
# European ATM Service Description for the FlightPlanDataDistribution Service

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***Abstract***

This document contains the updated version of the service description for the Flight Plan Data Distribution service produced for ISRM 2.0.

The FlightPlanDataDistribution Service supports the service provider (Network Manager) to:

- send a copy of a valid Extended Flight Plan (EFPL) message, Extended Modification (ECHG) message, Extended Delay (EDLA) message to the service consumers (ATC units) concerned by the flight that want to receive extended flight plan messages;

- send to all of other service consumers (ATC units) concerned by the flight only a copy of the ICAO Flight Plan included in the EFPL message or a copy of a 'simple' modification (CHG) message or a copy of a 'simple' delay (DLA) message;
- notify to the service consumers (ATC units) the cancellation of a specified flight plan;
- send a specific Flight Plan (in Extended or ICAO format) following a specific request from a service consumer (AU or ATC unit).

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# Document History

| Edition | Date | Status | Author | Justification |
|---|---|---|---|---|
| 00.00.01 | 13/02/2015 | Draft | [redacted] / ENAV(IDS) | New Document produced in order to report the model views related to the FlightPlanDataDistribution Service following the Foundation for ISRM 1.3. This service is a refactoring of the ExtendedFlightPlanDistribution Service, as delivered in ISRM 1.1. The input is the "DEL 08.03.10 D61 European ATM Service Description for Extended Flight Plan Distribution Service" document (v.00.02.01). |
| 00.00.02 | 31/03/2015 | Draft | [redacted] / ENAV(IDS) | Updated document to include WP8 feedback. |
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| 00.01.00 | 25/05/2015 | Final | [redacted] / ENAV(IDS) | Final version for ISRM 1.3 delivery. |
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| 00.02.01 | 28/01/2016 | Final Update | [redacted] ENAV(IDS) | Final version updated according to 08.03.10-D64_SJU_Assessment_report-response. |
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| 00.03.00 | 01/06/2016 | Final | | Final version for the ISRM 2.0 delivery |
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This deliverable consists of SJU foreground.

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# Executive summary

The FlightPlanDataDistribution service addresses the distribution of valid Flight Plans (in Extended format or in ICAO format) from the Network Manager to the ATC Units, and the provision of a specific Flight Plan upon request from an ATC Unit or an AU.

In particular it enables the Network Manager to:

- send valid Extended Flight Plan or updates (modified or delayed) to subscribed ATC Units able to receive Extended Flight Plan messages;
- send valid ICAO Flight Plan or updates (modified or delayed) to subscribed ATC Units not able to receive Extended Flight Plan messages;
- notify the ATC Units when a Flight Plan is cancelled.

Consumers no more interested in the provided information can unsubscribe from the service interface.

Further the FlightPlanDataDistribution service enables the Network Manager to:

- send a specific Flight Plan (either in ICAO or Extended format) upon request performed by an authorized ATC Unit or AU.

The service update, reported in this document, has been performed to align the model and SDD to the ISRM 00.07.00 Foundation.

# 1 Introduction

## 1.1 Purpose of the document

The purpose of this Service description is to provide a holistic overview of the FlightPlanDataDistribution Service and its building blocks. It serves as a complement to a model based description and supports the configuration management process by providing well-defined baselines.

## 1.2 Intended readership

This service description is intended to be read by Enterprise Architects, Service Architects, Information Architects, System Engineers and Developers in pursuing architecting, design and development activities.

## 1.3 Inputs from other projects

European ATM Service Description for the FlightPlanDataDistribution Service (See reference [9]).

B4.3 EFPL Service Allocation FT14 (See reference [12])

## 1.4 Glossary of terms

NA

## 1.5 Acronyms and Terminology

### 1.5.1 Acronyms

| Term | Definition |
|---|---|
| **ADD** | Architecture Description Document |
| **AIRM** | ATM Reference Information Model |
| **ATC Unit** | Air Traffic Control unit |
| **ATM** | Air Traffic Management |
| **AU** | Airspace User |
| **CC** | Capability Configuration |
| **CHG message** | Modification message |
| **CNL message** | Cancellation message |
| **DLA message** | Delay message |
| **EATMA** | European Air Traffic Management Architecture |
| **E-ATMS** | European Air Traffic Management System |
| **ECHG message** | Extended modification message of the Extended Flight Plan |
| **EDLA message** | Extended delay message of the Extended Flight Plan |

| Term | Definition |
|---|---|
| **EFPL** | Extended Flight Plan |
| **FAA** | Federal Aviation Administration |
| **FIXM** | Flight Information Exchange Model |
| **FPL** | Flight Plan |
| **IER** | Information Exchange Requirement |
| **IFPS** | Integrated Initial Flight Plan Processing System |
| **ISRM** | Information Service Reference Model |
| **MEP** | Message Exchange Pattern |
| **NAF** | NATO Architecture Framework |
| **NM** | Network Manager |
| **NSOV** | NATO Service Oriented View |
| **NOV** | NATO Operational View |
| **NSV** | NATO System View |
| **ORM** | Operational Reply Message |
| **OSED** | Operational Service and Environment Definition |
| **QoS** | Quality of Service |
| **SDD** | Service Description Document |
| **SESAR** | Single European Sky ATM Research Programme |
| **SESAR Programme** | The programme which defines the Research and Development activities and Projects for the SJU. |
| **SJU** | SESAR Joint Undertaking (Agency of the European Commission) |
| **SJU Work Programme** | The programme which addresses all activities of the SESAR Joint Undertaking Agency. |
| **SoaML** | Service Oriented Architecture Modelling Language |
| **SPR** | Safety and Performance Requirements |
| **SWIM** | System Wide Information Management |
| **UML** | Unified Modelling Language |
| **V&V** | Validation and Verification |

| Term | Definition |
|---|---|
| **WSDL** | Web Services Definition Language |
| **XSD** | XML Schema Definition |

### 1.5.2 Terminology

| Term | Definition | Source |
|---|---|---|
| **Capability** | Capability is the ability of one or more of the enterprise's resources to deliver a specified type of effect or a specified course of action to the enterprise stakeholders. | EATMA Guidance Material [8] |
| **Capability Configuration** | A Capability Configuration is a combination of Roles and Systems configured to provide a Capability derived from operational and/or business need(s) of a stakeholder type. | EATMA Guidance Material [8] |
| **Node** | A logical entity that performs Activities. Note: nodes are specified independently of any physical realisation. | EATMA Guidance Material [8] |
| **Service** | The contractual provision of something (a non-physical object), by one, for the use of one or more others. Services involve interactions between providers and consumers, which may be performed in a digital form (data exchanges) or through voice communication or written processes and procedures. | EATMA Guidance Material [8] |
| **Service function** | A type of activity describing the functionality of a Service. | EATMA Guidance Material [8] |
| **Service interface** | The mechanism by which a service communicates | EATMA Guidance Material [8] |

# 2 Service identification

| | |
|---|---|
| **Name** | FlightPlanDataDistribution |
| **ID** | {003BA6E3-D3F5-488d-B920-351BF2ABC666} |
| **Version** | 2.0 |
| **Keywords** | EFPL, ECHG, EDLA, CHG, DLA, CNL, Extended Flight Plan, ICAO Flight Plan, Extended Modification Message, Extended Delay Message, Modification Message, Delay Message, Cancellation Message, Distribution |
| **Architect(s)** | [redacted] ENAV(IDS) |

| Lifecycle status | Date | References |
|---|---|---|
| **Identified** | 23/01/2013 | European ATM Service Identification for Extended Flight Plan Services (See reference [11]) |
| **Allocated** | 08/07/2013 | B4.3 EFPL Service Allocation FT14 (See reference [12]) |
| **Designed** | 01/06/2016 | This document |
| **Validated** | *Date when validated. Filled by WP3* | *Name of protocol documenting the decision* |
| **IOC** | *Date for Initial Operational Capability* | *Reference to technical enabler hosting the service in the ATM master plan* |
| **FOC** | *Date for Full Operational Capability* | *Reference to technical enabler hosting the service in the ATM master plan* |

# 3 Operational and Business context

The operational context for the FlightPlanDataDistribution service derives from the P07.06.02 OSED (See reference [9]).

This service enables the Network Manager to:

- send a copy of a valid EFPL/ECHG/EDLA message to the ATC units concerned by the flight that want to receive extended flight plan messages;
- send to all of other ATC units concerned by the flight, that do not support the extended format, only a copy of the ICAO flight plan included in the EFPL message or a copy of a “simple” CHG/DLA message;
- notify to the ATC units the cancellation of a specified flight plan;
- send a specific Flight Plan (in Extended or ICAO format) following a specific request from an Airspace User or an ATC unit.

## 3.1 Information Exchange Requirements

The mapping from FlightPlanDataDistribution Service to the Information Exchange Requirements is shown in Figure 1.

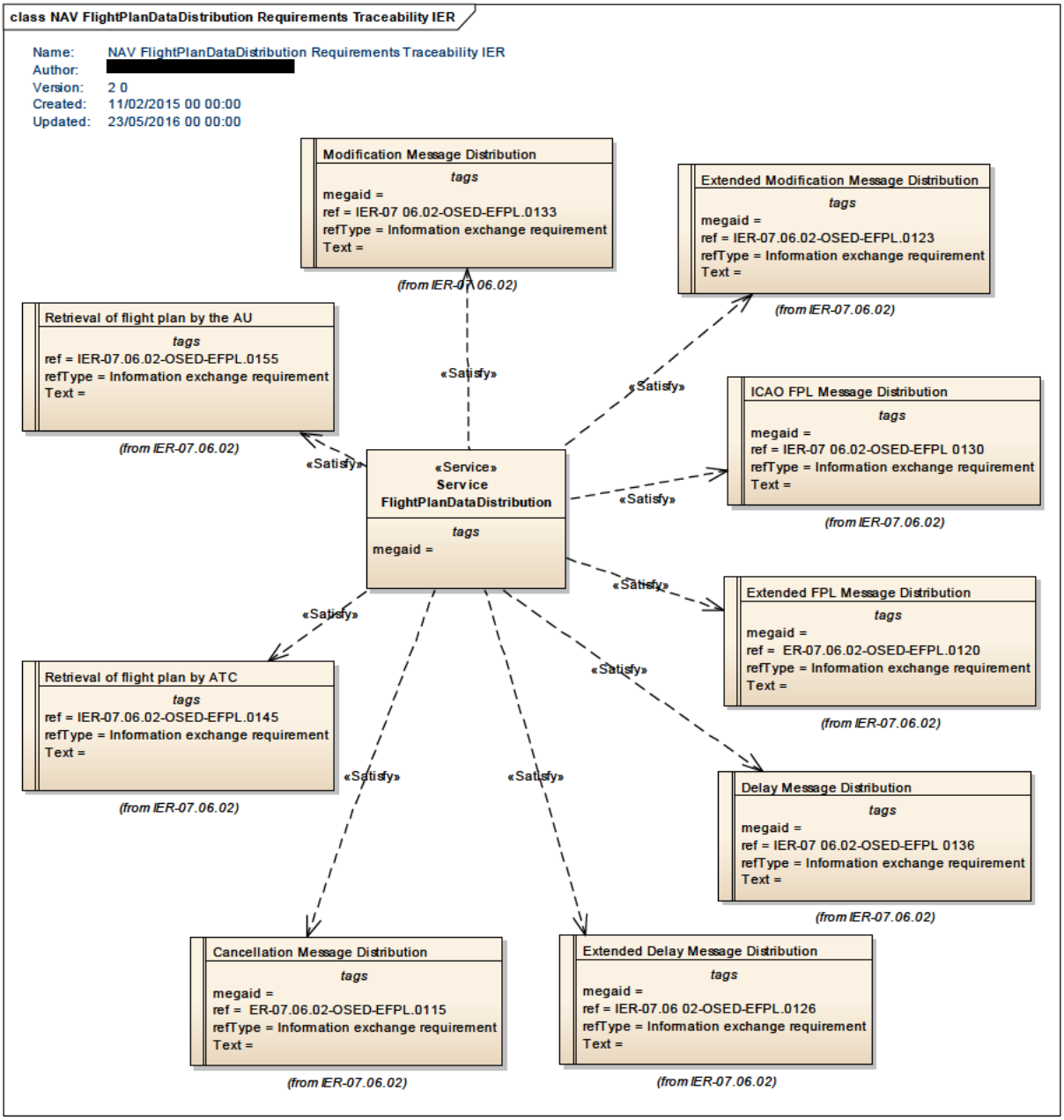


**Figure 1: NAV FlightPlanDataDistribution Requirements Traceability IER diagram**

| Element Name | | Author | Notes |
|---|---|---|---|
| Cancellation Message Distribution | | [redacted] | The NM shall be able to distribute a cancellation message to ATC units. |
| | **Element Tagged Value Name** | **Value** | |
| | megaid | | |
| | ref | IER-07.06.02-OSED-EFPL.0115 | |
| | refType | Information exchange requirement | |
| | Text | | |
| **Element Name** | | **Author** | **Notes** |
| Delay Message Distribution | | [redacted] | The NM shall be able to distribute a DLA message to ATC units not supporting EFPL format. |
| | **Element Tagged Value Name** | **Value** | |

| | | |
|---|---|---|
| | megaid | |
| | ref | IER-07.06.02-OSED-EFPL.0136 |
| | refType | Information exchange requirement |
| | Text | |

| Element Name | Author | Notes |
|---|---|---|
| Extended Delay Message Distribution | [redacted] | The NM shall be able to distribute an EDLA message to ATC units supporting EFPL format. |

| | Element Tagged Value Name | Value |
|---|---|---|
| | megaid | |
| | ref | IER-07.06.02-OSED-EFPL.0126 |
| | refType | Information exchange requirement |
| | Text | |

| Element Name | Author | Notes |
|---|---|---|
| Extended FPL Message Distribution | [redacted] | The NM shall be able to distribute an EFPL message to ATC units supporting EFPL format. |

| | Element Tagged Value Name | Value |
|---|---|---|
| | megaid | |
| | ref | IER-07.06.02-OSED-EFPL.0120 |
| | refType | Information exchange requirement |
| | Text | |

| Element Name | Author | Notes |
|---|---|---|
| Extended Modification Message Distribution | [redacted] | The NM shall be able to distribute an ECHG message to ATC units supporting EFPL format. |

| | Element Tagged Value Name | Value |
|---|---|---|
| | megaid | |
| | ref | IER-07.06.02-OSED-EFPL.0123 |
| | refType | Information exchange requirement |
| | Text | |

| Element Name | Author | Notes |
|---|---|---|
| ICAO FPL Message Distribution | [redacted] | The NM shall be able to distribute an ICAO FPL message to ATC units not supporting EFPL format. |

| | Element Tagged Value Name | Value |
|---|---|---|
| | megaid | |
| | ref | IER-07.06.02-OSED-EFPL.0130 |
| | refType | Information exchange requirement |
| | Text | |

| Element Name | Author | Notes |
|---|---|---|
| Modification Message Distribution | [redacted] | The NM shall be able to distribute a CHG message to ATC units not supporting EFPL format. |

| | Element Tagged Value Name | Value |
|---|---|---|
| | megaid | |
| | ref | IER-07.06.02-OSED-EFPL.0133 |
| | refType | Information exchange requirement |
| | Text | |

| Element Name | Author | Notes |
|---|---|---|
| Retrieval of flight plan by ATC | [redacted] | An ATC unit shall be able to request flight plan data for a given flight to the NM. |

| | Element Tagged Value Name | Value |
|---|---|---|
| | ref | IER-07.06.02-OSED-EFPL.0145 |
| | refType | Information exchange requirement |
| | Text | |

| Element Name | | Author | Notes |
|---|---|---|---|
| Retrieval of flight plan by the AU | | [redacted] | An AU shall be able to request flight plan data for a given flight to the NM. |
| | **Element Tagged Value Name** | **Value** | |
| | ref | IER-07.06.02-OSED-EFPL.0155 | |
| | refType | Information exchange requirement | |
| | Text | | |

**Table 1: Requirements tracing**

## 3.2 Other Requirements

### 3.2.1 Non-Functional Requirements

The diagram below shows the Non-Functional Requirements taken from the SPR document (Ref.[20]).

