



SUPPORTING
EUROPEAN
AVIATION

EUROCONTROL Network Manager Implementation of FF-ICE

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17th February 2026



Agenda

- Introduction
- FF-ICE Services
- FF-ICE Message Exchange
- FF-ICE New Information
- Transition from ICAO 2012 to FF-ICE
- FF-ICE Implementation Overview
- Further Information

Introduction

FPFDE* network strategic project established
FPFDE subgroup meets twice/year.
Members from ANSPs, operators, IATA, ATM systems etc..

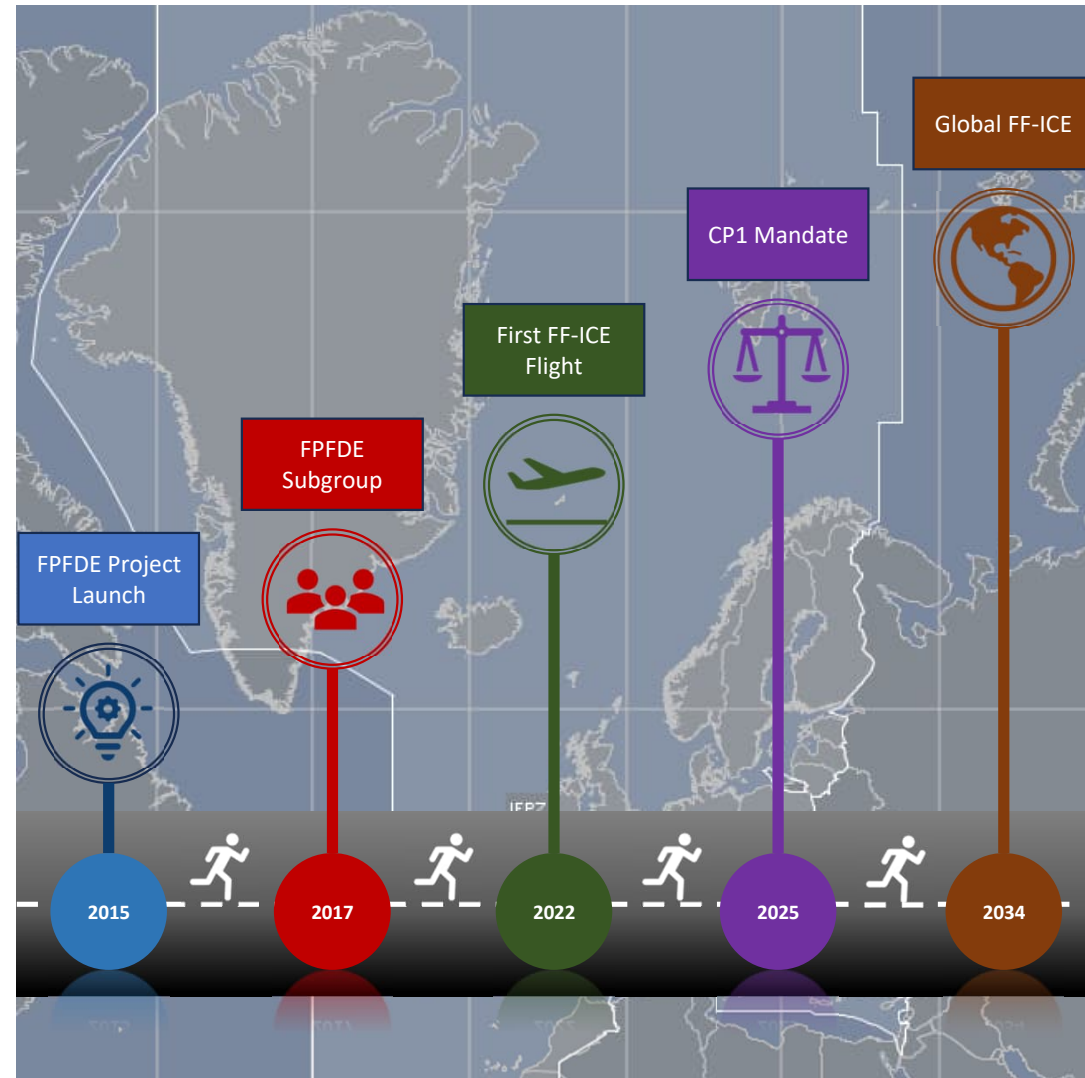
EUROCONTROL Network Manager (NM) FF-ICE services unit
for the IFPZ. All services provided except planning service

