not submit any other messages relating to that flight until such time as an "ACK" or "REJ" Submission Response is received for that message.

6.2.4.4 Once manual processing is completed, an "ACK" Submission Response shall be sent if the issue is resolved. Otherwise, a "REJ" Submission Response shall be sent if the issue remains unresolved. The eASP shall also provide a clear explanation of any manual changes made in their copy of the eFPL ~~original message~~, within the explanation field of the Submission Response message~~s field~~.

~~6.2.4.4~~6.2.4.5 Upon receipt of an "ACK" following a "MAN", the eAU should determine the need to submit a Flight Plan Update or Filed Flight Plan to all relevant ASPs incorporating the manual change that has been made to maintain a consistent flight plan across all ASPs.

~~6.2.4.5~~6.2.4.6 The following scenarios should be considered for manual processing:

a) Special Handling Flights: Flights requiring special handling (e.g. MEDEVAC, SAR) as identified in the Special Handling field, as defined in ICAO Doc 4444.

   *Note: these flights should normally not be rejected, even if they are non-compliant with standard restrictions. If these flight plans fail automatic validation checks, manual processing is recommended to ensure prompt facilitation and appropriate consideration of their special status.*

b) Known System Issues: Flights requiring manual intervention.

   *Note: cases where ATM system errors or configuration data errors which require manual intervention.*

c) Other Exceptional Cases: These cases will be identified and documented by the eASP.

## 6.3 Filing Service

### 6.3.1 Introduction

6.3.1.1 The Filing Service is a mandatory service. Operators use the Filing Service to submit eFPLs and send updates, which are necessary to receive air traffic services.

6.3.1.2 To support the organized implementation of Filing Service in this region, a set of operational requirements and business rules should be utilized to provide clarity and operational consistency. While each eASP may have unique considerations and priorities, the transboundary nature of flights necessitates that certain processes to be regionally agreed to allow for efficient flight planning for both eAUs and eASPs.

6.3.1.3 The Filing Service encompasses three primary processes:

a) Flight plan filing;

b) Flight plan updating; and

c) Flight plan cancellation.

6.3.1.4 Figure 1~~Figure 1Figure 1~~ depicts the workflow and associated FF-ICE message exchanges for each process, detailing the interaction between eAUs and eASPs throughout the flight plan lifecycle.

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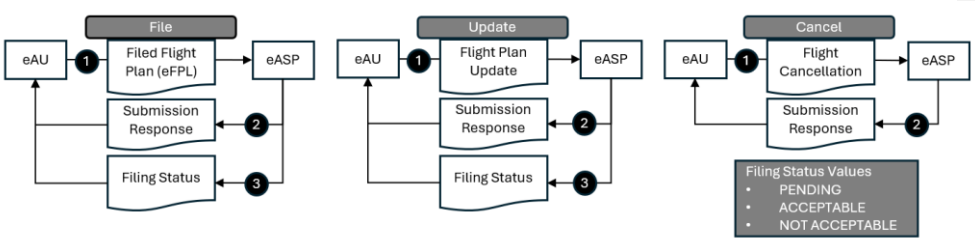


**Figure 1: Filing Service Process Overview**

6.3.1.5 There is a total of five FF-ICE messages available under the Filing Service:

a) Filed Flight Plan Message;

b) Flight Plan Update Message;

c) Flight Cancellation Message;

d) Submission Response Message; and

e) Filing Status Message.

6.3.1.6 The following sections discuss the necessary processes and identifies areas that would benefit from regional co-ordination for each of these messages.

### 6.3.2 Filed Flight Plan Message

6.3.2.1 Filed flight plans (eFPLs) are submitted by the eAUs as the first step under the Filing Service to obtain air traffic services. The eFPLs are subjected to validation checks resulting in a Submission Response, and evaluation checks resulting in a Filing Status.

### 6.3.3 Flight plan filing cut-off times

6.3.3.1 Flight plan filing cut-off times refer to the earliest and latest submission times for the filed flight plan. The earliest and latest submission times are defined in ICAO Doc 4444. However, regional agreements may impose stricter requirements necessitating that eAUs file their flight plans earlier than the standard latest submission time. The relevant cut-off times should be published by eASPs in the States Aeronautical Information Publication (AIP). The flight plan filing cut-off times for the Asia/Pacific region include:

a) Earliest Submission Timings: In accordance with ICAO Doc 444 Section 4.4.2.1.1, Filed Flight Plans shall not be submitted more than 120 hours before the EOBT of a flight. This requirement applies specifically to Filed Flight Plans and does not extend to Preliminary Flight Plans.

b) Latest Submission Timings: In accordance with ICAO Doc 4444 Section 11.3.2, Basic flight plan data necessary for flow control procedures shall be furnished at least 60 minutes in advance of the flight. Filed Flight Plans shall therefore be submitted at least 60 minutes before EOBT.

6.3.3.2 The requirements specified in the *Asia Pacific Regional Framework for Collaborative Air Traffic Flow Management* should be followed, i.e. Filed Flight Plan are to be submitted no less than three (3) hours prior to the EOBT, except where operational or technical constraints necessitate otherwise.

6.3.4 **Versioning**

6.3.4.1 eASPs should refer to ICAO Doc 9965 Volume II Chapter 3.8 *Versioning & Reference Information*. It is the sole responsibility of the eAUs to increase the versioning of the flight plans. eASPs shall refer to the version numbers provided by eAUs and not change the flight plan versions.

6.3.4.2 eAUs shall increment the flight plan version by 1 for the following scenarios:

a) A flight plan update is made to the Preliminary Flight Plan (PFP);

b) A PFP has been previously submitted, and the eAU is filing the flight plan (eFPL) for the same flight; or

c) An update is made to the Filed Flight Plan (eFPL).

~~6.3.4.3 For eASPs that do not provide Planning Service, it should be noted that the version number for the first submission of the Filed Flight Plan may not be 1.~~

6.3.4.3 It should be noted that the version number for the first submission of the Filed Flight Plan received by an eASP might not be 1. This might occur when:

a) the eASP does not provide Planning Service and the eAU has previously submitted Preliminary Flight Plans to other eASPs that provide Planning Services; or

b) route changes result in the eASP becoming newly relevant to the flight, requiring the eAU to submit an eFPL with the current version number to inform the eASP of the existing flight plan.

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6.3.4.4 If there is concern of inconsistent version number between eAU and eASP, Flight Data Request Service can be used to obtain the Filed Flight Plan which includes the version number.

### 6.3.5 Submission Response

6.3.5.1 The general validation requirements as per section 6.2.2.1~~6.2.2.1~~~~6.2.2.1~~~~6.2.1.2.1~~ also apply to the Submission Response message.

#### 6.3.5.2 Specific Validation Requirements for Filed Flight Plan

6.3.5.2.1 In addition to the checks listed in paragraph 6.2.2.1~~6.2.2.1~~~~6.2.2.1~~~~6.2.1.2.1~~, submission timeframe, versioning, and flight association checks should also be conducted for Filed Flight Plans and Flight Plan Updates. eASPs may also implement additional checks based on local requirements to ensure that route/trajectories filed by eAUs contain valid routes, fix names, coordinates, etc. These checks include, but are not limited to:

a) Trajectory syntactic checks; and

b) Semantic checks.

6.3.5.2.2 **Table 2**~~**Table 2**~~~~**Table 2**~~ provides a sample template for eASPs to use within the explanation note field for the various types of validation checks that might result in a Submission Response of "REJ":

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**Table 2: FF-ICE Submission Response feedback for Filed Flight Plans and Flight Plan Updates**

| **Additional Checks for Filed Flight Plans and Flight Plan Updates** | |
|---|---|
| ***Checks*** | ***Explanation Note*** |
| Submission Timeframe | EOBT is outside allowable submission timeframe |
| Versioning | A later version <Y> exists in the system |
| Flight association | Same flight with different GUFI found<br>Different flight with same GUFI found |
| *Route validation (Structure of route, lat/long of point, fix names)* | Trajectory Info Error<br>Invalid Route Structure<br>Invalid Fix/waypoint |

### 6.3.6 Filing Status Message

#### 6.3.6.1 Overview

6.3.6.1.1 Filing Status reflects the operational acceptability of a flight plan based on the eASP's evaluation or re-evaluation against its operational environment, including but not limited to airspace configuration, published restrictions, and other relevant constraints. eASPs provide feedback to eAUs to identify the restrictions and constraints applicable to the flights. The Filing Status serves as a key mechanism for eASPs to communicate flight plan acceptability to eAUs before departure.

6.3.6.1.2 eASPs should evaluate eFPLs against restrictions and constraints managed by existing ATM systems to ensure comprehensive evaluation of flight plan acceptability. Restrictions and constraints considered should include but are not limited to:

a) Aerodrome, airspace and route availability;

b) ATFM measures;

c) Environmental conditions such as SIGMETs, WAFs, TAFs, and volcanic ash areas, affecting airspace availability or constraints; and~~;~~

~~i) SIGMETs;~~

~~ii) WAFs;~~

~~iii) TAFs;~~

~~iv) Volcanic ash areas; and~~

d) Aircraft Operations Requirements (e.g. required navigation performance specifications, required equipage, etc.)

~~d)~~ *Note: The above list represents constraints and restrictions that eASPs should consider. However, not all of these will necessarily result in a "Not Acceptable" Filing Status.*

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6.3.6.2 **Filing Status Values and Expected Actions from the eAUs**

6.3.6.2.1 While eASPs retain the option to determine the specific criteria for each Filing Status based on their operational environment, the interpretation and expected actions from the eAUs for each Filing Status value shall be established as described in **Table 3** below.