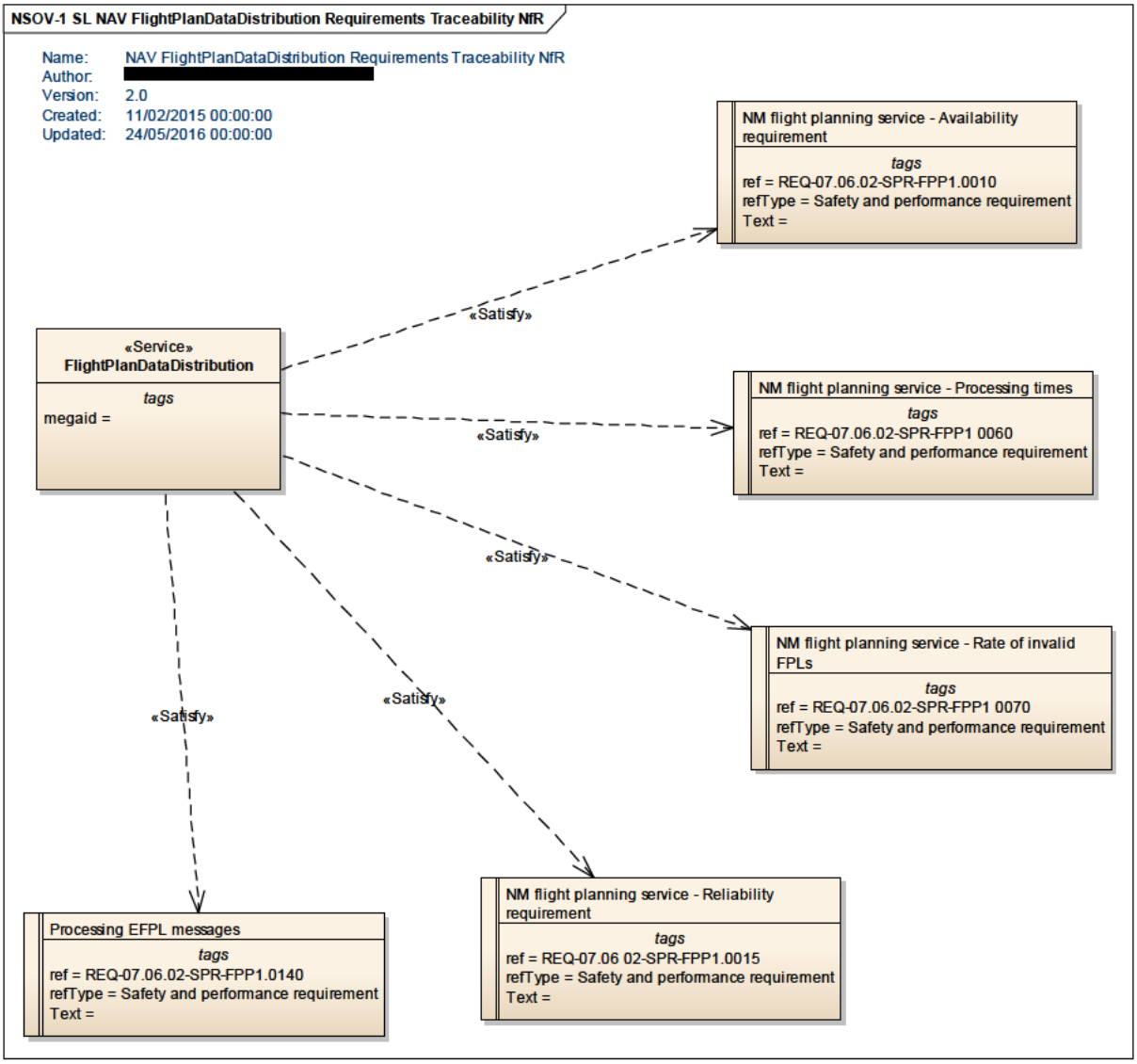


**Figure 2: NAV FlightPlanDataDistribution Requirements Traceability NfR diagram**

### 3.2.2 Relevant Industrial Standards

The data described in the P07.06.02 OSED are based on the definitions given in the ICAO Doc 4444 for the 2012 Flight Plan (ICAO Doc 4444 ATM/501 PANS – Air Traffic Management – 15th Edition 2007 Amendment 2).

### 3.2.3 Nodes

The EATMA nodes specified in the service are shown in the *NOV-2 FlightPlanDataDistribution Service To Nodes Mapping* diagram below:

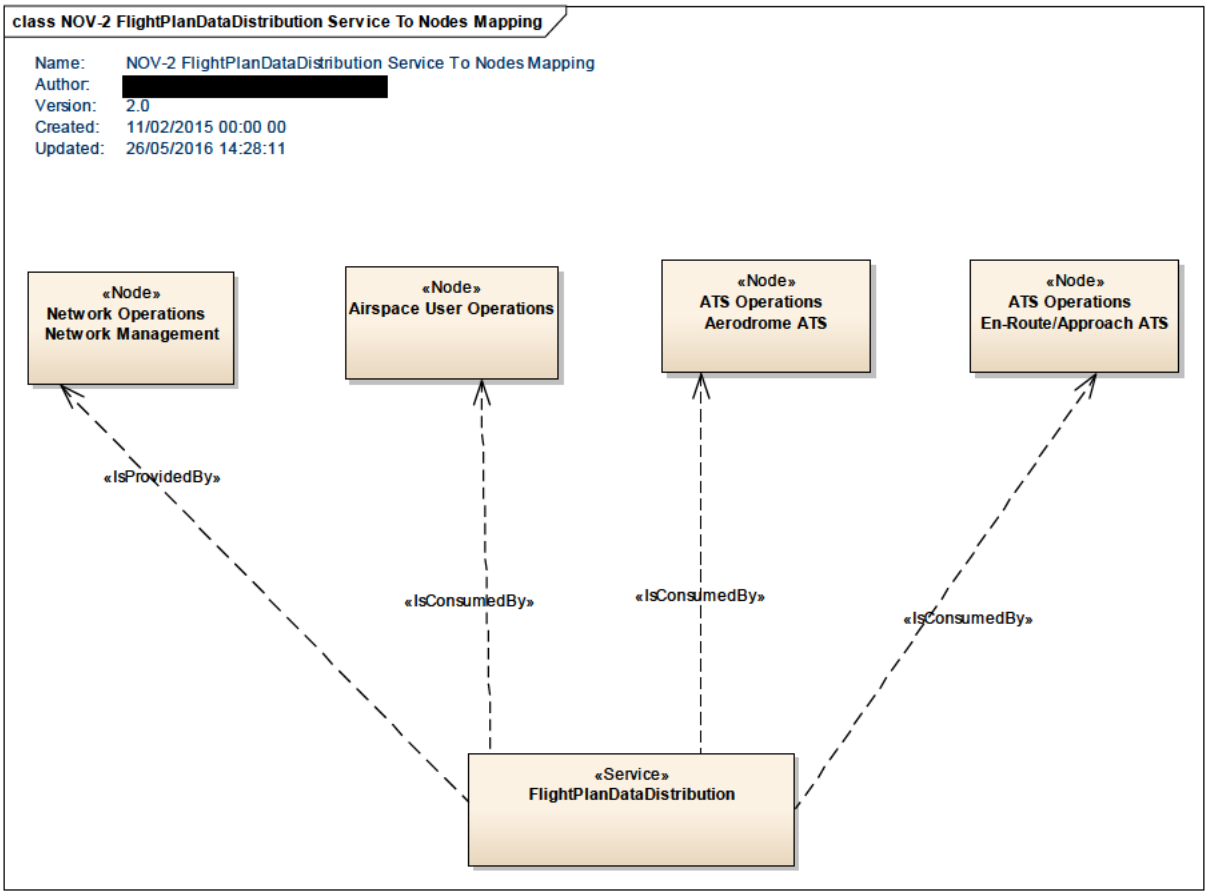


**Figure 3: NOV-2 FlightPlanDataDistribution Service to Nodes Mapping diagram**

# 4 Service overview

The FlightPlanDataDistribution service is used to support the following interactions between the service provider (Network Manager) and the service consumers (ATC units, AU):

- The service provider is able to support requests for subscription / unsubscription from the service consumers
- The service provider is able to publish EFPL/ECHG/EDLA/CNL messages for the subscribed service consumers (ATC units);
- The authorized service consumer is able to request a copy of a specific flight plan (in Extended or ICAO format) and receive the requested information.

## 4.1 Service Taxonomy

The service taxonomy is described in the ISRM Service Portfolio document [19].

## 4.2 Service Levels (NfRs)

Non Functional Requirements are described in section 3.2.1.

## 4.3 Service Functions and Capabilities

The mapping from Service to EATMA Operational Activities for the FlightPlanDataDistribution Service is shown in the NSOV-4 Service to Operational Activity diagram, which is reported in Figure 4. The mapping from Service to EATMA Capabilities for the FlightPlanDataDistribution Service is shown in Figure 5.

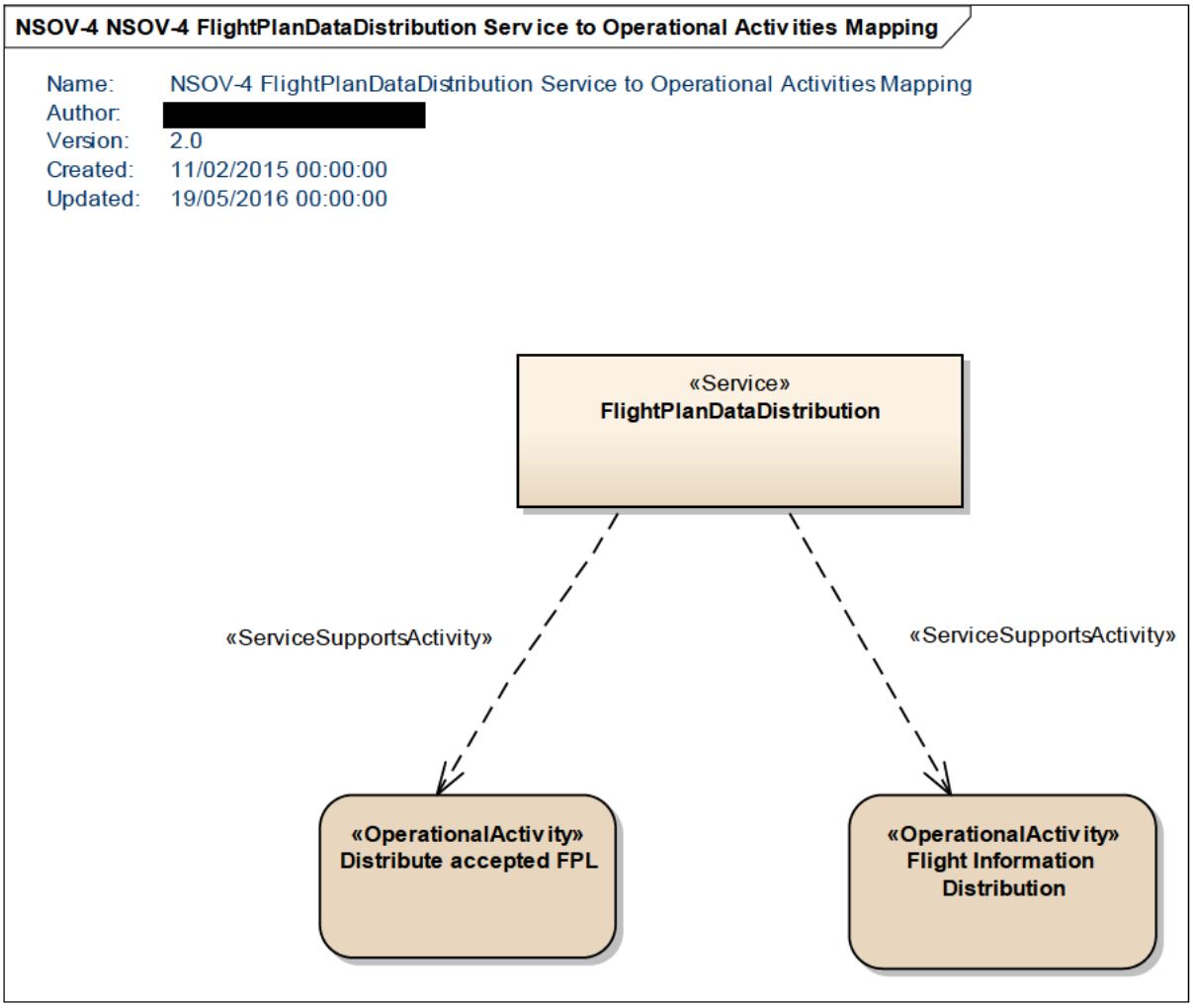


**Figure 4: NSOV-4 FlightPlanDataDistribution Service to Operational Activities Mapping diagram[1]**

[1] This diagram has been updated to take into account the latest EATMA Operational Activities.