Services provided via NM B2B services using request/reply
and publish/subscribe communication models

Messages exchanged using the Flight Information Exchange
Model (FIXM)

First flight using an FF-ICE flight plan: Lufthansa Munich to
Hamburg 15th of December 2022

*Flight Plan & Flight Data Evolution



EUROCONTROL NM B2B Services



EUROCONTROL B2B Services



PRE-OPS Platform

- Conduct testing & assess readiness to move to OPS
- Requires NM B2B PRE-OPS certificate



OPS Platform

- Required to use services operationally
- Requires NM B2B OPS certificate, following testing & validation

FF-ICE Services



Planning Service

- Operator share early flight intent
- Assist operator determine optimal route/trajectory

Not yet implemented by EUROCONTROL



Trial Service

- Evaluate eFPL before submission
- Evaluate alternative
- “What-if” investigations



Publication Service

- Obtain information relevant to operations and maintain awareness of changes

Services implemented by EUROCONTROL



Filing Service

- Flight plan submit
- Flight plan update
- Flight plan cancellation



Flight Data Request Service

- Request specific flight data
- Equiv. to RQP & RQS



Notification Service

- Notify flight events
- Arrival & Departure notifications







Services implemented by EUROCONTROL

FF-ICE Message Exchange

Standard FF-ICE Messages: PANS-ATM Table 17-1

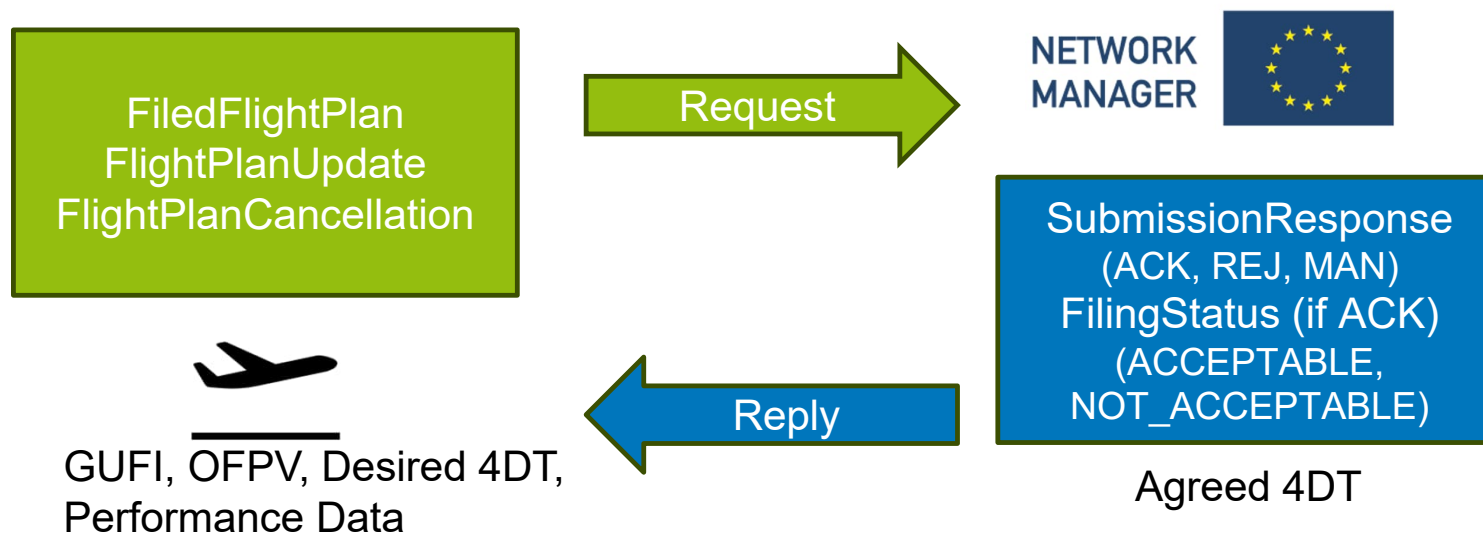
<u>Action</u>	
	Submit a flight plan
	Change a flight plan
	Delay a flight
	Cancel a flight
	Indicate departure/arrival
	Request flight plan or supplementary info.

