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ASIA/PACIFIC REGIONAL FLIGHT AND FLOW – INFORMATION FOR A COLLABORATIVE ENVIRONMENT RELEASE 1 (FF-ICE/R1) IMPLEMENTATION PLAN

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Version 1.0, xxxx yyyy

This guidance was developed by the Asia/Pacific Flight and Flow
Information for a Collaborative Environment Ad Hoc Group

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51 **1. SCOPE OF APAC REGIONAL FF-ICE/R1 IMPLEMENTATION PLAN**

52 **1.1 Alignment with Global Framework**

53 1.1.1 This *Asia/Pacific Regional Flight and Flow – Information for a Collaborative*
54 *Environment Release 1 (FF-ICE/R1) Implementation Plan* (the “Plan”) has been developed to complement
55 the International Civil Aviation Organization (ICAO) global framework and guidance. This Plan
56 supplements and tailors the global Flight and Flow – Information for a Collaborative Environment (FF-
57 ICE) concepts and objectives to the regional context of the Asia/Pacific (APAC), providing a practical
58 roadmap for implementation in APAC States while remaining aligned with ICAO’s provisions. This Plan
59 operates on established relevant ICAO materials and on the foundational concepts, principles, and
60 guidelines of System-wide Information Management (SWIM), Air Traffic Flow Management (ATFM)
61 practices, and aviation information security requirements. Therefore, this Plan does not duplicate
62 fundamental explanations from the *Manual on Flight and Flow – Information for a Collaborative*
63 *Environment (FF-ICE)* (ICAO Doc 9965) or other global manuals. Instead, it focuses on regional
64 implementation aspects bridging the gap between ICAO’s global guidance and the specific needs of APAC
65 stakeholders.

66 1.1.2 In accordance with other APAC regional plans, such as the *Asia/Pacific Plan for*
67 *Collaborative Aeronautical Information Management*, this Plan is not intended to duplicate or pre-empt
68 global guidance issued by ICAO expert groups. Rather, it builds upon the issued guidance to outline how
69 FF-ICE can be implemented across the APAC region in a coordinated and harmonized manner. Global
70 reference documents, i.e. *Manual on FF-ICE - Implementation Guidance* (ICAO Doc 9965 - Volume II),
71 *Manual on System-wide Information Management (SWIM) Concept* (ICAO Doc 10039), etc., contain these
72 foundational concepts, and this Plan serves to apply those concepts in the regional implementation setting.

73 1.1.3 This Plan uses the terms "shall", "should", and "may" to indicate the level of compliance
74 expected from States in following this document.

75 1.1.3.1 "Shall" indicates provisions that are compulsory for States to implement as these provisions
76 are considered necessary for regional harmonization and interoperability.

77 1.1.3.2 "Should" indicates provisions that are recommended as best practices for regional
78 coordination. States are encouraged to implement these provisions where operationally
79 feasible.

80 1.1.3.3 "May" indicates provisions that are optional and can be implemented at the discretion of
81 individual States based on their operational requirements and capabilities.

82 1.1.4 This Plan recognizes that States retain control over their implementation decisions, while
83 encouraging regional harmonization.

84 **1.2 APAC Regional Context and Guidance**

85 1.2.1 The FF-ICE implementation in the APAC region is being undertaken in parallel with the
86 region’s broader air navigation modernization strategies. The *Asia/Pacific Air Navigation Plan Volume III*
87 explicitly identifies FF-ICE and Trajectory-based Operations (TBO) as key elements of future Air Traffic
88 Management (ATM) enhancements. The *Asia/Pacific Air Navigation Plan (ANP) Volume III* calls on
89 APAC States to work collaboratively through ICAO and regional platforms towards a seamless ATM
90 environment, including the implementation of SWIM, FF-ICE, and TBO to support future traffic growth

91 and sustainability. Particularly, the implementation of SWIM, a key enabler for FF-ICE, within the APAC
92 region, should follow the regionally agreed-upon guidelines, including *APAC SWIM Technical*
93 *Infrastructure Profiles Version 1.0*, and the *APAC Common SWIM Information Services*. Following these
94 guidelines will ensure interoperability and harmonized implementation.

95 1.2.2 Moreover, the *Asia/Pacific Plan for Collaborative Aeronautical Information Management*
96 *Version 4.0* and the *Asia/Pacific Regional Framework for Collaborative ATFM Version 4.0* complement
97 the FF-ICE initiative by simultaneously addressing the Aeronautical Information Management (AIM) and
98 ATFM improvements that are needed. The *Asia/Pacific Plan for Collaborative Aeronautical Information*
99 *Management* provides guidance on the transition from Aeronautical Information Services (AIS) to AIM
100 and digital data exchange, which is a foundational element for successful FF-ICE implementation.

101 1.3 **Mandatory and Optional FF-ICE Services**

102 1.3.1 In accordance with *Procedures for Air Navigation Services – Air Traffic Management*
103 (ICAO Doc 4444), Filing Service and Flight Data Request Service are mandatory. Additionally, to support
104 the sunsetting of ICAO 2012 Flight Plan (FPL2012) and, at a minimum, DEP and ARR related Air Traffic
105 Services (ATS) messages, the Notification Service is a mandatory service within the APAC region. The
106 FF-ICE Planning Service, Trial Service, and Publication Service are considered optional within the APAC
107 region.

108 **2. EXECUTIVE SUMMARY**

109 2.1 This Plan provides regional strategy and guidance for the implementation of the FF-ICE
110 within the APAC region. This Plan also supports the transition from the traditional FPL2012 to the
111 modernized FF-ICE environment, enabling collaborative, service-based information exchange among
112 ATM Service Providers (ASPs), Airspace Users (AUs), and other aviation stakeholders. This Plan is aligned
113 with the *Global Air Navigation Plan (GANP)* (ICAO Doc 9883), and the *Asia/Pacific ANP Volume III*.

114 2.2 The implementation of FF-ICE represents a significant step towards achieving TBO in the
115 region. Through standardized information services and system-to-system interoperability, FF-ICE will
116 facilitate the sharing and management of comprehensive flight and flow data through all phases of flight.
117 This Plan defines the regional approach to implementing FF-ICE/R1 covering the pre-departure phase and
118 lays the foundation for a future expansion to Release 2 (FF-ICE/R2 - post-departure operations).

119 2.3 The APAC region is adopting a harmonized approach to the use of global data standards,
120 particularly the Flight Information Exchange Model (FIXM) version 4.3.0, together with the APAC
121 regional FIXM version 4.3.0 Extension to support cross-border ATFM and Airport Collaborative Decision
122 Making (A-CDM) integration. Mixed-mode operations between legacy and FF-ICE environments are
123 expected during the transition period, and guidance has been included regarding translation mechanisms,
124 validation procedures, and coordination processes necessary for maintaining seamless operation.

125 2.4 This Plan details the operational and technical requirements for the implementation of FF-
126 ICE services. Filing Service and Flight Data Request Service are established as mandatory in accordance
127 with *the Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM)*, ICAO Doc
128 4444), with the Notification Service also identified as mandatory within the APAC region to support the
129 eventual retirement of the FPL2012 and related ATS messages. The Planning, Trial, and Publication
130 Services are considered optional but are recommended, to enhance collaborative decision-making and
131 information availability.

132 2.5 Recognizing the importance of data integrity and operational assurance, this Plan
133 introduces a common validation process, standardized submission response codes, and uniform filing-status
134 interpretations. It outlines cybersecurity considerations for FF-ICE operations, recommending
135 implementation of secure communication protocols and promoting adherence to ICAO information security
136 guidance.

137 2.6 Implementation of FF-ICE/R1 across the APAC region will be achieved in phases.
138 Technical trials and cross-border testing are targeted to begin in 2030, followed by operational testing in
139 2031. The testing will lead to full operational capability (FOC) of the regionally mandatory FF-ICE/R1
140 services (Filing Service, Flight Data Request Service and Notification Service) by 2032. This timeline
141 supports regional readiness for the planned global sunset of the FPL2012 in 2034. States and
142 Administrations will report progress to the ICAO APAC Regional Office annually to ensure synchronous
143 advancement and to identify any areas requiring additional support or coordination.

144 2.7 This Plan will be maintained and updated in alignment with revisions to *GANP* (ICAO Doc
145 9883), and the *Asia/Pacific ANP Volume III*. Post-implementation coordination and performance
146 monitoring will ensure continuous improvement and harmonization across the region. Through the
147 collaborative and progressive implementation of FF-ICE, the APAC region will advance towards a fully
148 information-driven ATM environment that enhances safety, efficiency, and predictability in support of the
149 global vision for a seamless and interoperable air navigation system.

150 **3. DEFINITIONS (REFERENCED FROM DOC 9965)**

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

155
156 ***ATM community*** — The aggregate of organizations, agencies or entities that may participate, collaborate
157 and cooperate in the planning, development, use, regulation, operation and maintenance of the
158 ATM system.

159
160 ***ATM configuration*** — The arrangement of the non-flight elements of the Air Traffic Control (ATC)
161 System. The ATM configuration imposes constraints on flights through such factors including
162 military airspace reservations and releases, sector configurations, runway combinations and runway
163 usage.

164
165 ***ATM Service Provider (ASP)*** — A Unit involved in performing Air Traffic Management responsibilities
166 as introduced in the PANS-ATM.

167
168 ***ATM system limitations*** — Inherent characteristics that limit its ability to support desired aircraft
169 operations or effectively accommodate demand on resources.

170
171 ***Coordinated airport*** — Any airport where, in order to land or take off, it is necessary for an aircraft operator
172 to have been allocated a slot by an appropriate authority.

173
174 ***Effective flight constraints*** — The subset of flight constraints that actually affected the flight's
175 unconstrained trajectory.

176
177 ***Emergency Service Provider (ESP)*** — Provider of emergency services, such as search and rescue
178 organizations.

179
180 ***Flight and Flow – Information for a Collaboration Environment (FF-ICE)*** — Information necessary for
181 planning, coordination, and notification of flights exchanged in a standardized format between
182 members of the ATM community, including those involved in flight operations and aerodrome
183 operations.

184
185 *FF-ICE can refer to a single instance (an individual flight) and also to an aggregation of flights*
186 *(each with their own flight information in FF-ICE).*

187
188 ***Flight and Flow – Information for a Collaboration Environment (FF-ICE) services*** — A set of services
189 established for the purpose of facilitating the exchange of flight and flow – information for a
190 collaborative environment, more accurate assessment of demands, appropriate resource planning,
191 and optimum flight planning and execution.

192
193 ***Flight constraint*** — Results from applying a restriction to a particular flight and describes bounds (e.g. in
194 altitude, speed, time, and route) that constrain free movement of the flight.

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

197
198

199 **Flight plan** — Specified information relative to an intended flight or portion of a flight of an aircraft.
200 *Note 1: the term “flight plan” may be prefixed by the words “preliminary”, “filed”, “current” or*
201 *“operational” to indicate the context and different stages of flight.*
202 *Note 2: when the word “message” is used as a suffix to this term, it denotes the context and format*
203 *of the flight plan data as transmitted.*
204
205 **Operational flight plan.** The operator’s plan for the safe conduct of the flight, based on
206 considerations of aeroplane performance, other operating limitations, and relevant expected
207 conditions on the route to be followed and at the aerodromes concerned.
208
209 **Preliminary flight plan (PFP).** The flight plan submitted by an operator or a designated
210 representative to conduct collaborative planning of a flight, prior to filing a flight plan for use by
211 ATS units.
212
213 **Filed flight plan.** The latest flight plan as submitted and updated by the pilot, an operator or a
214 designated representative for use by ATS units.
215 *Note: the FPL denotes a filed flight plan exchanged using aeronautical fixed services while eFPL*
216 *denotes a filed flight plan exchanged using FF-ICE services. The eFPL allows for the exchange of*
217 *additional information not contained within the FPL.*
218
219 **Current flight plan (CPL).** The flight plan that reflects changes to the filed flight plan by
220 subsequent ATC clearances.
221
222 **Repetitive flight plan (RPL).** A flight plan related to a series of frequently recurring, regularly
223 operated individual flights with identical basic features, submitted by an operator or a designated
224 representative, for retention and repetitive use by ATS units.
225
226 **eFPL.** A symbol used to designate a filed flight plan exchanged using FF-ICE services.
227
228 **FPL.** A symbol used to designate a filed flight plan exchanged via Aeronautical Fixed Services
229 (AFS).
230
231 **Flight plan originator** — An operator or the operator’s designated representative that has flight planning
232 responsibility for the flight.
233
234 **Gate-to-gate** — An expression that describes the ground and airborne segments of aircraft operations from
235 the first movement with intention of flight (from gate, stand or parking position) to completion of
236 movement after flight (gate, stand or parking position).
237
238 **Globally unique flight identifier (GUFID)** — An unchangeable data element associated with a flight that
239 allows all eligible members of the ATM community to unambiguously refer to information
240 pertaining to the flight.
241
242 **Message** — A discrete unit of communication, expressed electronically, and intended by the source for
243 consumption by some recipient or group of recipients. The term “message” is thus not limited only
244 to ATS messages over AFTN, but can include communication via other technologies including
245 those described in ICAO Doc 10039.
246
247

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

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

251
252 **Operator** — The person, organization or enterprise engaged in or offering to engage in an aircraft operation.
253

254 **Procedure** — A procedure is an established practice or prescribed method of proceeding with an action,
255 normally non-systematic, under given circumstance or situation, in the provision of a service or
256 part thereof.
257

258 **Process** — A process is an operation or series of operations performed in a definite manner, normally
259 systematically, in the provision of a service or part thereof.
260

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

264 *Note: Tolerances are used to express the bounds of variation on the trajectory, triggering a*
265 *preference for the next ranked trajectory.*
266