## 4.4 Service Interfaces

The FlightPlanDataDistribution Service has two service interfaces (ports):

- ***FlightPlanPublisherInterface***;
- ***FlightPlanProviderInterface.***

The Service interface specifications are reported in Chapter 5 and are thus not detailed here.
The *NSOV-2 ExtendedFlightPlanSubmission Service Interface Definition* diagram is in Figure 5.

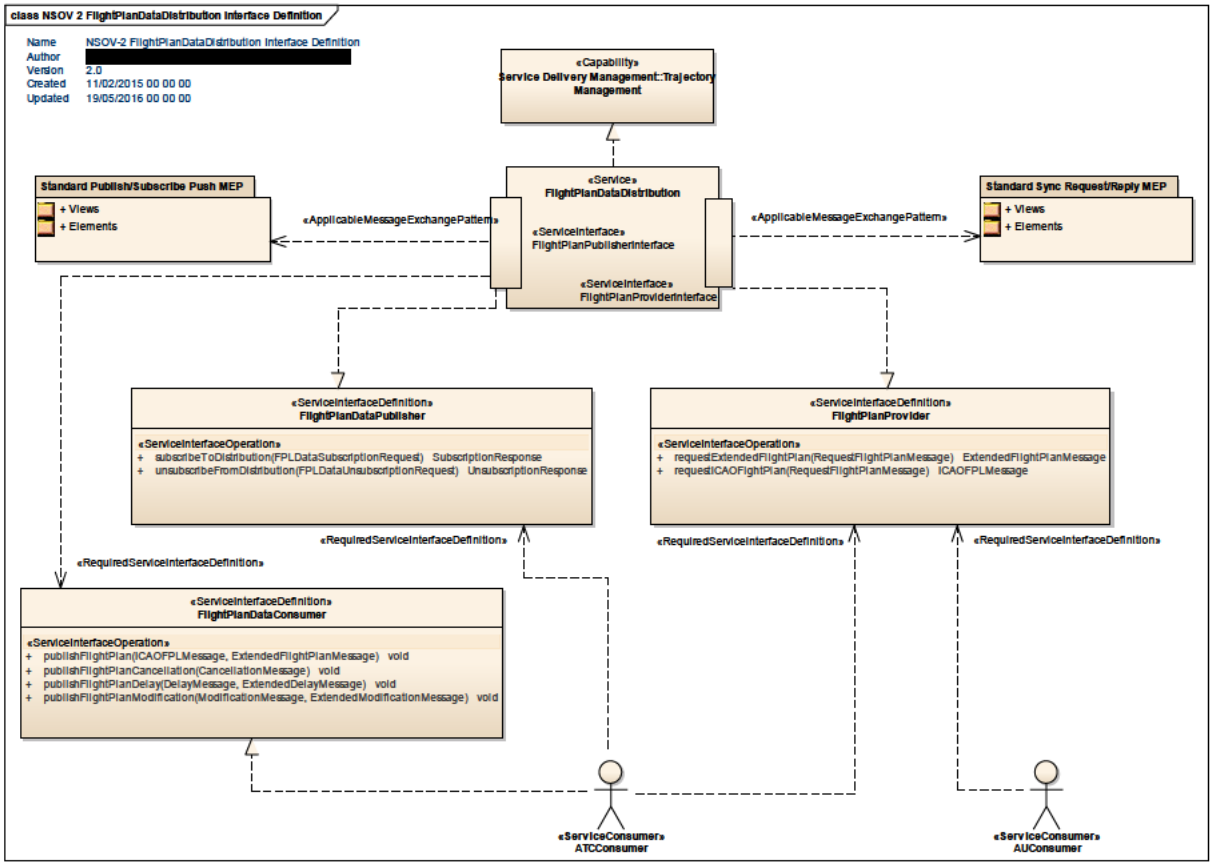


**Figure 5: NSOV-2 FlightPlanDataDistribution Interface Definition diagram**

The related service interface definitions are listed in Table 2 which is reported below.

| ServiceInterface | ServiceInterfaceDefinition | ServiceInterfaceOperation | Role |
|---|---|---|---|
| FlightPlanPublisherInterface | FlightPlanDataPublisher | subscribeToDistribution | provided |
| FlightPlanPublisherInterface | FlightPlanDataPublisher | unsubscribeFromDistribution | provided |
| FlightPlanPublisherInterface | FlightPlanDataConsumer | publishFlightPlan | required |
| FlightPlanPublisherInterface | FlightPlanDataConsumer | publishFlightPlanCancellation | required |
| FlightPlanPublisherInterface | FlightPlanDataConsumer | publishFlightPlanDelay | required |

| | | | |
|---|---|---|---|
| FlightPlanPublisherInterface | FlightPlanDataConsumer | publishFlightPlanModification | required |
| FlightPlanProviderInterface | FlightPlanProvider | requestExtendedFlightPlan | provided |
| FlightPlanProviderInterface | FlightPlanProvider | requestICAOFlightPlan | provided |

**Table 2: Service Interfaces**

# 5 Service interface specifications

The FlightPlanDataDistribution Service has two service interfaces (ports):

- ***FlightPlanPublisherInterface***;
- ***FlightPlanProviderInterface.***

The interfaces of the FlightPlanDataDistribution service are shown in Figure 5 and are hereby described, including their service interface definitions and operations.

## 5.1 Service Interface FlightPlanPublisherInterface

The purpose of the Service Interface **FlightPlanPublisherInterface** is to foresee the service interface definitions with necessary operations to allow the service consumers to subscribe / unsubscribe to the Service and to receive updated flight plan information from the service provider.

The Service Interface **FlightPlanPublisherInterface** implements two Service Interface definitions:

- the **FlighPlanDataPublisher** service interface definition.
- the **FlighPlanDataConsumer** service interface definition.

The message exchange pattern foreseen for the **FlighPlanPublisherInterface** interface is the Standard Publish/Subscribe Push MEP.

Such service interface definitions are described in the following subparagraphs.

### 5.1.1 Service Interface Definition FlightPlanDataPublisher

The purpose of the **FlighPlanDataPublisher** service interface definition is to implement those service operations enabling the service consumers to subscribe / unsubscribe to the Service.The architecture of the **FlighPlanDataPublisher** interface definition includes the following operations:

- **subscribeToDistribution**
- **unsubscribeFromDistribution**

These operations are described in the next paragraphs, including their related payload diagrams and tables which have been defined in the release of ISRM (1.4) upon discussion within WP8.

#### 5.1.1.1 Operation subscribeToDistribution

The operation **subscribeToDistribution** provides the service consumer with the functionality to subscribe to the FlightPlanDataDistribution service in order to receive flight plans (in ICAO or Extended Flight Plan format) and their related update messages.

##### 5.1.1.1.1 Operation Functionality

The operation *functionality* foresees:

- to pass the subscription request to the service
- to obtain the subscription response from the service.

##### 5.1.1.1.2 Operation Parameters

The input parameter of the operation is **FPLDataSubscriptionRequest** (which represents the request to subscribe to the service and contains the timestamp of the request).
The return type in output is the **SubscriptionResponse**[2] (which is the response sent by the service provider to the request from the service consumer, and contains the timestamp of the response).

[2] The management of the subscription failure is done at the level of the technical interface. ISRM stands at a higher (logical) abstraction level, therefore it does not specify further the outcome of the subscription.

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM (Ref. [21]) class where/if applicable.

**PAYLOAD DIAGRAMS:**

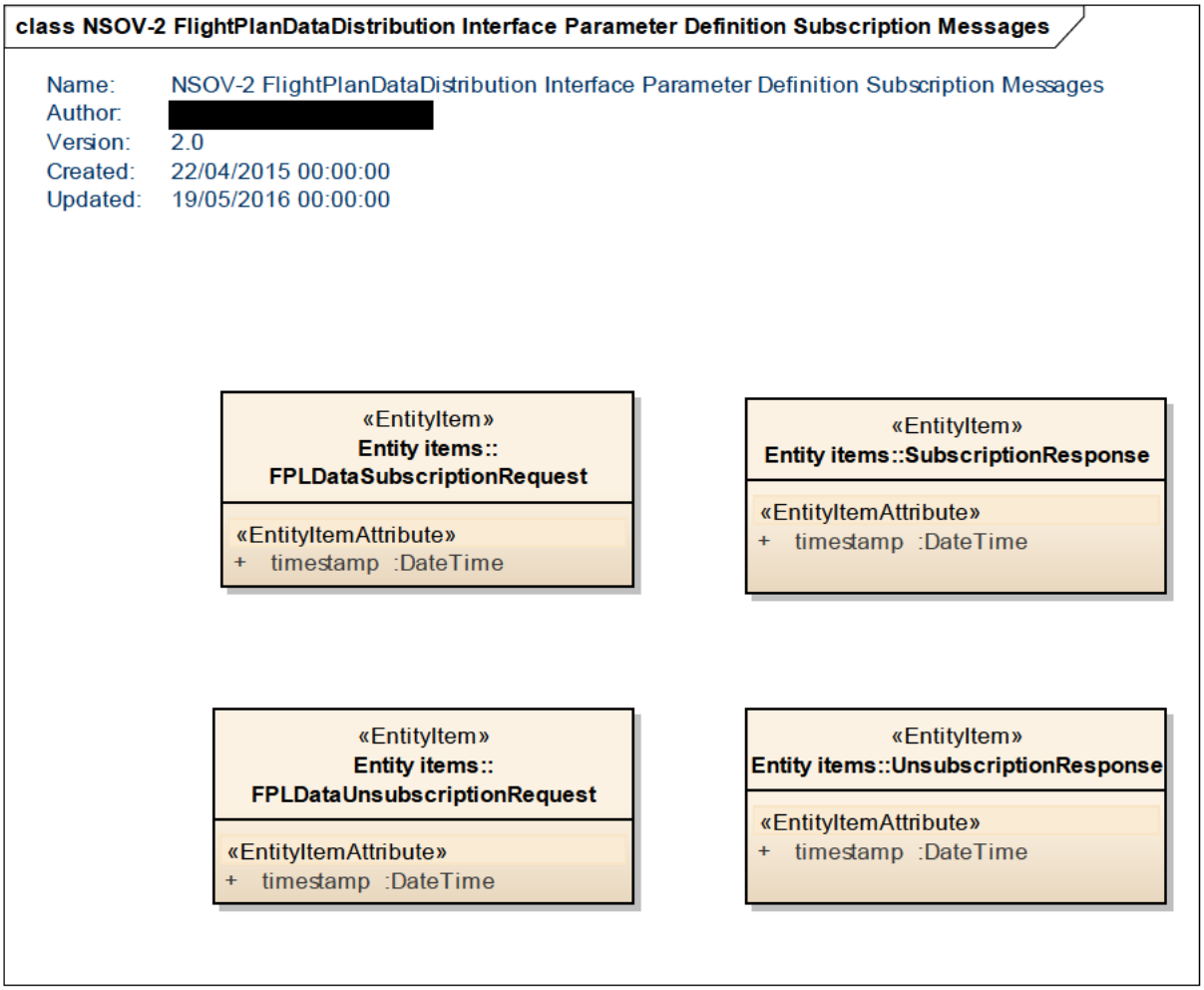


**Figure 6: NSOV-2 FlightPlanDataDistribution Interface Parameter Definition diagram – Subscription Messages**

**PAYLOAD TABLES:**

| Element Name | | Author | Notes |
|---|---|---|---|
| FPLDataSubscriptionRequest | | [redacted] | Entity Item containing filtering conditions applied to ATM operational data. It allow the subscription to distribution of flight plan related to the area of responsibility of one specific ATC unit. |
| | **Attribute Name** | **Type** | **Notes** |
| | timestamp | DateTime | The date and time of the subscription request |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | CLDM_out_of_scope | |
| **Element Name** | | **Author** | **Notes** |

| Element Name | | Author | Notes |
|---|---|---|---|
| SubscriptionResponse | | [redacted] | The set of information provided back by the publisher in return for a subscription. |
| | **Attribute Name** | **Type** | **Notes** |

| Element Name | | Author | | Notes |
|---|---|---|---|---|
| SubscriptionResponse | | [redacted] | | The set of information provided back by the publisher in return for a subscription. |
| | **Attribute Name** | **Type** | | **Notes** |
| | timestamp | DateTime | | The date and time when the Subscription Response is effective from |
| | **Tagged Value Name** | | **Value** | |
| | CLDMSemanticTrace | | CLDM_out_of_scope | |

**Table 3: Payload tracing to AIRM**

### 5.1.1.2 Operation unsubscribeFromDistribution

The operation **unsubscribeFromDistribution** provides the service consumer with the functionality to unsubscribe to the FlightPlanDataDistribution service in order to not receive anymore flight plans and their related update messages.

#### 5.1.1.2.1 Operation Functionality

The operation *functionality* foresees:

- to pass the unsubscription request to the service
- to obtain the unsubscription response from the service.

#### 5.1.1.2.2 Operation Parameters

The input parameter of the operation is **FPLDataUnsubscriptionRequest**. (which represents the request to unsubscribe to the service and contains the timestamp of the request).

The return type in output is **UnsubscriptionResponse** (which is the response sent by the service provider to the request from the service consumer, and contains the timestamp of the response).

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM class where/if applicable.

**PAYLOAD DIAGRAMS:** Please see Figure 6

*Note: the diagram with the relevant payload is already available in Figure 6 and is thus not reported here.*

**PAYLOAD TABLES:**

| Element Name | | Author | | Notes |
|---|---|---|---|---|
| FPLDataUnsubscriptionRequest | | [redacted] | | Entity Item containing filtering conditions applied to ATM operational data. It allow the unsubscription from distribution of flight plan related to the area of responsibility of one specific ATC unit. |
| | **Attribute Name** | **Type** | | **Notes** |
| | timestamp | DateTime | | The date and time of the Unsubscription request |
| | **Tagged Value Name** | | **Value** | |
| | CLDMSemanticTrace | | CLDM_out_of_scope | |

| Element Name | | Author | | Notes |
|---|---|---|---|---|
| UnsubscriptionResponse | | [redacted] | | The set of information provided back by the publisher in return for an unsubscription. |
| | **Attribute Name** | **Type** | | **Notes** |
| | timestamp | DateTime | | The date and time from when the Unsubscription is effective. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | CLDM_out_of_scope |

**Table 4: Payload tracing to AIRM**

## 5.1.2 Service Interface Definition FlightPlanDataConsumer

The purpose of the **FlighPlanDataConsumer** service interface definition is to implement those service operations enabling the service consumers receive up-to-date flight plan information from the service provider (such as new flight plans, modified flight plans, delayed flight plans and cancelled flight plans).

