



***Information
Exchange
Requirements
for FF-ICE / R1***

2026

***2022-122-SESAR Deployment Manager FPA
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Document revisions

Versions	Description
DRAFT 2024.02.08	1 st baseline for FPFDE SG review prior to FPFDE SG#1
DRAFT 2024.03.07	Revised version supporting FPFDE SG#1. Reflects the proposed resolution of the comments received from FPFDE SG members.
DRAFT 2024.04.09	Version capturing the revised understanding on exemptions / applicability of requirements per types of operations. Version supporting the SDM Stakeholders Consultation.
EDITION 1.0 2024.06.20	First official version. Integrates comments from SDM Stakeholders Consultation.
DRAFT 2026.04.13	Revised version that removes the dependency on the unpublished Doc 9965 Ed2, and that adds a new Appendix for describing the main FF-ICE/R1 information concepts relevant to CP1.
DRAFT 2026.06.15	Definition of Performance Profile updated to clarify weather and atmospheric data used when filing the eFPL.
EDITION 2.0 2026.07.09	Second official version. Integrates comments from SDM Stakeholders Consultation.

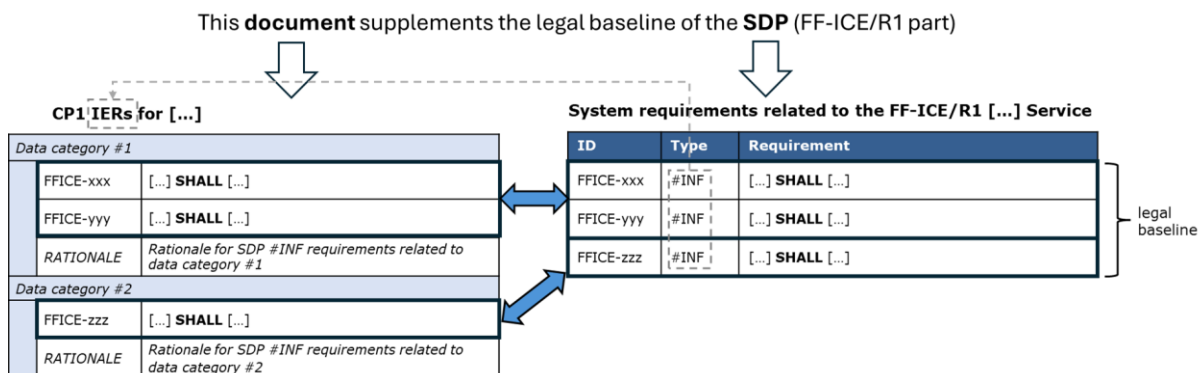
1. Introduction

CP1 (Family 5.6.1 – Flight Information Exchange) mandates that the FF-ICE/R1 Filing, Trial, Data Publication, Flight Data Request and Notification Services are provided by the Network Manager (NM) and consumed by Airspace Users (or their designated representatives) and Air Navigation Service Providers (ANSPs) by December 31, 2025.

This document provides details and clarity about the FF-ICE/R1 Information Exchange Requirements (IERs) to be satisfied by mandated stakeholders. The IERs outlined herein serve as a cornerstone for harmonizing operations, fostering collaboration, and ensuring compliance with the regulatory imperatives set forth in CP1. Therefore, this document serves as an essential tool for both understanding the CP1 requirements on the FF-ICE/R1 Information Exchanges and navigating the complexities of compliance.

RELATIONSHIP WITH THE SESAR DEPLOYMENT PROGRAMME

This document supplements the legal baseline of the SESAR deployment programme (SDP) 2025, specifically addressing the details of implementing CP1 FF-ICE/R1 information exchanges. It takes the FF-ICE/R1 IERs from the SDP, groups them in data categories deduced from the text of the CP1 regulation and provides the rationale for these IERs.



FUTURE EVOLUTION

The document will be gradually updated to reflect the growing maturity and the improved understanding of the FF-ICE/R1 implementation in Europe.

2. Definitions

Airspace users.

All aircraft operated as general air traffic. [EU/EC REGULATION No 549/2004]

eFPL.

