



How does FF-ICE in other ICAO initiatives

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ICAO EUR/NAT FF-ICE Workshop
(Paris, France, 17-19 February 2026)

**INTERNATIONAL
CIVIL AVIATION
ORGANIZATION**



Presentation overview

01 FF-ICE concept

02 Global provisions

03 Misconceptions about FF-ICE



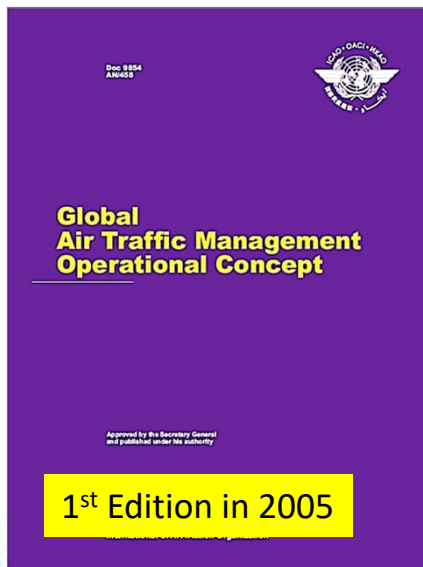
From Concept to Implementation Planning



ICAO Framework

(Vision, Concept, Planning and Standardization)

01



02

Detailed concepts & performance framework

- CDM/ATFM (Doc 9971)
- FF-ICE (Doc 9965)
- SWIM (Doc 10039)
- TBO (TBD)
- Connected Aircraft (TBD)

- ATM System Requirements (Doc 9882)
- Global Air Navigation System Performance (Doc 9883)

03

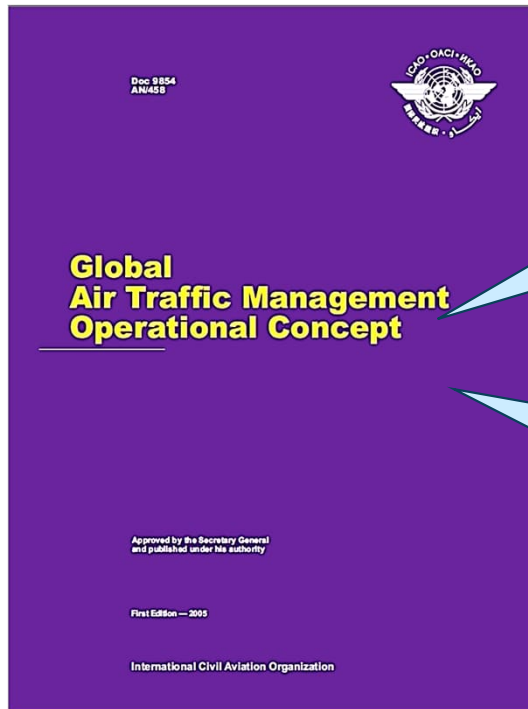


04



**SARPs, PANS, and
Guidance materials**

Concept related to FF-ICE since 2005



individual aircraft performance, flight conditions, and available ATM resources **will allow dynamically optimized 4-D trajectory planning.**

The agreement and the management of that agreement **will have the details required by the traffic management phases** that the flight is subject to **at the time the initial agreement and subsequent updates** are made.

Need for More Detailed and Enabling Concept

To address limitations and constraints of the current flight planning mechanism

- **Inconsistent or duplicate flight plans** held by various stakeholders (operator, aircraft, departure aerodrome, downstream ATS units)
- Intention of flight can only be **supplied a short time before flight to ATM** and **no feedback from ATM** on the supplied flight intent
- **Inflexible and inefficient means** to accommodate changing information needs at global, regional, and state levels



Flight and Flow - Information for a Collaborative Environment The Very Concept

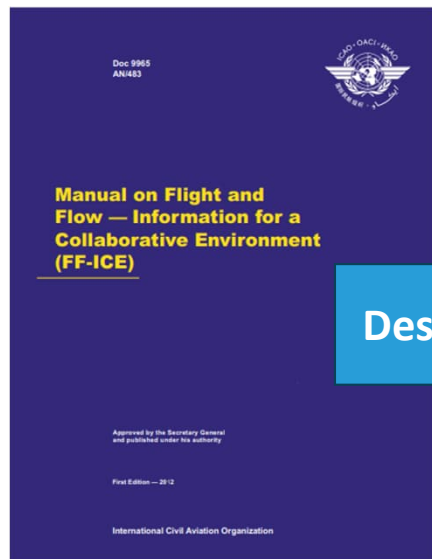


- **New mechanisms** to exchange information uniquely identify flights and ensure all stakeholders work from the correct information
- **New interactions** between stakeholders facilitate coordination and negotiation
- **New data exchanges** allows indication of advanced capabilities, and is extensible to address emerging needs

Flight and Flow - Information for a Collaborative Environment Global Endorsement

2012 | 12th Air Navigation Conference

- Information for flow management, flight planning, and trajectory management
- Interactions between the members of the ATM community
- Globally harmonized means and process for planning and providing consistent flight information



Describes

Flight and Flow - Information for a Collaborative Environment Global Implementation Planning