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

- 269 - The Area Control Centre (ACC) or flight information centre serving the control area of the
270 Flight Information Region (FIR) within which the departure aerodrome is situated;
 - 271 - The centres in charge of each FIR or upper FIR along the route;
 - 272 - For flights along specified routes or portions of routes in close proximity to FIR boundaries,
273 the centres in charge of each FIR or upper FIR adjacent to such routes or portions of routes;
 - 274 - When a potential re-clearance in flight (RIF) request is indicated in the flight plan, the
275 additional centres concerned and to the aerodrome control tower of the revised destination
276 aerodrome;
 - 277 - The aerodrome control tower at the destination aerodrome;
 - 278 - Flow management centres responsible for ATS units along the route.
 - 279 - Flight and flow – information services unit along the route of the flight.
- 280

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

284 *Note: a published restriction, in addition to the cause and applicability criteria, may also include*
285 *the constraint. For example, “due to congestion all flights departing ABCD between Monday and*
286 *Friday during the hours from 07:00 to 17:00 and routing via AWY1 to destination WXYZ must*
287 *remain below FL250”.*

288 *Typically, an Air Traffic Flow Management (ATFM) measure, which is a type of restriction, will*
289 *require a specific flight constraint to be issued to each impacted flight. For example, “between*
290 *09:00 and 14:00, the airspace <airspace ref> can only accept 15 aircraft per hour. Flights planned*
291 *to enter the airspace during this time period will be issued with an ATFM slot”.*
292

293 **Runway Visual Range (RVR)** — The range over which the pilot of an aircraft on the centre line of a runway
294 can see the runway surface markings or the lights delineating the runway or identifying its centre
295 line.
296

297 **Service** — A service is the provision of a pre-defined set of work including any associated information
298 intended to benefit the customer.
299

300 **Trajectory** — The representation of an aircraft continuous path, both in the air and on the ground, comprised
301 of position (x, y, z) and time.
302

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

306 *Note: there is only one desired trajectory for any given flight at any time. To allow for flexibility*
307 *and as the ATM system has unpredictable or uncontrollable events, it is likely that it will be*
308 *necessary to renegotiate trajectories leading to a revision in the agreed trajectory. The desired*
309 *trajectory therefore reflects the most recent airspace user request. Where the agreed trajectory is*
310 *not the desired trajectory then the ASP will negotiate to obtain a revised agreed trajectory.*
311

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

313 *Note: each participant would be allowed only one negotiating trajectory at a time which represents*
314 *their most recent proposal in the negotiation. These trajectories may not necessarily be a gate-to-*
315 *gate trajectory and are intended to be transitory.*
316

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

319 *Note: There is only one agreed trajectory for any given flight at any time.*
320

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

323 *Note: The executed trajectory is what was executed and is not necessarily the desired or agreed*
324 *trajectories. The executed trajectory relates only to the current flight of the aircraft (and does not*
325 *contain information from previous flights, even with an en-route to en-route perspective). The*
326 *executed trajectory information can be used for performance and operational analysis.*
327

328 **Trajectory synchronization** — The process of aligning the trajectories for a single flight held by
329 operationally relevant entities (including ground and airborne) such that remaining differences are
330 operationally negligible for the execution of the flight.
331

332 **Minutes in Trail (MINIT) / Miles in Trail (MIT)** — MINIT/MIT are tactical ATFM measures and are
333 expressed as the number of minutes or miles between each successive aircraft at an airspace
334 boundary point. (Doc 9971)

335 **4. INTRODUCTION**

336 4.1 FF-ICE is a global ICAO initiative to modernize flight planning and trajectory management
337 through enhanced information exchange methods and collaboration. At the global level, FF-ICE is designed
338 to address the limitations of the traditional FPL2012 by enabling a fully collaborative TBO environment.
339 This means that a flight’s trajectory can be shared, managed, and adjusted among stakeholders in all phases
340 of flight, improving predictability and efficiency in line with the TBO concept. By exchanging more
341 comprehensive flight and flow data (such as detailed route trajectories and aircraft performance
342 information) in a standardized, system-wide manner, FF-ICE aims to increase airspace capacity and flight
343 efficiency while maintaining safety. This is a key objective identified in the *Global Air Traffic Management*
344 *Operational Concept* (GATMOC) (ICAO Doc 9854) for future ATM systems, and a critical goal for the
345 FF-ICE effort overall.

346 4.2 ICAO’s FF-ICE concept is documented in ICAO Doc 9965, which is organized into two
347 volumes. Volume I outlines the overall FF-ICE Concept, covering how information for flight planning,
348 flow management, and trajectory management will support a collaborative ATM environment. Volume II,
349 *FF-ICE Implementation Guidance*, provides detailed guidance to ASPs and AUs for implementing FF-ICE
350 in the pre-departure phase, particularly the FF-ICE/R1 capabilities. According to this ICAO guidance, FF-
351 ICE/R1 introduces a set of new services including Planning Service, Filing Service, Trial Service, Flight
352 Data Request Service, Notification Service, and Publication Service, which collectively enable stakeholders
353 to file collaborative flight plans, perform trial trajectory analyses, update or cancel plans, share flight event
354 updates, and request flight information through SWIM-based messages. Each service is defined through
355 agreed-upon procedures and message formats to help ensure consistent information exchange among FF-
356 ICE participants, while allowing flexibility in interface implementation. The subsequent FF-ICE/R2 will
357 extend these principles into the post-departure phase by supporting in-flight trajectory updates and
358 collaborative adjustments between ASPs and AUs, further building on the foundation established by FF-
359 ICE/R1.

360 **5. BACKGROUND**

361 5.1 **SWIM as an Enabler for FF-ICE**

362 5.1.1 The implementation of FF-ICE is fundamentally supported by the concept of SWIM.
363 SWIM provides the technical infrastructure, standards, and governance needed to allow seamless
364 information exchange among ATM stakeholders.

365 5.1.2 In the FF-ICE environment, flight data sharing is accomplished through SWIM-based
366 information services rather than traditional point-to-point messaging. FF-ICE operates within a SWIM
367 operational environment where the key flight planning processes are described and offered in terms of
368 services.

369 5.1.3 These services are published and discovered via SWIM, enabling authorized stakeholders
370 to exchange flight and flow information in real time, using common formats and protocols. SWIM ensures
371 that all FF-ICE messages are exchanged on a secure, interoperable network with agreed-upon data exchange
372 models and service interfaces. Crucially, SWIM's service-oriented architecture means that FF-ICE
373 information exchanges are standardized at the service level, even as the underlying technologies and
374 implementations may differ between States.

375 5.1.4 Guidance on implementing SWIM information services, such as those to support FF-ICE,
376 are provided in the *Procedures for Air Navigation Services – Information Management* (PANS-IM, ICAO
377 Doc 10199) requirements and *Manual on the SWIM Implementation* (ICAO Doc 10203).

378 5.1.5 As the SWIM technical infrastructure evolves over time, the focus for FF-ICE will be on
379 creating and maintaining adaptive operational services and data exchanges, ensuring that any State's system
380 can communicate using the standard FF-ICE service definitions. The hardware/software implementation
381 within each State can be flexible and technology-agnostic on the condition that the State is able to provide
382 and consume the defined FF-ICE services and related information services through SWIM.

383 5.2 **FIXM and Regional Extensions**

384 5.2.1 The information exchange mechanism of FF ICE relies on standardized data formats.
385 Notably, it relies on the Flight Information eXchange Model (FIXM) for encoding flight information. While
386 FF-ICE defines what flight information needs to be exchanged among stakeholders, FIXM defines how that
387 information is structured for digital exchange within a SWIM environment. As the globally standardized
388 information exchange model, FIXM provides the rich, detailed, and structured flight and flow information
389 required by the FF-ICE concept, representing a major advancement from the traditional teletype-format
390 flight plan (FPL2012).

391 5.2.2 APAC stakeholders implement FF-ICE using the globally defined FIXM standard for flight
392 data. However, in recognizing certain regional operational needs, the APAC region has developed its own
393 endorsed extensions to FIXM to accommodate additional information specific to the region. An APAC
394 FIXM extension was developed to include flight-specific data attributes necessary for cross-border ATFM
395 operations, A-CDM, ATFM/A-CDM integration, and traffic synchronization. The APAC FIXM extension
396 adds fields for information such as target take-off time, target time over, and other collaborative decision-
397 making parameters that are crucial for coordinating operations across Flight Information Regions (FIRs)
398 within the region.

399 5.2.3 This approach allows APAC States to exchange all necessary flight and flow information,
400 including regional specifics, under FF-ICE, supporting the implementation of regional initiatives while still
401 adhering to global standards and ensuring interoperability between APAC and other ICAO regions.

402 5.2.4 **Appendix A** provides guidance on translating FF-ICE FIXM information to ATS
403 messages, and the structure of the legacy FPL2012, which may be needed to support ingestion of the
404 FPL2012 flight plan.

405 5.2.5 **Appendix B** maps the FIXM Core version 4.3.0 data attributes required to support cross-
406 border ATFM information exchanges.

407 5.3 **Mixed-Mode Operations During Transition**

408 5.3.1 As the APAC region begins implementing FF-ICE, there is expected to be an extended
409 transition period during which legacy and new systems will operate in parallel. Not all States or ASPs will
410 be ready to switch to FF-ICE/R1 on the same date. System upgrades and operational readiness will vary.
411 Consequently, a mixed-mode environment will exist for several years, wherein some flights will be filed
412 and managed using traditional FPL2012 procedures, while others will use the new FF-ICE services.

413 5.3.2 Section 6.1.8 provides regional implementation considerations for mixed-mode operations.

- 414 **6. APAC REGIONAL IMPLEMENTATION PLAN**
- 415 6.1 **General**
- 416 6.1.1 **Information Exchange Standards**
- 417 6.1.1.1 FF-ICE operations, as described in ICAO Doc 9965 Volume II, are performed through FF-
418 ICE services. Each FF-ICE service is encompassed with a set of FF-ICE messages for exchanging flight
419 information between stakeholders. These messages are constructed using FIXM, a globally standardized
420 information model for flight and flow information exchange.
- 421 6.1.1.2 ATM Information Reference Model (AIRM) (<https://airm.aero/>), a standardized dictionary
422 for ATM information, shall be used as a reference for ATM vocabulary in digital information exchange
423 among stakeholders within the FF-ICE/R1 processes, to prevent ambiguities. To ensure semantic
424 interoperability and consistency across information domains, AIRM also underpins the development of
425 FIXM, Aeronautical Information Exchange Model (AIXM), and the ICAO Meteorological Information
426 Exchange Model (IWXXM).
- 427 6.1.1.3 FIXM is comprised of the following components:
- 428 a) FIXM Core – provides globally harmonized flight data structures;
- 429 b) FIXM Applications – built upon FIXM Core to provide specific flight data structure
430 such as FF-ICE messages and FF-ICE message templates; and
- 431 c) FIXM Extensions – Extends FIXM Core to support additional local, national, or
432 regional information exchange requirements.
- 433 6.1.1.4 To ensure harmonized FF-ICE operations, the FF-ICE message templates specified in
434 ICAO Doc 9965 Volume II and published on the official FIXM website (<https://fixm.aero/>) shall be used
435 for FF-ICE implementation. Use of these templates will ensure consistent validation of data fields across
436 stakeholders.
- 437 6.1.1.5 FIXM version 4.3.0 shall be used as the standard format for the implementation of FF-
438 ICE/R1 services in the APAC region starting from Q3/2026, as agreed by APANPIRG/35 through its
439 *Conclusion APANPIRG/35/4*.
- 440 6.1.1.6 The APAC regional FIXM version 4.3.0 Extension shall be used for cross-border ATFM
441 operations, A-CDM, ATFM/A-CDM integration, and traffic synchronization within the region, as agreed
442 by APANPIRG/36 through its *Conclusion APANPIRG/36/12*.
- 443 6.1.1.7 The change process for the cross-border FIXM operating version used to support system-
444 to-system information exchange via SWIM shall follow the procedure agreed by ATM/SG/13 through its
445 *Conclusion ATM/SG/13-5*.
- 446 6.1.1.8 It is recommended that the FIXM version used within the APAC region for FF-ICE
447 services implementation and cross-border ATFM information exchange remain aligned to ensure effective
448 communication and interoperability across ATM operation support systems throughout the region.
- 449 6.1.2 **Globally Unique Flight Identifier (GUFI)**
- 450 6.1.2.1 Under the current operational format, multiple fields are used to identify a specific flight,
451 such as aircraft identification, departure aerodrome, destination aerodrome, date of flight, and Estimated

452 Off-Block Time (EOBT). However, this method may not always uniquely identify a flight, for example,
453 when a flight is delayed. Automation will play a critical role in the FF-ICE environment where large
454 volumes of simultaneous transactions and message exchanges are expected.

455 6.1.2.2 To avoid ambiguity in flight identification and accurate correlation of flight data, GUFIs
456 shall be used. The GUFIs provide a unique reference to each flight and ensure clear distinction between
457 flights with otherwise similar information.

458 6.1.2.3 When a flight plan is cancelled and a new flight plan is submitted, a new GUFIs shall be
459 assigned, even if the flight is considered the same by the operator. Alternatively, in place of the cancel and
460 refile option, a new filed flight plan message can be provided with the same GUFIs but with an incremented
461 flight plan version and as a consequence, it will be treated as a complete replacement of the existing data.

462 6.1.2.4 It is recommended that the current flight association practices continue to be applied in
463 parallel with the use of GUFIs, during the initial implementation of FF-ICE. This approach will provide
464 more robust data correlation and support operations in a mixed-mode environment.

465 6.1.3 **Flight Plan Differentiation**

466 6.1.3.1 In the early stage of FF-ICE implementation and the introduction of using GUFIs as an
467 additional field to differentiate a flight, it is possible that two flight plans with two different GUFIs may
468 refer to the same flight. One of the scenarios is a system failure causing incomplete cancellation but
469 followed by re-filing of eFPL. eAUs and eASPs should perform typical flight plan differentiation using
470 aircraft identification, departure aerodrome, destination aerodrome, and EOBT, in addition to the check
471 using only GUFIs.