**Table 3: FF-ICE Filing Status Interpretation and Expected eAU Action**

| Filing Status | Interpretation | Expected eAU Action |
|---|---|---|
| ACCEPTABLE | The flight plan complies with operational requirements. Any constraints identified can be accommodated without flight plan modifications. | No immediate action or update required.<br><br>Note any provided constraints for awareness.<br><br>Prepare for possible tactical clearances reflecting identified constraints. |
| NOT ACCEPTABLE | The flight plan does not comply with operational requirements and requires modification. | Submit Flight Plan Update to address non-compliance.<br><br>If close to EOBT, the operator may be unable to update their flight plan in time using FF-ICE/R1 processes. In these cases, the operator may update their flight plan as needed through tactical coordination with ATC.<br><br>*Note*: If departure eASP provides a "Not Acceptable" Filing Status, eAU can expect refusal to start-up clearance if non-compliance requires flight plan modification (e.g., aerodrome closure). This does not apply to "Not Acceptable" status received from downstream eASPs. |

| | | |
|---|---|---|
| PENDING | Flight plan evaluation has not yet been performed.<br><br>More details under Section 6.3.6.5.1~~6.3.6.5.1~~~~6.3.6.5.1~~~~6.3.5.5.1~~ | Await subsequent filing status update.<br><br>Monitor Expected Evaluation Time if provided. |

6.3.6.2.2 The Filing Status is intended to indicate the acceptability of a proposed route or trajectory within airspace where Air Traffic Services (ATS) are provided. It cannot be interpreted as the issuance of Air Traffic Control (ATC) clearance.

6.3.6.2.3 A NOT ACCEPTABLE Filing Status indicates that the flight plan is operationally inconsistent with the ATM configuration and/or with published restrictions and that operator action is required to obtain a clearance. eAUs are expected to submit flight plan updates to address the non-compliance. Note that the Filing Status reflects route/trajectory acceptability only and does not prevent ATC tactical coordination during operations.

6.3.6.2.4 An ACCEPTABLE Filing Status can include potential constraints to alert eAUs of constraints that may affect the flight plan. For example, if a flight plan is 'Acceptable' but there is an applicable ATFM program for the arrival airport, the arrival eASP should include this constraint in the Filing Status even though its specific impact (e.g. constraint time) is not yet known. When Filing Status is ACCEPTABLE, eAUs are not expected to make any changes to their eFPLs.

6.3.6.2.5 When a Filing Status is PENDING or NOT ACCEPTABLE, an explanation shall be included within the Filing Status response to eAU.

6.3.6.3 **Feedback Methods for Restrictions/Constraints**

6.3.6.3.1 When providing restrictions and/or constraints to eAUs within the Filing Status, eASPs shall make use of one or more of the following methods:

a) Filing Status Explanation;

b) General Flight Constraint; and/or

c) Route/Trajectory (R/T) Point Constraint.

6.3.6.3.2 eASPs should retain flexibility in determining their Filing Status feedback methods and content, except in the scenarios described in paragraph 6.3.6.4.1~~6.3.6.4.1~~~~6.3.6.4.1~~~~6.3.5.4.1~~, which require harmonized responses to ensure regional interoperability and consistent handling of situations.

6.3.6.3.3 Filing Status Explanation

6.3.6.3.3.1 The Filing Status Explanation is a mandatory field when the status is PENDING or NOT ACCEPTABLE but is otherwise optional. It should provide information necessary for eAUs to understand why a flight plan is not operationally acceptable or to be alerted to potential constraints that could impact the flight. Where available, the explanation should include references to published restriction identifiers to facilitate the eAU's understanding and response.

6.3.6.3.4 General Flight Constraint

6.3.6.3.4.1 General Flight Constraints may be used to indicate constraints that apply to the entire flight rather than specific trajectory point. This may include:

a) Applicability period of the constraint;

b) Operational impact on the flight;

c) Reference to published restriction identifiers where available; and

d) Other operational information affecting flight.

6.3.6.3.5 Route/Trajectory (R/T) Point Constraints

6.3.6.3.6 Providing an Agreed or Negotiating R/T within the Filing Status is optional. When provided, eASPs may include specific constraints at route or trajectory points. These constraints may specify speed, level, and/or time requirements that the flight is expected to meet. Such constraints should be accompanied by information for the eAU to understand their operational impact, including but not limited to:

a) Description of the constraint;

b) Speed, level, and/or time constraints where relevant;

c) Reference to published restriction identifiers, where available; and

d) Other point-specific operational requirements.

6.3.6.4 **~~Scenarios for Regional Harmonisation~~Harmonized Filing Status Responses for Identified ATFM Scenarios**

6.3.6.4.1 While eASPs maintain flexibility in determining their trajectory evaluation criteria and feedback methods, certain scenarios require pre-determined Filing Status responses to ensure regional interoperability and consistent handling of operational conditions. The following ATFM scenarios were identified to benefit from pre-established Filing Status responses:

a) Calculated Time Over (CTO) a point or Calculated Landing Time (CLDT) imposed by ~~arrival~~ eASPs;

b) Ground Stop (GSt) imposed by arrival eASPs;

c) ~~Flow restriction~~Flight level restrictions imposed by relevant eASPs;

d) Fix Balancing imposed by relevant eASPs; and

e) Re-routing imposed by relevant eASPs.

6.3.6.4.2 Harmonised Filing Status Responses

6.3.6.4.2.1 The regionally agreed Filing Status responses for these scenarios are detailed in **Table 10~~Table 10Table 10~~** of Appendix C. Consistent implementation by all eASPs in APAC is necessary to facilitate the processing requirements of eAUs.

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6.3.6.4.2.2 eASPs are not required to suggest alternative solutions to eAUs. However, if eASPs choose to offer suggestions to assist eAUs, they may:

a) Add additional suggested details to the end of the regionally agreed explanation format in the Filing Status Explanation field; and/or

b) Provide a Negotiating R/T containing the suggested alternative trajectory, including route, levels, or timing.

6.3.6.4.2.3 The regionally agreed explanation format shown in **Table 10**~~**Table 10**~~~~**Table 10**~~ should remain the primary response, with any additional suggested information considered as supplementary content rather than replacing the required format.

6.3.6.4.3 Scenario A) Calculated Time Over (CTO) a point or Calculated Landing Time (CLDT) imposed by ~~arrival~~ eASPs

6.3.6.4.3.1 Due to demand capacity imbalance, the ~~arrival~~ eASP may impose a time constraint of CTO or CLDT to flights.

~~6.3.6.4.3.2~~ *Note that eASP shall provide feedback only on constraints within airspace where it provides ATS or ATFM service. Where constraints are to be applied outside this airspace, e.g. assignment of Calculated Take-Off Time (CTOT) at the departure aerodrome in an airspace outside the eASP's jurisdiction, special arrangement between ASPs shall be established*~~*Note that a Calculated Take-Off Time (CTOT) at the departure aerodrome shall not be imposed as a constraint by an arrival eASP. eASP shall provide feedback only on constraints within airspace where it provides ATS. Where constraints are to be applied outside this airspace, special arrangement between ASPs shall be established*~~.

~~6.3.6.4.3.3~~6.3.6.4.3.2 When a CTO or CLDT is imposed on flights, the following responses shall be ~~determined~~provided as presented in **Table 10**~~**Table 10**~~~~**Table 10**~~ in Appendix C:

a) Filing Status value shall be NOT ACCEPTABLE;

b) An explanation shall be provided, specifying at a minimum the ATFM constraint/restriction affecting the flight;

c) A Negotiating R/T shall be included to indicate the constrained point and its associated time constraint;

d) When providing constraint details in the Negotiating R/T, eASPs should:

i) Use ElementStartPoint to identify the location of the constraint;

ii) Provide the time constraint using Constraint.Time, and any additional level/speed constraints using Constraint.Level/Constraint.Speed, if applicable;

iii) Provide the REGCAUSE in the constraint description;

iv) Provide the REGUL in restriction reference; and

e) The message format for REGCAUSE and REGUL should be in accordance with the *Asia/Pacific Region AFTN/AMHS-based Interface Control Document (ICD)* for ATFM.

6.3.6.4.4 Scenario B) Ground Stop (GSt) imposed by arrival eASPs

6.3.6.4.4.1 The arrival eASP may need to restrict arrivals for a period when capacity has been severely reduced.

6.3.6.4.4.2 When a Ground Stop (GSt) is implemented, the eASP initiating the measure shall provide the responses specified in **Table 10**~~**Table 10**~~~~**Table 10**~~ in Appendix C:

a) Filing Status value shall be NOT ACCEPTABLE;

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b) An explanation shall be provided. The following format should be used: GSt imposed on flights arriving into <aerodrome> from <YYYY-MM-DDTHH:mm:ssZ> to <YYYY-MM-DDTHH:mm:ssZ>;

c) If available, eASP should provide reference to the applicable restrictions within the explanation note: See NOTAM <XXX> / ADP <XXX> for details;

d) If available, SWIM information services should be used to provide more details of applicable restrictions; and

e) A Negotiating R/T is not required for Ground Stop restrictions.

6.3.6.4.5 Scenario C) ~~Flow~~ Flight level restrictions imposed by relevant eASPs

~~6.3.6.4.6~~6.3.6.4.5.1 Restrictions resulting in unavailability of certain flight levels may be imposed~~Flow restriction resulting in certain flight levels that are unavailable might be imposed~~.

~~6.3.6.4.6.1~~6.3.6.4.5.2 When flight level restrictions are imposed~~When flow restrictions with restricted flight levels are imposed on flights~~, the following responses shall be utilized as detailed in **Table 10**~~**Table 10**~~~~**Table 10**~~ in Appendix C:

a) Filing Status value shall be NOT ACCEPTABLE;

b) An explanation shall be provided. The following format should be used: <FL or altitude, FL or altitude> on route <XXXX> not available;

c) If available, eASP should provide reference to the applicable restrictions within the explanation note: See NOTAM <XXX> for details;

d) If available, SWIM information services should be used to provide more details of applicable restrictions; and

e) A Negotiating R/T is not required for flow restrictions.

