



FIXM Core v4.3.0

Requirements Traceability Report

Source Requirement Documents

FF-ICE Manual d0.99.docx

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Table of Contents

Introduction.....	3
Core.....	4
Base	4
Address.....	4
Aeronautica Reference.....	5
Extension.....	10
Measures	15
<i>UnitsOfMeasure</i>	18
Organization.....	20
RangesAndChoices	20
Types.....	21
Flight	23
Aircraft.....	23
Arrival.....	25
Capability	26
Cargo.....	39
<i>DangerousGoods</i>	39
<i>Packaging</i>	39
<i>RadioactiveMaterials</i>	41
Departure.....	41
Emergency	43
EnRoute.....	47
FlightData.....	49
FlightRouteTrajectory	52
<i>Constraints</i>	52
<i>RouteChanges</i>	53
<i>RouteTrajectory</i>	54

Introduction

The FIXM v4.3.0 Requirements Traceability Report serves as a mapping guide between the FIXM logical model classes and the ICAO / FF-ICE requirements. It is primarily intended as a reference for the FIXM CCB and development team to explain why each class exists in the FIXM model.

This document lists every class in FIXM Core, organized by packages, along with its associated requirement(s).

This document is complementary to the other FIXM artifacts such as the FIXM models and the FIXM schemas.

Core

Base

Address

ContactInformation	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

NetworkChoice	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

B-2.13	<p>AFTN Address</p> <p>An address in accordance with the PANS-ATM section 11.2.1.2.3 and Annex 10, volume 2.</p>
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OnlineContact	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

B-2.13	<p>AFTN Address</p> <p>An address in accordance with the PANS-ATM section 11.2.1.2.3 and Annex 10, volume 2.</p>
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PostalAddress	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

TelephoneContact	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

TextAddress	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

B-2.13	<p>AFTN Address</p>
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	An address in accordance with the PANS-ATM section 11.2.1.2.3 and Annex 10, volume 2.
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TextCity	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

TextCountryCode	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

TextCountryName	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

TextPhone	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

TelecomNetworkType	
B-2.12	<p>Contact Information</p> <p>The expression of contact information shall allow for name, phone number, email, and/or physical address.</p>

B-2.13	<p>AFTN Address</p> <p>An address in accordance with the PANS-ATM section 11.2.1.2.3 and Annex 10, volume 2.</p>
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AeronauticalReference

AerodromeName	
B-2.4.2	<p>The specification of an Aerodrome shall allow identification of an aerodrome that has no Doc. 7910 location identifier. For an aerodrome without a Doc. 7910 identifier, the data specification shall allow a name and/or a geographical position (per B-2.2.2) to be included.</p>

AerodromeReference	
B-2.4	<p>Aerodrome</p> <p>The specification of an Aerodrome shall allow use of an appropriate location identifier per ICAO Doc. 7910.</p> <p>The specification of an Aerodrome shall allow identification of an aerodrome that has no Doc. 7910 location identifier. For an aerodrome without a Doc. 7910 identifier, the data specification shall allow a name and/or a geographical position (per B-2.2.2) to be included.</p> <p>A departure aerodrome should allow for identification of a flight that has filed its flight plan while</p>

AerodromeReference	
	<p>in the air or for which the departure aerodrome is not known, beginning its route description from a specified point en-route, and therefore may not have provided a departure aerodrome.</p> <p>The specification of an Aerodrome shall allow an IATA aerodrome identifier per the IATA City Code Directory to be included in addition to the ICAO identifier. (An aerodrome will never be identified only by the IATA identifier.)</p>

AirspaceDesignator	
B-2.32.2	A Supplementary Information Source can be identified using an Addressee Indicator (from Doc. 7910 + Doc. 8585) for an ATS unit; an AFTN address; FF-ICE Participant identification per B-2.28; or appropriate contact information per B-2.12.

AtcUnitName	
Field Type 20b	<p>Unit which made last contact</p> <p>6 LETTERS consisting of the 4-letter ICAO location indicator followed by the 2-letter designator which together identify the ATS unit which made the last two-way contact or, if these are not available, some other description of the unit.</p>

AtcUnitReference	
B-2.32.2	A Supplementary Information Source can be identified using an Addressee Indicator (from Doc. 7910 + Doc. 8585) for an ATS unit; an AFTN address; FF-ICE Participant identification per B-2.28; or appropriate contact information per B-2.12.

DesignatedPoint	
B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in PANS-ATM Appendix 3, section 1.6.3.</p> <p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>

DesignatedPointDesignator	
B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in PANS-ATM Appendix 3, section 1.6.3.</p> <p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>

GeographicalPosition	
B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in PANS-ATM Appendix 3, section 1.6.3.</p>

GeographicalPosition

	<p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>
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IataAerodromeDesignator

B-2.4	<p>Aerodrome</p> <p>The specification of an Aerodrome shall allow use of an appropriate location identifier per ICAO Doc. 7910.</p> <p>The specification of an Aerodrome shall allow identification of an aerodrome that has no Doc. 7910 location identifier. For an aerodrome without a Doc. 7910 identifier, the data specification shall allow a name and/or a geographical position (per B-2.2.2) to be included.</p> <p>A departure aerodrome should allow for identification of a flight that has filed its flight plan while in the air or for which the departure aerodrome is not known, beginning its route description from a specified point en-route, and therefore may not have provided a departure aerodrome.</p> <p>The specification of an Aerodrome shall allow an IATA aerodrome identifier per the IATA City Code Directory to be included in addition to the ICAO identifier. (An aerodrome will never be identified only by the IATA identifier.)</p>
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LatLongPos

Modeling	Construct used for the data modeling purposes.
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LatLongPosList

Modeling	Construct used for the data modeling purposes.
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LocationIndicator

B-2.32.2	A Supplementary Information Source can be identified using an Addressee Indicator (from Doc. 7910 + Doc. 8585) for an ATS unit; an AFTN address; FF-ICE Participant identification per B-2.28; or appropriate contact information per B-2.12.
B-2.4.1	The specification of an Aerodrome shall allow use of an appropriate location identifier per ICAO Doc. 7910.

Longitude

Field Type 18-EET	<p>EET/ - Estimated Elapsed Time</p> <p>Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.</p> <p>Examples: - EET/CAP0745 XYZ0830 - EET/EINN0204</p>
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Navaid

B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in PANS-ATM Appendix 3, section 1.6.3.</p>
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Navaid	
	<p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>

NavaidDesignator	
B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in PANS-ATM Appendix 3, section 1.6.3.</p> <p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>

RelativePoint	
B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in PANS-ATM Appendix 3, section 1.6.3.</p> <p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>

RestrictedAirspaceDesignator	
Modeling	Construct used for the data modeling purposes.

RestrictedRouteDesignator	
Modeling	Construct used for the data modeling purposes.

RestrictedRunwayDirectionDesignator	
Modeling	Construct used for the data modeling purposes.

RouteDesignator	
B-2.3.1	The expression of a route identifier shall allow for the specification of an ATS Route, Standard Departure Route, and Standard Arrival Route as described in Appendices 2 and 3 of PANS-ATM.

RunwayDirectionDesignator	
B-2.43	<p>Runway Identifier</p> <p>The expression of a Runway Identifier shall allow for the specification of a runway designation as described in Annex 14, Vol 1.</p>

SidStarAbbreviatedDesignator

B-2.3.2	<p>When a Standard Departure Route or Standard Arrival Route is seven characters, it should be possible to include both the seven-character name and the shortened name as described in Annex 11, Appendix 3, paragraph 2.2. A note there states:</p> <p><i>Note. - Limitations in the display equipment on board aircraft may require shortening of the basic indicator, if that indicator is a five-letter name-code, e.g. KODAP. The manner in which such an indicator is shortened is left to the discretion of operators.</i></p> <p>In practice, the ARINC 424 specification contains an algorithm used to shorten seven character names. This algorithm results in publication of shortened names that are used in FMS databases and in some ground automation systems. Making both names available allows each system to use the designator consistent with their database. Note also that as automated uplink of clearances to aircraft is implemented a ground system using the seven-character name will need to upload the shorter name for it to load to the FMS successfully.</p>
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SidStarDesignator

B-2.3.1	The expression of a route identifier shall allow for the specification of an ATS Route, Standard Departure Route, and Standard Arrival Route as described in Appendices 2 and 3 of PANS-ATM.
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SidStarReference

B-2.3	<p>Route Identifier</p> <p>The expression of a route identifier shall allow for the specification of an ATS Route, Standard Departure Route, and Standard Arrival Route as described in Appendices 2 and 3 of PANS-ATM.</p> <p>When a Standard Departure Route or Standard Arrival Route is seven characters, it should be possible to include both the seven-character name and the shortened name as described in Annex 11, Appendix 3, paragraph 2.2. A note there states:</p> <p><i>Note. - Limitations in the display equipment on board aircraft may require shortening of the basic indicator, if that indicator is a five-letter name-code, e.g. KODAP. The manner in which such an indicator is shortened is left to the discretion of operators.</i></p> <p>In practice, the ARINC 424 specification contains an algorithm used to shorten seven character names. This algorithm results in publication of shortened names that are used in FMS databases and in some ground automation systems. Making both names available allows each system to use the designator consistent with their database. Note also that as automated uplink of clearances to aircraft is implemented a ground system using the seven-character name will need to upload the shorter name for it to load to the FMS successfully.</p>
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SignificantPointChoice

B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in PANS-ATM Appendix 3, section 1.6.3.</p> <p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>
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NavaidServiceType

B-2.2	<p>Position</p> <p>The expression of a position (or predicted position) shall allow any of the forms described in</p>
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NavaidServiceType	
	<p>PANS-ATM Appendix 3, section 1.6.3.</p> <p>The expression of position as a latitude/longitude should be with respect to the WGS-84 reference ellipsoid.</p> <p>The expression of a position shall allow varying precision to be used, appropriate to the operational use of the data. The position of an aircraft when expressed within a trajectory should at least allow precision to within 1 second of latitude/longitude or its equivalent.</p>

Extension

ActualTimeOfArrivalExtension	
Modeling	Construct used for the data modeling purposes.

ActualTimeOfDepartureExtension	
Modeling	Construct used for the data modeling purposes.

AerodromeReferenceExtension	
Modeling	Construct used for the data modeling purposes.

AircraftExtension	
Modeling	Construct used for the data modeling purposes.

AircraftOperatorExtension	
Modeling	Construct used for the data modeling purposes.

AircraftTypeExtension	
Modeling	Construct used for the data modeling purposes.

AllPackedInOneExtension	
Modeling	Construct used for the data modeling purposes.

AltitudeInTransitionExtension	
Modeling	Construct used for the data modeling purposes.

ArrivalExtension	
Modeling	Construct used for the data modeling purposes.

AtcUnitReferenceExtension	
Modeling	Construct used for the data modeling purposes.

BoundaryCrossingExtension

Modeling	Construct used for the data modeling purposes.
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CommunicationCapabilitiesExtension

Modeling	Construct used for the data modeling purposes.
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ContactInformationExtension

Modeling	Construct used for the data modeling purposes.
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CruiseClimbStartExtension

Modeling	Construct used for the data modeling purposes.
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CruisingLevelChangeExtension

Modeling	Construct used for the data modeling purposes.
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CruisingSpeedChangeExtension

Modeling	Construct used for the data modeling purposes.
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DangerousGoodsDimensionsExtension

Modeling	Construct used for the data modeling purposes.
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DangerousGoodsExtension

Modeling	Construct used for the data modeling purposes.
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DangerousGoodsPackageExtension

Modeling	Construct used for the data modeling purposes.
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DangerousGoodsPackageGroupExtension

Modeling	Construct used for the data modeling purposes.
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DepartureExtension

Modeling	Construct used for the data modeling purposes.
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DesignatedPointExtension

Modeling	Construct used for the data modeling purposes.
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DinghiesExtension

Modeling	Construct used for the data modeling purposes.
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EnRouteExtension	
Modeling	Construct used for the data modeling purposes.

EstimatedElapsedTimeExtension	
Modeling	Construct used for the data modeling purposes.

FlightCapabilitiesExtension	
Modeling	Construct used for the data modeling purposes.

FlightConstraintExtension	
Modeling	Construct used for the data modeling purposes.

FlightEmergencyExtension	
Modeling	Construct used for the data modeling purposes.

FlightExtension	
Modeling	Construct used for the data modeling purposes.

FlightIdentificationExtension	
Modeling	Construct used for the data modeling purposes.

FlightRouteInformationExtension	
Modeling	Construct used for the data modeling purposes.

GeographicalPositionExtension	
Modeling	Construct used for the data modeling purposes.

HazardClassExtension	
Modeling	Construct used for the data modeling purposes.

IataFlightDesignatorExtension	
Modeling	Construct used for the data modeling purposes.

LastContactExtension	
Modeling	Construct used for the data modeling purposes.