The symbol used to designate a filed flight plan exchanged using FF-ICE services. [ICAO Doc 4444]

General air traffic. [GAT]

All movements of civil aircraft, as well as all movements of State aircraft (including military, customs and police aircraft) when these movements are carried out in conformity with the procedures of the ICAO. [EU/EC REGULATION No 549/2004]

Globally unique flight identifier. [GUFI]

An unchangeable data element associated with a flight that allows all eligible members of the ATM community to unambiguously refer to information pertaining to the flight. [ICAO Doc 4444]

3. FF-ICE/R1 Information Concepts relevant to CP1

FF-ICE/R1 provides the ability to exchange more flight and flow related information in a robust, systematic and expandable manner, and a systematic collaboration or negotiation procedure between operators and ATM, which facilitates the determination of an optimal route and trajectory.

Several information concepts newly introduced in FF-ICE/R1 are subject to requirements stemming from CP1. These requirements are further explained in chapters 4 and 5 of this document.

The FF-ICE/R1 Information Concepts relevant to CP1 include the **Globally Unique Flight Identifier**, the **Operator Flight Plan Version**, the **Route/Trajectory Group**, the **Aircraft Take-Off Mass**, the **(Climb and descent) Speed schedule**, the **Performance (climb and descent)**, and the **Filing Status**.¹

APPENDIX A provides details about these FF-ICE/R1 Information Concepts: what they are, how they are represented etc.

4. Clarification of the CP1 mandate

The CP1 regulation states that:

Operational stakeholders must implement services that support the exchange of flight information using the SWIM yellow profile, as specified in the deployment programme:

(a) related to FF-ICE Release 1 Services:

- flight plan and routes generation and validation;
- flight plans, 4D trajectory, flight performance data, flight status;
- flights lists and detailed flight data;

These statements in CP1 context mean:

1. *routes generation and validation*: "routes generation" relates to the creation (resp. evaluation) by Airspace Users of FF-ICE flight plans and associated **expanded route** using the Filing (resp. Trial) Service provided by the Network Manager. See Appendix A chapter **Route/Trajectory Group** for details on the expanded route. "validation" relates to the outcome of the FF-ICE flight plan validation by the Network Manager and is an aspect covered in bullet point 4) *Flight Status* below.
2. *4D trajectory*: this relates to the **Trajectory information**. See Appendix A chapter **Route/Trajectory Group** for details.
3. *flight performance data*: this comprises the **Aircraft Take-Off Mass**, the **(Climb and descent) Speed schedule** and the **Performance (climb and descent)**, as explained in Appendix A.
4. *Flight status*: this relates to the **Operator Flight Plan Version** and the **Filing Status**.
Note: The term "Flight Status" used in CP1 does NOT refer to Field 18 STS, sometimes called status field, which captures the Reason for special handling by ATS. In FF-ICE, this piece of information is explicitly represented by the Data Item "Special Handling" in Data Category "Flight Characteristics".
5. *flights lists*: the notion of "Flights Lists" does not exist in FF-ICE/R1. It is therefore considered that this particular wording relates to the use of the **Globally Unique Flight Identifier** to assist in associating a message to the correct flight and to help in distinguishing between similar flights;
6. *detailed flight data*: This relates to the eFPL content that is not new compared to what is currently exchanged, i.e. this relates to **the flight plan data items already exchanged in FPL 2012 format**.

¹ This also applies to the ARO Flight plan filing service, as ARO shall provide the same capabilities.

The Information Exchange Requirements below are specified based on this meaning. In the next tables, the following terms and convention are used:

[Clarifications of the terms]

- The '**submitted eFPL**' designates the flight plan information that is provided by an Airspace User or its designated representative to the Network Manager using the FF-ICE Filing Service.
- The '**desired route/trajectory**' designates the route/trajectory group that is provided by an operator when submitting or updating an eFPL using the FF-ICE Filing Service.
- The '**distributed eFPL**' designates the flight information that is provided by the Network Manager to ANSPs using the FF-ICE Publication Service.
- The '**agreed route/trajectory**' designates the route/trajectory group that is provided by the Network Manager as an indication of the route/trajectory on record within the IFPS Zone.
- The '**flight (plan) data response**' (resp. '**flight (status) data response**') designates the flight information that is sent by the Network Manager as a response to a valid Flight Data Request of type "FLIGHT_PLAN" (resp. of type "FLIGHT_STATUS") made by an ANSP using the FF-ICE Flight Data Request Service.

[Convention]

- **SHALL** - indicates an IER that has to be satisfied in order to comply with the CP1 regulatory requirements;

5. IERs APPLICABILITY & EXEMPTIONS

The CP1 requirements related to FF-ICE/R1 concern General Air Traffic [GAT] operating IFR or mixed VFR/IFR.

