

Volume 12

***OGC CDB Navaids Attribution and Navaids  
Attribution Enumeration Values***

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**Open Geospatial Consortium**

Submission Date: 2020-01-21

Approval Date: 2020-xx-xx

Publication Date: 2020-xx-xx

External identifier of this OGC® document: <http://www.opengis.net/doc/BP/CDB-navaids/1.2>

Additional Formats (informative): 

Internal reference number of this OGC® document: 16-003r4

Version: 1.2

Category: OGC® Best Practice

Editor: Carl Reed

## **Volume 12: OGC CDB Navaids Attribution and Navaids Attribution Enumeration Values**

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Document type: OGC® Best Practice

Document subtype:

Document stage: Candidate

Document language: English

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## **i. Abstract**

This OGC Best Practice, a volume of the CDB document set, provides a list and description of the instance-level attribution fields held in Navigation Dataset Instance Attribute files. Please refer to section 3.7 of the CDB Core Standard (Volume 1) for information on the tables that use the Navaids key words.

## **ii. Keywords**

The following are keywords to be used by search engines and document catalogues.

ogcdoc, OGC document, ogcdoc, cdb, navaids

## **iii. Preface**

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The Open Geospatial Consortium shall not be held responsible for identifying any or all such patent rights.

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## **iv. Submitting organizations**

The following organizations submitted this Document to the Open Geospatial Consortium (OGC):

Organization name(s)

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- Carl Reed, OGC Individual Member
- Envitia, Ltd
- Glen Johnson, OGC Individual Member
- KaDSci, LLC
- Laval University
- Open Site Plan
- University of Calgary
- UK Met Office

The OGC CDB standard is based on and derived from an industry developed and maintained specification, which has been approved and published as OGC Document 15-003: OGC Common DataBase Volume 1 Main Body. An extensive listing of contributors to the legacy industry-led CDB specification is at Chapter 11, pp 475-476 in that OGC Best Practices Document ([https://portal.opengeospatial.org/files/?artifact\\_id=61935](https://portal.opengeospatial.org/files/?artifact_id=61935)).

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# Chapter 1. Scope

This informative CDB document provides a list and description of the instance-level attribution fields held in Navigation *Dataset Instance Attribute* files. This content was originally in Annexes H and I, Volume 2 CDB Best Practice.

For ease of editing and review, the standard has been separated into 12 Volumes and a schema repository.

For ease of editing and review, the standard has been separated into 16 Volumes, one being a schema repository.

- Volume 0: OGC CDB Companion Primer for the CDB standard (Best Practice).
- Volume 1: OGC CDB Core Standard: Model and Physical Data Store Structure. The main body (core) of the CDB standard (Normative).
- Volume 2: OGC CDB Core Model and Physical Structure Annexes (Best Practice).
- Volume 3: OGC CDB Terms and Definitions (Normative).
- Volume 4: OGC CDB Rules for Encoding CDB Vector Data using Shapefiles (Best Practice).
- Volume 5: OGC CDB Radar Cross Section (RCS) Models (Best Practice).
- Volume 6: OGC CDB Rules for Encoding CDB Models using OpenFlight (Best Practice).
- Volume 7: OGC CDB Data Model Guidance (Best Practice).
- Volume 8: OGC CDB Spatial Reference System Guidance (Best Practice).
- Volume 9: OGC CDB Schema Package: <http://schemas.opengis.net/cdb/> provides the normative schemas for key features types required in the synthetic modelling environment. Essentially, these schemas are designed to enable semantic interoperability within the simulation context (Normative).
- Volume 10: OGC CDB Implementation Guidance (Best Practice).
- Volume 11: OGC CDB Core Standard Conceptual Model (Normative).
- Volume 12: OGC CDB Navaids Attribution and Navaids Attribution Enumeration Values (Best Practice).
- Volume 13: OGC CDB Rules for Encoding CDB Vector Data using GeoPackage (Normative, Optional Extension).
- Volume 14: OGC CDB Guidance on Conversion of CDB Shapefiles into CDB GeoPackages (Best Practice).
- Volume 15: OGC CDB Optional Multi-Spectral Imagery Extension (Normative).

# **Chapter 2. Conformance**

Not Applicable

# **Chapter 3. References**

The following normative documents contain provisions that, through reference in this text, constitute provisions of this document. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the normative document referred to applies.

# **Chapter 4. Terms and Definitions**

This document uses the terms defined in Sub-clause 5.3 of [OGC 06-121r8], which is based on the ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards. In particular, the word “shall” (not “must”) is the verb form used to indicate a requirement to be strictly followed to conform to this standard.

# **Chapter 5. Conventions**

This section provides details and examples for any conventions used in the document. Examples of conventions are symbols, abbreviations, use of XML schema, or special notes regarding how to read the document.

## **5.1. Identifiers**

No requirements.

# Chapter 6. Navaids Attribution Tables

This informative document provides a list and description of the instance-level attribution fields held in Navigation *Dataset Instance Attribute* files. The attribute name is limited to a maximum of 10 characters.

The Logical data type in column 2 of the following tables refers to the dBASE III Logical data type. A true value is defined as one of the letters T, t, Y, and y; while the false value is defined as F, f, N, and n.

## 6.1. Airport

| Attribute Name | Data Type         | Range    | Unit | Key  | Description  |
|----------------|-------------------|----------|------|------|--|
| StoraNumbe     | Uint64            | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical           | 1        | -    |      | Absolute Height above surface level Flag. Always true.                     |
| AlterNam       | String            | 50 chars | -    |      | Alternate name other than the official name that can be used occasionally. |
| AsCoStNumb     | Uint64            | -        | -    |      | Associated Comms record storage number                                     |
| BeacoAvail     | Logical           | Boolean  | -    |      | Indicates if a rotating beacon is present.                                 |
| City           | String            | 50 chars | -    |      | Airport city name.   |
| CivMilTyp      | CivilMilitaryType | 0-6      | -    |      | Airport usage type (civil, military, etc.)                                 |
| ClearStatu     | ClearanceStatus   | 0-3      | -    |      | Clearance status.  |
| Country        | CountryEntry      | 0-336    | -    | 2116 | Country where the airport is located.                                      |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| DayliTim              | Float32          | +/-24        | Hrs         |            | Difference to Zulu time based on the daylight saving time.             |
| DayTimFram            | String           | 100 chars    | -           |            | Timeframe when daylight saving time is observed by a country.          |
| FlipPage              | String           | 75 chars     | -           |            | Related pages for that airport in the companion FLIP.                  |
| FuelType              | String           | memo         | -           |            | Fuel type available.   |
| HydElePres            | Logical          | Boolean      | -           |            | Indication of the presence of a hydrographic element near the airport. |
| IataCode              | String           | 6 chars      | -           |            | Airport IATA designator.   |
| IcaoCode              | String           | 4 chars      | -           | 2103       | Airport ICAO area code.  |
| Ident                 | String           | 6 chars      | -           | 2102       | Airport ICAO ident.  |
| IfrCapab              | Logical          | Boolean      | -           |            | Indicates if the airport has published IFR approaches.                 |
| IslanGrou             | String           | 50 chars     | -           |            | Airport associated with islands or group of islands.                   |
| Jasu                  | String           | 100 chars    | -           |            | Type of Jet Aircraft Starting Units (JASU) available.                  |
| LonRunLeng            | Uint32           | -            | Ft          |            | Length of the longest runway of the airport.                           |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| LonRunSurf            | PavementType           | 0-3          | -           |            | Surface type of the longest runway.   |
| MagTruIndi            | MagneticTrueIndication | 0-6          | -           |            | Indicates if the details and procedures are given relative to Magnetic or True North. |
| MagneVaria            | Float32                | +/-180       | Deg         |            | Magnetic variation.   |
| MgrsPosit             | String                 | 20 chars     | -           |            | MGRS position given using the UTM or the UPS grid.                                    |
| Name                  | String                 | 100 chars    | -           |            | Official name.  |
| NavIcaCod             | String                 | 4 chars      | -           |            | Recommended navaid ICAO code.   |
| Navailden             | String                 | 6 chars      | -           |            | Recommended navaid ident.   |
| Notam                 | NotamSystem            | 0-4          | -           |            | Notam service.  |
| OilType               | String                 | 75 chars     | -           |            | Type of oil available.  |
| OperaAgenc            | String                 | 255 chars    | -           |            | Primary operating agency.   |
| OperaHour             | OperatingHours         | 0-4          | -           |            | Operating hours of the airport.   |
| Point1                | GeoCoordinate          | x,y,z        | -           |            | Position (latitude, longitude, altitude) of the NavObject.                            |
| Remark                | String                 | memo         | -           |            | Essential remarks for terminal procedures.  |
| ServiRemar            | String                 | Memo         | -           |            | Service remarks for airport.  |
| SpeedLimit            | Uint32                 | -            | Kts         |            | Speed limit in knots.   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| SpeLimAlti            | Sint32           | -            | Ft          |            | Altitude below where speed limits may be imposed  |
| StateName             | StateEntry       | 0-51         | -           |            | State or province where the airport is located.   |
| SupFluTyp             | String           | 50 chars     | -           |            | Type of available fluids/system/oxygen/nitrogen .   |
| TerraImpac            | Logical          | Boolean      | -           |            | Indicates a terrain impact on the airport.  |
| Timezone              | Float32          | +/-24        | Hrs         |            | Difference to Zulu time.  |
| TransAltit            | Sint32           | -            | Ft          |            | Upper altitude limit for which the vertical position of an A/C is controlled by reference to altitudes (MSL). |
| TransLeve             | Sint32           | -            | Ft          |            | Lowest flight level available to use above the transition altitude.   |

## 6.2. AirRefueling

| <b>Attribute Name</b> | <b>Data type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |

| <b>Attribute Name</b> | <b>Data type</b>             | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------------------|--------------|-------------|------------|--|
| AiReOpIden            | String                       | 20 chars     | -           | 2102       | Air refueling operation identifier   |
| AltitDescr            | RefuelingAltitudeDescription | 0-4          | -           |            | Indicates how Altitude 1 and 2 should be used (Refuel1)                      |
| AltitDesc1            | RefuelingAltitudeDescription | 0-4          | -           |            | Indicates how Altitude 1 and 2 should be used (Refuel2)                      |
| AltitDesc2            | RefuelingAltitudeDescription | 0-4          | -           |            | Indicates how Altitude 1 and 2 should be used (Refuel3)                      |
| ApRaBeCoSe            | Uint32                       | -            | -           |            | APN 69/134/135 radar beacon code setting                                     |
| ApRaBeCoS1            | Uint32                       | -            | -           |            | APX 78 radar beacon code setting   |
| BackuFrequ            | Uint64                       | -            | Hz          |            | Backup UHF frequency   |
| ComTelNumb            | String                       | 100          | -           |            | Commercial telephone number(s) of the scheduling unit                        |
| Country               | CountryEntry                 | 0-336        | -           | 2116       | Country where the refueling track or anchor is located                       |
| Direction             | RefuelingDirection           | 0-8          | -           | 2122       | Predominant direction of the refueling track or anchor at the point of entry |
| DsnTelNumb            | String                       | 100          | -           |            | Defense switched network telephone number                                    |
| IcaoCode              | String                       | 4            | -           |            | ICAO code at point of entry  |

| <b>Attribute Name</b> | <b>Data type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| PrimaFrequ            | Uint64           | -            | Hz          |            | Primary UHF frequency  |
| ReceiChann            | Uint32           | -            | -           |            | Air-to-Air Y-band tacan channel used during refueling operations |
| Point                 | GeoCoordinate    | x,y,z        | -           |            | Reference Position (latitude, longitude, altitude)               |
| RefueAltit            | Sint32           | -            | Ft          |            | Altitude 1 to be used with altitude description 1                |
| RefueAlti1            | Sint32           | -            | Ft          |            | Altitude 2 to be used with altitude description 1                |
| RefueAlti2            | Sint32           | -            | Ft          |            | Altitude 1 to be used with altitude description 2                |
| RefueAlti3            | Sint32           | -            | Ft          |            | Altitude 2 to be used with altitude description 2                |
| RefueAlti4            | Sint32           | -            | Ft          |            | Altitude 1 to be used with altitude description 3                |
| RefueAlti5            | Sint32           | -            | Ft          |            | Altitude 2 to be used with altitude description 3                |
| Remark                | String           | memo         | -           |            | Remarks are limited to essential information                     |
| SchedUni              | String           | 130          | -           |            | General information on scheduling unit (name, area, etc.)        |

| <b>Attribute Name</b> | <b>Data type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------------|--------------|-------------|------------|--|
| TankeChann            | Uint32                 | -            | -           |            | Air-to-Air Y-band tacan channel used during refueling operations |
| Type                  | RefuelingOperationType | 0-3          | -           |            | Type of refueling operation                                      |

## 6.3. AirRefuelingControl

| <b>Attribute Name</b> | <b>Data type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.   |
| AiReOpIden            | String           | 20 chars     | -           | 2108       | Air refueling operation identifier   |
| AiReStNumb            | Uint64           | -            | -           |            | Associated air refueling record storage number   |
| AiTrCoCent            | String           | 50 chars     | -           |            | ATC controlling airspace where refueling track/anchor is located                                     |
| AiTrCoCeRe            | String           | memo         | -           |            | Remarks pertaining to the controlling agency, frequency, frequency direction, or general information |

| <b>Attribute Name</b> | <b>Data type</b>              | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|-------------------------------|--------------|-------------|------------|--|
| AtcCenMult            | Uint32                        | -            | -           | 2115       | Differentiates between different entries for the same ATC center             |
| Country               | CountryEntry                  | 0-336        | -           |            | Country where the air traffic control center is located                      |
| Direction             | RefuelingDirection            | 0-8          | -           | 2122       | Predominant direction of the refueling track or anchor at the point of entry |
| Frequency1            | Uint64                        | -            | Hz          |            | Center frequency 1   |
| Frequency2            | Uint64                        | -            | Hz          |            | Center frequency 2   |
| Frequency3            | Uint64                        | -            | Hz          |            | Center frequency 3   |
| Frequency4            | Uint64                        | -            | Hz          |            | Center frequency 4   |
| Frequency5            | Uint64                        | -            | Hz          |            | Center frequency 5   |
| FreDirRest            | FrequencyDirectionRestriction | 0-3          | -           |            | Direction in which the specified frequency applies                           |
| FreDirRes1            | FrequencyDirectionRestriction | 0-3          | -           |            | Direction in which the specified frequency applies                           |
| FreDirRes2            | FrequencyDirectionRestriction | 0-3          | -           |            | Direction in which the specified frequency applies                           |

| <b>Attribute Name</b> | <b>Data type</b>              | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                 |
|-----------------------|-------------------------------|--------------|-------------|------------|--|
| FreDirRes3            | FrequencyDirectionRestriction | 0-3          | -           |            | Direction in which the specified frequency applies |
| FreDirRes4            | FrequencyDirectionRestriction | 0-3          | -           |            | Direction in which the specified frequency applies |
| IcaoCode              | String                        | 4 chars      | -           |            | ICAO code  |
| Point1                | GeoCoordinate                 | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude) |
| RefPoiTyp             | RefuelingPoint Type           | 0-7          | -           |            | Type of refueling point                            |

## 6.4. AirRefuelingFootnote

| <b>Attribute Name</b> | <b>Data type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AiReOpIden            | String           | 20 chars     | -           | 2108       | Air refueling operation identifier                     |
| AiReStNumb            | Uint64           | -            | -           |            | Associated air refueling record storage number         |
| Country               | CountryEntry     | 0-336        | -           |            | Country where the refueling operation is located       |

| Attribute Name | Data type          | Range   | Unit | Key | Description  |
|----------------|--------------------|---------|------|-----|--|
| Direction      | RefuelingDirection | 0-8     | -    |     | Predominant direction of the refueling track or anchor at the point of entry |
| Footnote       | String             | memo    | -    |     | Footnote   |
| IcaoCode       | String             | 4 chars | -    |     | ICAO code  |
| Point1         | GeoCoordinate      | x,y,z   | -    |     | Reference Position (longitude, latitude, altitude)                           |

## 6.5. AirRefuelingPoint

| Attribute Name | Data type    | Range    | Unit | Key  | Description  |
|----------------|--------------|----------|------|------|--|
| StoraNumbe     | Uint64       | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical      | 1        | -    |      | Absolute Height above surface level Flag. Always true. |
| AiReOpIden     | String       | 20 chars | -    | 2108 | Air refueling operation identifier                     |
| AiReStNumb     | Uint64       | -        | -    |      | Associated air refueling record storage number         |
| Bearing        | Uint32       | 0-359    | Deg  |      | Bearing TO navaid (brg FROM navaid if DME)             |
| CoWiNaFla      | Logical      | Boolean  | -    |      | Indicates if point is collocated with a navaid         |
| Country        | CountryEntry | 0-336    | -    |      | Country where the refueling point is located           |

| Attribute Name | Data type           | Range   | Unit | Key  | Description  |
|----------------|---------------------|---------|------|------|--|
| Direction      | RefuelingDirection  | 0-8     | -    |      | Predominant direction of the refueling track or anchor at the point of entry |
| Distance       | Uint32              | -       | Nm   |      | Distance to navaid   |
| IcaoCode       | String              | 4 chars | -    |      | ICAO code  |
| Ident          | String              | 6 chars | -    | 2102 | Refueling point identifier   |
| NavaiCount     | CountryEntry        | 0-336   | -    |      | Navaid country   |
| NavaiIden      | String              | 6 chars | -    |      | Navaid identifier  |
| NavKeyCod      | Uint32              | -       | -    |      | Navaid key code  |
| NavaidType     | NavaidType          | 0-15    | -    |      | Navaid type  |
| Point1         | GeoCoordinate       | x,y,z   | -    |      | Position (longitude, latitude, altitude) of refueling point                  |
| SequeNumbe     | Uint32              | -       | -    | 2115 | Refueling point sequence number  |
| Type           | RefuelingPoint Type | 0-7     | -    |      | Type of refueling point  |

## 6.6. AirRefuelingSegment

| Attribute Name | Data type | Range    | Unit | Key  | Description  |
|----------------|-----------|----------|------|------|--|
| StoraNumbe     | Uint64    | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical   | 1        | -    |      | Absolute Height above surface level Flag. Always true. |
| AiReOpIden     | String    | 20 chars | -    | 2108 | Air refueling operation identifier                     |

| Attribute Name | Data type            | Range   | Unit | Key | Description  |
|----------------|----------------------|---------|------|-----|--|
| AiReStNumb     | Uint64               | -       | -    |     | Associated air refueling record storage number                               |
| Point2         | GeoCoordinate        | x,y,z   | -    |     | Arc origin position (longitude, latitude, altitude)                          |
| ArcSegDeri     | ArcSegmentDerivation | 0-3     | -    |     | Indicates how the arc segment is defined                                     |
| Bearing1       | Float32              | +/-180  | Deg  |     | Bearing 1 from center coordinates or navaid                                  |
| Bearing2       | Float32              | +/-180  | Deg  |     | Bearing 2 from center coordinates or navaid                                  |
| Country        | CountryEntry         | 0-336   | -    |     | Country where the refueling segment is located                               |
| Direction      | RefuelingDirection   | 0-8     | -    |     | Predominant direction of the refueling track or anchor at the point of entry |
| IcaoCode       | String               | 4 chars | -    |     | ICAO code  |
| NavaiCount     | CountryEntry         | 0-336   | -    |     | Navaid country   |
| NavaiIden      | String               | 6 chars | -    |     | Navaid identifier  |
| NavKeyCod      | Uint32               |         | -    |     | Navaid key code  |
| NavaidType     | NavaidType           | 0-15    | -    |     | Navaid type  |
| Point1         | GeoCoordinate        | x,y,z   | -    |     | Position (longitude, latitude, altitude) of refueling point                  |
| Radius1        | Float32              | -       | Nm   |     | Radius 1   |

| <b>Attribute Name</b> | <b>Data type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                   |
|-----------------------|------------------|--------------|-------------|------------|--|
| Radius2               | Float32          | -            | Nm          |            | Radius 2   |
| Point3                | GeoCoordinate    | x,y,z        | -           |            | Segment end position (longitude, latitude, altitude) |
| SegmeNumbe            | Uint32           | -            | -           | 2115       | Defines relative position of airspace segment        |
| Shape                 | BoundaryShape    | 0-8          | -           |            | Type of airspace segment being plotted               |

## 6.7. Airspace Boundary

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.       |
| AirwaLeve             | AirwayLevel      | 0-3          | -           |            | Airspace structure in which boundary is effective (high/low) |
| Class                 | String           | 2 chars      | -           |            | Airspace boundary class                                      |
| ClaExcFla             | Logical          | Boolean      | -           |            | Flag indicating exceptions to the airspace class             |
| ClaExcRema            | String           | memo         | -           |            | Provides the details of the exception in the airspace        |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|-------------------|--------------|-------------|------------|---|
| ComCalSig             | String            | 40 chars     | -           | 2111       | Call sign of the communications facilities                  |
| ContrAutho            | String            | 60 chars     | -           |            | Office responsible for air traffic within airspace          |
| Country               | CountryEntry      | 0-336        | -           | 2116       | Country where the boundary is located                       |
| Frequency             | Uint64            | -            | Hz          |            | Frequency for communicating with identified facility        |
| Frequenc1             | Uint64            | -            | Hz          |            | Frequency 2 used for communicating with identified facility |
| IcaoCode              | String            | 4 chars      | -           |            | ICAO code of the airspace boundary                          |
| Ident                 | String            | 6 chars      | -           | 2102       | ICAO ident of airspace boundary                             |
| LowEffAlti            | Sint32            | -            | Ft          |            | Lower vertical limit of the given airspace                  |
| LoEfAlRefe            | AltitudeReference | 0-4          | -           |            | Lower effective altitude reference                          |
| LowRvsAlti            | Sint32            | -            | Ft          |            | Lower vertical limit of the given RVSM airspace             |
| Name                  | String            | 50 chars     | -           |            | Official name of the airspace boundary                      |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude)          |

| <b>Attribute Name</b> | <b>Data Type</b>     | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|----------------------|--------------|-------------|------------|---|
| ReqNavPerf            | Float32              | -            | Nm          |            | Required performance accuracy necessary for operation within airspace |
| Type                  | AirspaceBoundaryType | 0-14         | -           |            | Airspace boundary type  |
| UppEffAlti            | Sint32               | -            | Ft          |            | Upper vertical limit of the given airspace                            |
| UpEfAlRef             | AltitudeReference    | 0-4          | -           |            | Upper effective altitude reference                                    |
| UppRvsAlti            | Sint32               | -            | Ft          |            | Upper vertical limit of the given RVSM airspace                       |