~~6.3.6.4.7~~6.3.6.4.6 Scenario D) Fix-Balancing imposed by relevant eASPs

~~6.3.6.4.8~~6.3.6.4.6.1 Fix balancing is a tactical ATFM measure aimed at distributing demand and avoid delays, whereby the aircraft is assigned a different arrival or departure fix. This can be used, for example, during conditions where a STAR or a SID is unusable~~eASPs may require flights to use alternative points if demand exceeds capacity at specific departure/arrival fixes.~~.

~~6.3.6.4.8.1~~6.3.6.4.6.2 When fix-balancing measures are imposed on flights, the following responses shall be utilized as detailed in **Table 10**~~**Table 10**~~~~**Table 10**~~ in Appendix C:

a) Filing Status value shall be NOT ACCEPTABLE;

b) An explanation shall be provided. The following format should be used: Trajectory Point <XXXXX> not available;

c) If available, eASP should provide reference to the applicable restrictions within the explanation note: See NOTAM <XXX> for details;

d) If available, SWIM information services should be used to provide more details of applicable restrictions; and

e) A Negotiating R/T is not required for fix-balancing.

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~~6.3.6.4.9~~6.3.6.4.7 Scenario E) Re-routing imposed by relevant eASPs

~~6.3.6.4.9.1~~6.3.6.4.7.1 eASPs may require flights to use alternative routing if specific routes/airspace are unavailable or constrained.

~~6.3.6.4.9.2~~6.3.6.4.7.2 When re-routing measures are imposed on flights, the following responses shall be utilized as detailed in **Table 10**~~**Table 10**~~~~**Table 10**~~ in Appendix C:

a) Filing Status value shall be NOT ACCEPTABLE;

b) An explanation shall be provided in the format: Route <XXXXX> not available;

c) If available, eASP should provide reference to the applicable restrictions within the explanation note: See NOTAM <XXX> for details;

d) If available, SWIM information services should be used to provide more details of applicable restrictions; and

e) A Negotiating R/T is not required for re-routing.

~~6.3.6.4.10~~6.3.6.4.8 Expected eAU Action

~~6.3.6.4.10.1~~6.3.6.4.8.1 Upon receiving a NOT ACCEPTABLE Filing Status, eAUs shall submit a Flight Plan Update (refer to Section 6.3.7 for more details on Flight Plan Updates) to comply with assigned restrictions/constraints. In a mixed-mode environment, the corresponding CHG/DLA message should be submitted when applicable.

~~6.3.6.4.11~~6.3.6.4.9 eASP Compliance Checking and Filing Status Response

~~6.3.6.4.11.1~~6.3.6.4.9.1 eASPs shall evaluate the Flight Plan Update to check for compliance against the restrictions/constraints where applicable. Paragraphs 6.3.6.4.9.2 to 6.3.6.4.9.6 provide an example on how this can be performed for the mentioned scenarios.

~~6.3.6.4.11.2~~6.3.6.4.9.2 For Scenario A, eASPs should check the Estimated Time Over (ETO) of the constrained point submitted within the Flight Plan Update for compliance to the CTO:

a) If the ETO falls within the compliance window, the Filing Status response of the Flight Plan Update will be ACCEPTABLE.

b) If the ETO falls outside the compliance window, the flight will be re-evaluated by the eASP.

c) The compliance window parameters as established through regional ATFM procedures shall be applied.

~~6.3.6.4.11.3~~6.3.6.4.9.3 For Scenario B, the arrival eASP should check that the updated estimated landing time of the flight plan update is not within the constrained period.

~~6.3.6.4.11.4~~6.3.6.4.9.4 For Scenario C, the eASPs should check the flight plan update to ensure that the unavailable Flight Levels of the specific trajectory points are not being used.

~~6.3.6.4.11.5~~6.3.6.4.9.5 For Scenario D, the eASPs should check the flight plan update to ensure that the unavailable trajectory points are not being used.

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~~6.3.6.4.11.6~~6.3.6.4.9.6 For Scenario E, the eASPs should check the flight plan update to ensure that the unavailable routes are not being used.

~~6.3.6.4.11.7~~6.3.6.4.9.7 When ATFM restrictions are cancelled and the last Filing Status value was NOT ACCEPTABLE, the eASP shall provide an updated Filing Status with the value of ACCEPTABLE and an explanation that the ATFM restriction is no longer applicable or has been cancelled.

~~6.3.6.4.11.8~~6.3.6.4.9.8 When ATFM restrictions are cancelled and the last Filing Status value was ACCEPTABLE, the eASP should provide an optional updated Filing Status with the value of ACCEPTABLE and an explanation that the ATFM restriction is no longer applicable or has been cancelled.

*Note. An ACCEPTABLE Filing Status may include information about applicable ATFM restrictions that do not constrain the flight (e.g. MIT/MINIT). This additional information is provided for situational awareness - the eAU may choose to modify their flight plan to optimize operations or may proceed without changes. The flight remains acceptable as filed, but operators can use this information to make informed decisions about potential route adjustments or other operational considerations.*

6.3.6.4.9.9 When ATFM restrictions are cancelled and the eAU had previously modified their Desired Route/Trajectory to comply with the restriction, the eAU may use available SWIM services to identify when restrictions are lifted and may submit a Flight Plan Update to adjust their Desired Route/Trajectory.

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6.3.6.5 **Usage of PENDING Status**

6.3.6.5.1 It is recommended that eASPs evaluate flight plans as soon as they are available. However, in situations where immediate evaluation is not possible, a PENDING Filing Status may be used when the eASP's system requires more time than the time-out period (see paragraph 6.8.1.1) to provide a definitive Filing Status. This could occur in scenarios such as:

a) When the flight plan has been received well in advance of the eASP's processing horizon for the flight; and

b) When eASPs do not conduct re-evaluation process and hence prefers to provide the filing status nearer to the EOBT.

*Note 1: this is not recommended as it may create a situation where other eASPs have returned a filing status to the flight plan, and there is no clarity for eAUs to determine whether the flight plans are accepted by all relevant eASPs.*

*Note 2: ICAO Doc 9965 recommends that the first non-Pending Filing Status should be ~~performed~~ provided no later than 3 hours before EOBT, provided the submission was made in the correct timeframe.*

6.3.6.5.2 When providing a PENDING status, the eASP shall include an explanation. An Expected Evaluation Time should be included to indicate when the flight plan is likely to be fully processed.

6.3.7 **Flight Plan Update Message**

6.3.7.1 Flight Plan Updates (FPU) are submitted by eAUs to inform on changes to the eFPL. These updates are subjected to similar validation and evaluation checks as the eFPLs.

~~6.3.7.1~~6.3.7.2 When route changes result in new eASPs becoming concerned with the flight that did not previously receive the eFPL, the eAU shall submit the current version of the complete set of flight plan data in eFPL to those new eASPs rather than a Flight Plan Update.

~~6.3.7.2~~6.3.7.3 **Flight Plan Update Cut-off Times**

~~6.3.7.2.1~~6.3.7.3.1 The submission timeframe for FPU should provide sufficient flexibility to eAUs to cater to operational issues and any additional considerations which may arise after the filing of the eFPL. It is recommended that FPUs are permitted from the time that eAU receives the Filing Status of a submitted eFPL until route clearance delivery or the flight's AOBT, whichever occurs first.

~~6.3.7.2.2~~6.3.7.3.2 eASPs shall ensure that any FPU received after route clearance delivery results in appropriate clearance revision by ATC to maintain consistency between the flight plan and delivered clearance.

~~6.3.7.3~~6.3.7.4 **Flight Plan Update Threshold**

~~6.3.7.3.1~~6.3.7.4.1 ICAO Doc 9965 states that eASPs may publish threshold modification values that should trigger the transmission of an update (see ICAO Doc 9965 Section 6.4.3.8). With FF-ICE automating most of these processes, eAUs should be able to provide eASPs with the most recent data as possible to increase operational predictability for all stakeholders.

~~6.3.7.3.2~~6.3.7.4.2 It is recommended that eAUs submit FPU each time there is a change in eFPL data, subject to their system capabilities. At the minimum, eAUs shall submit FPU due to changes equivalent to FPL2012 data update (ICAO Doc 4444 Section 11.4.2.2.4 states that a CHG message shall be transmitted when any change is to be made to basic flight plan data contained in previously-transmitted FPL or RPL data).

~~6.3.7.3.3~~6.3.7.4.3 The same recommendation applies for updates to EOBT. eAUs should submit FPU each time there is a change in EOBT, subject to their system capabilities. At the minimum, eAUs shall submit FPU if EOBT is delayed by more than 30 minutes (ICAO Doc 4444 Section 11.4.2.2.3.1 states that a DLA message shall be transmitted if the flight is delayed by more than 30 minutes after the estimated off-block time contained in the basic flight plan data).

~~6.3.7.3.4~~6.3.7.4.4 Providing the most recent data to eASPs ensures that all stakeholders have the most accurate and updated information of the flight plan available to perform their ATM functions, as even minor changes to route can affect trajectory predictions.

~~6.3.7.3.5~~6.3.7.4.5 While the different update thresholds for FPL2012 and eFPL will result in varying information received by eASPs versus aASPs, it should be noted that in a mixed-mode environment eASPs have the advantage of receiving the most updated information that eAUs are most likely to utilize. For this reason, the varied information received by eASPs versus aASPs should not present cause to delay sending more precise FPUs to eASPs only.

6.3.8 **Flight Cancellation**

6.3.8.1 **Specific Validation Requirements for Flight Cancellation**

6.3.8.1.1 In addition to the general validation checks indicated in paragraph 6.2.2.1~~6.2.2.1~~6.2.2.1~~6.2.1.2.1~~, eASPs should perform a flight association check, verify that the flight has not yet departed, and authenticate that the message originator has the authority to cancel the flight.

