



SAFE SKIES.
**SUSTAINABLE
FUTURE.**



ICAO APAC/MID ATFM-FF-ICE Seminar 2025

Dubai, UAE, 23 – 26 February 2025

WHAT IS FF-ICE

Crystal Kim

Technical Officer, Air Traffic Management Section

Air Navigation Bureau

International Civil Aviation Organization

Presentation overview

FF-ICE concept

Global provisions and guidance

Why FF-ICE

Address limitations and constraints of the current flight planning mechanism



Enable transitioning to a fully collaborative environment where a flight trajectory is shared and optimized during all phases of a flight

F_{light} and F_{low} - I_{nformation} for a C_{ollaborative} E_{nvironment} (Concept)

Just a new
flight plan
format ?

Same as
FIXM ?

Same as
SWIM ?

Same as
TBO

Only for
ANSPs ?

Just for
Pre-
departure
planning?

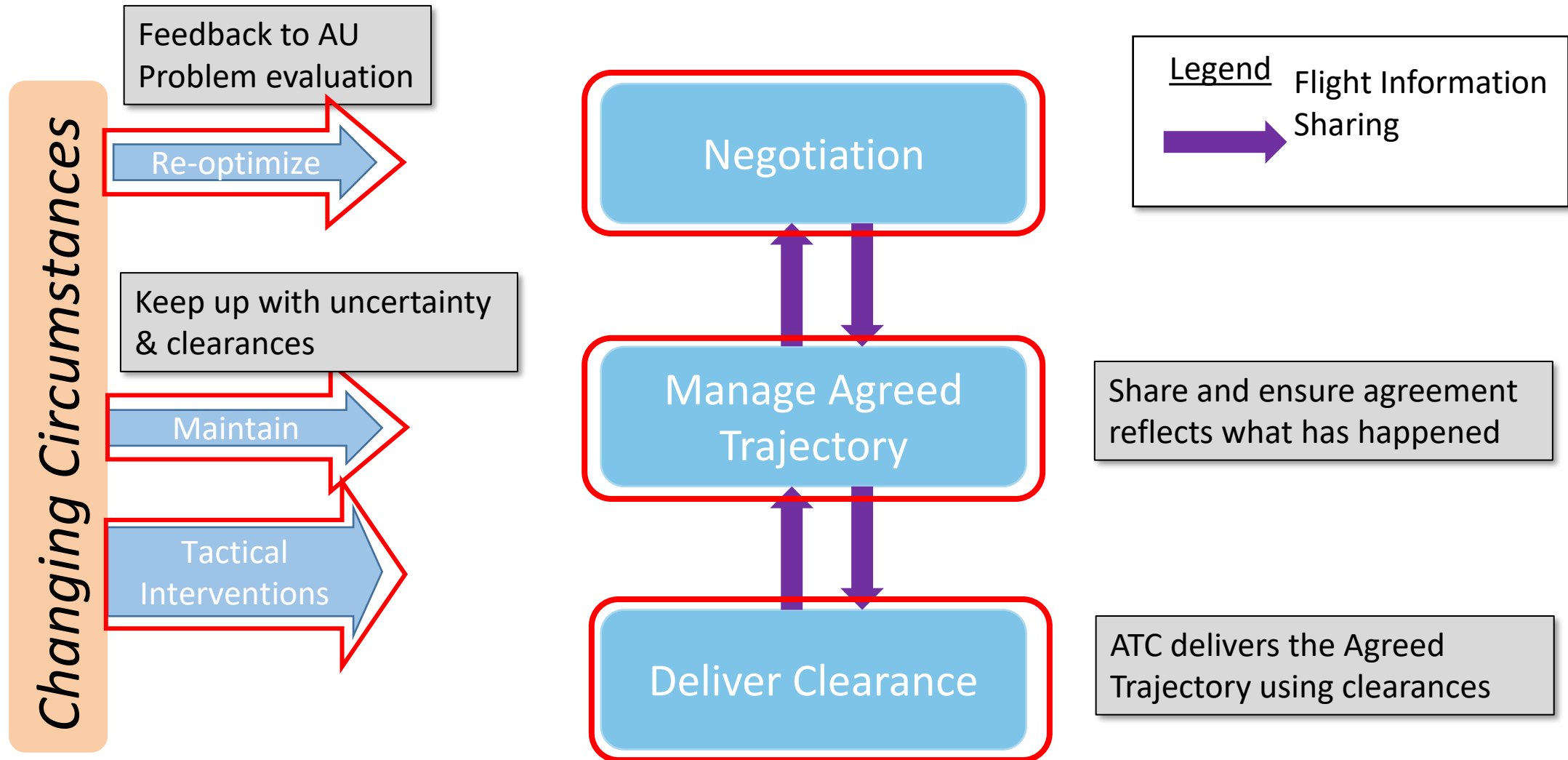
NO

F_{light} and F_{low} - I_{nformation} for a C_{ollaborative} E_{nvironment} (Concept)