LastPositionReportExtension	
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LastPositionReportExtension

Modeling	Construct used for the data modeling purposes.
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LevelConstraintExtension

Modeling	Construct used for the data modeling purposes.
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MeteorologicalDataExtension

Modeling	Construct used for the data modeling purposes.
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NavaidExtension

Modeling	Construct used for the data modeling purposes.
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NavigationCapabilitiesExtension

Modeling	Construct used for the data modeling purposes.
----------	--

OnlineContactExtension

Modeling	Construct used for the data modeling purposes.
----------	--

PerformanceProfileExtension

Modeling	Construct used for the data modeling purposes.
----------	--

PersonOrOrganizationExtension

Modeling	Construct used for the data modeling purposes.
----------	--

PlannedDelayExtension

Modeling	Construct used for the data modeling purposes.
----------	--

PostalAddressExtension

Modeling	Construct used for the data modeling purposes.
----------	--

ProfilePointExtension

Modeling	Construct used for the data modeling purposes.
----------	--

RadioCommunicationFailureExtension

Modeling	Construct used for the data modeling purposes.
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RadioactiveMaterialExtension

Modeling	Construct used for the data modeling purposes.
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ReclearanceInFlightExtension

Modeling	Construct used for the data modeling purposes.
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RelativePointExtension

Modeling	Construct used for the data modeling purposes.
----------	--

RestrictionReferenceExtension

Modeling	Construct used for the data modeling purposes.
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RouteChangeExtension

Modeling	Construct used for the data modeling purposes.
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RouteTrajectoryConstraintExtension

Modeling	Construct used for the data modeling purposes.
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RouteTrajectoryElementExtension

Modeling	Construct used for the data modeling purposes.
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RouteTrajectoryGroupContainerExtension

Modeling	Construct used for the data modeling purposes.
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RouteTrajectoryGroupExtension

Modeling	Construct used for the data modeling purposes.
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ShippingInformationExtension

Modeling	Construct used for the data modeling purposes.
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SidStarReferenceExtension

Modeling	Construct used for the data modeling purposes.
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SpeedConstraintExtension

Modeling	Construct used for the data modeling purposes.
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SpeedScheduleExtension

Modeling	Construct used for the data modeling purposes.
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SupplementaryInformationExtension

Modeling	Construct used for the data modeling purposes.
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SurveillanceCapabilitiesExtension

Modeling	Construct used for the data modeling purposes.
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SurvivalCapabilitiesExtension

Modeling	Construct used for the data modeling purposes.
----------	--

TelephoneContactExtension

Modeling	Construct used for the data modeling purposes.
----------	--

TimeConstraintExtension

Modeling	Construct used for the data modeling purposes.
----------	--

TimeRangeExtension

Common	Common building block for representing primitive data.
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TrajectoryPoint4DExtension

Modeling	Construct used for the data modeling purposes.
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TrajectoryPointPropertyExtension

Modeling	Construct used for the data modeling purposes.
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TrajectoryPointReferenceExtension

Modeling	Construct used for the data modeling purposes.
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TrueAirspeedRangeExtension

Common	Common building block for representing primitive data.
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VerticalRangeExtension

Common	Common building block for representing primitive data.
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Measures

Altitude

Common	Common building block for representing primitive data.
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AltitudeWithSource				
Table 3-B-1 Optional data elements	Field	Format	LADR functionality	Example
	Accuracy of position data		Optional if available from the ADT system.	
	Altitude (ft)	NNNNN	Optional field; either altitude in m or ft (recommended).	35000
	Altitude (m)	NNNNN		10000
	Altitude source	XXXX	Required if altitude data supplied.	BARO GNSS
	Groundspeed (kt)	NNN	Optional field.	350
	Groundspeed (km/h)	NNN	Optional field.	550
	Heading	DDD ⁰	Optional field.	090
	Emergency locator transmitter (ELT) Hex ID	HHHHHHHHHHHHHHHH	Carried ELT devices (may be more than one per aircraft).	1234567890ABCDE

Angle	
Common	Common building block for representing primitive data.

Bearing	
Common	Common building block for representing primitive data.

Distance	
Common	Common building block for representing primitive data.

FlightLevel	
Common	Common building block for representing primitive data.

Frequency	
Common	Common building block for representing primitive data.

GroundSpeed	
Common	Common building block for representing primitive data.

Height	
Common	Common building block for representing primitive data.

IndicatedAirspeed	
Common	Common building block for representing primitive data.

Length	
Common	Common building block for representing primitive data.

Mass	
Common	Common building block for representing primitive data.

Measure	
Common	Common building block for representing primitive data.

Pressure	
Common	Common building block for representing primitive data.

RestrictedAngle	
Modeling	Construct used for the data modeling purposes.

RestrictedMeasure	
Modeling	Construct used for the data modeling purposes.

RestrictedSpeed	
Modeling	Construct used for the data modeling purposes.

RestrictedVerticalDistance	
Common	Common building block for representing primitive data.

Speed	
Common	Common building block for representing primitive data.

Temperature	
Common	Common building block for representing primitive data.

TrueAirspeed	
Common	Common building block for representing primitive data.

VerticalDistance	
Common	Common building block for representing primitive data.

VerticalRate

Common	Common building block for representing primitive data.
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Volume

Common	Common building block for representing primitive data.
--------	--

Weight

Common	Common building block for representing primitive data.
--------	--

WindDirection

Common	Common building block for representing primitive data.
--------	--

WindSpeed

Common	Common building block for representing primitive data.
--------	--

AltitudeSource

Table 3-B-1 Optional data elements	<i>Field</i>	<i>Format</i>	<i>LADR functionality</i>	<i>Example</i>
	Accuracy of position data		Optional if available from the ADT system.	
	Altitude (ft)	NNNNN	Optional field; either altitude in m or ft (recommended).	35000
	Altitude (m)	NNNNN		10000
	Altitude source	XXXX	Required if altitude data supplied.	BARO GNSS
	Groundspeed (kt)	NNN	Optional field.	350
	Groundspeed (km/h)	NNN	Optional field.	550
	Heading	DDD ⁰	Optional field.	090
	Emergency locator transmitter (ELT) Hex ID	HHHHHHHHHHHHHHHH	Carried ELT devices (may be more than one per aircraft).	1234567890ABCDE

VerticalReference

Common	Common building block for representing primitive data.
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ZeroBearingType

Common	Common building block for representing primitive data.
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UnitsOfMeasure

UomAirspeed	
Common	Common building block for representing primitive data.

UomAltitude	
Common	Common building block for representing primitive data.

UomAngle	
Common	Common building block for representing primitive data.

UomFlightLevel	
Common	Common building block for representing primitive data.

UomFrequency	
Common	Common building block for representing primitive data.

UomGroundSpeed	
Common	Common building block for representing primitive data.

UomHeight	
Common	Common building block for representing primitive data.

UomLength	
Common	Common building block for representing primitive data.

UomMass	
Common	Common building block for representing primitive data.

UomPressure	
Common	Common building block for representing primitive data.

UomTemperature	
Common	Common building block for representing primitive data.

UomVerticalRate	
Common	Common building block for representing primitive data.

UomVolume	
Common	Common building block for representing primitive data.

UomWeight	
Common	Common building block for representing primitive data.

UomWindSpeed	
Common	Common building block for representing primitive data.

Organization

AircraftOperator	
B-2.31	<p>Operator Description</p> <p>An Operator Description is intended to identify the actual operator of a flight when it is not obvious from the aircraft identification.</p> <p>Expression of an Operator Description shall be in the form of Free-Text information as described in B-2.30 and should not exceed 20 characters.</p>

AircraftOperatorDesignator	
B-2.31	<p>Operator Description</p> <p>An Operator Description is intended to identify the actual operator of a flight when it is not obvious from the aircraft identification.</p> <p>Expression of an Operator Description shall be in the form of Free-Text information as described in B-2.30 and should not exceed 20 characters.</p>

PersonOrOrganization	
Modeling	Construct used for the data modeling purposes.

RangesAndChoices

FlightLevelOrAltitudeChoice	
Modeling	Construct used for the data modeling purposes.

FlightLevelOrAltitudeOrRangeChoice	
Modeling	Construct used for the data modeling purposes.

FlightLevelOrAltitudeOrVfrChoice	
Modeling	Construct used for the data modeling purposes.

TimeChoice	
Modeling	Construct used for the data modeling purposes.

TimeRange	
Modeling	Construct used for the data modeling purposes.

TrueAirspeedChoice	
Modeling	Construct used for the data modeling purposes.

TrueAirspeedRange	
Modeling	Construct used for the data modeling purposes.

VerticalRange	
Modeling	Construct used for the data modeling purposes.

VisualFlightRulesLevel	
Modeling	Construct used for the data modeling purposes.

Types

AircraftIdentification	
B-2.6.1	<p>An Aircraft Identification for purposes of communication with Air Traffic Services shall allow any of the following:</p> <ul style="list-style-type: none"> a) The ICAO designator for the aircraft operating agency as defined in ICAO Doc. 8585 followed by the flight identification (e.g. KLM511, NGA213, JTR25); b) The nationality or common mark and registration mark of the aircraft consistent with Annex 7 (e.g. EIAKO, 4XBCD, N2567GA); or c) A two to seven character identifier as specified by an ATM Service Provider.

AircraftTypeDesignator	
B-2.5.1	The specification of an aircraft type shall allow expression of a four-character type designator per ICAO Doc. 8643. Such indicators are two to four alphanumeric characters, starting with a letter.

AirportSlotIdentification	
B-2.38	<p>Airport Slot</p> <p>Departure and Arrival Airport Slot Identification contains information that, combined with other flight plan data, such as date of flight, time and departure (arrival) aerodrome code, facilitates the correlation between the flight plan and its allocated departure (arrival) airport slot.</p>

CharacterString	
Common	Common building block for representing primitive data.

Count	
Common	Common building block for representing primitive data.

CountPositive	
Common	Common building block for representing primitive data.

DateTimeUtc	
Common	Common building block for representing primitive data.

DateTimeUtcHighPrecision	
Common	Common building block for representing primitive data.

DateUtc	
Common	Common building block for representing primitive data.

DecimalIndex	
Common	Common building block for representing primitive data.

Duration	
Common	Common building block for representing primitive data.

GloballyUniqueFlightIdentifier	
B-2.29	<p>Globally Unique Flight Identifier (GUFI)</p> <p>A GUFI shall consist of a Version 4 Universally Unique Identifier (UUID) as described in IETF RFC 4122.</p> <p>The GUFI should rely on proven algorithms published in standard libraries referring to UUID Version 4.</p> <p>The GUFI should include a namespace identifier providing an indication of the GUFI generator (see 3.7.5.3).</p>

HypertextReference	
Common	Common building block for representing primitive data.

ModeACode	
B-2.25	<p>Mode A Code</p> <p>Expression of a Mode A beacon code shall contain four octal digits consistent with Annex 10, Volume IV.</p>

NamespaceIdentifier	
B-2.29.3	The GUFI should include a namespace identifier providing an indication of the GUFI generator (see 3.7.5.3).

RestrictedUniversallyUniqueIdentifier	
Modeling	Construct used for the data modeling purposes.

RestrictionReference	
B-2.37.2	Expression of a general flight constraint shall allow for identification of a reference to a published restriction that has generated the constraint; description of applicability; and description of the constraint; i.e. the impact of the restriction on the flight. If a reference is provided, then the descriptive data are optional. If there is no reference to published information, then descriptive data are required.

TextName	
Common	Common building block for representing primitive data.

UniversallyUniqueIdentifier	
B-2.29.1	A GUFU shall consist of a Version 4 Universally Unique Identifier (UUID) as described in IETF RFC 4122.

NamespaceDomain			
Table 31 Composition of the GUFU namespace	The Table 31 provides the recommended namespace constructs. Each originator should choose the most suitable option.		
	#	<u>Namespace Option</u>	<u>Description</u>
	1	Operating Agency Designator	An operating agency can be identified by its three letter Operating Agency Designator (ICAO Doc. 8585).
	2	Four letter Location Indicator (LOCID)	An ATM unit can be identified by its corresponding four letter Location Indicator (LOCID as determined in ICAO Doc. 7910). A LOCID is available for each FIR or ACC, as well as for airport locations that operators are tied into. For example, the ATM unit "Washington ATC Center", LOCID KZDC, assuming just one system generates GUFIs, might use the following namespace "KZDC".
	3	Fully Qualified Domain Name	<p>An organisation can be identified from the registered specific internet Fully Qualified Domain Name (FQDN) of its organisation. The domain name can come from either the organisation's email, or from the organisation's website. The domain name used should uniquely identify the organisation.</p> <p>Example Fully Qualified Domain Name: For website https://www.example.com/ and email person@example.com, the domain name used for the namespace would be "example.com"</p> <p>Use of subdomains: The namespace can additionally utilize subdomains as needed to ensure proper uniqueness and allow for best implementation. This could be done by adding a numeric or regional subdomain. east.example.com, region1.example.com, etc</p>

Flight

Aircraft

Aircraft	
Modeling	Construct used for the data modeling purposes.