472 6.1.3.2 During the transition period, the eASPs should verify that multiple eFPLs with distinct
473 GUFIs do not refer to the same flight. When such incidents are detected, manual resolution may be required.

474 6.1.4 **GUFIs Allocation Criteria**

475 6.1.4.1 For GUFIs allocation, the operation of an aircraft is considered “a flight” from the
476 submission of its first flight plan – whether a Preliminary Flight Plan (PFP) or an eFPL – until the aircraft
477 is in-block at the arrival aerodrome. For multi-leg operations, a different GUFIs shall be allocated for each
478 leg, as the departure aerodrome differs.

479 6.1.4.2 A key consideration in determining a flight is whether the aircraft becomes airborne. Once
480 airborne, and subsequently landed at an aerodrome – whether the intended destination aerodrome, a
481 diversion aerodrome, or even the departure aerodrome – the flight is deemed complete. If the aircraft intends
482 to continue its operation, a new flight plan with a new GUFIs shall be required.

483 6.1.4.3 If an aircraft is compelled to return to its parking stand prior to becoming airborne, such as
484 in a “ground return” or “aborted take-off”, the original flight plan and GUFIs may be retained, provided the
485 intention is to continue the same flight. Otherwise, the flight plan shall be cancelled.

486 6.1.5 **GUFIs Procedure**

487 6.1.5.1 An operator, or its designated representative, shall generate and allocate a GUFIs to each
488 flight plan. The operator should also ensure that all flight data submitted for that flight uses the same GUFIs,
489 and that no GUFIs is reused for any other flight.

490 6.1.5.2 Upon receipt of either a PFP or an eFPL, the eASP shall verify it against the flight plan
491 differentiation checks to ensure that:

- 492 a) the same PFP with a different GUFIDoes not already exist in the system;
493 b) the same eFPL with a different GUFIDoes not already exist in the system; and/or
494 c) a different PFP or eFPL with the same GUFIDoes not already exist in the system. If
495 such a case exists and the newly received PFP or eFPL contains a later version number,
496 it should be treated as a complete replacement of the existing data.

497 6.1.5.3 An eFPL should carry the same GUFIDoes as its corresponding PFP, if submitted, but with an
498 incremented version number.

499 6.1.5.4 Upon receipt of a Flight Plan Update message or a Flight Cancellation message, the eASP
500 shall use the GUFIDoes to retrieve the associated flight plan information before performing the required actions.
501 It is also recommended that the eASP perform verification using other key fields in the received messages
502 (e.g. aircraft identification, departure aerodrome, destination aerodrome, EOBT, etc.) to ensure accurate
503 flight plan association.

504 6.1.6 **GUFIDoes Composition and Validation**

505 6.1.6.1 A GUFIDoes shall include a version 4 Universally Unique Identifier (UUID) that has been
506 standardized by the Open Software Foundation (OSF). The UUID specification is published by the Internet
507 Engineering Task Force (IETF) as RFC 9562.

508 *Note: RFC 9562 supersedes RFC 4122 (referenced in ICAO Doc 9965) and is backward compatible.*

509 6.1.6.2 The UUID used in a GUFIDoes shall be supplemented with the following additional
510 information:

- 511 a) Namespace Identifier: captures the originator of the GUFIDoes. Recommendations for
512 constructing the namespace are as follows:
- 513 i) eAU should use the three-letter designator in accordance with the *Designators*
514 *for Aircraft Operating Agencies, Aeronautical Authorities and Services* (ICAO
515 Doc 8585);
- 516 ii) eASP should use the four-letter location indicator in accordance with the *Location*
517 *Indicators* (ICAO Doc 7910); and
- 518 iii) Other GUFIDoes originators should construct their namespace based on the Fully
519 Qualified Domain Name (FQDN) of their organization.
- 520 b) Creation Timestamp: provides increased uniqueness of the generated GUFIDoes. The
521 timestamp should be in the Coordinated Universal Time (UTC), in accordance with
522 FIXM version 4.3.0 schema.

523 6.1.6.3 The namespace portion of the GUFIDoes should be static for a given originator. The UUID
524 portion of the GUFIDoes should be validated for proper formatting. In addition, the UUID portion should also
525 be checked for duplication against existing UUIDs, generated by its own system and previously received
526 from external systems.

527 6.1.6.4 The sole use of UUID as a GUFIDoes is not recommended as it may lead to interoperability
528 issues among stakeholders and potential GUFIDoes collisions.

529 6.1.7 **Cyber Security**

530 6.1.7.1 eASPs and eAUs shall ensure that their FF-ICE systems are protected against cyber-attacks
531 and that all exchanged information is authentic. Network and server protections such as a firewalls shall be
532 implemented. Cybersecurity recommendations provided in *Aviation Common Certificate Policy* (ICAO
533 Doc 10169) and *Manual on Aviation Information Security* (ICAO Doc 10204) should be utilized.

534 6.1.7.2 In the absence of a regionally agreed-upon Public Key Infrastructure (PKI) framework, a
535 Transport Layer Security (TLS) self-signed certificate should be implemented, at minimum.

536 6.1.8 **Mixed Mode Operations**

537 6.1.8.1 **eASP Responsibility**

538 6.1.8.1.1 An eASP may provide a translation service to convert eFPL into FPL2012 to support the
539 varying capabilities of AUs and ASPs within the APAC region during mixed-mode operations.

540 6.1.8.2 **eAU Responsibility**

541 6.1.8.2.1 An eAU or its designated representative shall submit eFPL to all relevant eASPs and
542 FPL2012 to aASPs in accordance with ICAO Doc 4444 Chapter 17. The eAU or its designated
543 representative shall ensure that all Flight Plan Updates are submitted to all relevant eASPs and aASPs using
544 the appropriate message type:

545 a) If any changes are made after submitting eFPL (e.g. aircraft, route, delay): the eAU
546 shall submit a Flight Plan Update to all relevant eASPs, and a CHG or DLA message
547 to aASPs.

548 b) If a flight is expected to be delayed by more than 30 minutes: the eAU shall submit a
549 Flight Plan Update to all relevant eASPs and a CHG or DLA message to aASPs.

550 c) If a flight is cancelled: the eAU shall submit a Flight Cancellation to all relevant eASPs
551 and a CNL message to aASPs.

552 6.1.8.3 **Translation**

553 6.1.8.3.1 Translation between legacy FPL2012 and other relevant ATS messages in the current flight
554 planning process into FF-ICE messages will play an important role in accommodating differing
555 implementation timelines during the transition to full FF-ICE/R1 operations. ASPs may need to consider
556 implementing the legacy-to-FF-ICE translation function to support its internal automation.

557 6.1.8.3.2 Translation is, however, only considered an interim solution. FF-ICE operations represent
558 not only a change in flight plan format, but a paradigm shift in flight information exchange and management
559 among ATM stakeholders.

560 6.1.8.3.3 Potential data loss may occur during translation between eFPL and FPL2012, because
561 eFPL contains significantly more information than the legacy FPL2012. eAUs and eASPs are therefore
562 encouraged to leverage the full benefits of FF-ICE services rather than prolonging reliance on translation.

563 6.1.8.3.4 For translation guidance, reference should be made to ICAO Doc 9965.

564

565 6.1.9 **Access Management for FF-ICE Services**

566 6.1.9.1 All FF-ICE services should implement robust access control mechanisms to ensure that
567 only authorized parties can access FF-ICE services and receive flight data, safeguarding the confidentiality
568 and integrity of sensitive information.

569 6.1.9.2 The following security safeguards should be implemented for all FF-ICE services:

- 570 a) authentication mechanisms to verify the identity of service users; and
- 571 b) authorization controls to ensure users can only access data and services appropriate to
572 their role.

573 6.1.9.3 All FF-ICE service usage should be logged for operational monitoring, troubleshooting,
574 and accountability purposes.

575 6.2 **Common Validation Process for FF-ICE Services**

576 6.2.1 **Submission Response Message**

577 6.2.1.1 Submission Response Messages are responses provided by the message recipient for every
578 message submitted to them to acknowledge that they have received the messages and to indicate whether
579 they are able or unable to process the messages. Submission Responses are used in a similar manner for
580 five of the FF-ICE/R1 Services (Filing Service, Flight Data Request Service, Notification Service, Planning
581 Service, and Trial Service). A Submission Response shall be “ACK”, “REJ” or “MAN”, where:

- 582 a) ACK: indicates the message will be processed by the eASP.
- 583 b) REJ: indicates the message cannot be processed and no data will be retained by the
584 eASP.
- 585 c) MAN: indicates that manual intervention is required before processing can be
586 completed.

587 6.2.1.2 Status Response Messages (Filing Status, Planning Status, and Trial Response) are only
588 provided when the Submission Response status is “ACK”. If an eAU receives a Submission Response of
589 “REJ”, no status response will be provided. The eAU must address the issues identified in the Submission
590 Response explanation and resubmit the message until an “ACK” Submission Response is received, after
591 which the appropriate status response will be provided.

592 6.2.2 **General Validation Requirements**

593 6.2.2.1 Upon receipt of any messages, the message recipient shall perform the following checks
594 before returning a Submission Response. These checks include:

- 595 a) Basic syntax and semantic validation including FIXM version 4.3.0 schema
596 compliance and applicable FIXM FF-ICE Applications; and
- 597 b) Other validation checks specific to the individual FF-ICE/R1 services.

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

600

601 6.2.3 **Submission Response “REJ”**

602 6.2.3.1 When validation fails, the message recipient shall provide a Submission Response of “REJ”
 603 and include an explanation in the explanation note field. While harmonization of explanation notes is not
 604 required, eASPs should ensure that explanations are precise enough for eAUs to rectify their original
 605 message if necessary.

606 6.2.3.2 **Table 1** provides a sample template for eASPs to use within the explanation note regarding
 607 the various types of validation checks that might result in a Submission Response of “REJ”.

608 **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 4.3.0
Mandatory Fields	Mandatory field <X> missing

609 6.2.4 **Manual Processing Requirements**

610 6.2.4.1 While FF-ICE processes are expected to be predominantly automated, manual processing
 611 may be required for specific operational needs. eASPs should clearly document their manual processing
 612 procedures and criteria and make them available to AUs.

613 6.2.4.2 When manual processing is required, eASPs shall send a “MAN” Submission Response to
 614 the message originator.

615 6.2.4.3 No action is required of the message originator on receipt of a “MAN” Submission
 616 Response from the eASP. The message originator should not submit any other messages relating to that
 617 flight until such time as an “ACK” or “REJ” Submission Response is received for that message.

618 6.2.4.4 After manual processing is completed, an "ACK" Submission Response shall be sent if the
 619 issue is resolved. A "REJ" Submission Response shall be sent if the issue remains unresolved. The eASP
 620 shall also provide a clear explanation of any manual changes made in their copy of the eFPL, within the
 621 explanation field of the Submission Response message.

622 6.2.4.5 Upon receipt of an "ACK" following a "MAN" Submission Response, the eAU should
 623 determine the need to submit a Flight Plan Update or Filed Flight Plan to all relevant ASPs incorporating
 624 the manual change that has been made to maintain a consistent flight plan across all ASPs.

625 6.2.4.6 The following scenarios should be considered for manual processing:

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

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

- 632 b) Known System Issues: flights requiring manual intervention.

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

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

636 6.3 **Filing Service**

637 6.3.1 **Introduction**

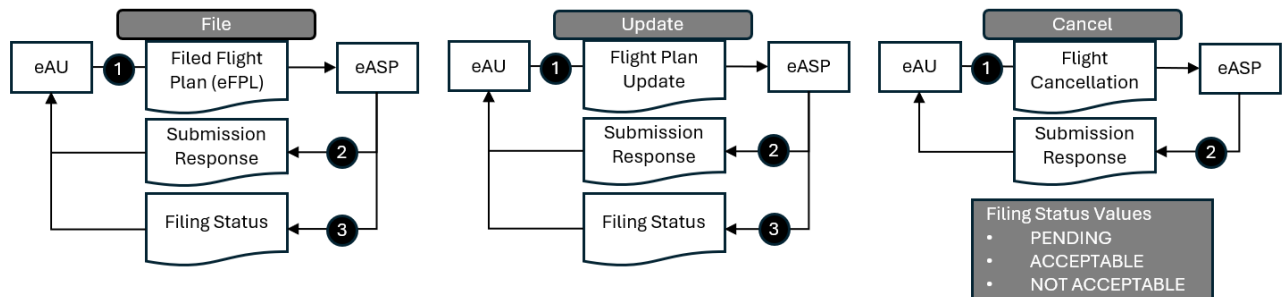
638 6.3.1.1 The Filing Service is a mandatory service. Operators use the Filing Service to submit eFPLs
639 and send updates, which are necessary to receive air traffic services.

640 6.3.1.2 To support the organized implementation of Filing Service in this region, a set of
641 operational requirements and business rules should be utilized to provide clarity and operational
642 consistency. While each eASP may have unique considerations and priorities, the transboundary nature of
643 flights necessitates that certain processes be regionally agreed-upon, to allow for efficient flight planning
644 for both eAUs and eASPs.

645 6.3.1.3 The Filing Service encompasses three primary processes:

- 646 a) Flight plan filing;
- 647 b) Flight plan updating; and
- 648 c) Flight plan cancellation.

649 6.3.1.4 **Figure 1** depicts the workflow and associated FF-ICE message exchanges for each Filing
650 Service process, detailing the interaction between eAUs and eASPs throughout the flight plan lifecycle.



651
652

Figure 1: Filing Service Process Overview

653 6.3.1.5 There are five FF-ICE messages available under the Filing Service:

- 654 a) Filed Flight Plan Message;
- 655 b) Flight Plan Update Message;
- 656 c) Flight Cancellation Message;
- 657 d) Submission Response Message; and
- 658 e) Filing Status Message.