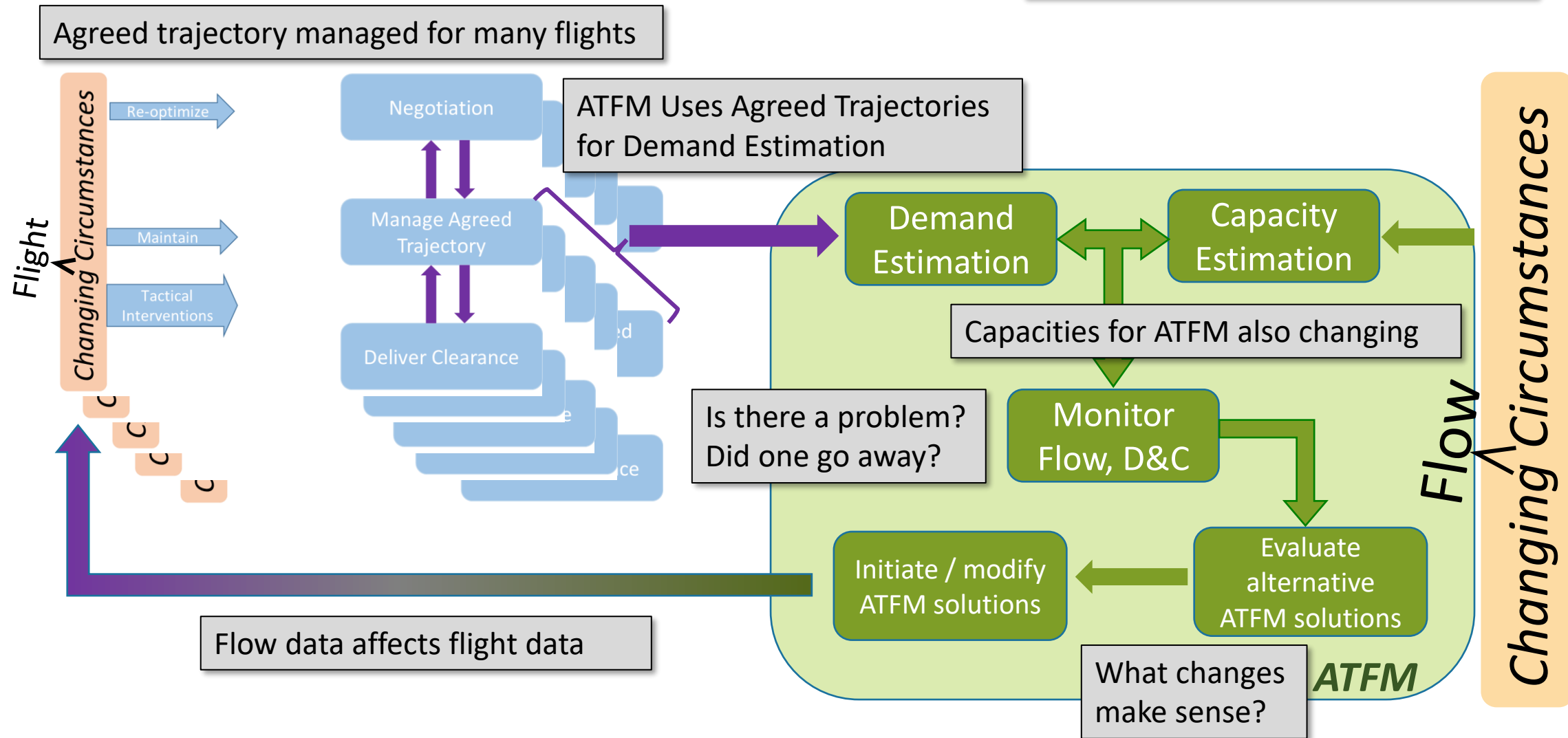


- **New data exchanges** allows indication of advanced capabilities, and is extensible to address emerging needs
- **New mechanisms** to exchange information uniquely identify flights and ensure all stakeholders work from the correct information
- **New interactions** between stakeholders facilitate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

FF-ICE concept framework

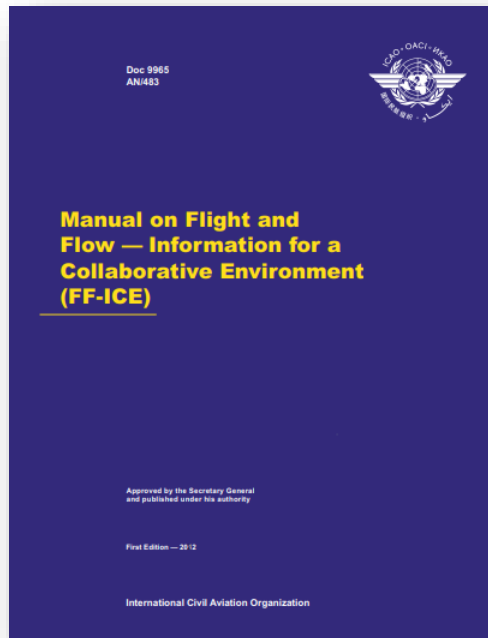


FF-ICE concept framework



Flight and **F**low - **I**nformation for a **C**ollaborative **E**nvironment **Global Endorsement**

2012 | 12th Air Navigation Conference

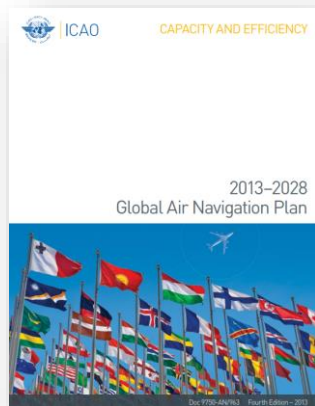


Describes

- 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

Flight and Flow - Information for a Collaborative Environment Deployment Planning

4th Edition, 2013 → 5th Edition, 2013 → 6th Edition, 2019 → 7th Edition, 2022

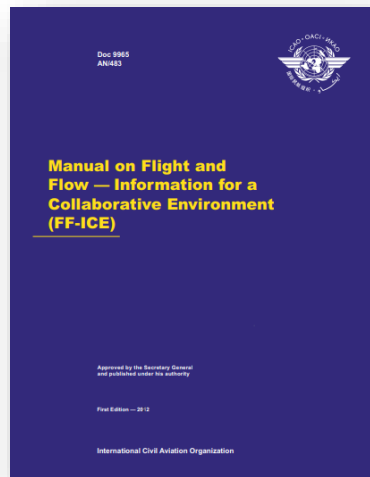


“Phased Approach (Pre-departure first then Post Departure)”