AircraftAddress	
B-2.16	<p>Aircraft Address</p> <p>An aircraft address shall be expressed as a hexadecimal number in accordance with Annex 10, Volume 3, Part I, chapter 9.</p>

AircraftRegistration	
B-2.17	<p>Registration</p> <p>An aircraft registration shall be expressed in accordance with the requirements and assignments in chapter 3 of Annex 7.</p>

AircraftRegistrationList	
Modeling	Construct used for the data modeling purposes.

AircraftType	
B-2.5	<p>Aircraft Type</p> <p>The specification of an aircraft type shall allow expression of a four-character type designator per ICAO Doc. 8643. Such indicators are two to four alphanumeric characters, starting with a letter.</p> <p>The specification of an aircraft type shall allow expression of a type that has no Doc. 8643 identifier, with indication that it is not a standard identifier.</p> <p>The specification of aircraft type shall allow expression of the number of aircraft for each of the various type designators involved in a formation flight.</p>

AircraftTypeChoice	
B-2.5	<p>Aircraft Type</p> <p>The specification of an aircraft type shall allow expression of a four-character type designator per ICAO Doc. 8643. Such indicators are two to four alphanumeric characters, starting with a letter.</p> <p>The specification of an aircraft type shall allow expression of a type that has no Doc. 8643 identifier, with indication that it is not a standard identifier.</p> <p>The specification of aircraft type shall allow expression of the number of aircraft for each of the various type designators involved in a formation flight.</p>

AircraftApproachCategory	
B-2.18	<p>Aircraft Approach Category</p> <p>Aircraft Approach Category shall be expressed as one of the aircraft categories specified in the Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS, ICAO Doc 8168), Volume I, section 4, chapter 1, paragraph 1.3.</p>

WakeTurbulenceCategory	
B-2.9	Wake Turbulence Category

WakeTurbulenceCategory	
	Expression of a Wake Turbulence Category shall support at a minimum the categories defined in PANS-ATM section 4.9.1. The category identified by the letter "J", as recommended via State Letter (TEC/OPS/SEP – 08-0294.SLG), shall also be supported.

Arrival

ActualTimeOfArrival	
B-2.41	<p>Actual Arrival Reference Data</p> <p>The point on the arrival aerodrome to which the arrival time refers. The point is identified using an appropriate trajectory point property, such as Wheels-On or In-Block, and may include its geographical position.</p>

Arrival	
Field Type 17	<p>Arrival aerodrome and time</p> <p>Format: - [a][b] (sp) [c]</p> <p>SINGLE HYPHEN</p> <p>(a) Arrival aerodrome 4 LETTERS, being the ICAO four-letter location indicator allocated to the arrival aerodrome, as specified in Doc 7910, Location Indicators, or ZZZZ if no ICAO location indicator has been allocated.</p> <p>(b) Time of arrival 4 NUMERICS, giving the actual time of arrival.</p> <p>* This field is to be terminated here if an ICAO location indicator has been allocated to the arrival aerodrome.</p> <p>SPACE</p> <p>(c) Arrival aerodrome Name of arrival aerodrome, if ZZZZ is inserted in (a).</p> <p>Examples: -EHAM1433 -ZZZZ1620 DEN HELDER</p>

ReclearanceInFlight	
Field Type 18-RIF	<p>RIF/ The route details to the revised destination aerodrome, followed by the ICAO four-letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.</p> <p>Examples: -RIF/DTA HEC KLAX -RIF/ESP G94 CLA YPPH</p>

ArrivalTimeType	
B-2.41	<p>Actual Arrival Reference Data</p> <p>The point on the arrival aerodrome to which the arrival time refers. The point is identified using an appropriate trajectory point property, such as Wheels-On or In-Block, and may include its</p>

ArrivalTimeType	
	geographical position.

Capability

CommunicationCapabilities																																																	
Field Type 10a	<p>Radiocommunication, navigation and approach aid equipment and capabilities</p> <p>1 LETTER as follows:</p> <p>N no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable</p> <p>OR S Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1)</p> <p>AND/OR ONE OR MORE OF THE FOLLOWING LETTERS to indicate the serviceable COM/NAV/approach aid equipment and capabilities</p> <table> <tr> <td>A GBAS landing system</td><td>J7 CPDLC FANS 1/A</td></tr> <tr> <td>B LPV (APV with SBAS)</td><td>SATCOM (Iridium)</td></tr> <tr> <td>C LORAN C</td><td>K MLS</td></tr> <tr> <td>D DME</td><td>L ILS</td></tr> <tr> <td>E1 FMC WPR ACARS</td><td>M1 ATC SATVOICE</td></tr> <tr> <td>E2 D-FIS ACARS</td><td>(INMARSAT)</td></tr> <tr> <td>E3 PDC ACARS</td><td>M2 ATC SATVOICE (MTSAT)</td></tr> <tr> <td>F ADF</td><td>M3 ATC SATVOICE (Iridium)</td></tr> <tr> <td>G GNSS. If any portion of the flight is planned</td><td>O VOR</td></tr> <tr> <td>planned to be conducted under FR, it refers</td><td>P1 CPDLC RCP 400 (<i>see Note 7</i>)</td></tr> <tr> <td>to GNSS receivers that comply with the</td><td>P2 CPDLC RCP 240 (<i>see Note 7</i>)</td></tr> <tr> <td>requirements of Annex 10, Volume I (<i>See Note 2</i>)</td><td>P3 SATVOICE RCP 400 (<i>see Note 7</i>)</td></tr> <tr> <td>H HF RTF</td><td>P4-P9 Reserved for RCP</td></tr> <tr> <td>I Inertial navigation</td><td>R PBN approved (<i>see Note 4</i>)</td></tr> <tr> <td>J1 CPDLC ATN VDL Mode 2</td><td>T TACAN</td></tr> <tr> <td>(<i>see Note 3</i>)</td><td>U UHF RTF</td></tr> <tr> <td>J2 CPDLC FANS 1/A HF DL</td><td>V VHF RTF</td></tr> <tr> <td>J3 CPDLC FANS 1/A VDL</td><td>W RVSM approved</td></tr> <tr> <td>Mode A</td><td>X MNPS approved</td></tr> <tr> <td>J4 CPDLC FANS 1/A VDL</td><td>Y VHF with 8.33 kHz channel</td></tr> <tr> <td>J5 CPDLC FANS 1/A</td><td>spacing capability</td></tr> <tr> <td>SATCOM (INMARSAT)</td><td>Z Other equipment carried or</td></tr> <tr> <td>J6 CPDLC FANS 1/A</td><td>other capabilities (<i>see Note 5</i>)</td></tr> <tr> <td>SATCOM (MTSAT)</td><td></td></tr> </table> <p><i>Note 1. - If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.</i></p> <p><i>Note 2. - If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ separated by a space.</i></p> <p><i>Note 3. - See RTCA/EUROCAE Interoperability Requirements Standard for ATN Baseline 1 (ATN B1 INTEROP Standard - DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.</i></p> <p><i>Note 4. - If the letter R is used, the performance-based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific route segment, route or area is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).</i></p> <p><i>Note 5. - If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.</i></p> <p><i>Note 6. - Information on navigation capability is provided to ATC for clearance and routing purposes.</i></p> <p><i>Note 7. - Guidance material on the application of performance-based communication, which</i></p>	A GBAS landing system	J7 CPDLC FANS 1/A	B LPV (APV with SBAS)	SATCOM (Iridium)	C LORAN C	K MLS	D DME	L ILS	E1 FMC WPR ACARS	M1 ATC SATVOICE	E2 D-FIS ACARS	(INMARSAT)	E3 PDC ACARS	M2 ATC SATVOICE (MTSAT)	F ADF	M3 ATC SATVOICE (Iridium)	G GNSS. If any portion of the flight is planned	O VOR	planned to be conducted under FR, it refers	P1 CPDLC RCP 400 (<i>see Note 7</i>)	to GNSS receivers that comply with the	P2 CPDLC RCP 240 (<i>see Note 7</i>)	requirements of Annex 10, Volume I (<i>See Note 2</i>)	P3 SATVOICE RCP 400 (<i>see Note 7</i>)	H HF RTF	P4-P9 Reserved for RCP	I Inertial navigation	R PBN approved (<i>see Note 4</i>)	J1 CPDLC ATN VDL Mode 2	T TACAN	(<i>see Note 3</i>)	U UHF RTF	J2 CPDLC FANS 1/A HF DL	V VHF RTF	J3 CPDLC FANS 1/A VDL	W RVSM approved	Mode A	X MNPS approved	J4 CPDLC FANS 1/A VDL	Y VHF with 8.33 kHz channel	J5 CPDLC FANS 1/A	spacing capability	SATCOM (INMARSAT)	Z Other equipment carried or	J6 CPDLC FANS 1/A	other capabilities (<i>see Note 5</i>)	SATCOM (MTSAT)	
A GBAS landing system	J7 CPDLC FANS 1/A																																																
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CommunicationCapabilities

prescribes RCP to an air traffic service in a specific area, is contained in the Performance- based Communication and Surveillance (PBCS) Manual (Doc 9869).

CommunicationCapabilityCodeList

Modeling	Construct used for the data modeling purposes.
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DatalinkCommunicationCapabilityCodeList

Modeling	Construct used for the data modeling purposes.
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Dinghies

B-2.34.8	<p>Expression of Supplementary Information shall allow specification of the Dinghies on board, including:</p> <ul style="list-style-type: none"> a) Number of dinghies b) Capacity of all dinghies c) Color of the dinghies d) An indication if the dinghies are covered
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EltHexIdentifier

Table 3-B-1 Optional data elements	Field	Format	LADR functionality	Example
	Accuracy of position data		Optional if available from the ADT system.	
	Altitude (ft)	NNNNN	Optional field; either altitude in m or ft (recommended).	35000
	Altitude (m)	NNNNN		10000
	Altitude source	XXXX	Required if altitude data supplied.	BARO GNSS
	Groundspeed (kt)	NNN	Optional field.	350
	Groundspeed (km/h)	NNN	Optional field.	550
	Heading	DDD ⁰	Optional field.	090
	Emergency locator transmitter (ELT) Hex ID	HHHHHHHHHHHHHHHH	Carried ELT devices (may be more than one per aircraft).	1234567890ABCDE

EltHexIdentifierList

Modeling	Construct used for the data modeling purposes.
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EmergencyRadioCapabilityTypeList

Modeling	Construct used for the data modeling purposes.
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FlightCapabilities

B-2.10	Equipment and Capability
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FlightCapabilities

Expression of Equipment and Capability shall allow derivation of the codes defined in PANS-ATM Item 10 where applicable. Note that new types of capability that have no corresponding PANS-ATM Appendix 3 designator may be lost on translation to PANS-ATM Appendix 3 ATS Message format.

Expression of Equipment and Capability shall allow for specification of capabilities that are not pre-defined. This is to allow for new capabilities or ANSP-specific capabilities that have not been designated standard codes but are required in a flight plan.

Expression of Navigation Capability shall allow identification of the following capabilities at a minimum:

- a) Automatic Direction Finder (ADF)
- b) VHF omnidirectional radio range (VOR)
- c) UHF tactical air navigation aid (TACAN)
- d) Distance Measuring Equipment (DME)
- e) Global Navigation Satellite System (GNSS)
- f) Indicate presence of Space Based Augmentation System (SBAS)
- g) Indicate presence of Ground Based Augmentation System (GBAS)
- h) Inertial Navigation (INS)
- i) VOR/DME
- j) DME/DME
- k) DME/DME/Inertial Reference Unit (IRU)
- l) Reduced Vertical Separation Minimum (RVSM)

Expression of Approach Capability shall allow identification of the following capabilities at a minimum:

- a) Instrument Landing System (ILS)
- b) Microwave Landing System (MLS)
- c) Localizer Performance with Vertical Guidance (LPV)
- d) Ground-Based Augmentation Landing System (GBAS Landing System)

Expression of PBN capability shall allow derivation of the codes defined in PANS-ATM Appendix 3, item 18 PBN/ where applicable.

Expression of PBN capability shall allow identification of the type of navigation capability used to achieve the performance (e.g. RNAV 1 achieved using GNSS).

Expression of PBN capability shall allow identification of optional functional capabilities described in ICAO Doc. 9613 Vol. 1, Attachment A, section 5 (e.g. Fixed Radius Path capabilities including RF legs and Fixed Radius Turns).

Expression of PBN capability shall allow identification of the type of Vertical Navigation required, as explained in ICAO Doc. 9613 Part A. section 1.1.4.2.

Expression of PBN capability shall allow capabilities defined in ICAO Doc. 9613 to be represented, at a minimum to include:

- a) Minimum Navigation Performance Specifications (MNPS)
- b) RNP 10 (RNAV 10)
- c) RNP 4
- d) RNAV 5
- e) RNAV 2
- f) RNAV 1
- g) RNP 2 Continental
- h) RNP 2 Oceanic
- i) RNP 1
- j) RNP 0.3
- k) RNP Approach
- l) RNP AR Approach, including the accuracy level approved (within the range indicated in ICAO Doc. 9613 Table II-A-1-1). The ability to default to the least-accurate specification should be accommodated.