659 6.3.1.6 The following sections discuss the necessary processes and identify areas that would
660 benefit from regional co-ordination for each of the Filing Service messages.

661

662

663 6.3.2 **Filed Flight Plan Message**

664 6.3.2.1 eFPLs are submitted by the eAUs as the first step under the Filing Service to obtain air
665 traffic services. The eFPLs are subjected to validation checks resulting in a Submission Response, and
666 evaluation checks resulting in a Filing Status.

667 6.3.3 **Flight Plan Filing Cut-off Times**

668 6.3.3.1 Flight plan filing cut-off times refer to the earliest and latest submission times for the filed
669 flight plan. The earliest and latest submission times are defined in ICAO Doc 4444. However, regional
670 agreements may impose stricter requirements necessitating that eAUs file their flight plans earlier than the
671 standard latest submission time. The relevant cut-off times should be published by eASPs in the States’
672 Aeronautical Information Publication (AIP). The flight plan filing cut-off times for the APAC region
673 include:

674 a) Earliest submission timings: in accordance with ICAO Doc 4444 Section 4.4.2.1.1,
675 eFPL shall not be submitted more than 120 hours before the EOBT of a flight. This
676 requirement applies specifically to eFPL and does not extend to PFP.

677 b) Latest submission timings: In accordance with ICAO Doc 4444 Section 11.3.2, basic
678 flight plan data necessary for flow control procedures shall be furnished at least 60
679 minutes in advance of the flight. eFPL shall therefore be submitted at least 60 minutes
680 before EOBT.

681 6.3.3.2 The requirements specified in the *Asia Pacific Regional Framework for Collaborative Air*
682 *Traffic Flow Management* should be followed, i.e. eFPL is to be submitted no less than three hours prior to
683 the EOBT, except where operational or technical constraints necessitate otherwise.

684 6.3.4 **Versioning**

685 6.3.4.1 eASPs should refer to ICAO Doc 9965 Volume II Chapter 3.8 *Versioning & Reference*
686 *Information*. It is the sole responsibility of the eAUs to increase the versioning of the flight plans. eASPs
687 shall refer to the version numbers provided by eAUs and not change the flight plan versions.

688 6.3.4.2 eAUs shall increment the flight plan version by one, for the following scenarios:

689 a) a Flight Plan Update is made to the PFP;

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

692 c) an update is made to the eFPL.

693 6.3.4.3 It should be noted that the version number for the first submission of the eFPL received by
694 an eASP might not be “1”. This might occur when:

695 a) the eASP does not provide Planning Service and the eAU has previously submitted
696 PFP to other eASPs that provide Planning Services; or

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

700 6.3.4.4 If there is a concern of inconsistent version numbers between eAU and eASP, Flight Data
701 Request Service can be used to obtain the eFPL which includes the version number.

702 6.3.5 **Submission Response**

703 6.3.5.1 The general validation requirements in accordance with section 6.2.2.1 also apply to the
704 Submission Response Message.

705 6.3.5.2 **Specific Validation Requirements for Filed Flight Plan**

706 6.3.5.2.1 In addition to the checks listed in paragraph 6.2.2.1, submission timeframe, versioning, and
707 flight association checks should also be conducted for Filed Flight Plans and Flight Plan Updates. eASPs
708 may also implement additional checks based on local requirements to ensure that route/trajectories filed by
709 eAUs contain valid routes, fix names, coordinates, etc. These checks include, but are not limited to:

- 710 a) trajectory syntactic checks; and
- 711 b) semantic checks.

712 6.3.5.2.2 **Table 2** provides a sample template for eASPs to use within the explanation note field for
713 the various types of validation checks that might result in a Submission Response of “REJ”:

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	
<i>Checks</i>	<i>Explanation Note</i>
Submission Timeframe	EOBT is outside allowable submission timeframe
Versioning	A later version <Y> exists in the system
Flight association	Same flight with different GUFID found Different flight with same GUFID found
<i>Route validation (Structure of route, lat/long of point, fix names)</i>	Trajectory Info Error Invalid Route Structure Invalid Fix/waypoint

716 6.3.6 **Filing Status Message**

717 6.3.6.1 **Overview**

718 6.3.6.1.1 Filing Status reflects the operational acceptability of a flight plan based on the eASP's
719 evaluation or re-evaluation against its operational environment, including but not limited to airspace
720 configuration, published restrictions, and other relevant constraints. eASPs provide feedback to eAUs to
721 identify the restrictions and constraints applicable to the flights. The Filing Status serves as a key
722 mechanism for eASPs to communicate flight plan acceptability to eAUs before departure.

723 6.3.6.1.2 eASPs should evaluate eFPLs against restrictions and constraints managed by existing
724 ATM systems to ensure comprehensive evaluation of flight plan acceptability. Restrictions and constraints
725 considered should include but are not limited to:

- 726 a) aerodrome, airspace and route availability;
- 727 b) ATFM measures;

- 728 c) environmental conditions such as SIGMETs, WAFs, TAFs, and volcanic ash areas,
 729 affecting airspace availability or constraints; and
 730 d) aircraft operations requirements (e.g. required navigation performance specifications,
 731 required equipage, etc.)

732 *Note: the above list represents constraints and restrictions that eASPs should consider.*
 733 *However, not all of these will necessarily result in a “Not Acceptable” Filing Status.*

734 6.3.6.2 **Filing Status Values and Expected Actions from the eAUs**

735 6.3.6.2.1 While eASPs retain the option to determine the specific criteria for each Filing Status based
 736 on their operational environment, the interpretation and expected actions from the eAUs for each Filing
 737 Status value shall be established as described in **Table 3**.

738 **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. Note any provided constraints for awareness. 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. 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. <i>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.</i>
PENDING	Flight plan evaluation has not yet been performed. More details under Section 6.3.6.5.1	Await subsequent filing status update. Monitor Expected Evaluation Time if provided.

739 6.3.6.2.2 The Filing Status is intended to indicate the acceptability of a proposed route or trajectory
 740 within airspaces where ATS are provided. It cannot be interpreted as the issuance of ATC clearance.

741 6.3.6.2.3 A “NOT ACCEPTABLE” Filing Status indicates that the flight plan is operationally
742 inconsistent with the ATM configuration and/or with published restrictions and that operator action is
743 required to obtain a clearance. eAUs are expected to submit Flight Plan Updates to address the non-
744 compliance. Note that the Filing Status reflects route/trajectory acceptability only and does not prevent
745 ATC tactical coordination during operations.

746 6.3.6.2.4 An “ACCEPTABLE” Filing Status can include potential constraints to alert eAUs of
747 constraints that may affect the flight plan. For example, if a flight plan is 'Acceptable' but there is an
748 applicable ATFM program for the arrival airport, the arrival eASP should include this constraint in the
749 Filing Status even though its specific impact (e.g. constraint time) is not yet known. When Filing Status is
750 “ACCEPTABLE”, eAUs are not expected to make any changes to their eFPLs.

751 6.3.6.2.5 When a Filing Status is “PENDING” or “NOT ACCEPTABLE”, an explanation shall be
752 included within the Filing Status response to eAU.

753 6.3.6.3 **Feedback Methods for Restrictions/Constraints**

754 6.3.6.3.1 When providing restrictions and/or constraints to eAUs within the Filing Status, eASPs
755 shall make use of one or more of the following methods:

- 756 a) Filing Status Explanation;
- 757 b) General Flight Constraint; and/or
- 758 c) Route/Trajectory (R/T) Point Constraint.

759 6.3.6.3.2 eASPs should retain flexibility in determining their Filing Status feedback methods and
760 content, except in the scenarios described in paragraph 6.3.6.4.1, which require harmonized responses to
761 ensure regional interoperability and consistent handling of situations.

762 6.3.6.3.3 Filing Status Explanation

763 6.3.6.3.3.1 The Filing Status Explanation is a mandatory field when the status is “PENDING” or
764 “NOT ACCEPTABLE”, but is otherwise optional. It should provide information necessary for eAUs to
765 understand why a flight plan is not operationally acceptable or to be alerted to potential constraints that
766 could impact the flight. Where available, the explanation should include references to published restriction
767 identifiers to facilitate the eAU’s understanding and response.

768 6.3.6.3.4 General Flight Constraint

769 6.3.6.3.4.1 General Flight Constraints may be used to indicate constraints that apply to the entire flight
770 rather than specific trajectory points. These types of constraints may include:

- 771 a) applicability period of the constraint;
- 772 b) operational impact on the flight;
- 773 c) reference to published restriction identifiers where available; and
- 774 d) other operational information affecting flight.

775

776

- 777 6.3.6.3.5 Route/Trajectory (R/T) Point Constraints
- 778 6.3.6.3.5.1 Providing an “Agreed” or “Negotiating R/T” within the Filing Status is optional. When
 779 provided, eASPs may include specific constraints at route or trajectory points. These
 780 constraints may specify speed, level, and/or time requirements that the flight is expected to
 781 meet. Such constraints should be accompanied by information for the eAU to understand
 782 their operational impact, including but not limited to:
- 783 a) description of the constraint;
 - 784 b) speed, level, and/or time constraints where relevant;
 - 785 c) reference to published restriction identifiers, where available; and
 - 786 d) other point-specific operational requirements.
- 787 6.3.6.4 **Harmonized Filing Status Responses for Identified ATFM Scenarios**
- 788 6.3.6.4.1 While eASPs maintain flexibility in determining their trajectory evaluation criteria and
 789 feedback methods, certain scenarios require pre-determined Filing Status responses to ensure regional
 790 interoperability and consistent handling of operational conditions. The following ATFM scenarios were
 791 identified to benefit from pre-established Filing Status responses:
- 792 a) Calculated Time Over (CTO) a point or Calculated Landing Time (CLDT) imposed
 793 by eASPs;
 - 794 b) Ground Stop (GSt) imposed by arrival eASPs;
 - 795 c) flight level restrictions imposed by relevant eASPs;
 - 796 d) fix balancing imposed by relevant eASPs; and
 - 797 e) re-routing imposed by relevant eASPs.
- 798 6.3.6.4.2 Harmonized Filing Status Responses
- 799 6.3.6.4.2.1 The regionally agreed-upon Filing Status Responses for these scenarios are detailed in
 800 **Table 10**. Consistent implementation by all eASPs in APAC is necessary to facilitate the processing
 801 requirements of eAUs.
- 802 6.3.6.4.2.2 eASPs are not required to suggest alternative solutions to eAUs. However, if eASPs choose
 803 to offer suggestions to assist eAUs, they may:
- 804 a) add additional suggested details to the end of the regionally agreed-upon explanation
 805 format in the Filing Status Explanation field; and/or
 - 806 b) provide a Negotiating R/T containing the suggested alternative trajectory, including
 807 route, levels, or timing.
- 808 6.3.6.4.2.3 The regionally agreed-upon explanation format shown in **Table 10** should remain the
 809 primary response, with any additional suggested information considered as supplementary content rather
 810 than replacing the required format.
- 811 6.3.6.4.3 Scenario A) Calculated Time Over (CTO) a point or Calculated Landing Time (CLDT)
 812 imposed by eASPs

813 6.3.6.4.3.1 Due to demand capacity imbalance, the eASP may impose a time constraint of CTO or
 814 CLDT to flights.

815 *Note: eASP shall provide feedback only on constraints within airspace where it provides ATS or ATFM*
 816 *service. Where constraints are to be applied outside this airspace, e.g. assignment of Calculated Take-Off*
 817 *Time (CTOT) at the departure aerodrome in an airspace outside the eASP's jurisdiction, special*
 818 *arrangement between ASPs shall be established.*

819 6.3.6.4.3.2 When a CTO or CLDT is imposed on flights, the following responses shall be provided as
 820 presented in **Table 10**:

- 821 a) Filing Status value shall be “NOT ACCEPTABLE”;
- 822 b) an explanation shall be provided, specifying at a minimum the ATFM
 823 constraint/restriction affecting the flight;
- 824 c) a Negotiating R/T shall be included to indicate the constrained point and its associated
 825 time constraint;
- 826 d) when providing constraint details in the Negotiating R/T, eASPs should:
 - 827 i) use ElementStartPoint to identify the location of the constraint;
 - 828 ii) provide the time constraint using Constraint.Time, and any additional level/speed
 829 constraints using Constraint.Level/Constraint.Speed, if applicable;
 - 830 iii) provide the REGCAUSE in the constraint description;
 - 831 iv) provide the REGUL in restriction reference; and
- 832 e) the message format for REGCAUSE and REGUL should be in accordance with the
 833 *Asia/Pacific Region AFTN/AMHS-based Interface Control Document (ICD)* for
 834 ATFM.

835 6.3.6.4.4 Scenario B) Ground Stop (GSt) imposed by arrival eASPs

836 6.3.6.4.4.1 The arrival eASP may need to restrict arrivals for a period when capacity has been severely
 837 reduced.

838 6.3.6.4.4.2 When a GSt is implemented, the eASP initiating the measure the following responses shall
 839 be utilized as detailed in **Table 10**:

- 840 a) Filing Status value shall be NOT ACCEPTABLE;
- 841 b) an explanation shall be provided. The following format should be used: GSt imposed
 842 on flights arriving into <aerodrome> from <YYYY-MM-DDTHH:mm:ssZ> to
 843 <YYYY-MM-DDTHH:mm:ssZ>;
- 844 c) if available, eASP should provide reference to the applicable restrictions within the
 845 explanation note: See NOTAM <XXX> / ADP <XXX> for details;
- 846 d) if available, SWIM information services should be used to provide more details of
 847 applicable restrictions; and
- 848 e) a Negotiating R/T is not required for GSt restrictions.