Flight and Flow - Information for a Collaborative Environment

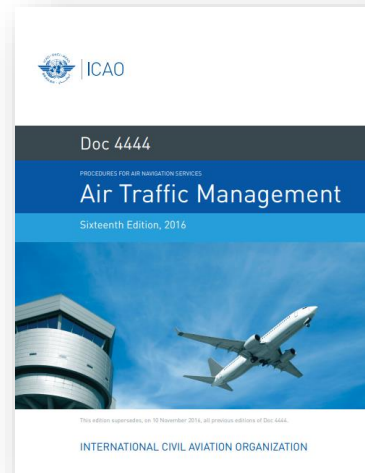
Global Provisions

Concept in 2012



Transposed
into

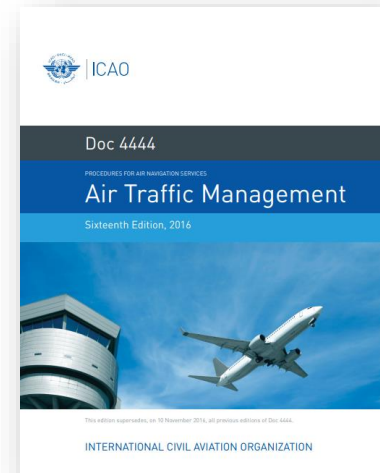
Services in 2024



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

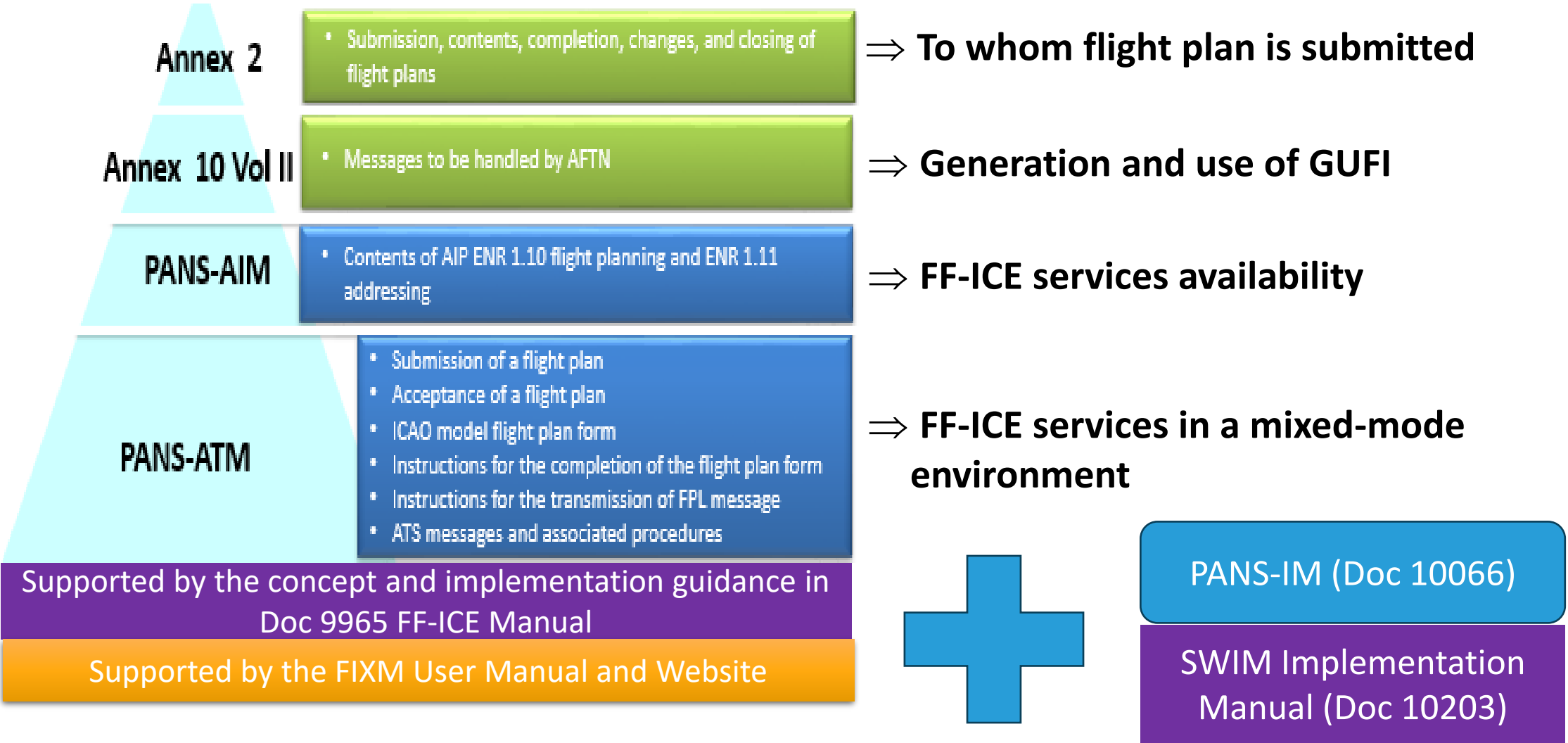
Amendment

More in 2028+



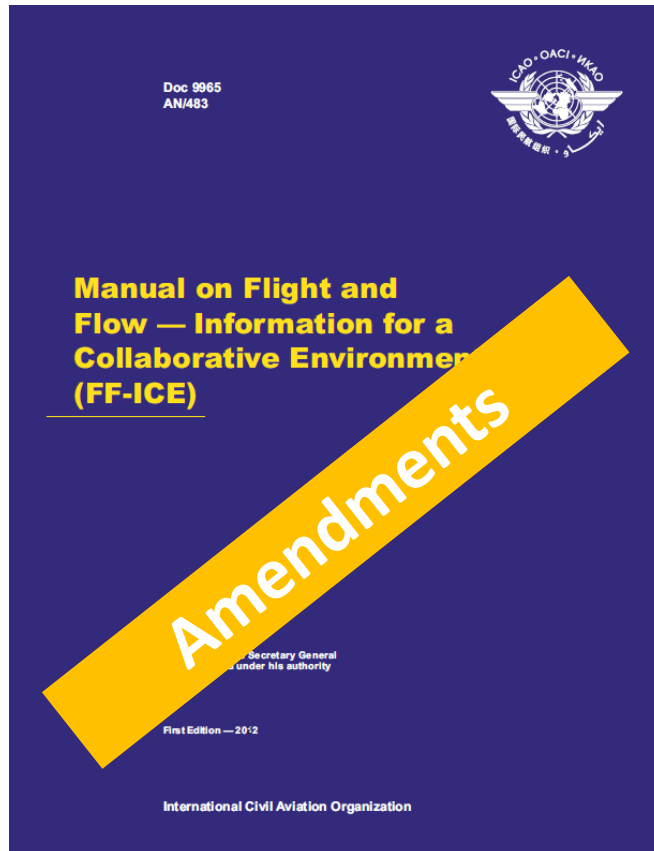
- *Mandate to replace FPL2012*
- *More details on post departure*

Overview of Provisions and Guidance



2nd Edition of Doc 9965

13

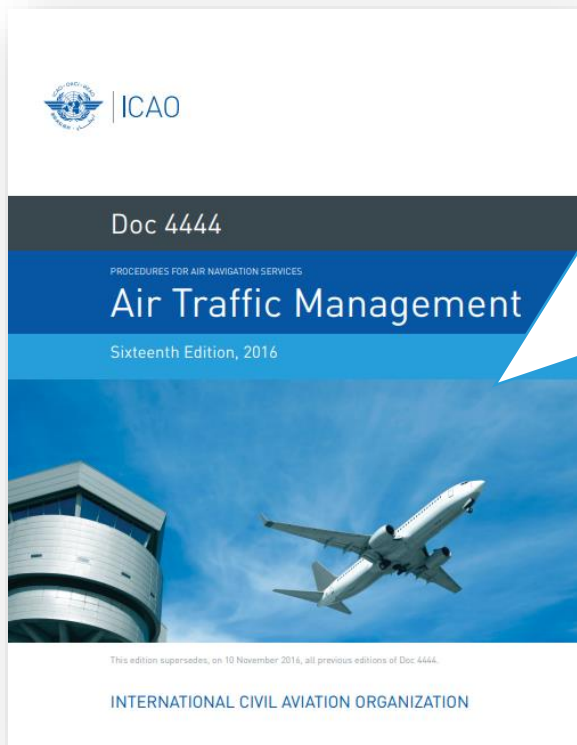


➤ Part I Concept (Updated)

➤ Part II Implementation Guidance (New)

- Implementation considerations
 - Air traffic flow and capacity management
 - Information management and technology
 - Mixed-mode and transition
 - State regulation/directives, publications and training
- GUF and flight plan association
- Detailed guidance for each FF-ICE service
- Route and trajectory information as well as other new data items
- Information and data exchange model
- Content of FF-ICE messages and translation from eFPL to FPL
- Logic rules, association checks, translation guidance

Key Definitions (1/5)