FlightCapabilities

Expression of Communication Capability shall allow at a minimum the following voice communication capabilities:

- a) VHF Radiotelephone (RTF)
- b) VHF RTF with 8.33 kHz spacing
- c) UHF RTF
- d) HF RTF
- e) Inmarsat Satcom RTF
- f) MTSAT Satcom RTF Appendix B
- g) Iridium Satcom RTF

Expression of Communication Capability shall allow at a minimum the following data communication capabilities:

- a) ATN Controller Pilot Data Communications (CPDLC)
 - i. Via VHF Data Link (VDL) Mode 2
- b) FANS 1/A CPDLC
 - i. Via HF Data Link (HFDL)
 - ii. Via VHF Data Link, Mode 2 (VDL Mode 2)
 - iii. Via VDL Mode 0/a (ACARS)
 - iv. Via Satcom (Inmarsat)
 - v. Via Satcom (MTSAT)
 - vi. Via Satcom (Iridium)

- c) ACARS
 - i. Waypoint Reporting (WPR)
 - ii. Digital Flight Information System (D-FIS)
 - iii. Pre-Departure Clearance (PDC)

Expression of Required Communication Performance shall support at a minimum the categories defined in ICAO Doc. 9869.

Expression of Surveillance Capability shall allow at a minimum indication of the following transponder capabilities. Sub-items indicate optional capabilities:

- a) Mode A transponder
 - i. With Mode C altitude
- b) Mode S transponder
 - i. With altitude encoding
 - ii. With aircraft ID
 - iii. With extended squitter (ADS-B)
 - iv. With enhanced Mode S

Expression of Surveillance Capability shall allow at a minimum indication of the following ADS-B capabilities including the ability to indicate whether certified against:

- EASA AMC20-24,
- CASA CA020.18,
- USA 14 CFR 91.227 / FAA AC 20-165 (all versions),
- EASA CS-ACNS.D.ADSB, and/or
- EASA CS-STAN 005 configuration 1.

- a) VDL Mode 4
 - i. With "Out" Capability
 - ii. With "In" Capability

- b) 1090 MHz
 - i. With "Out" Capability
 - ii. With "In" Capability

- c) Universal Access Transceiver (UAT)
 - i. With "Out" Capability

FlightCapabilities

	<p>ii. With "In" Capability</p> <p>d) ADS-B In with the following capabilities / approvals:</p> <ul style="list-style-type: none"> i. Airborne traffic situational awareness (AIRB) ii. Own Visual Separation in Approach (VSA) iii. Traffic Situational Awareness on the Surface (SURF) iv. Traffic Situational Awareness with Alerts (TSAA) v. CDTI (Cockpit Display of Traffic Information) Assisted Visual Separation (CAVS) RTCA DO-317B / EUROCAE ED-194A vi. Flight Deck based Interval Management for Spacing (FIM-S) RTCA DO-361 / EUROCAE ED-236 vii. Advanced Interval Management (A-IM) RTCA DO-361A / EUROCAE ED-236A viii. Paired Approach (PA) RTCA DO-361A / EUROCAE ED-236A ix. In trail Procedures (ITP) RTCA DO-317A / EUROCAE ED-194 (including subsequent versions) <p>Expression of Surveillance Capability shall allow at a minimum indication of the following ADS-C capabilities:</p> <ul style="list-style-type: none"> a) ATN b) FANS 1/A <p>Expression of Surveillance Capability shall allow at a minimum indication of categories of Required Surveillance Performance as described in ICAO Doc. 9869 (Performance-Based Communication and Surveillance Manual).</p>
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LifeJacketTypeList

Modeling	Construct used for the data modeling purposes.
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NavigationCapabilities

Field Type 10a	<p>Radiocommunication, navigation and approach aid equipment and capabilities</p> <p>1 LETTER as follows:</p> <p>N no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable</p> <p>OR S Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1)</p> <p>AND/OR ONE OR MORE OF THE FOLLOWING LETTERS to indicate the serviceable COM/NAV/approach aid equipment and capabilities</p> <table border="0"> <tr> <td>A GBAS landing system</td><td>J7 CPDLC FANS 1/A</td></tr> <tr> <td>B LPV (APV with SBAS)</td><td>SATCOM (Iridium)</td></tr> <tr> <td>C LORAN C</td><td>K MLS</td></tr> <tr> <td>D DME</td><td>L ILS</td></tr> <tr> <td>E1 FMC WPR ACARS</td><td>M1 ATC SATVOICE</td></tr> <tr> <td>E2 D-FIS ACARS</td><td>(INMARSAT)</td></tr> <tr> <td>E3 PDC ACARS</td><td>M2 ATC SATVOICE (MTSAT)</td></tr> <tr> <td>F ADF</td><td>M3 ATC SATVOICE (Iridium)</td></tr> <tr> <td>G GNSS. If any portion of the flight is planned to be conducted under FR, it refers to GNSS receivers that comply with the requirements of Annex 10, Volume I (See Note 2)</td><td>O VOR</td></tr> <tr> <td>H HF RTF</td><td>P1 CPDLC RCP 400 (see Note 7)</td></tr> <tr> <td>I Inertial navigation</td><td>P2 CPDLC RCP 240 (see Note 7)</td></tr> <tr> <td>J1 CPDLC ATN VDL Mode 2 (see Note 3)</td><td>P3 SATVOICE RCP 400 (see Note 7)</td></tr> <tr> <td>J2 CPDLC FANS 1/A HF DL</td><td>P4-P9 Reserved for RCP</td></tr> <tr> <td></td><td>R PBN approved (see Note 4)</td></tr> <tr> <td></td><td>T TACAN</td></tr> <tr> <td></td><td>U UHF RTF</td></tr> <tr> <td></td><td>V VHF RTF</td></tr> </table>	A GBAS landing system	J7 CPDLC FANS 1/A	B LPV (APV with SBAS)	SATCOM (Iridium)	C LORAN C	K MLS	D DME	L ILS	E1 FMC WPR ACARS	M1 ATC SATVOICE	E2 D-FIS ACARS	(INMARSAT)	E3 PDC ACARS	M2 ATC SATVOICE (MTSAT)	F ADF	M3 ATC SATVOICE (Iridium)	G GNSS. If any portion of the flight is planned to be conducted under FR, it refers to GNSS receivers that comply with the requirements of Annex 10, Volume I (See Note 2)	O VOR	H HF RTF	P1 CPDLC RCP 400 (see Note 7)	I Inertial navigation	P2 CPDLC RCP 240 (see Note 7)	J1 CPDLC ATN VDL Mode 2 (see Note 3)	P3 SATVOICE RCP 400 (see Note 7)	J2 CPDLC FANS 1/A HF DL	P4-P9 Reserved for RCP		R PBN approved (see Note 4)		T TACAN		U UHF RTF		V VHF RTF
A GBAS landing system	J7 CPDLC FANS 1/A																																		
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	R PBN approved (see Note 4)																																		
	T TACAN																																		
	U UHF RTF																																		
	V VHF RTF																																		

NavigationCapabilities

J3	CPDLC FANS 1/A VDL Mode A	W	RVSM approved
J4	CPDLC FANS 1/A VDL	X	MNPS approved
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	Y	VHF with 8.33 kHz channel spacing capability
J6	CPDLC FANS 1/A SATCOM (MTSAT)	Z	Other equipment carried or other capabilities (see Note 5)
<p><i>Note 1. - If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.</i></p> <p><i>Note 2. - If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ separated by a space.</i></p> <p><i>Note 3. - See RTCA/EUROCAE Interoperability Requirements Standard for ATN Baseline 1 (ATN B1 INTEROP Standard - DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.</i></p> <p><i>Note 4. - If the letter R is used, the performance-based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific route segment, route or area is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).</i></p> <p><i>Note 5. - If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.</i></p> <p><i>Note 6. - Information on navigation capability is provided to ATC for clearance and routing purposes.</i></p> <p><i>Note 7. - Guidance material on the application of performance-based communication, which prescribes RCP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).</i></p>			

NavigationCapabilityCodeList

Modeling	Construct used for the data modeling purposes.
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PerformanceBasedNavigationCapabilityCodeList

Modeling	Construct used for the data modeling purposes.
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SelectiveCallingCode

B-2.15	<p>SELCAL Code</p> <p>Expression of a Selective Calling (SELCAL) code shall be four characters consistent with the definitions in Annex 10, Volume 3, Part II, chapter 3.</p>
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SurveillanceCapabilities

Field Type 10b	<p>Surveillance equipment and capabilities</p> <p>INSERT N if no surveillance equipment for the route to be flown is carried, or the equipment is unserviceable, OR ONE OR MORE of the following descriptors, to a maximum of 20 characters, to describe the serviceable surveillance equipment and/or capabilities on board:</p> <p>SSR Modes A and C A Transponder - Mode A (4 digits - 4 096 codes) C Transponder - Mode A (4 digits - 4 096 codes) and Mode C</p> <p>SSR Modes S E Transponder - Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability</p>
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SurveillanceCapabilities

- H Transponder - Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability
- I Transponder - Mode S, including aircraft identification, but no pressure-altitude capability
- L Transponder - Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability
- P Transponder - Mode S, including pressure-altitude, but no aircraft identification capability
- S Transponder - Mode S, including both pressure-altitude and aircraft identification capability
- X Transponder - Mode S with neither aircraft identification nor pressure-altitude capability

Note. - Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a Mode S transponder.

ADS-B

- B1 ADS-B with dedicated 1 090 MHz ADS-B "out" capability
- B2 ADS-B with dedicated 1 090 MHz ADS-B "out" and "in" capability
- U1 ADS-B "out" capability using UAT
- U2 ADS-B "out" and "in" capability using UAT
- V1 ADS-B "out" capability using VDL Mode 4
- V2 ADS-B "out" and "in" capability using VDL Mode 4

ADS-C

- D1 ADS-C with FANS 1/A capabilities
- G1 ADS-C with ATN capabilities

Alphanumeric characters not indicated above are reserved.

Note 1. - The RSP specification(s), if applicable, will be listed in Item 18 following the indicator SUR/. Guidance material on the application of performance-based surveillance, which prescribes RSP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

Note 2. - Additional surveillance equipment or capabilities will be listed in Item 18 following the indicator SUR/, as required by the appropriate authority.

SurveillanceCapabilityCodeList

Modeling	Construct used for the data modeling purposes.
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SurvivalCapabilities

B-2.34	<p>Supplementary Information</p> <p>Expression of Supplementary Information shall allow specification of fuel endurance expressed as hours and minutes of flying time.</p> <p>Expression of Supplementary Information shall allow specification of an integer number of persons on board.</p> <p>Expression of Supplementary Information shall allow specification of the types of emergency radios carried on board, including at a minimum:</p> <ol style="list-style-type: none"> UHF radio VHF radio Emergency Locator Transmitter (ELT) <p>Expression of Supplementary Information shall allow specification of the types of Survival Capabilities on board, including at a minimum:</p> <ol style="list-style-type: none"> Polar Desert Maritime
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SurvivalCapabilities

	<p>d) Jungle</p> <p>Expression of Supplementary Information shall allow specification of the characteristics of Life Jackets on board, including at a minimum:</p> <p>a) Light b) Fluorescence c) UHF radio d) VHF radio</p> <p>Expression of Supplementary Information shall allow specification of the aircraft colour and markings as free text per B-2.30.</p> <p>Expression of Supplementary Information shall allow specification of the name of the pilot in command as free text per B-2.30.</p> <p>Expression of Supplementary Information shall allow specification of the Dinghies on board, including:</p> <p>a) Number of dinghies b) Capacity of all dinghies c) Color of the dinghies d) An indication if the dinghies are covered</p> <p>Expression of Supplementary Information shall allow specification of clarifying remarks and other survival equipment carried that is not specified above.</p>
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SurvivalEquipmentTypeList

Modeling	Construct used for the data modeling purposes.
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CommunicationCapabilityCode

Field Type 10a	Radiocommunication, navigation and approach aid equipment and capabilities	
	1 LETTER as follows:	
	N no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable	
	OR S Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1)	
	AND/OR ONE OR MORE OF THE FOLLOWING LETTERS to indicate the serviceable COM/NAV/approach aid equipment and capabilities	
	A GBAS landing system	J7 CPDLC FANS 1/A
	B LPV (APV with SBAS)	SATCOM (Iridium)
	C LORAN C	K MLS
	D DME	L ILS
	E1 FMC WPR ACARS	M1 ATC SATVOICE
	E2 D-FIS ACARS	(INMARSAT)
	E3 PDC ACARS	M2 ATC SATVOICE (MTSAT)
	F ADF	M3 ATC SATVOICE (Iridium)
	G GNSS. If any portion of the flight is planned	O VOR
	planned to be conducted under FR, it refers	P1 CPDLC RCP 400 (<i>see Note 7</i>)
	to GNSS receivers that comply with the	P2 CPDLC RCP 240 (<i>see Note 7</i>)
	requirements of Annex 10, Volume I (<i>See Note 2</i>)	P3 SATVOICE RCP 400 (<i>see Note 7</i>)
	H HF RTF	P4-P9 Reserved for RCP
	I Inertial navigation	R PBN approved (<i>see Note 4</i>)
	J1 CPDLC ATN VDL Mode 2	T TACAN
	(<i>see Note 3</i>)	U UHF RTF
	J2 CPDLC FANS 1/A HF DL	V VHF RTF