VFR, OAT, iOAT and mixed OAT/GAT operations are exempted.

Note: This document specifies the CP1 requirements on the FF-ICE information that is exchanged, i.e. focuses on the "to-be" aspects. It does not address the transition to this "to-be" situation. As an example, this document does not address the distribution of the FPL converted into FIXM using the Publication Service, which is not an FF-ICE capability, but a capability supporting the transition to FF-ICE.

6. CP1 IERs for Airspace Users (Filing Service)

Route/Trajectory		
	FFICE-009	The desired route/trajectory of the submitted eFPL SHALL contain an expanded route, in line with the rules of the IFPS Users Manual. (*)
	FFICE-010	The desired route/trajectory of the submitted eFPL SHALL contain trajectory information, with at least: - One Initial Prediction Point; - One End Prediction Point; - Top of Climb (TOC) points for the initial cruising level and every subsequent requested cruising level change after a climb; - One Top of Descent (TOD) point where the trajectory begins a descent from the final (last) cruising level. - Trajectory Change Point – Vertical (TCP-V) points where a level segment (intermediate or cruise) is initiated or terminated; in line with the rules of the IFPS Users Manual. (*)
	RATIONALE	The exchange of <i>4D trajectory</i> information is mandated by CP1, and the CP1 wording <i>routes</i> generation is interpreted as relating to the Expanded Route. Therefore, the minimum requirement from a CP1 perspective is that Package 2B (Expanded Route with selected trajectory points) , as described in Appendix A Route/Trajectory Group, is supported in the submitted eFPL. The selection of trajectory points to be supported compulsorily is based on the minimum trajectory requirements specified in the NM IFPS User Manual R27.0.

		State Flights and Mixed IFR/VFR operations are exempted from fulfilling this requirement in order to acknowledge that the information can be either sensitive or harder to originate and process. The wording "in line with the rules of the IFPS Users Manual" is used in the requirements in order to acknowledge that the IFPS Users Manual might specify further rules on the expected route/trajectory content in some particular cases, for instance when the submitted eFPL contains en-route delay information (see e.g. chapter C-7 En-Route Delay).
Flight Performance Data		
	FFICE-011	The aircraft take-off mass, the performance climb and descent profile and the climb and descent speed schedule SHALL be provided in the submitted eFPL. (*)
	RATIONALE	CP1 mandates the exchange of <i>flight performance data</i> , which comprises the Aircraft Take-Off Mass, the Performance (climb and descent) , and the (Climb and descent) Speed schedule when relevant (i.e. when the aircraft will climb/descend through the crossover altitude). State Flights and Mixed IFR/VFR operations are exempted from fulfilling this requirement, considering that they are already exempted from providing trajectory information. Besides the flight performance data, although nice to have, may be sensitive for Military flights. <i>Note: the requirement applies provided it is consistent with the contractual or legal provisions governing the sharing of performance data provided by aircraft manufacturers / aircraft operators / CFSPs.</i>
Flight status		
	FFICE-012	The operator flight plan version SHALL be provided in the submitted eFPL.
	RATIONALE	The term "Flight Status" used in CP1 refers to the FF-ICE/R1 Data Category of the same name, which for the submitted eFPL comprises the Operator Flight Plan Version. <i>Note: The operator flight plan version is already declared mandatory in the FIXM message template for the submitted eFPL.</i>
Flights lists		
	FFICE-013	The Globally Unique Flight Identifier (GUFID) SHALL be provided in the submitted eFPL.
	RATIONALE	This is to enable the flight / flight plan association based on GUFID. <i>Note: The GUFID is already declared mandatory in the FIXM message template for the submitted eFPL.</i>
Detailed flight data		
	FFICE-014	The flight data that is mandatory in FPL 2012 format, as prescribed in ICAO Doc 4444 and the IFPS Users Manual, SHALL be included in the submitted eFPL.
	RATIONALE	This is to ensure that the submitted eFPL retains all information in comparison to its legacy ATS message counterpart.

(*) **NOT APPLICABLE to State Flights (incl. military flights) and to Mixed IFR/VFR operations.**

The IERs on the content of the submitted eFPL content can be summarised as follows:

	GAT			Mixed OAT/GAT	OAT/iOAT
	IFR	Mixed IFR/VFR	VFR		
All movements of State Aircraft (including military, customs and police aircraft)	SHALL submit "light" eFPL	SHALL submit "light" eFPL	Not mandated to submit eFPL	Not mandated to submit eFPL	Not mandated to submit eFPL
All movements of civil aircraft	SHALL submit "full" eFPL	SHALL submit "light" eFPL	Not mandated to submit eFPL	N/A	N/A

 "light" eFPL = provision of Flight Performance Data, of Expanded Route information and of Trajectory information is **OPTIONAL**.