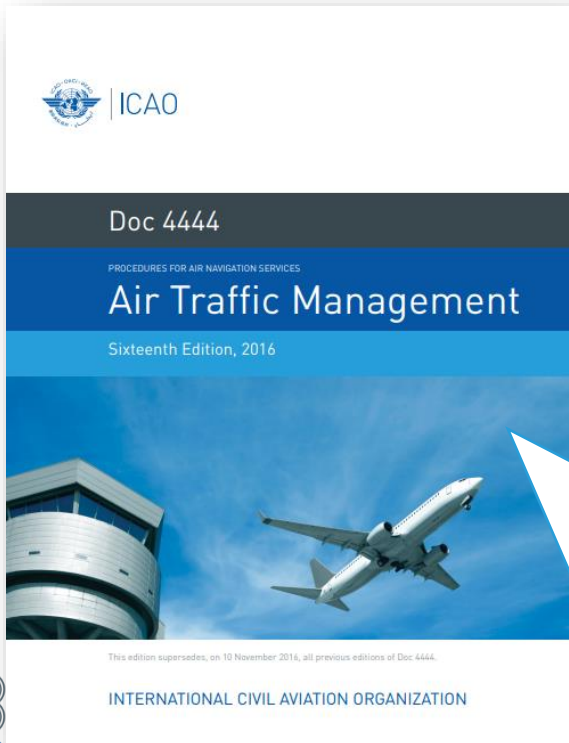
FF-ICE services

- **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.

FF-ICE

- **Information**

- necessary for **planning, coordination, and notification of flights,**
- exchanged between members of **the ATM community**, including those involved in flight operations and aerodrome operations.
- in a **standardized format**

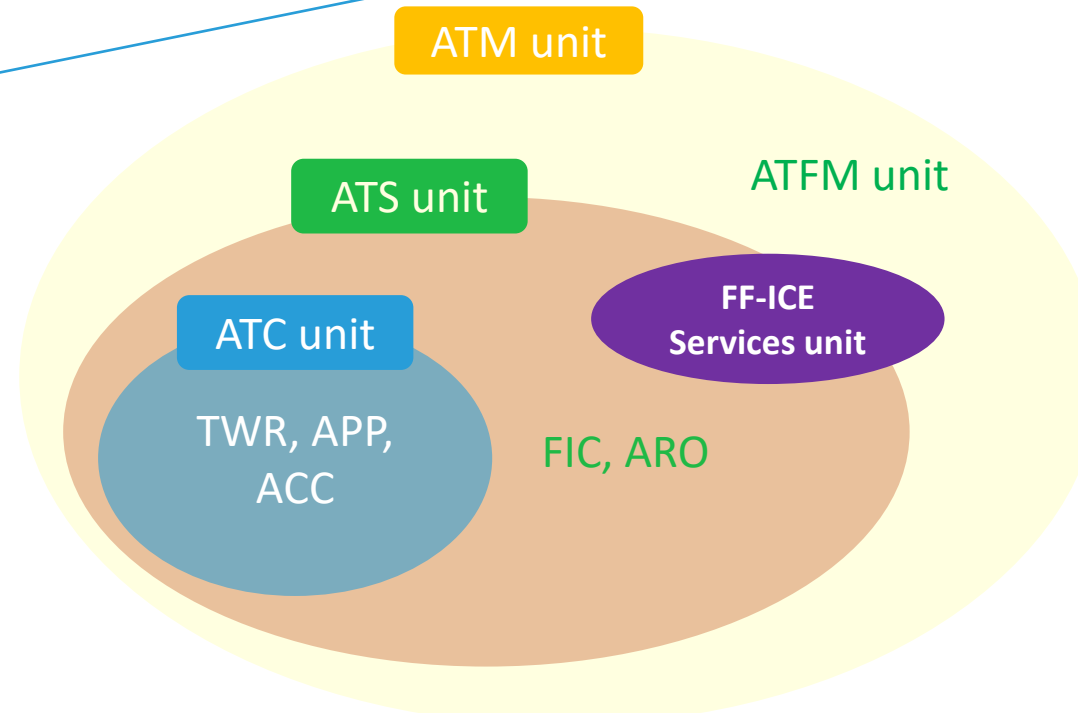
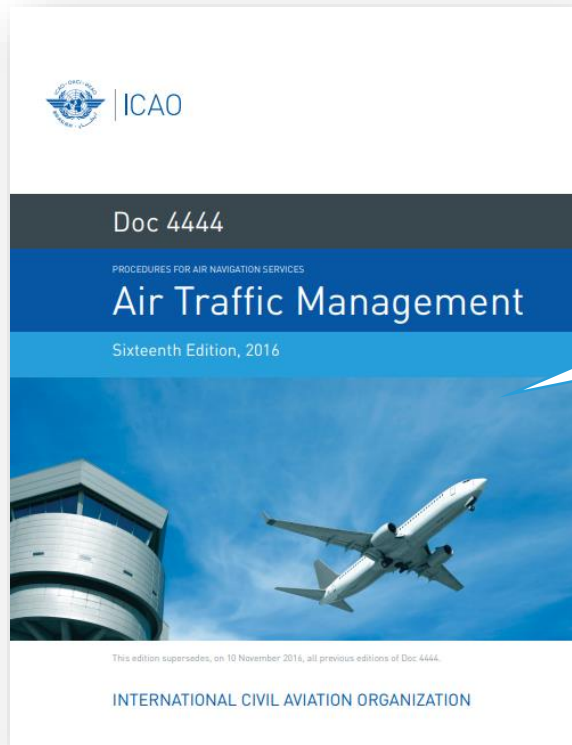


Key Definitions (3/5)

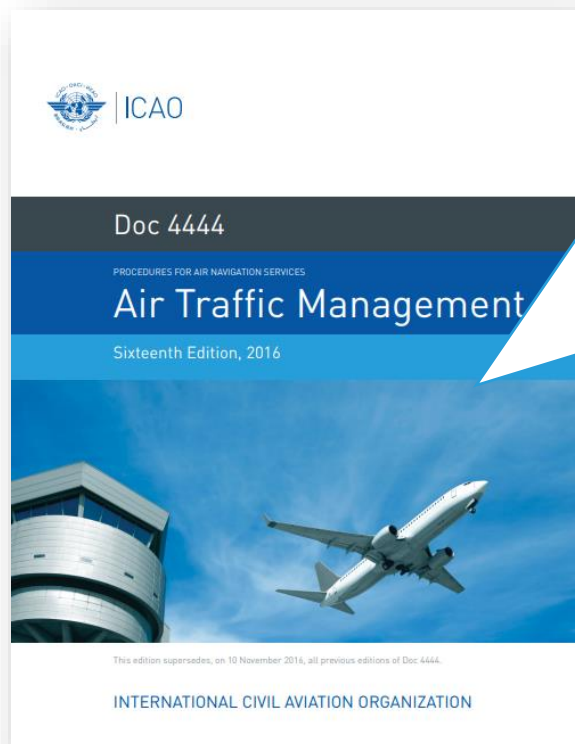
16

FF-ICE services unit

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



Key Definitions (4/5)