<u>ICAO 2012 Flight Plan Message</u>
FPL
CHG
DLA
CNL
DEP/ARR
RQP/RQS

<u>FF-ICE Messages & Services</u>	
Filed Flight Plan	 Filing Service
Flight Plan Update	 Filing Service
Flight Plan Update	 Filing Service
Flight Cancellation	 Filing Service
Flight Departure Flight Arrival	 Notification Service
Flight Data Request	 FDR Service

FF-ICE Message Exchange-Filing Service

- Enables operator to submit, update or cancel eFPL in order to obtain ATS
- Request/reply NM B2B service



Submission Response: Data Validity
Filing Status: Operational Acceptability

FF-ICE Message Exchange-Filing Service

- eFPLs evaluated as soon as received
- NM feedback does not include flow impact (not defined or supported in FIXM)
- Re-evaluation every 30 minutes from 12 hrs prior to EOBT up to EOBT.
- Operators receive filing status changes via Publish/Subscribe

Filing Status:
NOT_ACCEPTABLE

- Error(s) & warning(s)
 - Negotiating trajectory*
- *Proposed route if one can be found

Filing Status: ACCEPTABLE

- Agreed trajectory

Re-evaluation equivalent to revalidation for ICAO 2012 flight plans,
to determine if eFPL remains compliant with ATM restrictions and measures

FF-ICE New Information

```
(FPL-DLH9LCZ-IS  
-A320/M-SDE2E3FGIJ1LORWXYZ/HB1  
-EDDM0940  
-N0445F370 ROTAX3S ROTAX L603 LATLO DCT OBEDI DCT NEMEK DCT VRANA  
DCT PETAK/N0445F390 DCT PINDO UL607 XORKI  
-LGAV0208 LGSA  
-PBN/A1B1C1D1O1S1S2 COM/ULD DAT/VM DOF/230122 REG/DAIWKZ  
EET/EDUU0011 LOVV0014 LJLA0026 LDZO0035 LQSB0039 LYBA0107 LAAA0116  
LGGG0130 CODE/3C66EB RVR/75 OPR/DLH ORGN/EDDFDLHD DLH PER/C RMK/TCAS  
AO4DT)
```