## 6.8. AirwayRestriction

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumber           | Uint64           | -            | -           | 2101       | Storage number.  |
| BloAltTo              | Logical          | Boolean      | -           |            | Consider restriction altitude 1 to 2 as a restricted range |
| BloAltTo1             | Logical          | Boolean      | -           |            | Consider restriction altitude 2 to 3 as a restricted range |
| BloAltTo2             | Logical          | Boolean      | -           |            | Consider restriction altitude 3 to 4 as a restricted range |
| BloAltTo3             | Logical          | Boolean      | -           |            | Consider restriction altitude 4 to 5 as a restricted range |

| <b>Attribute Name</b> | <b>Data Type</b>   | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|--------------------|--------------|-------------|------------|--|
| BloAltTo4             | Logical            | Boolean      | -           |            | Consider restriction altitude 5 to 6 as a restricted range |
| BloAltTo5             | Logical            | Boolean      | -           |            | Consider restriction altitude 6 to 7 as a restricted range |
| BlockAltit            | Logical            | Boolean      | -           |            | Consider restriction altitude 7 as a restricted altitude   |
| Country               | CountryEntry       | 0-336        | -           | 2116       | Country where the start fix point is located               |
| CruisTabl             | CruiseTable        | 0-4          | -           |            | Cruise table indicator                                     |
| EndDate               | String             | 12 chars     | -           |            | End date   |
| EnFiIcCod             | String             | 4 chars      | -           |            | ICAO code of end fix point                                 |
| EndFixIden            | String             | 6 chars      | -           |            | End fix point identifier                                   |
| ExcluIndic            | ExclusionIndicator | 0-4          | -           |            | Altitudes to be excluded                                   |
| OpeEndDay             | DayOfWeek          | 0-7          | -           |            | Time of operation end day                                  |
| OpeEndDay1            | DayOfWeek          | 0-7          | -           |            | Time of operation end day                                  |
| OpeEndDay2            | DayOfWeek          | 0-7          | -           |            | Time of operation end day                                  |
| OpeEndDay3            | DayOfWeek          | 0-7          | -           |            | Time of operation end day                                  |
| OpeStaDay             | DayOfWeek          | 0-7          | -           |            | Time of operation start day                                |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>           |
|-----------------------|------------------|--------------|-------------|------------|------------------------------|
| OpeStaDay1            | DayOfWeek        | 0-7          | -           |            | Time of operation start day  |
| OpeStaDay2            | DayOfWeek        | 0-7          | -           |            | Time of operation start day  |
| OpeStaDay3            | DayOfWeek        | 0-7          | -           |            | Time of operation start day  |
| OpeEndTime            | String           | 20 chars     | -           |            | Time of operation end time   |
| OpeEndTim1            | String           | 20 chars     | -           |            | Time of operation end time   |
| OpeEndTim2            | String           | 20 chars     | -           |            | Time of operation end time   |
| OpeEndTim3            | String           | 20 chars     | -           |            | Time of operation end time   |
| OpeStaTime            | String           | 20 chars     | -           |            | Time of operation start time |
| OpeStaTim1            | String           | 20 chars     | -           |            | Time of operation start time |
| OpeStaTim2            | String           | 20 chars     | -           |            | Time of operation start time |
| OpeStaTim3            | String           | 20 chars     | -           |            | Time of operation start time |
| RestrAltit            | Sint32           | -            | Ft          |            | Restriction altitude         |
| RestrAlti1            | Sint32           | -            | Ft          |            | Restriction altitude         |
| RestrAlti2            | Sint32           | -            | Ft          |            | Restriction altitude         |
| RestrAlti3            | Sint32           | -            | Ft          |            | Restriction altitude         |
| RestrAlti4            | Sint32           | -            | Ft          |            | Restriction altitude         |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>           |
|-----------------------|------------------|--------------|-------------|------------|------------------------------|
| RestrAlti5            | Sint32           | -            | Ft          |            | Restriction altitude         |
| RestrAlti6            | Sint32           | -            | Ft          |            | Restriction altitude         |
| RestrIden             | Uint32           | 6            | -           |            | Restriction identifier       |
| RestrNot              | String           | memo         | -           |            | Restriction note             |
| RestrTyp              | RestrictionType  | 0-4          | -           |            | Restriction type             |
| RouteIdent            | String           | 6 chars      | -           | 2102       | Route identifier             |
| StartDate             | String           | 12 chars     | -           |            | Start date                   |
| StFiIcCod             | String           | 4 chars      | -           |            | ICAO code of start fix point |
| StaFixIden            | String           | 6 chars      | -           |            | Start fix point identifier   |
| TimeCode              | TimeCode         | 0-4          | -           |            | Time code                    |
| TimeIndica            | TimeIndicator    | 0-3          | -           |            | Time indicator               |

## 6.9. Approach

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|---------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64              | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical             | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirStoNumb            | Uint64              | -            | -           |            | Airport storage number                                 |
| Altitude1             | Sint32              | -            | Ft          |            | First altitude limit                                   |
| AltitTyp              | AltitudeType        | 0-4          | -           |            | Altitude 1 type  |
| Altitude2             | Sint32              | -            | Ft          |            | Second altitude limit                                  |
| AltitTyp1             | AltitudeType        | 0-4          | -           |            | Altitude 2 type  |
| AltitDescr            | AltitudeDescription | 0-13         | -           |            | Altitude description                                   |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| ArcRadius             | Float32                | -            | Nm          |            | Arc radius  |
| CenterFix             | String                 | 10 chars     | -           |            | Point which defines the center of the arc flight path                   |
| CeFiIcCod             | String                 | 4 chars      | -           |            | ICAO code of the center fix   |
| Country               | CountryEntry           | 0-336        | -           | 2116       | Country associated with the terminal procedure                          |
| Course                | Float32                | +/-180       | Deg         |            | Outbound course from waypoint in fix ident                              |
| FixDetails            | FixDetails             | 0-9          | -           |            | Fix details   |
| FixFunctio            | FixFunction            | 0-7          | -           |            | Fix function  |
| FixIcaCod             | String                 | 4 chars      | -           |            | ICAO code of the fix point  |
| FixIdent              | String                 | 10 chars     | -           |            | Fix identifier  |
| FlyOveTyp             | FlyOverType            | 0-4          | -           |            | Fly over type   |
| MagCouIndi            | MagneticTrueIndication | 0-6          | -           |            | Indicates if the course provided is magnetic course                     |
| NavaiCount            | CountryEntry           | 0-336        | -           |            | Country where recommended navaid 1 is located                           |
| Point2                | GeoCoordinate          | x,y,z        | -           |            | Navaid 1 DME position (longitude, latitude, altitude)                   |
| NavKeyCod             | Uint32                 | -            | -           |            | Distinguish between navaid of same type with same ident in same country |

| <b>Attribute Name</b> | <b>Data Type</b>   | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|--------------------|--------------|-------------|------------|---|
| NavMagVari            | Float32            | +/-180       | Deg         |            | Recommended navaid 1 magnetic variation                                 |
| Point3                | GeoCoordinate      | x,y,z        | -           |            | Navaid 1 position (longitude, latitude, altitude)                       |
| NavaiTyp              | SegmentNavai dType | 0-13         | -           |            | Recommended navaid 1 type   |
| NavaiCoun1            | CountryEntry       | 0-336        | -           |            | Country where recommended navaid 2 is located                           |
| Point4                | GeoCoordinate      | x,y,z        | -           |            | Navaid 2 DME position (longitude, latitude, altitude)                   |
| NavKeyCod1            | Uint32             | -            | -           |            | Distinguish between navaid of same type with same ident in same country |
| NavMagVar1            | Float32            | +/-180       | Deg         |            | Recommended navaid 2 magnetic variation                                 |
| Point5                | GeoCoordinate      | x,y,z        | -           |            | Navaid 2 position (longitude, latitude, altitude)                       |
| NavaiTyp1             | SegmentNavai dType | 0-13         | -           |            | Recommended navaid 2 type   |
| PathTermin            | PathTerminati on   | 0-23         | -           |            | Path and Termination  |
| ReNaIcCod             | String             | 4 chars      | -           |            | ICAO code of the recommended navaid 1                                   |

| Attribute Name | Data Type        | Range    | Unit | Key | Description  |
|----------------|------------------|----------|------|-----|--|
| RecNavIden     | String           | 10 chars | -    |     | Recommended navaid identifier 1                                |
| RecNavIde1     | String           | 10 chars | -    |     | Recommended navaid identifier 2                                |
| ReqNavPerf     | Float32          | -        | Nm   |     | Required navigation performance                                |
| RouteDista     | Float32          | -        | Nm   |     | Distance in nautical miles from waypoint in fix ident          |
| RouteType      | RouteType        | 0-4      | -    |     | Termination Procedure Type                                     |
| SpeAirCate     | AircraftCategory | 0-4      | -    |     | Aircraft category that speed limit 1 applies to                |
| SpeedAltit     | Sint32           | -        | Ft   |     | Altitude where speed limit 1 applies                           |
| SpeedLimit     | Uint32           | -        | Kts  |     | Speed limit 1  |
| SpeAirCat1     | AircraftCategory | 0-4      | -    |     | Aircraft category that speed limit 2 applies to                |
| SpeedAlti1     | Sint32           | -        | Ft   |     | Altitude where speed limit 2 applies                           |
| SpeedLimi1     | Uint32           | -        | Kts  |     | Speed limit 2  |
| SuTeDaStNu     | Uint64           | -        | -    |     | Storage number of associated Supplemental Terminal Data record |
| ThrCroHeig     | Uint32           | -        | Ft   |     | Threshold crossing height                                      |
| TransAltit     | Sint32           | -        | Ft   |     | Transition altitude  |
| TurnDirect     | TurnDirection    | 0-3      | -    |     | Turn direction   |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|---------------------|--------------|-------------|------------|---|
| TurDirVali            | Logical             | Boolean      | -           |            | Turn direction valid  |
| WaypoCount            | CountryEntry        | 0-336        | -           |            | Waypoint country  |
| WaypoDescr            | WaypointDescription | 0-15         | -           |            | Waypoint description  |
| WaypoDista            | Float32             | -            | Nm          |            | Nautical miles between fix point and recommended navaid 1 (RHO)     |
| WaypoDist1            | Float32             | -            | Nm          |            | Nautical miles between fix point and recommended navaid 2           |
| WayMagBear            | Float32             | +/-180       | Deg         |            | Magnetic bearing between fix point and recommended navaid 1 (THETA) |
| WayMagBea1            | Float32             | +/-180       | Deg         |            | Magnetic bearing between fix point and recommended navaid 2         |
| WayMagVari            | Float32             | +/-180       | Deg         |            | Waypoint magnetic variation   |
| Point1                | GeoCoordinate       | x,y,z        | -           |            | Waypoint position (longitude, latitude, altitude)                   |
| AirIcaCod             | String              | 4 chars      | -           |            | ICAO code of the associated airport                                 |
| AirpoIden             | String              | 6 chars      | -           | 2102       | Identifier of the associated airport                                |
| AppRouTyp             | ApproachRoute Type  | 0-39         | -           |            | Approach route type   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                          |
|-----------------------|------------------|--------------|-------------|------------|---|
| GpsFmsIndi            | GpsFmsIndicator  | 0-6          | -           |            | Authorized system used for procedure        |
| Ident                 | String           | 6 chars      | -           | 2108       | SID/STAR/Approach identifier                |
| MultiCod              | String           | 2 chars      | -           |            | Multiple records having same center fix     |
| MultiIndic            | String           | 10 chars     | -           |            | Multiple records having same transition fix |
| RouteQuali1           | RouteQualifier1  | 0-9          | -           |            | Approach route qualifier 1                  |
| RouteQual12           | RouteQualifier2  | 0-6          | -           |            | Approach route qualifier 2                  |
| SequeNumbe            | Uint32           | -            | -           |            | Sequence number                             |
| TransIden             | String           | 10 chars     | -           |            | Transition identifier                       |
| VertiAngl             | Float32          | +/-180       | Deg         |            | Descent angle for the procedure             |

## 6.10. Arresting Gear

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirIcaIden            | String           | 6 chars      | -           | 2108       | ICAO identifier of the associated airport              |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                      |
|-----------------------|-------------------|--------------|-------------|------------|---|
| AirpoIden             | String            | 10 chars     | -           | 2102       | DAIF identifier of the associated airport               |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Position (longitude, latitude, altitude) of airport     |
| AirStoNumb            | Uint64            | -            | -           |            | Storage number of the associated airport                |
| Country               | CountryEntry      | 0-336        | -           | 2116       | Country in which the airport is located                 |
| DisFroRefe            | Uint32            | -            | Ft          | 2114       | Distance from the reference given in location reference |
| LocatRefer            | LocationReference | 0-3          | -           | 2122       | Reference for location of arresting gear                |
| RunwaIden             | String            | 6 chars      | -           | 2111       | Runway identifier                                       |
| Type                  | String            | 80 chars     | -           | 2107       | Arresting gear type                                     |

## 6.11. Comms

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                           |
|-----------------------|---------------------|--------------|-------------|------------|--|
| 24HouAvail            | Logical             | Boolean      | -           |            | 24 hour availability of comms frequency flag |
| AirIcaCod             | String              | 4 chars      | -           |            | ICAO code of the associated airport          |
| AirpoIden             | String              | 6 chars      | -           | 2102       | Identifier of the associated airport         |
| AirStoNumb            | Uint64              | -            | -           |            | Storage number of the associated airport     |
| AltitDescr            | AltitudeDescription | 0-13         | -           |            | Altitude description                         |
| AntenPatt             | String              | 30 chars     | -           |            | Antenna Pattern Description                  |
| AreaCode              | String              | 12 chars     | -           |            | Area code for telephone numbers              |
| CallSign              | String              | 50 chars     | -           |            | Name of facility being called                |
| CellNetwor            | String              | 30 chars     | -           |            | Cellular network information                 |
| CommsAltit            | Sint32              | -            | Ft          |            | Communications altitude limit 1              |
| CommsAlti1            | Sint32              | -            | Ft          |            | Communications altitude limit 2              |
| CommsDetai            | CommsDetails        | 0-7          | -           |            | Communications details                       |
| CommsDista            | Uint32              | -            | Nm          |            | Communications distance                      |
| CommsEncry            | CommsEncryption     | 0-1          | -           |            | Communications encryption status/mode        |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|---------------------|--------------|-------------|------------|--|
| ComFliTyp             | CommsFlightType     | 0-4          | -           |            | FIR/UIR address to supplement identifier                           |
| CommsType             | CommsType           | 0-58         | -           | 2107       | Communications type  |
| Country               | CountryEntry        | 0-336        | -           | 2116       | Country where the communications information is applicable         |
| Distadescr            | DistanceDescription | 0-2          | -           |            | Comms distance description   |
| Encrypted             | Logical             | Boolean      | -           |            | Encrypted  |
| FirUirIden            | String              | 6 chars      | -           | 2108       | FIR/UIR identifier   |
| FirUirIndi            | FirUirType          | 0-3          | -           |            | FIR/UIR indicator  |
| Frequency             | Uint64              | -            | Hz          | 2104       | Communications frequency   |
| FrequTyp              | FrequencyType       | 0-7          | -           |            | Communications frequency type                                      |
| GuardTrans            | GuardTransmit       | 0-3          | -           |            | Communications transmit/receive flag                               |
| MagneVaria            | Float32             | +/-180       | Deg         |            | Magnetic variation   |
| Modulation            | Modulation          | 0-2          | -           |            | Signal modulation  |
| MonitFrequ            | MonitoredFrequency  | 0-6          | -           |            | Monitored emergency frequencies                                    |
| Point1                | GeoCoordinate       | x,y,z        | -           |            | Position (longitude, latitude, altitude) of communications antenna |
| RadarCapab            | Logical             | Boolean      | -           |            | Radar capability flag  |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                   |
|-----------------------|---------------------|--------------|-------------|------------|--|
| ReceiSensi            | Float64             | -            | Watt        |            | Receiver sensitivity                                 |
| Remark                | String              | memo         | -           |            | Remarks associated with Comms station                |
| ReAiStNumb            | Uint64              | -            | -           |            | Storage number of associated remote airport facility |
| ReFaIcCod             | String              | 4 chars      | -           |            | ICAO code of associated remote facility              |
| RemFacIden            | String              | 6 chars      | -           |            | Identifier of associated remote facility             |
| RemFacTyp             | FacilityRecord Type | 0-4          | -           |            | Associated remote facility type                      |
| RemoteName            | String              | 50 chars     | -           | 2120       | Name of associated remote facility                   |
| ReNaStNumb            | Uint64              | -            | -           |            | Storage number of associated remote navaid           |
| RetraAvail            | Logical             | Boolean      | -           |            | Retransmission available                             |
| RetraFrequ            | Uint64              | -            | Hz          |            | Retransmission frequency                             |
| Sector                | String              | 100 chars    | -           |            | Area in which frequency is effective                 |
| SeAiStNumb            | Uint64              | -            | -           |            | Storage number of sector airport facility            |
| SecEndBear            | Uint32              | 0-359        | Deg         |            | Sector end bearing                                   |
| SeFaIcCod             | String              | 4 chars      | -           |            | ICAO code of sector facility                         |
| SecFacIden            | String              | 6 chars      | -           |            | Identifier of sector facility                        |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                 |
|-----------------------|---------------------|--------------|-------------|------------|--|
| SecFacTyp             | FacilityRecord Type | 0-4          | -           |            | Sector facility type                               |
| SeNaStNumb            | Uint64              | -            | -           |            | Storage number of sector navaid                    |
| SecStaBear            | Uint32              | 0-359        | Deg         |            | Sector start bearing                               |
| ServiIndic            | ServiceIndicator    | 0-10         | -           |            | Communications service indicator                   |
| SignaEmiss            | SignalEmission      | 0-7          | -           |            | Signal emission                                    |
| SpeOpeHour            | String              | 100 chars    | -           |            | Hours of operation different from airport/heliport |
| TeleNumbe             | String              | 20 chars     | -           |            | Telephone number                                   |
| TransPowe             | Float64             | -            | Watt        |            | Transmission power                                 |
| VoiceMessa            | String              | 30 chars     | -           |            | Voice message                                      |

## 6.12. Controlled Airspace

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AiBoStNumb            | Uint64           | -            | -           |            | Associated AirspaceBoundary record storage number      |
| AirspCente            | String           | 6 chars      | -           | 2102       | Ident for airspace 'center'                            |

| <b>Attribute Name</b> | <b>Data Type</b>     | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|----------------------|--------------|-------------|------------|---|
| AirspClass            | String               | 2 chars      | -           |            | Airspace classification (one character)                         |
| AirspTyp              | AirspaceType         | 0-18         | -           | 2107       | Controlled airspace type  |
| AirTypChar            | String               | 2 chars      | -           | 2122       | Controlled airspace type character read directly from data file |
| ArcBearing            | Float32              | +/-180       | Deg         |            | Arc bearing   |
| ArcDistanc            | Float32              | -            | Nm          |            | Arc distance  |
| ArcDistan1            | Float32              | -            | Nm          |            | Arc distance (radius of arc from center point)                  |
| Point3                | GeoCoordinate        | x,y,z        | -           |            | Arc origin position (longitude, latitude, altitude)             |
| ArcSegDeri            | ArcSegmentDerivation | 0-3          | -           |            | Indicates how the arc segment is defined                        |
| Bearing1              | Float32              | +/-180       | Deg         |            | True bearing from arc origin or navaid                          |
| Bearing2              | Float32              | +/-180       | Deg         |            | True bearing from arc origin or navaid                          |
| BoundEn               | Logical              | Boolean      | -           |            | End of boundary description - return to origin point            |
| BoundShap             | BoundaryShape        | 0-8          | -           |            | Boundary shape type   |
| Country               | CountryEntry         | 0-336        | -           | 2116       | Country where airspace is located                               |

| <b>Attribute Name</b> | <b>Data Type</b>   | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                   |
|-----------------------|--------------------|--------------|-------------|------------|--|
| Country1              | CountryEntry       | 0-336        | -           |            | Country through which the boundary passes            |
| Country2              | CountryEntry       | 0-336        | -           |            | Country through which the boundary passes            |
| Country3              | CountryEntry       | 0-336        | -           |            | Country through which the boundary passes            |
| Country4              | CountryEntry       | 0-336        | -           |            | Country through which the boundary passes            |
| Country5              | CountryEntry       | 0-336        | -           |            | Country through which the boundary passes            |
| IcaoCode              | String             | 4 chars      | -           |            | ICAO code for the airspace                           |
| Level                 | AirwayLevel        | 0-3          | -           |            | Type of airway (high, low, or either)                |
| LowerLimit            | Sint32             | -            | Ft          |            | Lower limit  |
| LoLiAlRefere nce      | AltitudeRefere nce | 0-4          | -           |            | Altitude reference                                   |
| MultiCod              | String             | 2 chars      | -           | 2118       | Differentiate between airspaces with same designator |
| Name                  | String             | 50 chars     | -           |            | Controlled airspace name                             |
| NavaiCount            | CountryEntry       | 0-336        | -           |            | Country in which navaid is located                   |
| NavaiIden             | String             | 6 chars      | -           |            | Navaid identifier                                    |

| Attribute Name | Data Type         | Range   | Unit | Key | Description  |
|----------------|-------------------|---------|------|-----|--|
| NavKeyCod      | Uint32            | -       | -    |     | Distinguish between same type navaid with same ident and country |
| NavaidType     | NavaidType        | 0-15    | -    |     | Navaid type  |
| Notam          | Logical           | Boolean | -    |     | Active times by NOTAM  |
| Point2         | GeoCoordinate     | x,y,z   | -    |     | Position (longitude, latitude, altitude)                         |
| Point1         | GeoCoordinate     | x,y,z   | -    |     | Reference Position (longitude, latitude, altitude)               |
| ReqNavPerf     | Float32           | -       | Nm   |     | Required navigation performance                                  |
| SequeNumbe     | Uint32            | -       | -    |     | Sequence number  |
| TimeCode       | PrimaryTimeCode   | 0-4     | -    |     | Time codes for primary records                                   |
| UpperLimit     | Sint32            | -       | Ft   |     | Upper limit  |
| UpLiAlRefe     | AltitudeReference | 0-4     | -    |     | Reference for upper limit altitude                               |