 "full" eFPL = provision of Flight Performance Data, of Expanded Route information and of Trajectory information is **MANDATORY**.

7. CP1 IERs for the Network Manager (Data Publication Service)

Route/Trajectory		
	FFICE-304	The agreed route/trajectory SHALL be provided in the distributed eFPL.
	FFICE-305	The agreed route/trajectory that is provided in the distributed eFPL SHALL contain an expanded route. (See also Note 1 below)
	FFICE-306	The agreed route/trajectory that is provided in the distributed eFPL SHALL at least contain: - One Initial Prediction Point; - One End Prediction Point; - Top of Climb (TOC) points for the initial cruising level and every subsequent requested cruising level change after a climb; - One Top of Descent (TOD) point where the trajectory begins a descent from the final (last) cruising level. - Trajectory Change Point – Vertical (TCP-V) points where a level segment (intermediate or cruise) is initiated or terminated. (See also Note 1 below)
	FFICE-307	The agreed route/trajectory that is provided in the distributed eFPL SHALL identify, where appropriate, the constraints impacting the desired route/trajectory, if any. (See also Note 1 below)
	RATIONALE	The exchange of the agreed route/trajectory as part of the distributed eFPL is mandatory because it is the route/trajectory on record within the IFPS Zone against which the airspace user is recommended to synchronise its own desired route/trajectory. Synchronising trajectories is one of the main objectives of trajectory-based operations allowing both the operator and the ATM functions to obtain the benefits that improved predictability can provide in terms of flight efficiency and ATM resource management. The requirements on the minimum level of details of the agreed route/trajectory ensures that Package 2B (Expanded Route with selected trajectory points), as described in Appendix A Route/Trajectory Group, is always supported in the distributed eFPL for all types of IFR operations, as a minimum requirement. Additionally, the agreed route/trajectory must identify, where appropriate, the constraints (Profile Tuning Restrictions (PTR)) impacting the desired trajectory by adding the necessary constraint points and references to the PTR identifiers, where appropriate.
Flight Performance Data		
	FFICE-308	The aircraft take-off mass, the performance climb and descent profile and the climb and descent speed schedule, when provided in the submitted eFPL, SHALL be provided in the distributed eFPL.
	RATIONALE	This ensures that all flight performance data that is provided to the Network Manager by the Airspace User is also available to the ANSPs.
Flight status		
	FFICE-309	The operator flight plan version provided in the submitted eFPL SHALL be provided in the distributed eFPL.
	RATIONALE	The exchange of the operator flight plan version (which belongs to the FF-ICE/R1 Data Category Flight Status) is mandatory (<i>shall</i>) in the distributed eFPL, in so far as the knowledge by ANSPs of this piece of information is essential in order to guarantee that only the most recent and up-to-date flight plan data is used.
Flights lists		
	FFICE-311	The Globally Unique Flight Identifier (GUFI) SHALL be provided in the distributed eFPL.
	RATIONALE	This is to allow the flight / flight plan identification based on GUFI.
Detailed flight data		
	FFICE-312	The flight data that is mandatory in FPL 2012 format, as prescribed in ICAO Doc 4444 and the IFPS User's Manual, SHALL be included in the distributed eFPL.
	RATIONALE	This is to ensure that the distributed eFPL does not miss information compared to what is currently distributed to ANSPs.

Note 1: The Network Manager will only be able to comply with these requirements if a desired route/trajectory containing an expanded route with trajectory information is received. For instance, if an expanded route (resp. route) only is received in the submitted eFPL, the Network Manager can only distribute an expanded route (resp. route) with no additional trajectory points and no constraints.