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">  
<soap:Body>  
<ns7:FiledFlightPlanRequest xmlns:ns2="http://www.fixm.aero/app/ffice/1.1" xmlns:ns3="http://www.fixm.aero/ffice/1.1" xmlns:ns4="http://www.fixm.aero/ffice/1.1">  
<endUserId>AB123456</endUserId>  
<sendTime>2025-05-17 06:40:04</sendTime>  
<filedFlightPlan_v1_1>  
<ns2:flight>  
<ns4:aircraft>  
<ns4:aircraftAddress>1AB123</ns4:aircraftAddress>  
<ns4:aircraftApproachCategory>C</ns4:aircraftApproachCategory>  
<ns4:aircraftType>  
<ns4:aircraftCount>1</ns4:aircraftCount>  
<ns4:icaoAircraftTypeDesignator>B738</ns4:icaoAircraftTypeDesignator>  
</ns4:aircraftType>  
<ns4:capabilities>  
<ns4:communication>  
<ns4:communicationCapabilityCode>E3 Y</ns4:communicationCapabilityCode>  
<ns4:datalinkCommunicationCapabilityCode>J1</ns4:datalinkCommunicationCapabilityCode>  
<ns4:otherCommunicationCapabilities>TCAS</ns4:otherCommunicationCapabilities>  
</ns4:communication>  
<ns4:navigation>  
<ns4:navigationCapabilityCode>D F G I L W</ns4:navigationCapabilityCode>  
<ns4:performanceBasedCode>A1 B1 B5 D1 D3 L1 O1 S2</ns4:performanceBasedCode>  
<ns4:requiredRunwayVisualRange uom="M">175.0</ns4:requiredRunwayVisualRange>  
</ns4:navigation>  
<ns4:standardCapabilities>STANDARD</ns4:standardCapabilities>  
<ns4:surveillance>  
<ns4:surveillanceCapabilityCode>B1 S</ns4:surveillanceCapabilityCode>  
</ns4:surveillance>  
</ns4:capabilities>  
<ns4:registration>EIMXYZ</ns4:registration>  
<ns4:wakeTurbulence>M</ns4:wakeTurbulence>  
</ns4:aircraft>  
<ns4:arrival>  
<ns4:destinationAerodrome>  
<ns3:locationIndicator>EGCC</ns3:locationIndicator>  
</ns4:destinationAerodrome>  
<ns4:destinationAerodromeAlternate>  
<ns3:locationIndicator>EGBB</ns3:locationIndicator>  
</ns4:destinationAerodromeAlternate>  
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</ns4:arrival>  
<ns4:departure>  
<ns4:departureAerodrome>  
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</ns4:departureAerodrome>  
<ns4:estimatedOffBlockTime>2025-05-17T13:35:00Z</ns4:estimatedOffBlockTime>  
<ns4:runwayDirection>28R</ns4:runwayDirection>  
</ns4:departure>  
<ns4:flightIdentification>  
<ns4:aircraftIdentification>ABC123</ns4:aircraftIdentification>  
<ns4:gufi codeSpace="urn:uuid" creationTime="2025-05-17T06:40:04Z" namespaceDomain="FULLY_QUALIFIED_I<br/>...</ns4:gufi>  
<ns4:iataFlightDesignator>  
<ns4:flightNumber>554</ns4:flightNumber>  
<ns4:iataOperatorCode>FR</ns4:iataOperatorCode>  
</ns4:iataFlightDesignator>  
</ns4:flightIdentification>  
<ns4:flightPlanOriginator>  
<ns3:contact>  
<ns3:onlineContact>
```

FF-ICE New Information

GUFI- Globally Unique Flight Identifier

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.

UUID V4 + Creation
timestamp + Namespace

Generated by the operator
or designated representative

Identifies individual flights

```
<ns4:gufi codeSpace="urn:uuid" creationTime="2026-02-16T09:40:53Z"  
  namespaceDomain="FULLY_QUALIFIED_DOMAIN_NAME"  
  namespaceIdentifier="example.com">  
a7583d7c-38c4-4587-9c56-a5d71846f38e</ns4:gufi>
```

- Use the GUFI to associate received FF-ICE messages to the correct flight
- Include the same GUFI whenever updating or cancelling the associated flight plan
- If a flight plan is cancelled and a new flight plan is submitted, a new GUFI is required

FF-ICE New Information

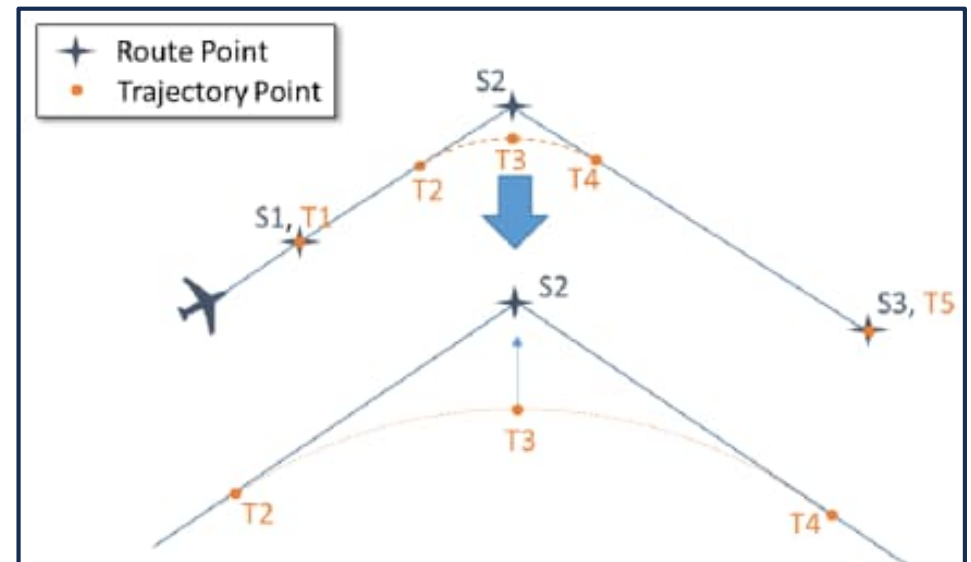
Operator Flight Plan Version

Flight Specific Performance Data

- Climb & descent speed schedule
- Climb & descent performance profiles

Take-off Mass

4D Trajectory



FF-ICE New Information

Example ICAO 2012 Flight Plan Item 15 Route:

```
-N0456F300 AGENA DCT BODEQ DCT LUMAS DCT BOSUR DCT SECON DCT ODIXU  
DCT ADITA DCT RAPED DCT PIGOS DCT EKSID DCT NOSTA DCT EGHIN DCT  
LABIN/N0453F290 DCT KOTOR
```

ICAO 2012 flight plan route
information for LUMAS
Versus
FF-ICE flight plan 4D trajectory
information for LUMAS

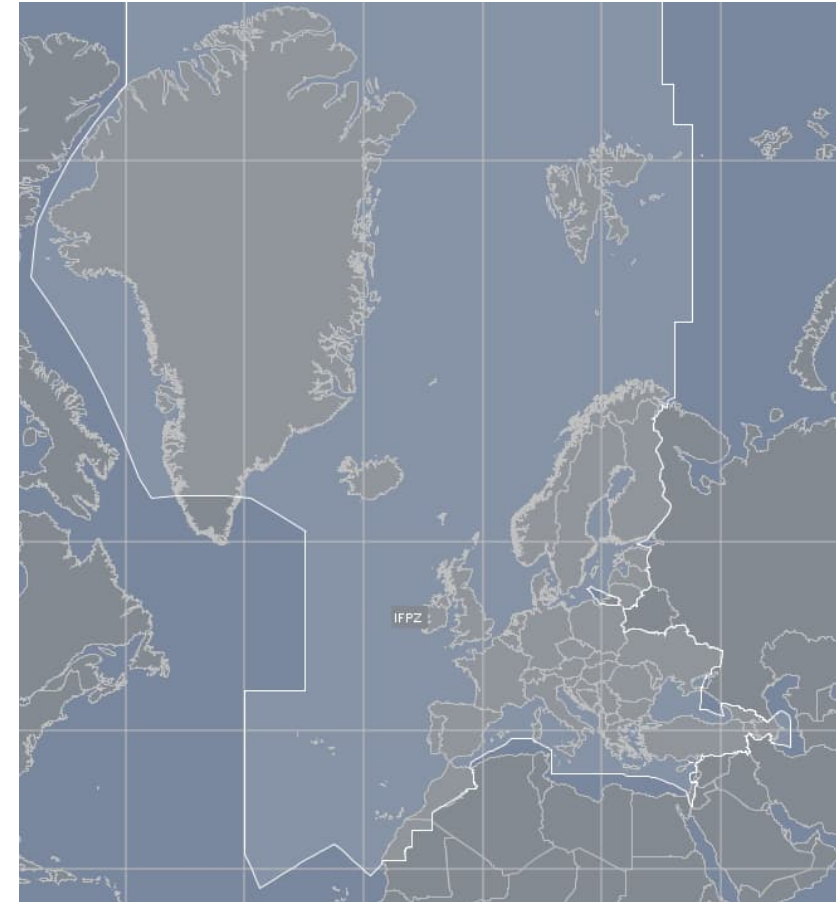
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<ns4:element>  
  <ns4:alongRouteDistance uom="M">285184.0</ns4:alongRouteDistance>  
  <ns4:elementStartPoint>  
    <ns3:designatedPoint>  
      <ns3:designator>LUMAS</ns3:designator>  
    </ns3:designatedPoint>  
  </ns4:elementStartPoint>  
  <ns4:extension xsi:type="ns5:NmRouteTrajectoryElementExtensionType" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">  
    <ns5:weight uom="KG">57607.0</ns5:weight>  
  </ns4:extension>  
  <ns4:point4D>  
    <ns4:level>  
      <ns3:altitude uom="M">9144.0</ns3:altitude>  
    </ns4:level>  
    <ns4:metData>  
      <ns4:temperature uom="C">-48.3</ns4:temperature>  
      <ns4:windDirection uom="DEG">322.0</ns4:windDirection>  
      <ns4:windSpeed uom="M_SEC">36.71</ns4:windSpeed>  
    </ns4:metData>  
    <ns4:position srsName="urn:ogc:def:crs:EPSG::4326">  
      <ns3:pos>41.733333333333334 4.666666666666667</ns3:pos>  
    </ns4:position>  
    <ns4:time>  
      <ns4:relativeTimeFromInitialPredictionPoint>P0Y0M0DT0H23M51S</ns4:relativeTimeFromInitialPredictionPoint>  
    </ns4:time>  
  </ns4:point4D>  
  <ns4:routeDesignatorToNextElement>  
    <ns4:otherRouteDesignator>DIRECT</ns4:otherRouteDesignator>  
  </ns4:routeDesignatorToNextElement>  
</ns4:element>
```