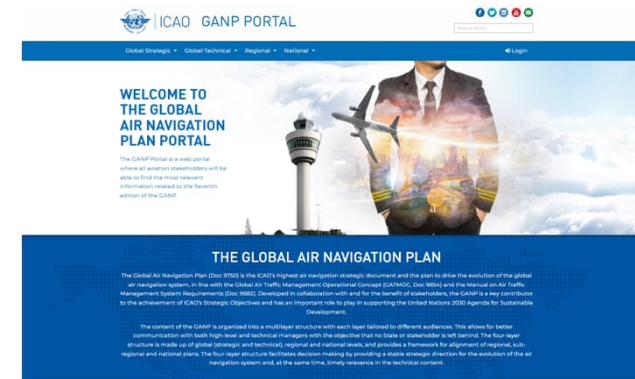
4th Edition, 2013



5th Edition, 2016



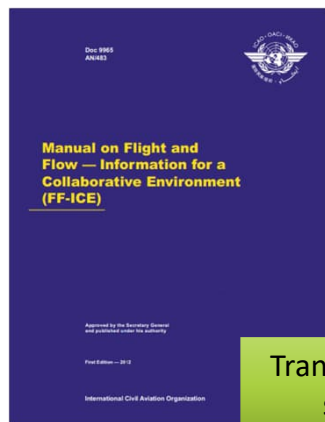
6th/7th/8th Editions (2019/2022/2025)



“Phased Approach (Pre-departure first then Post Departure on a voluntary basis)”

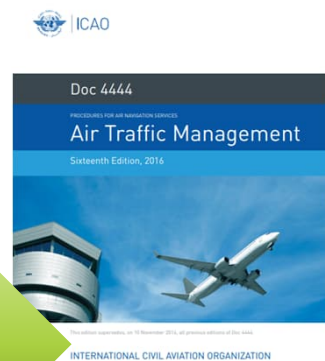
Flight and Flow - Information for a Collaborative Environment Global Provisions Evolution