8. CP1 IERs for the Network Manager (Flight Data Request Service)

Route/Trajectory		
	FFICE-105	The agreed route/trajectory SHALL be provided in the flight (plan) data response.
	FFICE-106	The agreed route/trajectory that is provided in the flight (plan) data response SHALL have the same content as the agreed route/trajectory provided in the distributed eFPL.
	RATIONALE	The requirements aim to ensure that the route/trajectory information provided to ANSPs upon request via the Flight Data Request Service is similar content-wise to the route/trajectory information pushed to ANSPs via the Publication Service. The exchange of the agreed route/trajectory as part of the flight (plan) data response is mandatory because it is the route/trajectory on record within the IFPS Zone against which the airspace user is recommended to synchronise its own desired route/trajectory.
Flight Performance Data		
	FFICE-107	The aircraft take-off mass, the performance climb and descent profile and the climb and descent speed schedule, when provided in the submitted eFPL, SHALL be provided in the flight (plan) data response.
	RATIONALE	The requirements aim to ensure that the flight performance data provided to ANSPs upon request via the Flight Data Request Service is similar content-wise to the flight performance data pushed to ANSPs via the Publication Service.
Flight status		
	FFICE-108	The operator flight plan version provided in the submitted eFPL SHALL be provided in the flight (status) data response.
	FFICE-109	The Filing Status value SHALL be provided in the flight (status) data response.
	RATIONALE	Plausibility - The response to a valid Flight Data Request of type "FLIGHT_STATUS" has to contain flight status information.
Flights lists		
	FFICE-110	The Globally Unique Flight Identifier (GUFI) SHALL be provided in the flight (plan) data response and flight (status) data response.
	RATIONALE	The requirement aims to ensure that the data provided to ANSPs upon request via the Flight Data Request Service is similar content-wise to the data pushed to ANSPs via the Publication Service.
Detailed flight data		
	FFICE-111	The flight data that is mandatory in FPL 2012 format, as prescribed in ICAO Doc 4444 and the IFPS User's Manual, SHALL be included in the flight (plan) data response.
	RATIONALE	The requirement aims to ensure that the data provided to ANSPs upon request via the Flight Data Request Service is similar content-wise to the data pushed to ANSPs via the Publication Service.

9. Summary table – List of IERs applicable to mandated Stakeholders

	IERs for AUs	IERs for the Network Manager	IERs for ANSPs
Filing Service	From FIXM (*): Message template for FiledFlightPlan, Message template for FlightCancellation, Message template for FlightPlanUpdate From CP1: FFICE-009, FFICE-010, FFICE-011, FFICE-012, FFICE-013, FFICE-014	From FIXM (*): Message template for SubmissionResponse, Message template for FilingStatus From CP1: None	N/A
Flight Data Request Service	From FIXM (*): Message template for FlightDataRequest From CP1: None	From FIXM (*): Message template for SubmissionResponse, Message template for FlightDataResponse From CP1: FFICE-105, FFICE-106, FFICE-107, FFICE-108, FFICE-109, FFICE-110, FFICE-111	From FIXM (*): Message template for FlightDataRequest From CP1: None
Notification Service	N/A	From FIXM (*): Message template for SubmissionResponse From CP1: None	From FIXM (*): Message template for FlightDeparture, Message template for FlightArrival From CP1: None
Data Publication Service	N/A	From FIXM (*): None From CP1: FFICE-304, FFICE-305, FFICE-306, FFICE-307, FFICE-308, FFICE-309, FFICE-311, FFICE-312	From FIXM (*): None From CP1: None
Trial Service	From FIXM (*): Message template for TrialRequest From CP1: None	From FIXM (*): Message template for SubmissionResponse, Message template for TrialResponse From CP1: None	N/A

(*) see <https://www.fixm.aero/> for more details about the message templates for FF-ICE.

APPENDIX A – DESCRIPTION OF THE MAIN FF-ICE/R1 INFORMATION CONCEPTS

Globally Unique Flight Identifier

What it is

The Globally Unique Flight Identifier (GUFI) is intended to provide a unique reference to a specific flight, civil or military. Its purpose is to assist in associating a message to the correct flight and to help in distinguishing between similar flights. For the purpose of GUFI allocation “a flight” is considered to be the operation of an aircraft with a specified aircraft identification, at a specified departure aerodrome, at a specified date and time, from first submission of the flight plan until in-blocks at an arrival aerodrome.

If a flight plan is cancelled and a new flight plan is submitted, the new flight plan shall contain a new GUFI even if the new flight plan relates to what the operator will consider to be the same flight.

The operator, or its designated representative, is required to generate and allocate a GUFI to its FF-ICE flight plan.

Representation

The GUFI consists of a version 4 UUID, as standardised by IETF RFC 4122 and ISO/IEC 9834-8:2014, supplemented with a namespace identifying the originator of the GUFI and a creation timestamp.

