



# European ATM Service Description for the OATFlightDataDistribution Service

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## Abstract

This document describes the SESAR OAT Flight Data Distribution service designed by Project 08.03.10. The services are justified by Operational Requirements taken from the OSED developed by P07.06.02 and P11.01.02. The service described covers the operations dealing with the distribution of OAT Flight Data and updates thereto.

*The service is called the OATFlightDataDistribution service.*

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## Executive summary

This document describes the SESAR OAT Flight Data Distribution Service identified by Project 08.03.10 as part of the work for ISRM iteration 2.0

The services are justified by Operational Requirements taken from the OSED developed by Project 07.06.02 and 11.01.02. The services identified cover the operations dealing with the distribution of OAT Flight Data.

The proposed OAT Flight Data Distribution service covers the following functionality:

- OAT Flight Data Distribution Service: to enable the NM to:
  - ✓ Distribute OAT Flight Data to a set of users identified from the trajectory of the flight and other users based on internal rules and Letters of Agreement.

# 1 Introduction

## 1.1 Purpose of the document

This document is an outcome of the Service Design activity as described in by the SESAR project B.04.03.

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

The service description document is also the foundation material for the standardisation process.

The service described in this document derive from the OSED Step1 Volume 2 developed by project 07.06.02 (see ref. [5]) and the OSED from Project 11.01.02 (see ref [6])

A service has been described in the OAT Flight Plan management context:

- **OAT Flight Data Distribution Service:** to enable the NM to:
  - ✓ Distribute OAT Flight Data to a set of users identified from the trajectory of the flight and other users based on internal rules and Letters of Agreement.

The document is focused on the interactions between the Network Manager (NM) and those users who have subscribed to receive OAT Flight data and subsequent updates thereto.

This document specifies a service (coming from a Service Identification activity as described in *B.04.03 D100-05 Working method on services (edition 2014)* – see ref. [4]) for consideration by B.4.3.

The service described in this document will also be a part of the Service Portfolio. The Service portfolio presents all services that are available or are planned to become available at a high level while the Service Description Document describes one single Service type in detail.

## 1.2 Intended readership

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

It must be read by members of P08.03.10, P11.01.02 and P07.06.02.

## 1.3 Inputs from other projects

07.06.02 OSED Step1 V3 (see ref [5]) and 11.01.02 OSED (see ref [6]).

## 1.4 Glossary of terms

Term	Definition
<b>Improved OAT FPL</b>	The term used in the P07.06.02 OSED to refer to the OAT Flight Plan.
<b>OAT Flight Plan</b>	A means for an airspace user to convey its intention to operate a flight under OAT flight rules to the Network Manager or relevant state authority.
<b>Military Trajectory</b>	The term used in many IER to justify the passing of OAT Flight Plan Data.

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Term	Definition
	It refers to the 4D trajectory of a flight operating under OAT flight rules.

## 1.5 Acronyms and Terminology

### 1.5.1 Acronyms

Term	Definition
<b>ADD</b>	Architecture Description Document
<b>AIS</b>	Aeronautical Information System
<b>ATC</b>	Air Traffic Control
<b>ATM</b>	Air Traffic Management
<b>AU</b>	Airspace User
<b>CFMU</b>	Central Flow Management Unit
<b>CNL</b>	Cancellation
<b>DOD</b>	Detailed Operational Description
<b>EAD</b>	European AIS Database
<b>EATMA</b>	European ATM Architecture
<b>ECHG</b>	Modification message of the Extended FPL
<b>EDLA</b>	Extended DLA message
<b>EFPL</b>	Extended Flight Plan
<b>EFPLM</b>	Extended Flight Plan Message It is a message containing the ICAO FPL data, the trajectory of the flight described in a 4D trajectory form and the Performance Data instantiated for that flight.
<b>EOBT</b>	Estimated Off-Blocks Time
<b>ETFMS</b>	Enhanced Tactical Flow Management System
<b>GAT</b>	General Air Traffic
<b>IER</b>	Information Exchange Requirement
<b>IFPS</b>	Initial Flight Plan Service
<b>ISRM</b>	Information Service Reference Model
<b>NAF</b>	NATO Architecture Framework

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Term	Definition
NM	Network Manager
NOV	NATO Operational View
NSOV	NATO Service Oriented View
NSV	NATO System View
OA	Operational Activities
OAT	Operational Air Traffic (military or state flights)
ORM	Operational Reply Messages
OSD	Operational Service and Environment Definition
QoS	Quality of Service
SID	Service Identification Document
SESAR	Single European Sky ATM Research Programme
SESAR Programme	The programme which defines the Research and Development activities and Projects for the SJU.
SoaML	Service Oriented Architecture Modelling Language
SWIM	System Wide Information Management
UML	Unified Modelling Language
WOC	Wing Operations Centre

### 1.5.2 Terminology

Term	Definition	Source
Capability	The collective ability to deliver a specified type of effect or a specified course of action. Within the context of the SESAR Programme a capability is therefore the ability to support the delivery of a specific operational concept to an agreed level of performance.	Common working meeting between B41 EA study and B43 T5
Capability Configuration	A combination of organisational aspects (with their competencies) and equipment that combine to provide a capability. A Capability Configuration represents a recognisable set of resources (technical systems, human roles, and physical assets) derived from a generic stakeholder organisation.  Note: Capability Configuration is a term used in NAF. The equivalent SoaML stereotype to be used is Participant. Also see note in Node term definition.	Project B.04.03

Term	Definition	Source
<b>Node</b>	<p>A logical entity that performs Operational Activities specified independently of any physical realisation e.g. a stakeholder type providing and/or consuming operational information within a network of others.</p> <p>Note: Node is a term used in NAF. The equivalent SoaML stereotype to be used is Participant. Be aware that the original intention of SoaML is that Participants are physical items and not logical constructs. Service architects must indicate whether the Participant is a logical (Node) or a physical (Capability Configuration) construct.</p>	Common working meeting between B41 EA study and B43 T5
<b>Service</b>	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.	B43 T5 study
<b>Service attribute</b>	A Service Attribute defines a property of a service. Examples: Response time, Frequency of invocation, Message Exchange Pattern.	B43 T5 study
<b>Service contract</b>	A service contract represents an agreement between the stakeholders involved for how a service is to be provided and consumed.	B43 T5 study
<b>Service function</b>	<p>A Service function describes what functionality is needed to provide or consume a service; it is the trigger for or is triggered by the Service interactions. A Service function can be automated to different extents depending on the context e.g. a Service function supporting a complex activity may need more automation than a Service function for a simple activity.</p> <p>Note: The equivalent SoaML stereotype is Capability, in WP8 Foundation documentation referred to as Service Capability.</p>	B43 T5 study
<b>Service interaction</b>	<p>A Service interaction is a description of an information exchange between ATM stakeholders' systems which can potentially be automated; phone calls / voice exchanges are considered as non-automated service interactions.</p> <p>In considering automated interactions, a service interaction is described by several modelling artefacts depicting the static and dynamic behaviour of a service. This includes service operations, data messages model and interaction behaviour.</p>	B43 T5 study
<b>Service interface</b>	<p>The mechanism by which a service communicates.</p> <p>Service providers and consumers need to implement service interfaces to be able to collaborate. A service interface includes service operations that enable access to the functionality of the services identified, as well as the data used in the service interaction.</p>	B43 T5 study

## 2 Service identification

Name	OATFlightDataDistribution
ID	{2F626405-4127-4692-BB7A-9C3AA83A6BF4}
Version	3.0
Keywords	OAT FPL
Architect(s)	██████████ NORACON

Lifecycle status	Date	Reference
Identified	30/11/2014	See reference [9]
Allocated	10/09/2014	See reference [13]
Designed	29/05/2015	This document
Validated	<i>Date when validated. Filled by WP3</i>	<i>Name of protocol documenting the decision</i>
IOC	<i>Date for Initial Operational Capability</i>	<i>Reference to technical enabler hosting the service in the ATM master plan</i>
FOC	<i>Date for Full Operational Capability</i>	<i>Reference to technical enabler hosting the service in the ATM master plan</i>

### 3 Operational and Business context

The operational context for the OAT Flight Data Distribution Service derives from the P07.06.02 OSED (see ref. [5]) and the P11.01.02 OSED (see ref [6]). This service enables the distribution from the NM to those users that need the OAT flight data and any subsequent updates to that data.

The “OAT Flight Data Distribution Service” foresees the interaction between the Military or State Airspace User and the Network Manager. The Military or State User is represented by the WOC Node and the Network Manager by the Network Management Node. The WOC is used as a short hand notation throughout this document to mean the Military or State Airspace User.

The OAT Flight Data Distribution Service covers the following operational activities (see Figure 3):

- The Network Manager is able to distribute OAT Flight Data to different node types that provide the service interface.

The rules for which units receive the data from NM are not yet visible but are derived from the trajectory of the flight and other rules.

The service uses only one MEP (Standard One-Way MEP). The subscription is virtual, the set of service providers to publish to, is determined by internal NM rules and the trajectory of the flight.

To match existing NM functionality the service does not offer a subscription interface operation.

## 3.1 Information Exchange Requirements

### 3.1.1 Information Exchange Requirements from Project 07.06.02

The driver of this service identification are IERs taken from the OSED section 4 (see ref [5]) and are included below for reading convenience.

[IER]

Identifier	Name	Issuer	Intende d Addres sees	Informati on Element	Involve d Operat ional Activiti es	Interacti on Rules and Policy	Status	Rationale	Satisfied DOD Requiremen t Identifier	Service Identifier
IER-07.06.02-OSED-M005.0021	Distribution of improved OAT FPL	NMOC/IFPS	Relevant civil & military (ATM, AD/C2) entities	Validated improved OAT FPL	Validation and distribution of the improved OAT FPL		<In Progress>	Sharing Mission Trajectory	REQ-07.02-DOD-0001.0000 <Partial>	Service Identifier

The linkage between the service and the IER is shown in Figure 1.