Communication Capability Code

J3	CPDLC FANS 1/A VDL Mode A	W	RVSM approved
J4	CPDLC FANS 1/A VDL	X	MNPS approved
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	Y	VHF with 8.33 kHz channel spacing capability
J6	CPDLC FANS 1/A SATCOM (MTSAT)	Z	Other equipment carried or other capabilities (see Note 5)
<p><i>Note 1. - If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.</i></p> <p><i>Note 2. - If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ separated by a space.</i></p> <p><i>Note 3. - See RTCA/EUROCAE Interoperability Requirements Standard for ATN Baseline 1 (ATN B1 INTEROP Standard - DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.</i></p> <p><i>Note 4. - If the letter R is used, the performance-based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific route segment, route or area is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).</i></p> <p><i>Note 5. - If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.</i></p> <p><i>Note 6. - Information on navigation capability is provided to ATC for clearance and routing purposes.</i></p> <p><i>Note 7. - Guidance material on the application of performance-based communication, which prescribes RCP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).</i></p>			

Datalink Communication Capability Code

Field Type 10a	Radiocommunication, navigation and approach aid equipment and capabilities		
	1 LETTER as follows:		
	<p>N no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable</p> <p>OR S Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1)</p> <p>AND/OR ONE OR MORE OF THE FOLLOWING LETTERS to indicate the serviceable COM/NAV/approach aid equipment and capabilities</p>		
	A GBAS landing system	J7	CPDLC FANS 1/A SATCOM (Iridium)
	B LPV (APV with SBAS)	K	MLS
	C LORAN C	L	ILS
	D DME	M1	ATC SATVOICE (INMARSAT)
	E1 FMC WPR ACARS	M2	ATC SATVOICE (MTSAT)
	E2 D-FIS ACARS	M3	ATC SATVOICE (Iridium)
	E3 PDC ACARS	O	VOR
	F ADF	P1	CPDLC RCP 400 (see Note 7)
	G GNSS. If any portion of the flight is planned to be conducted under FR, it refers to GNSS receivers that comply with the requirements of Annex 10, Volume I (See Note 2)	P2	CPDLC RCP 240 (see Note 7)
	H HF RTF	P3	SATVOICE RCP 400 (see Note 7)
	I Inertial navigation	P4-P9	Reserved for RCP
	J1 CPDLC ATN VDL Mode 2 (see Note 3)	R	PBN approved (see Note 4)
	J2 CPDLC FANS 1/A HF DL	T	TACAN
	J3 CPDLC FANS 1/A VDL Mode A	U	UHF RTF
	J4 CPDLC FANS 1/A VDL	V	VHF RTF
		W	RVSM approved
		X	MNPS approved
		Y	VHF with 8.33 kHz channel

DatalinkCommunicationCapabilityCode

	<p>J5 CPDLC FANS 1/A spacing capability SATCOM (INMARSAT) Z Other equipment carried or J6 CPDLC FANS 1/A other capabilities (see Note 5) SATCOM (MTSAT)</p> <p><i>Note 1. - If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.</i></p> <p><i>Note 2. - If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ separated by a space.</i></p> <p><i>Note 3. - See RTCA/EUROCAE Interoperability Requirements Standard for ATN Baseline 1 (ATN B1 INTEROP Standard - DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.</i></p> <p><i>Note 4. - If the letter R is used, the performance-based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific route segment, route or area is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).</i></p> <p><i>Note 5. - If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.</i></p> <p><i>Note 6. - Information on navigation capability is provided to ATC for clearance and routing purposes.</i></p> <p><i>Note 7. - Guidance material on the application of performance-based communication, which prescribes RCP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).</i></p>
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DinghyCoverIndicator

B-2.34.8	<p>Expression of Supplementary Information shall allow specification of the Dinghies on board, including:</p> <ul style="list-style-type: none"> a) Number of dinghies b) Capacity of all dinghies c) Color of the dinghies d) An indication if the dinghies are covered
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EmergencyRadioCapabilityType

B-2.34.3	<p>Expression of Supplementary Information shall allow specification of the types of emergency radios carried on board, including at a minimum:</p> <ul style="list-style-type: none"> a) UHF radio b) VHF radio c) Emergency Locator Transmitter (ELT)
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LifeJacketType

B-2.34.5	<p>Expression of Supplementary Information shall allow specification of the characteristics of Life Jackets on board, including at a minimum:</p> <ul style="list-style-type: none"> a) Light b) Fluorescence c) UHF radio d) VHF radio
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NavigationCapabilityCode

Field Type 10a	<p>Radiocommunication, navigation and approach aid equipment and capabilities</p> <p>1 LETTER as follows:</p> <p>N no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable</p> <p>OR S Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1)</p> <p>AND/OR ONE OR MORE OF THE FOLLOWING LETTERS to indicate the serviceable</p>
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NavigationCapabilityCode

COM/NAV/approach aid equipment and capabilities

A	GBAS landingsystem	J7	CPDLC FANS 1/A
B	LPV (APV with SBAS)		SATCOM (Iridium)
C	LORAN C	K	MLS
D	DME	L	ILS
E1	FMC WPR ACARS	M1	ATC SATVOICE
E2	D-FIS ACARS		(INMARSAT)
E3	PDC ACARS	M2	ATC SATVOICE (MTSAT)
F	ADF	M3	ATC SATVOICE (Iridium)
G	GNSS. If any portion of the flight is planned planned to be conducted under FR, it refers to GNSS receivers that comply with the requirements of Annex 10, Volume I (See Note 2)	O	VOR
H	HF RTF	P1	CPDLC RCP 400 (see Note 7)
I	Inertial navigation	P2	CPDLC RCP 240 (see Note 7)
J1	CPDLC ATN VDL Mode 2 (see Note 3)	P3	SATVOICE RCP 400 (see Note 7)
J2	CPDLC FANS 1/A HFDDL	P4-P9	Reserved for RCP
J3	CPDLC FANS 1/A VDL Mode A	R	PBN approved (see Note 4)
J4	CPDLC FANS 1/A VDL	T	TACAN
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	U	UHF RTF
J6	CPDLC FANS 1/A SATCOM (MTSAT)	V	VHF RTF
		W	RVSM approved
		X	MNPS approved
		Y	VHF with 8.33 kHz channel spacing capability
		Z	Other equipment carried or other capabilities (see Note 5)

Note 1. - If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.

Note 2. - If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ separated by a space.

Note 3. - See RTCA/EUROCAE Interoperability Requirements Standard for ATN Baseline 1 (ATN B1 INTEROP Standard - DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.

Note 4. - If the letter R is used, the performance-based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific route segment, route or area is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).

Note 5. - If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.

Note 6. - Information on navigation capability is provided to ATC for clearance and routing purposes.

Note 7. - Guidance material on the application of performance-based communication, which prescribes RCP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

PerformanceBasedNavigationCapabilityCode

Field Type 18-PBN

PBN/

Indication of RNAV and/or RNP capabilities. Include as many of the descriptors below, as apply to the flight, up to a maximum of 8 entries, i.e. a total of not more than 16 characters.

RNAV SPECIFICATIONS

A1	RNAV 10 (RNP 10)
B1	RNAV 5 all permitted sensors
B2	RNAV 5 GNSS
B3	RNAV 5 DME/DME

PerformanceBasedNavigationCapabilityCode

B4	RNAV 5 VOR/DME
B5	RNAV 5 INS or IRS
B6	RNAV 5 LORANC
C1	RNAV 2 all permitted sensors
C2	RNAV 2 GNSS
C3	RNAV 2 DME/DME
C4	RNAV 2 DME/DME/IRU
D1	RNAV 1 all permitted sensors
D2	RNAV 1 GNSS
D3	RNAV 1 DME/DME
D4	RNAV 1 DME/DME/IRU
RNP SPECIFICATIONS	
L1	RNP 4
O1	Basic RNP 1 all permitted sensors
O2	Basic RNP 1 GNSS
O3	Basic RNP 1 DME/DME
O4	Basic RNP 1 DME/DME/IRU
S1	RNP APCH
S2	RNP APCH with BAR-VNAV
T1	RNP AR APCH with RF (special authorization required)
T2	RNP AR APCH without RF (special authorization required)

Combinations of alphanumeric characters not indicated above are reserved.

StandardCapabilitiesIndicator

Field Type 10a

Radiocommunication, navigation and approach aid equipment and capabilities

1 LETTER as follows:

N no COM/NAV/approach aid equipment for the route to be flown is carried, or the equipment is unserviceable

OR S Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable (see Note 1)

AND/OR ONE OR MORE OF THE FOLLOWING LETTERS to indicate the serviceable COM/NAV/approach aid equipment and capabilities

A	GBAS landingsystem	J7	CPDLC FANS 1/A
B	LPV (APV with SBAS)		SATCOM (Iridium)
C	LORAN C	K	MLS
D	DME	L	ILS
E1	FMC WPR ACARS	M1	ATC SATVOICE
E2	D-FIS ACARS		(INMARSAT)
E3	PDC ACARS	M2	ATC SATVOICE (MTSAT)
F	ADF	M3	ATC SATVOICE (Iridium)
G	GNSS. If any portion of the flight is planned	O	VOR
	planned to be conducted under FR, it refers	P1	CPDLC RCP 400 (<i>see Note 7</i>)
	to GNSS receivers that comply with the	P2	CPDLC RCP 240 (<i>see Note 7</i>)
	requirements of Annex 10, Volume I (<i>See Note 2</i>)	P3	SATVOICE RCP 400 (<i>see Note 7</i>)
H	HF RTF	P4-P9	Reserved for RCP
I	Inertial navigation	R	PBN approved (<i>see Note 4</i>)
J1	CPDLC ATN VDL Mode 2	T	TACAN
	(<i>see Note 3</i>)	U	UHF RTF

StandardCapabilitiesIndicator

J2	CPDLC FANS 1/A HFDL	V	VHF RTF
J3	CPDLC FANS 1/A VDL Mode A	W	RVSM approved
		X	MNPS approved
J4	CPDLC FANS 1/A VDL	Y	VHF with 8.33 kHz channel spacing capability
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	Z	Other equipment carried or other capabilities (see Note 5)
J6	CPDLC FANS 1/A SATCOM (MTSAT)		
<p><i>Note 1. - If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.</i></p> <p><i>Note 2. - If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/ separated by a space.</i></p> <p><i>Note 3. - See RTCA/EUROCAE Interoperability Requirements Standard for ATN Baseline 1 (ATN B1 INTEROP Standard - DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.</i></p> <p><i>Note 4. - If the letter R is used, the performance-based navigation levels that can be met are specified in Item 18 following the indicator PBN/. Guidance material on the application of performance-based navigation to a specific route segment, route or area is contained in the Performance-based Navigation (PBN) Manual (Doc 9613).</i></p> <p><i>Note 5. - If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.</i></p> <p><i>Note 6. - Information on navigation capability is provided to ATC for clearance and routing purposes.</i></p> <p><i>Note 7. - Guidance material on the application of performance-based communication, which prescribes RCP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).</i></p>			

SurveillanceCapabilityCode

Field Type 10b	<p>Surveillance equipment and capabilities</p> <p>INSERT N if no surveillance equipment for the route to be flown is carried, or the equipment is unserviceable, OR ONE OR MORE of the following descriptors, to a maximum of 20 characters, to describe the serviceable surveillance equipment and/or capabilities on board:</p> <p>SSR Modes A and C</p> <p>A Transponder - Mode A (4 digits - 4 096 codes)</p> <p>C Transponder - Mode A (4 digits - 4 096 codes) and Mode C</p> <p>SSR Modes S</p> <p>E Transponder - Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability</p> <p>H Transponder - Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability</p> <p>I Transponder - Mode S, including aircraft identification, but no pressure-altitude capability</p> <p>L Transponder - Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability</p> <p>P Transponder - Mode S, including pressure-altitude, but no aircraft identification capability</p> <p>S Transponder - Mode S, including both pressure-altitude and aircraft identification capability</p> <p>X Transponder - Mode S with neither aircraft identification nor pressure-altitude capability</p> <p><i>Note. - Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a Mode S transponder.</i></p> <p>ADS-B</p> <p>B1 ADS-B with dedicated 1 090 MHz ADS-B "out" capability</p> <p>B2 ADS-B with dedicated 1 090 MHz ADS-B "out" and "in" capability</p>
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SurveillanceCapabilityCode	
	<p>U1 ADS-B "out" capability using UAT</p> <p>U2 ADS-B "out" and "in" capability using UAT</p> <p>V1 ADS-B "out" capability using VDL Mode 4</p> <p>V2 ADS-B "out" and "in" capability using VDL Mode 4</p> <p>ADS-C</p> <p>D1 ADS-C with FANS 1/A capabilities</p> <p>G1 ADS-C with ATN capabilities</p> <p>Alphanumeric characters not indicated above are reserved.</p> <p><i>Note 1. - The RSP specification(s), if applicable, will be listed in Item 18 following the indicator SUR/. Guidance material on the application of performance-based surveillance, which prescribes RSP to an air traffic service in a specific area, is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).</i></p> <p><i>Note 2. - Additional surveillance equipment or capabilities will be listed in Item 18 following the indicator SUR/, as required by the appropriate authority.</i></p>