6.3.8.1.2 Table 4~~Table 4Table 4~~ provides a sample template for eASPs to use within the explanation note field for the various types of validation checks that might result in a Submission Response of "REJ".

**Table 4: FF-ICE Submission Response Feedback for Flight Cancellation Messages**

| **Additional Checks for Flight Cancellation Messages** | |
|---|---|
| ***Checks*** | ***Explanation Note*** |
| Flight association | Same flight with different GUFI found<br><br>Different flight with same GUFI found |
| ~~Rights to cancel~~Authenticated user | ~~Flight does not exist~~No information available |
| Flight Plan State | Flight has already departed |

*Note: If the source of the request has no authorized access to the identified flight, a Submission Response of REJ should be returned with an explanation that the recipient does not have the requested information. Note that a response indicating non-authorization verifies for the sender that the flight exists, which is information in itself. So a generic message indicating that there is no information for the flight is preferable.*

6.3.8.1.3 In accordance with ICAO Doc 9965, the eASP shall provide an "ACK" response when cancellation is successful, which shall terminate operational use of GUFI, as well as any further processing of all instances of the Flight Plan (preliminary and filed). A "REJ" response shall be given with an explanation when cancellation is unsuccessful.

6.3.8.1.4 A cancelled flight cannot be reinstated. If the operator later decides to operate the flight, a new flight plan with a new GUFI shall be submitted.

### 6.3.9 Filing Requirements for Cross-~~FIR~~ ANSP and Local Agreements

6.3.9.1 Individual eASPs may consider establishing cross-~~FIR~~ ANSP agreements and local agreements with eAUs to facilitate seamless filing processes and the coordination of flight plan submissions across different airspace jurisdictions.

6.3.9.2 eASPs may likewise establish regional agreements with other eASPs for regional flight plan distribution and/or coordinated feedback on airspace restrictions.

6.3.9.3 eASPs may also establish local agreements with eAUs to facilitate FF-ICE implementation through translation services, Filing Status handling procedures, and tactical coordination arrangements.

6.3.9.4 However, the operational challenges that could arise from the potential complexity arising of a multitude of agreements, especially in the context of mixed mode operations, should also be a consideration.

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6.3.9.5 It is recommended that Asia/Pacific States adhere to the procedures in this Plan. Any local agreements or cross-~~FIR~~ ANSP agreements should not contradict the guidance provided in ICAO Doc 9965 or this Plan, which should supersede any supplementary or tangential agreements.

## 6.4 Flight Data Request Service

### 6.4.1 Introduction

6.4.1.1 The Flight Data Request Service is a mandatory service that eASPs will provide in the FF-ICE environment to allow authorized parties to obtain information about a flight, including flight plans, supplementary data, and flight status.

6.4.1.2 **Figure 2**~~**Figure 2**~~~~**Figure 2**~~ depicts the workflow and associated FF-ICE message exchanges between FF-ICE participants during flight data queries.

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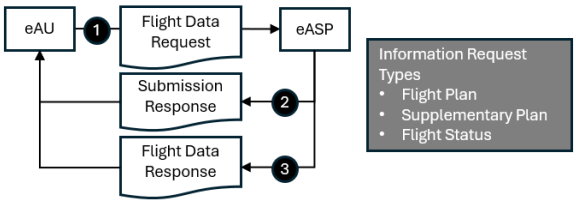


**Figure 2: Flight Data Request Service Overview**

6.4.1.3 There is a total of three FF-ICE messages available under the flight data request service:

a) Flight Data Request Message;

b) Submission Response Message; and

c) Flight Data Response Message.

### 6.4.2 Flight Data Request Message

6.4.2.1 Information available for request by the eASPs should include the minimum set of data types as listed in ICAO Doc 9965 (flight plans, supplementary data, and flight status) as well as any additional information which the eASPs may choose to make available. eAUs may also enable eASPs to request relevant information concerning a flight. Request codes should be specified in the Requested Flight Data Item field of the Flight Data Request Message.

#### 6.4.2.2 Access Control

6.4.2.2.1 In addition to the general requirements specified in Section 6.1.9, eASPs and eAUs should implement robust access control mechanisms to ensure that only authorised parties can receive the requested data, safeguarding the confidentiality and integrity of sensitive information. The following safeguards are recommended:

a) eAUs are limited to querying their own flights;

b) Relevant eASPs should have full access to the eFPL and associated data’

c) Adjacent eASPs (providers of airspaces not planned to be directly traversed by the flight but the boundaries of which are close to the flight trajectory) may be granted limited access to relevant eFPL for planning purposes;

d) Airport operators should have access to departures and arrivals pertinent to their operations; and

~~e) All data access should be logged and auditable, with authentication mechanisms in place to prevent unauthorised access.~~

6.4.2.3 **Query Limits**

6.4.2.3.1 The Flight Data Request Service is designed for querying information about individual flights, not for bulk data retrieval, as per ICAO Doc 9965 Volume II Section 8.4.4. eASPs and eAUs should publish request rate limit (i.e. the number of requests that can be made to the Flight Data Request Service within a specific period). Flight Data Requests that exceed the published request rate limit shall receive a Submission Response with status REJ and an appropriate explanation in **Table 5**~~*Table 5*~~ indicating the rate limit violation. ~~Systems should be configured to automatically reject requests that exceed the defined limits.~~

6.4.2.4 **Applicability Period**

6.4.2.4.1 A Flight data request pertaining to a specified Filed Flight Plan is only valid from the time the Filed Flight Plan is submitted to the time the flight is completed. A flight is completed once it has landed at the destination~~ or~~, diversion, or other alternate -aerodrome.

6.4.2.4.2 An eASP may also ~~add an~~support the submission of an information request for PFP data. This request will be valid from the time the PFP is submitted until the submission of the Filed Flight Plan.

6.4.2.5 **Submission Response Message**

6.4.2.5.1 The general validation requirements as per section ~~6.2.1~~6.2.2.1 apply to the Submission Response Message criteria.

6.4.2.6 **Specific Validation Requirements for Flight Data Request**

6.4.2.6.1 In addition to the checks listed in paragraph 6.2.2.1~~6.2.2.1~~~~6.2.2.1~~~~6.2.1.2.1~~, eASPs should perform flight association check and validate the legitimacy of the request, ensuring that only authorized parties can access flight data.

6.4.2.6.2 **Table 5**~~**Table 5**~~~~**Table 5**~~ below provides a sample template for eASPs to use within the explanation note field for the various types of validation checks that might result in a Submission Response of "REJ".

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**Table 5: FF-ICE Submission Response feedback for Flight Data Request Messages**

| Additional Checks for Flight Data Request Messages | |
|---|---|
| ***Checks*** | ***Explanation Note*** |
| Flight association | Same flight with different GUFI found<br>Different flight with same GUFI found |
| Multiple flights matched | Multiple flights with the requested information:<br>a) Aircraft ID1, dep, dest, EOBT, GUFI<br>b) Aircraft ID1, dep, dest, EOBT, GUFI |
| Requested flight not found | Flight does not exist |

| | |
|---|---|
| No authorized access to the identified flight | ~~Flight does not exist~~No information available |
| Requested flight data items not supported by the eASP | Request not supported |
| Query Limit | Query Limit Exceeded |

### 6.4.3 Flight Data Response Message

6.4.3.1 It is recommended that the following R/T be included within the Flight Data Response for the various requests:

a) Flight Plan Request: eASPs should include the Desired R/T representing the last filed R/T by eAU. This is based on the understanding that the requestor wants to see the route information that the eAU last submitted; and

b) Flight Status Request: eASPs should include the latest R/T (either Agreed R/T or Negotiating R/T) as per the latest Filing Status of the flight, if applicable. This is based on the understanding that the requestor wants to see the latest response (i.e. Filing Status) provided by the eASPs.

## 6.5 Notification Service

### 6.5.1 Introduction

6.5.1.1 The Notification Service enables eASPs to notify relevant eASPs, as identified through the flight plan, of significant flight events such as departure and arrival. While Notification Service is not a service mandated by ICAO Doc 4444 to be FF-ICE capable, it will likely be necessary to support the sunset of FPL2012 and the associated ATS messages. All ASPs in Asia/Pacific region shall implement the Notification Service according to the regional implementation timeline.

6.5.1.2 The Notification Service currently encompasses the full process of flight event notification through the sending of flight departure and arrival messages. **Figure 3**~~**Figure 3**~~~~**Figure 3**~~ depicts the workflow and associated FF-ICE message exchanges, showing the interaction between FF-ICE participants throughout the flight notification process.

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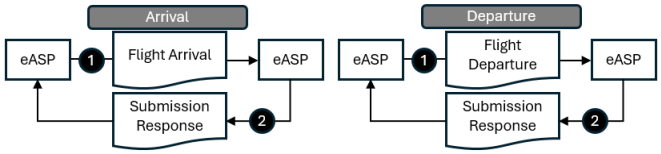


**Figure 3: Notification Service Overview**

6.5.1.3 There is a total of three FF-ICE messages available under the Notification Service:

a) Flight Departure Message;

b) Flight Arrival Message; and

c) Submission Response Message.

### 6.5.2 Submission Response Message

6.5.2.1 In addition to the checks listed in paragraph 6.2.2.1~~6.2.2.1~~~~6.2.2.1~~~~6.2.1.2.1~~, eASPs should perform flight association checks and timestamp validation checks to ensure that the arrival/departure time is not in the future and that the arrival time does not precede departure time in the case of the Arrival message. Additionally, the eASP should check to ensure that the originators of the Flight Departure/Flight Arrival message are from the appropriate ~~aerodromes~~eASPs.

6.5.2.2 **Table 6~~Table 6~~~~Table 6~~** provides a sample template for eASPs to use within the explanation note for the various types of validation checks that might result in a Submission Response of "REJ".