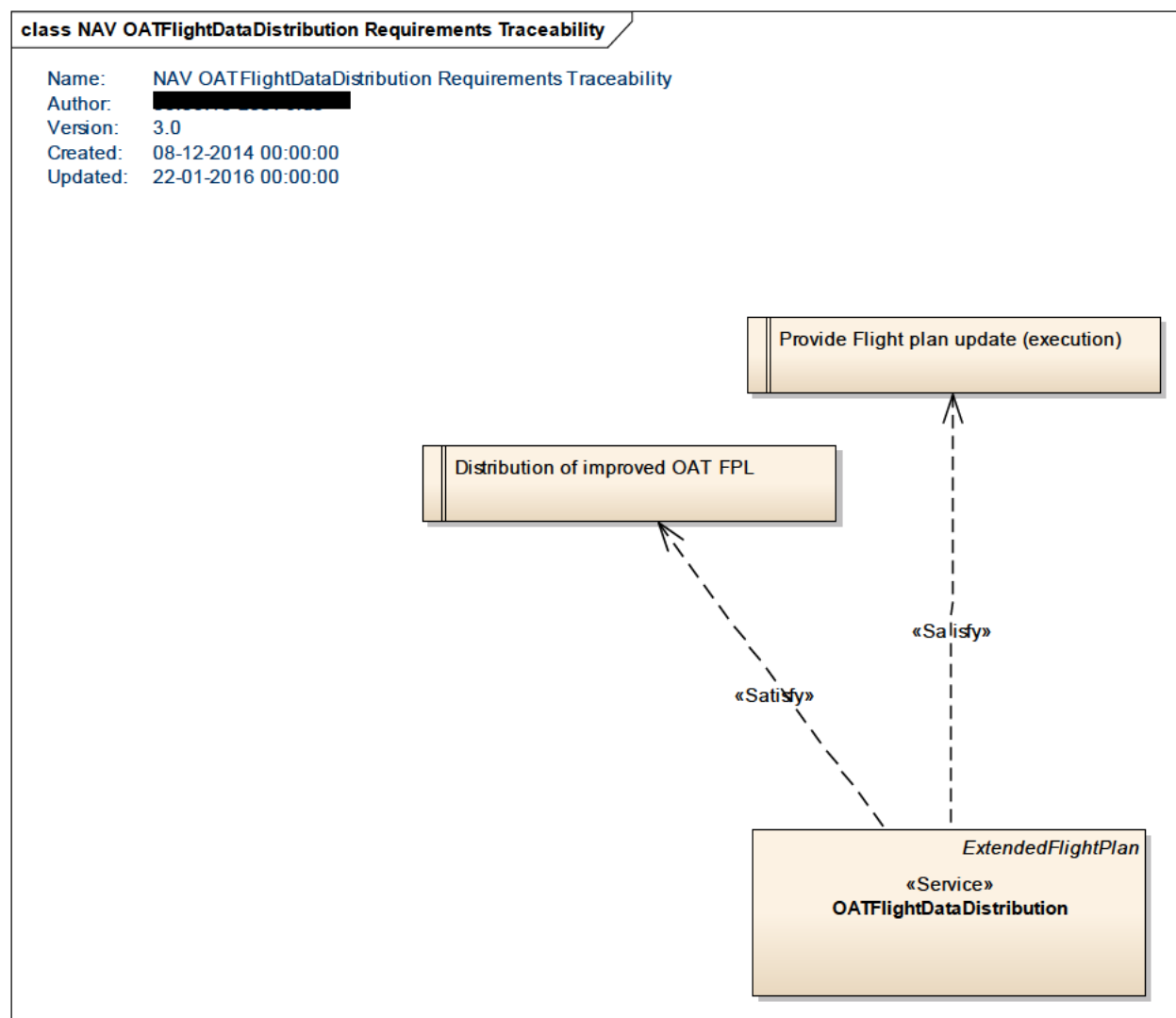


Figure 1 Requirements Traceability

Element Name	Author	Notes
Distribution of improved OAT FPL	██████████	N/A
	<b>Element Tagged Value Name</b>	<b>Value</b>
	megaid	
	ref	IER-07.06.02-OSED-M005.0021
	refType	Information exchange requirement
	Text	

Element Name	Author	Notes
Provide Flight plan update (execution)	██████████	N/A
	<b>Element Tagged Value Name</b>	<b>Value</b>
	megaid	
	ref	IER-11.01.02-OSED-WOCI.1019
	refType	Information exchange requirement
	Text	

Table 1 IER Requirements

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### 3.1.2 Information Exchange Requirements from Project 11.01.02

The driver of this service identification are IERs taken from the OSED section 6.2.1 (see ref [6]) and are included below for reading convenience. NOTE: Only a few are relevant to the service and are shown in Figure 1.

[IER]

Identifier	Name	Issuer	Intended Addressee	Information Element	Involved Operational Activities	Interaction Rules and Policy	Status	Rationale	Satisfied DOD Requirement Identifier	Service Identifier
IER-11.01.02-OSED-WOCI.1019	Provide Flight plan update (execution)	ER ACC ATC system	WOC system	improved OAT Flight Plan update, extended Flight Plan update	Mission execution		<In Progress>	Monitoring of Mission Trajectory. WOC will be updated with changes in Mission and resulting Flight Plan updates.	REQ-11.01.01-DOD-WOCR.1001<Partial>; REQ-11.01.01-DOD-WOCR.1004<Partial>; REQ-11.01.01-DOD-WOCR.1000<Partial>; REQ-11.01.01-DOD-WOCR.1003<Partial>	

## 3.2 Other Requirements

### 3.2.1 Non-Functional Requirements

There are currently no non-functional requirements listed in the P07.06.02 OSED or the P11.01.02 OSED and consequently no diagram.

The following Non-Functional Requirements have been extracted from 13.02.01 Technical Specification [8] have been considered, because they indicate that the existing IFPS performance for GAT Flight plans is acceptable and that State Airspace Users will also be able to accept this level of service, NOTE It is assumed that the State User or other receive of distributed OAT Flight Data will have similar levels of reliability:

Identifier	IER/SPR Name	Property / Criteria	Comments
REQ-13.02.01-TS-0103.0001	EFPL Performance	This requirement is based on the current IFPS system.	NM systems shall be able to process the same minimum number of EFPLs per second as ICAO Flight Plans, this is 6 per second.

**REQ-13.02.01-  
TS-0106.0001**

EFPL Reliability

This requirement is based on the current IFPS system.

Submission and processing of EFPLs shall be available 24h/7days, availability shall be minimum 99.97%. In case of a system failure, EFPL services shall be available again within 1 hour.

### 3.2.2 Relevant Industrial Standards

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

### 3.2.3 Nodes

The diagram showing the nodes providing and consuming the service, is shown below:



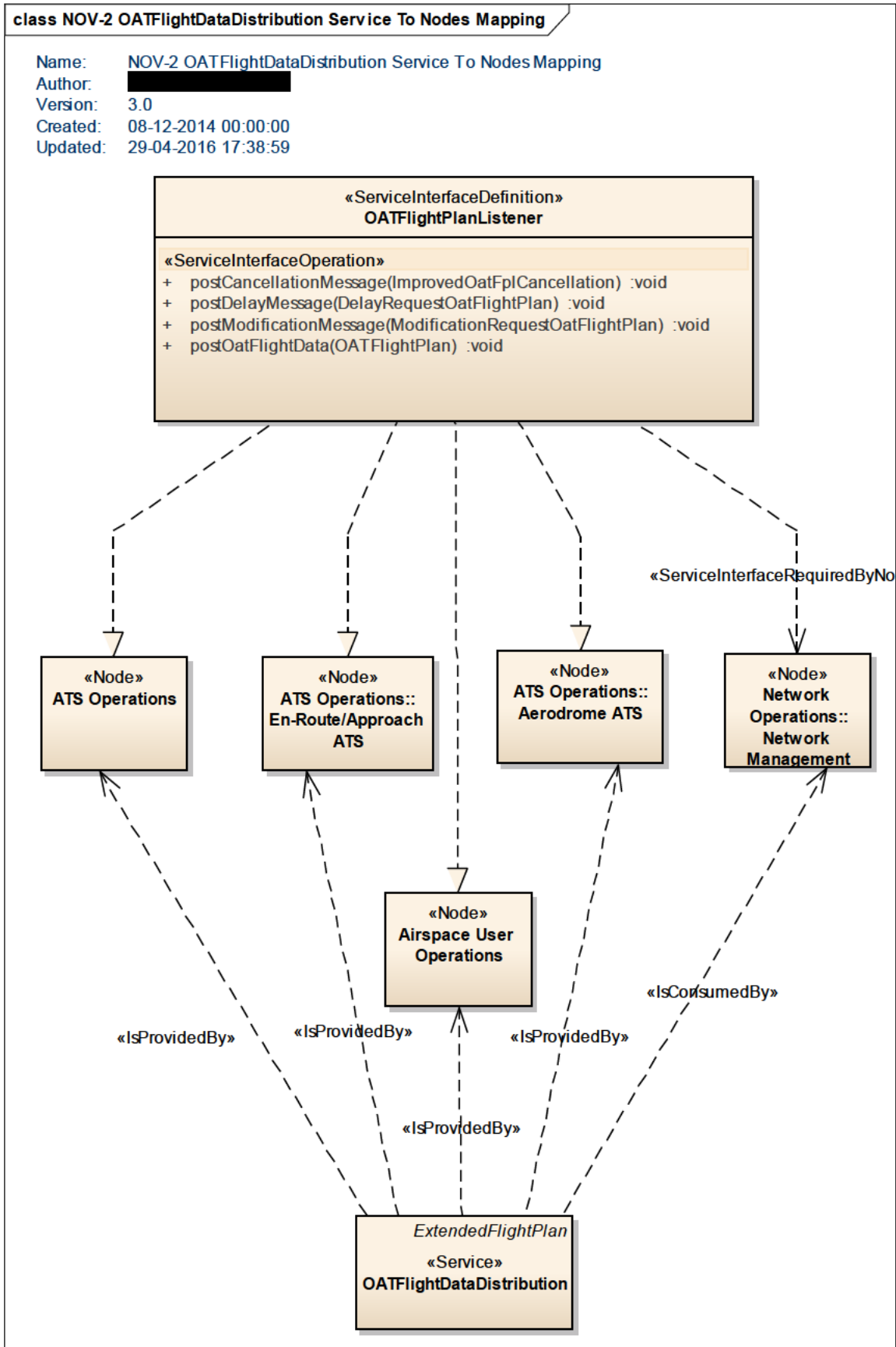


Figure 2: NOV-2 OATFlightDataDistribution Service to Nodes Mapping diagram

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## 4 Service overview

### 4.1 Service Taxonomy

The service taxonomy is described in the ISRM Service Portfolio document [11].

### 4.2 Service Levels (NfRs)

Non Functional Requirements are described in section 3.2.1.

### 4.3 Service Functions and Capabilities

The functions and capabilities of the service can be shown through the following diagrams:

The Business Process overview showing the interaction between NM and OAT Flight Data Consumers in relation to the publication of OAT Flight Data is shown in Figure 3

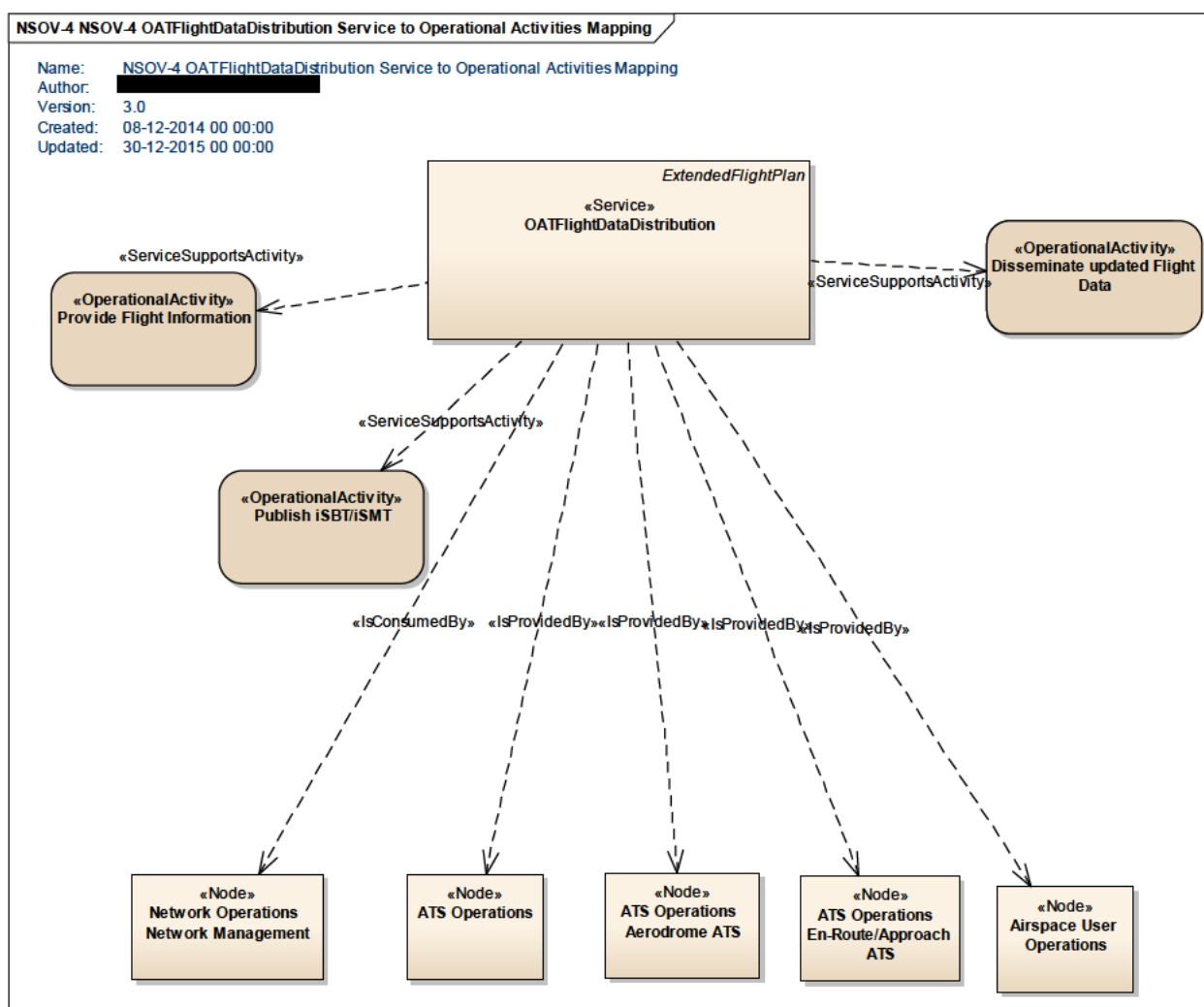


Figure 3 NSOV-4 OATFlightDataDistribution Service to Operational Activities Mapping