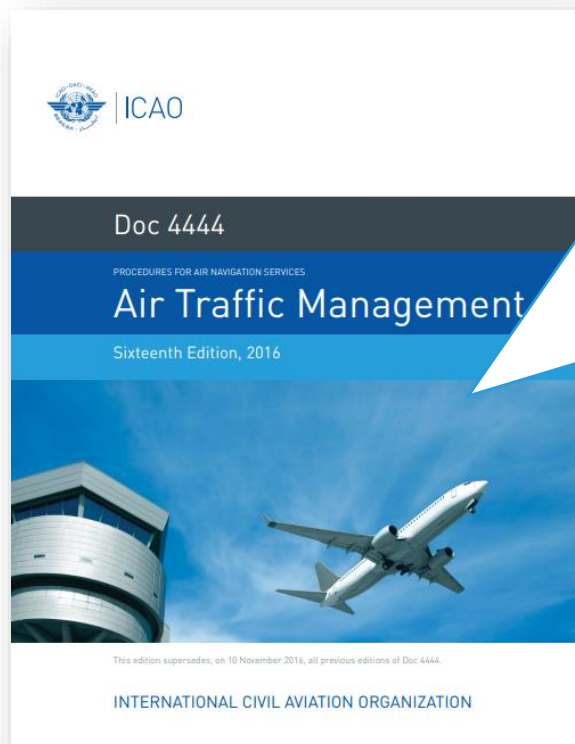


Flight plan.

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 (4/5)



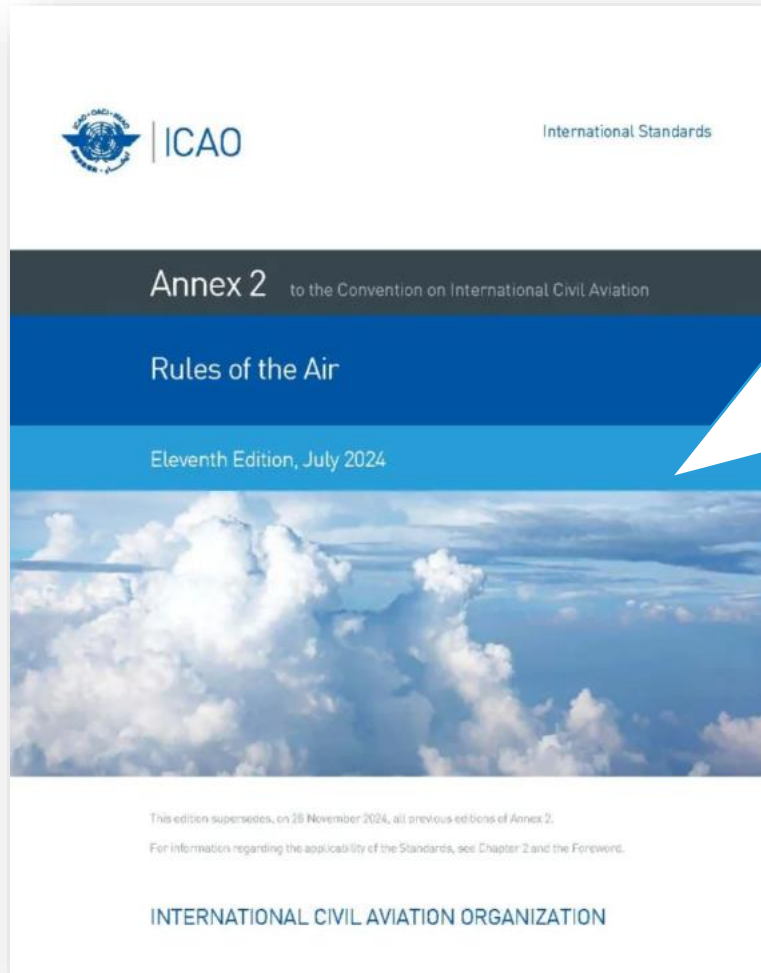
Filed flight plan (FPL or eFPL).

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.

Flight plan submission/distribution - General

19



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

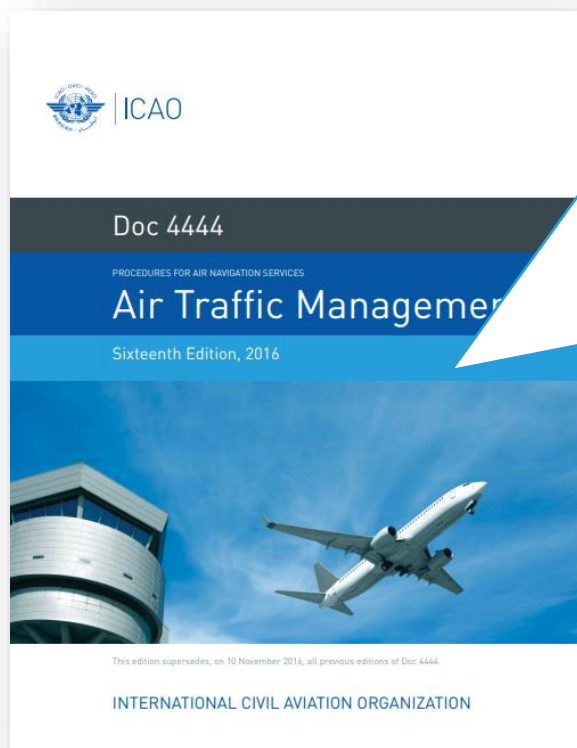
PANS-ATM

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

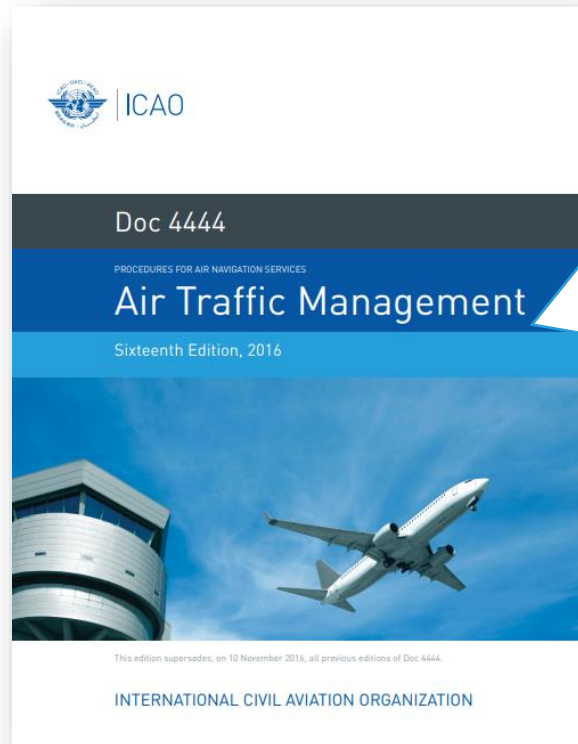


11.4.2.2.2.2 **An FPL message shall be originated** by the ATS unit serving the departure aerodrome or, when applicable, by:

- 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

22



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....