The architecture of the **FlighPlanDataConsumer** interface definition includes the following operations:

- **publishFlightPlan**
- **publishFlightPlanModification**
- **publishFlightPlanDelay**
- **publishFlightPlanCancellation**

These operations are described in the next paragraphs, including their related payload diagrams and tables which have been defined in the release of ISRM (1.4) upon discussion within WP8.

### 5.1.2.1 Operation publishFlightPlan

The service operation *publishFlightPlan* enables the subscribed service consumer to receive the flight plans already processed and distributed by the service provider.

#### 5.1.2.1.1 Operation Functionality

The operation *functionality* foresees:

- to pass Extended Flight plan or ICAO flight plan to the service consumer;
- not to obtain a return type (i.e.: no reply from the service consumer)

*Note: the operation has been explicitly modelled without a return type.*

#### 5.1.2.1.2 Operation Parameters

The input parameters of the operation are ExtendedFlightPlanMessage or ICAOFPLMessage

The output parameter is not foreseen.

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM class where/if applicable.

## PAYLOAD DIAGRAMS:

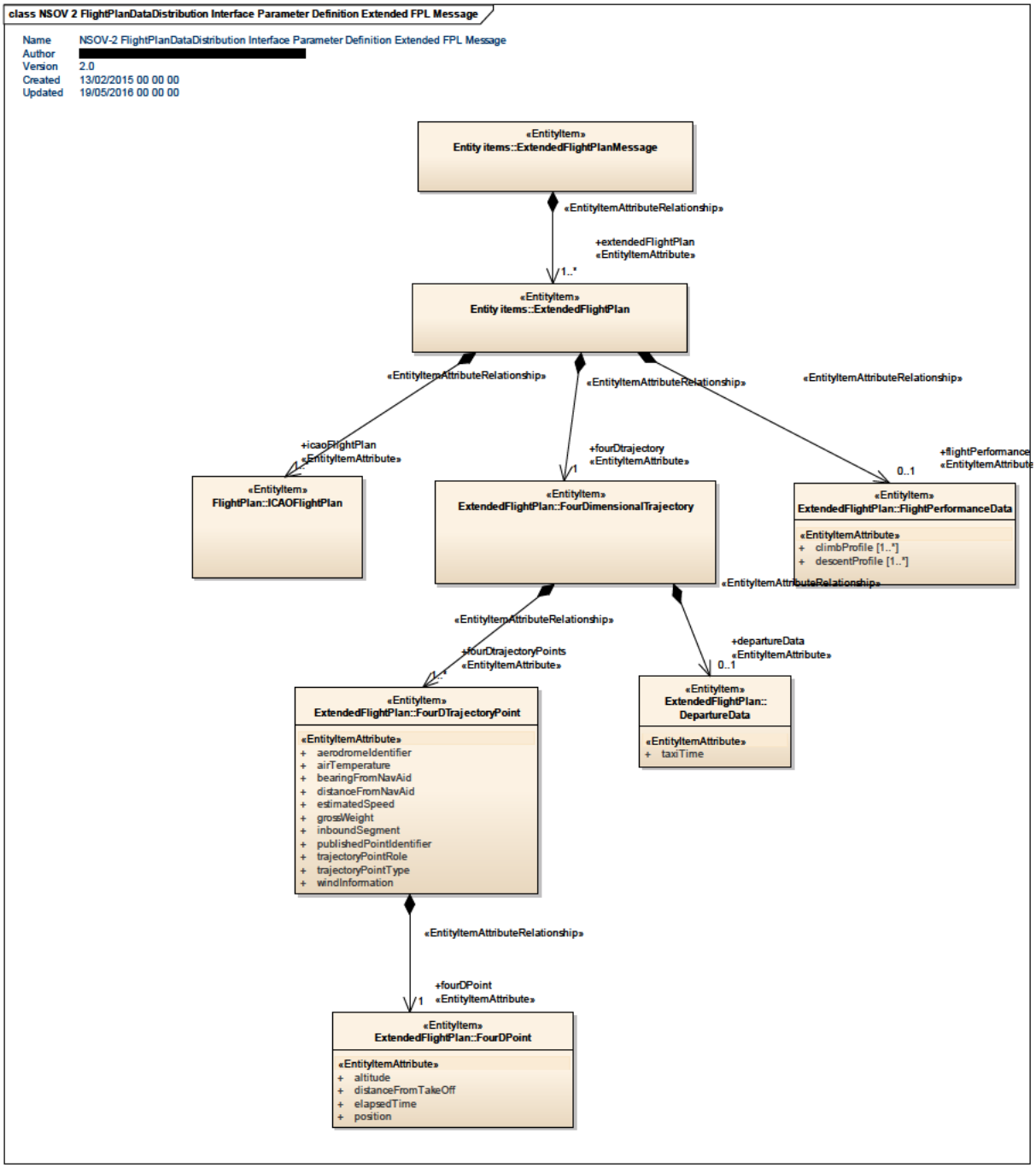


**Figure 7: NSOV-2 FlightPlanDataDistribution Interface Parameter Definition diagram - ExtendedFlightPlanMessage**

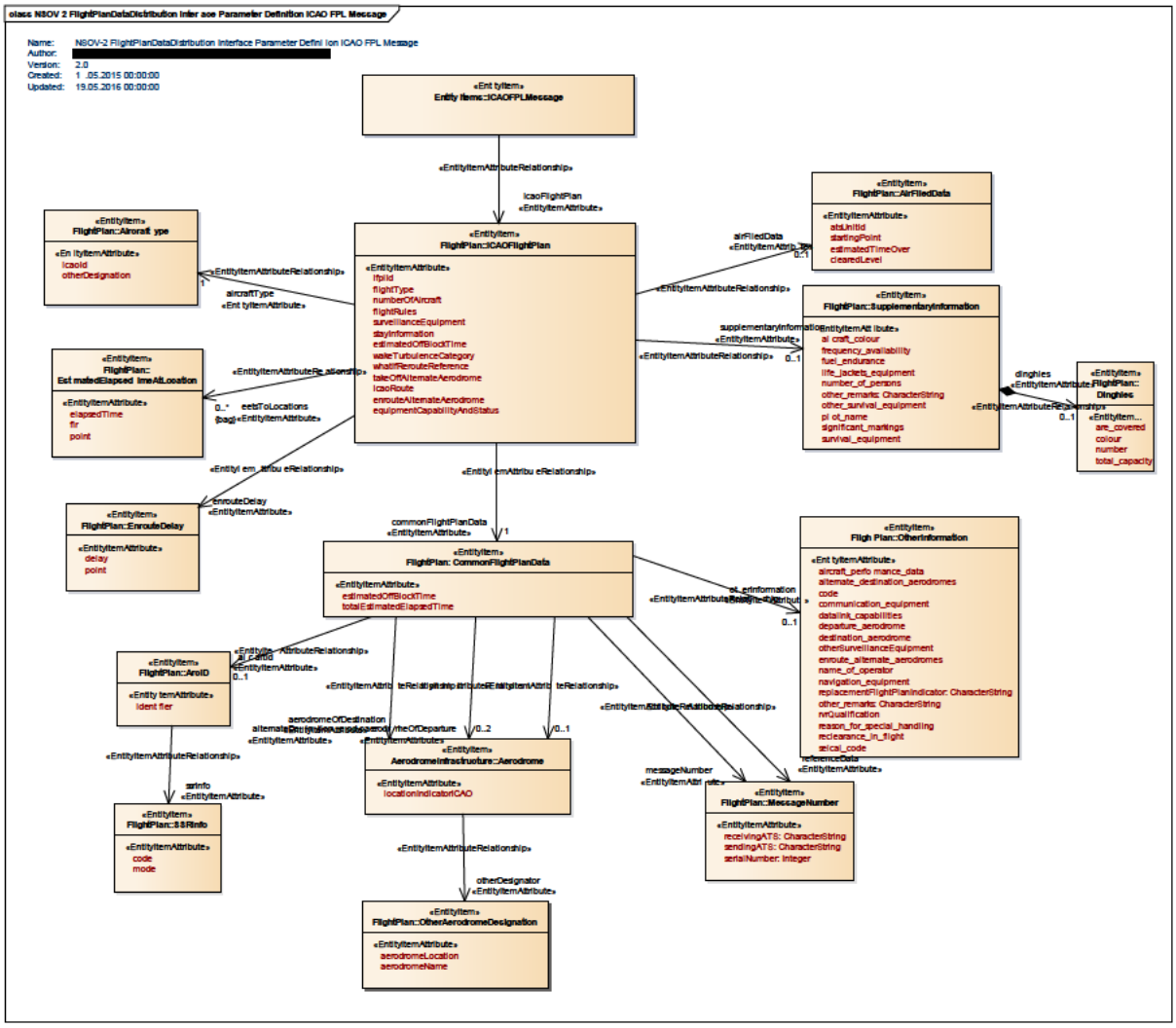


**Figure 8: NSOV-2 FlightPlanDataDistribution Interface Parameter Definition diagram – ICAOFPLMessage**

## PAYLOAD TABLES:

### Input Parameter "ExtendedFlightPlan"

| Element Name | Author | Notes |
|---|---|---|
| ExtendedFlightPlanMessage | [redacted] | Message containing the EFPL. |
| **Element Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | CLDM_out_of_scope | |

| Element Name | Author | Notes |
|---|---|---|
| ExtendedFlightPlan | paq | An **Extended Flight Plan** is a flight plan which, in addition to the ICAO defined flight plan information, includes also flight trajectory information in the form of a 4D trajectory, as calculated by the operator of the flight, as well as Performance Data specific to the flight. |
| **Element Tagged Value Name** | **Value** | |
| IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:AirTrafficOperations:InformationServicesProducts:Flig | |

| | | |
|---|---|---|
| | | htInformationProduct:ExtendedFlightPlan |

| Element Name | Author | Notes |
|---|---|---|
| ICAOFlightPlan | [redacted] | all data to be provided in a filed flight plan as specified in the ICAO Doc 4444, including the Field 15 route information. |

| Element Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | CLDM_out_of_scope |
| IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:AirTrafficOperations:InformationServicesProducts:FlightInformationProduct:FlightPlan |

| Attribute Name | Type | Notes |
|---|---|---|
| ifplId | | Unique identifier assigned by the NM system to a submitted flight plan. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@ifplIdentifier |
| IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightIdentifier:IFPLIdentifier |

| Attribute Name | Type | Notes |
|---|---|---|
| flightType | | Type of flight. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@type |

| Attribute Name | Type | Notes |
|---|---|---|
| numberOfAircraft | | Number of the aircraft in the flight, if more than one. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@numberOfAircraft |

| Attribute Name | Type | Notes |
|---|---|---|
| flightRules | | Category of flight rules with which the pilot intends to comply. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:Trajectory@flightRules |

| Attribute Name | Type | Notes |
|---|---|---|
| surveillanceEquipment | | Surveillance equipment of the aircraft of the flight. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability |

| Attribute Name | Type | Notes |
|---|---|---|
| stayInformation | | Information concerning the type of activity (training, photographic mission, etc) to be performed during the stay periods mentioned in the route of the flight. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@flightPhase |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | estimatedOffBlockTime | | Estimated Off-Block date/time. |
| | **Tagged Value Name** | **Value** | |
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Common:Codelists:CodePlanningStatusType@ESTIMATED | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OffBlock@time | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightEvent:EstimatedOffBlockTime | |
| | **Attribute Name** | **Type** | **Notes** |
| | wakeTurbulenceCategory | | Wake turbulence category. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCategory@wakeTurbulenceCategory | |
| | **Attribute Name** | **Type** | **Notes** |
| | whatIfRerouteReference | | Indication of AO What-If rerouting reference in a flight plan. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:WhatIfFlight | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:WhatIfFlight | |
| | **Attribute Name** | **Type** | **Notes** |
| | takeOffAlternateAerodrome | | Alternate landing aerodrome for the TakeOff phase |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@locationIndicatorICAO | |
| | **Attribute Name** | **Type** | **Notes** |
| | icaoRoute | | Flight route represented by the combination of cruising speed, cruising level and route description. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TrajectorySegment | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:Trajectory:FlightPlannedRoute | |
| | **Attribute Name** | **Type** | **Notes** |
| | enrouteAlternateAerodrome | | Aerodromes where the aircraft may land in case of emergency along the route. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@locationIndicatorICAO | |
| | IMDefinitionTrace | urn:x- | |

| | | | |
|---|---|---|---|
| | | ses:sesarju:airm:v410:InformationModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome | |
| | **Attribute Name** | **Type** | **Notes** |
| | equipmentCapabilityAndStatus | | It represents the capability and status of the equipment of the aircraft of the flight. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftEquipment | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Aircraft:AircraftEquipment | |

| **Element Name** | **Author** | **Notes** |
|---|---|---|
| FourDimensionalTrajectory | paq | AO calculated flight trajectory taking into account constraints and meteorological information for its calculation. |

| **Element Name** | | **Author** | **Notes** |
|---|---|---|---|
| FourDTrajectoryPoint | | [redacted] | This is a specialisation of FourDPoint. |
| | **Attribute Name** | **Type** | **Notes** |
| | aerodromeIdentifier | | ICAO designator of the airport representing the first or last trajectory point, when trajectoryPointType is adep or ades. It is null in case the first or last trajectory points are not an aerodrome. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome:Aerodrome@locationIndicatorICAO | |
| | **Attribute Name** | **Type** | **Notes** |
| | airTemperature | | The forecast static air temperature used to calculate the 4D Trajectory at the location and the corresponding estimated level included in the 4D Trajectory. It is only required when Speed is given as TAS. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Meteorology:AviationMeteorology:AviationCondition@airTemperature | |
| | **Attribute Name** | **Type** | **Notes** |
| | bearingFromNavAid | | Compulsory when trajectoryPointType is refPoint, is null in the other cases.<br>It is the bearing from a navaid (identified by the publishedPointIdentifier) used to define a reference point (Cf.: ICAO doc 4444) |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:PointReference@facilityAngle | |
| | **Attribute Name** | **Type** | **Notes** |
| | distanceFromNavAid | | Compulsory when trajectoryPointType is refPoint, is null in the other cases.<br>It is the distance from a navaid (identified by the publishedPointIdentifier) used to define a |