The service fulfils some identified EATMA capabilities; these are shown in Figure 4

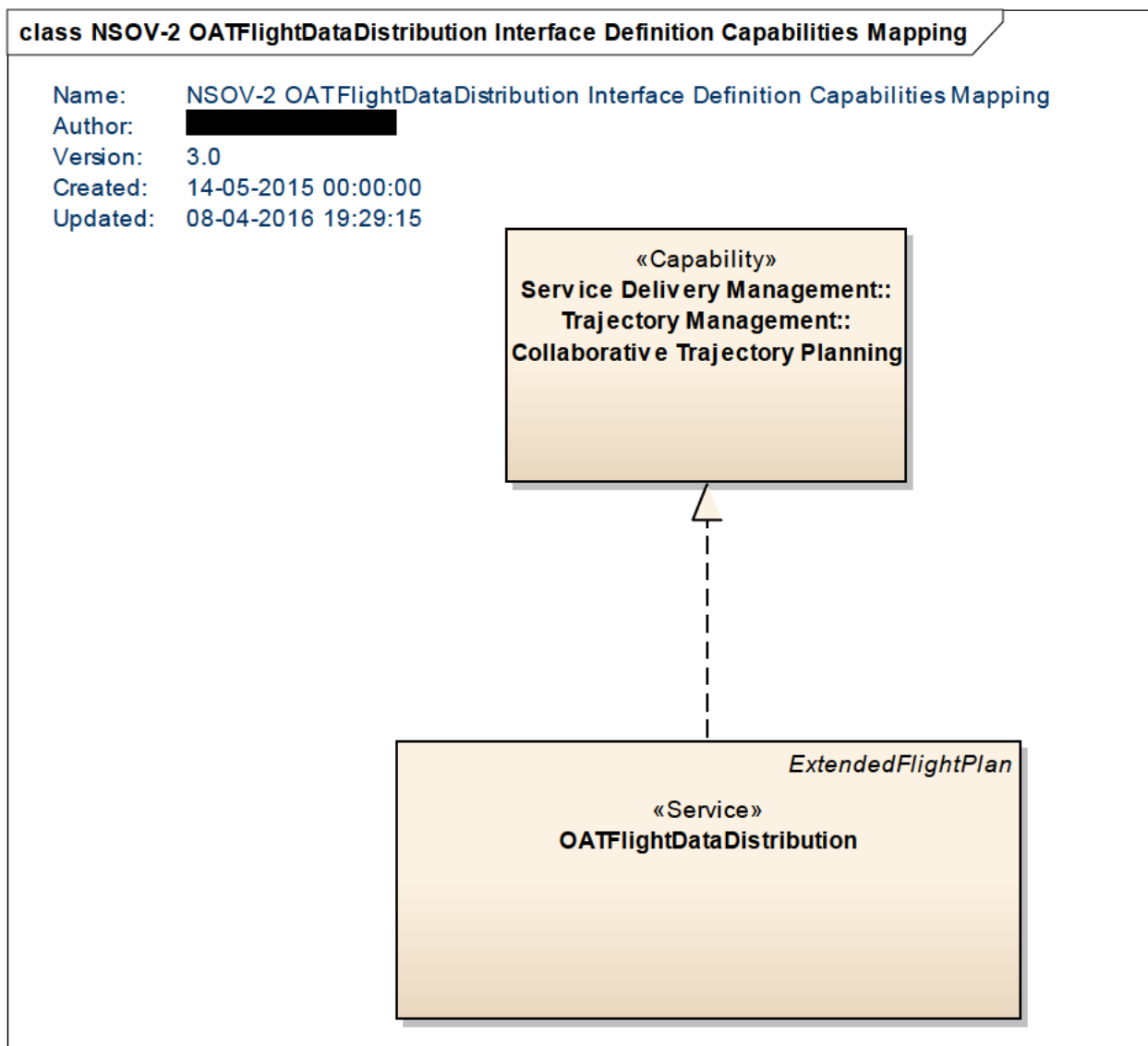


Figure 4 Service to Capability Mapping

### 4.4 Service Interfaces

The service is based on a single interface, providing (a) a simple publish mechanism. The interface allows the service provider to publish the message containing the data. The service interface is shown in Figure 5.

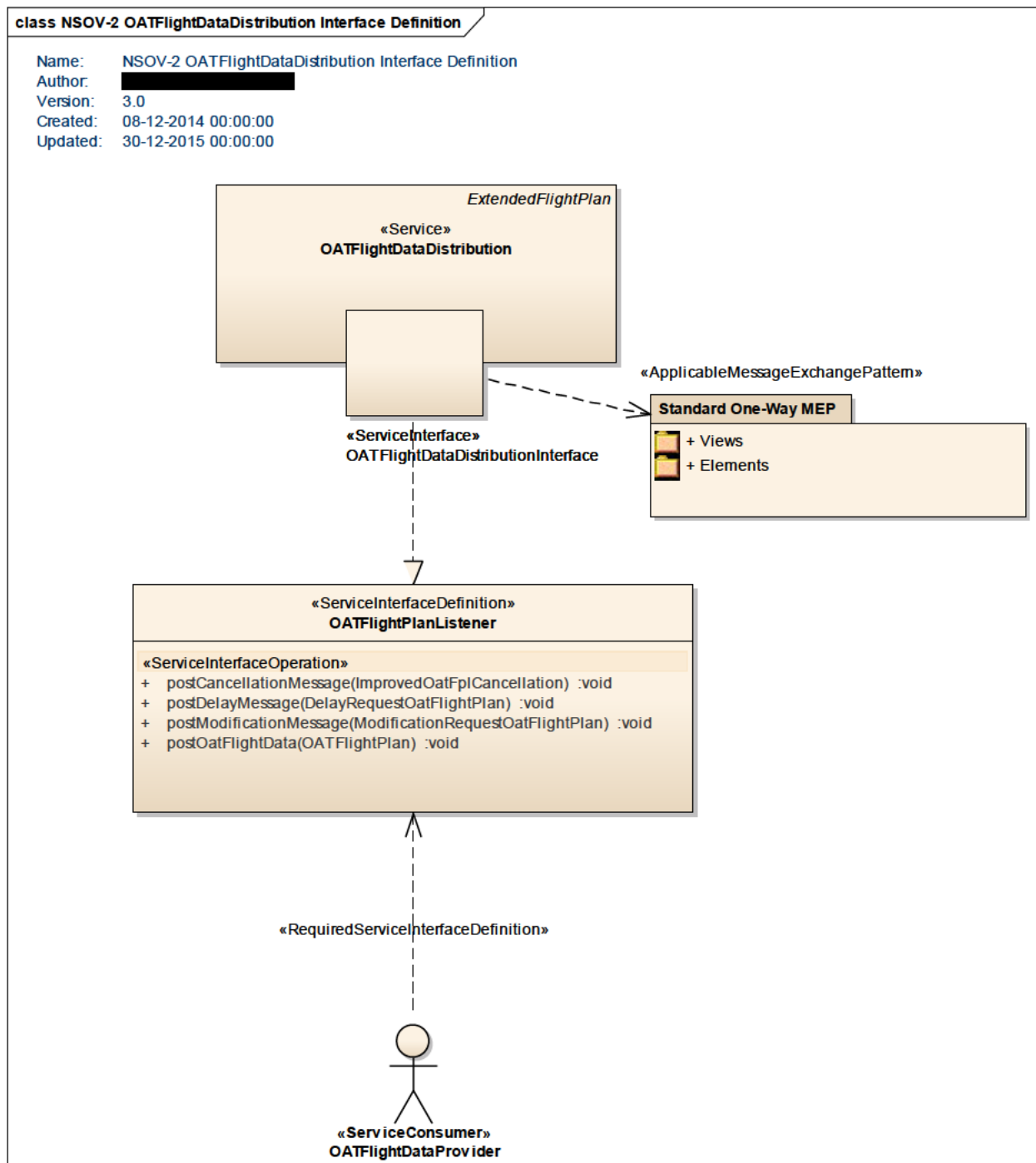


Figure 5: NSOV-2 OATFlightDataDistribution Interface Definition diagram

ServiceInterface	ServiceInterfaceDefinition	ServiceInterfaceOperation	Role
OATFlightDataDistributionInterface	OATFlightPlanListener	postOatFlightData	provided
OATFlightDataDistributionInterface	OATFlightPlanListener	postModificationMessage	provided
OATFlightDataDistributionInterface	OATFlightPlanListener	postDelayMessage	provided
OATFlightDataDistributionInterface	OATFlightPlanListener	postCancellationMessage	provided

Table 2: Service Interfaces

## 5 Service interface specifications

The interfaces of the OATFlightDataDistribution service are shown in Table 2. They are described in more detail in the sections below.

### 5.1 Service Interface OATFlightDataDistributionInterface

The service interface is shown in Figure 5.

#### 5.1.1 Service Interface Definition OATFlightPlanListener

The OAT Flight Plan Listener Service Interface exposes the operations described below:

- **postOatFlightData(OATFlightPlan)** – the operation supports the NM in the distribution of OAT Flight Data in the form of the OATFlightPlan. The input parameter of the function is the OAT Flight Plan. There is no synchronous defined response.
- **postDelayMessage(DelayRequestOatFlightPlan)** – the operation supports the NM in the distribution of a delay to the specific OAT Flight in the form of the DelayRequestOatFlightPlan. The input parameter of the function is the DelayRequestOatFlightPlan. There is no synchronous defined response.
- **postModificationMessage(ModificationrequestOATFlightPlan)** – the operation supports the NM in the distribution of a modification to an OAT Flight Plan in the form of the ModificationRequestOatFlightPlan. The input parameter of the function is the ModificationRequestOatFlightPlan. There is no synchronous defined response.
- **postCancellationMessage(ImprovedOatFplCancellation)** – the operation supports the NM in the distribution of a cancellation of an OAT Flight Plan in the form of the ImprovedOatFplCancellation. The input parameter of the function is the ImprovedOatFplCancellation. There is no synchronous defined response.

##### 5.1.1.1 Operation postOatFlightData

###### 5.1.1.1.1 Operation Functionality

The operation supports the NM in distributing accepted OAT Flight Plan data to those consumers of the data identified from the flight trajectory and other rules.