## 6.13. Enroute Airway

| Attribute Name | Data Type   | Range | Unit | Key  | Description  |
|----------------|-------------|-------|------|------|--|
| StoraNumbe     | Uint64      | -     | -    | 2101 | Storage number.  |
| AHGT           | Logical     | 1     | -    |      | Absolute Height above surface level Flag. Always true. |
| AirwaLeve      | AirwayLevel | 0-3   | -    |      | Airway level   |

| Attribute Name | Data Type              | Range    | Unit | Key  | Description   |
|----------------|------------------------|----------|------|------|---|
| AirwaRestr     | Logical                | Boolean  | -    |      | Airway restriction exists   |
| AtcComFla      | Logical                | Boolean  | -    |      | ATC compulsory waypoint flag  |
| BoundCod       | BoundaryCode           | 0-10     | -    |      | Boundary code   |
| Country        | String                 | 95 chars | -    |      | List of countries through which the ATS route segment passes              |
| CrLeNoStFl     | Logical                | Boolean  | -    |      | IFR cruising levels are not in agreement with appropriate diagrams (FLIP) |
| CruisTabl      | CruiseTable            | 0-4      | -    |      | Cruise table indicator  |
| Direction      | Direction              | 0-2      | -    |      | Predominant direction of ATS route  |
| DirecRestr     | DirectionRestriction   | 0-3      | -    |      | Direction restriction   |
| EnAiRoTyp      | EnrouteAirwayRouteType | 0-7      | -    |      | Enroute airway route type   |
| FixCountry     | CountryEntry           | 0-336    | -    | 2116 | Country where the fix point is located                                    |
| FixDetails     | FixDetails             | 0-9      | -    |      | Fix details   |
| FixFunctio     | FixFunction            | 0-7      | -    |      | Fix function  |
| FixIcaCod      | String                 | 4 chars  | -    |      | ICAO code of fix point  |
| FixIdent       | String                 | 6 chars  | -    |      | Fix identifier  |
| FixNavTyp      | NavaidType             | 0-15     | -    |      | Fix type  |
| FixRecTyp      | FixRecordType          | 0-8      | -    |      | Fix point record type   |
| FixStoNumb     | Uint64                 | -        | -    |      | Fix point storage number  |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------------|--------------|-------------|------------|--|
| FixTurRadi            | Float32                | -            | Nm          |            | Fix turn radius 1  |
| FixTurRad1            | Float32                | -            | Nm          |            | Fix turn radius 2  |
| FlyOveTyp             | FlyOverType            | 0-4          | -           |            | Fly over type  |
| FrequClas             | FrequencyClass         | 0-2          | -           |            | Frequency class of ATS route (UHF/VHF or LF/MF)                  |
| IcaoCode              | String                 | 4 chars      | -           |            | ICAO Code  |
| InbouCours            | Float32                | +/-180       | Deg         |            | Inbound course to waypoint in fix ident                          |
| InbCouRefe            | MagneticTrueIndication | 0-6          | -           |            | Inbound course reference   |
| MaximAltit            | Sint32                 | -            | Ft          |            | Maximum altitude for segment                                     |
| MaxFliAlti            | Sint32                 | -            | Ft          |            | Maximum altitude for airway                                      |
| MinimAltit            | Sint32                 | -            | Ft          |            | Altitude limit in direction flight coded for segment             |
| MinimAlti1            | Sint32                 | -            | Ft          |            | Segment altitude limit for opposite of coded direction of flight |
| MinFliAlti            | Sint32                 | -            | Ft          |            | Minimum altitude limit for airway                                |
| OutboCours            | Float32                | +/-180       | Deg         |            | Outbound course from waypoint in fix ident                       |
| OutCouRefe            | MagneticTrueIndication | 0-6          | -           |            | Outbound course reference  |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                    |
|-----------------------|---------------------|--------------|-------------|------------|---|
| Point1                | GeoCoordinate       | x,y,z        | -           |            | Position (longitude, latitude, altitude) of waypoint  |
| ReNaIcCod             | String              | 4 chars      | -           |            | ICAO code of recommended navaid                       |
| RecNavIden            | String              | 6            | -           |            | Recommended navaid identifier                         |
| Remark                | String              | memo         | -           |            | Essential information related to ATS route            |
| ReqNavPerf            | Float32             | -            | Nm          |            | Required navigation performance                       |
| RouteDista            | Float32             | -            | Nm          |            | Distance in nautical miles from waypoint in fix ident |
| RouteIdent            | String              | 8 chars      | -           | 2102       | Route identifier                                      |
| RouSegTyp             | AtsRouteSegmentType | 0-2          | -           |            | ATS route segment type                                |
| RouteStatu            | RouteStatus         | 0-5          | -           |            | ATS route status                                      |
| RvsmFlag              | Logical             | Boolean      | -           |            | Reduced vertical separation minima                    |
| SequeNumbe            | Uint32              | -            | -           |            | Sequence number                                       |
| StateName             | StateEntry          | 0-51         | -           |            | State through which ATS route passes                  |
| TransRadius           | Float32             | -            | -           |            | Transition radius                                     |
| WaypoDescr            | WaypointDescription | 0-15         | -           |            | Waypoint description                                  |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| WaypoDista            | Float32          | -            | Nm          |            | Nautical miles between fix point and recommended navaid   |
| WayMagBear            | Float32          | +/-180       | Deg         |            | Magnetic bearing between fix point and recommended navaid |

## 6.14. FirUir

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.                   |
| AdjFirIden            | String           | 6 chars      | -           | 2108       | Adjacent FIR ident   |
| AdjUirIden            | String           | 6 chars      | -           | 2120       | Adjacent UIR ident   |
| AiBoStNumb            | Uint64           | -            | -           |            | Associated airspace boundary record storage number                       |
| AltitUni              | AltitudeUnit     | 0-3          | -           |            | Unit used in specific FIR/UIR to fulfill requirement of ICAO flight plan |
| ArcBearing            | Float32          | +/-180       | Deg         |            | Arc bearing  |
| ArcDistanc            | Float32          | -            | Nm          |            | Arc distance   |

| <b>Attribute Name</b> | <b>Data Type</b>     | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                   |
|-----------------------|----------------------|--------------|-------------|------------|--|
| ArcDistan1            | Float32              | -            | Nm          |            | Arc distance (radius of arc from center point)       |
| Point2                | GeoCoordinate        | x,y,z        | -           |            | Arc origin position (longitude, latitude, altitude)  |
| ArcSegDeri            | ArcSegmentDerivation | 0-3          | -           |            | Indicates how the arc segment is defined             |
| Bearing1              | Float32              | +/-180       | Deg         |            | True bearing from arc origin or navaid               |
| Bearing2              | Float32              | +/-180       | Deg         |            | True bearing from arc origin or navaid               |
| BoundEn               | Logical              | Boolean      | -           |            | End of boundary description - return to origin point |
| BoundShap             | BoundaryShape        | 0-8          | -           |            | Boundary shape type                                  |
| Country1              | CountryEntry         | 0-336        | -           |            | Country through which the boundary passes            |
| Country2              | CountryEntry         | 0-336        | -           |            | Country through which the boundary passes            |
| Country3              | CountryEntry         | 0-336        | -           |            | Country through which the boundary passes            |
| Country4              | CountryEntry         | 0-336        | -           |            | Country through which the boundary passes            |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| Country5              | CountryEntry     | 0-336        | -           |            | Country through which the boundary passes                                |
| CruisTabl             | CruiseTable      | 0-4          | -           |            | Cruise table applicable  |
| EntRepRequ            | Logical          | Boolean      | -           |            | Entry report required for FIR/UIR  |
| FirUppLimt            | Sint32           |              | Ft          |            | FIR Upper Limit  |
| FlightType            | CommsFlightType  | 0-4          | -           | 2122       | Type of airway (high, low, or either)                                    |
| IcaoCode              | String           | 4 chars      | -           |            | FIR/UIR ICAO code  |
| Ident                 | String           | 6 chars      | -           | 2102       | FIR/UIR Ident  |
| Name                  | String           | 50 chars     | -           |            | Fir/Uir name   |
| NavaiCount            | CountryEntry     | 0-336        | -           |            | Country in which navaid is located                                       |
| NavaiIden             | String           | 6 chars      | -           |            | Navaid identifier  |
| NavKeyCod             | Uint32           | -            | -           |            | Distinguish between same type navaid with same ident and country         |
| NavaidType            | NavaidType       | 0-15         | -           |            | Navaid type  |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude)                                 |
| SequeNumbe            | Uint32           | -            | -           |            | Sequence number  |
| SpeedUnit             | SpeedUnit        | 0-3          | -           |            | Unit used in specific FIR/UIR to fulfill requirement of ICAO flight plan |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b> |
|-----------------------|------------------|--------------|-------------|------------|--------------------|
| Type                  | FirUirType       | 0-3          | -           | 2107       | FIR/UIR type       |
| UirLowLimi            | Sint32           | -            | Ft          |            | UIR Lower limit    |
| UirUppLimi            | Sint32           | -            | Ft          |            | Upper limit        |

## 6.15. Gate

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| Airline               | String           | 50 chars     | -           |            | Airline assigned to gate                               |
| AirIcaCod             | String           | 4 chars      | -           |            | ICAO code of the associated airport                    |
| AirpoIden             | String           | 6 chars      | -           | 2102       | Identifier of the associated airport                   |
| AirStoNumb            | Uint64           | -            | -           |            | Storage number of the associated airport               |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Country where the gate is located                      |
| Ident                 | String           | 6 chars      | -           | 2108       | Gate identifier  |
| Name                  | String           | 50 chars     | -           |            | Name commonly applied to the gate                      |
| Orientatio            | Float32          | +/-180       | Deg         |            | Orientation of gate (bearing)                          |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                               |
|-----------------------|------------------|--------------|-------------|------------|--|
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of gate |

## 6.16. GLS

| <b>Attribute Name</b> | <b>Data Type</b>   | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|--------------------|--------------|-------------|------------|---|
| StoraNumbe            | Uint64             | -            | -           | 2101       | Storage number.   |
| AHGT                  | Logical            | 1            | -           |            | Absolute Height above surface level Flag. Always true.  |
| AirpoIden             | String             | 6 chars      | -           | 2102       | Ident of the associated airport   |
| AirStoNumb            | Uint64             | -            | -           |            | Storage number of the associated airport  |
| ApproSlop             | Float32            | +/-180       | Deg         |            | Glideslope angle of the GLS approach  |
| Bearing               | Float32            | +/-180       | Deg         |            | Localizer bearing of GLS approach   |
| Category              | LandingAidCategory | 0-9          | -           |            | Category/Class of the GLS   |
| Channel               | String             | 10 chars     | -           |            | Channel decoded to identify frequency of differential GLS ground station and approach info sent by diff. GLS ground station |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| Country               | CountryEntry     | 0-336        | -           | 2116       | Country where the GLS is located   |
| IcaoCode              | String           | 4 chars      | -           | 2103       | ICAO code  |
| Ident                 | String           | 6 chars      | -           | 2108       | GLS reference path identifier  |
| LocatIden             | String           | 10 chars     | -           |            | Airport or heliport ICAO location identifier code where transmitter is installed             |
| MagneVaria            | Float32          | +/-180       | Deg         |            | Magnetic variation   |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Station position (longitude, latitude, altitude)   |
| RunwaIden             | String           | 6 chars      | -           |            | Ident of the associated runway   |
| RunStoNumb            | Uint64           | -            | -           |            | Storage number of the associated runway  |
| SerVolRadi            | Uint32           | -            | Nm          |            | Radius of service volume around transmitter  |
| StatiTyp              | GlsStationType   | 0-2          | -           |            | Type of differential ground station (eg: LAAS/GLS or SCAT-1)                                 |
| TdmaSlot              | String           | 30 chars     | -           |            | Time division multiple access (TDMA) slot in which ground station transmits related approach |

## 6.17. Helipad

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.   |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.  |
| AircrTyp              | String           | 10 chars     | -           |            | Aircraft type known to have used helipad in last 5 years.   |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the helipad approach end.                                 |
| Bearing               | Float32          | +/-180       | Deg         |            | Magnetic bearing.   |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Helipad country.  |
| Point2                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the displaced threshold (latitude, longitude, elevation). |
| HelipClose            | Logical          | Boolean      | -           |            | Indicates if the helipad is closed or unusable.   |
| HelIcaCod             | String           | 4 chars      | -           | 2103       | Associated Heliport ICAO code.  |
| HelipIden             | String           | 6 chars      | -           | 2108       | Associated Heliport identifier.   |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|-------------------|--------------|-------------|------------|--|
| HelStoNumb            | Uint64            | -            | -           |            | Associated Heliport storage number.                                |
| Ident                 | String            | 6 chars      | -           | 2102       | Helipad identifier.  |
| Length                | Uint32            | -            | Ft          |            | Helipad length.  |
| LightSyste            | LightingSystem    | 0-64         | -           |            | Lighting system 1.   |
| LightSyst1            | LightingSystem    | 0-64         | -           |            | Lighting system 2.   |
| LightSyst2            | LightingSystem    | 0-64         | -           |            | Lighting system 3.   |
| PadShape              | PadShape          | 0-2          | -           |            | Shape of helipad (circular or rectangular).                        |
| SequeNumbe            | Uint32            | -            | -           | 2115       | Sequence number to differentiate helipads at same heliport.        |
| Slope                 | Float32           | -            | %           |            | Helipad gradient   |
| Point3                | GeoCoordinate     | x,y,z        | -           |            | Position (longitude, latitude, elevation) of the helipad stop end. |
| StopwLengt            | Uint32            | -            | Ft          |            | Length of the area beyond the takeoff helipad.                     |
| StoSURTyp             | RunwaySurfaceType | 0-21         | -           |            | Stopway surface type.  |
| SurfaTyp              | RunwaySurfaceType | 0-21         | -           |            | Helipad surface type.  |
| TakeoDista            | Uint32            | -            | Ft          |            | Takeoff distance available.  |
| TrueBearin            | Float32           | +/-180       | Deg         |            | Helipad true bearing.  |

| Attribute Name | Data Type | Range   | Unit | Key | Description                |
|----------------|-----------|---------|------|-----|----------------------------|
| TruNorRef      | Logical   | Boolean | -    |     | True North reference flag. |
| Width          | Uint32    | 10      | Ft   |     | Heliport width.            |

## 6.18. Heliport

| Attribute Name | Data Type         | Range    | Unit | Key  | Description  |
|----------------|-------------------|----------|------|------|--|
| StoraNumbe     | Uint64            | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical           | 1        | -    |      | Absolute Height above surface level Flag. Always true.                     |
| AlterNam       | String            | 50 chars | -    |      | Alternate name other than the official name that can be used occasionally. |
| AsCoStNumb     | Uint64            | -        | -    |      | Associated Comms record storage number                                     |
| BeacoAvail     | Logical           | Boolean  | -    |      | Indicates if a rotating beacon is present.                                 |
| City           | String            | 50 chars | -    |      | Heliport city name.  |
| CivMilTyp      | CivilMilitaryType | 0-6      | -    |      | Heliport usage type (civil, military, etc.).                               |
| ClearStatu     | ClearanceStatus   | 0-3      | -    |      | Clearance status.  |
| Country        | CountryEntry      | 0-336    | -    | 2116 | Country where the heliport is located.                                     |
| DayliTim       | Float32           | +/-24    | Hrs  |      | Difference to Zulu time based on the daylight saving time.                 |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| DayTimFram            | String           | 100 chars    | -           |            | Timeframe when daylight saving time is observed by a country.            |
| FlipPage              | String           | 75 chars     | -           |            | Related pages for that heliport in the companion FLIP.                   |
| FuelType              | String           | memo         | -           |            | Fuel type available.   |
| HydElePres            | Logical          | Boolean      | -           |            | Indication of the presence of an hydrographic element near the heliport. |
| IataCode              | String           | 6 chars      | -           | 2106       | Heliport IATA designator.  |
| IcaoCode              | String           | 4 chars      | -           | 2103       | Heliport ICAO area code.   |
| Ident                 | String           | 6 chars      | -           | 2102       | Heliport ICAO ident.   |
| IfrCapabil            | Logical          | Boolean      | -           |            | Indicates if the heliport has published IFR approaches.                  |
| IslanGrou             | String           | 50 chars     | -           |            | Heliport associated with islands or group of islands.                    |
| Jasu                  | String           | 100 chars    | -           |            | Type of Jet Aircraft Starting Units (JASU) available.                    |
| MagneVaria            | Float32          | +/-180       | Deg         |            | Magnetic variation.  |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| MagTruIndi            | MagneticTrueIndication | 0-6          | -           |            | Indicates if the details and procedures are given relative to Magnetic or True North. |
| MgrsPositi            | String                 | 20 chars     | -           |            | MGRS position given using the UTM or the UPS grid.                                    |
| Name                  | String                 | 100 chars    | -           |            | Official name.  |
| NavIcaCod             | String                 | 4 chars      | -           |            | Recommended navaid ICAO code.   |
| NavaiDen              | String                 | 6 chars      | -           |            | Recommended navaid ident.   |
| Notam                 | NotamSystem            | 0-4          | -           |            | Notam service.  |
| OilType               | String                 | 75 chars     | -           |            | Type of oil available.  |
| OperaHour             | OperatingHours         | 0-4          | -           |            | Operating hours of the heliport.  |
| PadDimensi            | Uint32                 | -            | Ft          |            | Pad dimension.  |
| PadDimens1            | Uint32                 | -            | Ft          |            | Pad dimension.  |
| PadIdent              | String                 | 6 chars      | -           | 2108       | Helipad identifier.   |
| PadShape              | PadShape               | 0-2          | -           |            | Pad shape.  |
| Point1                | GeoCoordinate          | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the NavObject.                            |
| Remark                | String                 | memo         | -           |            | Essential remarks for terminal procedures.  |
| ServiRemar            | String                 | memo         | -           |            | Service remarks for airport.  |
| SpeedLimit            | Uint32                 | -            | Kts         |            | Speed limit in knots.   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| SpeLimAlti            | Sint32           | -            | Ft          |            | Altitude below where speed limits may be imposed  |
| StateName             | StateEntry       | 0-51         | -           |            | State or province where the heliport is located.  |
| SupFluTyp             | String           | 50 chars     | -           |            | Type of available fluids/system/oxygen/nitrogen .   |
| TerraImpac            | Logical          | Boolean      | -           |            | Indicates a terrain impact on the heliport.   |
| Timezone              | Float32          | +/-24        | Hrs         |            | Difference to Zulu time.  |
| TransAltit            | Sint32           | -            | Ft          |            | Upper altitude limit for which the vertical position of an A/C is controlled by reference to altitudes (MSL). |
| TransLeve             | Sint32           | -            | Ft          |            | Lowest flight level available to use above the transition altitude.   |

## 6.19. HoldingPattern

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                       |
|-----------------------|-------------------|--------------|-------------|------------|--|
| AirIcaCod             | String            | 4 chars      | -           |            | ICAO code of the associated airport                      |
| AirpoIden             | String            | 6 chars      | -           |            | Identifier of the associated airport                     |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Position (longitude, latitude, altitude) of airport      |
| AirStoNumb            | Uint64            | -            | -           |            | Storage number of the associated airport                 |
| ArcRadius             | Float32           | -            | Nm          |            | Turning radius, inbound to outbound leg, for RNP Holding |
| Country               | CountryEntry      | 0-336        | -           | 2116       | Country where the holding pattern applies                |
| DupliIden             | String            | 6 chars      | -           | 2108       | Duplicate identifier                                     |
| FixCountry            | CountryEntry      | 0-336        | -           |            | Country where the fix point is located                   |
| FixIcaCod             | String            | 4 chars      | -           |            | Fix ICAO Code  |
| FixIdent              | String            | 6 chars      | -           | 2102       | Fix identifier   |
| FixRecTyp             | FixRecordType     | 0-8          | -           | 2107       | Record type of fix point                                 |
| FixStoNumb            | Uint64            | -            | -           |            | Fix point storage number                                 |
| HoldiCours            | Float32           | +/-180       | Deg         |            | Inbound holding course                                   |
| HoPaTuDire            | PathTurnDirection | 0-2          | -           |            | Holding pattern turn direction                           |
| HoldiSpee             | Uint32            | -            | Kts         |            | Holding pattern maximum speed in knots                   |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| LegLength             | Float32                | -            | Nm          |            | Leg length in nautical miles                              |
| LegTime               | Float32                | -            | Min         |            | Leg time in minutes                                       |
| MagneCours            | MagneticTrueIndication | 0-6          | -           |            | Indicates if magnetic course                              |
| MaximAltit            | Sint32                 | -            | Ft          |            | Maximum altitude  |
| MinimAltit            | Sint32                 | -            | Ft          |            | Minimum altitude  |
| Name                  | String                 | 50 chars     | -           |            | Name commonly applied to the holding pattern              |
| NavaiCount            | CountryEntry           | 0-336        | -           |            | Country of navaid collocated with waypoint                |
| Navaididen            | String                 | 6 chars      | -           |            | Identifier of navaid collocated with waypoint             |
| NavKeyCod             | Uint32                 | -            | -           |            | Key code of navaid collocated with waypoint               |
| NavaidType            | NavaidType             | 0-15         | -           |            | Type of navaid collocated with waypoint                   |
| ReqNavPerf            | Float32                | -            | Nm          |            | Required navigation performance                           |
| TrackDescr            | TrackDescription       | 0-3          | -           |            | Defines track geometry for single terminal segment record |
| Type                  | HoldingPatternType     | 0-7          | -           |            | Type of holding pattern                                   |