849

- 850 6.3.6.4.5 Scenario C) Flight level restrictions imposed by relevant eASPs
- 851 6.3.6.4.5.1 Restrictions resulting in unavailability of certain flight levels may be imposed.
- 852 6.3.6.4.5.2 When flight level restrictions are imposed, the following responses shall be utilized as
853 detailed in **Table 10**:
- 854 a) Filing Status value shall be “NOT ACCEPTABLE”;
- 855 b) an explanation shall be provided. The following format should be used: <FL or altitude,
856 FL or altitude> on route <XXXX> not available;
- 857 c) if available, eASP should provide reference to the applicable restrictions within the
858 explanation note: See NOTAM <XXX> for details;
- 859 d) if available, SWIM information services should be used to provide more details of
860 applicable restrictions; and
- 861 e) a Negotiating R/T is not required for flow restrictions.
- 862 6.3.6.4.6 Scenario D) Fix balancing imposed by relevant eASPs
- 863 6.3.6.4.6.1 Fix balancing is a tactical ATFM measure aimed at distributing demand and avoiding
864 delays, whereby the aircraft is assigned a different arrival or departure fix. This can be used, for example,
865 during conditions where a STAR or a SID is unusable.
- 866 6.3.6.4.6.2 When fix balancing measures are imposed on flights, the following responses shall be
867 utilized as detailed in **Table 10**:
- 868 a) Filing Status value shall be NOT ACCEPTABLE;
- 869 b) an explanation shall be provided. The following format should be used: Trajectory
870 Point <XXXXXX> not available;
- 871 c) if available, eASP should provide reference to the applicable restrictions within the
872 explanation note: See NOTAM <XXX> for details;
- 873 d) if available, SWIM information services should be used to provide more details of
874 applicable restrictions; and
- 875 e) a Negotiating R/T is not required for fix-balancing.
- 876 6.3.6.4.7 Scenario E) Re-routing imposed by relevant eASPs
- 877 6.3.6.4.7.1 eASPs may require flights to use alternative routing if specific routes/airspace are
878 unavailable or constrained.
- 879 6.3.6.4.7.2 When re-routing measures are imposed on flights, the following responses shall be utilized
880 as detailed in **Table 10**:
- 881 a) Filing Status value shall be “NOT ACCEPTABLE”;
- 882 b) an explanation shall be provided in the format: Route <XXXXXX> not available;
- 883 c) if available, eASP should provide reference to the applicable restrictions within the
884 explanation note: See NOTAM <XXX> for details;

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

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

888 6.3.6.4.8 Expected eAU Action

889 6.3.6.4.8.1 Upon receiving a “NOT ACCEPTABLE” Filing Status, eAUs shall submit a Flight Plan
890 Update (refer to Section 6.3.7 for more details on Flight Plan Updates) to comply with assigned
891 restrictions/constraints. In a mixed-mode environment, the corresponding CHG/DLA message should be
892 submitted when applicable.

893 6.3.6.4.9 eASP Compliance Checking and Filing Status Response

894 6.3.6.4.9.1 eASPs shall evaluate the Flight Plan Update to check for compliance against the
895 restrictions/constraints where applicable. Paragraphs 6.3.6.4.9.2 to 6.3.6.4.9.6 provide an example on how
896 this evaluation can be performed for the following scenarios.

897 6.3.6.4.9.2 For Scenario A, eASPs should check the Estimated Time Over (ETO) of the constrained
898 point submitted within the Flight Plan Update for compliance to the CTO:

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

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

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

905 6.3.6.4.9.3 For Scenario B, the arrival eASP should check that the updated estimated landing time of
906 the Flight Plan Update is not within the constrained period.

907 6.3.6.4.9.4 For Scenario C, the eASPs should check the Flight Plan Update to ensure that the
908 unavailable Flight Levels of the specific trajectory points are not being used.

909 6.3.6.4.9.5 For Scenario D, the eASPs should check the Flight Plan Update to ensure that the
910 unavailable trajectory points are not being used.

911 6.3.6.4.9.6 For Scenario E, the eASPs should check the Flight Plan Update to ensure that the
912 unavailable routes are not being used.

913 6.3.6.4.9.7 When ATFM restrictions are cancelled and the last Filing Status value was “NOT
914 ACCEPTABLE”, the eASP shall provide an updated Filing Status with the value of “ACCEPTABLE” and
915 an explanation that the ATFM restriction is no longer applicable or has been cancelled.

916 6.3.6.4.9.8 When ATFM restrictions are cancelled and the last Filing Status value was
917 “ACCEPTABLE”, the eASP should provide an optional updated Filing Status with the value of
918 “ACCEPTABLE” and an explanation that the ATFM restriction is no longer applicable or has been
919 cancelled.

920 *Note: an “ACCEPTABLE” Filing Status may include information about applicable ATFM restrictions that*
921 *do not constrain the flight (e.g. MIT/MINIT). This additional information is provided for situational*

922 awareness. The eAUs may choose to modify their flight plan to optimize operations or may proceed without
923 changes. The flight remains acceptable as filed, but operators can use this information to make informed
924 decisions about potential route adjustments or other operational considerations.

925 6.3.6.4.9.9 When ATFM restrictions are cancelled and the eAU had previously modified their Desired
926 Route/Trajectory to comply with the restriction, the eAU may use available SWIM services to identify
927 when restrictions are lifted and may submit a Flight Plan Update to adjust their Desired Route/Trajectory.

928 6.3.6.5 Usage of “PENDING” Status

929 6.3.6.5.1 It is recommended that eASPs evaluate flight plans as soon as they are available. However,
930 in situations where immediate evaluation is not possible, a “PENDING” Filing Status may be used when
931 the eASP's system requires more time than the time-out period (see paragraph 6.8.1.1) to provide a
932 definitive Filing Status. This could occur in scenarios such as:

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

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

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

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

943 6.3.6.5.2 When providing a “PENDING” status, the eASP shall include an explanation. An Expected
944 Evaluation Time should be included to indicate when the flight plan is likely to be fully processed.

945 6.3.7 Flight Plan Update Message

946 6.3.7.1 Flight Plan Updates are submitted by eAUs to inform on changes to the eFPL. These
947 updates are subjected to similar validation and evaluation checks as the eFPLs.

948 6.3.7.2 When route changes result in new eASPs becoming concerned with the flight that did not
949 previously receive the eFPL, the eAU shall submit the current version of the complete set of flight plan data
950 in eFPL to those new eASPs, rather than a Flight Plan Update.

951 6.3.7.3 Flight Plan Update Cut-off Times

952 6.3.7.3.1 The submission timeframe for Flight Plan Update should provide sufficient flexibility to
953 eAUs to cater to operational issues and any additional considerations that may arise after the filing of the
954 eFPL. It is recommended that Flight Plan Updates are permitted from the time that the eAU receives the
955 Filing Status of a submitted eFPL until route clearance delivery or the flight's AOBT, whichever occurs
956 first.

957 6.3.7.3.2 eASPs shall ensure that any Flight Plan Update received after route clearance delivery
958 results in appropriate clearance revision by ATC to maintain consistency between the flight plan and
959 delivered clearance.

960 6.3.7.4 **Flight Plan Update Threshold**

961 6.3.7.4.1 ICAO Doc 9965 states that eASPs may publish threshold modification values that trigger
 962 the transmission of an update (see ICAO Doc 9965). With FF-ICE automating most of these processes,
 963 eAUs should be able to provide eASPs with the most recent data as possible, to increase operational
 964 predictability for all stakeholders.

965 6.3.7.4.2 It is recommended that eAUs submit Flight Plan Update each time there is a change in
 966 eFPL data, subject to their system capabilities. At a minimum, eAUs shall submit Flight Plan Update due
 967 to changes equivalent to an FPL2012 data update (ICAO Doc 4444 Section 11.4.2.2.4 states that a CHG
 968 message shall be transmitted when any change is to be made to basic flight plan data contained in
 969 previously-transmitted FPL or RPL data).

970 6.3.7.4.3 The same recommendation applies for updates to EOBT. eAUs should submit Flight Plan
 971 Update each time there is a change in EOBT, subject to their system capabilities. At a minimum, eAUs
 972 shall submit Flight Plan Update if EOBT is delayed by more than 30 minutes (ICAO Doc 4444 Section
 973 11.4.2.2.3.1 states that a DLA message shall be transmitted if the flight is delayed by more than 30 minutes
 974 after the estimated off-block time contained in the basic flight plan data).

975 6.3.7.4.4 Providing the most recent data to eASPs ensures that all stakeholders have the most
 976 accurate and updated information of the flight plan available to perform their ATM functions, as even minor
 977 changes to route can affect trajectory predictions.

978 6.3.7.4.5 While the varying update thresholds for FPL2012 and eFPL will result in varying
 979 information received by eASPs versus aASPs, it should be noted that in a mixed-mode environment eASPs
 980 have the advantage of receiving the most updated information that eAUs are most likely to utilize. For this
 981 reason, the varied information received by eASPs versus aASPs should not present cause to delay sending
 982 more precise Flight Plan Updates to eASPs only.

983 6.3.8 **Flight Cancellation**984 6.3.8.1 **Specific Validation Requirements for Flight Cancellation**

985 6.3.8.1.1 In addition to the general validation checks indicated in paragraph 6.2.2.1, eASPs should
 986 perform a flight association check, verify that the flight has not yet departed, and authenticate that the
 987 message originator has the authority to cancel the flight.

988 6.3.8.1.2 **Table 4** provides a sample template for eASPs to use within the explanation note field for
 989 the various types of validation checks that might result in a Submission Response of “REJ”.

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

Additional Checks for Flight Cancellation Messages	
<i>Checks</i>	<i>Explanation Note</i>
Flight association	Same flight with different GUFID found Different flight with same GUFID found
Authenticated user	No information available
Flight Plan State	Flight has already departed

991 *Note: If the source of the request has no authorized access to the identified flight, a*
 992 *Submission Response of “REJ” should be returned, with an explanation that the recipient*

993 *does not have the requested information. Note that a response indicating non-authorization*
 994 *verifies for the sender that the flight exists, which is information in itself. Therefore, a*
 995 *generic message indicating that there is no information for the flight is preferable.*

996 6.3.8.1.3 In accordance with ICAO Doc 9965, the eASP shall provide an “ACK” response when
 997 cancellation is successful, which shall terminate operational use of GUFIs, as well as any further processing
 998 of all instances of the flight plan (preliminary and filed). A “REJ” response shall be given with an
 999 explanation, when cancellation is unsuccessful.

1000 6.3.8.1.4 A cancelled flight cannot be reinstated. If the operator later decides to operate the flight, a
 1001 new flight plan with a new GUFIs shall be submitted.

1002 6.3.9 **Filing Requirements for Cross-ANSP and Local Agreements**

1003 6.3.9.1 Individual eASPs may consider establishing cross-ANSP agreements and local agreements
 1004 with eAUs to facilitate seamless filing processes and the coordination of flight plan submissions across
 1005 different airspace jurisdictions.

1006 6.3.9.2 eASPs may likewise establish regional agreements with other eASPs for regional flight
 1007 plan distribution and/or coordinated feedback on airspace restrictions.

1008 6.3.9.3 eASPs may also establish local agreements with eAUs to facilitate FF-ICE implementation
 1009 through translation services, Filing Status handling procedures, and tactical coordination arrangements.

1010 6.3.9.4 However, the operational challenges that could arise from the potential complexity arising
 1011 of a multitude of agreements, especially in the context of mixed mode operations, should also be a
 1012 consideration.

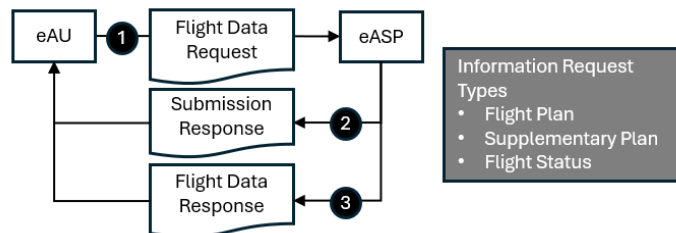
1013 6.3.9.5 It is recommended that APAC States adhere to the procedures in this Plan. Any local
 1014 agreements or cross-ANSP agreements should not contradict the guidance provided in ICAO Doc 9965 or
 1015 this Plan, which should supersede any supplementary or tangential agreements.

1016 6.4 **Flight Data Request Service**

1017 6.4.1 **Introduction**

1018 6.4.1.1 The Flight Data Request Service is a mandatory service that eASPs will provide in the FF-
 1019 ICE environment to allow authorized parties to obtain information about a flight, including flight plans,
 1020 supplementary data, and flight status.

1021 6.4.1.2 **Figure 2** depicts the workflow and associated FF-ICE message exchanges between FF-
 1022 ICE participants during flight data queries.



1023 **Figure 2: Flight Data Request Service Overview**
 1024

1025 6.4.1.3 There are three FF-ICE messages available under the flight data request service:

- 1026 a) Flight Data Request Message;
- 1027 b) Submission Response Message; and
- 1028 c) Flight Data Response Message.

1029 6.4.2 **Flight Data Request Message**

1030 6.4.2.1 Information available for request by the eASPs should include the minimum set of data
1031 types as listed in ICAO Doc 9965 (flight plans, supplementary data, and flight status) as well as any
1032 additional information which the eASPs may choose to make available. eAUs may also enable eASPs to
1033 request relevant information concerning a flight. Request codes should be specified in the Requested Flight
1034 Data Item field of the Flight Data Request Message.

1035 6.4.2.2 **Access Control**

1036 6.4.2.2.1 In addition to the general requirements specified in Section 6.1.9, eASPs and eAUs should
1037 implement robust access control mechanisms to ensure that only authorized parties can receive the
1038 requested data, safeguarding the confidentiality and integrity of sensitive information. The following
1039 safeguards are recommended:

- 1040 a) eAUs are limited to querying their own flights;
- 1041 b) relevant eASPs should have full access to the eFPL and associated data;
- 1042 c) adjacent eASPs (providers of airspaces not planned to be directly traversed by the
1043 flight but the boundaries of which are close to the flight trajectory) may be granted
1044 limited access to relevant eFPL for planning purposes; and
- 1045 d) airport operators should have access to departures and arrivals pertinent to their
1046 operations.