The input parameter of the function is the OatFlightPlan. There is no defined response.

### 5.1.1.1.2 Operation Parameter

The input parameter is called OatFlightPlan and is shown below:

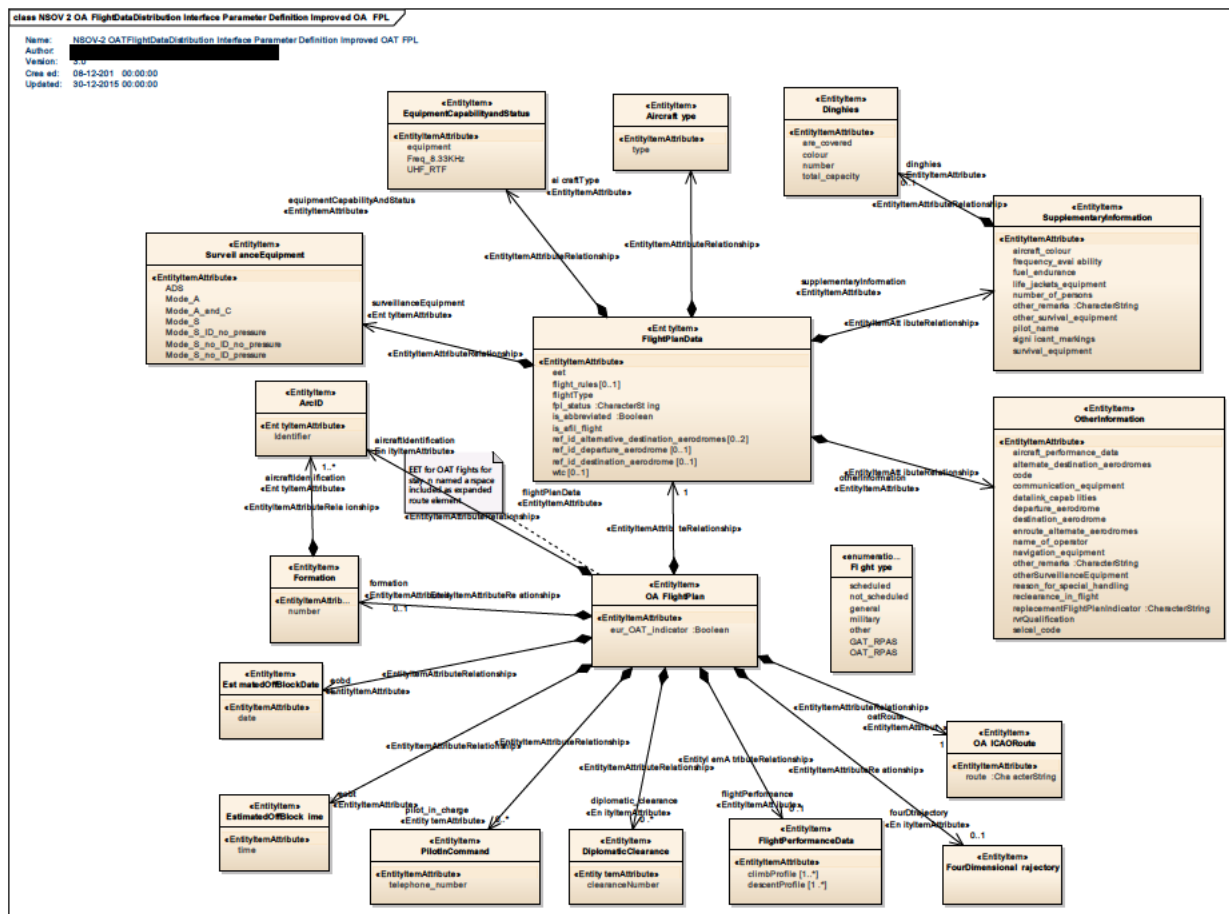


Figure 6 NSOV-2 service parameter type definition Improved OAT FPL

Element Name	Author	Notes	
OATFlightPlan		<p>An improved OAT FPL is based on an ICAO 2012 FPL Message content with new OAT fields. It also encompasses the new fields introduced for the EFPL (Extended Flight Plan).</p> <p>New Fields</p> <ul style="list-style-type: none"> <li>• <b>4D Trajectory (UP4DT):</b> AO calculated flight 4D trajectory as included in the operational flight plan (OFP) of the flight.</li> <li>• <b>Flight Performance Data:</b> the 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. The Flight Performance Data will be provided both as climb and descent performance profiles and as total weight of aircraft as part of the 4D trajectory (see the 4D trajectory content description below) in order to allow for two approaches in the re-calculation of a flight trajectory within the recipient systems.</li> <li>• Diplomatic Clearance</li> <li>• Pilot In Charge</li> <li>• Formation</li> </ul>	
	<b>Element Tagged Value Name</b>	<b>Value</b>	
	encoding		
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	eur_OAT_indicator	Boolean	Indicator that the flight is OAT and requires special handling for confidentiality.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	CLDM_out_of_scope	

Element Name	Author	Notes	
FlightPlanData		<p>ICAO Flight Plan</p> <p>Refer to ICAO ICAO4444 FPL or ADEXP V2.1 APL</p> <p>Refer to ICAO4444 Doc for constraints applying to this class</p>	
	<b>Element Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	CLDM_out_of_scope	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	eet		Estimated Elapsed Time
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-	

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		ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@totalEstimatedElapsedTime	
Attribute Name	Type	Notes	
flight_rules		Indicates if the rules applicable for the flight are visual (VFR), instrumented (IFR) or visual and then instrumented (VFR_THEN_IFR) or vice versa (IFR_THEN_VFR).	
Tagged Value Name	Value		
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:Trajectory@flightRules		
Attribute Name	Type	Notes	
flightType		The Type of the flight (e.g. Scheduled, not scheduled, etc.)	
Tagged Value Name	Value		
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@type		
Attribute Name	Type	Notes	
fpl_status	CharacterString	<p>In PH1 only "FILED" value is used.</p> <p>Status of the flight. It can be:</p> <ul style="list-style-type: none"> <li>-Scheduled</li> <li>-Initiated</li> <li>-Airborne</li> <li>-FIR</li> <li>-Final Approach</li> <li>-Departed *(proposal to change it to Taken – off)*</li> </ul> <p>This is the state of the flight plan as the flight progresses.</p>	
Tagged Value Name	Value		
CLDMSemanticTrace	CLDM out of scope		
Attribute Name	Type	Notes	
is_abbreviated	Boolean	<p>In PH1 is always set to FALSE</p> <p>Indicates whether the flight plan is abbreviated or not.</p> <p>An abbreviated flight plan is a flight plan that is created upon the appearance of a new uncorrelated track, this kind of flight plan has reduced content, and can even contain just an arcid.</p>	
Tagged Value Name	Value		
CLDMSemanticTrace	CLDM out of scope		
Attribute Name	Type	Notes	
is_afil flight		Indicates whether a flight is air filed or not.	
Tagged Value Name	Value		
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@isIFPLIdentifierTemporary		
Attribute Name	Type	Notes	
ref_id_alternative_destination_aerodromes		The indicator(s) of not more than two alternate 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	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	ref_id_departure_aerodrome		The departure aerodrome for the flight
	<b>Tagged Value Name</b>	<b>Value</b>	
	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	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	ref_id_destination_aerodrome		The indicator of the arrival aerodrome for the flight
	<b>Tagged Value Name</b>	<b>Value</b>	
	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	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	wtc		Wake Turbulence Category (e.g. heavy)
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCategory@wakeTurbulenceCategory	

<b>Element Name</b>	<b>Author</b>	<b>Notes</b>	
AircraftType		The designator(s) of the aircraft type(s) (e.g. B747).	
	<b>Element Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftType	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	type		The text representation of the aircraft type.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftType@icaoIdentifier	

Element Name	Author	Notes	
EquipmentCapabilityandStatus		<p>This item indicates the identity and status of aircraft equipment.</p> <p>The equipment described here is with regard to:</p> <p>a) Radio communication, navigation and approach aid equipment.</p> <p>b) Surveillance equipment</p> <p>c) ADS equipment</p> <p>d) RVSM</p> <p>See also ICAO 4444 document (field 10).</p>	
	<b>Element Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftEquipment	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	equipment		The equipment of the aircraft.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftEquipment	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	Freq_8.33KHz		8.33KHz equipment status.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Codelists:CodeCommunicationCapabilityType@VHF_WITH_8.33_KHZ_CHANNEL_SPACING_CAPABILITY	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightCapability@communicationCapability	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	UHF_RTF		Ultra High frequency Radio Transmission Frequency
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Codelists:CodeCommunicationCapabilityType@UHF_RTF	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightCapability@communicationCapability	

Element Name	Author	Notes
SurveillanceEquipment		Describes the serviceable surveillance equipment carried.
	<b>Element Tagged Value Name</b>	<b>Value</b>

	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability
Attribute Name	Type	Notes
ADS		ADS capability
Tagged Value Name	Value	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-C_FANS_1/A	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-C_ATN	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-B_OUT_VDL_MODE_4	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-B_OUT_UAT	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-B_IN_VDL_MODE_4	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-B_OUT_IN_UAT	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-B_1090MHZ_ADS-B_OUT_IN	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@ADS-B_1090MHZ_ADS-B_OUT	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:DataTypes:Codelists:CodeEquipmentStatusType	
Attribute Name	Type	Notes
Mode_A		Transponder Mode A (4 digits - 4096 codes)
Tagged Value Name	Value	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@MODE_A	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability	
Attribute Name	Type	Notes
Mode_A_and_C		Transponder Mode A (4 digits - 4096 codes) and Mode C
Tagged Value Name	Value	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:Subject	

		ctFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@MODE_A_AND_C
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability
	<b>Attribute Name</b>	<b>Type</b>
	Mode_S	Transponder Mode S, including both pressure-altitude and aircraft identification transmission
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@MODE_S
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability
	<b>Attribute Name</b>	<b>Type</b>
	Mode_S_ID_no_pressure	Transponder Mode S, including aircraft identification transmission, but no pressure-altitude transmission
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@MODE_S_ID_NO_PRESSURE
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability
	<b>Attribute Name</b>	<b>Type</b>
	Mode_S_no_ID_no_pressure	Transponder Mode S without both aircraft identification and pressure-altitude transmission
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@MODE_S_NO_ID_NO_PRESSURE
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability
	<b>Attribute Name</b>	<b>Type</b>
	Mode_S_no_ID_pressure	Transponder Mode S, including pressure-altitude transmission, but no aircraft identification transmission
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:Codelists:CodeSurveillanceCapabilityType@MODE_S_NO_ID_PRESSURE
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@surveillanceCapability

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

Element Name	Author	Notes
Formation		A formation of aircraft (may be different aircraft types) with the lead aircraft having the call sign used by ATC.
	<b>Element Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FormationComponent
	<b>Attribute Name</b>	<b>Type</b>
	number	This attribute holds the value of the number of aircraft in the formation.
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FormationComponent@numberOfAircraft

Element Name	Author	Notes
EstimatedOffBlockDate		Estimated Off-Block Date used for identification purposes only. Please note that this is not the EOBD updated continuously by CDM but the EOBD as it is in the ICAO flight plan which may be changed if a change is issued to the flight plan.
	<b>Attribute Name</b>	<b>Type</b>
	date	The Estimated Off-Blocks date of the flight (eobd).
	<b>Tagged Value Name</b>	<b>Value</b>
	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