## 6.20. IIs

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirIcaCod             | String           | 4 chars      | -           | 2103       | ICAO code of the associated airport.                   |
| AirpoIden             | String           | 6 chars      | -           | 2102       | Ident of the associated airport.                       |
| AirStoNumb            | Uint64           | -            | -           |            | Storage number of the associated airport.              |
| AppRouIden            | String           | 6 chars      | -           |            | Ident of the associated approach route 1.              |
| ApRoStNumb            | Uint64           | -            | -           |            | Storage number of the associated approach route 1.     |
| AppRouIde1            | String           | 6 chars      | -           |            | Ident of the associated approach route 2.              |
| ApRoStNum1            | Uint64           | -            | -           |            | Storage number of the associated approach route 2.     |
| AppRouIde2            | String           | 6 chars      | -           |            | Ident of the associated approach route 3.              |
| ApRoStNum2            | Uint64           | -            | -           |            | Storage number of the associated approach route 3.     |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                 |
|-----------------------|------------------------|--------------|-------------|------------|--|
| AppRouIde3            | String                 | 6 chars      | -           |            | Ident of the associated approach route 4.          |
| ApRoStNum3            | Uint64                 | -            | -           |            | Storage number of the associated approach route 4. |
| AppRouIde4            | String                 | 6 chars      | -           |            | Ident of the associated approach route 5.          |
| ApRoStNum4            | Uint64                 | -            | -           |            | Storage number of the associated approach route 5. |
| BacCouAvai            | IlsBackCourse          | 0-3          | -           |            | Back course availability information.              |
| Bearing               | Float32                | +/-180       | Deg         |            | Localizer magnetic bearing.                        |
| BeariRefer            | MagneticTrueIndication | 0-6          | -           |            | Bearing reference.                                 |
| Category              | LandingAidCategory     | 0-9          | -           |            | Category/class of the ILS.                         |
| Country               | CountryEntry           | 0-336        | -           | 2116       | Country where the ILS is located.                  |
| Declinatio            | Float32                | +/-180       | Deg         |            | Station declination.                               |
| DecliRefer            | MagneticTrueIndication | 0-6          | -           |            | Declination angle reference.                       |
| FalGliFla             | Logical                | Boolean      | -           |            | False glidepath flag                               |
| FalLocFla             | Logical                | Boolean      | -           |            | False localizer flag                               |
| GlideAngl             | Float32                | +/-180       | Deg         |            | Glideslope angle.                                  |
| GlideBeamw            | Float32                | +/-180       | Deg         |            | Glideslope beamwidth.                              |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| GlideFrequ            | Uint64           |              | Hz          |            | ILS glideslope frequency.   |
| GliMagVari            | Float32          | +/-180       | Deg         |            | ILS glideslope magnetic variation.                                  |
| Point3                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the glideslope emitter. |
| GliXOffse             | Sint32           | -            | Ft          |            | Glideslope X offset.  |
| GliYOffse             | Sint32           | -            | Ft          |            | Glideslope Y offset.  |
| Ident                 | String           | 6 chars      | -           |            | Localizer ICAO ident.   |
| LocalBeamw            | Float32          | +/-180       | Deg         |            | Localizer beamwidth.  |
| LocalFrequ            | Uint64           | -            | Hz          | 2104       | ILS localizer frequency.  |
| LocMagVari            | Float32          | +/-180       | Deg         |            | ILS localizer magnetic variation.                                   |
| Point2                | GeoCoordinate    | x,y,z        | -           |            | Localizer position (longitude, latitude, altitude).                 |
| LocXOffse             | Sint32           | -            | Ft          |            | Localizer X offset.   |
| LocYOffse             | Sint32           | -            | Ft          |            | Localizer Y offset.   |
| Name                  | String           | 50 chars     | -           |            | Official name of the localizer.                                     |
| NavStoNumb            | Uint64           | -            | -           |            | Storage number of the associated navaid.                            |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude)                  |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|---------------------|--------------|-------------|------------|---|
| RunwaIden             | String              | 6 chars      | -           | 2111       | Ident of the associated runway.                           |
| RunStoNumb            | Uint64              | -            | -           |            | Storage number of the associated runway.                  |
| SynchTyp              | SynchronisationType | 0-2          | -           |            | Synchronization type.                                     |
| ThrCroHeig            | Uint32              | -            | Ft          |            | Height above the landing threshold on a normal glidepath. |
| TrueBearin            | Float32             | +/-180       | Deg         |            | Localizer true bearing.                                   |

## 6.21. Marker

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirpoIden             | String           | 6 chars      | -           | 2108       | Ident of the associated airport/heliport               |
| AirStoNumb            | Uint64           | -            | -           |            | Storage number of the associated airport/heliport      |
| AssocNavai            | AssociatedNavaid | 0-2          | -           |            | Associated navaid information                          |
| Channel               | String           | 6 chars      | -           |            | Navaid channel.  |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                           |
|-----------------------|------------------------|--------------|-------------|------------|--|
| Country               | CountryEntry           | 0-336        | -           | 2116       | Country where the marker is located          |
| Frequency             | Uint64                 |              | Hz          |            | Frequency                                    |
| HighLow               | MarkerPower            | 0-2          | -           |            | Marker power                                 |
| IcaoCode              | String                 | 4 chars      | -           | 2103       | Marker ICAO area code                        |
| Ident                 | String                 | 6 chars      | -           | 2102       | Marker ident                                 |
| IlsBearing            | Float32                | +/-180       | Deg         |            | Bearing of the ILS localizer                 |
| IlsBeaRefe            | MagneticTrueIndication | 0-6          | -           |            | Reference for the ILS bearing                |
| LocalIden             | String                 | 6 chars      | -           |            | Associated localizer ident                   |
| LocStoNumb            | Uint64                 | -            | -           |            | Associated localizer storage number          |
| Location              | Float32                | -            | Nm          |            | Location from the approach end of the runway |
| LocatCollo            | Logical                | Boolean      | -           |            | Locator collocation flag                     |
| LocatIden             | String                 | 6 chars      | -           |            | Associated locator ident                     |
| LocStoNum1            | Uint64                 | -            | -           |            | Associated locator storage number            |
| MagneVaria            | Float32                | +/-180       | Deg         |            | Magnetic variation                           |
| MinAxiBear            | Float32                | +/-180       | Deg         |            | True bearing of the marker minor axis        |
| MorseCode             | String                 | 3 chars      | -           |            | Corresponding letters of the Morse code      |
| Name                  | String                 | 50 chars     | -           |            | Marker official name                         |
| NavaiCount            | CountryEntry           | 0-336        | -           |            | Navaid country.                              |
| NavaiFrequ            | Uint64                 | -            | Hz          |            | Frequency                                    |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                              |
|-----------------------|------------------|--------------|-------------|------------|---|
| NavKeyCod             | Uint32           | -            | -           |            | Navaid key code.                                |
| NavaidType            | NavaidType       | 0-15         | -           |            | Navaid type.                                    |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Marker position (longitude, latitude, altitude) |
| Runwalden             | String           | 6 chars      | -           | 2111       | Ident of the associated runway                  |
| RunStoNumb            | Uint64           | -            | -           |            | Storage number of the associated runway         |
| Type                  | MarkerType       | 0-10         | -           | 2107       | Marker type                                     |

## 6.22. MilitaryTrainingRoute

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.   |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.                |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Country where the military training route originates                  |
| EffecTime             | String           | 100 chars    | -           |            | Hours, days and/or dates that military training route is in effect    |
| IcaoCode              | String           | 4 chars      | -           |            | ICAO code of air traffic controlling authority where route originates |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|-------------------|--------------|-------------|------------|--|
| Ident                 | String            | 10 chars     | -           | 2102       | Designation of the military training route   |
| OriMilUni             | String            | 100 chars    | -           |            | Military unit designated as the originating activity   |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude)   |
| Remark                | String            | Memo         | -           |            | Remarks are limited to terrain following ops, special operating proc., flight service stations (100nm radius) & SR remarks |
| SchMilUni             | String            | 100 chars    | -           |            | Military unit responsible for scheduling training route flights  |
| Type                  | MilitaryRouteType | 0-3          | -           |            | Type of military training route  |

## 6.23. MilitaryTrainingRouteAirspace

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumber           | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| ActPoiIden            | String           | 4 chars      | -           |            | Ident of the action point within the military training route             |
| MiTrRoIden            | String           | 10 chars     | -           | 2102       | Military training route identifier                                       |
| MiTrRoStNu            | Uint64           | -            | -           |            | Associated military training route storage number                        |
| MTROSNumbe            | Uint64           | -            | -           |            | Associated military training route overlay storage number                |
| NeAcPoIden            | String           | 4 chars      | -           |            | Ident of the next action point within the military training route        |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude)                       |
| Sector                | String           | 10 chars     | -           |            | Designation for the section of the special use airspace                  |
| SegmeNumbe            | Uint32           | -            | -           | 2115       | Defines relative position of segment in military training route airspace |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| SequeNumbe            | Uint32           | -            | -           | 2120       | Defines order of special use airspace (SUAS) or military operations area (MOA) identifiers |
| SpUsAiIden            | String           | 18 chars     | -           |            | Special use airspace or military operations area identifier                                |
| SpUsAiStNu            | Uint64           | -            | -           |            | Associated special use airspace storage number   |

## 6.24. MilitaryTrainingRouteDescription

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.                                   |
| ActPoiIden            | String           | 4 chars      | -           | 2108       | Ident of the action point within the military training route                             |
| AddRouInfo            | String           | 100 chars    | -           |            | Info vital to execution of military training route at a specific point to the next point |
| Bearing               | Float32          | +/-180       | Deg         |            | Bearing from DME or bearing to non-DME navaid  |

| <b>Attribute Name</b> | <b>Data Type</b>         | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                       |
|-----------------------|--------------------------|--------------|-------------|------------|--|
| CoWiNaFla             | Logical                  | Boolean      | -           |            | Point collocated with navaid flag                        |
| Country               | CountryEntry             | 0-336        | -           |            | Country where the point is located                       |
| CrossAltit            | Sint32                   | -            | Ft          |            | Crossing altitude 1                                      |
| CroAltRefe            | AltitudeReference        | 0-4          | -           |            | Crossing altitude 1 reference                            |
| CrossAlti1            | Sint32                   | -            | Ft          |            | Crossing altitude 2                                      |
| CroAltRef1            | AltitudeReference        | 0-4          | -           |            | Crossing altitude 2 reference                            |
| CroAltDesc            | RouteAltitudeDescription | 0-5          | -           |            | Indicates how the crossing altitude(s) should be applied |
| Distance              | Float32                  | -            | Nm          |            | Range from non-DME navaid or slant range from DME        |
| EnrouAltit            | Sint32                   | -            | Ft          |            | Enroute altitude 1                                       |
| EnrAltRefe            | AltitudeReference        | 0-4          | -           |            | Enroute altitude 1 reference                             |
| EnrouAlti1            | Sint32                   | -            | Ft          |            | Enroute altitude 2                                       |
| EnrAltRef1            | AltitudeReference        | 0-4          | -           |            | Enroute altitude 2 reference                             |
| EnrAltDesc            | RouteAltitudeDescription | 0-5          | -           |            | Indicates how the enroute altitude(s) should be applied  |
| IcaoCode              | String                   | 4 chars      | -           |            | ICAO code  |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|-------------------|--------------|-------------|------------|---|
| MiTrRoIden            | String            | 10 chars     | -           | 2102       | Military training route identifier                          |
| MiTrRoStNu            | Uint64            | -            | -           |            | Associated military training route storage number           |
| NavaiCount            | CountryEntry      | 0-336        | -           |            | Navaid country  |
| NavaiIden             | String            | 6 chars      | -           |            | Navaid identifier   |
| NavKeyCod             | Uint32            | -            | -           |            | Navaid key code   |
| NavaidType            | NavaidType        | 0-15         | -           |            | Navaid type   |
| NeAcPoIden            | String            | 4 chars      | -           |            | Ident of next action point within a military training route |
| PointFunct            | PointFunction     | 0-6          | -           |            | Function of the point                                       |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Position of point (longitude, latitude, altitude)           |
| RouWidLef             | Float32           | -            | Nm          |            | Route width to left of centerline to the next point         |
| RouWidRigh            | Float32           | -            | Nm          |            | Route width to right of centerline to the next point        |
| TurnDirect            | PathTurnDirection | 0-2          | -           |            | Specific direction in which a turn is to be made            |
| TurnRadius            | Float32           | -            | Nm          |            | Turn radius around a point                                  |

## 6.25. MilitaryTrainingRouteOverlay

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|-------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64            | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical           | 1            | -           |            | Absolute Height above surface level Flag. Always true.   |
| AcPoBiSeAn            | Float32           | +/-180       | Deg         |            | Bi-section path angle for the next point based on next segment path (acute angle to that path) |
| ActPoiFunc            | PointFunction     | 0-6          | -           |            | Function of the action point   |
| ActPoiIden            | String            | 4 chars      | -           |            | Ident of the action point within the military training route                                   |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the action point                                   |
| AcPoRoWiLe            | Float32           | -            | Nm          |            | Route width to left of action point  |
| AcPoRoWiRi            | Float32           | -            | Nm          |            | Route width to right of action point   |
| AcPoTuDire            | PathTurnDirection | 0-2          | -           |            | Specific direction in which a turn is to be made   |
| AcPoTuRadi            | Float32           | -            | Nm          |            | Turn radius around action point  |
| MiTrRoIden            | String            | 10 chars     | -           | 2102       | Military training route identifier   |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|-------------------|--------------|-------------|------------|--|
| MiTrRoStNu            | Uint64            | -            | -           |            | Associated military training route storage number  |
| NAPBSAngl             | Float32           | +/-180       | Deg         |            | Bi-section path angle for the next point based on next segment path (acute angle to that path) |
| NeAcPoFunc            | PointFunction     | 0-6          | -           |            | Function of the next action point  |
| NeAcPoIden            | String            | 4 chars      | -           |            | Ident of the next action point within the military training route                              |
| Point2                | GeoCoordinate     | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the next action point                              |
| NAPRWLef              | Float32           | -            | Nm          |            | Route width to left of the next action point   |
| NAPRWRigh             | Float32           | -            | Nm          |            | Route width to right of the next action point  |
| NeAcPoTuDi            | PathTurnDirection | 0-2          | -           |            | Specific direction in which a turn is to be made   |
| NeAcPoTuRa            | Float32           | -            | Nm          |            | Turn radius around the next action point   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| SegmeNumbe            | Uint32           | -            | -           | 2115       | Defines relative position of segment in military training route overlay |

## 6.26. Mls

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.   |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.                  |
| AirIcaCod             | String           | 4 chars      | -           | 2103       | Icao code of the associated airport                                     |
| AirpoIden             | String           | 6 chars      | -           | 2102       | Ident of the associated airport   |
| AirStoNumb            | Uint64           | -            | -           |            | Storage number of the associated airport                                |
| AzimuBeari            | Float32          | +/-180       | Deg         |            | Magnetic bearing of the MLS azimuth                                     |
| AziLefAngl            | Float32          | +/-180       | Deg         |            | Azimuth proportional left angle   |
| AziLefCove            | Sint32           | +/-180       | Deg         |            | Azimuth left coverage   |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the MLS azimuth transmitter |

| <b>Attribute Name</b> | <b>Data Type</b>   | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|--------------------|--------------|-------------|------------|--|
| AziRigAngl            | Float32            | +/-180       | Deg         |            | Azimuth proportional right angle   |
| AziRigCove            | Sint32             | +/-180       | Deg         |            | Azimuth right coverage   |
| AziTruBear            | Float32            | +/-180       | Deg         |            | Azimuth true bearing in degrees  |
| AziXOffse             | Float32            | -            | Ft          |            | Azimuth X offset   |
| AziYOffse             | Float32            | -            | Ft          |            | Azimuth Y offset   |
| BacAziBear            | Float32            | +/-180       | Deg         |            | Magnetic bearing of the MLS back azimuth                                     |
| BaAzLeAngl            | Float32            | +/-180       | Deg         |            | Back azimuth proportional left angle   |
| BaAzLeCove            | Sint32             | +/-180       | Deg         |            | Back azimuth left coverage   |
| Point2                | GeoCoordinate      | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the MLS back azimuth transmitter |
| BaAzRiAngl            | Float32            | +/-180       | Deg         |            | Back azimuth proportional right angle  |
| BaAzRiCove            | Sint32             | +/-180       | Deg         |            | Back azimuth right coverage  |
| BaAzTrBear            | Float32            | +/-180       | Deg         |            | Back azimuth true bearing in degrees   |
| BaAzXOffse            | Float32            | -            | Ft          |            | Back azimuth X offset  |
| BaAzYOffse            | Float32            | -            | Ft          |            | Back azimuth Y offset  |
| Category              | LandingAidCategory | 0-9          | -           |            | Category/class of the MLS  |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                       |
|-----------------------|------------------|--------------|-------------|------------|--|
| Channel               | String           | 6 chars      | -           | 2110       | Assigned channel   |
| Collocatio            | MlsCollocation   | 0-3          | -           |            | MLS collocation information                              |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Country where the MLS is located                         |
| Point3                | GeoCoordinate    | x,y,z        | -           |            | MLS Datum point position (longitude, latitude, altitude) |
| DaPoXOffse            | Float32          | -            | Ft          |            | Datum point X offset                                     |
| DaPoYOffse            | Float32          | -            | Ft          |            | Datum point Y offset                                     |
| EleAngSpa             | Float32          | +/-180       | Deg         |            | Elevation angle span                                     |
| EleMinAngl            | Float32          | +/-180       | Deg         |            | Elevation minimum angle                                  |
| EleNomAngl            | Float32          | +/-180       | Deg         |            | Elevation nominal angle                                  |
| Point4                | GeoCoordinate    | x,y,z        | -           |            | Elevation position (longitude, latitude, altitude)       |
| EleXOffse             | Float32          | -            | Ft          |            | Elevation X offset                                       |
| EleYOffse             | Float32          | -            | Ft          |            | Elevation Y offset                                       |
| Frequency             | Uint64           | -            | Hz          | 2104       | Frequency  |
| HigRatAppr            | Logical          | Boolean      | -           |            | MLS high rate approach available                         |
| Ident                 | String           | 6 chars      | -           |            | MLS ICAO ident   |
| MagneVaria            | Float32          | +/-180       | Deg         |            | Magnetic variation                                       |
| Name                  | String           | 50 chars     | -           |            | Official name of the MLS                                 |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                       |
|-----------------------|---------------------|--------------|-------------|------------|--|
| RunwaIden             | String              | 6 chars      | -           | 2111       | Ident of the associated runway                           |
| RunStoNumb            | Uint64              | -            | -           |            | Storage number of the associated runway                  |
| SynchTyp              | SynchronizationType | 0-2          | -           |            | Synchronization Type                                     |
| ThrCroHeig            | Uint32              | -            | Ft          |            | Height above the landing threshold on a normal glidepath |

## 6.27. Msa

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64                 | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical                | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirIcaCod             | String                 | 4 chars      | -           |            | Airport/Heliport ICAO Code                             |
| AirpoIden             | String                 | 6 chars      | -           | 2108       | Airport/Heliport Ident                                 |
| AirStoNumb            | Uint64                 | -            | -           |            | Airport/Heliport Storage Number                        |
| Country               | CountryEntry           | 0-336        | -           | 2116       | Country where the MSA applies                          |
| IcaoCode              | String                 | 4 chars      | -           |            | MSA ICAO Code  |
| MagTruIndi            | MagneticTrueIndication | 0-6          | -           |            | Magnetic/True Indication                               |
| MsaCenter             | String                 | 6 chars      | -           | 2102       | MSA Center   |
| MsCeFiStNu            | Uint64                 | -            | -           |            | MSA Center Fix Storage Number                          |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| MsaCenTyp             | FixRecordType    | 0-8          | -           | 2107       | MSA Center Type  |
| MultiCod              | String           | 2 chars      | -           | 2118       | Multiple Code  |
| NavKeyCod             | Uint32           | 2 chars      | -           |            | Navaid key code if MSA center is a navaid                      |
| NavaidType            | NavaidType       | 0-15         | -           |            | Navaid type if MSA center is a navaid                          |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the MSA center fix |
| RouteIdent            | String           | 50 chars     | -           | 2111       | Identifier of the terminal procedure associated with MSA       |
| RouteType             | RouteType        | 0-4          | -           |            | Type of terminal procedure associated with MSA                 |
| SectoAltit            | Uint32           | -            | Ft          |            | Sector Altitude  |
| SecEndBear            | Uint32           | 0-359        | Deg         |            | Sector End Bearing   |
| SecEndRadi            | Uint32           | -            | Nm          |            | Sector Radius  |
| SecStaBear            | Uint32           | 0-359        | Deg         |            | Sector Start Bearing   |
| SecStaRadi            | Uint32           | -            | Nm          |            | Sector Start Radius  |
| SectoAlti1            | Uint32           |              | Ft          |            | Sector Altitude  |
| SecEndBea1            | Uint32           | 0-359        | Deg         |            | Sector End Bearing   |
| SectoRadius           | Uint32           | -            | Nm          |            | Sector Radius  |
| SecStaBea1            | Uint32           | 0-359        | Deg         |            | Sector Start Bearing   |
| SectoAlti2            | Uint32           | -            | Ft          |            | Sector Altitude  |
| SecEndBea2            | Uint32           | 0-359        | Deg         |            | Sector End Bearing   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|----------------------|
| SectoRadi1            | Uint32           | -            | Nm          |            | Sector Radius        |
| SecStaBea2            | Uint32           | 0-359        | Deg         |            | Sector Start Bearing |
| SectoAlti3            | Uint32           | -            | Ft          |            | Sector Altitude      |
| SecEndBea3            | Uint32           | 0-359        | Deg         |            | Sector End Bearing   |
| SectoRadi2            | Uint32           | -            | Nm          |            | Sector Radius        |
| SecStaBea3            | Uint32           | 0-359        | Deg         |            | Sector Start Bearing |
| SectoAlti4            | Uint32           | -            | Ft          |            | Sector Altitude      |
| SecEndBea4            | Uint32           | 0-359        | Deg         |            | Sector End Bearing   |
| SectoRadi3            | Uint32           | -            | Nm          |            | Sector Radius        |
| SecStaBea4            | Uint32           | 0-359        | Deg         |            | Sector Start Bearing |
| SectoAlti5            | Uint32           | -            | Ft          |            | Sector Altitude      |
| SecEndBea5            | Uint32           | 0-359        | Deg         |            | Sector End Bearing   |
| SectoRadi4            | Uint32           | -            | Nm          |            | Sector Radius        |
| SecStaBea5            | Uint32           | 0-359        | Deg         |            | Sector Start Bearing |
| SectoAlti6            | Uint32           | -            | Ft          |            | Sector Altitude      |
| SecEndBea6            | Uint32           | 0-359        | Deg         |            | Sector End Bearing   |
| SectoRadi5            | Uint32           | -            | Nm          |            | Sector Radius        |
| SecStaBea6            | Uint32           | 0-359        | Deg         |            | Sector Start Bearing |