| | | | |
|---|---|---|---|
| | | | reference point (Cf.: ICAO doc 4444) |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v4101:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:PointReference@facilityDistance | |
| | **Attribute Name** | **Type** | **Notes** |
| | estimatedSpeed | | Estimated speed of the aircraft at the location expressed as Mach number or True Air Speed (TAS) |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectoryPoint@airspeed | |
| | **Attribute Name** | **Type** | **Notes** |
| | grossWeight | | Gross weight of the aircraft at a location included in the 4D Trajectory, starting with the aerodrome of departure (ADEP). The gross weight at the ADEP is the Take-Off Weight (TOW). |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectoryPoint@mass | |
| | **Attribute Name** | **Type** | **Notes** |
| | inboundSegment | | The route segment that ends at the 4DTrajectoryPoint.<br>Is null for the first trajectoryPoint, is compulsory for all other 4DTrajectoryPoint. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TrajectoryPoint@inboundSegment | |
| | **Attribute Name** | **Type** | **Notes** |
| | publishedPointIdentifier | | Published coded designator of the trajectory point.<br>Is compulsory when trajectoryPointType is publishedPoint or refPoint<br>is null in the other cases. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:DesignatedPoint@designator | |
| | **Attribute Name** | **Type** | **Notes** |
| | trajectoryPointRole | | Indicate the role of the point in the trajectory, e.g.: bottomOfClimb, VFRToIFR.<br>A point can have multiple roles (e.g.: a publishedPoint can be the bottom of a climb and the point where the rules change from VFR To IFR)<br>When trajectoryPointType is otherPoint the trajectoryPointRole cannot be GATToOAT, IFRToVFR, OATToGAT, VFRToIFR<br><br>One of the following location items: |

| | | | |
|---|---|---|---|
| | | | • Aerodrome of departure/destination. Eg: EGKK<br>• Points traversed by the 4D Trajectory including but not limited to the following:<br>1. Points where a change of ATS route, requested cruising level or speed, flight rules (IFR/VFR) or flight type (GAT/OAT) occur;<br>2. Points that mark the beginning and end of a portion of flight outside a designated route (direct segments);<br>3. Points that mark the beginning and end of a portion of flight where the direction and the vertical and horizontal speed of the flight are constant (vector points). Such points may be used to describe the climb and descent phases of the flight using intermediate points in order to provide a more accurate description of the 4D trajectory along these sections of the trajectory that are not linear.<br>4. Points that describe the ATS route segments planned to be flown;<br>5. Top of Climb (TOC) points for every transition from a climb phase to a cruise phase;<br>6. Top of Descent (TOD) points for every transition from a cruise phase to a descent phase;<br>7. Bottom of Climb (BOC) points for every transition from a cruise phase to a climb phase;<br>8. Bottom of Descent (BOD) points for every a transition from a descent phase to a cruise phase;<br>9. Points where the 4D Trajectory intersects the boundary of FIR/UIRs in whose airspace the flight is planned to fly. |

| | **Tagged Value Name** | **Value** |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectorySignificantPoint@types |

| | **Attribute Name** | **Type** | **Notes** |
|---|---|---|---|
| | trajectoryPointType | | Indicate the type of point (e.g.: ADEP, geoPoint, refPoint)<br>In case of refPoint, the Position inherited from FourDPoint is the geographical position of the trajectory point resulting from the calculation based on a NavAid, distance and bearing. |

| | **Tagged Value Name** | **Value** |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectorySignificantPoint@types |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | windInformation | | The forecast direction and speed of the wind used to calculate the 4D trajectory at the location and the corresponding estimated level included in the 4D trajectory. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Meteorology:Wind |

| Element Name | Author | Notes |
|---|---|---|
| FlightPerformanceData | [redacted] | Climbing and descending capabilities of the aircraft specific to the flight, taking into account the performance of the airframe that is used to operate the flight as well as any other parameters that may influence it such as engine settings and status, cost factor applied by the operator.<br><br>The climb and descent performance profiles are optimum and unconstrained climb and descent profiles instantiated per flight that satisfy the following conditions:<br><br>1. Are calculated without taking into account constraints regarding the vertical evolution of the flight such as route availability, RAD level restrictions, SID/STAR restrictions;<br>2. Are calculated without applying meteorological conditions (wind and temperature);<br>3. Are provided up to the maximum cruising level acceptable for the flight (even if not included in the flight plan). This would allow the recipient systems to generate accurate trajectories for vertical re-routings above the highest requested cruising level included in the filed flight plan. Performance profiles should be provided at least up to the highest requested cruising level given in the FPL;<br><br>Do not contain step-climbs and step-descents i.e. if the aircraft is planned to do an initial climb to F350, then burn fuel during an hour of cruise, and then climb to F370, these two consecutive climbs shall be glued together. |

| | Attribute Name | Type | Notes |
|---|---|---|---|

| | | | |
|---|---|---|---|
| | climbProfile | | The climb performance profile described as a sequence of points in which every point is defined by:<br>1. Cumulative Distance from the aerodrome of departure<br>2. Level: Altitude above mean sea level (MSL) in feet (ft) or meters (m) or Flight level (FL).<br>3. Cumulative Time elapsed from the aerodrome of departure |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:FlightPerformance@climbProfile |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | descentProfile | | The descent performance profile described as a sequence of points, in reverse order starting from the aerodrome of destination, in which every point is defined by:<br>1. Cumulative Distance from the aerodrome of destination<br>2. Level: Altitude above mean sea level (MSL) in feet (ft) or meters (m) or Flight level (FL).<br>3. Cumulative Time elapsed from the aerodrome of destination |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:FlightPerformance@descentProfile |

| Element Name | Author | Notes |
|---|---|---|
| DepartureData | [redacted] | Departure data item. |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | taxiTime | | Estimated taxi time from the parking position to take-off. This data is not attached to a specific point/location of the 4D trajectory. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TaxiData@taxiTime |

**Table 5: Payload tracing to AIRM**

### Input parameter "ICAOFlightPlan"

| Element Name | Author | Notes |
|---|---|---|
| ICAOFPLMessage | [redacted] | ICAO flight plan message |

| | Element Tagged Value Name | Value |
|---|---|---|
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:AirTrafficOperations:InformationServicesProducts:FlightInformationProduct:FlightPlan |

| Element Name | Author | Notes |
|---|---|---|
| ICAOFlightPlan | [redacted] | all data to be provided in a filed flight plan as specified in the ICAO Doc 4444, including |

| | | | |
|---|---|---|---|
| | | | the Field 15 route information. |
| | **Element Tagged Value Name** | | **Value** |
| | CLDMSemanticTrace | | CLDM_out_of_scope |
| | IMDefinitionTrace | | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:AirTrafficOperations:InformationServicesProducts:FlightInformationProduct:FlightPlan |
| | **Attribute Name** | **Type** | **Notes** |
| | ifplId | | Unique identifier assigned by the NM system to a submitted flight plan. |
| | **Tagged Value Name** | | **Value** |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@ifplIdentifier |
| | IMDefinitionTrace | | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightIdentifier:IFPLIdentifier |
| | **Attribute Name** | **Type** | **Notes** |
| | flightType | | Type of flight. |
| | **Tagged Value Name** | | **Value** |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@type |
| | **Attribute Name** | **Type** | **Notes** |
| | numberOfAircraft | | Number of the aircraft in the flight, if more than one. |
| | **Tagged Value Name** | | **Value** |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@numberOfAircraft |
| | **Attribute Name** | **Type** | **Notes** |
| | flightRules | | Category of flight rules with which the pilot intends to comply. |
| | **Tagged Value Name** | | **Value** |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:Trajectory@flightRules |
| | **Attribute Name** | **Type** | **Notes** |
| | surveillanceEquipment | | Surveillance equipment of the aircraft of the flight. |
| | **Tagged Value Name** | | **Value** |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability |
| | **Attribute Name** | **Type** | **Notes** |
| | stayInformation | | Information concerning the type of activity (training, photographic mission, etc) to be performed during the stay periods mentioned in the route of the flight. |
| | **Tagged Value Name** | | **Value** |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@flightPhase |
| | **Attribute Name** | **Type** | **Notes** |
| | estimatedOffBlockTime | | Estimated Off-Block date/time. |
| | **Tagged Value Name** | | **Value** |
| | CLDMContextTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:Subje |

| | | | |
|---|---|---|---|
| | | | ctFields:Common:Codelists:CodePlanningStatusType@ESTIMATED |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OffBlock@time |
| | IMDefinitionTrace | | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightEvent:EstimatedOffBlockTime |
| | **Attribute Name** | **Type** | **Notes** |
| | wakeTurbulenceCategory | | Wake turbulence category. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCategory@wakeTurbulenceCategory | |
| | **Attribute Name** | **Type** | **Notes** |
| | whatIfRerouteReference | | Indication of AO What-If rerouting reference in a flight plan. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:WhatIfFlight | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:WhatIfFlight | |
| | **Attribute Name** | **Type** | **Notes** |
| | takeOffAlternateAerodrome | | Alternate landing aerodrome for the TakeOff phase |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@locationIndicatorICAO | |
| | **Attribute Name** | **Type** | **Notes** |
| | icaoRoute | | Flight route represented by the combination of cruising speed, cruising level and route description. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TrajectorySegment | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:Trajectory:FlightPlannedRoute | |
| | **Attribute Name** | **Type** | **Notes** |
| | enrouteAlternateAerodrome | | Aerodromes where the aircraft may land in case of emergency along the route. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@locationIndicatorICAO | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome | |
| | **Attribute Name** | **Type** | **Notes** |
| | equipmentCapabilityAndStatus | | It represents the capability and status of the equipment of the aircraft of the flight. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftEquipment |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Aircraft:AircraftEquipment |

| Element Name | Author | Notes |
|---|---|---|
| AircraftType | [redacted] | Type of aircraft. |

| | Element Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftType |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | icaoId | | |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftType@icaoIdentifier |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | otherDesignation | | TYP/ field 18 subfield |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftType@operationalName |

| Element Name | Author | Notes |
|---|---|---|
| EstimatedElapsedTimeAtLocation | [redacted] | Association of a location and an elapsed time. |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | elapsedTime | | The elapsed time. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TrajectorySegment@estimatedElapsedTime |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | FIR | | A FIR. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:Codelists:CodeAirspaceType@FIR |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:Airspace:Airspace@designator |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:AirspaceInfrastructure:Airspace:FlightInformationRegion |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | point | | A point. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TrajectoryPoint@referencePoint |

| Element Name | Author | Notes |
|---|---|---|
| EnrouteDelay | [redacted] | Specify the point on the route where a delay is planned to occur together with the duration of the delay. |

| Element Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:EnRouteDelay |

| Attribute Name | Type | Notes |
|---|---|---|
| delay | | |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:EnRouteDelay@delay |

| Attribute Name | Type | Notes |
|---|---|---|
| point | | |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:EnRouteDelay@enRouteDelayPoint |

| Element Name | Author | Notes |
|---|---|---|
| AirFiledData | [redacted] | Estimate data provided when the flight plan was filed airborne. |

| Element Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | CLDM_out_of_scope |

| Attribute Name | Type | Notes |
|---|---|---|
| atsUnitId | | ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained.<br><br>[IFPS User Manual] |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Stakeholders:Stakeholder:Unit@designator |

| Attribute Name | Type | Notes |
|---|---|---|
| startingPoint | | Starting point. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspaceInfrastructurePoint:SignificantPoint |

| Attribute Name | Type | Notes |
|---|---|---|
| estimatedTimeOver | | (ETO/ATO) Estimated or Actual Time Over the first point indicated in the route.<br><br>The EOBT field in the context of a flight plan with source AFIL is not the EOBT but the ETO/ATO at the first point given in the route.<br><br>[IFPS User Manual] |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OverPoint@time |

| | | |
|---|---|---|
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightEvent:EstimatedTimeOver |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | clearedLevel | | Level at which the aircraft has been cleared to join controlled airspace over the given point. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:ATMServiceDeliveryManagement:ATCClearance@clearedFlightLevel |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:AirTrafficOperations:ATMServiceDeliveryManagement:ClearedRoute |

| Element Name | Author | Notes |
|---|---|---|
| SupplementaryInformation | [redacted] | This field consists of such supplementary information as is available, organized into a string of elements separated by spaces.<br><br>Refer to ICAO4444 field type 19 (Supplementary information) |

| | Element Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | CLDM_out_of_scope |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | aircraft_colour | | The colour of the aircraft. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftColourAndMarking@aircraftColour |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | frequency_availability | | Availability of frequencies for the aircraft.<br><br>Three different values can be specified. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Codelists:CodeCommunicationCapabilityType@VHF_RTF |
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Codelists:CodeCommunicationCapabilityType@UHF_RTF |
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeAircraftEquipmentType@EMERGENCY_LOCATOR_TRANSMITTER |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@communicationCapability |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | fuel_endurance | | Fuel endurance. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@fuelEndurance |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | life_jackets_equipment | | Specifies the equipment of the life jackets carried.<br><br>Four different values can be specified. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeLifeJacketEquipmentType | |
| | **Attribute Name** | **Type** | **Notes** |
| | number_of_persons | | The total number of persons on board, when so prescribed by the appropriate ATS authority. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:TakeOffConfiguration@numberOfPersons | |
| | **Attribute Name** | **Type** | **Notes** |
| | other_remarks | CharacterString | Any other useful remarks. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | CLDM_out_of_scope | |
| | **Attribute Name** | **Type** | **Notes** |
| | other_survival_equipment | | Indicates any other survival equipment carried. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@survivalEquipmentType | |
| | **Attribute Name** | **Type** | **Notes** |
| | pilot_name | | The name of the pilot-in-command. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@pilot | |
| | **Attribute Name** | **Type** | **Notes** |
| | significant_markings | | Significant markings for the aircraft. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftColourAndMarking@significantMarkings | |
| | **Attribute Name** | **Type** | **Notes** |
| | survival_equipment | | Specifies the survival equipment carried.<br><br>Four different values can be specified. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@survivalEquipmentType | |

| Element Name | Author | Notes |
|---|---|---|
| Dinghies | [redacted] | Details about the dinghies carried by the aircraft.<br><br>At least one of the attributes has to be specified. |
| **Element Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x- | |

| | | |
|---|---|---|
| | | ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment |

| Attribute Name | Type | Notes |
|---|---|---|
| are_covered | | Specifies if dinghies are covered. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@isCovered |

| Attribute Name | Type | Notes |
|---|---|---|
| colour | | The colour of the dinghies. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@colour |

| Attribute Name | Type | Notes |
|---|---|---|
| number | | The number of dinghies carried. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@number |

| Attribute Name | Type | Notes |
|---|---|---|
| total_capacity | | The total capacity, in persons carried, of all dinghies. |

| Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@dinghyTotalCapacity |

| Element Name | Author | Notes |
|---|---|---|
| CommonFlightPlanData | [redacted] | CommonFlightPlanData dataType contains the common fields of the flight plan messages and update messages |

| Element Tagged Value Name | Value |
|---|---|
| CLDMSemanticTrace | CLDM_out_of_scope |