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	t:FlightEvent:EstimatedOffBlockTime
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Element Name	Author	Notes
EstimatedOffBlockTime		Estimated Off-Blocks Time used for identification purposes only. Please note that this is not the EOBT updated continuously by CDM but the EOBT as it is in the ICAO flight plan which may be changed if a change is issued to the flight plan.
Attribute Name	Type	Notes
time		The Off-Blocks Time expressed as a string in ("HHMM") format  NOT TRACEABLE
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
PilotInCommand		A set contact numbers for the PIC of an RPAS.
Element Tagged Value Name	Value	
CLDMSemanticTrace	CLDM_out_of_scope	
Attribute Name	Type	Notes
telephone_number		RPAS Pilot-in-command telephone number(s) in international format.
Tagged Value Name	Value	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Stakeholders:Stakeholder:PilotInCommand	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:StakeholderAndBusinessServices:Stakeholder:CrewMember@telephoneNumber	

Element Name	Author	Notes
DiplomaticClearance		A set of alphanumeric characters for each diplomatic clearance number.
Attribute Name	Type	Notes
clearanceNumber		European permanent or blanket diplomatic clearance number for the calendar year or one or more national diplomatic clearance numbers.
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:MilitaryOperations:DiplomaticClearance@clearanceNumber	

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Element Name		Author	Notes
FlightPerformanceData			<p>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.</p> <p>The <u>climb and descent performance profiles</u> are optimum and unconstrained climb and descent profiles instantiated per flight that satisfy the following conditions:</p> <ol style="list-style-type: none"> <li>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;</li> <li>2. Are calculated without applying meteorological conditions (wind and temperature);</li> <li>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;</li> </ol> <p>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.</p>
Attribute Name	Type	Notes	
climbProfile		<p>The climb performance profile described as a sequence of points in which every point is defined by:</p> <ol style="list-style-type: none"> <li>1. Cumulative Distance from the aerodrome of departure</li> <li>2. Level: Altitude above mean sea level (MSL) in feet (ft) or meters (m) or Flight level (FL).</li> <li>3. Cumulative Time elapsed from the aerodrome of departure</li> </ol>	
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	

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Element Name	Author	Notes
FlightPerformanceData		<p>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.</p> <p>The <u>climb and descent performance profiles</u> are optimum and unconstrained climb and descent profiles instantiated per flight that satisfy the following conditions:</p> <ol style="list-style-type: none"> <li>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;</li> <li>2. Are calculated without applying meteorological conditions (wind and temperature);</li> <li>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;</li> </ol> <p>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.</p>
Attribute Name	Type	Notes
		<p>sequence of points, in reverse order starting from the aerodrome of destination, in which every point is defined by:</p> <ol style="list-style-type: none"> <li>1. Cumulative Distance from the aerodrome of destination</li> <li>2. Level: Altitude above mean sea level (MSL) in feet (ft) or meters (m) or Flight level (FL).</li> <li>3. Cumulative Time elapsed from the aerodrome of destination</li> </ol>
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:FlightPerformance@descentProfile	

Element Name	Author	Notes
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OATICAORoute		Represents the Flight Plan ICAO Route as modified with new OAT related route elements.	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	route	CharacterString	This is the route following the ICAO conventions with new OAT changes and route elements.
	<b>Tagged Value Name</b>	<b>Value</b>	
	AIRMRemarks	This is just the text version of Field 15 icao route.	
	CLDMSemanticTrace	CLDM_out_of_scope	

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

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	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightCapability@communicationCapability	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	datalink_capabilities		Not for PH1 Up to four different datalink capabilities.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftCapability@datalinkCommunicationCapability	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	departure_aerodrome		Not for PH1 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.
	<b>Tagged Value Name</b>	<b>Value</b>	
	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	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	destination_aerodrome		Not for PH1 Complete name of destination aerodrome, if ZZZZ is used as destination aerodrome.
	<b>Tagged Value Name</b>	<b>Value</b>	
	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	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	enroute_alternate_aerodromes		Not for PH1 Complete name of en-route alternate aerodrome/s.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@enRouteAlternateAerodrome	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:BaseInfrastructure:AerodromeInfrastructure:Aerodrome@designator	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	name_of_operator		Not for PH1 Name of the operator, if not obvious from the aircraft identification.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@operator	

		ctFields:Flight:Flight@operator	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Stakeholders:Stakeholder:AircraftOperator@designatorICAO	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	navigation_equipment		Not for PH1 Significant navigation equipment
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Codelists:CodeNavigationCapabilityType	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	other_remarks	CharacterString	In PH1 the string coming in the Field 18 will be copied in this attribute  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.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	CLDM_out_of_scope	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	otherSurveillanceEquipment		SUR/ from Field18 of ICAO2012
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:AircraftAvionics@type	
	IMDefinitionTrace	urn:x- ses:sesarju:airm:v410:InformationModel:SubjectFields:Aircraft:AircraftAvionics	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	reason_for_special_handling		Not for PH1 Reason for special handling by ATS.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@reasonForSpecialHandling	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	reclearance_in_flight		Not for PH1 The route details to the revised destination aerodrome. The revised route is subject to re-clearance in flight.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:AirspaceUserOperations:ReclearanceInFlight	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:ATMServiceDeliveryManagement:ATCClearance	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	replacementFlightPlanIndicator	CharacterString	
	<b>Tagged Value Name</b>	<b>Value</b>	
	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
selcal_code		Not for PH1 OCL  {length = 4}  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	

Element Name	Author	Notes
SupplementaryInformation		This field consists of such supplementary information as is available, organized into a string of elements separated by spaces.  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.  Three different values can be specified.
Tagged Value Name	Value	
CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:CodeLists:CodeAircraftEquipmentType@EMERGENCY LOCATOR TRANSMITTER	
CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:CodeLists:CodeCommunicationCapabilityType@UHF_RTF	
CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:CodeLists:CodeCommunicationCapabilityType@VHF_RTF	
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:Subje	

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		ctFields:Aircraft:AircraftCapability@communicationCapabil ity	
Attribute Name	Type	Notes	
fuel_endurance		Fuel endurance.	
Tagged Value Name	Value		
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:Subje ctFields:Flight:Flight@fuelEndurance		
Attribute Name	Type	Notes	
life_jackets_equipment		Specifies the equipment of the life jackets carried.  Four different values can be specified.	
Tagged Value Name	Value		
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:Subje ctFields: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:Subje ctFields: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:Subje ctFields:Aircraft:SurvivalEquipment@survivalEquipmentTy pe		
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:Subje ctFields: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:Subje ctFields:Aircraft:AircraftColourAndMarking@significantMa rkings		
Attribute Name	Type	Notes	
survival_equipment		Specifies the survival equipment carried.  Four different values can be specified.	
Tagged Value Name	Value		
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:Subje ctFields:Aircraft:SurvivalEquipment@survivalEquipmentTy pe		

Element Name	Author	Notes
Dinghies		Details about the dinghies carried by the aircraft.  At least one of the attributes has to be specified.
	<b>Element Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment
	<b>Attribute Name</b>	<b>Type</b>
	are_covered	
		Specifies if dinghies are covered.
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@isCovered
	<b>Attribute Name</b>	<b>Type</b>
	colour	
		The colour of the dinghies.
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@colour
	<b>Attribute Name</b>	<b>Type</b>
	number	
		The number of dinghies carried.
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@number
	<b>Attribute Name</b>	<b>Type</b>
	total_capacity	
		The total capacity, in persons carried, of all dinghies.
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:SurvivalEquipment@dinghyTotalCapacity

Figure 7 Improved OAT FPL Mapping to AIRM

The OatIcaoRoute field is expanded further in the diagram below:

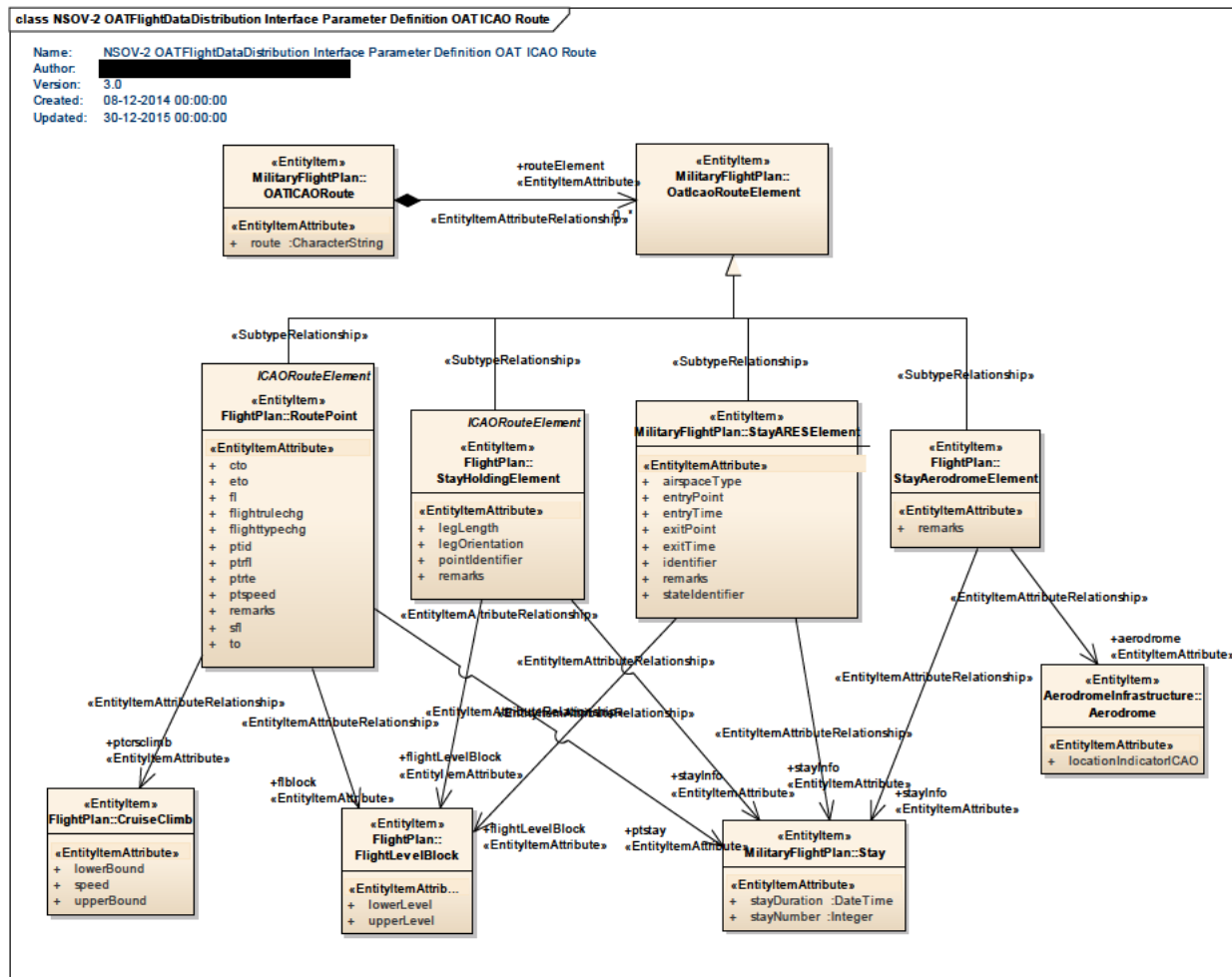


Figure 8 NSOV-2 service parameter type definition OAT Route

Element Name	Author	Notes	
OATICAORoute	[Redacted]	Represents the Flight Plan ICAO Route as modified with new OAT related route elements.	
	Attribute Name	Type	Notes
	route	CharacterString	This is the route following the ICAO conventions with new OAT changes and route elements.
	Tagged Value Name	Value	
	AIRMRemarks	This is just the text version of Field 15 icao route.	
	CLDMSemanticTrace	CLDM_out_of_scope	

Element Name	Author	Notes
OatIcaoRouteElement	[Redacted]	ICAO Flight Plan Route Element as modified with new OAT related route elements.  Note: OAT Route elements may refer to non-standard (non GAT) waypoint fixes.