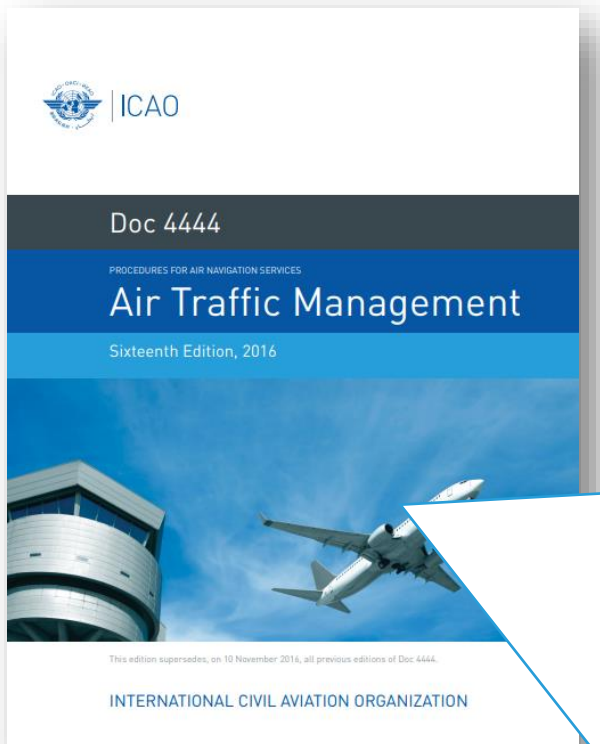
FF-ICE services description (1/2)

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;

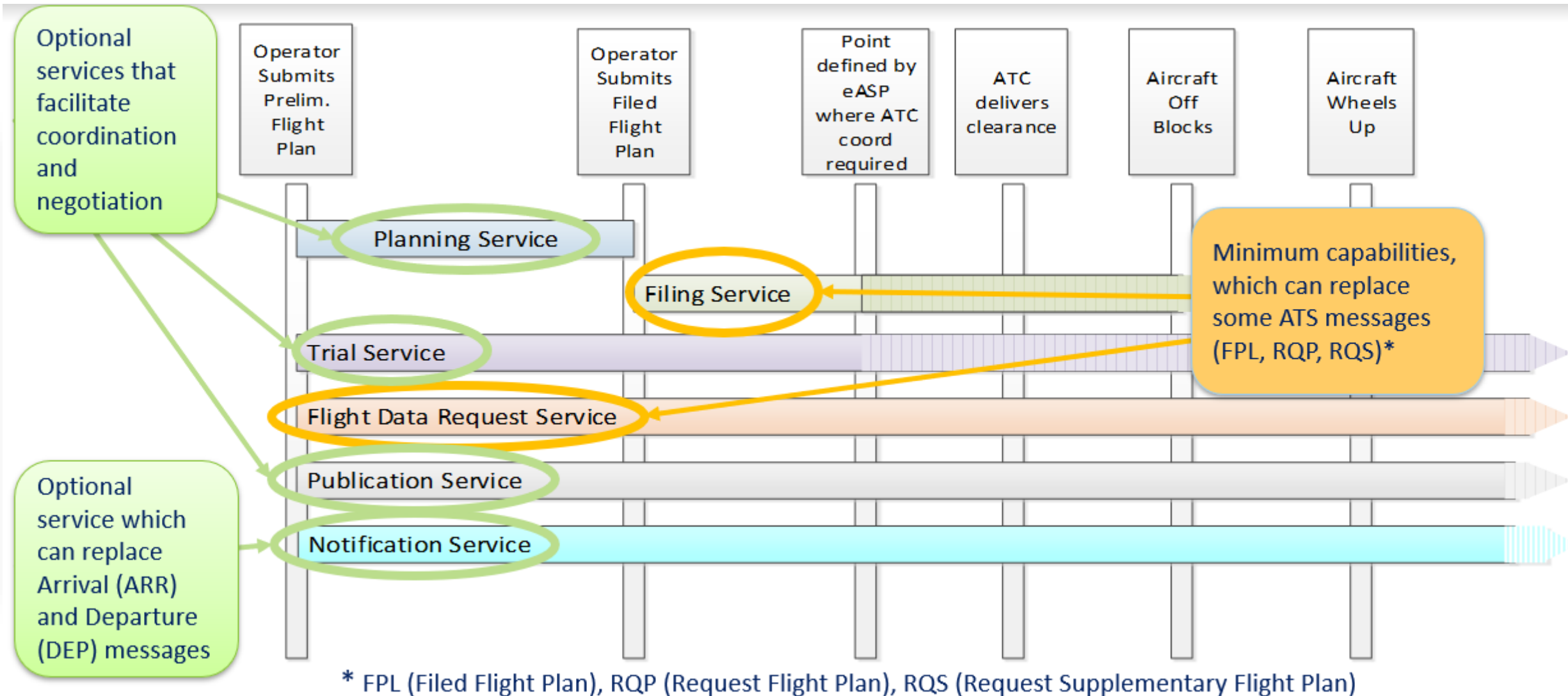
Note.— The trial service offers an opportunity for an operator or designated representative to submit “what-if” scenarios and to receive feedback from an FF-ICE services unit, prior to submitting a PFP, eFPL or flight plan update.

- 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)

24



Standard FF-ICE Messages

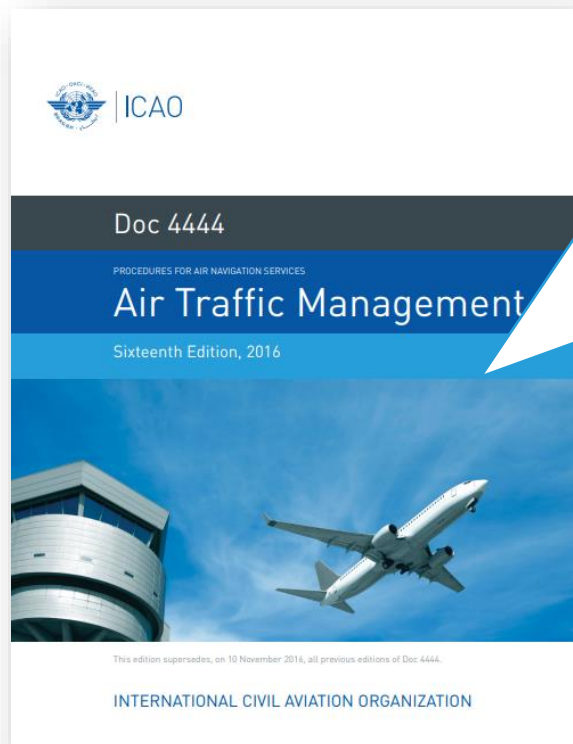
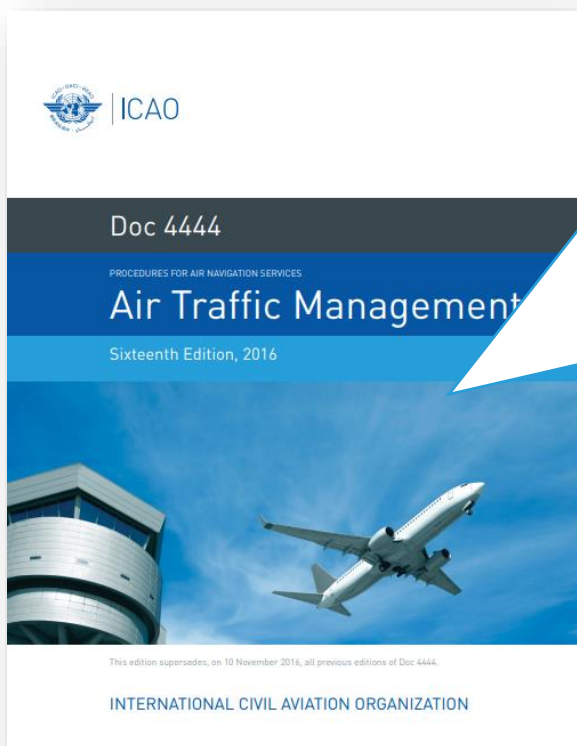