## 6.28. Navaid

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |

| Attribute Name | Data Type              | Range   | Unit | Key  | Description                                       |
|----------------|------------------------|---------|------|------|---|
| AirIcaCod      | String                 | 4 chars | -    |      | ICAO code of the associated airport/heliport      |
| AirpoIden      | String                 | 6 chars | -    | 2108 | Ident of the associated airport/heliport          |
| AirStoNumb     | Uint64                 | -       | -    |      | Storage number of the associated airport/heliport |
| AsCoStNumb     | Uint64                 | -       | -    |      | Associated Comms record storage number            |
| AssMarTyp      | AssociatedMarkerType   | 0-4     | -    |      | Associated marker type                            |
| BfoOperati     | Logical                | Boolean | -    |      | BFO operation flag                                |
| BiasedIls      | Logical                | Boolean | -    |      | Biased ILS flag                                   |
| Channel        | String                 | 6 chars | -    | 2110 | Assigned channel                                  |
| Collocatio     | NavaidCollocation      | 0-8     | -    |      | Navaid collocation information                    |
| CompoTyp       | ComponentType          | 0-10    | -    |      | Component type (e.g.: DME, locator, etc.)         |
| Country        | CountryEntry           | 0-336   | -    | 2116 | Country where the navaid is located               |
| Declinatio     | Float32                | +/-180  | Deg  |      | Station declination                               |
| DecliRefer     | MagneticTrueIndication | 0-6     | -    |      | Magnetic, True, or other (grid direction)         |
| DmeIdent       | String                 | 6 chars | -    |      | DME identifier                                    |
| DmeOffset      | Float32                |         | Nm   |      | DME offset  |

| Attribute Name | Data Type              | Range    | Unit | Key  | Description  |
|----------------|------------------------|----------|------|------|--|
| Point2         | GeoCoordinate          | x,y,z    | -    |      | DME position (longitude, latitude, altitude)                     |
| EmissTyp       | EmissionType           | 0-3      | -    |      | Emission type (A0, A1 or A2)                                     |
| Frequency      | Uint64                 | -        | Hz   | 2104 | Navaid frequency   |
| FreProAlti     | Uint32                 | -        | Ft   |      | Frequency protection altitude                                    |
| FreProDist     | Uint32                 | -        | Nm   |      | Frequency protection distance                                    |
| IcaoCode       | String                 | 4 chars  | -    | 2103 | Navaid ICAO area code  |
| Ident          | String                 | 6 chars  | -    | 2102 | Navaid ICAO Ident  |
| KeyCode        | Uint32                 | -        | -    | 2118 | Distinguish between same type navaid with same ident and country |
| LocalBeari     | Float32                | +/-180   | Deg  |      | Localizer bearing  |
| LocBeaRefe     | MagneticTrueIndication | 0-6      | -    |      | Magnetic, True, or other (grid direction)                        |
| LocalWidt      | Float32                | +/-180   | Deg  |      | Localizer width  |
| MagneVaria     | Float32                | +/-180   | Deg  |      | Magnetic variation   |
| Modulation     | SignalModulation       | 0-2      | -    |      | Modulation (400Hz or 1020Hz)                                     |
| Name           | String                 | 45 chars | -    |      | Navaid official name   |
| NexNavDist     | Uint32                 | -        | Nm   |      | Distance to the next navaid                                      |

| Attribute Name | Data Type           | Range   | Unit  | Key  | Description   |
|----------------|---------------------|---------|-------|------|---|
| Point1         | GeoCoordinate       | x,y,z   | -     |      | Position (longitude, latitude, altitude) of the NavObject |
| Power          | Uint32              | -       | Watt  |      | Navaid power capacity                                     |
| PreciDm        | Logical             | Boolean | -     |      | Precision vs non-precision DME                            |
| RadClaCod      | RadioClassCode      | 0-7     | -     |      | Navaid radio class code                                   |
| Range          | Uint32              | -       | Nm    |      | Navaid power capacity                                     |
| RangeRelia     | RangeReliability    | 0-10    | -     |      | Navaid range reliability                                  |
| RepetRat       | Uint32              | -       | 1/min |      | NDB repetition rate [number of occurrences per minute]    |
| RunwaDista     | Float32             | -       | Nm    |      | Distance to associated runway                             |
| RunwaIden      | String              | 6 chars | -     |      | Associated runway identifier                              |
| State          | StateEntry          | 0-51    | -     |      | State or province name where the navaid is located        |
| Status         | NavaidStatus        | 0-3     | -     |      | Navaid status   |
| SynchTyp       | SynchronisationType | 0-2     | -     |      | Navaid synchronization type                               |
| ThrCroHeig     | Uint32              | -       | Ft    |      | Threshold crossing height                                 |
| Type           | NavaidType          | 0-15    | -     | 2107 | Navaid type   |
| VhfNavaid      | Logical             | Boolean | -     | 2122 | Flag indicating if navaid is a VHF navaid.                |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                  |
|-----------------------|------------------|--------------|-------------|------------|-------------------------------------|
| VoIdFiPat             | String           | 30 chars     | -           |            | Voice identifier file name and path |
| VoiIdePres            | Logical          | Boolean      | -           |            | Voice identifier present flag       |
| VoiOnFrequ            | Logical          | Boolean      | -           |            | Voice on frequency presence flag    |
| VoOnFrFil             | String           | 30 chars     | -           |            | Voice on frequency file link        |
| WeathBroad            | WeatherBroadcast | 0-2          | -           |            | Weather broadcast information       |
| WeaBroFil             | String           | 30 chars     | -           |            | Weather broadcast file link         |

## 6.29. Off Route Terrain Clearance Altitude

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.   |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.  |
| AlterIden             | String           | 8 chars      |             | 2108       | Alternate OffRouteTerrainClearanceAlt identifier  |
| Altitude              | Uint32           | -            | Ft          |            | Altitude: 1000ft clearance in non-mountainous & 2000ft in mountainous areas of US and 3000ft clearance for NIMA products. |

| Attribute Name | Data Type     | Range   | Unit | Key  | Description   |
|----------------|---------------|---------|------|------|---|
| Ident          | String        | 8 chars | -    | 2102 | OffRouteTerrainClearanceAlt identifier  |
| Point2         | GeoCoordinate | x,y,z   | -    |      | North east corner (longitude, latitude, altitude) of the cell in which altitude applies |
| Point1         | GeoCoordinate | x,y,z   | -    |      | North west corner (longitude, latitude, altitude) of the cell in which altitude applies |
| Point3         | GeoCoordinate | x,y,z   | -    |      | South east corner (longitude, latitude, altitude) of the cell in which altitude applies |
| Point4         | GeoCoordinate | x,y,z   | -    |      | South west corner (longitude, latitude, altitude) of the cell in which altitude applies |

## 6.30. ParachuteJumpArea

| Attribute Name | Data Type | Range | Unit | Key  | Description  |
|----------------|-----------|-------|------|------|--|
| StoraNumbe     | Uint64    | -     | -    | 2101 | Storage number.  |
| AHGT           | Logical   | 1     | -    |      | Absolute Height above surface level Flag. Always true. |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                 |
|-----------------------|-------------------|--------------|-------------|------------|--|
| AltitRefer            | AltitudeReference | 0-4          | -           |            | Altitude reference (eg: AMSL, AGL, etc.)           |
| Country               | CountryEntry      | 0-336        | -           | 2116       | Country where the parachute jump area is located   |
| EffecAltit            | Sint32            | -            | Ft          |            | Altitude for which the area is effective           |
| EffecTim              | String            | 50 chars     | -           |            | Indicates hours, dates, or condition of operation  |
| IcaoCode              | String            | 4 chars      | -           |            | ICAO region code                                   |
| Ident                 | String            | 8 chars      | -           | 2102       | DAFIF parachute jump area identifier               |
| Name                  | String            | 50 chars     | -           |            | Official name assigned to the jump area            |
| OperaHour             | String            | 20 chars     | -           |            | Actual hours of operation                          |
| OperaTim              | String            | 95 chars     | -           |            | Operating times of the area                        |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude) |
| StateName             | StateEntry        | 0-51         | -           |            | State or province where the jump area is located   |

## 6.31. ParachuteJumpAreaBoundary

| <b>Attribute Name</b> | <b>Data Type</b>     | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|----------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64               | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical              | 1            | -           |            | Absolute Height above surface level Flag. Always true.           |
| ArcSegDeri            | ArcSegmentDerivation | 0-3          | -           |            | Indicates how the arc segment is defined                         |
| Bearing1              | Float32              | +/-180       | Deg         |            | Bearing from navigational aid to designated area                 |
| Bearing2              | Float32              | +/-180       | Deg         |            | Bearing from navigational aid to designated area                 |
| BoundShap             | BoundaryShape        | 0-8          | -           |            | Type of area point being plotted by positions, radii, etc.       |
| Point2                | GeoCoordinate        | x,y,z        | -           |            | Position (longitude, latitude, altitude) of circle or arc center |
| Country               | CountryEntry         | 0-336        | -           | 2116       | Country in which boundary segment is located                     |
| Distance1             | Float32              | -            | Nm          |            | Distance from navigational aid to the designated area            |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| Distance2             | Float32          | -            | Nm          |            | Distance from navigational aid to the designated area  |
| IcaoCode              | String           | 4 chars      | -           |            | ICAO code  |
| Ident                 | String           | 8            | -           | 2102       | DAFIF parachute jump area identifier                   |
| NavaiCount            | CountryEntry     | 0-336        | -           |            | Country where the navaid is located                    |
| NavaiIden             | String           | 6 chars      | -           |            | Navaid identifier                                      |
| NavKeyCod             | Uint32           | -            | -           |            | Navaid key code  |
| Point3                | GeoCoordinate    | x,y,z        | -           |            | Navaid position (longitude, latitude, altitude)        |
| NavStoNumb            | Uint64           | -            | -           |            | Associated navaid storage number                       |
| NavaidType            | NavaidType       | 0-15         | -           |            | Navaid type  |
| PaJuArStNu            | Uint64           | -            | -           |            | Storage number of associated ParachuteJump Area record |
| Radius1               | Float32          | -            | Nm          |            | Radius of arc or circle from the center position       |
| Radius2               | Float32          | -            | Nm          |            | Radius of arc or circle from the center position       |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude)     |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------------|--------------|-------------|------------|--|
| Point4                | GeoCoordinate          | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the segment end position   |
| Point5                | GeoCoordinate          | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the segment start position |
| SequeNumbe            | Uint32                 | -            | -           | 2115       | Sequence number  |
| Type                  | ParachuteJump AreaType | 0-7          | -           |            | Parachute jump area boundary type                                      |

## 6.32. PathPoint

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|---------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64              | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical             | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirpoIden             | String              | 6 chars      | -           | 2102       | Associated airport/heliport identifier                 |
| AirStoNumb            | Uint64              | -            | -           |            | Associated airport/heliport storage number             |
| AppPerDesi            | ApproachPerformance | 0-0          | -           |            | Indicates the category type of the approach (APD)      |
| AppRouIden            | String              | 6 chars      | -           |            | Identifier of the approach route to be flown           |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|---------------------|--------------|-------------|------------|---|
| AppSegTyp             | ApproachSegmentType | 0-1          | -           |            | Type of the final approach segment (operations type)                        |
| Country               | CountryEntry        | 0-336        | -           | 2116       | Country in which the airport/heliport is located                            |
| FlPaAlElHe            | Sint32              | -            | Ft          |            | Surveyed height in reference to WGS-84 ellipsoid                            |
| FlPaAlOrHe            | Sint32              | -            | Ft          |            | Surveyed height in reference to Mean Sea Level (MSL)                        |
| Point2                | GeoCoordinate       | x,y,z        | -           |            | Flight path alignment point (FPAP) position (longitude, latitude, altitude) |
| GlideAngl             | Float32             | +/-180       | Deg         |            | Intended descent angle for final approach flight path                       |
| IcaoCode              | String              | 4 chars      | -           |            | ICAO code for the airport/heliport  |
| LaThElHeig            | Sint32              | -            | Ft          |            | Surveyed height in reference to WGS-84 ellipsoid                            |
| LaThOrHeig            | Sint32              | -            | Ft          |            | Surveyed height in reference to Mean Sea Level (MSL)                        |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|-------------------|--------------|-------------|------------|---|
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Landing threshold point (LTP) position (longitude, latitude, altitude)  |
| LengOffse             | Uint32            | -            | Ft          |            | Distance from stop end of runway (SER) to the FPAP  |
| RePaDaSele            | PathDataSelect or | 0-0          | -           |            | Reference path data selector enables automatic tuning of a procedure by Ground Based Augmentation Systems (GBAS) avionics |
| RefPatIden            | String            | 6 chars      | -           |            | Ident to confirm selection of correct approach procedure  |
| RouteIndic            | String            | 25 chars     | -           |            | Differentiates between multiple final approach segments to the same runway or helipad (single alpha character)            |
| RunwaIden             | String            | 6 chars      | -           |            | Associated runway/helipad identifier  |
| ServiProvi            | ServiceProvider   | 0-0          | -           |            | Associates approach procedure to a particular Satellite Based Approach System (SBAS) service provider                     |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                   |
|-----------------------|------------------|--------------|-------------|------------|--|
| ThrCouWidt            | Float32          | -            | Ft          |            | Width of lateral course at Landing Threshold Point   |
| ThrCroHeig            | Uint32           | 6            | Ft          |            | Height above landing threshold on a normal glidepath |

## 6.33. PreferredRoute

| <b>Attribute Name</b> | <b>Data Type</b>     | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|----------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64               | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical              | 1            | -           |            | Absolute Height above surface level Flag. Always true.       |
| AircrGrou             | AircraftGroup        | 0-21         | -           |            | Types of aircrafts permitted to use the route                |
| AirwaLeve             | AirwayLevel          | 0-3          | -           |            | Airway level (high, low, or both)                            |
| AlRoAiGrou            | AircraftGroup        | 0-21         | -           |            | Types of aircrafts permitted to use the alternate route      |
| AltitDescr            | AltitudeDescription  | 0-13         | -           |            | Description of how segment altitude limits should be applied |
| DirecRestr            | DirectionRestriction | 0-3          | -           |            | Direction restriction (forward, backward, either)            |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|---------------------|--------------|-------------|------------|---|
| EffecTime             | String              | 50 chars     | -           |            | Period during which preferred route is effective            |
| EffecTime1            | String              | 50 chars     | -           |            | Period during which preferred route is effective            |
| EffecTime2            | String              | 50 chars     | -           |            | Period during which preferred route is effective            |
| FixCountry            | CountryEntry        | 0-336        | -           | 2116       | Country where the fix point is located                      |
| FixIcaCod             | String              | 4 chars      | -           |            | ICAO code of fix point                                      |
| FixIdent              | String              | 30 chars     | -           |            | Fix identifier (may be name if ident not available)         |
| FiNaKeCod             | Uint32              | -            | -           |            | Key code of fix point for navaid fix                        |
| FixPoiTyp             | FixPointType        | 0-19         | -           |            | Fix point type for navaid and ATS fixes                     |
| FiPoReTyp             | FixPointRecord Type | 0-13         | -           |            | Fix record type   |
| FixStoNumb            | Uint64              | -            | -           |            | Fix storage number  |
| Ident                 | String              | 8 chars      | -           | 2102       | Route identifier  |
| InFiIcCod             | String              | 4 chars      | -           |            | ICAO code of the initial fix point                          |
| IniFixIden            | String              | 6 chars      | -           |            | Identifier of departure airport or initial fix of the route |
| IniFixNam             | String              | 50 chars     | -           |            | Name of the initial fix point                               |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|------------------|--------------|-------------|------------|--|
| InFiReTyp             | FixRecordType    | 0-8          | -           |            | Initial fix record type  |
| InFiStNumb            | Uint64           | -            | -           |            | Storage number of the associated initial fix point               |
| MaxRouAlti            | Sint32           | -            | Ft          |            | Maximum altitude limit for route                                 |
| MaSpLiFla             | Logical          | Boolean      | -           |            | Speed limit represents maximum speed allowed (FALSE - min speed) |
| MinRouAlti            | Sint32           | -            | Ft          |            | Minimum altitude limit for route                                 |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of fix point            |
| RefRouIden            | String           | 6 chars      | -           |            | Reference route identifier (route to be flown)                   |
| RnaReqFla             | Logical          | Boolean      | -           |            | RNAV equipment required flag                                     |
| RouteUse              | RouteUse         | 0-2          | -           |            | Route use (point-to-point or area-to-area)                       |
| RoutiTyp              | RoutingType      | 0-7          | -           |            | Type of reference route  |
| SegAltLimi            | Sint32           | -            | Ft          |            | Segment altitude limit 1   |
| SegAltLim1            | Sint32           | -            | Ft          |            | Segment altitude limit 2   |
| SequeNumbe            | Uint32           | -            | -           |            | Sequence number  |
| SpeedLimit            | Uint32           | -            | Kts         |            | Speed limit for the route  |

| <b>Attribute Name</b> | <b>Data Type</b>   | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|--------------------|--------------|-------------|------------|--|
| TeFiIccod             | String             | 4 chars      | -           |            | ICAO code of the terminal fix point                        |
| TerFixIden            | String             | 6 chars      | -           |            | Identifier of arrival airport or terminal fix of the route |
| TerFixNam             | String             | 50 chars     | -           |            | Name of the terminal fix point                             |
| TeFiReTyp             | FixRecordType      | 0-8          | -           |            | Terminal fix record type                                   |
| TeFiStNumb            | Uint64             | -            | -           |            | Storage number of the associated terminal fix point        |
| TimeCode              | PrimaryTimeCode    | 0-4          | -           |            | Describes continuity of time of applicability              |
| Type                  | PreferredRouteType | 0-9          | -           |            | Preferred route type                                       |

## 6.34. Preset Site

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirTruBear            | Float32          | 0-360        | Deg         |            | True bearing of aircraft at the preset site            |
| AirpoIden             | String           | 6 chars      | -           | 2108       | Identifier of the associated airport                   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| AirStoNumb            | Uint64           | -            | -           |            | Storage number of the associated airport                                |
| Ident                 | String           | 32 chars     | -           | 2102       | PresetSite identifier   |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Preset site position (longitude, latitude, altitude)                    |
| Runwalden             | String           | 6 chars      | -           |            | Ident of the associated runway  |
| RunStoNumb            | Uint64           | -            | -           |            | Storage number of the associated runway                                 |
| SegmeNumbe            | Uint32           | -            | -           |            | The segment number of the preset site, if it belongs to a segment group |
| Type                  | PresetSiteType   | 0-8          | -           |            | Type of preset site   |

## 6.35. RestrictiveAirspace

| <b>Attribute Name</b> | <b>Data Type</b>        | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|-------------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64                  | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical                 | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirspDesig            | String                  | 6 chars      | -           | 2102       | Restrictive airspace designation                       |
| AirResTyp             | AirspaceRestrictionType | 0-9          | -           |            | Restrictive airspace type                              |
| ArcBearing            | Float32                 | +/-180       | Deg         |            | Arc bearing  |
| ArcDistanc            | Float32                 | -            | Nm          |            | Arc distance   |

| Attribute Name | Data Type            | Range    | Unit | Key  | Description  |
|----------------|----------------------|----------|------|------|--|
| ArcDistan1     | Float32              | -        | Nm   |      | Arc distance (radius of arc from center point)       |
| Point3         | GeoCoordinate        | x,y,z    | -    |      | Arc origin position (longitude, latitude, altitude)  |
| ArcSegDeri     | ArcSegmentDerivation | 0-3      | -    |      | Indicates how the arc segment is defined             |
| Bearing1       | Float32              | +/-180   | Deg  |      | True bearing from arc origin or navaid               |
| Bearing2       | Float32              | +/-180   | Deg  |      | True bearing from arc origin or navaid               |
| BoundEn        | Logical              | Boolean  | -    |      | End of boundary description - return to origin point |
| BoundShap      | BoundaryShape        | 0-8      | -    |      | Boundary shape type                                  |
| Country        | CountryEntry         | 0-336    | -    | 2116 | Country where airspace is located                    |
| IcaoCode       | String               | 4 chars  | -    |      | ICAO code for the airspace                           |
| Level          | AirwayLevel          | 0-3      | -    |      | Type of airway (high, low, or either)                |
| LowerLimit     | Sint32               | -        | Ft   |      | Lower limit  |
| LoLiAlRefe     | AltitudeReference    | 0-4      | -    |      | Altitude reference                                   |
| MultiCod       | String               | 2 chars  | -    |      | Differentiate between airspaces with same designator |
| Name           | String               | 50 chars | -    |      | Restrictive airspace name                            |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|-------------------|--------------|-------------|------------|--|
| NavaiCount            | CountryEntry      | 0-336        | -           |            | Country in which navaid is located                               |
| Navaiden              | String            | 6 chars      | -           |            | Navaid identifier  |
| NavKeyCod             | Uint32            | -            | -           |            | Distinguish between same type navaid with same ident and country |
| NavaidType            | NavaidType        | 0-15         | -           |            | Navaid type  |
| Notam                 | Logical           | Boolean      | -           |            | Active times by NOTAM  |
| Point2                | GeoCoordinate     | x,y,z        | -           |            | Position (longitude, latitude, altitude)                         |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude)               |
| Sector                | String            | 100 chars    | -           | 2117       | Designation for the section of the airspace                      |
| SequeNumbe            | Uint32            | -            | -           |            | Sequence number  |
| SpUsAiStNu            | Uint64            | -            | -           |            | Associated SpecialUseAirs pace storage number                    |
| TimeCode              | PrimaryTimeCode   | 0-4          | -           |            | Time codes for primary records                                   |
| UpperLimit            | Sint32            | -            | Ft          |            | Upper limit  |
| UpLiAlRefe            | AltitudeReference | 0-4          | -           |            | Reference for upper limit altitude                               |