Element Name	Author	Notes
RoutePoint	[Redacted]	Point on the flight plan route.

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Attribute Name	Type	Notes
cto		Calculated time over a point
Tagged Value Name	Value	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Common:Codelists:CodePlanningStatusType@CALCULATED	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OverPoint@time	
Attribute Name	Type	Notes
eto		The expected time over the point
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:OverPoint@time	
Attribute Name	Type	Notes
fl		The flight level the flight will pass the point.
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OverPoint@assignedFlightLevel	
Attribute Name	Type	Notes
flightrulechg		The change in flight rules at the point (IFR/VFR).
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:FlightRulesChange@flightRule	
Attribute Name	Type	Notes
flighttypechg		The indication provided in the route of flight of a change in the type of flight to 'OAT' or 'GAT' .
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:FlightTypeChange@flightType	
Attribute Name	Type	Notes
ptid		Point Identifier
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TrajectoryPoint@referencePoint	
Attribute Name	Type	Notes
ptrfl		The requested flight level associated with the point.
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:AirspaceUserOperations:RequestedFlightLevel@flightLevel	
Attribute Name	Type	Notes
ptrte		The remainder of the route in text form
Tagged Value Name	Value	

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	CLDMSemanticTrace	CLDM out of scope
Attribute Name	Type	Notes
ptspeed		The speed in Kts or Mach expected at the associated point.
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OverPoint@assignedSpeed	
Attribute Name	Type	Notes
remarks		Textual remarks associated with the stay.
Tagged Value Name	Value	
CLDMSemanticTrace	CLDM out of scope	
Attribute Name	Type	Notes
sfl		Supplementary flight level. The flight level at or above which or, at or below which a flight has been or will be crossing one point. Consists of a flight level number and a crossing condition (either 'A' if the aircraft will cross the point at or above the level, or 'B' if the aircraft will cross the point at or below the level).
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirTrafficOperations:TrafficSynchronization:Coordination:CoordinationConditions@supplementaryFlightLevel	
Attribute Name	Type	Notes
to		The time over the point
Tagged Value Name	Value	
CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Common:Codelists:CodePlanningStatusType@ACTUAL	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:OverPoint@time	

Element Name	Author	Notes
StayHoldingElement		Represents the element type to allow OAT flights to operate or stay at a holding point.
Attribute Name	Type	Notes
legLength		The length of the holding leg.
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:RouteAndProcedure:HoldingProcedure@outboundLegEndDistance	
Attribute Name	Type	Notes
legOrientation		The orientation of the holding leg.
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:RouteAndProcedure:HoldingProcedure@outboundCourse	
Attribute Name	Type	Notes
pointIdentifier		Holding Point Identifier.
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x-	

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		ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:RouteAndProcedure:HoldingProcedure@holdingFix
Attribute Name	Type	Notes
remarks		Textual remarks associated with the stay.
Tagged Value Name	Value	
CLDMSemanticTrace	CLDM_out_of_scope	

Element Name	Author	Notes
StayARESElement		Reserved airspace volume information will be entered at Item 15 (Route) where a flight is to carry out special activities along the route
Attribute Name	Type	Notes
airspaceType		1 letter for the type of airspace (e.g. P, D, R ...) or 3 letter abbreviation (TSA, TRA, CBA)
Tagged Value Name	Value	
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:Airspace:Airspace@type	
Attribute Name	Type	Notes
entryPoint		The entry point into the airspace volume
Tagged Value Name	Value	
CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:AirspaceExit@entryPoint	
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:AirspaceEntry	
Attribute Name	Type	Notes
entryTime		The expected time of entry into the airspace volume
Tagged Value Name	Value	
CLDMContextTrace		
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:AirspaceEntry@time	
Attribute Name	Type	Notes
exitPoint		The exit point from the airspace volume
Tagged Value Name	Value	
CLDMContextTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:AirspaceExit@exitPoint	
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:AirspaceExit	
Attribute Name	Type	Notes
exitTime		The expected time of exit from the airspace volume
Tagged Value Name	Value	
CLDMContextTrace		
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightEvent:AirspaceExit@time	
Attribute Name	Type	Notes
identifier		<ul style="list-style-type: none"> <li>The identifier of the airspace volume composed of : 1 to 3 digits composing a</li> </ul>

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			number from 1 to 999 (unduplicated within the State for the type of airspace indicated) (optional) 1 letter indicating the sub-part of the area considered
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:Airspace:HoldingArea	
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:Airspace:Airspace@designator	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	remarks		Textual remarks associated with the stay.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	CLDM_out_of_scope	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	stateIdentifier		The identifier of the state in which the airspace resides, use EU for cross border airspace.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	CR_00548	

<b>Element Name</b>	<b>Author</b>	<b>Notes</b>
StayAerodromeElement		Represents the element type to allow OAT flights to operate or stay at an aerodrome or in its vicinity (touch and go etc).
	<b>Attribute Name</b>	<b>Type</b>
	remarks	
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	CLDM_out_of_scope

<b>Element Name</b>	<b>Author</b>	<b>Notes</b>
CruiseClimb		The start of a cruise climb at the point and the associated information.
	<b>Attribute Name</b>	<b>Type</b>
	lowerBound	
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightPhase:FlightPhase@cruiseClimbLowerBound
	<b>Attribute Name</b>	<b>Type</b>
	speed	
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightPhase:FlightPhase@cruiseClimbSpeed
	<b>Attribute Name</b>	<b>Type</b>
	upperBound	
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightPhase:FlightPhase@cruiseClimbUpperBound

Element Name	Author	Notes
FlightLevelBlock		A flight level block defining an airspace vertically, inclusive of the flight levels given. A block defined as below or above a flight level shall be expressed respectively as from flight level 000 to the specified level or as from the specified level to flight level 999.
	<b>Element Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	CLDM_out_of_scope
	<b>Attribute Name</b>	<b>Type</b>
	lowerLevel	
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:RouteAndProcedure:HoldingProcedure@lowerLimit
	<b>Attribute Name</b>	<b>Type</b>
	upperLevel	
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:RouteAndProcedure:HoldingProcedure@upperLimit

Element Name	Author	Notes
Stay		Indication within the filed route of flight of a period of 'special activity' when the aircraft will 'stay' in the area defined for the length of time given, i.e. training, mid-air refuelling, etc.
	<b>Attribute Name</b>	<b>Type</b>
	stayDuration	DateTime
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMContextTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Codelists:CodeFlightPhaseType@STAY_PHASE
	CLDMSemanticTrace	urn:x- ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:FlightPhase:FlightPhase@duration
	IMDefinitionTrace	
	<b>Attribute Name</b>	<b>Type</b>
	stayNumber	Integer
	<b>Tagged Value Name</b>	<b>Value</b>
	CLDMSemanticTrace	CLDM_out_of_scope

Element Name	Author	Notes
Aerodrome		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.

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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

Figure 9 OAT ICAO Route Mapping to AIRM

The FourDimensionalTrajectory and its relationship to the Improved OAT Flight Plan is shown in the diagram below:

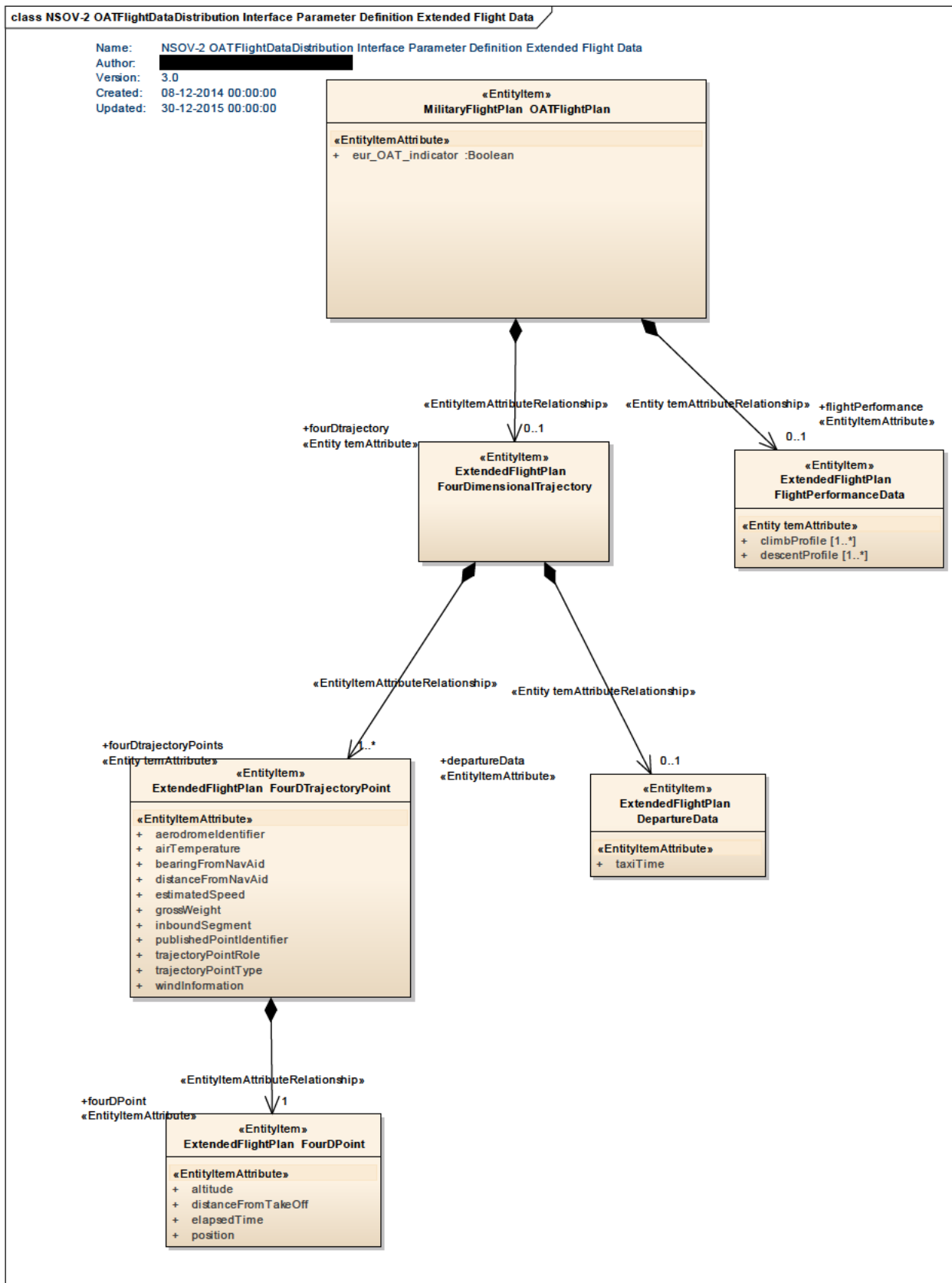


Figure 10 Extended Flight Data

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

Element Name	Author	Notes
FourDTrajectoryPoint		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 adept 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. 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. 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-	

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		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. 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. Is compulsory when trajectoryPointType is publishedPoint or refPoint 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, VFRTtoIFR. 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) When trajectoryPointType is otherPoint the trajectoryPointRole cannot be GATtoOAT, IFRtoVFR, OATtoGAT, VFRTtoIFR  One of the following location items: <ul style="list-style-type: none"> <li>• Aerodrome of departure/destination. Eg: EGKK</li> <li>• Points traversed by the 4D Trajectory including but not limited to the following: <ol style="list-style-type: none"> <li>1. Points where a change of ATS route, requested cruising level or speed, flight rules (IFR/VFR) or flight type (GAT/OAT) occur;</li> <li>2. Points that mark the beginning and end of a portion of flight outside a designated route (direct segments);</li> <li>3. Points that mark the beginning and end of</li> </ol> </li> </ul>