| Attribute Name | Type | Notes |
|---|---|---|
| estimatedOffBlockTime | | Estimated Off-Block Time |

| Tagged Value Name | Value |
|---|---|
| CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Common:Codelists:CodePlanningStatusType@ESTIMATED |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OffBlock@time |
| IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightEvent:EstimatedOffBlockTime |

| Attribute Name | Type | Notes |
|---|---|---|
| totalEstimatedElapsedTime | | For IFR flights, the estimated time required from take-off to arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the destination aerodrome, to arrive over the destination aerodrome. For VFR flights, the estimated time required from take-off to arrive over the destination aerodrome. Source: ICAO |

| | | | |
|---|---|---|---|
| | | | (2005), Annex 2, Rules of the Air |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@totalEstimatedElapsedTime | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:Trajectory:TrajectoryPoint | |

| **Element Name** | **Author** | **Notes** |
|---|---|---|
| ArcID | [redacted] | Aircraft Identification.<br><br>May be the registration marking of the aircraft, or the ICAO designator of the aircraft operator followed by the flight identifier. |
| **Element Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightIdentifier:AircraftIdentification | |
| **Attribute Name** | **Type** | **Notes** |
| Identifier | | Aircraft identifier. |
| **Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@aircraftIdentification | |

| **Element Name** | **Author** | **Notes** |
|---|---|---|
| SSRInfo | [redacted] | This class represents SSR code and mode in IRDs. |
| **Attribute Name** | **Type** | **Notes** |
| code | | The code range is: (octal)0000 .. (octal)7777. |
| **Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightIdentifier:SSRCode@code | |
| **Attribute Name** | **Type** | **Notes** |
| mode | | Mode indicates the surveillance system used for the SSR code: mode A, mode S, mode C. |
| **Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightIdentifier:SSRCode@mode | |

| **Element Name** | **Author** | **Notes** |
|---|---|---|
| Aerodrome | [redacted] | A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft. |
| **Element Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome | |
| **Attribute Name** | **Type** | **Notes** |
| locationIndicatorICAO | | The four letter ICAO location indicator of the |

| | | | |
|---|---|---|---|
| | | | aerodrome/heliport, as listed in ICAO DOC 7910. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@designator |

| Element Name | Author | Notes |
|---|---|---|
| OtherAerodromeDesignation | [redacted] | Used to specify the name and location of an aerodrome for which no ICAO identification exist or the first or last point of the route when departing from or arriving to a place that is not an aerodrome. |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | aerodromeLocation | | The location of the aerodrome expressed as a reference point or a geographical position. Optional. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@aerodromeReferencePoint |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:AerodromeReferencePoint |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | aerodromeName | | The name of the aerodrome.<br><br>1{ LIM_CHAR }50 |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@name |

| Element Name | Author | Notes |
|---|---|---|
| MessageNumber | [redacted] | This entity shall contain the following attributes, where the ICAOFlightPlanPart entity is subject to update, in detail a sequence of letters identifying the sending ATS unit and the receiving ATS unit, followed by the serial number of this message.<br>[Doc 4444 flight plan field type 3: message number and reference data]<br>In particular:<br>- sending ATS<br>- receiving ATS<br>- serial number of the message |

| | Element Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | CLDM_out_of_scope |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | receivingATS | CharacterString | |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMSemanticTrace | CLDM_out_of_scope |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | sendingATS | CharacterString | |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | CLDM_out_of_scope | |
| | **Attribute Name** | **Type** | **Notes** |
| | serialNumber | Integer | |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | CLDM_out_of_scope | |

| Element Name | Author | Notes |
|---|---|---|
| OtherInformation | [redacted] | Any other flight data Items specified in the bilateral agreement.<br><br>Refer to ICAO 4444 field type 18 (Other information) |
| **Attribute Name** | **Type** | **Notes** |
| aircraft_performance_data | | Aircraft performance data, indicated by a single letter as specified in the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS, Doc 8168), *Volume I — Flight Procedures*, if so prescribed by the appropriate ATS authority. |
| **Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeAircraftLandingCategoryType | |
| **Attribute Name** | **Type** | **Notes** |
| alternate_destination_aerodromes | | Not for PH1<br>Complete name of alternative destination aerodromes, if ZZZZ is used as alternative destination aerodromes. |
| **Tagged Value Name** | **Value** | |
| CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@firstAlternateDestinationAerodrome | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@designator | |
| **Attribute Name** | **Type** | **Notes** |
| code | | Not for PH1<br>Aircraft address (expressed in the form of an alphanumerical code of six hexadecimal characters) when required by the appropriate ATS authority. |
| **Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Aircraft@icaoAircraftAddress | |
| **Attribute Name** | **Type** | **Notes** |
| communication_equipment | | Information about radiocommunication, navigation and approach aid equipment and information about surveillance equipment. |
| **Tagged Value Name** | **Value** | |
| CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:Subje | |

| | | | |
|---|---|---|---|
| | | ctFields:Flight:FlightCapability@communicationCapability | |
| | **Attribute Name** | **Type** | **Notes** |
| | datalink_capabilities | | Not for PH1<br>Up to four different datalink capabilities. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@datalinkCommunicationCapability | |
| | **Attribute Name** | **Type** | **Notes** |
| | departure_aerodrome | | Not for PH1<br>Complete name of departure aerodrome, if ZZZZ is used as departure aerodrome or the ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained if departure aerodrome is not filled. |
| | **Tagged Value Name** | **Value** | |
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@departureAerodrome | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@designator | |
| | **Attribute Name** | **Type** | **Notes** |
| | destination_aerodrome | | Not for PH1<br>Complete name of destination aerodrome, if ZZZZ is used as destination aerodrome. |
| | **Tagged Value Name** | **Value** | |
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@destinationAerodrome | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@designator | |
| | **Attribute Name** | **Type** | **Notes** |
| | otherSurveillanceEquipment | | SUR/ from Field18 of ICAO2012 |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftAvionics@type | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Aircraft:AircraftAvionics | |
| | **Attribute Name** | **Type** | **Notes** |
| | enroute_alternate_aerodromes | | Not for PH1<br>Complete name of en-route alternate aerodrome/s. |
| | **Tagged Value Name** | **Value** | |
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@enRouteAlternateAerodrome | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodr | |

| | | | |
|---|---|---|---|
| | | ome@designator | |
| | **Attribute Name** | **Type** | **Notes** |
| | name_of_operator | | Not for PH1<br>Name of the operator, if not obvious from the aircraft identification. |
| | **Tagged Value Name** | **Value** | |
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@operator | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Stakeholders:Stakeholder:AircraftOperator@designatorICAO | |
| | **Attribute Name** | **Type** | **Notes** |
| | navigation_equipment | | Not for PH1<br>Significant navigation equipment |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Codelists:CodeNavigationCapabilityType | |
| | **Attribute Name** | **Type** | **Notes** |
| | replacementFlightPlanIndicator | CharacterString | |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | CLDM_out_of_scope | |
| | **Attribute Name** | **Type** | **Notes** |
| | other_remarks | CharacterString | In PH1the string coming in the Field 18 will be copied in this attribute<br><br>Any other plain language remarks when required by the appropriate ATS authority or deemed necessary by the pilot-in-command for the provision of air traffic services. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | CLDM out of scope | |
| | **Attribute Name** | **Type** | **Notes** |
| | rvrQualification | | Operating minima when special meteorological conditions exist. If specified, must be within [ 0, 999 ]. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Stakeholders:Stakeholder:FlightCrewApplicationAndApproval@runwayVisualRangeMinima | |
| | **Attribute Name** | **Type** | **Notes** |
| | reason_for_special_handling | | Not for PH1<br>Reason for special handling by ATS. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@reasonForSpecialHandling | |
| | **Attribute Name** | **Type** | **Notes** |
| | reclearance_in_flight | | Not for PH1<br>The route details to the revised destination aerodrome. The revised route is subject to re-clearance in flight. |
| | **Tagged Value Name** | **Value** | |
| | CLDMContextTrace | urn:x- | |

| | | | |
|---|---|---|---|
| | | | ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:AirspaceUserOperations:ReclearanceInFlight |
| | CLDMSemanticTrace | | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:ATMServiceDeliveryManagement:ATCClearance |
| | **Attribute Name** | **Type** | **Notes** |
| | selcal_code | | Not for PH1<br>OCL<br><br>{lenght = 4}<br><br>Selcal (Selective Calling) code made up of a four letter code. Included if so prescribed by the appropriate ATS authority. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Aircraft@selectiveCallingCode | |

**Table 6: Payload tracing to AIRM**

**Output Parameters: NOT FORESEEN.**

### 5.1.2.2 Operation publishFlightPlanModification

The service operation *publishFlightPlanModification* provides the service consumer with the functionality to receive updates of flight plans processed by the service provider.

#### 5.1.2.2.1 Operation Functionality

The operation *functionality* foresees:

- to pass the ExtendedModificationMessage or the ModificationMessage to the service consumer;
- not to obtain a return type (i.e.: no reply from the service consumer)

*Note: the operation has been explicitly modelled without a return type.*

Clarifications:
- The ExtendedModificationMessage is used for updates related to Extended Flight plans (ECHG).
- The ModificationMessage is used for updates related to ICAO flight plans (CHG).

#### 5.1.2.2.2 Operation Parameters

The input parameters of the operation are **ExtendedModificationMessage** or **ModificationMessage**

The output parameter is not foreseen.

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM class where/if applicable.

## PAYLOAD DIAGRAMS:

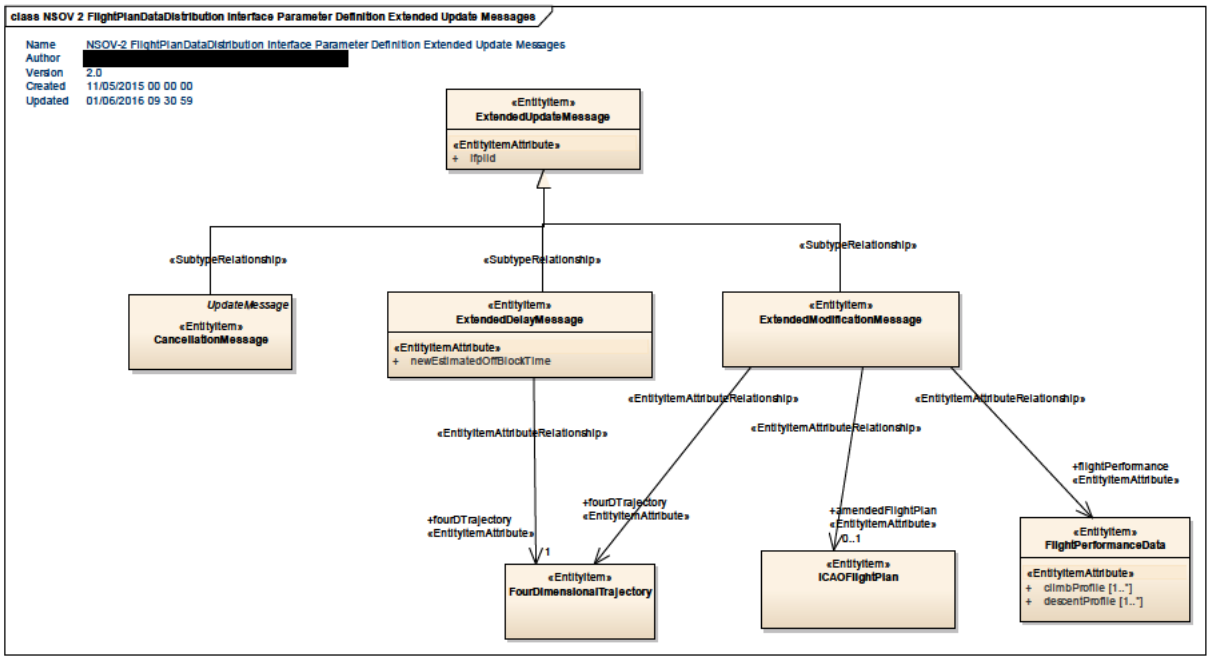


**Figure 9: NSOV-2 FlightPlanDataDistribution Interface Parameter Definition diagram - ExtendedUpdateMessages**

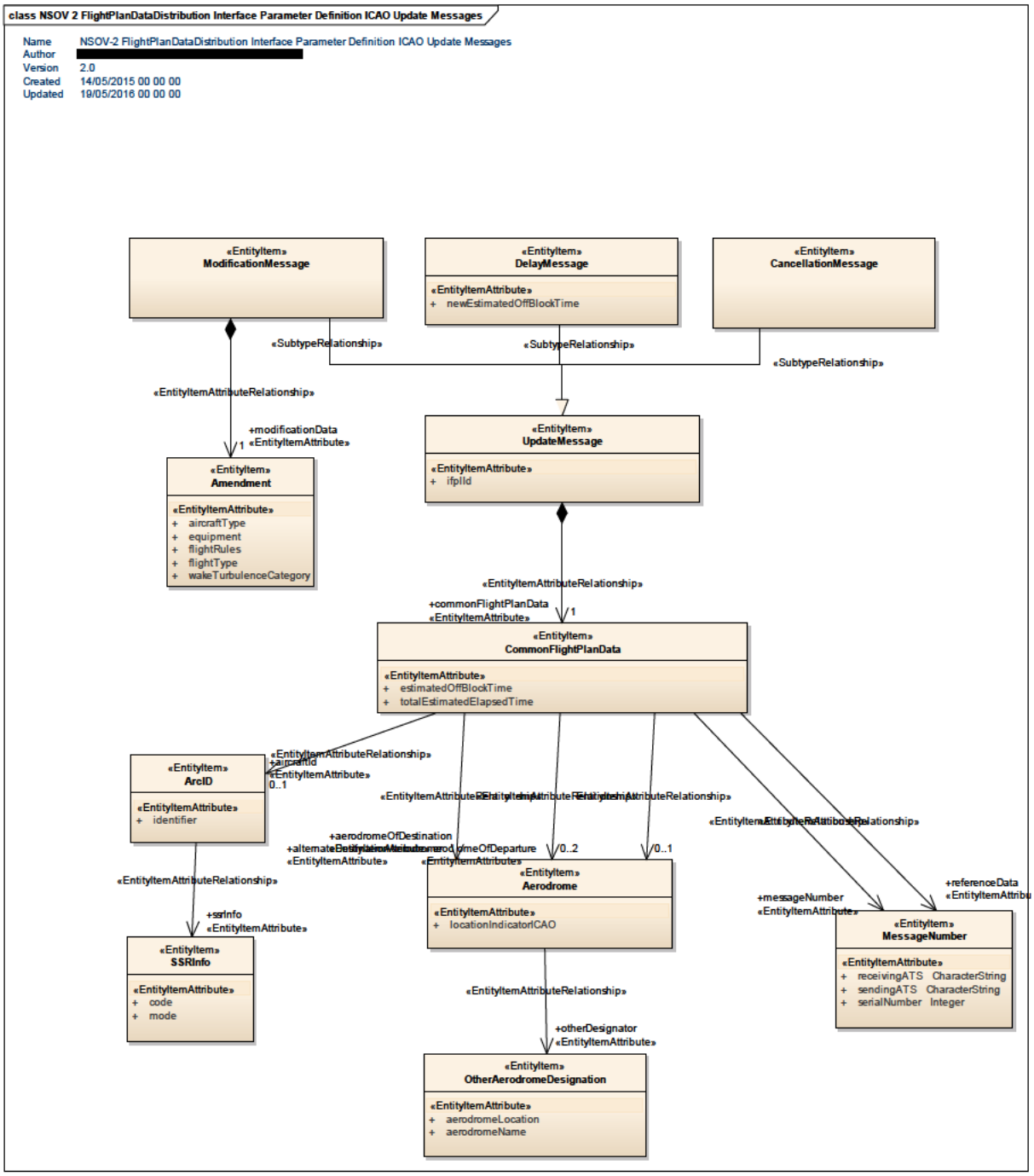


**Figure 10: NSOV-2 FlightPlanDataDistribution Interface Parameter Definition diagram - ICAOUpdateMessages**

## PAYLOAD TABLES:

Input parameter: ExtendedModificationMessage

| Element Name | Author | Notes |
|---|---|---|
| ExtendedUpdateMessage | [redacted] | ExtendedUpdateMessage is the super class of ExtendedModificationMessage, ExtendedDelayMessage and CancellationMessage. |