FF-ICE concept in 2012



Transposed into services

FF-ICE services in 2024



- Foundation for evolution
- focus on pre-departure
- elective implementation

Change in approach

Global discussion In 2024



- Transition to FF-ICE
- Cessation of FPL2012 by 2034

More in 2028+



Amendment

- Sunset FPL2012
- More details on post departure

More to come In Day 3 of this Workshop



FF-ICE Provisions – Release 1

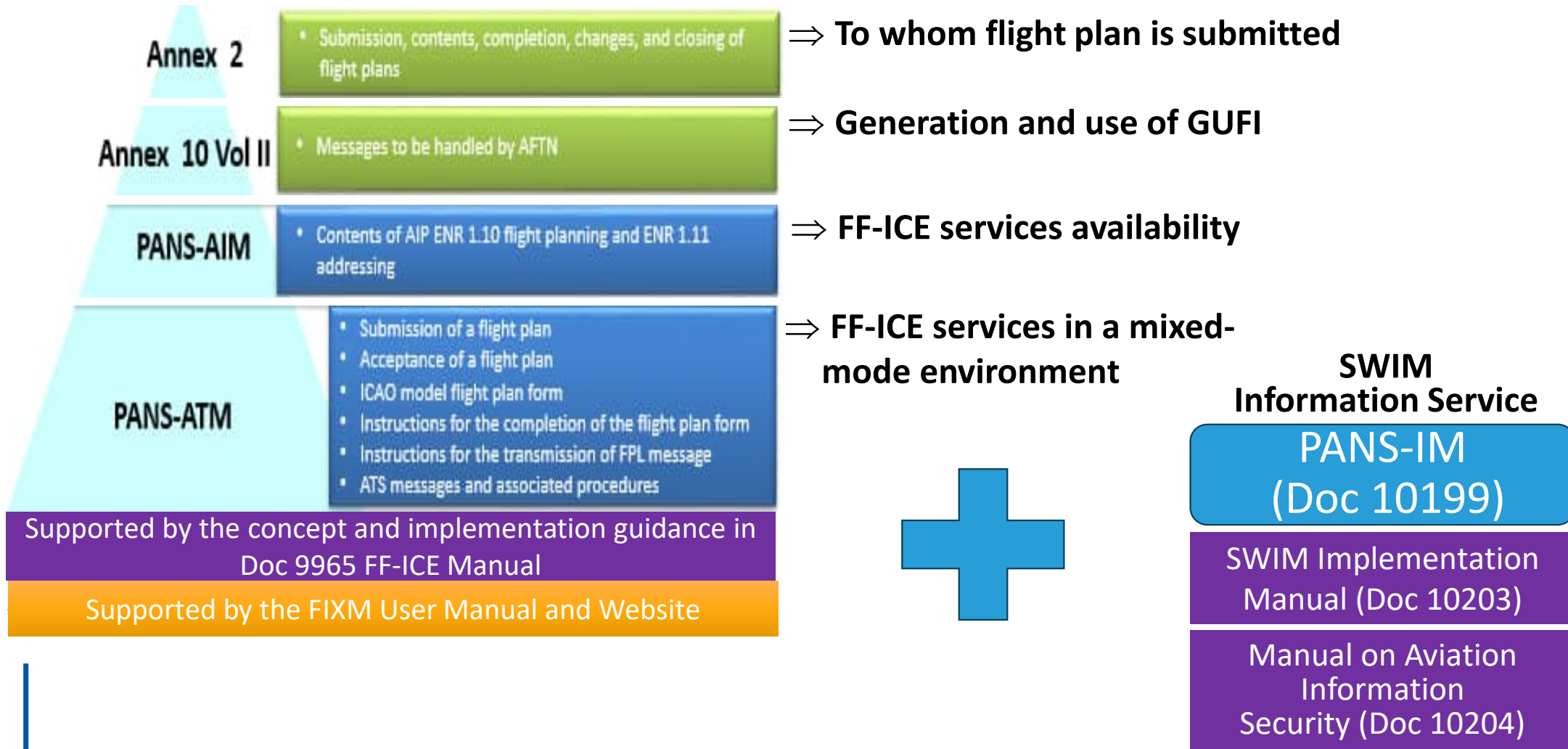


— Guiding Principles and Objectives

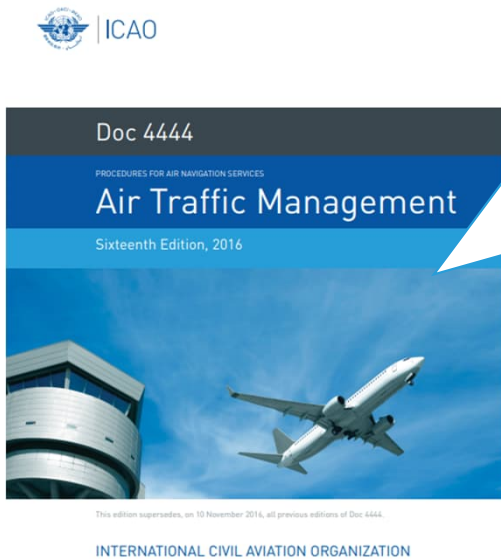
(FF-ICE Provisions – Release 1 in 2024)

- Allow provision and use of FF-ICE services **on a voluntary basis, but in a standardized manner**
- **No additional requirements** to those not implementing FF-ICE services
- **Primarily focus on interactions prior to departure**, but allow for successive increments of provisions to address the evolution of FF-ICE
- **As comprehensive yet future-proof provisions** as possible in order to cater for ongoing developments of FF-ICE

Overview of Provisions and Guidance



Key Definitions (1/6)



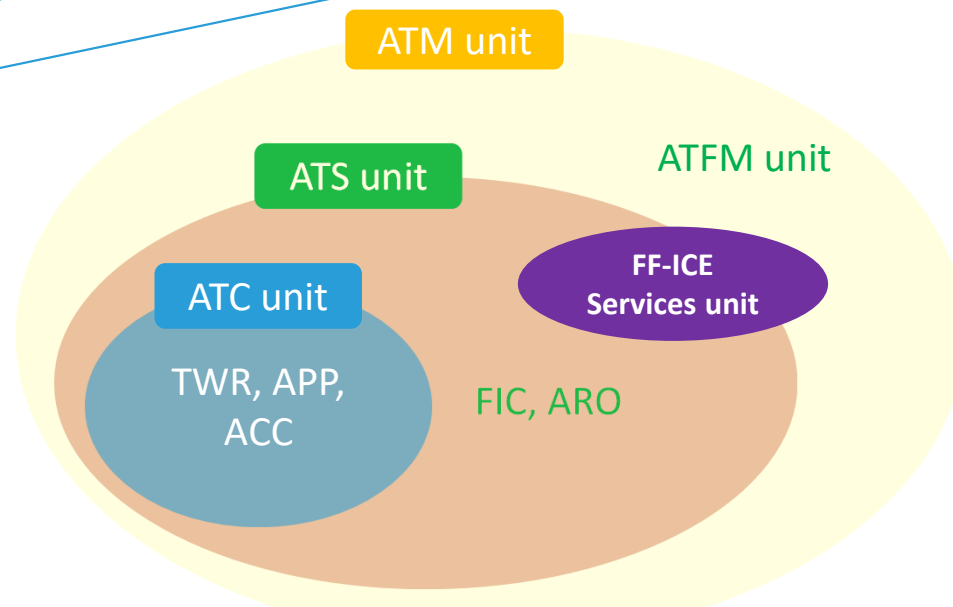
FF-ICE services

- **A set of services** established for the purposes of
 - facilitating exchange of *FF-ICE*, accurate assessment of demands, appropriate resource planning,
 - optimizing flight planning and execution.

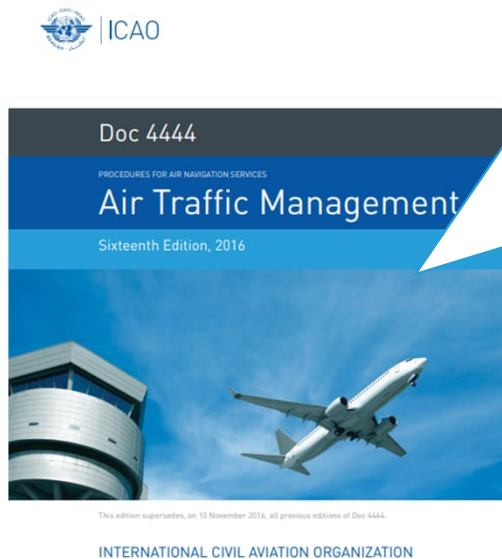
Key Definitions (2/6)

FF-ICE services unit

- A unit designated by the appropriate ATS authority for the provision of FF-ICE services.