1047 6.4.2.3 **Query Limits**

1048 6.4.2.3.1 The Flight Data Request Service is designed for querying information about individual
1049 flights, not for bulk data retrieval, in accordance with ICAO Doc 9965. eASPs and eAUs should publish
1050 request rate limit (i.e. the number of requests that can be made to the Flight Data Request Service within a
1051 specific period). Flight Data Requests that exceed the published request rate limit shall receive a Submission
1052 Response with status REJ and an appropriate explanation in **Table 5**, provided in section 6.4.2.6.2,
1053 indicating the rate limit violation.

1054 6.4.2.4 **Applicability Period**

1055 6.4.2.4.1 A flight data request pertaining to a specified eFPL is only valid from the time the eFPL is
1056 submitted to the time the flight is completed. A flight is completed when it has landed at the destination,
1057 diversion, or other alternate aerodrome.

1058 6.4.2.4.2 An eASP may also support the submission of an information request for PFP data. This
1059 request will be valid from the time the PFP is submitted until the submission of the eFPL.

1060

1061

1062 6.4.2.5 **Submission Response Message**

1063 6.4.2.5.1 The general validation requirements in accordance with section 6.2.2.1 apply to the
1064 Submission Response Message criteria.

1065 6.4.2.6 **Specific Validation Requirements for Flight Data Request**

1066 6.4.2.6.1 In addition to the checks listed in paragraph 6.2.2.1, eASPs should perform flight
1067 association checks and validate the legitimacy of the request, ensuring that only authorized parties can
1068 access flight data.

1069 6.4.2.6.2 **Table 5** provides a sample template for eASPs to use within the explanation note field for
1070 the various types of validation checks that might result in a Submission Response of “REJ”.

1071 **Table 5: FF-ICE Submission Response feedback for Flight Data Request Messages**

Additional Checks for Flight Data Request Messages	
<i>Checks</i>	<i>Explanation Note</i>
Flight association	Same flight with different GUFIs found Different flight with same GUFIs found
Multiple flights matched	Multiple flights with the requested information: a) Aircraft ID1, dep, dest, EOBT, GUFIs b) Aircraft ID1, dep, dest, EOBT, GUFIs
Requested flight not found	Flight does not exist
No authorized access to the identified flight	No information available
Requested flight data items not supported by the eASP	Request not supported
Query Limit	Query Limit Exceeded

1072 6.4.3 **Flight Data Response Message**

1073 6.4.3.1 It is recommended that the following R/T be included within the Flight Data Response for
1074 the various requests:

- 1075 a) Flight Plan Request: eASPs should include the Desired R/T representing the last filed
1076 R/T by eAU. This is based on the understanding that the requestor wants to see the
1077 route information that the eAU last submitted; and
- 1078 b) Flight Status Request: eASPs should include the latest R/T (either Agreed R/T or
1079 Negotiating R/T) as per the latest Filing Status of the flight, if applicable. This is based
1080 on the understanding that the requestor wants to see the latest response (i.e. Filing
1081 Status) provided by the eASPs.

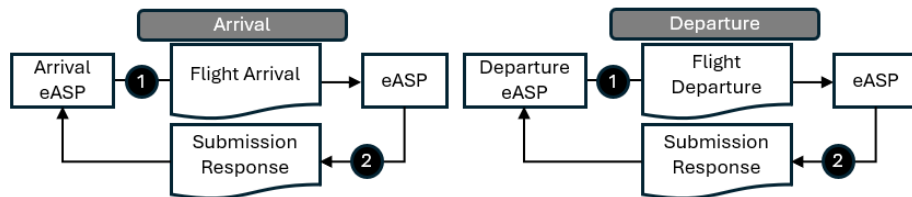
1082 6.5 **Notification Service**

1083 6.5.1 **Introduction**

1084 6.5.1.1 The Notification Service enables eASPs to notify relevant eASPs, as identified through the
1085 flight plan, of significant flight events such as departure and arrival. While Notification Service is not a

1086 service mandated by ICAO Doc 4444 to be FF-ICE capable, it will likely be necessary to support the sunset
 1087 of FPL2012 and the associated ATS messages. All ASPs in the APAC region shall implement the
 1088 Notification Service according to the regional implementation timeline.

1089 6.5.1.2 The Notification Service currently encompasses the full process of flight event notification
 1090 through the sending of flight departure and arrival messages. **Figure 3** depicts the workflow and associated
 1091 FF-ICE message exchanges, showing the interaction between FF-ICE participants throughout the flight
 1092 notification process.



1093
 1094 **Figure 3: Notification Service Overview**

1095 6.5.1.3 There are three FF-ICE messages available under the Notification Service:

- 1096 a) Flight Departure Message;
- 1097 b) Flight Arrival Message; and
- 1098 c) Submission Response Message.

1099 **6.5.2 Submission Response Message**

1100 6.5.2.1 In addition to the checks listed in paragraph 6.2.2.1, eASPs should perform flight
 1101 association checks and timestamp validation checks to ensure that the arrival/departure time is not in the
 1102 future and that the arrival time does not precede departure time in the case of the Arrival message.
 1103 Additionally, the eASP should check to ensure that the originators of the Flight Departure/Flight Arrival
 1104 Message are from the appropriate eASPs.

1105 6.5.2.2 **Table 6** provides a sample template for eASPs to use within the explanation note for the
 1106 various types of validation checks that might result in a Submission Response of “REJ”.

1107 **Table 6: FF-ICE Submission Response feedback for Flight Departure and Flight**
 1108 **Arrival Messages**

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

1109 6.5.2.3 Upon receipt of a Submission Response indicating “REJ” status from Notification Service,
 1110 the sender shall review the Submission Status Explanation to determine the cause of rejection. The sender

1111 shall make the necessary corrections to address the identified issues and re-submit the notification message,
 1112 if applicable.

1113 6.6 **Planning Service**

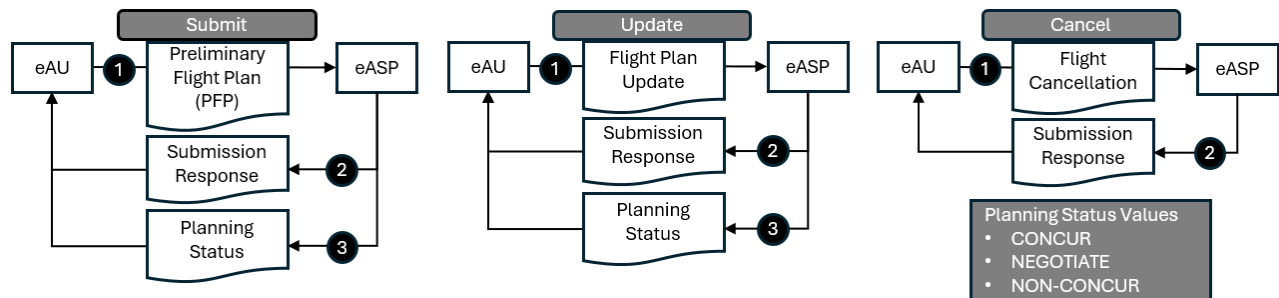
1114 6.6.1 **Introduction**

1115 6.6.1.1 The Planning Service is an optional service that enables collaborative decision-making
 1116 between eAUs and eASPs by sharing informal flight plans well ahead of time via Preliminary Flight Plans,
 1117 allowing improved demand prediction and optimal trajectory planning before the formal filing of flight
 1118 plans. eASPs providing Planning Services shall publish the availability of the service in their AIP.

1119 6.6.1.2 The Planning Service encompasses three primary processes:

- 1120 a) PFP submission;
- 1121 b) PFP updating; and
- 1122 c) PFP cancellation.

1123 6.6.1.3 **Figure 4** depicts the workflow and associated FF-ICE message exchanges for each process,
 1124 showing the interaction between eAUs and eASPs throughout the PFP lifecycle.



1125

1126 **Figure 4: Planning Service Process Overview**

1127 6.6.1.4 There are five FF-ICE messages available under the Planning Service:

- 1128 a) PFP Message;
- 1129 b) Flight Plan Update Message;
- 1130 c) Flight Cancellation Message;
- 1131 d) Submission Response Message; and
- 1132 e) Planning Status Message.

1133 6.6.1.5 The processes under Planning Service are similar to those related to Filing Service, except
 1134 that these processes take place in a timeframe designated before the submission of eFPL. This timeframe
 1135 enables negotiations to take place with more advance notice.

1136 6.6.2 **Preliminary Flight Plan Message**

1137 6.6.2.1 PFPs are submitted by the eAUs as the first step under the Planning Service. Unlike eFPL
 1138 which is submitted to all relevant eASPs, eAUs can choose to submit PFPs to select eASPs that they have

1139 designated for cooperative planning efforts. Typically, these eASPs have airspaces that are complex or
 1140 regularly constrained. The PFPs are subjected to validation checks resulting in a Submission Response,
 1141 and evaluation checks resulting in a Planning Status.

1142 6.6.3 **PFP Cut-off Times**

1143 6.6.3.1 The PFP cut-off times refer to the earliest and latest submission times for the PFP. The
 1144 earliest submission time is dependent on eASPs’ capability and the type of advance planning that could be
 1145 conducted between the eASPs and eAUs. Meanwhile, the latest submission time should be determined by
 1146 the time that the eFPL is due. The PFP expires when the eFPL is due. PFP expiry refers to the point at
 1147 which a PFP can no longer be processed or updated by eASP. The due time of eFPL is determined by each
 1148 eASP and shall comply with the latest submission timing as defined in ICAO Doc 4444 and any regional
 1149 agreements. This will also be the time after which the PFP will not be accepted. The cut-off times should
 1150 be published by eASPs in the AIPs.

1151 6.6.3.2 After an eFPL has been submitted, a PFP can no longer be submitted for the same flight.

1152 6.6.4 **Versioning**

1153 6.6.4.1 As with eFPL, it is the responsibility of the eAUs to increase the versioning of the PFPs.
 1154 Every new version or Flight Plan Update made to the PFP will increment the version by one.

1155 6.6.5 **Submission Response Message**

1156 6.6.5.1 The general validation requirements as per paragraph 6.2.2.1 apply to the Submission
 1157 Response Message criteria.

1158 6.6.6 **Specific Validation Requirements for PFPs**

1159 6.6.6.1 In addition to the checks listed in paragraph 6.2.2.1, submission timeframe, existence of
 1160 eFPL, versioning, and flight association check should be conducted for PFPs and Flight Plan Updates.
 1161 eASPs may also implement additional checks based on local requirements, to ensure that route/trajectories
 1162 filed by eAUs contain valid routes, fix names, and coordinates, including but not limited to:

- 1163 a) trajectory syntactic checks; and
- 1164 b) semantic checks.

1165 6.6.6.2 **Table 7** provides a sample template for eASPs to use within the explanation note field for
 1166 the various types of validation checks that might result in a Submission Response of “REJ”.

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

Additional Checks for PFPs and Flight Plan Updates	
<i>Checks</i>	<i>Explanation Note</i>
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 GUF1 found

	Different flight with same GUFID found
Route validation (Structure of route, lat/long of points, fix names)	Trajectory Info Error Invalid Route Structure Invalid Fix/waypoint

1169 6.6.7 **Planning Status Message**

1170 6.6.7.1 **Overview**

1171 6.6.7.1.1 The Planning Status reflects the likelihood that the flight plan will be operationally
 1172 acceptable if submitted as an eFPL. The evaluations conducted for the PFPs are therefore similar to those
 1173 conducted for the eFPLs. eASPs provide feedback within the Planning Status to eAUs to identify the
 1174 restrictions and constraints applicable to the flights.

1175 6.6.7.1.2 In line with the evaluations conducted for eFPLs, eASPs should evaluate PFPs against
 1176 restrictions managed by existing ATM systems, to ensure comprehensive evaluation of flight plan
 1177 acceptability. Refer to section 6.3.6.1.2 for the recommended list.

1178 6.6.7.2 **Planning Status Values**

1179 6.6.7.2.1 eASPs retain flexibility in determining the specific criteria for each planning status based
 1180 on their operational environment. However, the criteria for a “NON-CONCUR” Planning Status should be
 1181 similar to the criteria for a “NOT ACCEPTABLE” Filing Status.

1182 6.6.7.2.2 Similarly, the criteria for a “CONCUR” Planning Status should be similar to the criteria for
 1183 an “ACCEPTABLE” Filing Status.

1184 6.6.7.2.3 A third Planning Status of “NEGOTIATE” is also available. This Planning Status refers to
 1185 any situation where the flight plan is likely to be accepted if filed, but the R/T details differ.

1186 6.6.7.3 **Feedback Methods for Restrictions/Constraints**

1187 6.6.7.3.1 When providing restrictions / constraints to eAUs within the Planning Status, eASPs should
 1188 make use of methods similar to those detailed under the Filing Status, as outlined in Section 6.3.6.3.1.

1189 6.6.7.3.2 eASPs should retain flexibility in determining their Planning Status feedback methods and
 1190 content, except in the scenarios described in Section 6.3.6.4.1 which require pre-established responses to
 1191 promote regional interoperability and consistent handling.

1192 6.6.7.3.3 For the five Scenarios (as described in Section 6.3.6.4.1), the Planning Status should
 1193 therefore be “NON-CONCUR” with a Negotiating R/T provided where applicable, as specified in the
 1194 established requirements.

1195 6.6.7.3.4 The regionally agreed-upon Planning Status response format and explanation templates for
 1196 the respective scenarios are detailed in **Appendix C Table 10**. The explanation formats listed within the
 1197 table shall be used together with the “NON-CONCUR” Planning Status value.