- *UUID v4*: The construction of a new GUFI always requires the generation of a new UUID (i.e. the UUID portion of the GUFI should never intentionally be kept static while relying on the other components of the GUFI, such as the timestamp, to provide uniqueness).
- *Namespace*: The namespace is encoded using two fields: the namespace domain and the namespace identifier. The namespace domain identifies the particular type of namespace that is encoded, while the namespace identifier holds the actual namespace value. There are three options for the encoding of the namespace:
 - namespace domain = FULLY_QUALIFIED_DOMAIN_NAME when the namespace identifier is a domain name from either the organisation’s email or from the organisation’s website.
 - namespace domain = OPERATING_AGENCY_DESIGNATOR when the namespace identifier is a three-letter Operating Agency Designator (as per ICAO Doc. 8585).
 - namespace domain = LOCATION_INDICATOR when the namespace identifier is a four-letter Location Indicator (as per ICAO Doc. 7910).
- *Timestamp*: The creation timestamp is expressed as a DateTime UTC

The GUFI is represented in FIXM by property [gufi](#) of type GloballyUniqueFlightIdentifierType.

Related encoding guidance can be found on the FIXM User Manual at:

https://docs.fixm.aero/#/general-guidance/fx_FlightData?id=gufi

Operator Flight Plan Version

What it is

The negotiation process introduced by FF-ICE can give rise to a significant number of modifications to the flight plan, performed over a period of time. In order to assist in data synchronisation and in providing a reference for feedback, the operator is required to provide the Operator Flight Plan Version as an indication of the flight plan revision.

The Operator Flight Plan Version is always expressed as a positive integer. An initial eFPL submission shall have the Operator Flight Plan Version set to 1. A subsequent submission intending to replace the previous flight plan should indicate an Operator Flight Plan Version one greater than the previously submitted plan or update.

Note: More information about Operator Flight Plan Version can be found in the FF-ICE implementation roadmap.

Representation

The Operator Flight Plan Version is represented in FIXM by property operatorFlightPlanVersion, of type CountPositiveType.

Related encoding guidance can be found on the FIXM User Manual at:

https://docs.fixm.aero/#/general-guidance/ffice_FficeMessage?id=operatorflightplanversion

Route/Trajectory Group

What it is

The Route/Trajectory Group supports the representation of the aircraft movement description with variable levels of granularity.

A Route/Trajectory is distinguished by the type of route provided, and the type of trajectory information provided. The route may be either:

1. A **Route**. In a Route, each significant point and route element that would be present in an FPL field 15c has a corresponding route/trajectory element; or
2. An **Expanded Route**. An expanded route contains every significant point that is in the route. While a Route has only the entry and exit point from each ATS route traversed, the expanded route contains each significant point traversed along each ATS route.

Additional trajectory points included may be either:

- A. **None** (no additional trajectory points included);
- B. **Selected trajectory points**. In Europe, the selection of trajectory points is based on the minimum trajectory requirements specified in the NM IFPS User Manual R27.0.
- C. **Complete trajectory**. It includes every turn, every start and completion of cruising level, and every change in airspeed. A complete trajectory must also contain each required EET point.

There are five options for the level of details of the route/trajectory information in an eFPL, described as packages:

- Package 1A = Route and no trajectory point
- Package 1B = Route with selected trajectory points
- Package 2A = Expanded Route and no trajectory points
- Package 2B = Expanded Route with selected trajectory points
- Package 2C = Expanded Route with complete trajectory

Representation

The Route/Trajectory Group mainly consists of an ordered sequence of route/trajectory elements. It is represented in FIXM by datatype RouteTrajectoryGroupType.

Related encoding guidance can be found on the FIXM User Manual at:

https://docs.fixm.aero/#/general-guidance/fix_RouteTrajectory

Aircraft Take-Off Mass

What it is

This is the mass of the aircraft at the beginning of the take-off phase, as planned when the eFPL is submitted.

Representation

The Aircraft Take-Off Mass is represented in FIXM by property takeOffMass, of type MassType.

Note: a change to the planned take-off mass may be shared in an eFPL update, as appropriate.