Key Definitions (3/6)



Flight plan.

Specified information relative to an intended flight or portion of a flight of an aircraft.

Note 1.— The term flight plan may be prefixed by the words “preliminary”, “filed”, “current” or “operational” to indicate the context and different stages of a flight.

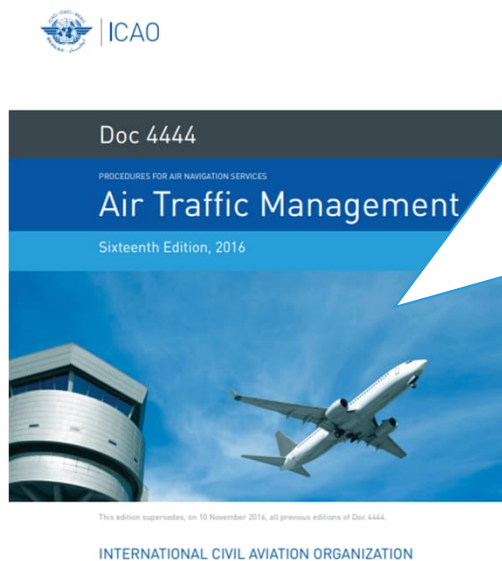
Key Definitions (4/6)

Preliminary flight plan (PFP).

The information related to a flight submitted by an operator or a designated representative to conduct collaborative planning of a flight, prior to filing a flight plan.



Key Definitions (5/6)

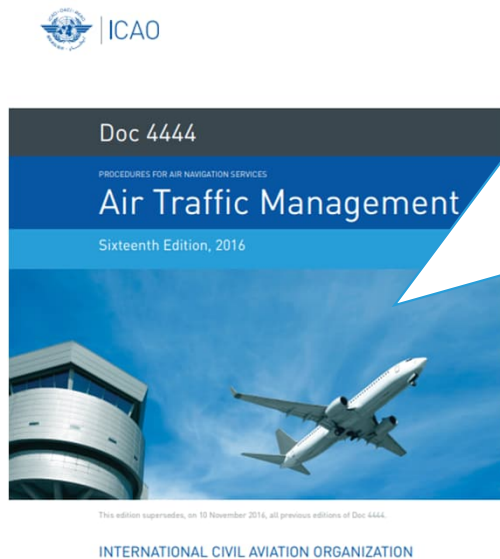


Filed flight plan (FPL or eFPL).

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

*Note.— The FPL denotes..... while eFPL denotes
The eFPL allows for the exchange of additional information not contained within the FPL.*

Key Definitions (5/6)



Filed flight plan (FPL or eFPL).

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

*Note.— The FPL denotes..... while eFPL denotes
The eFPL allows for the exchange of additional information not contained within the FPL.*

Key Definitions (6/6)



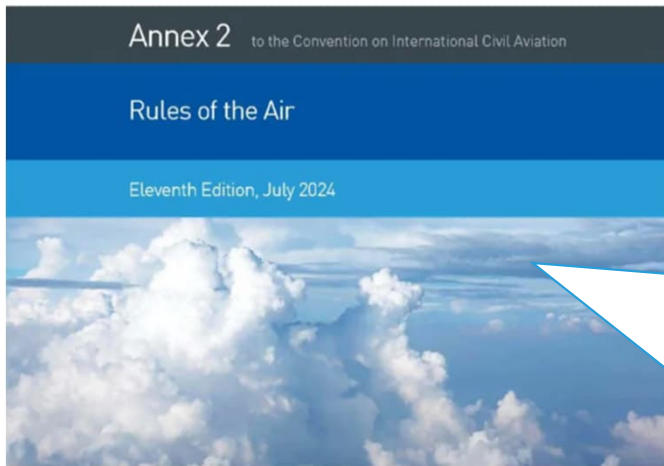
Globally unique flight identifier (GUFID).

An unchangeable data element associated with a flight that allows all eligible members of the ATM community to unambiguously refer to information pertaining to the flight

Flight plan submission/distribution - General



International Standards



This edition supersedes, on 28 November 2024, all previous editions of Annex 2.
For information regarding the applicability of the Standards, see Chapter 2 and the Foreword.