Transition from ICAO 2012 to FF-ICE

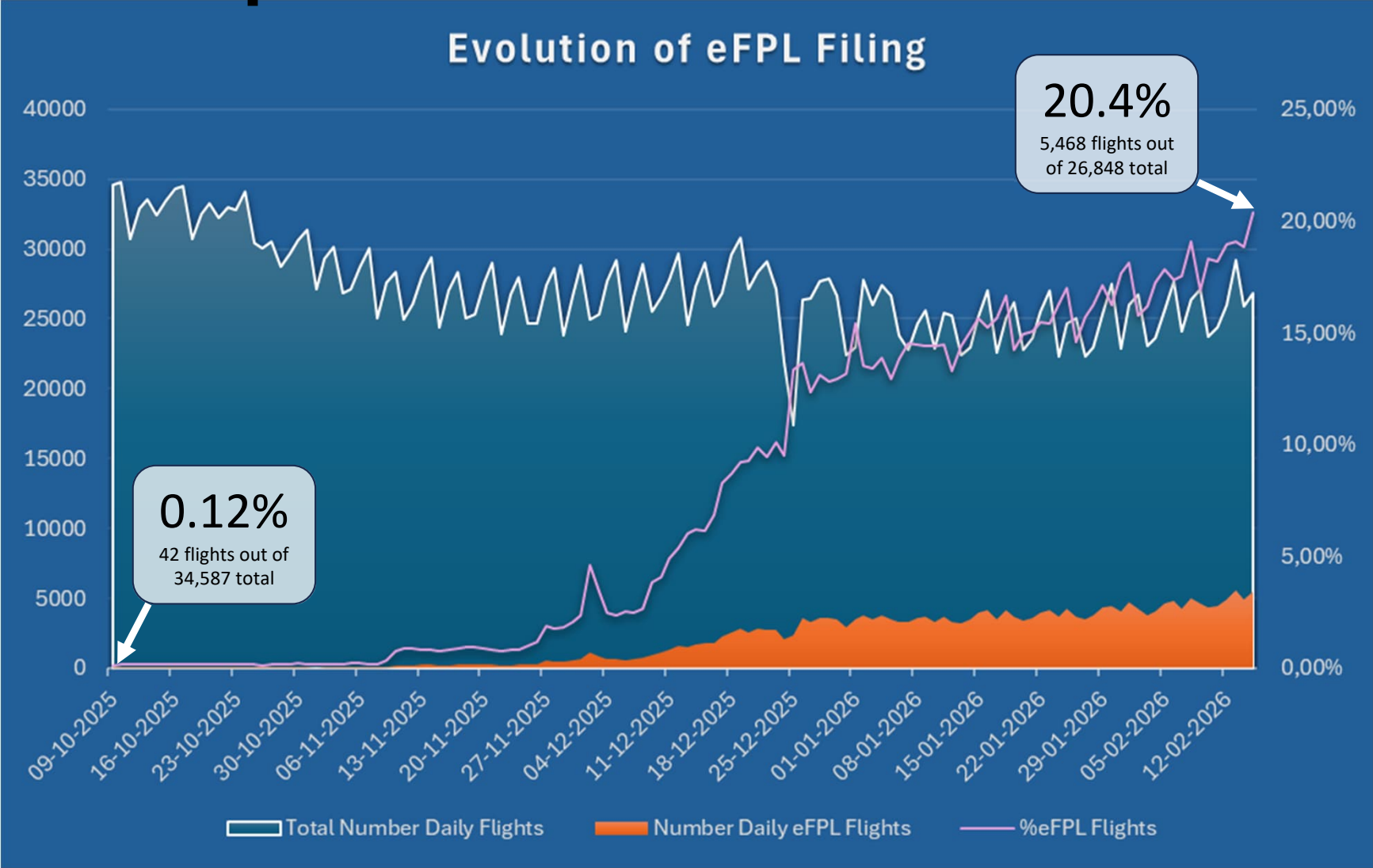
European Commission CP1 regulation mandates the implementation of FF-ICE for GAT under IFR in EU Member States, Norway & Switzerland