| | Element Tagged Value Name | Value |
|---|---|---|

| | | | |
|---|---|---|---|
| | encoding | | |
| | **Attribute Name** | **Type** | **Notes** |
| | ifplid | | Flight plan association data to allow the association of the message to the original flight plan. The association data will depend on the message format. For example, in case of an exchange of flight plan data with IFPS using a web based technology (such as the existing NM B2B services), the association data would be the unique flight plan identification code allocated by IFPS to the flight upon reception of the original Extended Flight Plan message. |
| | **Tagged Value Name** | **Value** | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight:ifplIdentifier | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightIdentifier:IFPLIdentifier | |

| **Element Name** | **Author** | **Notes** |
|---|---|---|
| ExtendedModificationMessage | [redacted] | An extended modification message shall contain, as a minimum:<br>• **Flight plan association data** to allow the association of the message to the original flight plan. The association data will depend on the message format and protocol used for the data exchange. For example, in case of an exchange of flight plan data with IFPS using a web based technology (such as the existing NM B2B services), the association data would be the unique flight plan identification code allocated by IFPS to the flight upon reception of the original Extended Flight Plan message.<br>• **The data elements that are modified**. In case they are modified, the 4D Trajectory and/or Flight Performance Data, as defined in 4.1.2.1, shall be included as well. In case, the Flight Performance Data is modified then the corresponding updated 4D Trajectory shall be included. The 4D Trajectory may be modified without the Flight Performance Data being modified as well.<br><br>Note: an extended modification message may optionally repeat all data elements included in the original extended flight plan message even if they are not updated. This will depend on the data format and protocol used for the exchange of data. |

| | | |
|---|---|---|
| | **Element Tagged Value Name** | **Value** |
| | encoding | |

**Table 7: Payload tracing to AIRM**

*Note: all the other relevant entity items for the ExtendedUpdateMessage are reported in Table 6 and are thus not reported here.*

Input parameter: ModificationMessage

| Element Name | | | Author | Notes |
|---|---|---|---|---|
| UpdateMessage | | | [redacted] | Parent class (abstract) of modification, delay and cancellation message. |
| | **Attribute Name** | **Type** | | **Notes** |
| | ifplId | | | The unique identifier of a flight plan in the IFPS system |
| | | **Tagged Value Name** | **Value** | |
| | | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@ifplIdentifier | |
| | | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightIdentifier:IFPLIdentifier | |

| Element Name | | | Author | Notes |
|---|---|---|---|---|
| ModificationMessage | | | [redacted] | All modification messages (CHG) submitted to the NM for processing shall contain an opening bracket, the message title, aircraft identification, departure aerodrome and estimated off-block time, arrival aerodrome, a correctly formatted Item 18, Item 22 containing the content of the change and a close bracket. |
| | **Element Tagged Value Name** | | **Value** | |
| | encoding | | | |

**Table 8: Payload tracing to AIRM**

*Note: all the other relevant entity items for the ICAOUpdateMessage are reported in Table 6 and are thus not reported here.*

**Output Parameters: NOT FORESEEN.**

### 5.1.2.3 Operation publishFlightPlanDelay

The service operation *publishFlightPlanDelay* provides the service consumer with the functionality to receive updates of flight plans subject to a delay processed by the service provider.

*Note: the delay of a flight plan is a particular case of update of a flight plan.*

#### 5.1.2.3.1 Operation Functionality

The operation *functionality* foresees:

- to pass the ExtendedDelayMessage or the DelayMessage to the service consumer
- not to obtain a return type (i.e.: no reply from the service consumer)

*Note: the operation has been explicitly modelled without a return type.*

#### 5.1.2.3.2 Operation Parameters

The operation *publishFlightPlanDelay* has a two input parameters

1. *DelayMessage*
2. *ExtendedDelayMessage*

The DelayMessage is used for a delay of the related to ICAO flight plans (DLA).
The ExtendedDelayMessage is used for a delay of the related Extended Flight plans (EDLA).
The operation has been modelled without a return type.

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM class where/if applicable.

**PAYLOAD DIAGRAMS:**

Please refer to Figure 9 and Figure 10.

**PAYLOAD TABLES:**

Input Parameters: ExtendedDelayMessage, DelayMessage

| Element Name | Author | Notes |
|---|---|---|
| ExtendedDelayMessage | [redacted] | An extended delay message shall contain, as a minimum:<br>• Flight plan association data to allow the association of the message to the original flight plan. The association data will depend on the message format. For example, in case of an exchange of flight plan data with IFPS using a web based technology (such as the existing NM B2B services), the association data would be the unique flight plan identification code allocated by IFPS to the flight upon reception of the original Extended Flight Plan message.<br>• The new estimated off-block time<br>• The new estimated off-block date, in case it is modified<br>• The updated 4D Trajectory, in case it is modified due to the delay |

| | Element Tagged Value Name | Value |
|---|---|---|
| | encoding | |

| | Attribute Name | Type | Notes |
|---|---|---|---|
| | newEstimatedOffBlockTime | | New estimated off-block time and date. |

| | Tagged Value Name | Value |
|---|---|---|
| | CLDMContextTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Common:Codelists:CodePlanningStatusType@ESTIMATED |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OffBlock@time |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightEvent:EstimatedOffBlockTime |

| Element Name | | | Author | Notes |
|---|---|---|---|---|
| DelayMessage | | | [redacted] | A DelayMessage message is transmitted when the departure of an aircraft is delayed |
| | **Attribute Name** | **Type** | | **Notes** |
| | newEstimatedOffBlockTime | | | New estimated off-block time and date. |
| | | **Tagged Value Name** | **Value** | |
| | | CLDMContextTrace | urn:x-ses:sesarju:airm:v400:ConsolidatedLogicalDataModel:SubjectFields:Common:Codelists:CodePlanningStatusType@ESTIMATED | |
| | | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v400:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OffBlock@time | |
| | | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightEvent:EstimatedOffBlockTime | |

**Table 9: Payload tracing to AIRM**

**Output Parameters: NOT FORESEEN.**

### 5.1.2.4 Operation publishFlightPlanCancellation

The service operation publishFlightPlanCancellation allows the service provider to send to the subscribed service consumers the cancellation message (CNL) for both Extended Flight Plans or ICAO flight plans processed by the service provider.

*Note: the cancellation of a flight plan is a particular case of update of a flight plan.*

#### 5.1.2.4.1 Operation Functionality

The operation *functionality* foresees:

- to pass the CancellationMessage to the service consumer;
- not to obtain a return type (i.e.: no reply from the service consumer)

*Note: the operation has been explicitly modelled without a return type.*

#### 5.1.2.4.2 Operation Parameters

The input parameter of the operation is the *CancellationMessage (CNL)*.

The output parameter is not foreseen.

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM class where/if applicable.

**PAYLOAD DIAGRAMS:**

For the payload diagrams please refer to Figure 10.

**PAYLOAD TABLES:**

| Element Name | Author | Notes |
|---|---|---|
| CancellationMessage | [redacted] | Message for the cancellation of a flight plan (CNL) |
| | **Element Tagged Value** | **Value** |

| | Name | |
|---|---|---|
| | encoding | |

**Table 10: Payload tracing to AIRM**

**Output Parameters: NOT FORESEEN.**

## 5.2 Service Interface FlightPlanProviderInterface

The purpose of the Service Interface **FlightPlanProviderInterface** is to foresee the service interface definition with necessary operations to allow the service consumers to request a copy of a specific ExtendedFlightPlan or ICAOFlightPlan.

The message exchange pattern foreseen for the service interface **FlightPlanProviderInterface** is the Standard Synchronous Request/Reply MEP.

The Service Interface **FlightPlanProvidernterface** implements one Service Interface definition:

- the **FlightPlanProvider** service interface definition.

The service interface definition is described in the following subparagraphs.

### 5.2.1 Service Interface Definition FlightPlanProvider

The purpose of the **FlightPlanProvider** service interface definition is to implement those service operations enabling the authorized service consumers to receive, on their request, an up-to-date copy of a certain flight in Extended or ICAO format.

The architecture of the **FlightPlanProvider** interface definition includes the following operations:

- **requestExtendedFlightPlan;**
- **requestICAOFlightPlan.**

These operations are described in the next paragraphs, including their related payload diagrams and tables which have been defined in the release of ISRM (1.4) upon discussion within WP8.

#### 5.2.1.1 Operation requestExtendedFlightPlan

The service operation *requestExtendedFlightPlan* provides the service consumer with the functionality to request a copy of a specific flight plan in “Extended format”, processed by the service provider.

##### 5.2.1.1.1 Operation Functionality

The operation *functionality* foresees:

- to pass the request for a flight plan in Extended format to the service provider;
- to obtain as return type the ExtendedFlightPlanMessage for the requested flight plan.

##### 5.2.1.1.2 Operation Parameters

The input parameter for the operation is the ***RequestFlightPlanMessage***.

The return type as output parameter for the operation is the ***ExtendedFlightPlanMessage***.

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM class where/if applicable.

**PAYLOAD DIAGRAMS**

**Input parameter:**

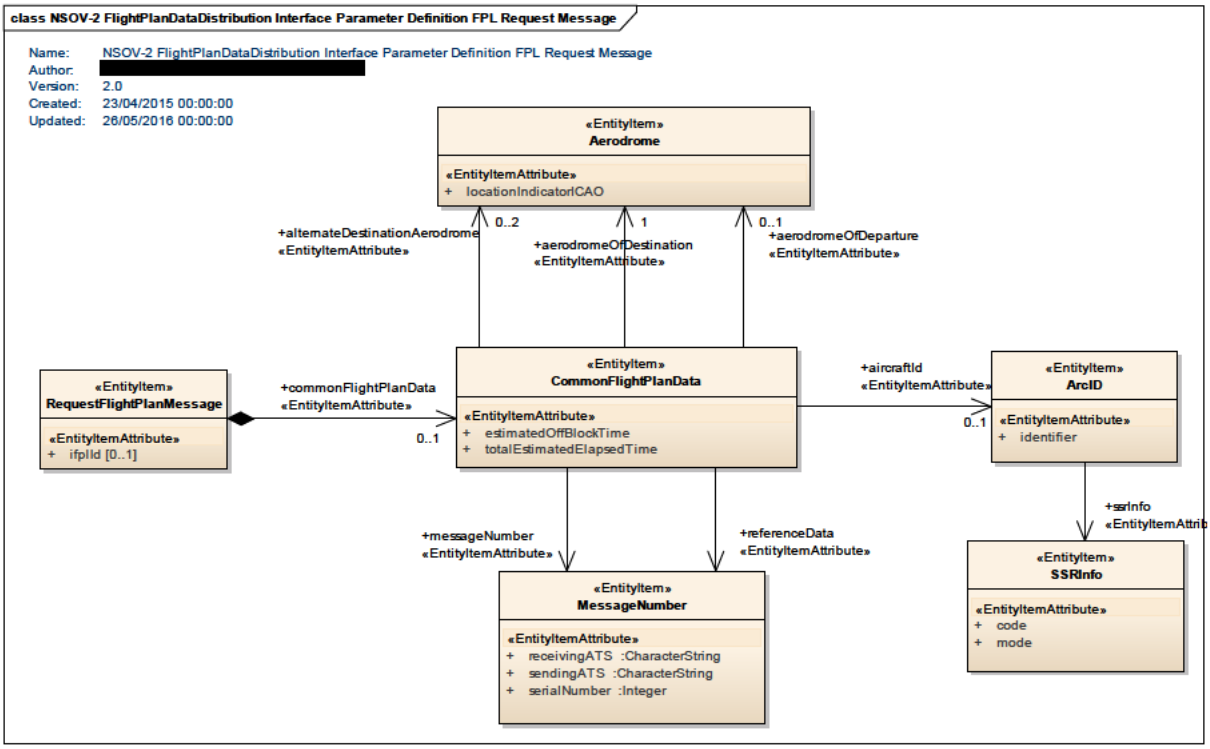


**Figure 11: NSOV-2 FlightPlanDataDistribution Interface Parameter Definition diagram - RequestFlightPlanMessage**

**Output parameter**:

ExtendedFlightPlanMessage: see Figure 7

**PAYLOAD TABLES**

**Input parameter:**

| Element Name | | | Author | Notes |
|---|---|---|---|---|
| RequestFlightPlanMessage | | | [redacted] | Message used to request a flight plan to the Network Manager. |
| | Element Tagged Value Name | | Value | |
| | CLDMSemanticTrace | | CLDM_out_of_scope | |
| | Attribute Name | Type | Notes | |
| | ifplId | | Unique identifier assigned by the NM system to a submitted flight plan. | |
| | Tagged Value Name | Value | | |
| | CLDMSemanticTrace | urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@ifplIdentifier | | |
| | IMDefinitionTrace | urn:x-ses:sesarju:airm:v410:InformationModel:SubjectFields:Flight:FlightIdentifier:IFPLIdentifier | | |

**Table 11: Payload tracing to AIRM**

**Output parameter:**

ExtendedFlightPlanMessage: see Table 5

### 5.2.1.2 Operation requestICAOFlightPlan

The service operation *requestICAOFlightPlan* provides the service consumer with the functionality to request a copy of a specific flight plan in "ICAO format", processed by the service provider.