1198 6.6.8 **Flight Plan Update Message**

1199 6.6.8.1 Flight Plan Updates are submitted by eAUs to provide information regarding changes to
 1200 the PFPs. These updates are subjected to similar validation and evaluation checks as the PFPs.

1201 6.6.9 **Flight Plan Update cut-off times**

1202 6.6.9.1 The submission of Flight Plan Update for PFP should be allowed from the time that the
1203 eAU submits a PFP to the time that the eFPL is due.

1204 6.6.10 **Flight Plan Update Threshold**

1205 6.6.10.1 Unlike the flight plan filing process, which operates in a mixed-mode environment, the
1206 Planning Service impacts only FF-ICE-capable stakeholders. For this reason, eAUs are advised to submit
1207 Flight Plan Update each time there is a change in PFP data. There is no legacy message equivalent to the
1208 PFP, meaning that the PFP update may be as frequent as allowed within the system’s capabilities, without
1209 impact to non-FF-ICE-capable stakeholders.

1210 6.6.11 **Flight Cancellation**

1211 6.6.11.1 **Specific Validation Requirements for Flight Cancellation**

1212 6.6.11.1.1 In addition to the general validation checks detailed in paragraph 6.2.2.1, eASPs should
1213 perform flight association checks and authenticate that the message originator has the authority to cancel
1214 the flight.

1215 6.6.11.1.1.1 **Table 8** provides a sample template for eASPs to use within the explanation note field for
1216 the various types of validation checks that might result in a Submission Response of “REJ”.

1217 **Table 8: FF-ICE Submission Response feedback for Flight Cancellation**

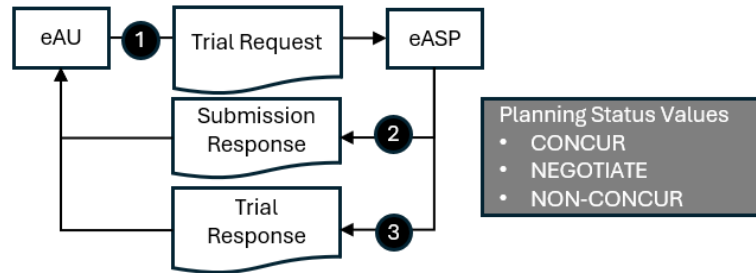
Additional Checks for Flight Cancellation Messages	
<i>Checks</i>	<i>Explanation Note</i>
Flight association	Same flight with different GUFID found Different flight with same GUFID found
Authenticated User	No information available

1218 6.7 **Trial Service**

1219 6.7.1 **Introduction**

1220 6.7.1.1 The Trial Service is an optional service that allows operators to evaluate "what-if"
1221 scenarios for both preliminary and filed flight plans, without affecting the actual flight plan data, enabling
1222 better flight planning and constraint resolution.

1223 6.7.1.2 The Trial Service encompasses the process of evaluating alternative flight scenarios
1224 without affecting existing flight plans. **Figure 5** depicts the workflow and associated FF-ICE message
1225 exchanges, showing the interaction between eAUs and eASPs throughout the trial request and evaluation
1226 process.



1227
1228

Figure 5: Trial Service Overview

1229 6.7.1.3 There are three FF-ICE messages available under the Trial Service:

- 1230 a) Trial Request Message;
1231 b) Submission Response Message; and
1232 c) Trial Response Message.

1233 6.7.2 **Trial Request Message**

1234 6.7.2.1 Trial Requests are submitted by the eAUs as the first step under the Trial Service. As with
1235 the PFPs, eAUs can choose to submit Trial Requests to selected eASPs with whom they wish to conduct
1236 the trials. Multiple Trial Requests can be submitted to the same eASP and these requests can be submitted
1237 even without the presence of PFPs/eFPLs. Trial Requests are subjected to validation checks resulting in a
1238 Submission Response and evaluation checks resulting in a Planning Status. Trial Requests shall be treated
1239 by the eASP as a separate, standalone transaction which has no impact on existing data.

1240 6.7.2.2 **Limits on Trial Request Frequency**

1241 6.7.2.2.1 eASPs may set limits on the maximum frequency of requests allowable within a specified
1242 period for each eAU to prevent system overload and ensure service availability for all users.
1243 These limitations should be published in the eASP's AIP.

1244 6.7.2.3 **Submission Response Message**

1245 6.7.2.3.1 The general validation requirements as per paragraph 6.2.2.1 apply to the Submission
1246 Response Message criteria.

1247 6.7.2.4 **Specific Validation Requirements for Trial Requests**

1248 6.7.2.4.1 In addition to the checks listed in paragraph 6.2.2.1, submission timeframe and request
1249 frequency checks should be conducted for Trial Requests. For submission timeframes,
1250 Trial Requests can be allowed up to route clearance delivery, allowing sufficient time to
1251 submit a Flight Plan Update arising from a positive Trial Response. This option is only
1252 available when Trial Requests are for a flight that is already provided as a PFP or eFPL.
1253 eASPs may also implement additional checks based on local requirements, to ensure that
1254 R/Ts filed by eAUs contain valid routes, fix names, and coordinates, including but not
1255 limited to:

- 1256 a) trajectory syntactic checks; and

1257 b) semantic checks.

1258 6.7.2.4.2 **Table 9** provides a sample template for eASPs to use within the explanation note field for
1259 the various types of validation checks that might result in a Submission Response of “REJ”.

1260 **Table 9: FF-ICE Submission Response feedback for Trial Requests**

Additional Checks for Trial Requests	
<i>Checks</i>	<i>Explanation Note</i>
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 Invalid Route Structure Invalid Fix/waypoint

1261 6.7.3 **Trial Response Message**

1262 6.7.3.1 **Planning Status Values**

1263 6.7.3.1.1 The Planning Status within the Trial Response Message reflects the likelihood that the
1264 flight plan will be operationally acceptable if submitted as a PFP or eFPL. The evaluations conducted for
1265 the Trial Requests are similar to those that are conducted for the PFPs.

1266 6.7.3.1.2 However, as eAUs are allowed to submit multiple Trial Requests, it may not be practical
1267 for eASPs to consider all Trial Requests as actual traffic demand. It is therefore not expected for eASPs to
1268 provide flight specific constraints. For example, if a trial flight plan is expected to operate during the
1269 duration of an ATFM program, eASPs are expected to provide feedback to the eAUs that the flight will be
1270 caught in the ATFM program. A flight specific constraint need not be provided to the eAUs.

1271 6.7.3.1.3 eASPs should publish the scope of evaluation performed for Trial Requests, in the AIP.

1272 6.7.3.2 **Feedback Methods for Restrictions/Constraints**

1273 6.7.3.2.1 When providing restrictions/constraints to eAUs within the Trial Response, eASPs should
1274 use methods similar to those used for the Planning Service. eASPs should similarly retain flexibility in
1275 determining their Trial Response feedback methods and content.

1276 6.7.3.2.2 For the five Scenarios (as described in Section 6.3.6.4.1) which require regionally agreed-
1277 upon responses to ensure regional interoperability and consistent handling, the Trial Response shall contain
1278 a Planning Status of “NON-CONCUR”. In addition, no flight specific constraints or R/Ts will be expected
1279 in the response.

1280 6.7.3.2.3 The explanation within **Appendix C Table 10** can be used for relevant scenarios.

1281 *Note: eASPs should not include any flight-specific constraints or resource allocations, as Trial Requests*
1282 *are “what-if” scenarios that do not represent actual flight operations. The response should indicate general*
1283 *restriction applicability without reserving operational resources or assigning specific constraint values.*

1284 6.8 **Message Delivery Assurance**

1285 6.8.1 **Time-out for submitted messages**

1286 6.8.1.1 Time-outs are predefined waiting periods during which a system expects to receive a
1287 response from another system or user. If no response arrives within this window, the system marks the
1288 request as failed or expired. These time-out periods are deliberately set longer than the typical response
1289 time to account for various delays, such as system latency and network delays.

1290 6.8.1.2 States should publish business-level time-out periods in their AIPs to provide operators
1291 with expected response times for FF-ICE services. These time-outs represent commitments for completing
1292 processes such as flight plan evaluation and trajectory assessment.

1293 6.8.1.3 The time-out periods specified in the following sections are recommended business-level
1294 time-outs that eASPs should implement to ensure consistent service delivery across the region.

1295 6.8.2 **Submission Response**

1296 6.8.2.1 It is recommended that the timeout for the Submission Response message be set at one
1297 minute. If Submission Response is not received after one minute, the message originator should resubmit
1298 the original message (e.g. eFPL / Flight Plan Update / Flight Cancellation / PFP / Flight Departure / Flight
1299 Arrival / Flight Data Request etc).

1300 6.8.3 **Filing and Planning Status**

1301 6.8.3.1 For Filing Service, it is recommended that the timeout for Filing Status Message be set at
1302 one minute from the time the eAU receives a Submission Response of “ACK”. If the first Filing Status is
1303 not received one minute after receiving the Submission Response of “ACK”, eAUs may contact the eASPs.
1304 Filing Status Message is not expected if a Submission Response of “REJ” or “MAN” was received.

1305 6.8.3.2 For Planning Service, if a re-evaluation process is provided, it is recommended that the
1306 timeout for Planning Status Message be set at one minute from the time the eAU receives a Submission
1307 Response of “ACK”. If the first Planning Status Message is not received one minute after receiving the
1308 Submission Response of “ACK”, eAUs may contact the eASPs. Planning Status Message is not expected
1309 if a Submission Response of “REJ” or “MAN” was received.

1310 6.8.4 **Trial Response and Flight Data Response**

1311 6.8.4.1 It is recommended that the timeout for Trial Response Message and Flight Data Response
1312 Message be set at one minute from the time the eAU receives a Submission Response of “ACK”. If the
1313 Trial Response or Flight Data Response is not received one minute after receiving the Submission Response
1314 of “ACK”, eAUs are expected to contact the eASPs. Trial Response Message or Flight Data Response
1315 Message are not expected if a Submission Response of “REJ” or “MAN” was received.

1316 6.9 **Publication Service**

1317 6.9.1 The Publication Service is an optional FF-ICE/R1 service used to provide flight
1318 information to authorized stakeholders. It is an event-based service that disseminates information whenever
1319 defined criteria are met.

1320 6.9.2 Subscribers to this service may include a wide range of stakeholders from AUs to customs
1321 and immigration authorities, who may use the service to enhance situational awareness and adjust their
1322 operations based on the updated flight information received.

1323 6.9.3 An eASP providing a Publication Service should ensure that the service is discoverable by
1324 potential subscribers, through the AIP or a SWIM service registry, for example. The eASP shall also ensure
1325 that appropriate access control is in place so that the subscribers can retrieve only the flight information
1326 relevant to their operations.

1327 6.9.4 Given the nature of the Publication Service, it is recommended that its implementation uses
1328 a Publish/Subscribe message exchange pattern, with a push mechanism applied to improve service
1329 efficiency.

1330 6.9.5 Currently, no specific FF-ICE message is defined for Publication Service. However, it is
1331 recommended that FIXM be used wherever possible, to exchange flight information through this service.

1332 6.10 **Re-evaluation Process**

1333 6.10.1 Re-evaluation is an optional process that an eASP may perform to determine whether a
1334 flight plan still complies with published restrictions or ATM constraints that may have been applied or
1335 modified since its last evaluation. Re-evaluation is provided as part of the Filing Service and Planning
1336 Service when implemented by an eASP. If implemented, reference should be made to ICAO Doc 9965.

1337 6.10.2 The re-evaluation process is triggered by predefined factors, including:

1338 a) Event trigger: an event affecting ATM configuration such as:

1339 i) airspace or airport conditions;

1340 ii) routing availability;

1341 iii) ATC constraints;

1342 iv) demand-capacity imbalance situations;

1343 v) meteorological constraints; and

1344 b) Time trigger: a predefined interval that initiates the re-evaluation process, e.g. every
1345 30 minutes.

1346 *Note: the specific interval is to be determined by each eASP.*

1347 6.10.3 The re-evaluation process may continue until the aircraft has off-block. This may vary
1348 depending on ATM conditions. Cut-off times for specific ATM conditions are subject to national and/or
1349 regional agreement.

1350 6.10.4 If, following a re-evaluation, the Filing Status (or Planning Status) changes, the eASP shall
1351 provide the eAU with the updated status and an explanation of the change as specified in Section 6.3.6.4.2.

1352 6.11 **Implementation Timeline for APAC**

1353 6.11.1 A phased approach to FF-ICE/R1 implementation with the following timeline is
1354 recommended for the APAC region:

1355 a) 2030: commencement of technical tests and trials involving eAUs and cross-border
1356 eASP interactions.

1357 b) 2031: begin operational tests to identify and resolve any issues.

1358 c) 2032: full operationalization of three FF-ICE/R1 services (Filing Service, Flight Data
1359 Request Service and Notification Service).

1360 6.11.2 This recommended timeline will ensure APAC States' readiness to support the sunset of
1361 FPL2012 in 2034. Note that SWIM implementation is a prerequisite for FF-ICE/R1 deployment, as FF-ICE
1362 services are built upon SWIM infrastructure and information exchange capabilities.

1363 6.12 **Implementation Monitoring**

1364 6.12.1 This Plan is a supplementary plan to the *Asia/Pacific ANP Volume III*, supporting the
1365 transition from current flight planning to FF-ICE operations. Implementation monitoring ensures
1366 harmonized regional deployment of FF-ICE capabilities and identifies areas requiring additional support or
1367 coordination.

1368 6.12.2 APAC States should report their FF-ICE implementation status to the ICAO APAC
1369 Regional Office annually by 28 February. Implementation status will be examined by the APAC FF-ICE/R1
1370 Implementation Task Force and presented at the Air Traffic Management Sub-Group (ATM/SG) of
1371 Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) to measure,
1372 report, and advance regional implementation progress, and identify implementation challenges.