**Table 6: FF-ICE Submission Response feedback for Flight Departure and Flight Arrival Message**

| **Additional Checks for Flight Departure and Flight Arrival Message** | |
|---|---|
| ***Checks*** | ***Explanation Note*** |
| Flight association | Same flight with different GUFI found<br>Different flight with same GUFI found |
| Timestamp Check | Arrival/Departure time is in the future<br>Arrival time is before departure time |
| Permission to send notification | No rights to send Arrival/Departure message |

6.5.2.3 Upon receipt of a Submission Response indicating REJ status from Notification Service, the sender shall review the Submission Status Explanation to determine the cause of rejection. The sender shall make the necessary corrections to address the identified issues and re-submit the notification message, if applicable.

## 6.6 Planning Service

### 6.6.1 Introduction

6.6.1.1 The Planning Service is an optional service that enables collaborative decision-making between eAUs and eASPs by sharing informal flight plans well ahead of time via Preliminary Flight Plans, allowing improved demand prediction and optimal trajectory planning before the formal filing of flight plans. eASPs providing Planning Services shall publish the availability of the service in their AIP.

6.6.1.2 The Planning Service encompasses three primary processes:

a) Preliminary flight plan submission;

b) Preliminary flight plan updating; and

c) Preliminary flight plan cancellation.

6.6.1.3 Figure 4~~Figure 4~~~~Figure 4~~ depicts the workflow and associated FF-ICE message exchanges for each process, showing the interaction between eAUs and eASPs throughout the preliminary flight plan lifecycle.

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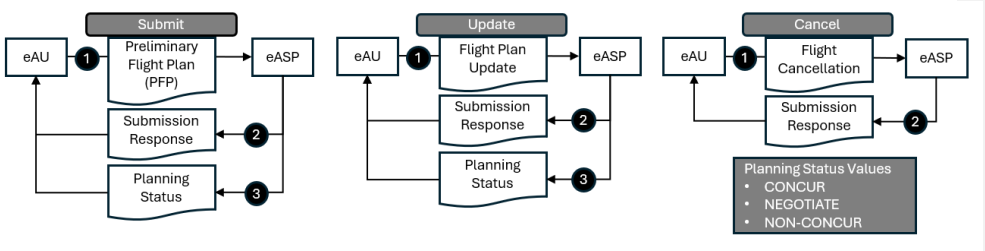


**Figure 4: Planning Service Process Overview**

6.6.1.4 There is a total of five FF-ICE messages available under the Planning Service:

a) Preliminary Flight Plan (PFP) Message;

b) Flight Plan Update Message;

c) Flight Cancellation Message;

d) Submission Response Message; and

e) Planning Status Message.

6.6.1.5 The processes under planning service are similar to those related to Filing Service, except that these processes take place in a timeframe designated before the submission of eFPL. This enables negotiations to take place with more advance notice.

### 6.6.2 Preliminary Flight Plan Message

6.6.2.1 PFPs are submitted by the eAUs as the first step under the Planning Service. Unlike eFPL which is submitted to all relevant eASPs, eAUs can choose to submit PFPs to select eASPs that they have designated for cooperative planning efforts. Typically, these eASPs have airspaces that are complex or regularly constrained. The PFPs are subjected to validation checks resulting in a Submission Response, and evaluation checks resulting in a Planning Status.

### 6.6.3 PFP Cut-off Times

6.6.3.1 The PFP cut-off times refer to the earliest and latest submission times for the PFP. The earliest submission time is dependent on eASPs' capability and the type of advance planning that could be conducted between the eASPs and eAUs. Meanwhile, the latest submission time should be determined by the time that the eFPL is due. The PFP expires when the eFPL is due. PFP expiry refers to the point at which a PFP can no longer be processed or updated by eASP. The due time of eFPL is determined by each eASP and shall comply with the latest submission timing as defined in ICAO Doc 4444 and any regional agreements. This will also be the time after which PFP will not be accepted. The cut-off times should be published by eASPs in the AIPs.

6.6.3.2 Once an eFPL has been submitted, PFP can no longer be submitted for the same flight.

### 6.6.4 Versioning

6.6.4.1 As with eFPL, it is the responsibility of the eAUs to increase the versioning of the PFPs. Every new version or flight plan update made to the PFP will increment the version by 1.

### 6.6.5 Submission Response Message

6.6.5.1 The general validation requirements as per paragraph 6.2.2.1~~6.2.2.1~~6.2.2.~~16.2.1.2.1~~ applies to the Submission Response Message criteria.

### 6.6.6 Specific Validation Requirements for PFPs

6.6.6.1 In addition to the checks listed in paragraph 6.2.2.1~~6.2.2.1~~6.2.2.~~16.2.1.2.1~~, submission timeframe, existence of eFPL, versioning, and flight association check should be conducted for PFPs and Flight Plan Updates. eASPs may also implement additional checks based on local requirements to ensure that route/trajectories filed by eAUs contain valid routes, fix names, coordinates. etc., including but not limited to:

a) Trajectory syntactic checks; and

b) Semantic checks.

6.6.6.2 **Table 7**~~**Table 7**~~~~**Table 7**~~ provides a sample template for eASPs to use within the explanation note field for the various types of validation checks that might result in a Submission Response of "REJ".

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**Table 7: FF-ICE Submission Response feedback for Preliminary Flight Plans and Flight Plan Updates**

| **Additional Checks for PFPs and Flight Plan Updates** | |
|---|---|
| ***Checks*** | ***Explanation Note*** |
| Submission Timeframe | EOBT is outside allowable submission timeframe |
| Existence of eFPL | eFPL for the same flight has already been submitted |
| Versioning | A later version <Y> exists in the system |
| Flight association | Same flight with different GUFI found<br>Different flight with same GUFI found |
| Route validation (Structure of route, lat/long of points, fix names) | Trajectory Info Error<br>Invalid Route Structure<br>Invalid Fix/waypoint |

### 6.6.7 Planning Status Message

#### 6.6.7.1 Overview

6.6.7.1.1 The Planning Status reflects the likelihood that the flight plan will be operationally acceptable if submitted as a Filed Flight Plan. The evaluations conducted for the PFPs are therefore similar to those conducted for the eFPLs. eASPs provide feedback within the Planning Status to eAUs to identify the restrictions and constraints applicable to the flights.

6.6.7.1.2 In line with the evaluations conducted for eFPLs, eASPs should evaluate PFPs against restrictions managed by existing ATM systems to ensure comprehensive evaluation of flight plan acceptability. Refer to section 6.3.6.1.2~~6.3.6.1.2~~6.3.6.1.2~~6.3.5.1.2~~ for the recommended list.

#### 6.6.7.2 Planning Status Values

6.6.7.2.1 eASPs retain flexibility in determining the specific criteria for each planning status based on their operational environment. However, the criteria for a NON-CONCUR Planning Status should be similar to the criteria for a NOT ACCEPTABLE Filing Status.

6.6.7.2.2 Similarly, the criteria for a CONCUR Planning Status should be similar to the criteria for an ACCEPTABLE Filing Status.

6.6.7.2.3 A third Planning Status of NEGOTIATE is also available. This refers to any situation where the flight plan is likely to be accepted if filed, but the route/trajectory details differ.

6.6.7.3 **Feedback Methods for Restrictions/Constraints**

6.6.7.3.1 When providing restrictions / constraints to eAUs within the Planning Status, eASPs should make use of methods similar to those detailed under the Filing Status, as outlined in Section 6.3.6.3.1~~6.3.6.3.1~~~~6.3.6.3.1~~~~6.3.5.3.1~~.

6.6.7.3.2 eASPs should retain flexibility in determining their Planning Status feedback methods and content, except in the scenarios described in Section 6.3.6.4.1~~6.3.6.4.1~~~~6.3.6.4.1~~~~6.3.5.4.1~~ which require pre-established responses to promote regional interoperability and consistent handling.

6.6.7.3.3 For the five Scenarios (as described in Section 6.3.6.4.1~~6.3.6.4.1~~~~6.3.6.4.1~~~~6.3.5.4.1~~), the Planning Status should therefore be NON-CONCUR with a Negotiating R/T provided where applicable as specified in the established requirements.

6.6.7.3.4 The regionally agreed Planning Status response format and explanation templates for the respective scenarios are detailed in **Table 10**~~**Table 10**~~~~**Table 10**~~ in Appendix C. The explanation formats listed within the table shall be used together with the NON-CONCUR Planning Status value.

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6.6.8 **Flight Plan Update Message**

6.6.8.1 Flight Plan Updates (FPU) are submitted by eAUs to provide information regarding changes to the PFPs. These updates are subjected to similar validation and evaluation checks as the PFPs.

6.6.9 **Flight Plan Update cut-off times**

6.6.9.1 The submission of FPU for PFP should be allowed from the time that eAU submits a PFP to the time that the eFPL is due.

6.6.10 **Flight Plan Update Threshold**

6.6.10.1 Unlike the flight Plan Filing Process, which operates in a mixed-mode environment, the Planning Service impacts only FF-ICE-capable stakeholders. For this reason, eAUs are advised to submit FPU each time there is a change in PFP data. There is no legacy message equivalent to the PFP, meaning that the PFP update may be as frequent as allowed within the system's capabilities, without impact to non-FF-ICE-capable stakeholders.

6.6.11 **Flight Cancellation**

6.6.11.1 **Specific Validation Requirements for Flight Cancellation**

6.6.11.1.1 In addition to the general validation checks outlined in paragraph 6.2.2.1~~6.2.2.1~~~~6.2.2.1~~~~6.2.1.2.1~~, eASPs should perform flight association checks and authenticate that the message originator has the authority to cancel the flight.