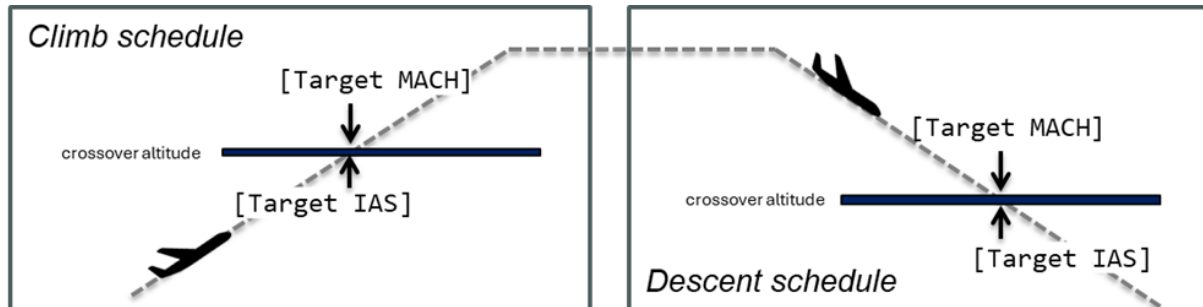
(Climb and descent) Speed schedule

What it is

The speed schedule is composed of a climb speed schedule and a descent speed schedule, each being comprised of a target Indicated Airspeed and Mach Number representing speed targets for the flight in transition.

The speed targets for the flight in transition are the speed parameters when the flight reaches the cross-over altitude.² The cross-over altitude is defined in ARINC 702A as the altitude at which the aircraft transitions from Mach number to IAS or vice versa. Therefore, there are four speed targets for the flight in transition which are:

- The target Indicated Air Speed when reaching the cross-over altitude in climb, i.e. when transitioning from IAS to Mach control;
- The target Mach number when transitioning from IAS to Mach control;
- The target Mach number when reaching the cross-over altitude in descent, i.e. when transitioning from Mach to IAS control;
- The target Indicated Air Speed when transitioning from Mach to IAS control.



Representation

The Speed Schedule is represented in FIXM by properties climbSchedule and descentSchedule, of type SpeedScheduleType.

Related encoding guidance can be found on the FIXM User Manual at:

https://docs.fixm.aero/#/general-guidance/fix_RouteTrajectory?id=climbschedule-descentsschedule

Performance (climb and descent) profile

What it is

The unconstrained performance profile is reflective of actual weather and atmospheric data as used by the AU or its designated representative. The actual weather and atmospheric data will exclude wind and temperature as these values will be calculated using zero wind and a temperature of ISA 0 (zero), for the climb and descent reflective of the aircraft capabilities and desired parameters for

² The speed schedule is reflective of the desired route/trajectory

that specific flight (planned take-off mass, speed schedule etc.). It does not include any airspace, altitude, or speed restriction constraints that are flight-specific and applicable to the route of flight.

Representation

A Performance Profile is expressed as a sequence of Profile Points each containing: distance, time duration, flight level or altitude, and optionally the true airspeed. The Performance Profile is expected to include one Profile Point every 1000 feet. This ensures that the Profile Points are evenly distributed and that the resulting Performance Profile has a granularity that is sufficient to support the intended use cases.

Climb profile	Climb profiles will be based on the planned take off mass. The Climb profiles begin at take-off with distance and time expressed relative to the point associated with take-off and end at the maximum altitude the aircraft could reach at the planned take off mass.
Descent Profile	Option 1 - Forward calculation Descent profiles will be based upon the planned aircraft mass at the calculated top-of-descent and will start at the max altitude available at the planned mass. Time and distance are expressed relative to the point in the profile corresponding to the max altitude. Descent profiles end at touchdown. Option 2 - Backward calculation Descent profiles will be based upon the planned aircraft mass at landing and will end at the max altitude available. Time and distance are expressed relative to the point in the profile corresponding to the max altitude. Descent profiles end at touchdown.

Performance CLIMB Profile				
		Altitude	Distance	Time duration
Profile Points	Point 0	Altitude at take-off	0	0
	Point 1	First relevant 1 000 ft increment (upwards)	Expressed relative to "Point 0" of the climb profile.	Expressed relative to "Point 0" of the climb profile.
	...	...		
	Point k	9 000 ft		
	Point k+1	10 000 ft		
	...	...		
	Point n	Maximum altitude the aircraft could reach at the planned take off mass.		