1373 6.12.3 It is expected that the relevant FF-ICE experts in each APAC State will be responsible for
1374 detailed reporting using the *Regional FF-ICE Monitoring and Reporting Form (Appendix D)* and
1375 coordinate with their APAC Seamless ANS Reporting point of contact to ensure the accuracy of higher-
1376 level reporting and consistency between separate reporting levels.

1377 6.13 **Plan Update Cycle and Process**

1378 6.13.1 This Plan requires periodic updates to maintain alignment with updates to:

- 1379 a) ICAO Doc 9965;
1380 b) GANP, including ASBU framework restructuring;
1381 c) Asia/Pacific ANP Volume III; and
1382 d) any other relevant documents and APANPIRG Conclusions/Decisions.

1383 6.13.2 This Plan is intended to be reviewed every three years following its initial implementation.
1384 Earlier or more frequent review and amendment may be conducted as recommended by the APAC FF-
1385 ICE/R1 Implementation Task Force and as agreed-upon by APANPIRG through the ATM/SG.

1386 6.13.3 This Plan shall be reviewed and updated by the APAC FF-ICE Regional Implementation
1387 Plan Drafting Group to be established under the APAC FF-ICE/R1 Implementation Task Force. The
1388 drafting group will consist of subject matter experts (SMEs) nominated by APAC States and International
1389 Organizations.

1390 6.14 **Post Implementation Process**

1391 6.14.1 To ensure continuous improvement of FF-ICE operations, both in operational procedures
1392 and technical capabilities, close and routine coordination among stakeholders should be conducted on an
1393 annual basis. This coordination should focus on sharing and reviewing the collective performance of FF-
1394 ICE operations, as well as implementing improvements within the region. The APAC FF-ICE/R1
1395 Implementation Task Force will serve as a platform for these activities.

1396 6.14.2 The following indicators are recommended for monitoring, to assess the performance of
1397 FF-ICE operations within the region.

- 1398 a) submission time of the first eFPL, compared to EOBT specified in the eFPL;
- 1399 b) number of “REJ” Submission Response messages, along with their explanations;
- 1400 c) number of “MAN” Submission Response messages, along with their explanations;
- 1401 d) number of “NOT ACCEPTABLE” Filing Status messages, along with their
- 1402 explanations;
- 1403 e) number of negotiations before achieving “ACCEPTABLE” Filing Status, including
- 1404 time elapsed from the first submission of eFPL to the “ACCEPTABLE” Filing Status;
- 1405 f) number of flights departing with “NOT ACCEPTABLE” Filing Status; and
- 1406 g) number of Flight Data Request transactions and type of information requested.
- 1407

1408 **REFERENCED DOCUMENTS**

- 1409 *Asia/Pacific A-CDM Implementation Plan*
- 1410 *Asia/Pacific ANP Volume III*
- 1411 *Asia/Pacific Common SWIM Information Services.*
- 1412 *Asia/Pacific Plan for Collaborative Aeronautical Information Management (AIM), Version 4.0*
- 1413 *Asia/Pacific Region ATM Contingency Plan*
- 1414 *Asia/Pacific Regional Framework for Collaborative Air Traffic Flow Management*
- 1415 *Asia/Pacific SWIM Technical Infrastructure Profiles Version 1.0*
- 1416 *Conclusion from APANPIRG/35/4*
- 1417 *Conclusion from APANPIRG/36/12*
- 1418 *Conclusion from ATM/SG/13-5*
- 1419 ICAO Doc 4444 — *Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM)*
- 1420 ICAO Doc 7910 — *Location Indicators*
- 1421 ICAO Doc 8585 — *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services*
- 1422 ICAO Doc 9854 — *Global Air Traffic Management Operational Concept (GATMOC)*
- 1423 ICAO Doc 9883 — *Global Air Navigation Plan (GANP)*
- 1424 ICAO Doc 9965 — *Manual on Flight and Flow Information for a Collaborative Environment (FF-ICE),*
1425 *Volume I (Concept) and Volume II (Implementation Guidance)*
- 1426 ICAO Doc 9971 — *Manual on Collaborative Air Traffic Flow Management (ATFM)*
- 1427 ICAO Doc 10039 — *Manual on the System Wide Information Management (SWIM)*
- 1428 ICAO Doc 10169 — *Aviation Common Certificate Policy (ACCP)*
- 1429 ICAO Doc 10199 — *Procedures for Air Navigation Services – Information Management (PANS-IM)*
- 1430 ICAO Doc 10203 — *Manual on the System-wide Information Management (SWIM) Implementation*
- 1431 ICAO Doc 10204 — *Manual on Aviation Information Security*
- 1432 IETF RFC 9562 — *Universally Unique IDentifiers (UUIDs)*
- 1433 IETF RFC 4122 — *A Universally Unique IDentifier (UUID) URN Namespace*

1434 **ABBREVIATIONS AND ACRONYMS¹**

Abbreviation/Acronym	Expansion
ACC	Area Control Centre
A-CDM	Airport Collaborative Decision Making
AFS	Aeronautical Fixed Services
AFTN	Aeronautical Fixed Telecommunication Network
AIM	Aeronautical Information Management
AIP	Aeronautical Information Publication
AIRM	ATM Information Reference Model
AIS	Aeronautical Information Services
AIXM	Aeronautical Information Exchange Model
ANP	Air Navigation Plan
ANS	Air Navigation Services
ANSP	Air Navigation Service Providers
AOBT	Actual Off-Block Time
APAC	Asia/Pacific
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Regional Group
ASBU	Aviation System Block Upgrade
ASP	ATM Service Provider
ATC	Air Traffic Control
aASP	Non-FFICE Capable ATM Service Provider
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATM/SG	Air Traffic Management Sub-Group

¹ Refer to ICAO Doc 9965 for definition of terms

Abbreviation/Acronym	Expansion
ATS	Air Traffic Services
AU	Airspace User
aAU	An AU that is not capable of using mandatory FF-ICE services.
CHG	ATS Change Message
CLDT	Calculated Landing Time
CNL	ATS Cancel Message
CPL	Current Flight Plan
CTO	Calculated Time Over
CTOT	Calculated Take-Off Time
DLA	ATC Delay Message
eASP	An ASP that is not capable of providing the 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
ESP	Emergency Service Provider
ETO	Estimated Time Over
FF-ICE	Flight and Flow Information for a Collaborative Environment
FIR	Flight Information Region
FIXM	Flight Information Exchange Model
FPL	Filed flight plan exchanged using via aeronautical fixed services (AFS)
FQDN	Fully Qualified Domain Name
GSt	Ground Stop
GUFI	Globally Unique Flight Identifier
ICAO	International Civil Aviation Organization
IETF	Internet Engineering Task Force

Abbreviation/Acronym	Expansion
IWXXM	ICAO Meteorological Information Exchange Model
MEDEVAC	Medical Evacuation
MINIT	Minutes in Trail
MIT	Miles in Trail
OSF	Open Software Foundation
PFP	Preliminary Flight Plan
PKI	Public Key Infrastructure
R1	Release 1 (for pre-departure phase)
R2	Release 2 (for post-departure phase)
RFC	Request for Comments
RIF	Re-Clearance in Flight
RPL	Repetitive Flight Plan
R/T	Route/Trajectory
RVR	Runway Visual Range
SAR	Search and Rescue
SID	Standard Instrument Departure
SIGMET	Significant Meteorological Hazards
SME	Subject Matter Expert
STAR	Standard Terminal Arrival Route
SWIM	System-wide Information Management
TAF	Terminal Area Forecast
TBO	Trajectory-based Operations
TLS	Transport Layer Security
UTC	Coordinated Universal Time
UUID	Universally Unique Identifier

Abbreviation/Acronym	Expansion
WAF	Weather Avoidance Field

1435

1436 **APPENDIX A FIXM MAPPING TO ATS**

1437 Translation of FF-ICE FIXM to ATS Messages is available on the FIXM website at
1438 <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 4.3.0 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)

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Data Attribute	FIXM version 4.3.0 Core
	<p>FlightType.routeTrajectoryGroup.negotiating.element.point4D.pointProperty.propertyType = WHEELS_ON</p> <p>FlightType.routeTrajectoryGroup.negotiating.element.elementStartPoint.aerodromReferencePoint.locationIndicator =</p> <p>FlightType.arrival.destinationAerodrome.locationIndicator</p>

APPENDIX C HARMONIZED FILING STATUS RESPONSES

Table 10: 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 eASPs	Initiating eASP	NOT ACCEPTABLE	NON CONCUR	REGUL <AAAACCCCCDDMMVVV>	Negotiating	ElementStartPoint for location Constraint.Time for time Constraint.Level/ Constraint.Speed if applicable	Time (Level, Speed if applicable)	REGCAUSE <XX XX>	REGUL <AAAACCCCCDDMMVVV>	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>. Note: If available, See NOTAM <XXX> / ADP <XXX> for details.	NULL	-	-	-		ELDT against restricted period
c) 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

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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. 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. 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. This form should be completed by States to report their progress in implementing FF-ICE in accordance with ICAO Doc 9965 and the *Asia/Pacific Regional FF-ICE/R1 Implementation Plan*.

States should complete this form annually by 28 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 Metrics	Expected Outcome/Guidance to States	Response
General			
Implementation of FIXM-based information exchange	<p>0% - State has not implemented FIXM-based information exchange</p> <p>50% - State has implemented FIXM-based capability but uses older version</p> <p>100% - State has implemented FIXM-based capability with latest FIXM version (v4.3.0)</p>	State should implement FIXM-based information exchange using FIXM version 4.3.0 for all FF-ICE messages	
Implementation of national FF-ICE procedures, in accordance with ICAO Doc 4444 and ICAO Doc 9965	<p>0% - State has not developed any national FF-ICE procedures</p> <p>50% - State is in process of developing and implementing its national FF-ICE procedures</p> <p>100% - State has fully established and published FF-ICE procedures based on ICAO Doc 9965 that are adhered to by stakeholders</p>	State should establish and publish procedures covering FF-ICE operations, communication, and stakeholder responsibilities	

Reporting Form Element	Reporting Metrics	Expected Outcome/Guidance to States	Response
Filing Service			
Implementation of Filing Service	<p>0% - No Filing Service implementation</p> <p>50% - Partial implementation with gaps (e.g. incomplete message set support, incomplete validation/evaluation capability, manual intervention required)</p> <p>100% - Full automated implementation with complete message set, validation and evaluation capability in compliance with this document</p>	<p>Filing Service is mandatory service for eASPs</p> <p>Full implementation should include:</p> <ul style="list-style-type: none"> a) complete message set support b) automated validation and evaluation c) published validation and evaluation criteria in AIP 	
Implementation of Filing Re-evaluation Process	<p>0% - No re-evaluation process</p> <p>50% - Partial re-evaluation (e.g. limited status change handling, re-evaluation only for selected restrictions, and/or procedures not fully established)</p> <p>100% - Full re-evaluation with established procedures</p>	<p>State should establish and publish clear procedures for the re-evaluation process and handling of status changes</p>	
Implementation of national procedures for Filing Service mixed mode operations to support both FF-ICE and FPL2012 message handling (FPL, CHG, DLA), in accordance with ICAO Doc 4444, ICAO Doc 9965 and regional plan	<p>0% - No mixed mode procedures</p> <p>100% - Full procedures established for handling both FF-ICE and FPL2012 formats with appropriate message dissemination</p>	<p>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)</p>	
Flight Data Request Service			

Reporting Form Element	Reporting Metrics	Expected Outcome/Guidance to States	Response
Implementation of Flight Data Request Service	0% - No implementation 50% - Partial implementation with gaps (e.g. limited request types support, manual intervention required) 100% - Full automated implementation in compliance with this document	Flight Data Request Service is mandatory service for eASPs Full implementation should include automated support for all required request types (Flight Plan, Supplementary Plan and Flight Status)	
Implementation of national 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 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 50% - Partial implementation with gaps (e.g. limited event types, manual intervention required) 100% - Full automated implementation in compliance with this document	Notification Service is mandatory service for APAC. 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 ICAO Doc 4444, ICAO Doc 9965 and regional plan	0% - No mixed mode procedures 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)	

Reporting Form Element	Reporting Metrics	Expected Outcome/Guidance to States	Response
Planning Service			
Implementation of Planning Service	<p>0% - No Planning Service implementation</p> <p>50% - Partial implementation with gaps (e.g. incomplete message set support, incomplete validation/evaluation capability, manual intervention required)</p> <p>100% - Full automated implementation in compliance with this document</p>	<p>Planning Service is recommended for ASPs whose airspace is complex and/or regularly constrained</p> <p>Full implementation should include:</p> <ul style="list-style-type: none"> a) complete message set support b) automated validation and evaluation c) published validation and evaluation criteria in AIP 	
Implementation of Planning Re-evaluation Process	<p>0% - No re-evaluation process</p> <p>50% - Partial re-evaluation (limited status change handling, re-evaluation only for selected restrictions, and/or procedures not fully established)</p> <p>100% - Full re-evaluation with established procedures</p>	<p>State should establish and publish clear procedures for the re-evaluation process and handling of status changes</p>	
Trial Service			
Implementation of Trial Service	<p>0% - No Trial Service implementation</p> <p>100% - Full automated implementation in compliance with this document</p> <p><i>Note: Partial implementation of trial service is not expected as manual intervention is not practical for potentially large number of "fire and forget" messages.</i></p>	<p>Optional service allowing "what-if" evaluation of flight plan alternatives</p> <p>Full implementation should include automated processing of Trial Requests and responses.</p>	

Reporting Form Element	Reporting Metrics	Expected Outcome/Guidance to States	Response
Publication Service			
Implementation of Publication Service	0% - No implementation 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	