## 6.36. Runway

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.   |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true.                    |
| AirIcaCod             | String           | 4 chars      | -           | 2103       | Associated Airport ICAO code.   |
| AirpoIden             | String           | 6 chars      | -           | 2108       | Associated Airport identifier.  |
| AirStoNumb            | Uint64           | -            | -           |            | Associated Airport storage number.  |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the runway approach end.      |
| Bearing               | Float32          | +/-180       | Deg         |            | Magnetic bearing.   |
| CeLiLiFla             | Logical          | Boolean      | -           |            | Indicates presence of lights on center line.                              |
| ClosedFlag            | Logical          | Boolean      | -           |            | Indicates if the runway is closed or unusable.                            |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Runway country.   |
| Descriptio            | String           | memo         | -           |            | Runway description.   |
| DisThrDist            | Uint32           | -            | Ft          |            | Distance between the beginning of the runway and the displaced threshold. |

| <b>Attribute Name</b> | <b>Data Type</b>     | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|----------------------|--------------|-------------|------------|---|
| Point2                | GeoCoordinate        | x,y,z        | -           |            | Position (longitude, latitude, altitude) of the displaced threshold (latitude, longitude, elevation). |
| Ident                 | String               | 6 chars      | -           | 2102       | Runway identifier.  |
| LanAidCate            | LandingAidCategory   | 0-9          | -           |            | Category of the primary landing aid (ILS, MLS, GLS).  |
| LanAidIden            | String               | 6 chars      | -           |            | Primary landing aid (ILS, MLS or GLS) identifier.   |
| LandiDista            | Uint32               | -            | Ft          |            | Landing distance available.   |
| Length                | Uint32               | -            | Ft          |            | Runway length.  |
| LightSyste            | LightingSystem       | 0-64         | -           |            | Lighting system 1.  |
| LightSyst1            | LightingSystem       | 0-64         | -           |            | Lighting system 2.  |
| LightSyst2            | LightingSystem       | 0-64         | -           |            | Lighting system 3.  |
| LightSyst3            | LightingSystem       | 0-64         | -           |            | Lighting system 4.  |
| LightSyst4            | LightingSystem       | 0-64         | -           |            | Lighting system 5.  |
| LightSyst5            | LightingSystem       | 0-64         | -           |            | Lighting system 6.  |
| LightSyst6            | LightingSystem       | 0-64         | -           |            | Lighting system 7.  |
| LightSyst7            | LightingSystem       | 0-64         | -           |            | Lighting system 8.  |
| MaxTirPres            | MaximumTire Pressure | 0-4          | Psi         |            | Maximum tire pressure authorized.   |

| <b>Attribute Name</b> | <b>Data Type</b>         | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|--------------------------|--------------|-------------|------------|---|
| PavemClass            | Uint32                   | -            | -           |            | Pavement classification number.                                   |
| PavEvaMeth            | PavementEvaluationMethod | 0-2          | -           |            | Pavement evaluation method.                                       |
| PavSubCate            | PavementSubgradeCategory | 0-4          | -           |            | Pavement subgrade category.                                       |
| PavemTyp              | PavementType             | 0-3          | -           |            | Type of pavement.   |
| SeLaAiCate            | LandingAidCategory       | 0-9          | -           |            | Category of the second landing aid (ILS, MLS, GLS).               |
| SeLaAiIden            | String                   | 6 chars      | -           |            | Second landing aid (ILS, MLS or GLS) identifier.                  |
| Slope                 | Float32                  | -            | %           |            | Runway gradient.  |
| Point3                | GeoCoordinate            | x,y,z        | -           |            | Position (longitude, latitude, elevation) of the runway stop end. |
| StopwLengt            | Uint32                   | -            | Ft          |            | Length of the area beyond the takeoff runway.                     |
| StoSUrTyp             | RunwaySurfaceType        | 0-21         | -           |            | Stopway surface type.   |
| SurfaTyp              | RunwaySurfaceType        | 0-21         | -           |            | Runway surface type.  |
| TakeoDista            | Uint32                   | -            | Ft          |            | Takeoff distance available.                                       |
| ThrCroHeig            | Uint32                   | -            | Ft          |            | Height above the landing threshold on a normal glidepath.         |

| Attribute Name | Data Type | Range   | Unit | Key | Description  |
|----------------|-----------|---------|------|-----|--|
| TouZonElev     | Float32   | -       | Ft   |     | Highest elevation in the first 3000 ft of landing surface. |
| TrueBearin     | Float32   | +/-180  | Deg  |     | Runway true bearing.                                       |
| TruNorRefe     | Logical   | Boolean | -    |     | True North reference flag.                                 |
| Width          | Uint32    | -       | Ft   |     | Runway width.  |

## 6.37. Sid

| Attribute Name | Data Type           | Range    | Unit | Key  | Description  |
|----------------|---------------------|----------|------|------|--|
| StoraNumbe     | Uint64              | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical             | 1        | -    |      | Absolute Height above surface level Flag. Always true. |
| AirStoNumb     | Uint64              | -        | -    |      | Airport storage number                                 |
| Altitude1      | Sint32              | -        | Ft   |      | First altitude limit                                   |
| AltitTyp       | AltitudeType        | 0-4      | -    |      | Altitude 1 type  |
| Altitude2      | Sint32              | -        | Ft   |      | Second altitude limit                                  |
| AltitTyp1      | AltitudeType        | 0-4      | -    |      | Altitude 2 type  |
| AltitDescr     | AltitudeDescription | 0-13     | -    |      | Altitude description                                   |
| ArcRadius      | Float32             | -        | Nm   |      | Arc radius   |
| CenterFix      | String              | 10 chars | -    |      | Point which defines the center of the arc flight path  |
| CeFiIccod      | String              | 4 chars  | -    |      | ICAO code of the center fix                            |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| Country               | CountryEntry           | 0-336        | -           | 2116       | Country associated with the terminal procedure                          |
| Course                | Float32                | +/-180       | Deg         |            | Outbound course from waypoint in fix ident                              |
| FixDetails            | FixDetails             | 0-9          | -           |            | Fix details   |
| FixFunctio            | FixFunction            | 0-7          | -           |            | Fix function  |
| FixIcaCod             | String                 | 4 chars      | -           |            | ICAO code of the fix point  |
| FixIdent              | String                 | 10 chars     | -           |            | Fix identifier  |
| FlyOveTyp             | FlyOverType            | 0-4          | -           |            | Fly over type   |
| MagCouIndi            | MagneticTrueIndication | 0-6          | -           |            | Indicates if the course provided is magnetic course                     |
| NavaiCount            | CountryEntry           | 0-336        | -           |            | Country where recommended navaid 1 is located                           |
| Point2                | GeoCoordinate          | x,y,z        | -           |            | Navaid 1 DME position (longitude, latitude, altitude)                   |
| NavKeyCod             | Uint32                 | -            | -           |            | Distinguish between navaid of same type with same ident in same country |
| NavMagVari            | Float32                | +/-180       | Deg         |            | Recommended navaid 1 magnetic variation                                 |
| Point3                | GeoCoordinate          | x,y,z        | -           |            | Navaid 1 position (longitude, latitude, altitude)                       |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|-------------------|--------------|-------------|------------|---|
| NavaiTyp              | SegmentNavaidType | 0-13         | -           |            | Recommended navaid 1 type   |
| NavaiCoun1            | CountryEntry      | 0-336        | -           |            | Country where recommended navaid 2 is located                           |
| Point4                | GeoCoordinate     | x,y,z        | -           |            | Navaid 2 DME position (longitude, latitude, altitude)                   |
| NavKeyCod1            | Uint32            | -            | -           |            | Distinguish between navaid of same type with same ident in same country |
| NavMagVar1            | Float32           | +/-180       | Deg         |            | Recommended navaid 2 magnetic variation                                 |
| Point5                | GeoCoordinate     | x,y,z        | -           |            | Navaid 2 position (longitude, latitude, altitude)                       |
| NavaiTyp1             | SegmentNavaidType | 0-13         | -           |            | Recommended navaid 2 type   |
| PathTermin            | PathTermination   | 0-23         | -           |            | Path and Termination  |
| ReNaIcCod             | String            | 4 chars      | -           |            | ICAO code of the recommended navaid 1                                   |
| RecNavIden            | String            | 10 chars     | -           |            | Recommended navaid identifier 1   |
| RecNavIde1            | String            | 10 chars     | -           |            | Recommended navaid identifier 2   |
| ReqNavPerf            | Float32           | -            | Nm          |            | Required navigation performance   |

| Attribute Name | Data Type           | Range   | Unit | Key | Description  |
|----------------|---------------------|---------|------|-----|--|
| RouteDista     | Float32             | -       | Nm   |     | Distance in nautical miles from waypoint in fix ident          |
| RouteType      | RouteType           | 0-4     | -    |     | Termination Procedure Type                                     |
| SpeAirCate     | AircraftCategory    | 0-4     | -    |     | Aircraft category that speed limit 1 applies to                |
| SpeedAltit     | Sint32              | -       | Ft   |     | Altitude where speed limit 1 applies                           |
| SpeedLimit     | Uint32              | -       | Kts  |     | Speed limit 1  |
| SpeAirCat1     | AircraftCategory    | 0-4     | -    |     | Aircraft category that speed limit 2 applies to                |
| SpeedAlti1     | Sint32              | -       | Ft   |     | Altitude where speed limit 2 applies                           |
| SpeedLimi1     | Uint32              | -       | Kts  |     | Speed limit 2  |
| SuTeDaStNu     | Uint64              | -       | -    |     | Storage number of associated Supplemental Terminal Data record |
| ThrCroHeig     | Uint32              | -       | Ft   |     | Threshold crossing height                                      |
| TransAltit     | Sint32              | -       | Ft   |     | Transition altitude  |
| TurnDirect     | TurnDirection       | 0-3     | -    |     | Turn direction   |
| TurDirVali     | Logical             | Boolean | -    |     | Turn direction valid   |
| WaypoCount     | CountryEntry        | 0-336   | -    |     | Waypoint country   |
| WaypoDescr     | WaypointDescription | 0-15    | -    |     | Waypoint description   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| WaypoDista            | Float32          | -            | Nm          |            | Nautical miles between fix point and recommended navaid 1 (RHO)     |
| WaypoDist1            | Float32          | -            | Nm          |            | Nautical miles between fix point and recommended navaid 2           |
| WayMagBear            | Float32          | +/-180       | Deg         |            | Magnetic bearing between fix point and recommended navaid 1 (THETA) |
| WayMagBea1            | Float32          | +/-180       | Deg         |            | Magnetic bearing between fix point and recommended navaid 2         |
| WayMagVari            | Float32          | +/-180       | Deg         |            | Waypoint magnetic variation   |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Waypoint position (longitude, latitude, altitude)                   |
| AirIcaCod             | String           | 4 chars      | -           |            | ICAO code of the associated airport                                 |
| AirpoIden             | String           | 6 chars      | -           | 2102       | Identifier of the associated airport                                |
| Ident                 | String           | 8 chars      | -           | 2108       | SID/STAR/Approach identifier  |
| SequeNumbe            | Uint32           | -            | -           |            | Sequence number   |
| SidRouTyp             | SidRouteType     | 0-12         | -           |            | SID route type  |
| TransIden             | String           | 60 chars     | -           |            | Transition identifier   |

## 6.38. Special Use Airspace

| Attribute Name | Data Type    | Range    | Unit | Key  | Description  |
|----------------|--------------|----------|------|------|--|
| StoraNumbe     | Uint64       | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical      | 1        | -    |      | Absolute Height above surface level Flag. Always true.       |
| AirwaLeve      | AirwayLevel  | 0-3      | -    |      | Airspace structure in which boundary is effective (high/low) |
| ComCalSig      | String       | 50 chars | -    | 2111 | Call sign of the communications facilities                   |
| ContrAgenc     | String       | 60 chars | -    |      | Office responsible for air traffic within airspace           |
| Country1       | CountryEntry | 0-336    | -    | 2116 | Country in which the special use airspace is located         |
| Country2       | CountryEntry | 0-336    | -    |      | Country in which the special use airspace is located         |
| Country3       | CountryEntry | 0-336    | -    |      | Country in which the special use airspace is located         |
| Country4       | CountryEntry | 0-336    | -    |      | Country in which the special use airspace is located         |
| EffecDat       | String       | 12 chars | -    |      | Effective date of the special use airspace                   |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|-------------------|--------------|-------------|------------|---|
| EffecTim              | String            | 50 chars     | -           |            | Times at which given airspace iWs to be in effect               |
| Frequency1            | Uint64            | -            | Hz          |            | Frequency for communicating with identified facility            |
| Frequency2            | Uint64            | -            | Hz          |            | Frequency 2 used for communicating with identified facility     |
| IcaoCode              | String            | 4 chars      | -           |            | ICAO code of the special use airspace                           |
| Ident                 | String            | 6 chars      | -           | 2102       | ICAO ident of special use airspace                              |
| LowEffAlti            | Sint32            | -            | Ft          |            | Lower vertical limit of the given airspace                      |
| LoEfAlRefere          | AltitudeReference | 0-4          | -           |            | Lower effective altitude reference                              |
| Name                  | String            | 50 chars     | -           |            | Official name of the special use airspace                       |
| Point1                | GeoCoordinate     | x,y,z        | -           |            | Reference Position (longitude, latitude, altitude)              |
| Remark                | String            | memo         | -           |            | Essential information related to the given special use airspace |
| Sector                | String            | 2 chars      | -           | 2117       | Designation for the section of the special use airspace         |

| Attribute Name | Data Type               | Range | Unit | Key | Description   |
|----------------|-------------------------|-------|------|-----|---|
| Type           | AirspaceRestrictionType | 0-9   | -    |     | Special use airspace type                                   |
| UppEffAlti     | Sint32                  | -     | Ft   |     | Upper vertical limit of the given airspace                  |
| UpEfAlRef      | AltitudeReference       | 0-4   | -    |     | Upper effective altitude reference                          |
| WeathCondi     | WeatherCondition        | 0-7   | -    |     | Meteorological conditions in which the airspace can be used |

## 6.39. Star

| Attribute Name | Data Type           | Range    | Unit | Key  | Description  |
|----------------|---------------------|----------|------|------|--|
| StoraNumbe     | Uint64              | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical             | 1        | -    |      | Absolute Height above surface level Flag. Always true. |
| AirStoNumb     | Uint64              | -        | -    |      | Airport storage number                                 |
| Altitude1      | Sint32              | -        | Ft   |      | First altitude limit                                   |
| AltitTyp       | AltitudeType        | 0-4      | -    |      | Altitude 1 type  |
| Altitude2      | Sint32              | -        | Ft   |      | Second altitude limit                                  |
| AltitTyp1      | AltitudeType        | 0-4      | -    |      | Altitude 2 type  |
| AltitDescr     | AltitudeDescription | 0-13     | -    |      | Altitude description                                   |
| ArcRadius      | Float32             | -        | Nm   |      | Arc radius   |
| CenterFix      | String              | 10 chars | -    |      | Point which defines the center of the arc flight path  |
| CeFiIcCod      | String              | 4 chars  | -    |      | ICAO code of the center fix                            |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| Country               | CountryEntry           | 0-336        | -           | 2116       | Country associated with the terminal procedure                          |
| Course                | Float32                | +/-180       | Deg         |            | Outbound course from waypoint in fix ident                              |
| FixDetails            | FixDetails             | 0-9          | -           |            | Fix details   |
| FixFunctio            | FixFunction            | 0-7          | -           |            | Fix function  |
| FixIcaCod             | String                 | 4 chars      | -           |            | ICAO code of the fix point  |
| FixIdent              | String                 | 10 chars     | -           |            | Fix identifier  |
| FlyOveTyp             | FlyOverType            | 0-4          | -           |            | Fly over type   |
| MagCouIndi            | MagneticTrueIndication | 0-6          | -           |            | Indicates if the course provided is magnetic course                     |
| NavaiCount            | CountryEntry           | 0-336        | -           |            | Country where recommended navaid 1 is located                           |
| Point2                | GeoCoordinate          | x,y,z        | -           |            | Navaid 1 DME position (longitude, latitude, altitude)                   |
| NavKeyCod             | Uint32                 | -            | -           |            | Distinguish between navaid of same type with same ident in same country |
| NavMagVari            | Float32                | +/-180       | Deg         |            | Recommended navaid 1 magnetic variation                                 |
| Point3                | GeoCoordinate          | x,y,z        | -           | A          | Navaid 1 position (longitude, latitude, altitude)                       |

| <b>Attribute Name</b> | <b>Data Type</b>  | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|-------------------|--------------|-------------|------------|---|
| NavaiTyp              | SegmentNavaidType | 0-13         | -           |            | Recommended navaid 1 type   |
| NavaiCoun1            | CountryEntry      | 0-336        | -           |            | Country where recommended navaid 2 is located                           |
| Point4                | GeoCoordinate     | x,y,z        | -           |            | Navaid 2 DME position (longitude, latitude, altitude)                   |
| NavKeyCod1            | Uint32            | -            | -           |            | Distinguish between navaid of same type with same ident in same country |
| NavMagVar1            | Float32           | +/-180       | Deg         |            | Recommended navaid 2 magnetic variation                                 |
| Point5                | GeoCoordinate     | x,y,z        | -           |            | Navaid 2 position (longitude, latitude, altitude)                       |
| NavaiTyp1             | SegmentNavaidType | 0-13         | -           |            | Recommended navaid 2 type   |
| PathTermin            | PathTermination   | 0-23         | -           |            | Path and Termination  |
| ReNaIcCod             | String            | 4 chars      | -           |            | ICAO code of the recommended navaid 1                                   |
| RecNavIden            | String            | 10 chars     | -           |            | Recommended navaid identifier 1   |
| RecNavIde1            | String            | 10 chars     | -           |            | Recommended navaid identifier 2   |
| ReqNavPerf            | Float32           | -            | Nm          |            | Required navigation performance   |

| Attribute Name | Data Type           | Range   | Unit | Key | Description  |
|----------------|---------------------|---------|------|-----|--|
| RouteDista     | Float32             | -       | Nm   |     | Distance in nautical miles from waypoint in fix ident          |
| RouteType      | RouteType           | 0-4     | -    |     | Termination Procedure Type                                     |
| SpeAirCate     | AircraftCategory    | 0-4     | -    |     | Aircraft category that speed limit 1 applies to                |
| WWSpeedAltit   | Sint32              | -       | Ft   |     | Altitude where speed limit 1 applies                           |
| SpeedLimit     | Uint32              | -       | Kts  |     | Speed limit 1  |
| SpeAirCat1     | AircraftCategory    | 0-4     | -    |     | Aircraft category that speed limit 2 applies to                |
| SpeedAlti1     | Sint32              | -       | Ft   |     | Altitude where speed limit 2 applies                           |
| SpeedLimi1     | Uint32              | -       | Kts  |     | Speed limit 2  |
| SuTeDaStNu     | Uint64              | -       | -    |     | Storage number of associated Supplemental Terminal Data record |
| ThrCroHeig     | Uint32              | -       | Ft   |     | Threshold crossing height                                      |
| TransAltit     | Sint32              | -       | Ft   |     | Transition altitude  |
| TurnDirect     | TurnDirection       | 0-3     | -    |     | Turn direction   |
| TurDirVali     | Logical             | Boolean | -    |     | Turn direction valid   |
| WaypoCount     | CountryEntry        | 0-336   | -    |     | Waypoint country   |
| WaypoDescr     | WaypointDescription | 0-15    | -    |     | Waypoint description   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| WaypoDista            | Float32          | -            | Nm          |            | Nautical miles between fix point and recommended navaid 1 (RHO)     |
| WaypoDist1            | Float32          | -            | Nm          |            | Nautical miles between fix point and recommended navaid 2           |
| WayMagBear            | Float32          | +/-180       | Deg         |            | Magnetic bearing between fix point and recommended navaid 1 (THETA) |
| WayMagBea1            | Float32          | +/-180       | Deg         |            | Magnetic bearing between fix point and recommended navaid 2         |
| WayMagVari            | Float32          | +/-180       | Deg         |            | Waypoint magnetic variation   |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Waypoint position (longitude, latitude, altitude)                   |
| AirIcaCod             | String           | 4 chars      | -           |            | ICAO code of the associated airport                                 |
| AirpoIden             | String           | 6 chars      | -           | 2102       | Identifier of the associated airport                                |
| Ident                 | String           | 8 chars      | -           | 2108       | SID/STAR/Approach identifier  |
| SequeNumbe            | Uint32           | -            | -           |            | Sequence number   |
| StaRouTyp             | StarRouteType    | 0-12         | -           |            | STAR route type   |
| TransIden             | String           | 6 chars      | -           |            | Transition identifier   |

| Attribute Name | Data Type | Range  | Unit | Key | Description                     |
|----------------|-----------|--------|------|-----|---------------------------------|
| VertiAngl      | Float32   | +/-180 | Deg  |     | Descent angle for the procedure |

## 6.40. Supplemental Terminal Data

| Attribute Name | Data Type            | Range   | Unit | Key  | Description   |
|----------------|----------------------|---------|------|------|---|
| StoraNumbe     | Uint64               | -       | -    | 2101 | Storage number.   |
| AHGT           | Logical              | 1       | -    |      | Absolute Height above surface level Flag. Always true.                  |
| AgencRespo     | String               | 8 chars | -    |      | Military or federal agency primarily responsible for terminal procedure |
| AirpoIden      | String               | 6 chars | -    | 2108 | Airport/Heliport identifierW  |
| Point1         | GeoCoordinate        | x,y,z   | -    |      | Position (longitude, latitude, altitude) of airport                     |
| AirStoNumb     | Uint64               | -       | -    |      | Airport/Heliport storage number   |
| AltMinTyp      | AlternateMinimumType | 0-2     | -    |      | Alternate minimum not standard or not authorized                        |
| Country        | CountryEntry         | 0-336   | -    | 2116 | Country associated with supplemental terminal procedure data            |
| EmeSafAlti     | Uint32               | -       | Ft   |      | Safe altitude providing obstacle clearance [above MSL]                  |

| <b>Attribute Name</b> | <b>Data Type</b>    | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|---------------------|--------------|-------------|------------|---|
| IcaoCode              | String              | 4 chars      | -           |            | Terminal procedure ICAO code  |
| Ident                 | String              | 40 chars     | -           | 2102       | Terminal procedure identifier   |
| OperaAgenc            | String              | 255 chars    | -           |            | Host country agency with authority for the terminal procedure                           |
| Remark                | String              | memo         | -           |            | Essential information applying to the entire procedure                                  |
| RouQuaTyp             | RouteQualifier Type | 0-2          | -           |            | Supplements route type - applies to GPS & RNAV type procedures                          |
| RouteType             | RouteType           | 0-4          | -           |            | Terminal procedure route type   |
| TakMinTyp             | TakeoffMinimumType  | 0-1          | -           |            | Takeoff minimum not standard and/or departure procedure are published                   |
| TransAltit            | Uint32              | -            | Ft          |            | Altitude below which vertical position controlled by reference to altitudes [above MSL] |
| TransLeve             | Uint32              | -            | Ft          |            | Lowest flight level above transition altitude [above MSL]                               |