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			<p>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.</p> <ol style="list-style-type: none"> <li>4. Points that describe the ATS route segments planned to be flown;</li> <li>5. Top of Climb (TOC) points for every transition from a climb phase to a cruise phase;</li> <li>6. Top of Descent (TOD) points for every transition from a cruise phase to a descent phase;</li> <li>7. Bottom of Climb (BOC) points for every transition from a cruise phase to a climb phase;</li> <li>8. Bottom of Descent (BOD) points for every a transition from a descent phase to a cruise phase;</li> <li>9. Points where the 4D Trajectory intersects the boundary of FIR/UIRs in whose airspace the flight is planned to fly.</li> </ol>
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectorySignificantPoint@types	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	trajectoryPointType		<p>Indicate the type of point (e.g.: ADEP, geoPoint, refPoint)</p> <p>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.</p>
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectorySignificantPoint@types	
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	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.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Meteorology:Wind	

<b>Element Name</b>	<b>Author</b>	<b>Notes</b>
FourDPoint		A representation of a 4 dimensional point
<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
altitude		elevation of the point

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	Tagged Value Name	Value
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectoryPoint@point4D
Attribute Name	Type	Notes
distanceFromTakeOff		Total ground distance from take-off up to the 4DTrajectoryPoint
	Tagged Value Name	Value
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Trajectory:TrajectoryPoint@cumulativeDistance
Attribute Name	Type	Notes
elapsedTime		time elapsed relative to the take-off time.
	Tagged Value Name	Value
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@totalEstimatedElapsedTime
Attribute Name	Type	Notes
position		The geographical position of the point
	Tagged Value Name	Value
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:AirspaceInfrastructure:AirspacePoint:TrajectoryPoint@point4D

Element Name	Author	Notes
DepartureData		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

Element Name		Author	Notes
FlightPerformanceData			<p>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.</p> <p>The <u>climb and descent performance profiles</u> are optimum and unconstrained climb and descent profiles instantiated per flight that satisfy the following conditions:</p> <ol style="list-style-type: none"> <li>Are calculated without taking into account constraints regarding the vertical evolution of the flight such as route availability, RAD level restrictions, SID/STAR restrictions;</li> <li>Are calculated without applying meteorological conditions (wind and temperature);</li> <li>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;</li> </ol> <p>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.</p>
Attribute Name	Type	Notes	
climbProfile		<p>The climb performance profile described as a sequence of points in which every point is defined by:</p> <ol style="list-style-type: none"> <li>Cumulative Distance from the aerodrome of departure</li> <li>Level: Altitude above mean sea level (MSL) in feet (ft) or meters (m) or Flight level (FL).</li> <li>Cumulative Time elapsed from the aerodrome of departure</li> </ol>	
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	

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Element Name		Author	Notes
FlightPerformanceData			<p>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.</p> <p>The <u>climb and descent performance profiles</u> are optimum and unconstrained climb and descent profiles instantiated per flight that satisfy the following conditions:</p> <ol style="list-style-type: none"> <li>4. Are calculated without taking into account constraints regarding the vertical evolution of the flight such as route availability, RAD level restrictions, SID/STAR restrictions;</li> <li>5. Are calculated without applying meteorological conditions (wind and temperature);</li> <li>6. 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;</li> </ol> <p>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.</p>
Attribute Name	Type	Notes	
		<p>sequence of points, in reverse order starting from the aerodrome of destination, in which every point is defined by:</p> <ol style="list-style-type: none"> <li>4. Cumulative Distance from the aerodrome of destination</li> <li>5. Level: Altitude above mean sea level (MSL) in feet (ft) or meters (m) or Flight level (FL).</li> <li>6. Cumulative Time elapsed from the aerodrome of destination</li> </ol>	
Tagged Value Name	Value		
CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Aircraft:FlightPerformance@descentProfile		

Figure 11 FourDimensionalTrajectory Mapping to AIRM

## 5.1.1.2 Operation postModificationMessage

### 5.1.1.2.1 Operation Functionality

The operation supports the NM in distributing accepted OAT Flight Plan modifications data to those consumers of the data identified from the flight trajectory and other rules.

The input parameter of the function is the modificationRequestOATFPL. There is no defined response.

### 5.1.1.2.2 Operation Parameters

The input parameter is called ModificationRequestOatFlightPlan and is shown below:

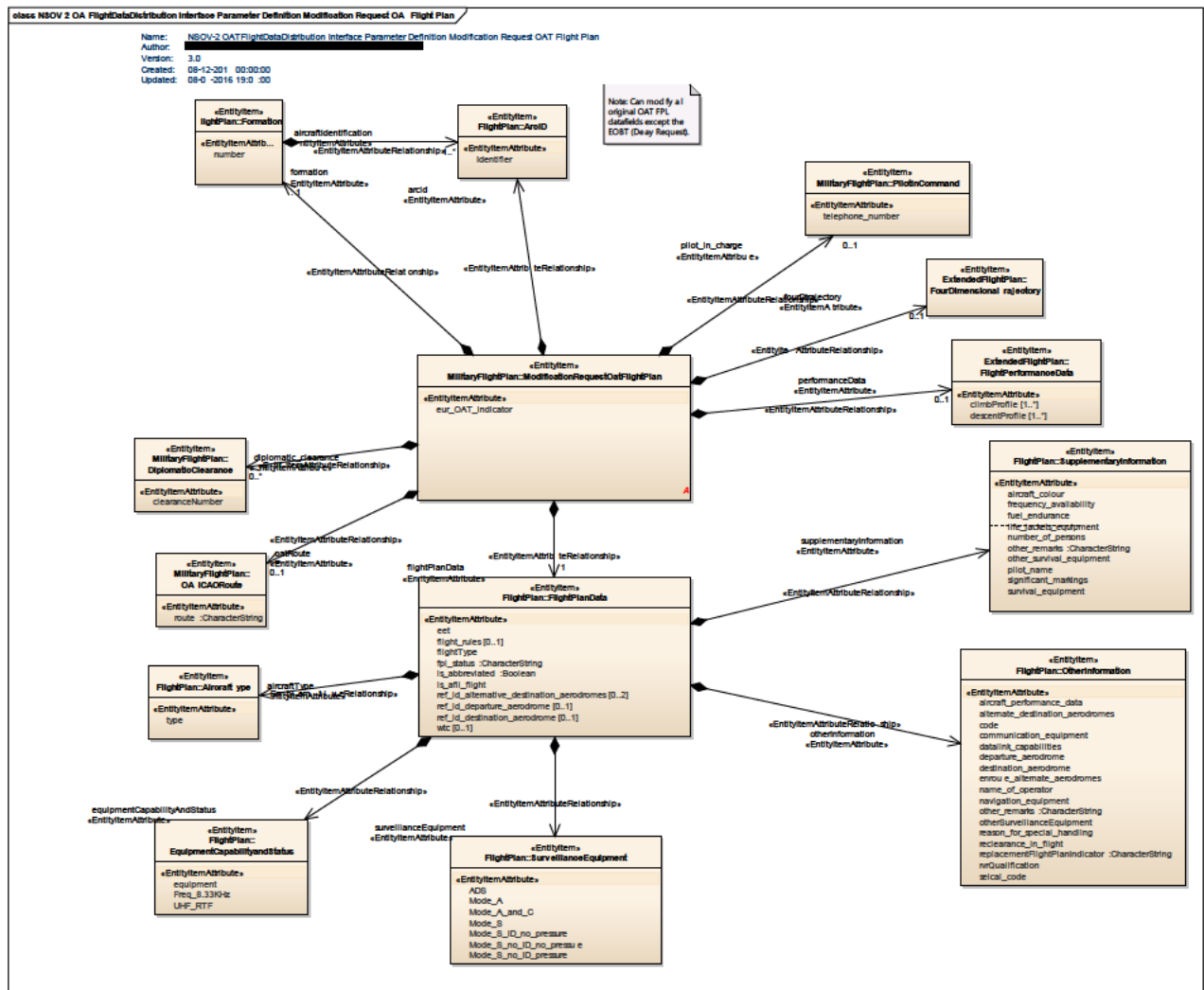


Figure 12 NSOV-2 service parameter type definition Modification Request OAT Flight Plan

Element Name	Author	Notes	
ModificationRequestOatFlightPlan		<p>An OAT FPL modification message shall contain, as a minimum:</p> <ul style="list-style-type: none"> <li><b>Flight plan association data</b> 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.</li> </ul> <p>Note: an OAT FPL modification message may optionally repeat all data elements included in the original OAT flight plan message even if they are not updated. This will depend on the data format and protocol used for the exchange of data.</p>	
	<b>Element Tagged Value Name</b>	<b>Value</b>	
	encoding		
	<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
	eur_OAT_indicator		Indicator that the flight is OAT and requires special handling for confidentiality.
	<b>Tagged Value Name</b>	<b>Value</b>	
	CLDMSemanticTrace	urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@flightType=OAT	

Figure 13 Modification Request OAT Flight Plan Mapping to AIRM

### 5.1.1.3 Operation postDelayMessage

#### 5.1.1.3.1 Operation Functionality

The operation supports the NM in distributing accepted OAT Flight Plan delay data to those consumers of the data identified from the flight trajectory and other rules.

The input parameter of the function is the DelayRequestOATFlightPlan. There is no defined response.

#### 5.1.1.3.2 Operation Parameters

The input parameter is called DelayRequestOATFlightPlan and is shown below:



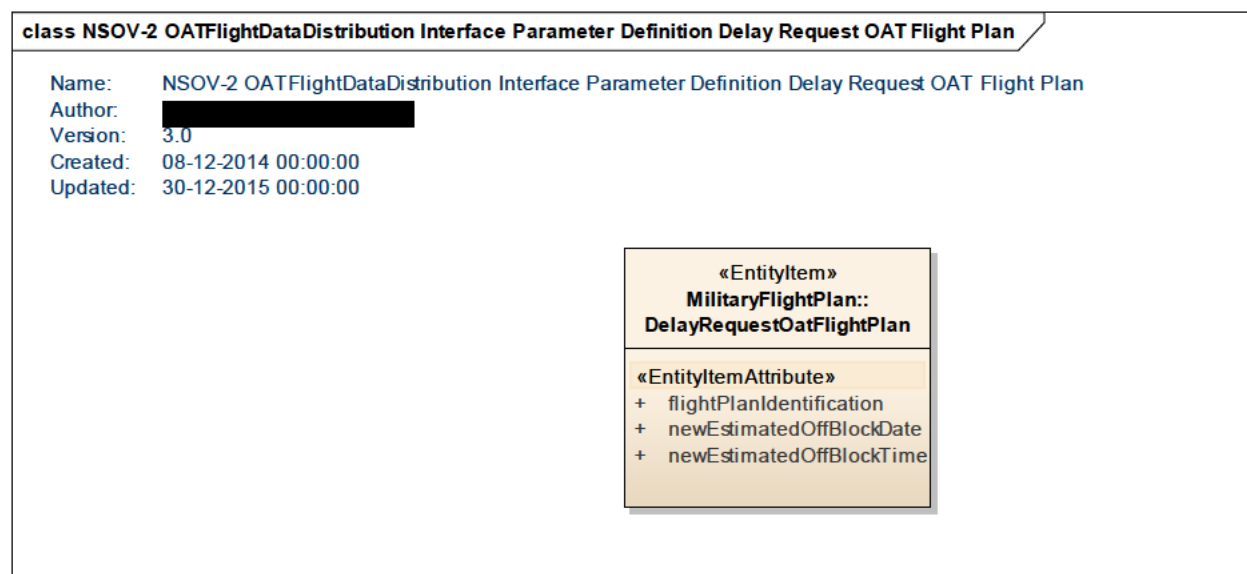


Figure 14 NSOV-2 service parameter type definition Delay Request OAT Flight Plan

Element Name	Author	Notes
DelayRequestOatFlightPlan	██████████	An OAT Flight Plan delay request shall contain, as a minimum: <ul style="list-style-type: none"> <li>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.</li> <li>The new estimated off-block time</li> <li>The new estimated off-block date, in case it is modified</li> </ul>
<b>Element Tagged Value Name</b>		<b>Value</b>
CLDMSemanticTrace		CLDM_out_of_scope
<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
flightPlanIdentification		Unique identifier of the flight plan in the NM database. Currently expressed as the ifplID and soon to be the GUFID.
<b>Tagged Value Name</b>		<b>Value</b>
CLDMSemanticTrace		urn:x-ses:sesarju:airm:v410:ConsolidatedLogicalDataModel:SubjectFields:Flight:Flight@ifplIdentifier
<b>Attribute Name</b>	<b>Type</b>	<b>Notes</b>
newEstimatedOffBlockDate		New estimated off-block time
<b>Tagged Value Name</b>		<b>Value</b>
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
newEstimatedOffBlockTime		New estimated off-block date, in case it is modified
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	

Figure 15 Delay Request OAT Flight Plan Mapping to AIRM

#### 5.1.1.4 Operation postCancellationMessage

##### 5.1.1.4.1 Operation Functionality

The operation supports the NM in distributing accepted OAT Flight Plan cancellation data to those consumers of the data identified from the flight trajectory and other rules.