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3.3.1.3 Unless otherwise prescribed by the appropriate ATS authority, a flight plan shall be submitted, before departure, to an air traffic services reporting office or, during flight, transmitted to the appropriate air traffic services unit or air-ground control radio station

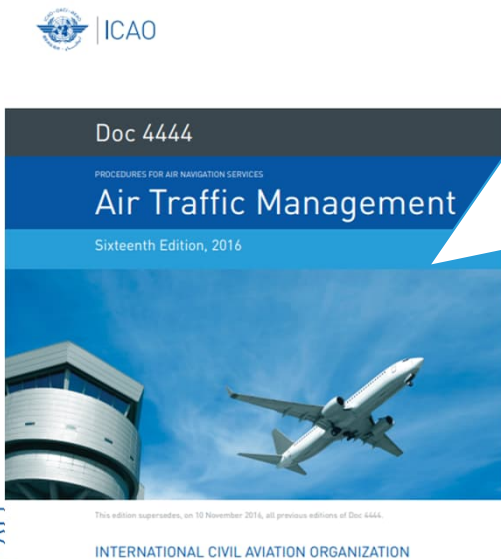
Elective Implementation of FF-ICE Services PANS-ATM

17.2 GENERAL PROVISIONS

17.2.1 When it has been determined that FF-ICE services will be provided, the appropriate ATS authority shall:

- a) designate at least one FF-ICE services unit;
- b) arrange for, as a minimum, the provision of the filing service and flight data request service;
- c) ensure that the FF-ICE services unit(s) maintains the ability necessary to exchange ATS messages with operators and ATS units that have not implemented FF-ICE services, in accordance with provisions in Chapter 11; and
- d) arrange for the promulgation of information on the availability of FF-ICE services, associated procedures and conditions in the Aeronautical Information Publications (AIP).

Flight plan submission/distribution – FPL



11.4.2.2.2.2 **An FPL message shall be originated** by the ATS unit serving the departure aerodrome or, when applicable, by:

- a) **a unit designated by the appropriate ATS authority** to serve the departure aerodrome;
- b) **the ATS unit** receiving a flight plan from an aircraft in flight;
or
- c) **the pilot, the operator or its designated representative**, when so delegated in accordance with 11.2.1.1.1.

Flight plan submission/distribution - eFPL



17.4.3.2 Unless otherwise prescribed by the appropriate ATS authority, **an operator or its designated representative electing to use FF-ICE services shall submit:**

- a) an eFPL to each FF-ICE services unit; and
- b) an FPL to each ATS unit unable to process an eFPL....

Note 1. The FF-ICE services unit may assume responsibility for the provision of the flight plan information and changes thereto in an appropriate format to all relevant units concerned along the route of flight....

FF-ICE services description (1/2)



Doc 4444

PROCEDURES FOR AIR NAVIGATION SERVICES

Air Traffic Management

Sixteenth Edition, 2016

This edition supersedes, on 10 November 2016, all previous editions of Doc 4444.

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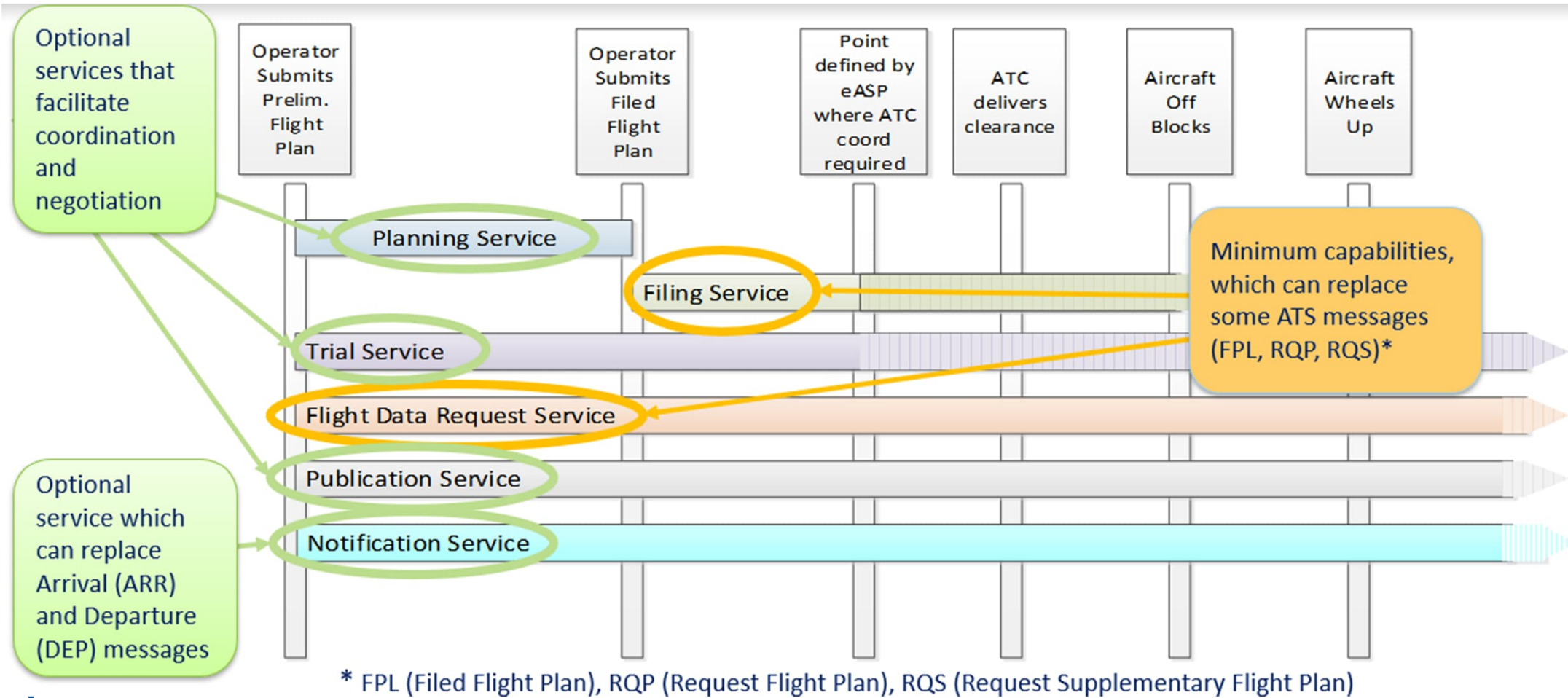
17.1.1 The FF-ICE services may include any of the following:

- a) *planning service*: the evaluation of a preliminary flight plan (PFP) with respect to flight plan acceptability and, where practicable, the indication of applicable restrictions and resultant constraints on the flight;
- b) *filing service*: the evaluation of a filed flight plan (eFPL) for the provision of air traffic services and indication of flight plan acceptability;
- c) *trial service*: the evaluation of a trial request with respect to flight plan acceptability and, where practicable, the indication of applicable restrictions and resultant constraints on the flight;

Note.— The trial service offers an opportunity for an operator or designated representative to submit “what-if” scenarios and to receive feedback from an FF-ICE services unit, prior to submitting a PFP, eFPL or flight plan update.

- d) *flight data request service*: the provision of data regarding a specific flight such as the latest version of a filed flight plan or search and rescue data upon request by an eligible recipient;
- e) *notification service*: the provision of data regarding a certain flight event such as departure and arrival to required recipients; and
- f) *publication service*: the publication of flight and flow data for access by authorized subscribers.

FF-ICE services description (2/2)



Standard FF-ICE Messages

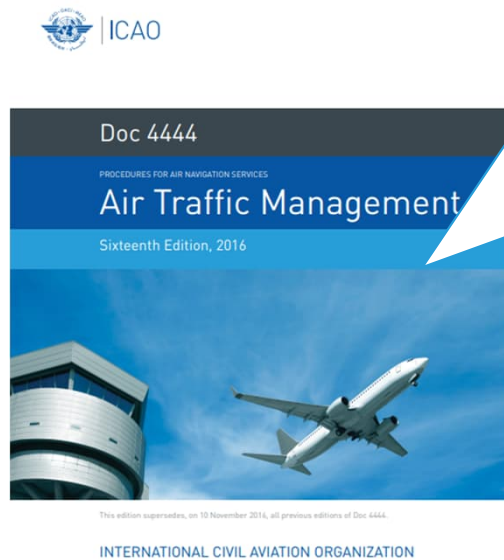
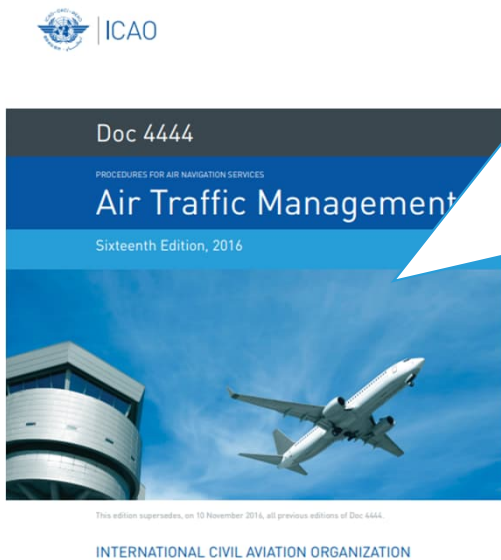


Table 17-1

- Submission response
- Preliminary flight plan
- Planning status
- Trial request
- Trial response
- Filed flight plan (eFPL)
- Fling status
- Flight plan update
- Flight plan cancellation
- Flight data request
- Flight data response
- Flight departure
- Flight arrival

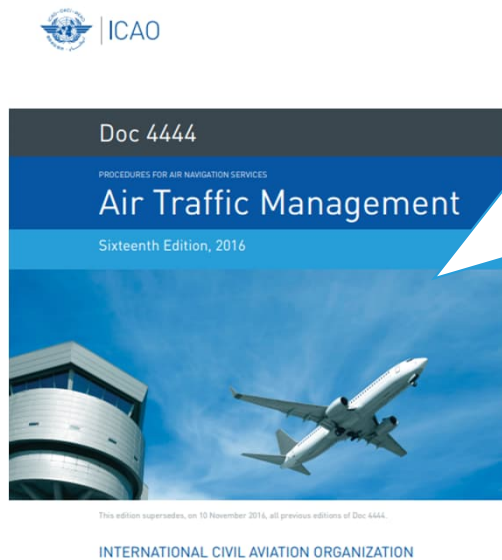
FF-ICE Services Procedures – Examples (1/2)



17.4.1.3 **Each recipient shall respond** to each of the messages identified below **with a Submission Response message...**

17.4.5.1 Each individual FF-ICE services unit shall **determine the acceptability** of the flight plan or flight plan update, and **send an appropriate FF-ICE message** (Planning Status message or Filing Status message) ...as soon as practicable.

FF-ICE Services Procedures – Examples (2/2)



17.4.1.6 The originator of PFP, eFPL or Flight Plan Update messages **shall include flight plan version** information

....