SurvivalEquipmentType	
B-2.34.4	<p>Expression of Supplementary Information shall allow specification of the types of Survival Capabilities on board, including at a minimum:</p> <p>a) Polar</p> <p>b) Desert</p> <p>c) Maritime</p> <p>d) Jungle</p>

Cargo

DangerousGoods

AirWaybillNumber	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

DangerousGoods	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

ShippingInformation	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

Packaging

AllPackedInOne

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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CompatibilityGroup

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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DangerousGoodsDimensions

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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DangerousGoodsPackage

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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DangerousGoodsPackageGroup

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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HazardClass

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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HazardDivision

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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RestrictedHazardClass

B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>
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UnNumber	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

AircraftDangerousGoodsLimitation	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

PackingGroup	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

RadioactiveMaterials

CriticalSafetyIndex	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

RadioactiveMaterial	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

TransportIndex	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

RadioactiveMaterialCategory	
B-2.8	<p>Dangerous Goods Information</p> <p>Expression of information regarding dangerous goods being carried on a flight shall support all items defined in the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Document 9284), Part 7, section 4.1.1.1.</p>

Departure

ActualTimeOfDeparture	
B-2.42	<p>Actual Departure Reference Data</p> <p>The point on the departure aerodrome to which the departure time refers. The point is identified using an appropriate trajectory point property, such as Off-Blocks or Wheels-Off, and may include its geographical position.</p>

Departure	
Field Type 13	<p>Departure aerodrome and time</p> <p>Format: SINGLE HYPHEN [Departure aerodrome]* [Time]</p> <p style="text-align: center;">*</p> <p>Format: – [a] [b]</p> <p>SINGLE HYPHEN</p> <p>(a) Departure aerodrome</p> <p>4 LETTERS, being</p> <p>the ICAO four-letter location indicator allocated to the departure aerodrome, as specified in Doc 7910, Location Indicators, or</p> <p>ZZZZ if no ICAO location indicator has been allocated (see Note 1) or if the departure aerodrome is not known, or</p> <p>AFIL if the flight plan has been filed in the air (see Note 2).</p> <p><i>Note 1. - If ZZZZ is used, the name and location of the departure aerodrome is to be shown in the Other Information Field (see Field Type 18) if this Field Type is contained in the message.</i></p> <p><i>Note 2. - If AFIL is used, the ATS unit from which supplementary flight data can be obtained is to be shown in the Other Information Field (Field Type 18).</i></p> <p>* This field shall be terminated here in message types CPL, EST, CDN and ACP. It shall be terminated here in message type RQP if the estimated off-block time is not known.</p> <p>(b) Time</p> <p>4 NUMERICS giving</p> <p>the estimated off-block time (EOBT) at the aerodrome in (a) in FPL, ARR, CHG, CNL, DLA and RQS messages and in RQP message, if known, or</p> <p>the actual time of departure from the aerodrome in (a) in ALR, DEP and SPL messages, or</p> <p>the actual or estimated time of departure from the first point shown in the Route Field (see Field Type 15) in FPL messages derived from flight plans filed in the air, as shown by the letters AFIL in (a).</p> <p>Examples: -EHAM0730 -AFIL1625</p>

DepartureLocationChoice	
Modeling	Construct used for the data modeling purposes.

DepartureLocationPreviousChoice	
Modeling	Construct used for the data modeling purposes.

DeparturePointChoice	
Modeling	Construct used for the data modeling purposes.

DepartureTimeChoice	
Modeling	Construct used for the data modeling purposes.

DepartureTimePreviousChoice	
Modeling	Construct used for the data modeling purposes.

AirfileIndicator	
B-2.4.3	A departure aerodrome should allow for identification of a flight that has filed its flight plan while in the air or for which the departure aerodrome is not known, beginning its route description from a specified point en-route, and therefore may not have provided a departure aerodrome.

DepartureTimeType	
B-2.42	<p>Actual Departure Reference Data</p> <p>The point on the departure aerodrome to which the departure time refers. The point is identified using an appropriate trajectory point property, such as Off-Blocks or Wheels-Off, and may include its geographical position.</p>

Emergency

FlightEmergency	
Field Type 5	<p>Description of emergency</p> <p>Format : - [a] / [b] / [c]</p> <p>SINGLE HYPHEN</p> <p>(a) Phase of emergency</p> <p>or INCERFA if an uncertainty phase, or ALERFA if an alert phase, DETRESFA if a distress phase</p> <p>has been declared in respect of the aircraft concerned.</p> <p>OBLIQUE STROKE</p> <p>(b) Originator of message</p> <p>8 LETTERS, being the 4-letter ICAO location indicator plus the 3-letter designator of the ATS unit originating the message followed by the letter X or, if applicable, the one-letter designator identifying the division of the ATS unit originating the message.</p> <p>OBLIQUE STROKE</p>

FlightEmergency

(c) Nature of emergency

SHORT PLAIN-LANGUAGE TEXT, as necessary to explain the nature of the emergency, with natural spaces between the words.

Example: -ALERFA/EINNZQZX/REPORT OVERDUE

LastContact

Field Type 20

Alerting search and rescue information

Format: - [] (sp) [] (sp)*(sp) []
(*EIGHT elements in all)

This field consists of the following specified sequence of elements separated by spaces. Any information not available should be shown as 'NIL' or 'NOT KNOWN' and not simply omitted.

SINGLE HYPHEN

(a) Identity of operator

The ICAO two-letter designator of the aircraft operating agency or, if this has not been assigned, the name of the operator.

(b) Unit which made last contact

6 LETTERS consisting of the 4-letter ICAO location indicator followed by the 2-letter designator which together identify the ATS unit which made the last two-way contact or, if these are not available, some other description of the unit.

(c) Time of last two-way contact

4 NUMERICS giving the time of the last two-way contact.

(d) Frequency of last contact

NUMERICS as necessary giving the transmitting/receiving frequency of the last contact.

(e) Last reported position

The last reported position expressed in one of the data conventions of 1.6 of this Appendix followed by the time over that position.

(f) Method of determining last known position

Plain-language text as necessary.

(g) Action taken by reporting unit

Plain-language text as necessary.

(h) Other pertinent information

Plain-language text as necessary.

Example: -USAF LGGGZAZX 1022 126.7 GN 1022
PILOT REPORT OVER NDB ATS UNITS
ATHENS FIR ALERTED NIL

Field Type 21

Radio failure information

Format: - [] (sp) [] (sp)*(sp) []
(*SIX elements in all)

This field consists of the following specified sequence of elements preceded by a single hyphen and separated by spaces. Any information not available is to be shown as 'NIL' or 'NOT

	<p>KNOWN" and not simply omitted.</p> <p>SINGLE HYPHEN</p> <p>(a) Time of last two-way contact 4 NUMERICS giving the time of the last two-way contact with the aircraft.</p> <p>(b) Frequency of last contact NUMERICS as necessary giving the transmitting/receiving frequency of the last two-way contact with the aircraft.</p> <p>(c) Last reported position The last reported position expressed in one of the data conventions of 1.6 of this Appendix.</p> <p>(d) Time at last reported position 4 NUMERICS giving the time at the last reported position.</p> <p>(e) Remaining COM capability LETTERS as necessary identifying the remaining COM capability of the aircraft, if known, using the convention of Field Type 10, or in plain language.</p> <p>(f) Any necessary remarks Plain-language text as necessary.</p> <p>Example: -1232 121.3 CLA 1229 TRANSMITTING ONLY 126.7 LAST POSITION CONFIRMED BY RADAR</p>
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LastPositionReport

Field Type 20	<p>Alerting search and rescue information</p> <p>Format: - [] (sp) [] (sp)*(sp) [] (*EIGHT elements in all)</p> <p>This field consists of the following specified sequence of elements separated by spaces. Any information not available should be shown as 'NIL' or 'NOT KNOWN' and not simply omitted.</p> <p>SINGLE HYPHEN</p> <p>(a) Identity of operator The ICAO two-letter designator of the aircraft operating agency or, if this has not been assigned, the name of the operator.</p> <p>(b) Unit which made last contact 6 LETTERS consisting of the 4-letter ICAO location indicator followed by the 2-letter designator which together identify the ATS unit which made the last two-way contact or, if these are not available, some other description of the unit.</p> <p>(c) Time of last two-way contact 4 NUMERICS giving the time of the last two-way contact.</p> <p>(d) Frequency of last contact NUMERICS as necessary giving the transmitting/receiving frequency of the last contact.</p> <p>(e) Last reported position The last reported position expressed in one of the data conventions of 1.6 of this Appendix followed by the time over that position.</p> <p>(f) Method of determining last known position Plain-language text as necessary.</p>
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LastPositionReport

	<p>(g) Action taken by reporting unit Plain-language text as necessary.</p> <p>(h) Other pertinent information Plain-language text as necessary.</p> <p>Example: -USAF LGGGZAZX 1022 126.7 GN 1022 PILOT REPORT OVER NDB ATS UNITS ATHENS FIR ALERTED NIL</p>
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Field Type 21	<p>Radio failure information</p> <p>Format: - [] (sp) [] (sp) * (sp) [] (*SIX elements in all)</p> <p>This field consists of the following specified sequence of elements preceded by a single hyphen and separated by spaces. Any information not available is to be shown as "NIL" or "NOT KNOWN" and not simply omitted.</p> <p>SINGLE HYPHEN</p> <p>(a) Time of last two-way contact 4 NUMERICS giving the time of the last two-way contact with the aircraft.</p> <p>(b) Frequency of last contact NUMERICS as necessary giving the transmitting/receiving frequency of the last two-way contact with the aircraft.</p> <p>(c) Last reported position The last reported position expressed in one of the data conventions of 1.6 of this Appendix.</p> <p>(d) Time at last reported position 4 NUMERICS giving the time at the last reported position.</p> <p>(e) Remaining COM capability LETTERS as necessary identifying the remaining COM capability of the aircraft, if known, using the convention of Field Type 10, or in plain language.</p> <p>(f) Any necessary remarks Plain-language text as necessary.</p> <p>Example: -1232 121.3 CLA 1229 TRANSMITTING ONLY 126.7 LAST POSITION CONFIRMED BY RADAR</p>
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RadioCommunicationFailure

Field Type 21	<p>Radio failure information</p> <p>Format: - [] (sp) [] (sp) * (sp) [] (*SIX elements in all)</p> <p>This field consists of the following specified sequence of elements preceded by a single hyphen and separated by spaces. Any information not available is to be shown as "NIL" or "NOT KNOWN" and not simply omitted.</p> <p>SINGLE HYPHEN</p> <p>(a) Time of last two-way contact</p>
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RadioCommunicationFailure

	<p>4 NUMERICS giving the time of the last two-way contact with the aircraft.</p> <p>(b) Frequency of last contact NUMERICS as necessary giving the transmitting/receiving frequency of the last two-way contact with the aircraft.</p> <p>(c) Last reported position The last reported position expressed in one of the data conventions of 1.6 of this Appendix.</p> <p>(d) Time at last reported position 4 NUMERICS giving the time at the last reported position.</p> <p>(e) Remaining COM capability LETTERS as necessary identifying the remaining COM capability of the aircraft, if known, using the convention of Field Type 10, or in plain language.</p> <p>(f) Any necessary remarks Plain-language text as necessary.</p> <p>Example: -1232 121.3 CLA 1229 TRANSMITTING ONLY 126.7 LAST POSITION CONFIRMED BY RADAR</p>
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EmergencyPhase

Field Type 5a	<p>Phase of emergency</p> <p>or INCERFA if an uncertainty phase, or ALERFA if an alert phase, DETRESFA if a distress phase</p> <p>has been declared in respect of the aircraft concerned.</p>
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EnRoute**AltitudeInTransition**

Field Type 14c	<p>Cleared level</p> <p>F followed by 3 NUMERICS, or S followed by 4 NUMERICS, or A followed by 3 NUMERICS, or M followed by 4 NUMERICS</p> <p>See data conventions in 1.6 of this Appendix.</p> <p>giving the cleared level at which the aircraft will cross the boundary point, if in level cruising flight, or the cleared level to which it is proceeding, if climbing or descending at the boundary point.</p> <p>* This field will be terminated here if the aircraft will cross the boundary point in level cruising flight.</p>
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BoundaryCrossing

Field Type 14	<p>Estimate data</p> <p>*</p> <p>Format: - [a] / [b][c][d][e]</p> <p>SINGLE HYPHEN</p> <p>(a) Boundary point (see Note 1)</p>
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BoundaryCrossing

The BOUNDARY POINT expressed either by a designator consisting of 2 to 5 characters, in geographical coordinates, in abbreviated geographical coordinates, or by bearing and distance from a significant point.

Note 1. - This point may be an agreed point located close to, rather than on, the FIR boundary.