Performance DESCENT Profile				
		Altitude	Distance	Time duration
Profile Points	Point 0	Max capable altitude at the reference mass	0	0
	Point 1	First relevant 1 000 ft increment (downwards)	Expressed relative to "Point 0" of the descent profile	Expressed relative to "Point 0" of the descent profile
	...	...		
	Point k	10 000 ft		
	Point k+1	9 000 ft		
	...	...		
	Point n	Altitude at touchdown		

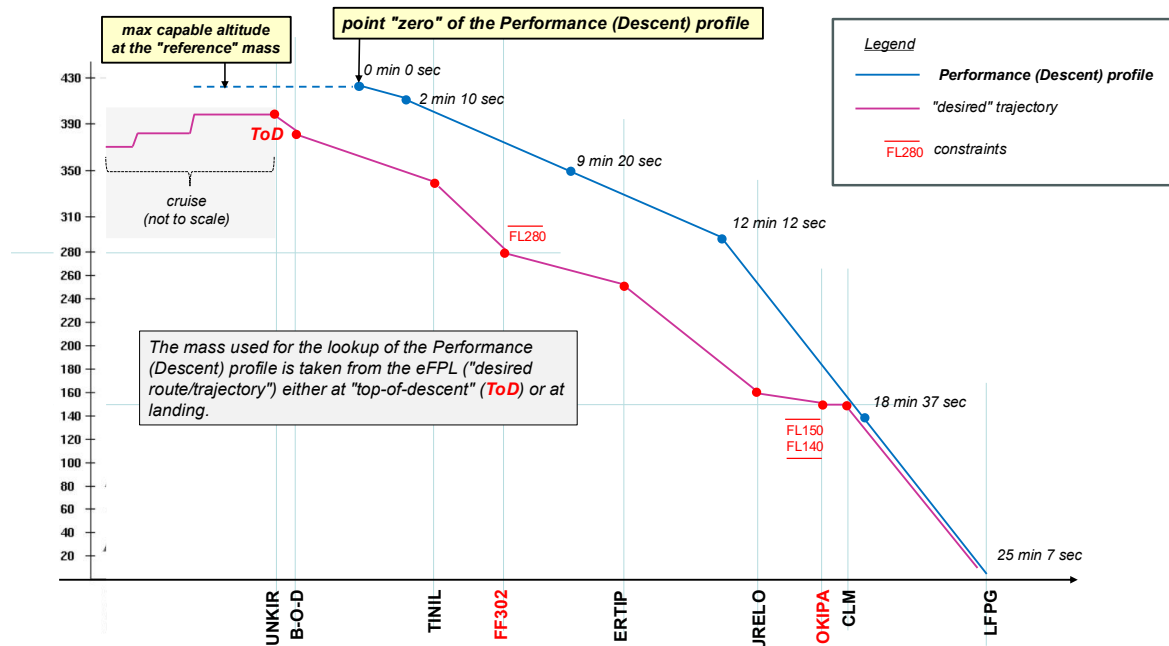


Figure 1: Illustration of the Performance Descent Profile

Note: The performance (descent) profile is expected to include one profile every 1000 ft. Only a subset of the profile points are shown on Figure 1 above, for readability.

The Performance Profile is represented in FIXM by properties climbProfile and descentProfile, of type PerformanceProfileType.

Performance Profile Deviations

EU	ICAO	Notes
The Speed Schedule is reflective of the desired route/trajectory.	The Speed Schedule assumes no flight-specific constraints.	Speed schedule is not impacted by the flight specific constraints although impacted by atmospheric conditions.
The Performance Profile in climb ends at the maximum altitude the aircraft could reach at the planned take off mass.	The Performance Profile in climb ends at the maximum operational cruise altitude for the specific route/trajectory.	In the EU, the end of the climb profile differs from what ICAO specifies.
The Performance Profile in descent begins at the maximum capable altitude at the reference mass.	The Performance Profile in descent begins at a top-of-descent at the maximum operational cruise altitude for the specific route/trajectory.	In the EU, the start of the descent profile differs from what ICAO specifies.

Filing Status

What it is

The Filing Status indicates the status of the submitted flight with respect to the eASP (namely NM). It consists of the following:

- as a minimum, the value of the filing status, which can be one the following:
 - ACCEPTABLE - Indicates that the eFPL, and in particular the desired route/trajectory, is acceptable.

- NOT_ACCEPTABLE - Indicates that the eFPL, typically the desired route/trajectory, does not comply with operational requirements.
- If applicable, an explanation to detail the inconsistencies with the ATM configuration and/or with restrictions that have led to the Filing Status value being set to NOT_ACCEPTABLE.

Representation

The Filing Status is represented in FIXM by property filingStatus of type FilingStatusType.