The input parameter of the function is the improvedOatFplCancellation. There is no defined response.

### 5.1.1.4.2 Operation Parameters

The input parameter is called ImprovedOatFplCancellation and is shown below:

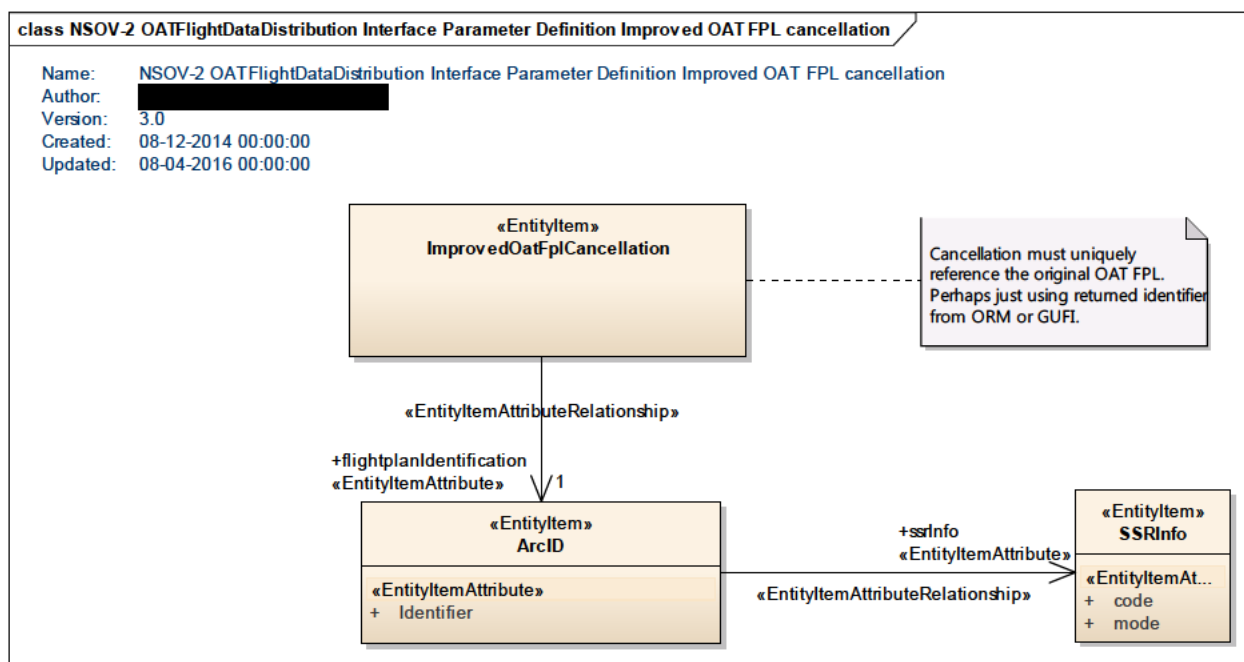


Figure 16 NSOV-2 service parameter type definition Improved OAT FPL Cancellation

Element Name	Author	Notes
ImprovedOatFplCancellation		Cancellation message for Improved OAT FPL.
	<b>Element Tagged Value Name</b>	<b>Value</b>
	encoding	

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

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Element Name		Author	Notes
SSRInfo			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		

Figure 17 Improved OAT FPL Cancellation Mapping to AIRM

## 5.2 Required Interface Definition

The subscription from the user of OAT Flight Data to the NM is not explicitly defined and not identified as a service interface. There are rules within the NM which are derived from Letters of Agreement between the NM and each individual user which allow the NM to identify the set of users from each specific OAT flight. Some of these will be dynamic based on the trajectory of the flight and others fixed based on state, aerodrome, airspace reservation and other criteria.

## 6 Service dynamic behaviour

### 6.1 Service Interface OATFlightDataDistributionInterface

The requests and possible responses to those requests are shown in Figure 18.

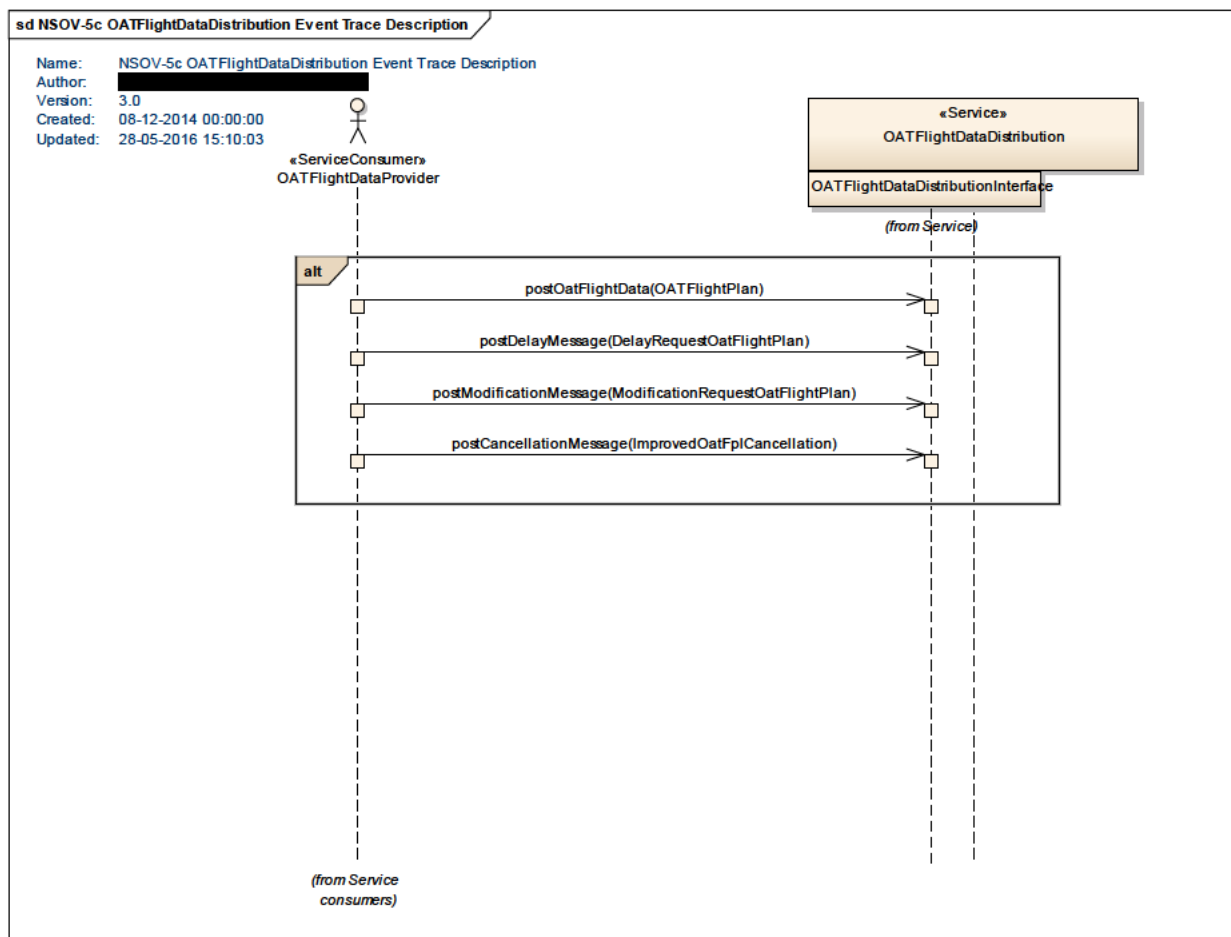


Figure 18: NSOV-5c OATFlightDataDistribution Event Trace Description

## 7 Service provisioning (optional)

The OAT Flight Data Distribution service attempts to emulate the existing functionality performed by the NM for GAT flight data. In many ways the service operations and payloads are similar or equivalent to the service modelled as the FlightPlanDataDistribution Service.

The modelling done in the development of the payload for this service will re-use wherever possible existing entity items but will retain the logical structure as appropriate for a logical service description. This will allow different service instances to be developed all using the same logical payload.

Two different instances are mentioned in the P07.06.02 OSED; the first using AFTN as a medium and using modified ICAO fields to supply the data, the second using SWIM as a medium and using XML/FIXM as a way of describing the physical payload.

## 8 Validation and Verification

### 8.1 Verification

Verification performed according to the ISRM Rulebook (Ref [10]) following the ISRM Verification Guidelines (Ref [12]). This includes use of verification scripts. Verification is partly automatic, partly semi-automatic and partly manual.

#### 8.1.1 Verification Results

The verification reports for the service can be found in the Verification Reports directory located in the D65 delivery package:

Designed\_Services\_-\_OATFlightDataDistributionService.xls

Designed\_Services\_-\_OATFlightDataDistributionService\_Common

.xls

Based on the results in the verification reports the service has been successfully verified.

### 8.2 Validation

Validation of this service has not been performed.

## 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] SESAR Working Method on Services Edition 2014	00.05.00	B.04.03 D100
[5] Step 1 Mission trajectory OSED 2015 update	00.02.01	07.06.02 D51
[6] WOC OSED operational and performance requirements for Step 1, Step 2 and Step 3	00.01.02	11.01.02 D03
[7] IFPS Users Manual	19.0.1 Edition	<a href="https://www.eurocontrol.int/sites/default/files/content/documents/nm/network-operations/HANDBOOK/ifps-users-manual-current.pdf">https://www.eurocontrol.int/sites/default/files/content/documents/nm/network-operations/HANDBOOK/ifps-users-manual-current.pdf</a>
[8] TM Perfo Initial System Requirements	01.00.01	13.02.01 D10
[9] European ATM Service Identification for OAT Flight Plan Services	00.00.03	08.03.10 D62
[10] ISRM Foundation Rulebook	00.07.00	08.03.10 D44
[11] ISRM Service Portfolio	00.08.01	08.03.10 D65
[12] ISRM Verification Guidelines	00.07.00	08.03.10 D44
[13] B.4.3 Service Allocation - SVA004	00.00.03	B.04.03



**-END OF DOCUMENT-**

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