6.6.11.1.1.1 **Table 8**~~**Table 8**~~~~**Table 8**~~ provides a sample template for eASPs to use within the explanation note field for the various types of validation checks that might result in a Submission Response of "REJ".

**Table 8: FF-ICE Submission Response feedback for Flight Cancellation**

| **Additional Checks for Flight Cancellation Messages** | |
|---|---|
| ***Checks*** | ***Explanation Note*** |
| Flight association | Same flight with different GUFI found<br>Different flight with same GUFI found |
| ~~Rights to cancel~~Authenticated User | ~~Flight does not exist~~No information available |

## 6.7 Trial Service

### 6.7.1 Introduction

6.7.1.1 The Trial Service is an optional service that allows operators to evaluate "what-if" scenarios for both preliminary and Filed Flight Plans without affecting the actual flight plan data, enabling better flight planning and constraint resolution.

6.7.1.2 The Trial Service encompasses the process of evaluating alternative flight scenarios without affecting existing flight plans. Figure 5~~Figure 5~~~~Figure 5~~ depicts the workflow and associated FF-ICE message exchanges, showing the interaction between eAUs and eASPs throughout the trial request and evaluation process.

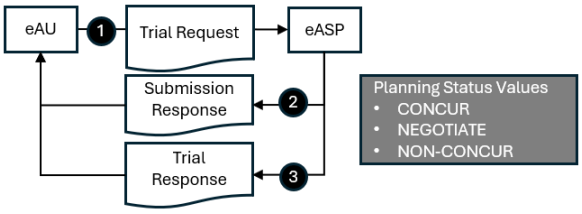


**Figure 5: Trial Service Overview**

6.7.1.3 There is a total of three FF-ICE messages available under the trial service:

a) Trial Request Message;

b) Submission Response Message; and

c) Trial Response Message.

### 6.7.2 Trial Request Message

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6.7.2.1 Trial Requests are submitted by the eAUs as the first step under the Trial Service. As with the PFPs, eAUs can choose to submit Trial Requests to selected eASPs with whom they wish to conduct the trials. Multiple Trial Requests can be submitted to the same eASP and these requests can be submitted even without the presence of PFPs/eFPLs. Trial Requests are subjected to validation checks resulting in a Submission Response and evaluation checks resulting in a Planning Status. Trial requests shall be treated by the eASP as a separate, standalone transaction which has no impact on existing data.

### 6.7.3 Limits on Trial Request Frequency

6.7.3.1 eASPs may set limits on the maximum frequency of requests allowable within a specified period for each eAU to prevent system overload and ensure service availability for all users. These limitations should be published in the eASP's AIP.

### 6.7.4 Submission Response Message

6.7.4.1 The general validation requirements as per paragraph 6.2.2.1~~6.2.2.1~~6.2.2.1~~6.2.1.2.1~~ applies to the Submission Response Message criteria.

### 6.7.5 Specific Validation Requirements for Trial Requests

6.7.5.1 In addition to the checks listed in paragraph 6.2.2.1~~6.2.2.1~~6.2.2.1~~6.2.1.2.1~~, submission timeframe and request frequency checks should also be conducted for Trial Requests. For submission timeframes, Trial Requests can be allowed up to route clearance delivery, allowing sufficient time to submit an FPU arising from a positive Trial Response. This is only available when Trial Requests are for a flight that is already provided as a PFP or eFPL. eASPs may also implement additional checks based on local requirements to ensure that route/trajectories filed by eAUs contain valid routes, fix names, coordinates, etc., including but not limited to:

a) Trajectory syntactic checks; and

b) Semantic checks.

6.7.5.2 **Table 9~~Table 9Table 9~~** provides a sample template for eASPs to use within the explanation note field for the various types of validation checks that might result in a Submission Response of "REJ".

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**Table 9: FF-ICE Submission Response feedback for Trial Requests**

| **Additional Checks for Trial Requests** | |
|---|---|
| ***Checks*** | ***Explanation Note*** |
| Submission Timeframe | Outside the allowable submission timeframe |
| Request Frequency | Frequency of Trial Requests has been exceeded |
| Route validation (Structure of route, lat/long of points, fix names) | Trajectory Info Error<br>Invalid Route Structure<br>Invalid Fix/waypoint |

### 6.7.6 Trial Response Message

#### 6.7.6.1 Planning Status Values

6.7.6.1.1 The Planning Status within the Trial Response Message reflects the likelihood that the flight plan will be operationally acceptable if submitted as a PFP or eFPL. The evaluations conducted for the Trial Requests are similar to those that are conducted for the PFPs.

6.7.6.1.2 However, as eAUs are allowed to submit multiple Trial Requests, it may not be practical for eASPs to consider all Trial Requests as actual traffic demand. It is therefore not expected for eASPs to provide flight specific constraint. For example, if a trial flight plan is expected to operate during the duration of an ATFM program, eASPs are expected to provide feedback to the eAUs that the flight will be caught in the ATFM program. A flight specific constraint need not be provided to the eAUs.

6.7.6.1.3 eASPs should publish the scope of evaluation performed for Trial Requests in the AIP.

### 6.7.6.2 Feedback Methods for Restrictions/Constraints

6.7.6.2.1 When providing restrictions/constraints to eAUs within the Trial Response, eASPs should use methods similar to those used for the Planning Service. eASPs should similarly retain flexibility in determining their Trial Response feedback methods and content.

6.7.6.2.2 For the five Scenarios (as described in Section 6.3.6.4.1~~6.3.6.4.1~~~~6.3.6.4.1~~~~6.3.5.4.1~~) which require regionally agreed responses to ensure regional interoperability and consistent handling, the Trial Response shall contain a Planning Status of NON-CONCUR. In addition, no flight specific constraints or Route/Trajectories will be expected in the response.

6.7.6.2.3 The explanation within **Table 10**~~**Table 10**~~~~**Table 10**~~ in Appendix C can be used for relevant scenarios.

*Note: eASPs should not include any flight-specific constraints or resource allocations, as trial requests are "what-if" scenarios that do not represent actual flight operations. The response should indicate general restriction applicability without reserving operational resources or assigning specific constraint values.*

## 6.8 Message Delivery Assurance

### 6.8.1 Time-out for submitted messages

6.8.1.1 Time-outs are predefined waiting periods during which a system expects to receive a response from another system or user. If no response arrives within this window, the system marks the request as failed or expired. These time-out periods are deliberately set longer than the typical response time to account for various delays, such as system latency and network delays. ~~This mechanism is crucial as it alerts users to potential problems when communications take longer than expected. States should publish the time-out periods in their AIPs.~~

6.8.1.2 States should publish business-level time-out periods in their AIPs to provide operators with expected response times for FF-ICE services. These time-outs represent commitments for completing processes such as flight plan evaluation and trajectory assessment.

~~6.8.1.1~~6.8.1.3 The time-out periods specified in the following sections are recommended business-level time-outs that eASPs should implement to ensure consistent service delivery across the region.

### 6.8.2 Submission Response

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6.8.2.1 It is recommended that the timeout for Submission Response message be set at 1 minute. If eAU does not receive the Submission Response after 1 minute, the eAU should resubmit the original message (e.g. eFPL / FPU / Flight Cancellation / PFP / Flight Departure / Flight Arrival / Flight Data Request etc).

### 6.8.3 Filing and Planning Status

6.8.3.1 It is recommended that the timeout for Filing and Planning Status message be set at 1 minute from the time eAUs receives a Submission Response of "ACK". If the first Filing/Planning Status is not received 1 minute after receiving the Submission Response "ACK", eAUs are expected to contact the eASPs. Filing/Planning Status message is not expected if a Submission Response of "REJ" or "MAN" was received.

~~6.8.3.2 If the processing of Filing Status is expected to take more than 1 minute, eASPs can consider sending a PENDING Filing Status to eAUs. Refer to section 6.3.5.5.1 for the usage of PENDING.~~

### 6.8.4 Trial Response and Flight Data Response

6.8.4.1 It is recommended that the timeout for Trial Response and Flight Data Response message be set at 1 minute from the time eAUs receives a Submission Response of "ACK". If the Trial Response or Flight Data Response is not received 1 minute after receiving the Submission Response "ACK", eAUs are expected to contact the eASPs. Trial Response or Flight Data Response messages are not expected if a Submission Response of "REJ" or "MAN" was received.

## 6.9 Publication Service

6.9.1 The Publication Service is an optional FF-ICE/R1 service used to provide flight information to authorized stakeholders. It is an event-based service that disseminates information whenever defined criteria are met.

6.9.2 Subscribers to this service may include a wide range of stakeholders from AUs to customs and immigration authorities, who may use the service to enhance situational awareness and adjust their operations based on the updated flight information received.

6.9.3 An eASP providing a Publication Service should ensure that the service is discoverable by potential subscribers, through the AIP or a SWIM service registry for example. The eASP shall also ensure that appropriate access control is in place so that the subscribers can retrieve only the flight information relevant to their operations.

6.9.4 Given the nature of the Publication Service, it is recommended that its implementation uses a Publish/Subscribe message exchange pattern, with a push mechanism applied to improve service efficiency.

6.9.5 Currently, no specific FF-ICE message is defined for Publication Service. However, it is recommended that FIXM be used wherever possible to exchange flight information through this service.

## 6.10 Re-evaluation Process

6.10.1 Re-evaluation is an optional process that an eASP may perform to determine whether a flight plan still complies with published restrictions or ATM constraints that may have been applied or modified since its last evaluation. Re-evaluation is provided as part of the Filing Service and Planning

Service when implemented by an eASP. If implemented, reference should be made to Doc 9965 Vol. II Manual on FF-ICE Implementation Guidance.

6.10.2 Re-evaluation process is triggered by predefined factors, including:

a) Event Trigger: An event affecting ATM configuration such as:

i) Airspace or airport conditions;

ii) Routing availability;

iii) ATC constraints;

iv) Demand-capacity imbalance situations;

v) Meteorological constraints; and

b) Time Trigger: A predefined interval that initiates the re-evaluation process, e.g. every 30 minutes.