## 6.41. Terminal Procedure Climb

| Attribute Name | Data Type     | Range    | Unit | Key  | Description  |
|----------------|---------------|----------|------|------|--|
| StoraNumbe     | Uint64        | -        | -    | 2101 | Storage number.  |
| AHGT           | Logical       | 1        | -    |      | Absolute Height above surface level Flag. Always true.         |
| AirpoIden      | String        | 6 chars  | -    | 2108 | Airport/Heliport identifier                                    |
| AirStoNumb     | Uint64        | -        | -    |      | Airport/Heliport storage number                                |
| ClimbAltit     | Uint32        | -        | Ft   |      | Altitude to which climb rate applies [above MSL]               |
| ClimbFootn     | String        | 90 chars | -    |      | Footnote associated with climb information                     |
| CliRatTyp      | ClimbRateType | 0-4      | -    |      | Minimum rate, or ATC climb rate if higher than min. climb rate |
| Country        | CountryEntry  | 0-336    | -    | 2116 | Country associated with terminal procedure climb data          |
| DesceRat       | Uint32        | -        | Ft/m |      | Minimum or ATC climb rate/descent [vertical velocity ft/min]   |
| IcaoCode       | String        | 4 chars  | -    |      | Terminal procedure ICAO code                                   |
| Ident          | String        | 40 chars | -    | 2102 | Terminal procedure identifier                                  |

| Attribute Name | Data Type     | Range   | Unit | Key | Description   |
|----------------|---------------|---------|------|-----|---|
| MinCliRat      | Uint32        | -       | Kts  |     | Minimum climb rate based on 60 knots                |
| OccurNumbe     | Uint32        | -       | -    |     | Number of occurrences for a given runway            |
| Point1         | GeoCoordinate | x,y,z   | -    |     | Position (longitude, latitude, altitude) of airport |
| RouteType      | RouteType     | 0-4     | -    |     | Terminal procedure route type                       |
| RunwaIden      | String        | 6 chars | -    |     | Runway at which the climb rate information applies  |

## 6.42. Terminal Procedure Feeder Route

| Attribute Name | Data Type | Range   | Unit | Key  | Description  |
|----------------|-----------|---------|------|------|--|
| StoraNumbe     | Uint64    | -       | -    | 2101 | Storage number.  |
| AHGT           | Logical   | 1       | -    |      | Absolute Height above surface level Flag. Always true.   |
| AirpoIden      | String    | 6 chars | -    | 2108 | Airport identifier                                       |
| AirStoNumb     | Uint64    | -       | -    |      | Airport storage number                                   |
| Altitude       | Sint32    | -       | Ft   |      | Referenced altitude associated with feeder route segment |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| Country               | CountryEntry           | 0-336        | -           | 2116       | Country associated with terminal procedure feeder route         |
| Course                | Float32                | +/-180       | Deg         |            | Course from waypoint 1 to waypoint 2 in route segment           |
| IcaoCode              | String                 | 4 chars      | -           |            | Feeder route ICAO code  |
| Ident                 | String                 | 10 chars     | -           | 2102       | Feeder route identifier   |
| MagCouIndi            | MagneticTrueIndication | 0-6          | -           |            | Indicates if course is given in degrees magnetic, true or other |
| RouteDista            | Float32                | -            | Nm          |            | Distance between waypoint 1 and waypoint 2                      |
| RouteType             | RouteType              | 0-4          | -           |            | Terminal procedure route type                                   |
| SequeNumbe            | Uint32                 | -            | -           | 2115       | Feeder route sequence number                                    |
| TerProIden            | String                 | 40 chars     | -           | 2126       | Terminal procedure identifier                                   |
| WaypoCount            | CountryEntry           | 0-336        | -           |            | Waypoint 1 country  |
| WaypoIden             | String                 | 6 chars      | -           |            | Waypoint 1 identifier   |
| Point1                | GeoCoordinate          | x,y,z        | -           |            | Waypoint 1 position (longitude, latitude, altitude)             |
| WaypoCoun1            | CountryEntry           | 0-336        | -           |            | Waypoint 2 country  |
| WaypoIden1            | String                 | 6 chars      | -           |            | Waypoint 2 identifier   |

| Attribute Name | Data Type     | Range | Unit | Key | Description   |
|----------------|---------------|-------|------|-----|---|
| Point2         | GeoCoordinate | x,y,z | -    |     | Waypoint 2 position (longitude, latitude, altitude) |

## 6.43. Terminal Procedure Minima

| Attribute Name | Data Type     | Range    | Unit | Key  | Description   |
|----------------|---------------|----------|------|------|---|
| StoraNumbe     | Uint64        | -        | -    | 2101 | Storage number.   |
| AHGT           | Logical       | 1        | -    |      | Absolute Height above surface level Flag. Always true.  |
| AirpoIden      | String        | 6 chars  | -    | 2108 | Airport/Heliport identifier   |
| Point1         | GeoCoordinate | x,y,z    | -    |      | Position (longitude, latitude, altitude) of airport   |
| AirStoNumb     | Uint64        | -        | -    |      | Airport/Heliport storage number   |
| ApproTyp       | String        | 30 chars | -    | 2107 | Type of approach on which minimum data is based   |
| CaADeHeigh     | Uint32        | -        | Ft   |      | Height above highest elevation in the touchdown zone - for a straight in or glideslope approach [above MSL] |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| CaAHeAbTou            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone  |
| CaAPrVisib            | Float32          | -            | m           |            | Designated visibility for the approach  |
| CaARuVisib            | Float32          | -            | m           |            | Determined by atmospheric conditions or instrumentally derived value for runway visual range                    |
| CaAWeCeili            | Float32          | -            | m           |            | Height equal to or greater than decision height or minimum descent altitude above airport or heliport elevation |
| CaBDeHeigh            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone - for a straight in or glideslope approach [above MSL]     |
| CaBHeAbTou            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone  |
| CaBPrVisib            | Float32          | -            | m           |            | Designated visibility for the approach  |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| CaBRuVisib            | Float32          | -            | m           |            | Determined by atmospheric conditions or instrumentally derived value for runway visual range                    |
| CaBWeCeili            | Float32          | -            | m           |            | Height equal to or greater than decision height or minimum descent altitude above airport or heliport elevation |
| CaCDeHeigh            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone - for a straight in or glideslope approach [above MSL]     |
| CaCHeAbTou            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone  |
| CaCPrVisib            | Float32          | -            | m           |            | Designated visibility for the approach  |
| CaCRuVisib            | Float32          | -            | m           |            | Determined by atmospheric conditions or instrumentally derived value for runway visual range                    |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| CaCWeCeili            | Float32          | -            | m           |            | Height equal to or greater than decision height or minimum descent altitude above airport or heliport elevation |
| CaDDeHeigh            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone - for a straight in or glideslope approach [above MSL]     |
| CaDHeAbTou            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone  |
| CaDPrVisib            | Float32          | -            | m           |            | Designated visibility for the approach  |
| CaDRuVisib            | Float32          | -            | m           |            | Determined by atmospheric conditions or instrumentally derived value for runway visual range                    |
| CaDWeCeili            | Float32          | -            | m           |            | Height equal to or greater than decision height or minimum descent altitude above airport or heliport elevation |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| CaEDeHeigh            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone - for a straight in or glideslope approach [above MSL]     |
| CaEHeAbTou            | Uint32           | -            | Ft          |            | Height above highest elevation in the touchdown zone  |
| CaEPrVisib            | Float32          | -            | m           |            | Designated visibility for the approach  |
| CaERuVisib            | Float32          | -            | m           |            | Determined by atmospheric conditions or instrumentally derived value for runway visual range                    |
| CaEWeCeili            | Float32          | -            | m           |            | Height equal to or greater than decision height or minimum descent altitude above airport or heliport elevation |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Country associated with terminal procedure minima data  |
| IcaoCode              | String           | 4 chars      | -           |            | Terminal procedure ICAO code  |
| Ident                 | String           | 40 chars     | -           | 2102       | Terminal procedure identifier   |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| RouteType             | RouteType        | 0-4          | -           |            | Terminal procedure route type                                 |
| Remark                | String           | memo         | -           |            | Remarks give conditions affecting published approach minimums |

## 6.44. VfrRoute

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirIcaCod             | String           | 4 chars      | -           |            | ICAO code of the associated airport/heliport           |
| AirpoIden             | String           | 6 chars      | -           | 2111       | Identifier of the associated airport/heliport          |
| Point1                | GeoCoordinate    | x,y,z        | -           |            | Position (longitude, latitude, altitude) of airport    |
| AirStoNumb            | Uint64           | -            | -           |            | Storage number of the associated airport/heliport      |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Country where the airport/heliport is located          |

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------|--------------|-------------|------------|---|
| Remark                | String           | memo         | -           |            | Essential information pertaining to part or to all route procedures at the airport/heliport |
| RouteIdent            | String           | 6 chars      | -           | 2102       | Route identifier  |
| RouteName             | String           | 40 chars     | -           |            | Route name  |

## 6.45. VfrRouteSegment

| <b>Attribute Name</b> | <b>Data Type</b> | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>                                     |
|-----------------------|------------------|--------------|-------------|------------|--|
| StoraNumbe            | Uint64           | -            | -           | 2101       | Storage number.  |
| AHGT                  | Logical          | 1            | -           |            | Absolute Height above surface level Flag. Always true. |
| AirIcaCod             | String           | 4 chars      | -           | 2103       | ICAO code of the associated airport/heliport           |
| AirpoIden             | String           | 6 chars      | -           | 2111       | Identifier of the associated airport/heliport          |
| AirStoNumb            | Uint64           | -            | -           |            | Storage number of the associated airport/heliport      |
| Altitude              | Uint32           |              | Ft          |            | Reference altitude [above sea level]                   |
| Country               | CountryEntry     | 0-336        | -           | 2116       | Country where the airport/heliport is located          |

| <b>Attribute Name</b> | <b>Data Type</b>       | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>  |
|-----------------------|------------------------|--------------|-------------|------------|---|
| Course                | Float32                | +/-180       | Deg         |            | Inbound course to the point/checkpoint  |
| CoursRefer            | MagneticTrueIndication | 0-6          | -           |            | Course reference (magnetic/true)  |
| Point2                | GeoCoordinate          | x,y,z        | -           |            | Position (longitude, latitude, altitude)<br>0.5nm, at 90 degree angle to heading, to left of checkpoint |
| MgrsPositi            | String                 | 20 chars     | -           |            | MGRS position given using the UTM or the UPS grid   |
| PathType              | PathType               | 0-6          | -           |            | Defines how the route is used (eg: arrival, departure, etc.)  |
| PointName             | String                 | 25 chars     | -           |            | Official name of point/checkpoint   |
| PointDescr            | String                 | 40 chars     | -           |            | Landmark, graphical description of point/checkpoint   |
| PoiRepTyp             | PointReportingType     | 0-2          | -           |            | Indicates if point is compulsory for graphic presentation of the route                                  |
| Point1                | GeoCoordinate          | x,y,z        | -           |            | Position (longitude, latitude, altitude) of point/checkpoint  |

| <b>Attribute Name</b> | <b>Data Type</b>           | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|----------------------------|--------------|-------------|------------|--|
| Point3                | GeoCoordinate              | x,y,z        | -           |            | Position (longitude, latitude, altitude)<br>0.5nm, at 90 degree angle to heading, to right of checkpoint |
| RouteIdent            | String                     | 6 chars      | -           | 2102       | Route identifier   |
| RouteName             | String                     | 40 chars     | -           |            | Route name   |
| SegAltDesc            | SegmentAltitudeDescription | 0-5          | -           |            | Defines how the given altitude applies to the segment  |
| SegmeNam              | String                     | 25 chars     | -           |            | Official segment name  |
| SegmeNumbe            | Uint32                     | -            | -           | 2115       | Defines relative position of segment in total VFR route segment  |
| SegTurDire            | PathTurnDirection          | 0-2          | -           |            | Direction in which course turns are to be made   |
| SegmeTyp              | SegmentType                | 0-3          | -           |            | Indicates if segment is a starting, next, or ending segment  |
| SOEAAFla              | Logical                    | Boolean      | -           |            | Flag indicating whether or not the segment starts or ends at an airport/heliport                         |
| VfRoStNumb            | Uint64                     | -            | -           |            | Storage number of the associated VFR route record  |

## 6.46. Waypoint

| Attribute Name | Data Type              | Range   | Unit | Key  | Description  |
|----------------|------------------------|---------|------|------|--|
| StoraNumbe     | Uint64                 | -       | -    | 2101 | Storage number.  |
| AHGT           | Logical                | 1       | -    |      | Absolute Height above surface level Flag. Always true. |
| AirIcaCod      | String                 | 4 chars | -    |      | ICAO code of the associated airport.                   |
| AirpoIden      | String                 | 6 chars | -    |      | Ident of the associated airport.                       |
| AirStoNumb     | Uint64                 | -       | -    |      | Storage number of the associated airport.              |
| Bearing        | Float32                | +/-180  | Deg  |      | Bearing from navaid to waypoint                        |
| BeariRefer     | MagneticTrueIndication | 0-6     | -    |      | Bearing reference (magnetic, true, or 'grid')          |
| ColloNavai     | Logical                | Boolean | -    |      | Waypoint collocated with a navaid flag                 |
| Country        | CountryEntry           | 0-336   | -    | 2116 | Country where the waypoint is located                  |
| Distance       | Float32                | -       | Nm   |      | Distance from navaid to waypoint                       |
| DynMagVari     | Float32                | +/-180  | Deg  |      | Dynamic magnetic variation                             |
| FixType        | FixType                | 0-16    | -    |      | Fix Type   |
| IcaoCode       | String                 | 4 chars | -    | 2103 | ICAO code of waypoint                                  |
| Ident          | String                 | 6 chars | -    | 2102 | Waypoint Identifier                                    |

| <b>Attribute Name</b> | <b>Data Type</b>   | <b>Range</b> | <b>Unit</b> | <b>Key</b> | <b>Description</b>   |
|-----------------------|--------------------|--------------|-------------|------------|--|
| Name                  | String             | 50 chars     | -           |            | Waypoint name/description  |
| NameFormat            | NameFormatType     | 0-16         | -           |            | Format of waypoint name field                                    |
| NavaiCount            | CountryEntry       | 0-336        | -           |            | Country where navaid is located                                  |
| NavaiIden             | String             | 6 chars      | -           |            | Navaid identifier  |
| NavKeyCod             | Uint32             | -            | -           |            | Distinguish between same type navaid with same ident and country |
| NavaidType            | NavaidType         | 0-15         | -           |            | Navaid type  |
| Point1                | GeoCoordinate      | x,y,z        | -           |            | Waypoint Position (longitude, latitude, altitude)                |
| RnavWaypoi            | Logical            | Boolean      | -           |            | Waypoint is a RNAV waypoint                                      |
| RouteType             | RouteType          | 0-4          | -           |            | Route type   |
| RunIcaCod             | String             | 6 chars      | -           |            | Runway ICAO code   |
| RunwaIden             | String             | 6 chars      | -           |            | Runway identifier  |
| RvsmIndica            | RvsmIndicator      | 0-5          | -           |            | Waypoint RVSM indicator  |
| StateName             | StateEntry         | 0-51         | -           |            | State or province where waypoint is located                      |
| Type                  | WaypointType       | 0-15         | -           |            | Waypoint type  |
| Usage                 | WaypointUsag eType | 0-9          | -           |            | Waypoint usage type  |
| WayRecTyp             | FixRecordType      | 0-8          | -           | 2122       | Waypoint record type   |

# Chapter 7. Navaids Attribution Enumeration Values

This section describes the attributes specific to each NAV category whose values are enumerated in accordance to this appendix.

| Enumeration Name | Enumerator Description                                 | Values |
|------------------|--|--------|
| BoxRegionType    |  |        |
|                  | Remained Region  | 0      |
|                  | Added Region   | 1      |
|                  | Removed Region   | 2      |
| AircraftCategory |  |        |
|                  | All aircrafts  | 0      |
|                  | Jets only  | 1      |
|                  | Turbo props only                                       | 2      |
|                  | Other  | 3      |
|                  | Not Defined  | 4      |
| AircraftGroup    |  |        |
|                  | All Aircraft   | 0      |
|                  | All Aircraft, Cruise speed 250 kts or less             | 1      |
|                  | Non-Jet and Turbo Prop                                 | 2      |
|                  | Multi-Engine Props Only                                | 3      |
|                  | Jets & Turbo Props/Spec., Cruise Spd 190kts or greater | 4      |
|                  | Helicopter Only  | 5      |
|                  | Jet Power  | 6      |
|                  | Turbo-Prop/Special, Cruise Speed 190 kts or greater    | 7      |
|                  | Non-Jet, Non-Turbo Prop                                | 8      |
|                  | Non-Jet, Cruise Speed 190 kts or greater               | 9      |
|                  | Non-Jet, Cruise Speed 189 kts or less                  | 10     |
|                  | Aircraft as defined in a Continuation Record Note      | 11     |
|                  | Single Engine  | 12     |
|                  | Twin Engine  | 13     |
|                  | Non Turbo Jets   | 14     |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>            | <b>Values</b> |
|-------------------------|--|---------------|
|                         | Non Jets                                 | 15            |
|                         | Props                                    | 16            |
|                         | Turbo Props                              | 17            |
|                         | Turbo Jets                               | 18            |
|                         | Water Turbo Jets                         | 19            |
|                         | Water Turbo Props                        | 20            |
|                         | Not defined                              | 21            |
| AirspaceBoundaryType    |  |               |
|                         | Advisory Area (ADA or UDA)               | 0             |
|                         | Air Defense Identification Zone (ADIZ)   | 1             |
|                         | Air Route Traffic Control Center (ARTCC) | 2             |
|                         | Area Control Center (ACC)                | 3             |
|                         | Buffer Zone (BZ)                         | 4             |
|                         | Control Area or Special Rules Area       | 5             |
|                         | Ctrl/Special Rules/Military Traffic Zone | 6             |
|                         | Flight Information Region (FIR)          | 7             |
|                         | Ocean Control Area (OCA)                 | 8             |
|                         | Radar Area                               | 9             |
|                         | Terminal Control Area (TCA or MTCA)      | 10            |
|                         | Upper Flight Information Region (UIR)    | 11            |
|                         | Mode C Defined Areas                     | 12            |
|                         | Other                                    | 13            |
|                         | Not Defined                              | 14            |
| AirspaceRestrictionType |  |               |
|                         | Alert                                    | 0             |
|                         | Caution                                  | 1             |
|                         | Danger                                   | 2             |
|                         | Military Operations Area                 | 3             |
|                         | Prohibited                               | 4             |
|                         | Restricted                               | 5             |
|                         | Temporary Reserved Airspace              | 6             |
|                         | Training                                 | 7             |

| Enumeration Name     | Enumerator Description                               | Values |
|----------------------|--|--------|
|                      | Warning  | 8      |
|                      | Not Defined  | 9      |
| AirspaceType         |  |        |
|                      | Class C Airspace (was ARSA within the USA)           | 0      |
|                      | Control Area - ICAO Designation (CTA)                | 1      |
|                      | Terminal Control Area - ICAO Desig (TMA or TCA)      | 2      |
|                      | Radar Zone or Radar Area (was TRSA in the USA)       | 3      |
|                      | Class B Airspace (was TCA within the USA)            | 4      |
|                      | Class D Airspace in USA/Control Zone for ICAO (CTR)  | 5      |
|                      | Advisory Area (ADA or UDA)                           | 6      |
|                      | Air Defense Identification Zone (ADIZ)               | 7      |
|                      | Air Route Traffic Control Center (ARTCC)             | 8      |
|                      | Area Control Center (ACC)                            | 9      |
|                      | Buffer Zone (BZ)                                     | 10     |
|                      | Control Area (CTA/UTA)/Special Rules Area (SRA - UK) | 11     |
|                      | Ctrl/Special Rules/Military Traffic Zone             | 12     |
|                      | Ocean Control Area (OCA)                             | 13     |
|                      | Radar Area   | 14     |
|                      | Terminal Control Area (TCA or MTCA)                  | 15     |
|                      | Mode C Defined Areas                                 | 16     |
|                      | Other  | 17     |
|                      | Not Defined  | 18     |
| AirwayLevel          |  |        |
|                      | All Altitudes  | 0      |
|                      | High Level Airway                                    | 1      |
|                      | Low Level Airway                                     | 2      |
|                      | Not Defined  | 3      |
| AlternateMinimumType |  |        |

| Enumeration Name    | Enumerator Description                 | Values |
|---------------------|--|--------|
|                     | Alternate Minimum Not Standard         | 0      |
|                     | Alternate Minimum Not Authorized       | 1      |
|                     | Not Defined                            | 2      |
| AltitudeDescription |  |        |
|                     | At or above Alt1                       | 0      |
|                     | At or below Alt1                       | 1      |
|                     | At Alt1                                | 2      |
|                     | Between two altitudes                  | 3      |
|                     | At or above Alt2                       | 4      |
|                     | At Alt1 & Glideslope altitude Alt2     | 5      |
|                     | At or above Alt1 & Glideslope Alt Alt2 | 6      |
|                     | At Alt1 & Glideslope Intercept Alt2    | 7      |
|                     | At or above Alt1 & GS Intercept Alt2   | 8      |
|                     | At or above Alt1 & Vertical Angle Alt2 | 9      |
|                     | As assigned                            | 10     |
|                     | Recommended altitude                   | 11     |
|                     | Glideslope intercept altitude in Alt2  | 12     |
|                     | Not Defined                            | 13     |
| AltitudeReference   |  |        |
|                     | Above Mean Sea Level                   | 0      |
|                     | Above Ground Level                     | 1      |
|                     | By Notam                               | 2      |
|                     | Altitude not limited                   | 3      |
|                     | Not Defined                            | 4      |
| AltitudeType        |  |        |
|                     | Feet above sea level                   | 0      |
|                     | Radar altimeter                        | 1      |
|                     | Missed approach point                  | 2      |
|                     | Transition level                       | 3      |
|                     | Not Defined                            | 4      |