Note 2. - See 1.6 for data conventions.

OBLIQUE STROKE**(b) Time at boundary point**

4 NUMERICS giving the estimated time at the boundary point.

(c) Cleared level

F followed by 3 NUMERICS, or

S followed by 4 NUMERICS, or

A followed by 3 NUMERICS, or

M followed by 4 NUMERICS

See data conventions in 1.6 of this Appendix.

giving the cleared level at which the aircraft will cross the boundary point, if in level cruising flight, or the cleared level to which it is proceeding, if climbing or descending at the boundary point.

* This field will be terminated here if the aircraft will cross the boundary point in level cruising flight.

(d) Supplementary crossing data

A LEVEL, expressed as in (c), at or above which or at or below which (see (e)) the aircraft will cross the boundary point.

(e) Crossing condition

1 LETTER as follows:

A if the aircraft will cross the boundary point at or above the level in (d),
or

B if the aircraft will cross the boundary point at or below the level in (d).

Examples: -LN/1746F160

-CLN/1831F240F180A

-5420N05000W/0417F290

-LNX/1205F160F200B

-ZD126028/0653F130

EnRoute**Modeling**

Construct used for the data modeling purposes.

BoundaryCrossingCondition**Field Type 14e**

Crossing condition

1 LETTER as follows:

BoundaryCrossingCondition

	A if the aircraft will cross the boundary point at or above the level in (d), or B if the aircraft will cross the boundary point at or below the level in (d).
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FlightData**Flight**

Modeling	Construct used for the data modeling purposes.
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Flight

Modeling	Construct used for the data modeling purposes.
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FlightConstraint

B-2.37	<p>General Flight Constraint</p> <p>A general flight constraint is intended to express a constraint on the flight that cannot be associated with a specific trajectory point, either because it is not relevant to only a specific point or because it is not possible to identify the point.</p> <p>Expression of a general flight constraint shall allow for identification of a reference to a published restriction that has generated the constraint; description of applicability; and description of the constraint; i.e. the impact of the restriction on the flight. If a reference is provided, then the descriptive data are optional. If there is no reference to published information, then descriptive data are required.</p> <p>As with other flight constraints, reference to a published restriction should allow reference to a NOTAM; advisory; or AIXM identifier as necessary.</p> <p>Description of the applicability shall accommodate a free-text description.</p> <p>Description of the constraint shall accommodate a free-text description</p>
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FlightIdentification

B-2.6	<p>Aircraft Identification</p> <p>An Aircraft Identification for purposes of communication with Air Traffic Services shall allow any of the following:</p> <ul style="list-style-type: none"> a) The ICAO designator for the aircraft operating agency as defined in ICAO Doc. 8585 followed by the flight identification (e.g. KLM511, NGA213, JTR25); b) The nationality or common mark and registration mark of the aircraft consistent with Annex 7 (e.g. EIAKO, 4XBCD, N2567GA); or c) A two to seven character identifier as specified by an ATM Service Provider. <p>The specification of an Aircraft Identification shall allow the IATA operator code and commercial flight identifier to be included in addition to the identifier for ATS purposes described in B-2.6.1. (An aircraft identification will never be identified only by the IATA identifier).</p>
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FlightNumber

B-2.6.2	The specification of an Aircraft Identification shall allow the IATA operator code and commercial flight identifier to be included in addition to the identifier for ATS purposes described in B-2.6.1. (An aircraft identification will never be identified only by the IATA identifier).
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GufiChoice

Modeling	Construct used for the data modeling purposes.
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IataFlightDesignator

B-2.6.2	The specification of an Aircraft Identification shall allow the IATA operator code and commercial flight identifier to be included in addition to the identifier for ATS purposes described in B-2.6.1. (An aircraft identification will never be identified only by the IATA identifier).
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IataOperatorCode

B-2.6.2	The specification of an Aircraft Identification shall allow the IATA operator code and commercial flight identifier to be included in addition to the identifier for ATS purposes described in B-2.6.1. (An aircraft identification will never be identified only by the IATA identifier).
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OperationalSuffix

B-2.6.2	The specification of an Aircraft Identification shall allow the IATA operator code and commercial flight identifier to be included in addition to the identifier for ATS purposes described in B-2.6.1. (An aircraft identification will never be identified only by the IATA identifier).
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RouteTrajectoryGroupContainer

Modeling	Construct used for the data modeling purposes.
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SpecialHandlingReasonCodeList

Modeling	Construct used for the data modeling purposes.
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SupplementaryInformation

B-2.34	<p>Supplementary Information</p> <p>Expression of Supplementary Information shall allow specification of fuel endurance expressed as hours and minutes of flying time.</p> <p>Expression of Supplementary Information shall allow specification of an integer number of persons on board.</p> <p>Expression of Supplementary Information shall allow specification of the types of emergency radios carried on board, including at a minimum:</p> <ul style="list-style-type: none"> a) UHF radio b) VHF radio c) Emergency Locator Transmitter (ELT) <p>Expression of Supplementary Information shall allow specification of the types of Survival Capabilities on board, including at a minimum:</p> <ul style="list-style-type: none"> a) Polar b) Desert c) Maritime d) Jungle <p>Expression of Supplementary Information shall allow specification of the characteristics of Life Jackets on board, including at a minimum:</p> <ul style="list-style-type: none"> a) Light b) Fluorescence c) UHF radio d) VHF radio
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SupplementaryInformation

	<p>Expression of Supplementary Information shall allow specification of the aircraft colour and markings as free text per B-2.30.</p> <p>Expression of Supplementary Information shall allow specification of the name of the pilot in command as free text per B-2.30.</p> <p>Expression of Supplementary Information shall allow specification of the Dinghies on board, including:</p> <ul style="list-style-type: none"> a) Number of dinghies b) Capacity of all dinghies c) Color of the dinghies d) An indication if the dinghies are covered <p>Expression of Supplementary Information shall allow specification of clarifying remarks and other survival equipment carried that is not specified above.</p>
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SupplementaryInformationSourceChoice

B-2.32	<p>Supplementary Information Source</p> <p>A Supplementary Information Source is intended to identify where search and rescue supplementary information for a flight can be obtained.</p> <p>A Supplementary Information Source can be identified using an Addressee Indicator (from Doc. 7910 + Doc. 8585) for an ATS unit; an AFTN address; FF-ICE Participant identification per B-2.28; or appropriate contact information per B-2.12.</p>
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COPYRIGHT**FlightRulesCategory**

B-2.7	<p>Flight Rules</p> <p>A Flight Rules designator shall allow communication of the following types of flight rules:</p> <ul style="list-style-type: none"> a) Intention to operate the entire flight under the IFR; b) Intention to operate the entire flight under the VFR; c) Intention to operate initially under the IFR, followed by one or more subsequent changes of flight rules; or d) Intention to operate initially under the VFR, followed by one or more subsequent changes of flight rules.
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SpecialHandlingReasonCode

B-2.20	<p>Special Handling</p> <p>Expression of Special Handling designators shall at a minimum support the following categories. The abbreviated designators shown (e.g. "ALTRV") are for ease of traceability to the PANS-ATM special handling categories, but are not a required part of the FF-ICE data item.</p> <ul style="list-style-type: none"> a) ALTRV: for a flight operated in accordance with an altitude reservation; b) ATFMX: for a flight approved for exemption from ATFM measures by the appropriate ATS authority; c) FFR: fire-fighting; d) FLTCK: flight check for calibration of nav aids; e) HAZMAT: for a flight carrying hazardous material; f) HEAD: a flight with Head of State status; g) HOSP: for a medical flight declared by medical authorities; h) HUM: for a flight operating on a humanitarian mission; i) MARSAs: for a flight for which a military entity assumes responsibility for separation of military aircraft; j) MEDEVAC: for a life critical medical emergency evacuation; k) NONRVSM: for a non-RVSM capable flight intending to operate in RVSM airspace;
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SpecialHandlingReasonCode	
	l) SAR: for a flight engaged in a search and rescue mission; and m) STATE: for a flight engaged in military, customs or police services.

TypeOfFlight	
B-2.19	<p>Type of Flight</p> <p>Expression of type of flight shall be traceable to one of the following:</p> <ul style="list-style-type: none"> a) Scheduled Air Transport; b) Non-Scheduled Air Transport; c) General Aviation; d) Military; e) Other.

FlightRouteTrajectory

Constraints

LevelConstraint	
B-3.4.4	<p>Speed Constraint - A speed constraint shall be able to identify:</p> <ul style="list-style-type: none"> a) the constrained speed as an indicated airspeed; b) the type of constraint (at, at or above, at or below, or between 2 speeds); c) whether the change to the speed is to commence at or complete by the start point of the Route/Trajectory Element.

RouteTrajectoryConstraint	
B-3.4	<p>Route/Trajectory Constraint</p> <p>Each Route/Trajectory Element may contain one or more constraints. Each constraint will specify a Speed, Level, or Time constraint. Each constraint may include identification of the source of the constraint and a textual description of the constraint.</p> <p>Each Route/Trajectory Constraint may contain an indication that the constraint is relevant during the arrival or the departure phase.</p> <p>Level Constraint - A level constraint shall be able to identify:</p> <ul style="list-style-type: none"> a) the constrained level (expressed as altitude or flight level per B-2.1); b) the type of constraint (at, at or above, at or below, or between 2 levels); c) whether the change to the level is to commence at or complete by the start point of the Route/Trajectory Element. <p>Speed Constraint - A speed constraint shall be able to identify:</p> <ul style="list-style-type: none"> a) the constrained speed as an indicated airspeed; b) the type of constraint (at, at or above, at or below, or between 2 speeds); c) whether the change to the speed is to commence at or complete by the start point of the Route/Trajectory Element. <p>Time Constraint - A time constraint shall be able to identify:</p> <ul style="list-style-type: none"> a) the constrained time (expressed as an absolute time per B-2.22); and b) the type of constraint (at, at or before, at or after, or between 2 times).

SpeedConstraint	
B-3.4.3	<p>Level Constraint - A level constraint shall be able to identify:</p> <ul style="list-style-type: none"> a) the constrained level (expressed as altitude or flight level per B-2.1); b) the type of constraint (at, at or above, at or below, or between 2 levels);

SpeedConstraint	
	c) whether the change to the level is to commence at or complete by the start point of the Route/Trajectory Element.

TimeConstraint	
B-3.4.5	Time Constraint - A time constraint shall be able to identify: a) the constrained time (expressed as an absolute time per B-2.22); and b) the type of constraint (at, at or before, at or after, or between 2 times).

DepartureOrArrivalIndicator	
B-3.4.2	Each Route/Trajectory Constraint may contain an indication that the constraint is relevant during the arrival or the departure phase.

RouteChanges

CruiseClimbStart	
B-3.3.4	Cruise Climb A Route/Trajectory Element may contain a Cruise Climb. The Cruise Climb must be indicated to start at the point associated with the Element. A Cruise Climb may be associated with a Route Element, Expanded Route Element, or Trajectory Element.

CruisingLevelChange	
B-3.3.2	Cruising Level Change A Route/Trajectory Element may contain a change in cruising level (expressed as per B-2.1). The Level Change may also specify whether the change is expected to begin or to complete at the position associated with the Element. A Level Change may be associated with a Route Element, Expanded Route Element, or Trajectory Element.

CruisingSpeedChange	
B-3.3.3	Cruising Speed Change A Route/Trajectory Element may contain a change in cruising speed (expressed per B-2.11). The Speed Change may also specify whether the change is expected to begin or to complete at the position associated with the Element. A Speed Change may be associated with a Route Element, Expanded Route Element, or Trajectory Element.

RouteChange	
B-3.3	Requested Change A Requested Change indicates Operator intent to change altitude, speed, and/or flight rules at the start point of a Route/Trajectory Element. Each Route/Trajectory Element may contain a requested change; which may specify speed, level, and/or flight rules. Cruising Level Change A Route/Trajectory Element may contain a change in cruising level (expressed as per B-2.1). The Level Change may also specify whether the change is expected to begin or to complete at the position associated with the Element. A Level Change may be associated with a Route Element, Expanded Route Element, or Trajectory Element. Cruising Speed Change A Route/Trajectory Element may contain a change in cruising speed (expressed per B-2.11). The Speed Change may also specify whether the change is expected to begin or to complete at the position associated with the Element. A Speed Change may be associated with a Route Element, Expanded Route Element, or Trajectory Element.