*Note: the specific interval is to be determined by each eASP.*

6.10.3 The re-evaluation process may continue until the aircraft has ~~pushed back~~off-block. This may vary depending on ATM conditions. Cut-off times for specific ATM conditions are subject to national and/or regional agreement.

6.10.4 If, following a re-evaluation, the Filing Status (or Planning Status) changes, the eASP shall provide the eAU with the updated status and an explanation of the change as specified in Section 6.3.6.4.2~~6.3.6.4.2~~~~6.3.6.4.2~~~~6.3.5.4.2~~.

## 6.11 Implementation Timeline for APAC

6.11.1 A phased approach to FF-ICE/R1 implementation with the following timeline is recommended for Asia/Pacific region:

a) 2030: Commencement of technical tests and trials involving eAUs and cross-border eASP interactions.

b) 2031: Begin operational tests to identify and resolve any issues.

c) 2032 Full operationalization of three FF-ICE/R1 services (Filing, Flight Data Request and Notification Services).

6.11.2 The above recommended timeline will ensure Asia/Pacific States' readiness to support the sunset of FPL2012 in 2034. Note that SWIM implementation is a prerequisite for FF-ICE/R1 deployment, as FF-ICE services are built upon SWIM infrastructure and information exchange capabilities.

## 6.12 Implementation Monitoring

6.12.1 This regional implementation plan is a supplementary plan to the ~~*Asia/Pacific Seamless ANS Plan*~~*Asia/Pacific ANP Volume III*, supporting the transition from current flight planning to FF-ICE operations. Implementation monitoring ensures harmonized regional deployment of FF-ICE capabilities and identifies areas requiring additional support or coordination.

6.12.2 Asia/Pacific States should report their FF-ICE implementation status to the ICAO Asia/Pacific Regional Office annually by 28 February. Implementation status will be examined by the FF-ICE/R1 Implementation Task Force and the ATM Sub-Group of APANPIRG~~, or other appropriate regional~~

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~~body as designated by APANPIRG~~ to measure, report, and advance regional implementation progress, identify implementation challenges, and recommend priority FF-ICE elements for the APAC Seamless ANS monitoring and reporting scheme.

6.12.3 It is expected that the relevant FF-ICE experts in each Asia/Pacific State will be responsible for detailed reporting using the *Regional FF-ICE Monitoring and Reporting Form* (**Appendix D**) and coordinate with their APAC Seamless ANS Reporting point of contact to ensure the accuracy of higher-level reporting and consistency between separate reporting levels.

## 6.13 Plan Update Cycle and Process

6.13.1 This Plan requires periodic updates to maintain alignment with updates of:

a) ICAO Doc 9965;

b) GANP, including ASBU framework restructuring;

c) ~~*Asia/Pacific Seamless ANS Plan*~~*Asia/Pacific ANP Volume III*;

d) Any other relevant documents and APANPIRG Conclusion/Decision.

6.13.2 This Plan is intended to be reviewed every three years following its initial implementation. ~~following the scheduled review of the *Asia/Pacific Seamless ANS Plan* and every three years thereafter, following the regular review of the *Asia/Pacific Seamless ANS Plan*.~~ Earlier or more frequent review and amendment ~~will~~ may be conducted as recommended by ~~FF-ICE Ad hoc Group~~FF-ICE/R1 Implementation Task Force and agreed-upon by APANPIRG through its Air Traffic Management ~~(ATM)~~ Sub-Group (ATM/SG).

6.13.3 This document shall be reviewed and updated by the FF-ICE Regional Implementation Plan Drafting Group to be established under FF-ICE/R1 Implementation Task Force. The drafting group will consist of subject matter experts (SMEs) nominated by different Asia/Pacific States and International Organizations. ~~The WG held a series of meetings to draft this edition.~~

## 6.14 Post Implementation Process

6.14.1 To ensure continuous improvement of FF-ICE operations, both in operational procedures and technical capabilities, close and routine coordination among stakeholders should be conducted on an annual basis. This coordination should focus on sharing and reviewing the collective performance of FF-ICE operations, as well as implementing improvements within the region. ~~A contributing body under APANPIRG may be established to~~The FF-ICE/R1 Implementation Task Force will serve as a platform for these activities.

6.14.2 The following indicators are recommended for monitoring to assess the performance of FF-ICE operations within the region.

a) ~~eFPL submission time~~Submission time of the first eFPL, compared to EOBT specified in the eFPL;

b) Number of *REJ* Submission Response messages, along with their explanations;

c) Number of *MAN* Submission Response messages, along with their explanations;

d) Number of *NOT ACCEPTABLE* Filing Status messages, along with their explanations;

e) Number of negotiations before achieving *ACCEPTABLE* Filing Status, including time elapsed from the first submission of eFPL to the *ACCEPTABLE* Filing Status;

f) Number of flights departing with *NOT ACCEPTABLE* Filing Status; and

g) Number of Flight Data Request transactions and type of information requested.

**REFERENCE**

ICAO Doc 9965 — Manual on Flight and Flow Information for a Collaborative Environment (FF-ICE), Volume I (Concept) and Volume II (Implementation Guidance)

ICAO Doc 10039 — Manual on System Wide Information Management (SWIM), Volume II

PANS-IM — Procedures for Air Navigation Services – Information Management

ICAO Doc 4444 — Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM)

ICAO Doc 9971 — Manual on Collaborative Air Traffic Flow Management (ATFM)

ICAO Doc 10204 — Manual on Information Security (Trust Framework Panel)

ICAO Doc 9854 — Global Air Traffic Management Operational Concept

~~Asia/Pacific Seamless Air Navigation Services (Seamless ANS) Plan, Version 4.0~~Asia/Pacific ANP Volume III

Asia/Pacific Plan for Collaborative Aeronautical Information Management (AIM), Version 4.0

Asia/Pacific Regional ~~ATFM~~ Framework for Collaborative ATFM

Asia/Pacific Region~~al~~ ATM Contingency Plan

Asia/Pacific A-CDM Implementation Plan

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## ABBREVIATIONS AND ACRONYMS[1]

| | |
|---|---|
| A-CDM | Airport Collaborative Decision Making |
| AIM | Aeronautical Information Management |
| AIRM | ATM Information Reference Model |
| AIS | Aeronautical Information Services |
| AIXM | Aeronautical Information Exchange Model |
| ANS | Air Navigation Services |
| ANSP | Air Navigation Service Providers |
| APAC | Asia/Pacific |
| ASP | ATM Service Provider |
| aASP | An ASP that is not capable of providing the mandatory FF-ICE services. |
| eASP | An ASP that is capable of providing the mandatory FF-ICE services. |
| ATFM | Air Traffic Flow Management |
| ATM | Air Traffic Management |
| AU | Airspace User |
| aAU | An AU that is not capable of using mandatory FF-ICE services. |
| eAU | An AU that is capable of using mandatory FF-ICE services. |
| eFPL | Filed flight plan exchanged using FF-ICE services |
| EOBT | Estimated Off-Block Time |
| FF-ICE | Flight and Flow Information for a Collaborative Environment |
| FIXM | Flight Information Exchange Model |
| FPL | Filed flight plan exchanged using via aeronautical fixed services (AFS) |
| GUFI | Globally Unique Flight Identifier |
| ICAO | International Civil Aviation Organization |
| IWXXM | ICAO Meteorological Information Exchange Model |

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[1] Refer to ICAO Doc 9965 for definition of terms

| | |
|---|---|
| PANS-IM | Procedures for Air Navigation Services – Information Management |
| R1 | Release 1 (for pre-departure phase) |
| R2 | Release 2 (for post-departure phase) |
| SWIM | System Wide Information Management |
| TBO | Trajectory-Based Operations |

# APPENDIX A - FIXM MAPPING TO ATS

Translation of FF-ICE FIXM to ATS Messages is available on the FIXM website at https://docs.fixm.aero/#/ats-message-to-fixm-mapping/translating-ffice-fixm-messages-to-ats-messages

## APPENDIX B - MAPPING OF FIXM CORE 4.3.0 DATA ATTRIBUTES TO SUPPORT CROSS-BORDER ATFM INFORMATION EXCHANGE

| Data Attribute | FIXM version ~~4.3~~4.3.0 Core |
|---|---|
| EOBT | FlightType.departure.estimatedOffBlockTime = (EOBT) |
| ETO | FlightType.routeTrajectoryGroup.desired.element.point4D.time = (ETO) |
| | FlightType.routeTrajectoryGroup.desired.element.elementStartPoint = (point at which ETO is specified) |
| ELDT | FlightType.routeTrajectoryGroup.desired.element.point4D.time = (ELDT) |
| | FlightType.routeTrajectoryGroup.desired.element.point4D.pointProperty.propertyType = WHEELS_ON |
| | FlightType.routeTrajectoryGroup.desired.element.elementStartPoint.aerodromReferencePoint.locationIndicator = FlightType.arrival.destinationAerodrome.locationIndicator |
| CTOT | FlightType.routeTrajectoryGroup.negotiating.element.constraint.time.timeSpecification.timeValue = (CTOT) |
| | FlightType.routeTrajectoryGroup.negotiating.element.point4D.pointProperty.propertyType = WHEELS_OFF |
| | FlightType.routeTrajectoryGroup.negotiating.element.elementStartPoint.aerodromReferencePoint.locationIndicator = FlightType.departure.aerodrome.locationIndicator |
| CTO | FlightType.routeTrajectoryGroup.negotiating.element.constraint.time.timeSpecification.timeValue = (CTO) |
| | FlightType.routeTrajectoryGroup.negotiating.element.constraint.level = (Altitude, Flight Level or Range) |
| | FlightType.routeTrajectoryGroup.negotiating.element.elementStartPoint = (point at which CTO is specified) |
| CLDT | FlightType.routeTrajectoryGroup.negotiating.element.constraint.time.timeSpecification.timeValue = (CLDT) |