17.4.3.3 **An eFPL message shall include**, as a minimum, **the GUF**I and the flight data items prescribed by the provisions in Annex 2, 3.3.2 and Appendix 2 of this document.

Technical and Interoperability Requirement (1/3)



This edition supersedes, on 10 November 2016, all previous editions of Doc 4444.

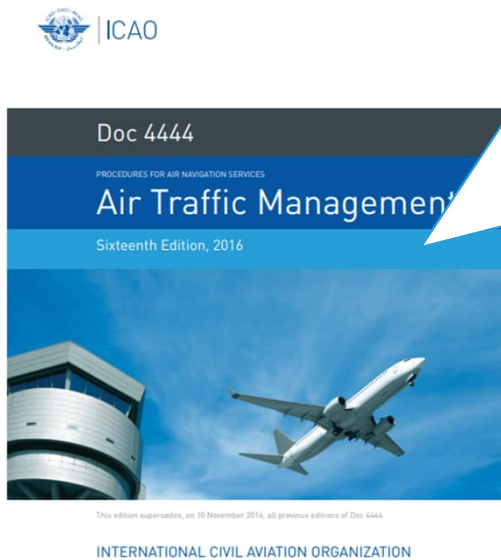
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17.5.1 FF-ICE services shall make use of information services.

*Note 1. — In the context of system-wide information management, the information service addresses **machine-to machine interaction in a service-oriented architecture.***

*Note 2. — Procedures on information services are contained in the Procedures for Air Navigation Services - Information Management (**PANS-IM, Doc 10199**).*

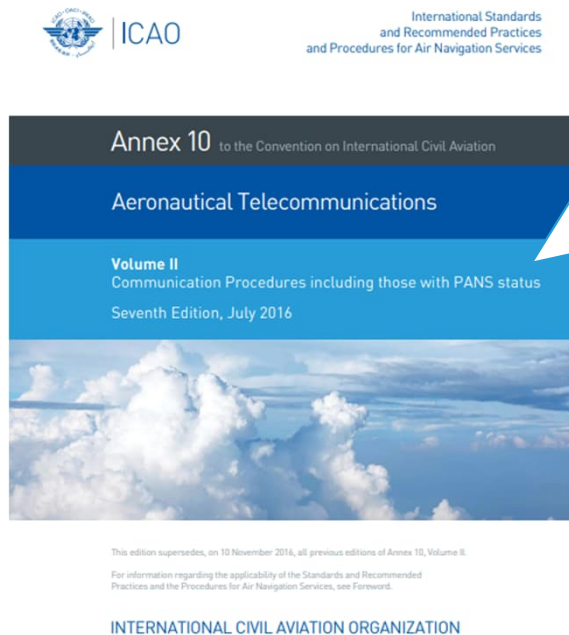
Technical and Interoperability Requirement (2/3)



17.5.2 ... shall adopt an information exchange model that :

- a) **provides the structure and format** of the required flight and flow data elements,
- b) **enables the construction and exchange** of the standard FF-ICE messages
- c) **provides a mechanism** by which additional flight and flow data and/or FF-ICE messages can be used without affecting global interoperability.

Technical and Interoperability Requirement (3/3)



3.9 Globally unique flight identifier

3.9.1 The originator of a preliminary flight plan (PFP) or eFPL **shall assign a single GUFID** to a flight for which the flight plan is to be submitted.

3.9.2 The originator of a PFP or eFPL shall ensure that **all FF-ICE messages** submitted for a flight are **identified by the same GUFID**.

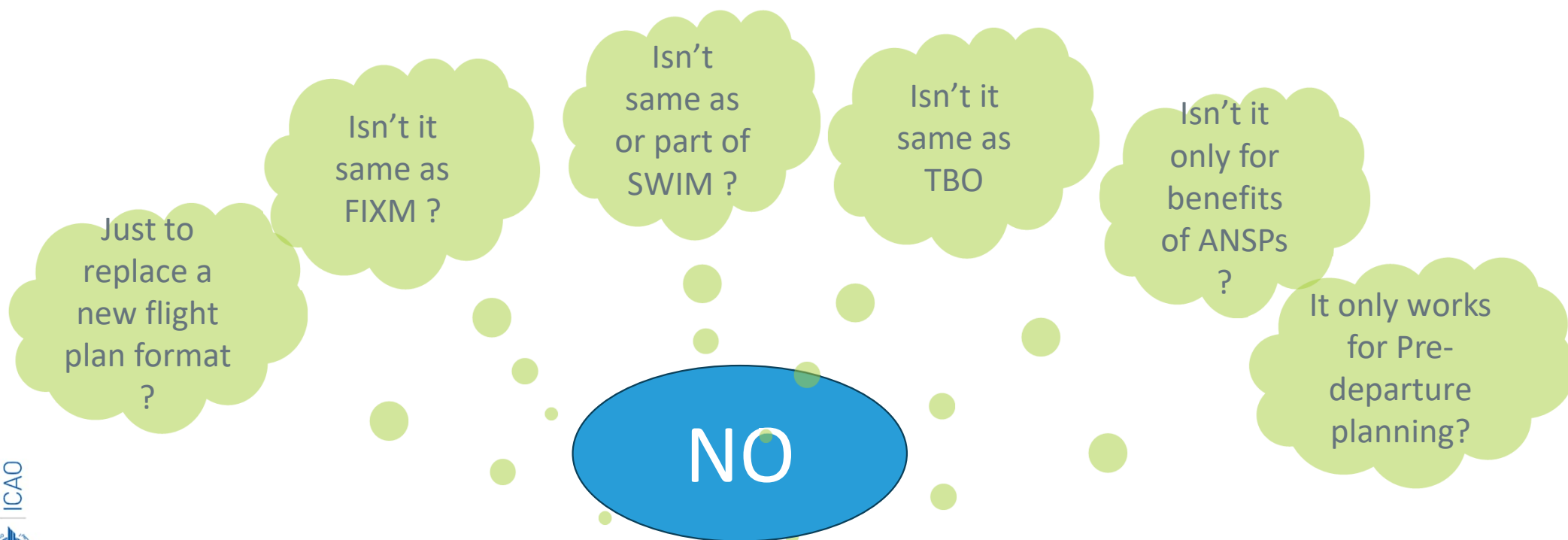
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Misconceptions and recap