#### 5.2.1.2.1 Operation Functionality

The operation *functionality* foresees:

- to pass the request for a flight plan in ICAO format to the service provider;
- to obtain as return type the ICAOFlightPlanMessage for the requested flight plan.

#### 5.2.1.2.2 Operation Parameters

The input parameter for the operation is *RequestFlightPlanMessage*.
The return type from the operation is *ICAOFlightPlanMessage*.

The payload diagrams and related tables are reported hereby, where each attribute and relationship is described. The tagged values show the linked AIRM class where/if applicable.

**PAYLOAD DIAGRAMS**

The diagram for the input parameter (RequestFlightPlanMessage) is available in Figure 11 and is thus not reported here.

The diagram for the output parameter (ICAOFPLMessage) is available in Figure 8 and is thus not reported here.

**PAYLOAD TABLES**

**Input parameter:**

The table for the input parameter (RequestFlightPlanMessage) is available in Table 11 and is thus not reported here.

**Output parameter:**

The table for the output parameter (ICAOFPLMessage) is available in Table 6 and is thus not reported here.

# 6 Service dynamic behaviour

The FlightPlanDataDistribution Service implements the following Service Interfaces (with their respective interface definitions):

- FlightPlanPublisherInterface
  - FlightPlanDataPublisher
  - FlightPlanDataConsumer

- FlightPlanProviderInterface
  - FlightPlanProvider

The dynamic behaviour of such service interface is described in the following paragraphs of the present chapter.

## 6.1 Service Interface FlightPlanPublisherInterface

The dynamic behaviour of **FlightPlanPublisherInterface** is described in Figure 12.

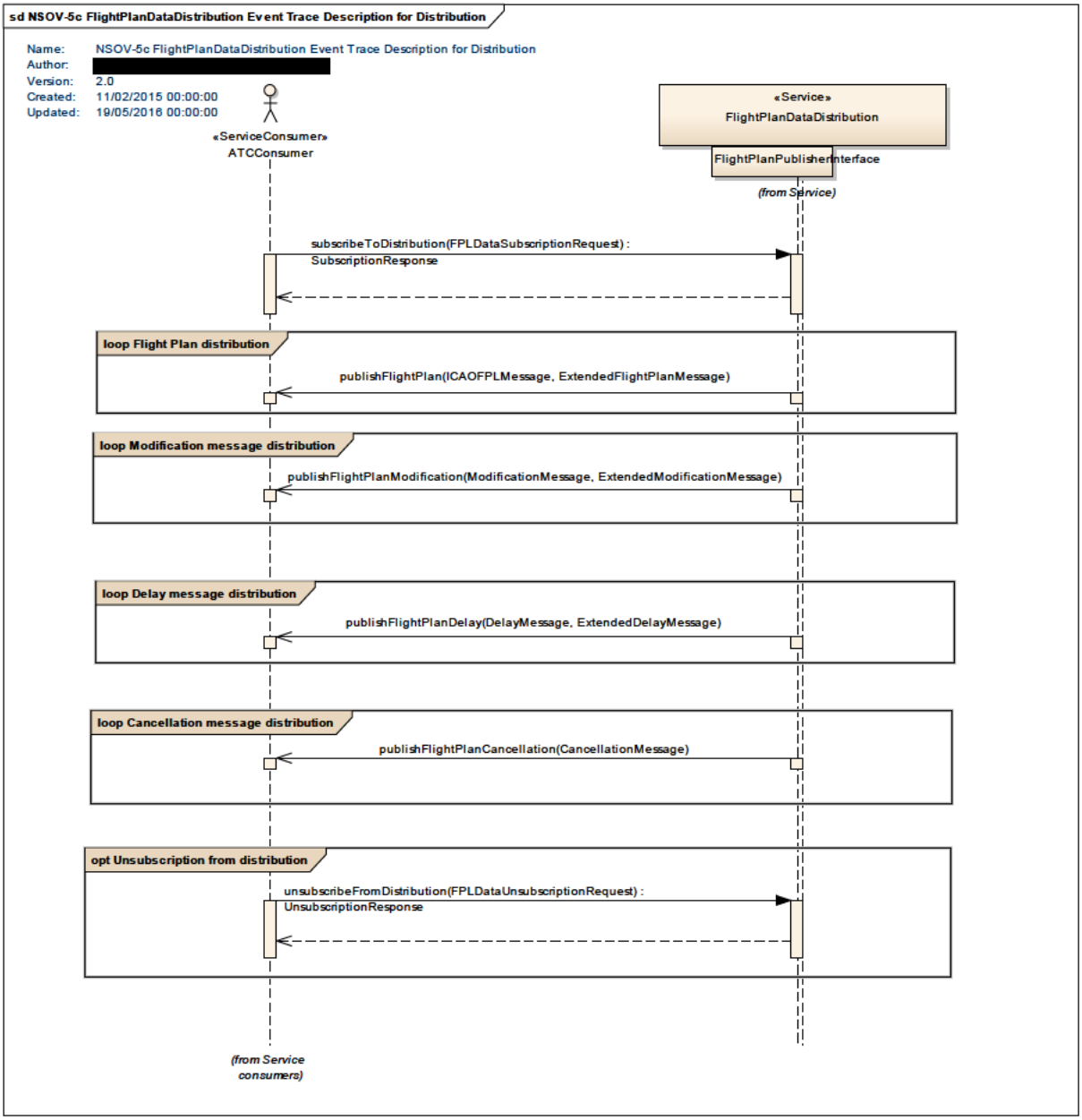


**Figure 12: NSOV-5c FlightPlanDataDistribution Event Trace Description for the FlightPlanPublisherInterface**

## 6.2 Service Interface FlightPlanProviderInterface

The dynamic behaviour of **FlightPlanProviderInterface** is described in Figure 13.

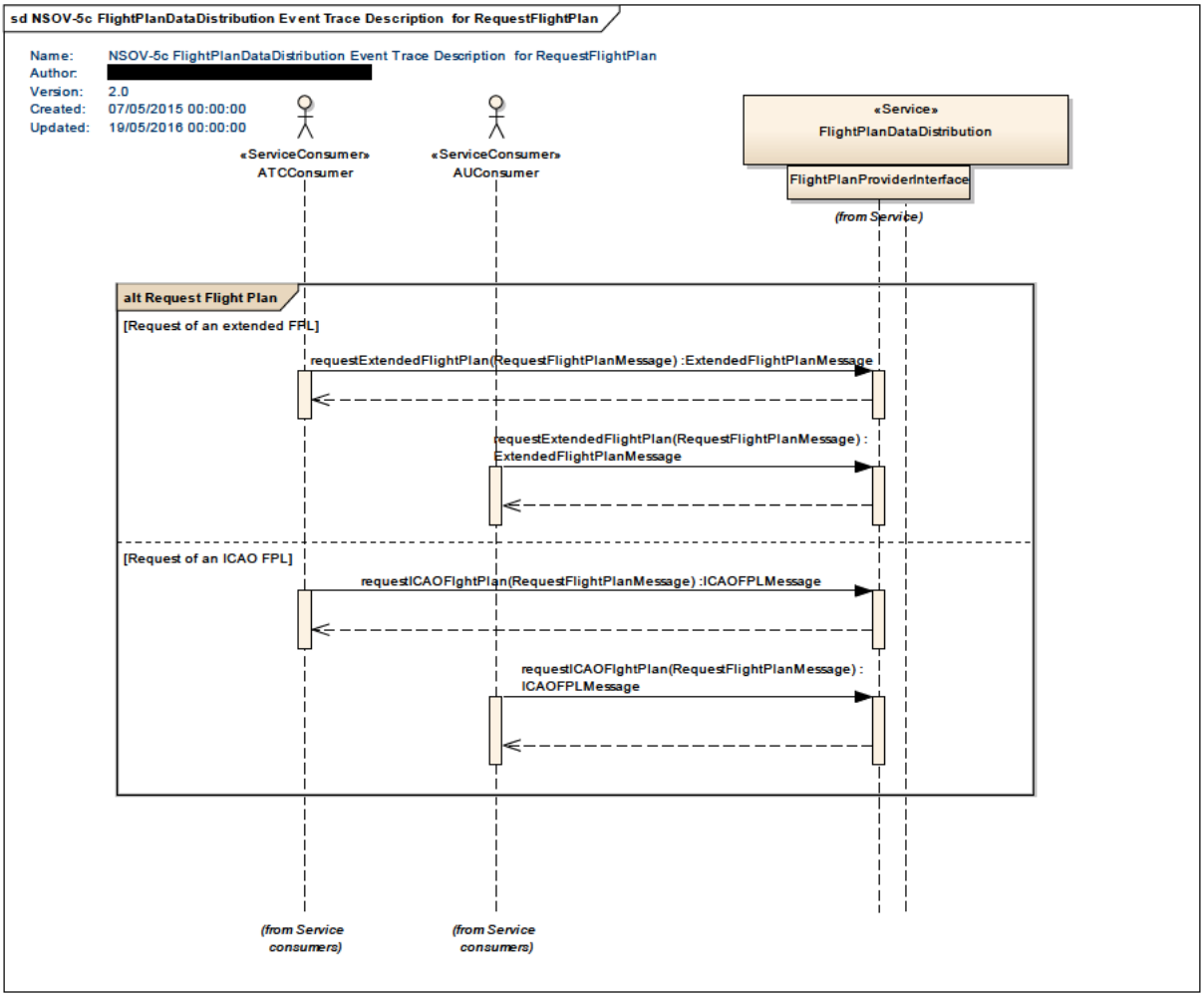


**Figure 13: NSOV-5c FlightPlanDataDistribution Event Trace Description for the FlightPlanProvidertInterface**

# 7 Service provisioning (optional)

NA

# 8 Validation and Verification

## 8.1 Verification

The verification of the service model is compliant to ISRM Foundation Rulebook (Ref. [6]).

Verification was performed using the WP 8.3.10 verification tools integrated on Sparx Enterprise Architect framework:

- Autoverify script version 28927 (Tortoise SVN review 28927).
- MDG Technologies ISRM Verification Rules version 29993 (Tortoise SVN review 29325)
- MDG Technologies ISRM Library Functions version 29915 (Tortoise SVN review 29325)

### 8.1.1 Verification Results

Verification was performed via manual inspection and assisted by a script developed in 08.03.10.

The verification outcome is completely free of errors.

The detailed findings, coming from execution of the verification script, are recorded in Verification_report_FlighPlanDataDistribution_Service file, located in the D65 delivery package.

Verification reports are in the following files:

Designed_Services_–_FlightPlanDataDistributionService.xls

Designed_Services_–_FlightPlanDataDistributionService_Common.xls

A summary of those results is reported below:

| | | | |
|---|---|---|---|
| Service name: | Designed Services - FlighPlanDataDistribution | Date of Service Creation: | 20140212-09:37:57 |
| Service version: | 2.0 | Version of Verification Rules: | 00.07.00 |
| Phase: | 2.0 | Date of Verification: | 20160601-04:21:53 |
| Owner of service: | [redacted] | Passes: | 200 |
| Name of verifier: | [redacted] | Failures: | |
| Overall comments: | NA | Manual: | 59 |
| MDG Library Functions version: | 29915 | MDG ISRM Verification version: | 29993 |

## 8.2 Validation

Currently there are no validation exercises covering the exchange of information for the FlightPlanDataDistribution Service.

Since the reference information exchange model applicable to the payload of the ExtendedFlightPlanSubmission service (See reference [17]) is FIXM (v3.0.1) with its EFPL extension (v1.0 beta) released by Eurocontrol, it is recommended to extend the usage of FIXM also to the FlightPlanDataDistribution service as future activity.

# 9 References

| Name | Version | Document ID / Location |
|---|---|---|
| [1] Project deliverables template | 03.00.00 | SJU templates & guidelines package, Project deliverables template |
| [2] SESAR Operational Service and Environment Definition | 03.00.00 | SJU templates & guidelines package, OSED template |
| [3] SESAR Safety and Performance Requirements | 03.00.00 | SJU templates & guidelines package, SPR template |
| [4] ISRM Tooling Guidelines | 00.07.00 | 08.03.10 D44 |
| [5] ISRM Modelling Guidelines | 00.07.00 | 08.03.10 D44 |
| [6] ISRM Foundation Rulebook | 00.07.00 | 08.03.10 D44 |
| [7] ISRM Verification Guidelines | 00.07.00 | 08.03.10 D44 |
| [8] European ATM Architecture (EATMA) Guidance Material v4 | 00.04.02 | B.04.01 D66 |
| [9] Step 1 Business trajectory OSED 2015 update | 00.04.00 | 07 06 02 D45 |
| [10] Deliverable D22-003 to ISRM v1.0 | 00.00.04 | 08.03.05 D22-003 |
| [11] European ATM Service Identification for Extended Flight Plan Services | 00.01.00 | 08.03.05 D22-002 |
| [12] B4.3 EFPL Service Allocation FT14 | 00.00.04 | B.4.3 |
| [13] TM Perfo Initial System Requirements V1.0 | 01.00.01 | 13.02.01 D10 |
| [14] TM Perfo Final System Requirements V1.0 | 00.01.01 | 13.02.01 D145 |
| [15] ICAO Doc 4444 ATM/501 PANS – Air Traffic Management | Fifteenth Edition – 2007 Amendment 2 | http://code7700.com/pdfs/icao_doc_4444_15th_edition.pdf |
| [16] IFPS Users Manual | 19.0.1 Edition – - March 2015 | https://www.eurocontrol.int/sites/default/files/content/documents/nm/network-operations/HANDBOOK/ifps-users-manual-current.pdf |
| [17] European ATM Service Description for the ExtendedFlightPlanSubmission service | 00.03.01 | 08.03.10 D65 |
| [18] European ATM Service Description for the FlightPlanDataDistribution | 00.02.01 | 08.03.10 D64 |

| Name | Version | Document ID / Location |
|---|---|---|
| service | | |
| [19] ISRM Service Portfolio | 00.08.01 | 08.03.10 D65 |
| [20] Interim Step 1 SPR for Business Trajectory Management | 00.02.00 | 07.06.02 D87 |
| [21] ATM Information Reference Model | 4.1.0 | 08.01.03 D47 |
| [22] Verification reports for the service | N/A | 08.03.10 D65 Verification reports |

**-END OF DOCUMENT-**