Table 17-1

- 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

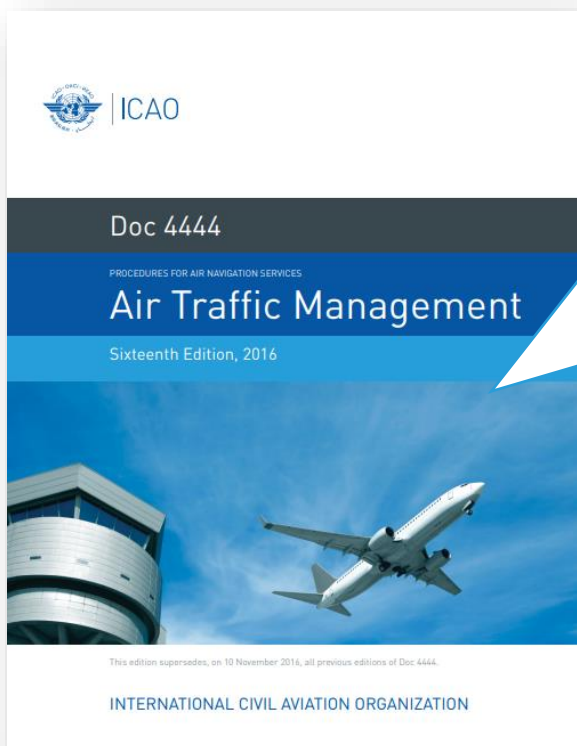
FF-ICE Services Procedures – Examples (1/2)



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.

Standard FF-ICE Messages

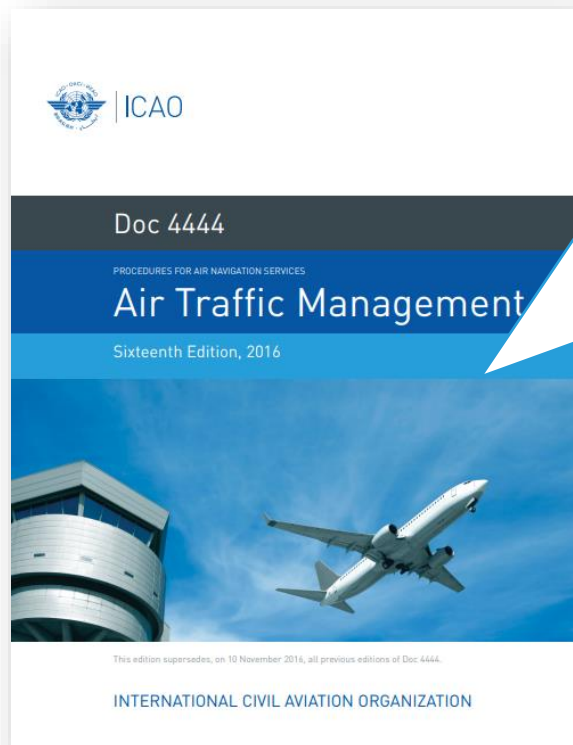
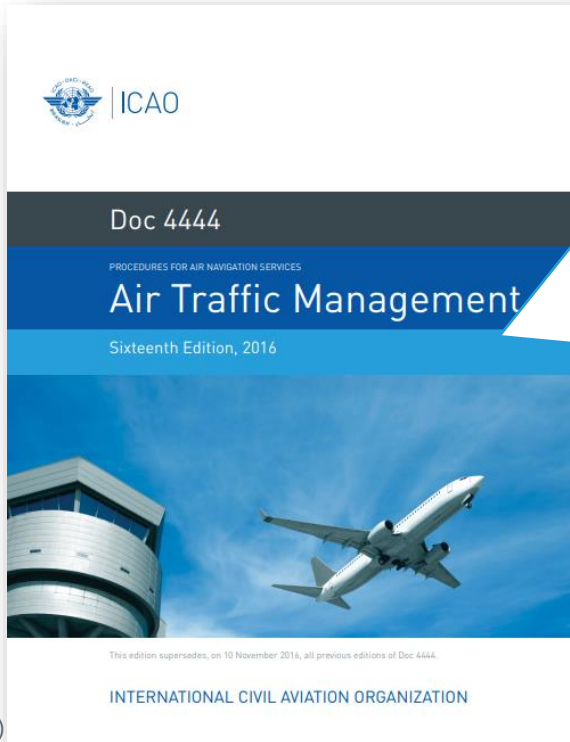


Table 17-1

- 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



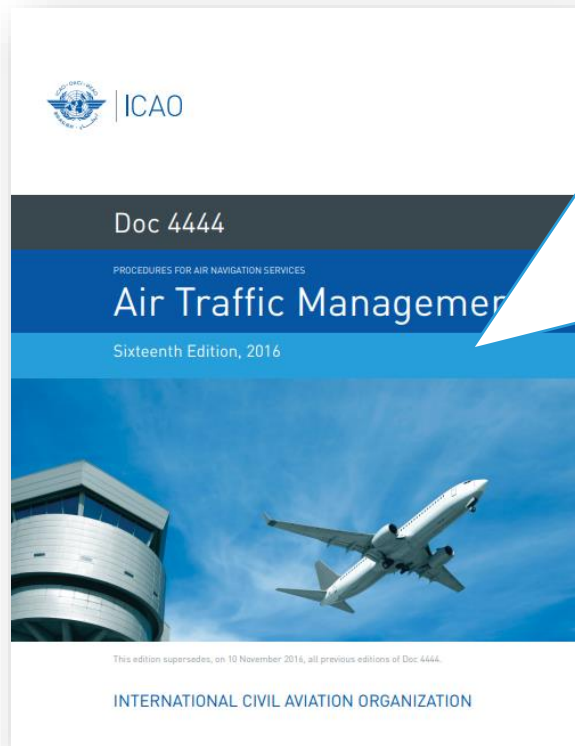
17.5.1 FF-ICE services shall make use of information services.