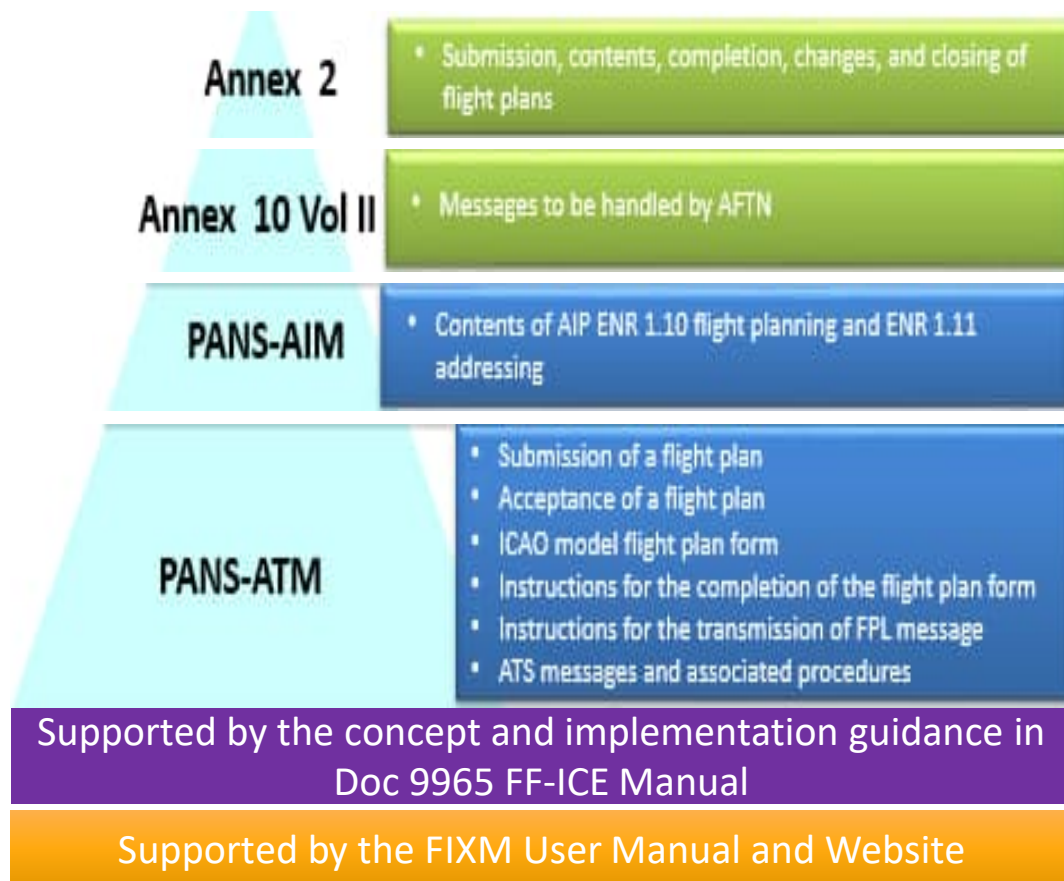


Flight and Flow - Information for a Collaborative Environment

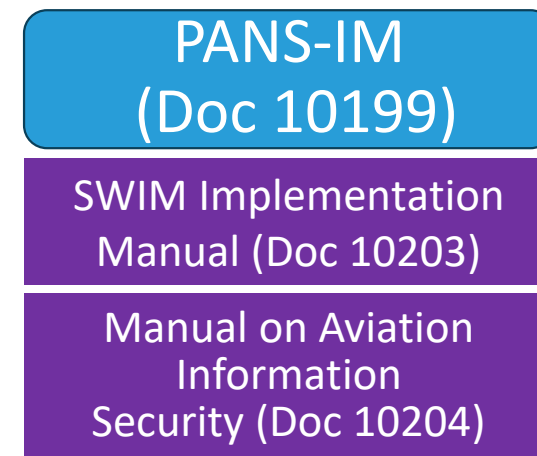


Summary of Global Provisions and Guidance

FF-ICE Services



SWIM Information Service



Thank You