IFPZ is larger than the mandated area
Not all operators mandated to implement FF-ICE
Different timeframes for implementation

FF-ICE and FPL 2012 will coexist for an extensive period and NM has implemented mixed mode operations to support both, using translation & conversion



FF-ICE Implementation Overview



FF-ICE Further Information



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FF-ICE

Flight and flow information for a collaborative environment

FF-ICE is an ICAO concept that addresses limitations and constraints of the current flight planning mechanism, commonly known as the ICAO 2012 flight plan (FPL2012)

THIS IS PART OF

OPTIMISED OPERATIONAL PERFORMANCE (O) NETWORK OPERATIONS

Introduction to FF-ICE

FF-ICE aims to facilitate the transition to a fully collaborative environment where a flight trajectory is shared and optimised during all phases of a flight, known as trajectory-based operations or TBO.

In the first release, FF-ICE/R1, the concept introduces six services for use mainly in the pre-departure phase of flight. Each service is supported by harmonised procedures and standardised messages. They will enable stakeholders to plan, file, update or cancel flights plans, provide data on certain flight events and request and receive flight plan information and data. The second release, FF-ICE/R2, will address post-departure negotiation between airspace users and ATM service providers.

A key innovation within FF-ICE is the concept of the Globally Unique Flight Identifier (GUFI). GUFI provides a unique reference to a specific flight, helping distinguish between similar flights and associate messages to the correct flights.

Introduction to FF-ICE
NM Implementation
User steps for FF-ICE implementation
Reference documentation
Related regulations
Frequently Asked Questions
Contact
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- EUROCONTROL FF-ICE Webpage
- <https://www.eurocontrol.int/ffice>
- Introduction to FF-ICE
- Explanatory video
- EUROCONTROL implementation
- User steps for implementation
- Reference documentation
- FAQs



Contact: ffice@eurocontrol.int

Learning Zone

← Catalogue

FF-ICE - A Concept to Support Future ATM Operations

Webinar by [Main speaker name]

webinar recording Passed 22-Jul-2025 13:11 to 22-Jul-2025 13:11

Description Syllabus

FF-ICE, meaning **F**light and **F**low Information for a **C**ollaborative **E**nvironment, is an ICAO concept that addresses limitations and constraints of the current flight planning mechanism, commonly known as the ICAO 2012 flight plan (FPL2012). FF-ICE aims to facilitate the transition to a fully collaborative environment where a flight trajectory is shared and optimised during all phases of a flight, known as trajectory-based operations or TBO.

Commission Implementing Regulation (EU) 2021/116 (Common Project 1) mandates the submission of FF-ICE flight plans (eFPLs) for all IFR/GAT flights operating in the FIR/UIRs of the EU Member States, Norway and Switzerland by the end of 2025. This mandate applies to airspace users, ANSPs and EUROCONTROL Network Manager (NM).

This webinar will provide an introduction to FF-ICE, explain the main changes compared to FPL 2012, the high-level requirements from CPT and will provide you with an overview of how to start exchanging eFPLs with NM.

Agenda

- Introduction to FF-ICE (What? Why? When?)
- FF-ICE services
- The NM implementation of FF-ICE, including explanation of transition arrangements for the mixed modes of FF-ICE & FPL2012

Open syllabus

Status
You have finished the course

Duration
This recording takes 1 hour to watch

Available places



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