FlightType.routeTrajectoryGroup.negotiating.element.point4D.pointProperty.propertyType = WHEELS_ON

FlightType.routeTrajectoryGroup.negotiating.element.elementStartPoint.aerodromReferencePoint.locationIndicator = FlightType.arrival.destinationAerodrome.locationIndicator

## APPENDIX C – ~~SCENARIOS FOR HARMONISATION~~HARMONIZED FILING STATUS RESPONSES

*Table 10: ~~Scenarios for Harmonisation~~Harmonized Filing Status Responses for Identified ATFM Scenarios*

| Scenario | Who to feedback | Filing Status Value | Planning Status Value | Explanation through FF-ICE Message (Mandatory if NOT ACCEPTABLE) | Type of Trajectory | FIXM Elements to use | Type of Constraint (Level, Speed, Time) | Constraint. Description (Optional) | Constraint. Restriction Reference (Optional) | Checking Point |
|---|---|---|---|---|---|---|---|---|---|---|
| a) CTO/ CLDT imposed by ~~arrival~~ eASPs | ~~Arrival eASP /~~ Initiating eASP | NOT ACCEPTABLE | NON CONCUR | REGUL <AAAACCCCCDDMMMVV> | Negotiating | ElementStartPoint for location<br><br>Constraint.Time for time<br><br>Constraint.Level/ Constraint.Speed if applicable | Time<br><br>(Level, Speed if applicable) | REGCAUSE <XX XX> | REGUL <AAAACCCCCDDMMMVV> | ETO / ELDT against CTO /CLDT |
| b) Ground Stop imposed by Arrival eASPs | Initiating eASP / Arrival eASP | NOT ACCEPTABLE | NON CONCUR | GSt imposed on flights arriving into <WSSS> from <YYYY-MM-DDTHH:mm:ssZ> to <YYYY-MM-DDTHH:mm:ssZ>.<br><br>Note: If available, *See NOTAM <XXX> / ADP <XXX> for details.* | NULL | - | - | - | | -<br><br>ELDT against restricted period |
| c) ~~Flow~~Flight level Restrictions | All relevant eASP | NOT ACCEPTABLE | NON CONCUR | <FL or altitude, FL or altitude> on route <XXXX> not available. | NULL | - | - | - | | Flight Level on Point against restricted flight levels |

| Scenario | Who to feedback | Filing Status Value | Planning Status Value | Explanation through FF-ICE Message (Mandatory if NOT ACCEPTABLE) | Type of Trajectory | FIXM Elements to use | Type of Constraint (Level, Speed, Time) | Constraint. Description (Optional) | Constraint. Restriction Reference (Optional) | Checking Point |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Note: If available, *See NOTAM <XXX> for details.* | | | | | | |
| d) Fix Balancing | All relevant eASP | NOT ACCEPTABLE | NON CONCUR | Fix <XXXXX> not available.<br><br>Note: If available, *See NOTAM <XXX> for details.* | NULL | - | - | - | | Flight Trajectory against restricted points |
| e) Re-routing | All relevant eASP | NOT ACCEPTABLE | NON CONCUR | Route <XXXXX> not available.<br><br>Note: If available, *See NOTAM <XXX> for details.* | NULL | - | - | - | | Flight Trajectory against restricted routes |

**APPENDIX D - REGIONAL FF-ICE MONITORING AND REPORTING FORM**

This form is designed to monitor the implementation status of Flight and Flow Information for a Collaborative Environment (FF-ICE) services and capabilities within the region. The form should be completed by States to report their progress in implementing FF-ICE in accordance with ICAO Doc 9965 and this plan.

States should complete this form annually by 28th February to track implementation progress.

**Scoring System**

Each element uses a three-level scoring system:

- **0%** = Not implemented or no progress
- **50%** = Partial implementation with gaps, manual intervention required, or development in progress
- **100%** = Full implementation in compliance with regional requirements

| Reporting Form Element | Reporting Metrices | Expected Outcome/Guidance to States | Response |
|---|---|---|---|
| **General** | | | |
| Implementation of FIXM-based Information Exchange | 0% - State has not implemented FIXM-based information exchange<br><br>50% - State has implemented FIXM-based capability but uses older version<br><br>100% - State has implemented FIXM-based capability with latest FIXM version (v4.3.0) | State should implement FIXM-based FF-ICE information exchange using FIXM version ~~4.3~~4.3.0 for all FF-ICE messages | |
| Implementation of Local FF-ICE Procedures, in accordance with Doc 9965 and Doc 4444 PANS-ATM | 0% - State has not developed any local FF-ICE procedures<br><br>50% - State is in process of developing and implementing local FF-ICE procedures<br><br>100% - State has fully established and published FF-ICE procedures based on Doc 9965 that are adhered to by stakeholders | State should establish and publish procedures covering FF-ICE operations, communication, and stakeholder responsibilities | |
| **Filing Service** | | | |

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|---|---|---|---|
| Implementation of Filing Service | 0% - No Filing Service implementation<br><br>50% - Partial implementation with gaps (e.g., incomplete message set support, incomplete validation/evaluation capability, manual intervention required)<br><br>100% - Full automated implementation with complete message set, validation and evaluation capability in compliance with this document | Filing Service is mandatory for eASPs.<br><br>Full implementation should include:<br><br>- Complete message set support<br><br>- Automated validation and evaluation<br><br>- Published validation and evaluation criteria in AIP | |
| Implementation of Filing Re-evaluation Process | 0% - No re-evaluation process<br><br>50% - Partial re-evaluation (e.g. limited status change handling, re-evaluation only for selected restrictions, and/or procedures not fully established)<br><br>100% - Full re-evaluation with established procedures | State should establish and publish clear procedures for the re-evaluation process and handling of status changes | |
| Implementation of local procedures for Filing Service mixed mode operations to support both FF-ICE and FPL2012 message handling (FPL, CHG, DLA), in accordance with Doc 9965, Doc 4444 and regional plan | 0% - No mixed mode procedures<br><br>100% - Full procedures established for handling both FF-ICE and FPL2012 formats with appropriate message dissemination | State should establish and publish clear procedures so that eAUs understand what messages to submit, how to submit them, and what to expect to receive based on their technical capabilities (FF-ICE or FPL2012) | |
| **Flight Data Request Service** | | | |
| Implementation of Flight Data Request Service | 0% - No implementation<br><br>50% - Partial implementation with gaps (e.g., limited request types support, manual intervention required)<br><br>100% - Full automated implementation in compliance with this document | Mandatory service for eASPs.<br><br>Full implementation should include automated support for all required request types (Flight Plan, Supplementary Plan and Flight Status). | |

| | | | |
|---|---|---|---|
| Implementation of local procedures for Flight Data Request Service mixed mode operations to support both FF-ICE and FPL2012 message handling (RQP, RQS), in accordance with Doc 9965, Doc 4444 and regional plan | 0% - No mixed mode procedures<br><br>100% - Full procedures established for handling both FF-ICE and FPL2012 formats with appropriate message dissemination | State should establish and publish clear procedures so that eAUs/eASPs understand what messages to submit, how to submit them, and what to expect to receive based on their technical capabilities (FF-ICE or FPL2012) | |
| **Notification Service** | | | |
| Implementation of Notification Service | 0% - No implementation<br><br>50% - Partial implementation with gaps (e.g., limited event types, manual intervention required)<br><br>100% - Full automated implementation in compliance with this document | Mandatory service for notifying stakeholders of significant flight events (in support of sunsetting FPL2012 DEP and ARR messages).<br><br>Full implementation should include automated support for departure and arrival notifications | |
| Implementation of local procedures for Notification Service mixed mode operations to support both FF-ICE and FPL2012 message handling (DEP, ARR), in accordance with Doc 9965, Doc 4444 and regional plan | 0% - No mixed mode procedures<br><br>100% - Full procedures established for handling both FF-ICE and FPL2012 formats with appropriate message dissemination | State should establish and publish clear procedures so that parties understand the notifications they should expect to receive based on their technical capabilities (FF-ICE or FPL2012) | |
| **Planning Service** | | | |
| Implementation of Planning Service | 0% - No Planning Service implementation<br><br>50% - Partial implementation with gaps (e.g., incomplete message set support, incomplete validation/evaluation capability, manual intervention required)<br><br>100% - Full automated implementation in compliance with this document | Planning Service is recommended for ASPs whose airspace is complex and/or regularly constrained.<br><br>Full implementation should include:<br><br>- Complete message set support | |

| | | | |
|---|---|---|---|
| | | - Automated validation and evaluation<br><br>- Published validation and evaluation criteria in AIP | |
| Implementation of Planning Re-evaluation Process | 0% - No re-evaluation process<br><br>50% - Partial re-evaluation (limited status change handling, re-evaluation only for selected restrictions, and/or procedures not fully established)<br><br>100% - Full re-evaluation with established procedures | State should establish and publish clear procedures for the re-evaluation process and handling of status changes | |
| **Trial Service** | | | |
| Implementation of Trial Service | 0% - No Trial Service implementation<br><br>100% - Full automated implementation in compliance with this document<br><br>*Note: Partial implementation of trial service is not expected as manual intervention is not practical for potentially large number of "fire and forget" messages.* | Optional service allowing "what-if" evaluation of flight plan alternatives.<br><br>Full implementation should include automated processing of Trial Requests and responses. | |
| **Publication Service** | | | |
| Implementation of Publication Service | 0% - No implementation<br><br>100% - Subscription options published and available through SWIM with clear procedures for information subscription | Optional service for disseminating flight information. State should publish available subscription options and clear procedures for stakeholders to subscribe through SWIM. | |

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