RouteChange

	<p>Cruise Climb A Route/Trajectory Element may contain a Cruise Climb. The Cruise Climb must be indicated to start at the point associated with the Element. A Cruise Climb may be associated with a Route Element, Expanded Route Element, or Trajectory Element.</p> <p>Change of Flight Rules A Route/Trajectory Element may contain a change of flight rules (to IFR or to VFR). The Change of Flight Rules must be indicated to start at the point associated with the Element. A Change of Flight Rules may be associated with a Route Element or Expanded Route Element, but not with a Trajectory Element.</p>
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UpperLevelChoice

Field Type 15c6	<p>Cruise climb</p> <p>The letter C followed by an oblique stroke; then the point at which cruise climb is planned to start, expressed exactly as in (c3) above, followed by an oblique stroke; then the speed to be maintained during cruise climb expressed exactly as in (a) above followed by the two levels defining the layer to be occupied during cruise climb; each level expressed as in (b) above, or the level above which cruise climb is planned, followed by the letters PLUS, without a space between them.</p>
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Activation

B-3.3.2	<p>Cruising Level Change</p> <p>A Route/Trajectory Element may contain a change in cruising level (expressed as per B-2.1). The Level Change may also specify whether the change is expected to begin or to complete at the position associated with the Element. A Level Change may be associated with a Route Element, Expanded Route Element, or Trajectory Element.</p>
B-3.3.3	<p>Cruising Speed Change</p> <p>A Route/Trajectory Element may contain a change in cruising speed (expressed per B-2.11). The Speed Change may also specify whether the change is expected to begin or to complete at the position associated with the Element. A Speed Change may be associated with a Route Element, Expanded Route Element, or Trajectory Element.</p>

AtOrAboveIndicator

Field Type 15c6	<p>Cruise climb</p> <p>The letter C followed by an oblique stroke; then the point at which cruise climb is planned to start, expressed exactly as in (c3) above, followed by an oblique stroke; then the speed to be maintained during cruise climb expressed exactly as in (a) above followed by the two levels defining the layer to be occupied during cruise climb; each level expressed as in (b) above, or the level above which cruise climb is planned, followed by the letters PLUS, without a space between them.</p>
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RouteTrajectory**ElapsedTimeLocationChoice**

Field Type 18-EET	<p>EET/ - Estimated Elapsed Time</p> <p>Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.</p> <p>Examples: - EET/CAP0745 XYZ0830 - EET/EINN0204</p>
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EstimatedElapsedTime

Field Type 18-EET	<p>EET/ - Estimated Elapsed Time</p> <p>Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.</p> <p>Examples: - EET/CAP0745 XYZ0830 - EET/EINN0204</p>
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FlightRouteInformation

B-3.1	<p>Flight Route / Trajectory Group</p> <p>A Flight Route / Trajectory Group shall support the data elements and relationships shown in Figure 30.</p> <p>A Flight Route / Trajectory Group shall be identified as one of the following, consistent with the definitions in section 10.1.1:</p> <ul style="list-style-type: none"> a) Desired; b) Negotiating; c) Agreed; <p>Aircraft Take-Off Mass - Predicted take-off mass shall be allowed for each Route / Trajectory Group submitted per B-2.35. Take-off mass is associated with the Route/Trajectory since each contemplated route/trajectory could have different fuel loads. There is no condition under which take-off mass should be required.</p> <p>Requested Cruising Speed - The requested cruise speed shall be provided as per B-2.11. The requested cruise speed shall be required for each Route/Trajectory group submitted. If there are no requested changes or constraints along the route, this will be the sole cruising speed used for estimation.</p> <p>Requested Cruising Level - The requested cruise level shall be provided as per B-2.1. The requested cruising level shall be required for each Route/Trajectory group submitted. If there are no requested changes or constraints along the route, this will be the sole cruising level used for estimation.</p> <p>Total Estimated Elapsed Time - The total estimated elapsed time from take-off to arrival (see definition in PANS-ATM chapter 1) should be provided when a complete set of trajectory points are not included.</p>
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MeteorologicalData

B-3.5.7	Wind Vector - The predicted wind vector at the Trajectory Point provided in accordance with Annex 3, Chapter 2 and the desired accuracy specified in Annex 3, Attachment B.
B-3.5.9	Temperature - The predicted temperature at the Trajectory Point.

PerformanceProfile

B-3.7.2	<p>Performance Profile</p> <p>Aircraft performance data can be provided in the form of a zero-wind, standard atmosphere profile reflective of the flight capabilities and desired parameters. Separate profiles should be provided for climb and descent. The profile should not include any flight-specific constraints such as altitude or speed restrictions applicable to the route of flight. Constraints that are always applicable (e.g., a 250 knot constraint applicable to all flights below 10,000 feet), and gradients required for obstacle clearance along the route of flight should be incorporated into the profile.</p> <p>A performance profile is expressed as a sequence of profile points each containing: distance, time duration, flight level or altitude, and true airspeed.</p>
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PerformanceProfile

Climb profiles begin at take-off with distance and time expressed relative to the point associated with take-off, nominally the "Wheels Off" point. Climb profiles end at the maximum operational cruise altitude for the specific route/trajectory.

Descent profiles begin at a top-of-descent at the maximum operational cruise altitude for the specific route/trajectory. Time and distance are expressed relative to the top-of-descent. Descent profiles end at touchdown.

PlannedDelay

B-3.6

Planned Delay

A Planned Delay identifies a time duration for which a flight is expected to loiter; i.e. the flight will interrupt its progression along the route at the associated point and expect to request resumption of its progression along the filed route after the indicated duration.

A Planned Delay may be associated with a specified route point, meaning that the delay starts and ends at that point.

A Planned Delay may be associated with a specified route Element, meaning that the delay starts at the beginning of the Element and ends at the end of the Element.

Expression of a Planned Delay shall include an indication of the type and reason for the delay

Point4DTimeChoice

B-3.5.3

Time - The predicted time at the Trajectory Point, expressed as a duration since the Initial Prediction Point, or as an absolute time, using format and content defined in B-2.21 and B-2.22 respectively.

ProfilePoint

B-3.7.4

A performance profile is expressed as a sequence of profile points each containing: distance, time duration, flight level or altitude, and true airspeed.

RouteDesignatorToNextElementChoice

B-3.2.6

Route to Next Element

An indication that that route to the next element is either:

- a) Direct
- b) On an ATS Route (includes Standard Departure Route, Standard Arrival Route)
- c) Unspecified (e.g. will be indicated as 'unspecified' on a route element with a planned delay)

When on an ATS Standard Departure, or Standard Arrival Route, a route identifier as described in the appropriate section of B-2.3 is included.

RouteTrajectoryElement

B-3.2

Route/Trajectory Element

A Route/Trajectory Element defines a portion of the route and can be at one of three levels as described below:

- a) A Route Element defined by a Significant Point and the ATS Route (or direct route) to be followed until a change in route.
- b) An Expanded Route Element defined by a Significant point, and the ATS Route (or direct route) to be followed until the next Significant Point, which may be along the same ATS Route.
- c) A Trajectory Element defined by a geographic point and the ATS Route (or direct route) followed until the next trajectory point.

RouteTrajectoryElement**Along-Route Distance**

Each Route/Trajectory Element shall allow inclusion of the along-route distance of the start point of that element. Along-Route Distance may be specified in units of nautical miles or kilometres and should at least allow precision to within 1 meter or equivalent.

Modified Route Indicator

Each Route/Trajectory Element shall allow indication that the element is different from the operator submitted route.

Route Truncation Indicator

A Route/Trajectory Element shall allow indication that the route provided is incomplete and ends (N.B. cannot be used to truncate the beginning of the route) at the current element. When a Route Truncation Indicator is set, the following conditions should hold:

- a) A Route Element Start Point (B-3.2.5) should be included;
- b) A Route To Next Element (B-3.2.6) should not be included; and
- c) There should be no additional Route/Trajectory Elements.

Route Element Start Point

A Route Element Start Point shall be specified as a Position as specified in B-2.2, or as an Aerodrome as specified in B-2.4. When the Route Element Start Point is indicated by a coded designator assigned to an en-route point, the geographic position of the point may optionally be provided.

Route to Next Element

An indication that that route to the next element is either:

- a) Direct
- b) On an ATS Route (includes Standard Departure Route, Standard Arrival Route)
- c) Unspecified (e.g. will be indicated as 'unspecified' on a route element with a planned delay)

When on an ATS Standard Departure, or Standard Arrival Route, a route identifier as described in the appropriate section of B-2.3 is included.

RouteTrajectoryGroup**B-3.1****Flight Route / Trajectory Group**

A Flight Route / Trajectory Group shall support the data elements and relationships shown in Figure 30.

A Flight Route / Trajectory Group shall be identified as one of the following, consistent with the definitions in section 10.1.1:

- a) Desired;
- b) Negotiating;
- c) Agreed;

Aircraft Take-Off Mass - Predicted take-off mass shall be allowed for each Route / Trajectory Group submitted per B-2.35. Take-off mass is associated with the Route/Trajectory since each contemplated route/trajectory could have different fuel loads. There is no condition under which take-off mass should be required.

Requested Cruising Speed - The requested cruise speed shall be provided as per B-2.11. The requested cruise speed shall be required for each Route/Trajectory group submitted. If there are no requested changes or constraints along the route, this will be the sole cruising speed used for estimation.

Requested Cruising Level - The requested cruise level shall be provided as per B-2.1. The requested cruising level shall be required for each Route/Trajectory group submitted. If there are no requested changes or constraints along the route, this will be the sole cruising level used for estimation.

Total Estimated Elapsed Time - The total estimated elapsed time from take-off to arrival (see

RouteTrajectoryGroup

definition in PANS-ATM chapter 1) should be provided when a complete set of trajectory points are not included.

SpeedSchedule

B-3.7.7

Speed Schedule

A climb and descent speed schedule may be provided as input for more accurate trajectory construction. Each speed schedule is comprised of a target Indicated Airspeed during the initial phase of flight and subsequent Mach Number representing speed targets for the flight in transition assuming no flight-specific constraints.

TrajectoryPoint4D

B-3.5

Trajectory Point

A Trajectory Point may be specified as the start point of a Route/Trajectory Element. Note that a Trajectory Point may be specified along with a Route Element Start Point, in which case it is the Trajectory Point associated with the start of a Route Element or Expanded Route Element. If specified without a Route Element Start Point then it is for a Trajectory Element that is along a route Element but does not begin at the start of the Route Element.

Geographic Position - The position on the earth, expressed as a latitude/longitude per B-2.2.

Time - The predicted time at the Trajectory Point, expressed as a duration since the Initial Prediction Point, or as an absolute time, using format and content defined in B-2.21 and B-2.22 respectively.

Level - The predicted level at the Trajectory Point, expressed as an altitude level using the format and content defined in B-2.1.

Predicted Airspeed - The predicted indicated airspeed at the Trajectory Point, expressed using the format and content defined in B-2.11.

Predicted Ground speed - The predicted ground speed at the Trajectory Point, expressed using the format and content defined in B-2.11.

Wind Vector - The predicted wind vector at the Trajectory Point provided in accordance with Annex 3, Chapter 2 and the desired accuracy specified in Annex 3, Attachment B.

Assumed Altimeter Setting- The predicted altimeter setting at the Trajectory Point.

Temperature - The predicted temperature at the Trajectory Point.

Trajectory Point Property - Each Trajectory Point can indicate the flight events of interest that occur at that point, including all of the events identified in Table 6. Each Trajectory Point Property shall have the ability to include reference data and a textual description.

TrajectoryPointProperty

B-3.5.10

Trajectory Point Property

Each Trajectory Point can indicate the flight events of interest that occur at that point, including all of the events identified in Table B- 1. Each Trajectory Point Property shall have the ability to include reference data and a textual description.

TrajectoryPointReference

B-3.5.10

Trajectory Point Property

Each Trajectory Point can indicate the flight events of interest that occur at that point, including all of the events identified in Table B- 1. Each Trajectory Point Property shall have the ability to

TrajectoryPointReference

include reference data and a textual description.

FlightRules

B-3.3.5

Change of Flight Rules

A Route/Trajectory Element may contain a change of flight rules (to IFR or to VFR). The Change of Flight Rules must be indicated to start at the point associated with the Element. A Change of Flight Rules may be associated with a Route Element or Expanded Route Element, but not with a Trajectory Element.

ModifiedRouteItemIndicator

B-3.2.3

Modified Route Indicator

Each Route/Trajectory Element shall allow indication that the element is different from the operator submitted route.

OtherRouteDesignator

B-3.2.6

Route to Next Element

An indication that that route to the next element is either:

- a) Direct
- b) On an ATS Route (includes Standard Departure Route, Standard Arrival Route)
- c) Unspecified (e.g. will be indicated as 'unspecified' on a route element with a planned delay)

When on an ATS Standard Departure, or Standard Arrival Route, a route identifier as described in the appropriate section of B-2.3 is included.

PlannedDelayType

B-3.6.4

Expression of a Planned Delay shall include an indication of the type and reason for the delay

RouteTruncationIndicator

B-3.2.4

Route Truncation Indicator

A Route/Trajectory Element shall allow indication that the route provided is incomplete and ends (N.B. cannot be used to truncate the beginning of the route) at the current element. When a Route Truncation Indicator is set, the following conditions should hold:

- a) A Route Element Start Point (B-3.2.5) should be included;
- b) A Route To Next Element (B-3.2.6) should not be included; and
- c) There should be no additional Route/Trajectory Elements.

TrajectoryPointPropertyType

B-3.5.10

Trajectory Point Property

Each Trajectory Point can indicate the flight events of interest that occur at that point, including all of the events identified in Table B- 1. Each Trajectory Point Property shall have the ability to include reference data and a textual description.