*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)

30



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.



3.9 Globally unique flight identifier

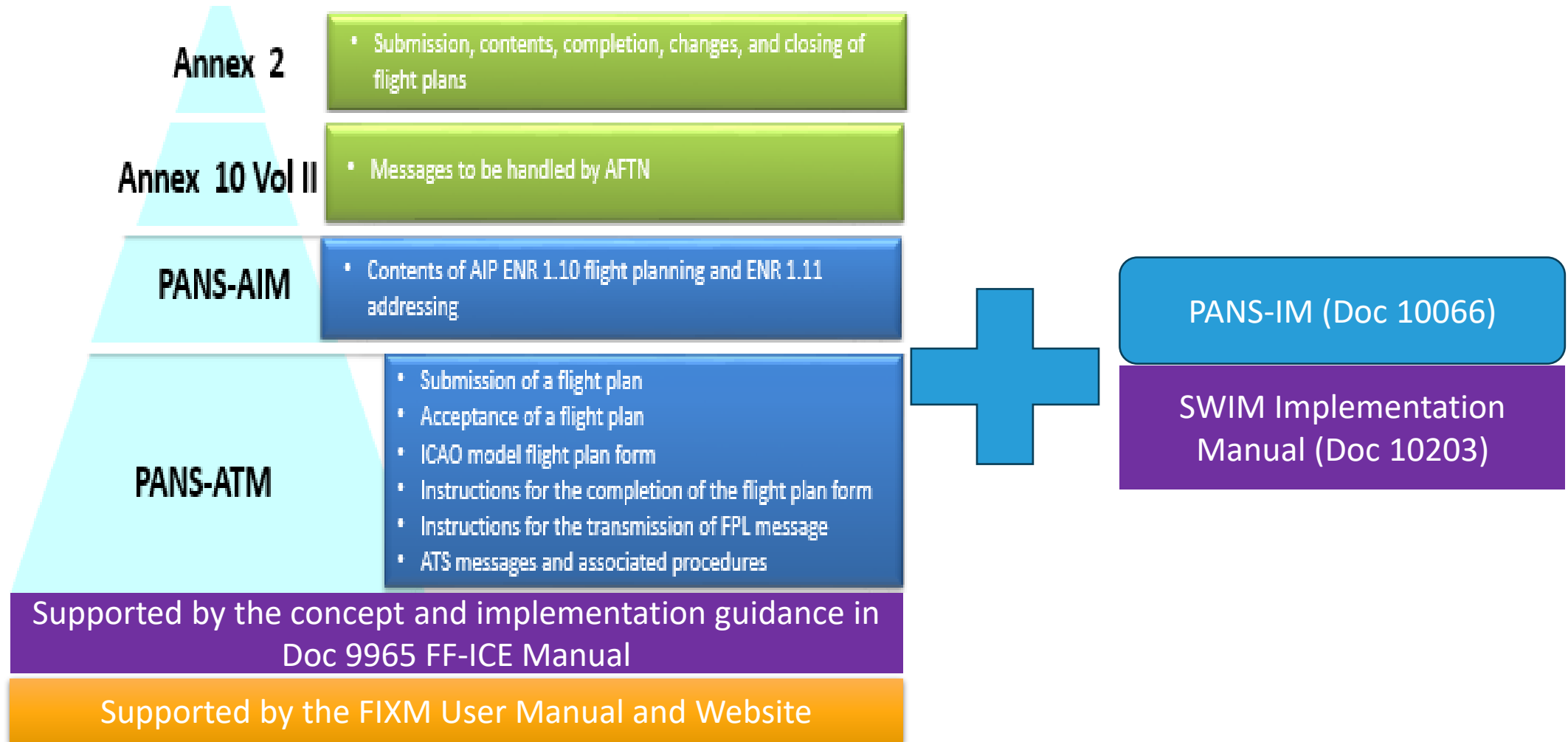
3.9.1 The originator of a preliminary flight plan (PFP) or eFPL **shall assign a single GUF**I to a flight for which the flight plan is to be submitted.

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 GUF**I.

.....

Summary of Global Provisions and Guidance

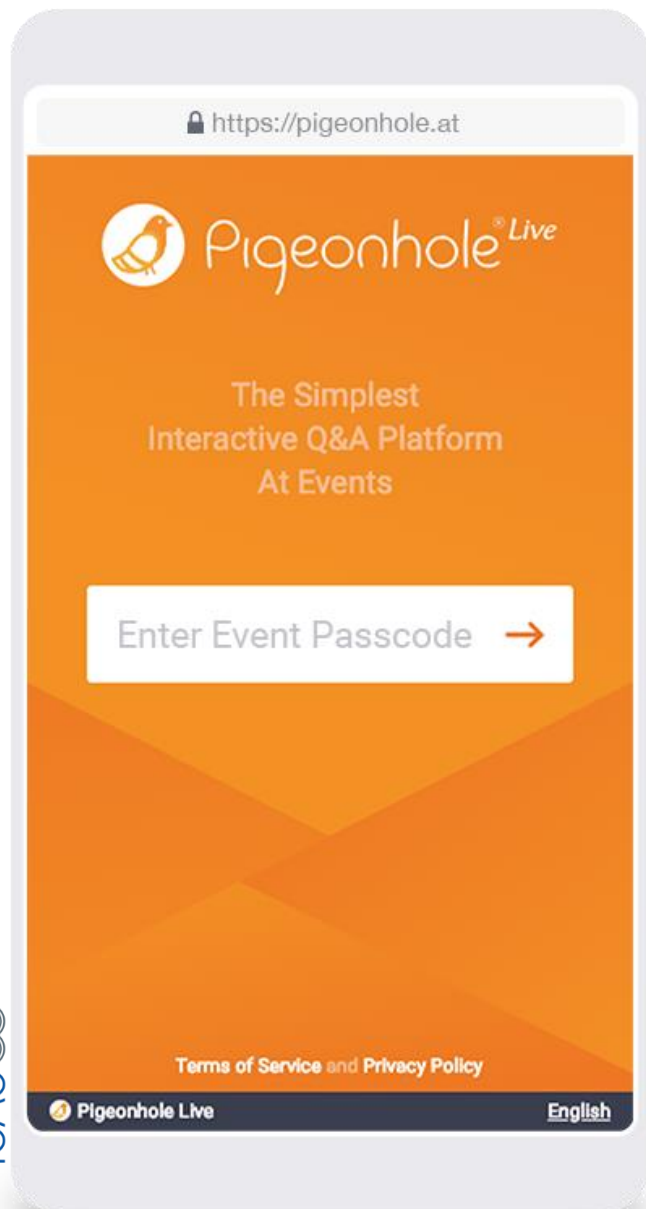
32



For Questions

Go to
pigeonhole.at
Enter passcode

ICAOATFMFFICE



Thank You