| Enumeration Name    | Enumerator Description                       | Values |
|---------------------|--|--------|
| AltitudeUnit        | Flight Level                                 | 0      |
|                     | Meters                                       | 1      |
|                     | Feet   | 2      |
|                     | Not Defined                                  | 3      |
| ApproachPerformance |  |        |
|                     | Not defined                                  | 0      |
| ApproachRouteType   | Approach Transition                          | 0      |
|                     | Localizer/Backcourse Approach                | 1      |
|                     | Flight Management System Approach            | 2      |
|                     | Instrument Guidance System (IGS) Approach    | 3      |
|                     | Instrument Landing System (ILS) Approach     | 4      |
|                     | Ground Based Augmentation Sys/GLS Approach   | 5      |
|                     | Satellite Based Augmentation Sys Approach    | 6      |
|                     | Localizer Only (LOC) Approach                | 7      |
|                     | Microwave Landing System (MLS) Approach      | 8      |
|                     | Non Directional Beacon (NDB) Approach        | 9      |
|                     | Global Positioning System (GPS) Approach     | 10     |
|                     | Area Navigation (RNAV) Approach              | 11     |
|                     | Tacan Approach                               | 12     |
|                     | Simplified Directional Facility Approach     | 13     |
|                     | VOR Approach                                 | 14     |
|                     | Microwave Landing System Type A Approach     | 15     |
|                     | Localizer Directional Aid (LDA) Approach     | 16     |
|                     | Microwave Landing System Type B & C Approach | 17     |

| Enumeration Name     | Enumerator Description                   | Values |
|----------------------|--|--------|
|                      | Missed Approach                          | 18     |
|                      | ILS Back Course Approach                 | 19     |
|                      | ILS Cat II Approach                      | 20     |
|                      | VORDME/VORTAC Approach                   | 21     |
|                      | VOR Circling Approach                    | 22     |
|                      | NDB Circling Approach                    | 23     |
|                      | RNAV (GPS) Non-Precision Approach        | 24     |
|                      | ILS Cat III Approach                     | 25     |
|                      | LAAS-GPS/GLS (PAPP record required)      | 26     |
|                      | WAAS-GPS (PAPP record required)          | 27     |
|                      | RNAV (GPS) Overlay Approach              | 28     |
|                      | PAR Approach                             | 29     |
|                      | NDB/DME Approach                         | 30     |
|                      | VOR (Based on VORDME or VORTAC) Approach | 31     |
|                      | MLS Cat II Approach                      | 32     |
|                      | ADF Approach                             | 33     |
|                      | SDF Approach                             | 34     |
|                      | MLS Cat III Approach                     | 35     |
|                      | RNAV (GPS) Precision Approach (Other)    | 36     |
|                      | ILS Localizer only Circling Approach     | 37     |
|                      | ILS Back Course Circling Approach        | 38     |
|                      | Not Defined                              | 39     |
| ArcSegmentDerivation |  |        |
|                      | Distance and Bearing                     | 0      |
|                      | End Coordinates                          | 1      |
|                      | Derived by Plotted Coordinates           | 2      |
|                      | Not Defined                              | 3      |
| ApproachSegmentType  |  |        |
|                      | Straight-In Approach                     | 0      |
|                      | Not Defined                              | 1      |
| AssociatedMarkerType |  |        |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>         | <b>Values</b> |
|-------------------------|---------------------------------------|---------------|
|                         | Inner Marker Beacon                   | 0             |
|                         | Middle Marker Beacon                  | 1             |
|                         | Outer Marker Beacon                   | 2             |
|                         | Back Marker Beacon                    | 3             |
|                         | Not Defined                           | 4             |
| AssociatedNavaid        |                                       |               |
|                         | Locator                               | 0             |
|                         | Non-Locator Navaid                    | 1             |
|                         | Not Defined                           | 2             |
| AtsRouteSegmentType     |                                       |               |
|                         | End of Continuous ATS route procedure | 0             |
|                         | Uncharted A-Route intersection        | 1             |
|                         | Not Defined                           | 2             |
| BoundaryCode            |                                       |               |
|                         | USA                                   | 0             |
|                         | Canada and Alaska                     | 1             |
|                         | Pacific                               | 2             |
|                         | Latin America                         | 3             |
|                         | South America                         | 4             |
|                         | South Pacific                         | 5             |
|                         | Europe                                | 6             |
|                         | Eastern Europe                        | 7             |
|                         | Middle East-South Asia                | 8             |
|                         | Africa                                | 9             |
|                         | Not Defined                           | 10            |
| BoundaryShape           |                                       |               |
|                         | Arc by edge                           | 0             |
|                         | Circle                                | 1             |
|                         | Great Circle                          | 2             |
|                         | Rhumb Line                            | 3             |
|                         | Counter Clockwise ARC                 | 4             |
|                         | Clockwise ARC                         | 5             |
|                         | Point (without radius or bearing)     | 6             |
|                         | Generalized                           | 7             |

| Enumeration Name  | Enumerator Description                  | Values |
|-------------------|---|--------|
| CivilMilitaryType | Not Defined                             | 8      |
|                   | CIVIL                                   | 0      |
|                   | MILITARY                                | 1      |
|                   | CIVIL/MILITARY                          | 2      |
|                   | CIVIL - MINOR OR NO FACILITIES          | 3      |
|                   | MILITARY - MINOR OR NO FACILITIES       | 4      |
|                   | PRIVATE                                 | 5      |
|                   | Not Defined                             | 6      |
| ClearanceStatus   |   |        |
|                   | Airport of Entry                        | 0      |
|                   | Landing Rights Airport                  | 1      |
|                   | Airport of Entry/Landing Rights Airport | 2      |
|                   | Not Defined                             | 3      |
| ClimbRateType     |   |        |
|                   | Minimum Climb Rate                      | 0      |
|                   | ATC Climb Rate                          | 1      |
|                   | Not Defined                             | 2      |
| CommsDetails      |   |        |
|                   | Air/Ground                              | 0      |
|                   | VHF Direction Finding Service           | 1      |
|                   | Remote Communications Air to Ground     | 2      |
|                   | Language other than English             | 3      |
|                   | Military Use Frequency                  | 4      |
|                   | Pilot Controlled Light                  | 5      |
|                   | Remote Communications Outlet            | 6      |
|                   | Not Defined                             | 7      |
| CommsEncryption   |   |        |
|                   | Off                                     | 0      |
|                   | Not Defined                             | 1      |
| CommsFlightType   |   |        |
|                   | IFR Flight                              | 0      |
|                   | VFR Flight                              | 1      |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>       | <b>Values</b> |
|-------------------------|-------------------------------------|---------------|
|                         | Oceanic FIR/UIR                     | 2             |
|                         | Other FIR/UIR                       | 3             |
|                         | Not Defined                         | 4             |
| CommsType               |                                     |               |
|                         | Area Control Center                 | 0             |
|                         | Airlift Command Post                | 1             |
|                         | Approach Control                    | 2             |
|                         | Arrival Control                     | 3             |
|                         | Automatic Terminal Info Service     | 4             |
|                         | Automatic Weather Observing Service | 5             |
|                         | Clearance Delivery                  | 6             |
|                         | Clearance, Pre-Taxi                 | 7             |
|                         | Control Area (Terminal)             | 8             |
|                         | Control                             | 9             |
|                         | Departure Control                   | 10            |
|                         | Director (Approach Control Radar)   | 11            |
|                         | Enroute Flight Advisory Service     | 12            |
|                         | Emergency                           | 13            |
|                         | Flight Service Station              | 14            |
|                         | Ground Comm Outlet                  | 15            |
|                         | Ground Control                      | 16            |
|                         | Gate Control                        | 17            |
|                         | Helicopter Frequency                | 18            |
|                         | Information                         | 19            |
|                         | Multicom                            | 20            |
|                         | Operations                          | 21            |
|                         | Radio                               | 22            |
|                         | Radar                               | 23            |
|                         | Remote Flight Service Station       | 24            |
|                         | Ramp/Taxi Control                   | 25            |
|                         | Airport Radar Service Area          | 26            |
|                         | Terminal Control Area (TCA)         | 27            |
|                         | Terminal Control Area (TMA)         | 28            |
|                         | Terminal                            | 29            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>         | <b>Values</b> |
|-------------------------|---------------------------------------|---------------|
|                         | Terminal Radar Service Area           | 30            |
|                         | Transcriber Weather Broadcast         | 31            |
|                         | Tower, Air Traffic Control            | 32            |
|                         | Upper Area Control                    | 33            |
|                         | Unicom                                | 34            |
|                         | Volmet                                | 35            |
|                         | Ground Control Approach               | 36            |
|                         | Parameters (French Radio)             | 37            |
|                         | Common Traffic Advisory Frequency     | 38            |
|                         | Air/Ground                            | 39            |
|                         | Approach/Departure Control            | 40            |
|                         | Air Route Traffic Control Center      | 41            |
|                         | Ground Control/Clearance Delivery     | 42            |
|                         | Command Post                          | 43            |
|                         | Pilot to Dispatcher                   | 44            |
|                         | Pilot to Metro Service                | 45            |
|                         | Airport Advisory Service              | 46            |
|                         | Air Route Traffic Control             | 47            |
|                         | Preflight                             | 48            |
|                         | Single Frequency Approach             | 49            |
|                         | Miscellaneous                         | 50            |
|                         | Centralized Approach Control          | 51            |
|                         | Aerodrome Flight Info Service         | 52            |
|                         | Remote Communications Outlet          | 53            |
|                         | Automated Surface Observation System  | 54            |
|                         | Flight Communications Center          | 55            |
|                         | Flight Operations Center              | 56            |
|                         | Airport Weather Information Broadcast | 57            |
|                         | Not Defined                           | 58            |
| ComponentType           |                                       |               |
|                         | Locator                               | 0             |
|                         | Dme                                   | 1             |
|                         | Localizer                             | 2             |

| <b>Enumeration Name</b> | <b>Enumerator Description</b> | <b>Values</b> |
|-------------------------|-------------------------------|---------------|
|                         | Glide Slope                   | 3             |
|                         | Back Course Marker            | 4             |
|                         | Inner Marker                  | 5             |
|                         | Middle Marker                 | 6             |
|                         | Outer Marker                  | 7             |
|                         | MLS Localizer                 | 8             |
|                         | MLS DME                       | 9             |
|                         | Not Defined                   | 10            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                         | <b>Value</b> |
|-------------------------|---|--------------|
| CountryEntry            |   |              |
|                         | Unidentified  | 0            |
|                         | Afghanistan   | 1            |
|                         | Africa - Central                                      | 2            |
|                         | Africa - East   | 3            |
|                         | Africa - South  | 4            |
|                         | Africa - West   | 5            |
|                         | Alaska  | 6            |
|                         | Albania   | 7            |
|                         | Algeria   | 8            |
|                         | American Samoa  | 9            |
|                         | American Samoa/Samoa                                  | 10           |
|                         | Andorra   | 11           |
|                         | Andorra/Spain   | 12           |
|                         | Angola  | 13           |
|                         | Anguilla Island                                       | 14           |
|                         | Antarctica  | 15           |
|                         | Antigua and Barbuda                                   | 16           |
|                         | Argentina   | 17           |
|                         | Argentina/Antarctica                                  | 18           |
|                         | Armenia   | 19           |
|                         | Armenia/Azerbaijan/Georgia/Russian Federation         | 20           |
|                         | Armenia/Azerbaijan/Kazakhstan/Turkmenistan/Uzbekistan | 21           |
|                         | Aruba   | 22           |
|                         | Ashmore and Cartier Island                            | 23           |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>            | <b>Value</b> |
|-------------------------|--|--------------|
|                         | Asia - Far East                          | 24           |
|                         | Asia - Middle East                       | 25           |
|                         | Asia - South                             | 26           |
|                         | Australia                                | 27           |
|                         | Australia associated islands             | 28           |
|                         | Austria                                  | 29           |
|                         | Austria/Liechtenstein                    | 30           |
|                         | Azerbaijan                               | 31           |
|                         | Azerbaijan/Kazakhstan/Russian Federation | 32           |
|                         | Bahamas                                  | 33           |
|                         | Bahrain                                  | 34           |
|                         | Bahrain/Iraq-Saudi Arabia Neutral Zone   | 35           |
|                         | Baker Island                             | 36           |
|                         | Bangladesh                               | 37           |
|                         | Barbados                                 | 38           |
|                         | Bassas                                   | 39           |
|                         | Belarus                                  | 40           |
|                         | Belarus/Russian Federation               | 41           |
|                         | Belgium                                  | 42           |
|                         | Belize                                   | 43           |
|                         | Benin                                    | 44           |
|                         | Bermuda                                  | 45           |
|                         | Bhutan                                   | 46           |
|                         | Bolivia                                  | 47           |
|                         | Bosnia and Herzegovina                   | 48           |
|                         | Botswana                                 | 49           |
|                         | Bouvet Island                            | 50           |
|                         | Brazil                                   | 51           |
|                         | British Indian Ocean Territory           | 52           |
|                         | British Virgin Islands                   | 53           |
|                         | Brunei Darussalam                        | 54           |
|                         | Bulgaria                                 | 55           |
|                         | Burkina Faso                             | 56           |
|                         | Burma (Myanmar)                          | 57           |

| Enumeration Name | Enumerator Description                | Value |
|------------------|---------------------------------------|-------|
|                  | Burundi                               | 58    |
|                  | Cambodia                              | 59    |
|                  | Cameroon                              | 60    |
|                  | Canada                                | 61    |
|                  | Canada - Uplands CFB                  | 62    |
|                  | Canada - Weather Centres              | 63    |
|                  | Cape Verde                            | 64    |
|                  | Cayman Islands                        | 65    |
|                  | Central African Republic              | 66    |
|                  | Central America/Mexico/West Caribbean | 67    |
|                  | Chad                                  | 68    |
|                  | Chile                                 | 69    |
|                  | Chile/Antarctica                      | 70    |
|                  | China                                 | 71    |
|                  | Christmas Island                      | 72    |
|                  | Clipperton Island                     | 73    |
|                  | Cocos (Keeling) Island                | 74    |
|                  | Colombia                              | 75    |
|                  | Comoros                               | 76    |
|                  | Congo                                 | 77    |
|                  | Continental China                     | 78    |
|                  | Cook Islands                          | 79    |
|                  | Coral Sea Islands                     | 80    |
|                  | Costa Rica                            | 81    |
|                  | Croatia                               | 82    |
|                  | Cuba                                  | 83    |
|                  | Cyprus                                | 84    |
|                  | Czech Republic                        | 85    |
|                  | Democratic People's Republic of Korea | 86    |
|                  | Democratic Republic of the Congo      | 87    |
|                  | Denmark                               | 88    |
|                  | Denmark and associated islands        | 89    |
|                  | Djibouti                              | 90    |
|                  | Dominica                              | 91    |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>         | <b>Value</b> |
|-------------------------|---------------------------------------|--------------|
|                         | Dominican Republic                    | 92           |
|                         | East Caribbean                        | 93           |
|                         | East Timor                            | 94           |
|                         | Ecuador                               | 95           |
|                         | Egypt                                 | 96           |
|                         | El Salvador                           | 97           |
|                         | Equatorial Guinea                     | 98           |
|                         | Eritrea                               | 99           |
|                         | Estonia                               | 100          |
|                         | Ethiopia                              | 101          |
|                         | Europa Island                         | 102          |
|                         | Europe - North                        | 103          |
|                         | Europe - South                        | 104          |
|                         | Europe - West                         | 105          |
|                         | Ex-URSS region                        | 106          |
|                         | Falklands Islands                     | 107          |
|                         | Faroe Islands                         | 108          |
|                         | Federal Republic of Yugoslavia        | 109          |
|                         | Fiji                                  | 110          |
|                         | Fiji and surrounding islands          | 111          |
|                         | Finland                               | 112          |
|                         | France                                | 113          |
|                         | France and associated islands         | 114          |
|                         | French Antilles                       | 115          |
|                         | French Guyana                         | 116          |
|                         | French Polynesia                      | 117          |
|                         | French Polynesia/Pitcairn Island      | 118          |
|                         | French Southern and Antarctic Islands | 119          |
|                         | Gabon                                 | 120          |
|                         | Gambia                                | 121          |
|                         | Gaza Strip                            | 122          |
|                         | Georgia                               | 123          |
|                         | Germany                               | 124          |
|                         | Ghana                                 | 125          |

| Enumeration Name | Enumerator Description              | Value |
|------------------|-------------------------------------|-------|
|                  | Gibraltar                           | 126   |
|                  | Glorioso Islands                    | 127   |
|                  | Greece                              | 128   |
|                  | Greenland                           | 129   |
|                  | Grenada                             | 130   |
|                  | Guadeloupe                          | 131   |
|                  | Guam                                | 132   |
|                  | Guatemala                           | 133   |
|                  | Guernsey                            | 134   |
|                  | Guinea                              | 135   |
|                  | Guinea-Bissau                       | 136   |
|                  | Guyana                              | 137   |
|                  | Haiti                               | 138   |
|                  | Hawaii                              | 139   |
|                  | Honduras                            | 140   |
|                  | Hong Kong                           | 141   |
|                  | Hong Kong/Paracel Islands           | 142   |
|                  | Howland Island                      | 143   |
|                  | Hungary                             | 144   |
|                  | Iceland                             | 145   |
|                  | Iles Wallis et Futuna               | 146   |
|                  | India                               | 147   |
|                  | Indonesia                           | 148   |
|                  | Indonesia/East Timor                | 149   |
|                  | Iran                                | 150   |
|                  | Iraq                                | 151   |
|                  | Iraq/Iraq-Saudi Arabia Neutral Zone | 152   |
|                  | Iraq-Saudi Arabia Neutral Zone      | 153   |
|                  | Ireland                             | 154   |
|                  | Isle of Man                         | 155   |
|                  | Israel                              | 156   |
|                  | Israel/Gaza Strip                   | 157   |
|                  | Italy                               | 158   |
|                  | Italy and enclaved territories      | 159   |
|                  | Ivory Coast                         | 160   |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                 | <b>Value</b> |
|-------------------------|---|--------------|
|                         | Jamaica                                       | 161          |
|                         | Jamaica and surrounding islands               | 162          |
|                         | Jan Mayen                                     | 163          |
|                         | Japan   | 164          |
|                         | Jarvis Island                                 | 165          |
|                         | Jersey  | 166          |
|                         | Johnston Atoll                                | 167          |
|                         | Jordan  | 168          |
|                         | Jordan/The West Bank                          | 169          |
|                         | Juan de Nova Island                           | 170          |
|                         | Kazakhstan                                    | 171          |
|                         | Kazakhstan/Kyrgyzstan/Uzbekistan              | 172          |
|                         | Kazakhstan/Tajikistan/Turkmenistan/Uzbekistan | 173          |
|                         | Kenya   | 174          |
|                         | Kingman Reef                                  | 175          |
|                         | Kiribati                                      | 176          |
|                         | Kiribati and Line Island                      | 177          |
|                         | Kiribati/Jarvis Island                        | 178          |
|                         | Kiribati/Tuvalu                               | 179          |
|                         | Kuwait  | 180          |
|                         | Kyrgyzstan                                    | 181          |
|                         | Laos People's Democratic Republic             | 182          |
|                         | Latvia  | 183          |
|                         | Lebanon                                       | 184          |
|                         | Lesotho                                       | 185          |
|                         | Liberia                                       | 186          |
|                         | Libyan Arab Jamahiriya                        | 187          |
|                         | Liechtenstein                                 | 188          |
|                         | Lithuania                                     | 189          |
|                         | Luxembourg                                    | 190          |
|                         | Macao   | 191          |
|                         | Madagascar                                    | 192          |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>      | <b>Value</b> |
|-------------------------|------------------------------------|--------------|
|                         | Madagascar and surrounding islands | 193          |
|                         | Malawi                             | 194          |
|                         | Malaysia                           | 195          |
|                         | Malaysia/Brunei Darussalam         | 196          |
|                         | Maldives                           | 197          |
|                         | Mali                               | 198          |
|                         | Malte                              | 199          |
|                         | Mariana Islands                    | 200          |
|                         | Mariana Islands (including Guam)   | 201          |
|                         | Marshall Islands                   | 202          |
|                         | Martinique                         | 203          |
|                         | Mauritania                         | 204          |
|                         | Mauritius                          | 205          |
|                         | Mayotte                            | 206          |
|                         | Mexico                             | 207          |
|                         | Mexico and surrounding islands     | 208          |
|                         | Micronesia                         | 209          |
|                         | Micronesia/Palau                   | 210          |
|                         | Midway Islands                     | 211          |
|                         | Monaco                             | 212          |
|                         | Mongolia                           | 213          |
|                         | Montserrat                         | 214          |
|                         | Morocco                            | 215          |
|                         | Morocco/Western Sahara             | 216          |
|                         | Mozambique                         | 217          |
|                         | Mozambique and surrounding islands | 218          |
|                         | Namibia                            | 219          |
|                         | Nauru                              | 220          |
|                         | Navassa Island                     | 221          |
|                         | Nepal                              | 222          |
|                         | Netherlands                        | 223          |
|                         | Netherlands Antilles               | 224          |
|                         | Netherlands Antilles/Aruba         | 225          |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                 | <b>Value</b> |
|-------------------------|---|--------------|
|                         | New Caledonia                                 | 226          |
|                         | New Zealand                                   | 227          |
|                         | New Zealand/Antarctica                        | 228          |
|                         | Nicaragua                                     | 229          |
|                         | Niger   | 230          |
|                         | Nigeria                                       | 231          |
|                         | Niue Island                                   | 232          |
|                         | Norfolk Island                                | 233          |
|                         | Norway  | 234          |
|                         | Norway and associated territories             | 235          |
|                         | Oceania - East                                | 236          |
|                         | Oceania - North-East                          | 237          |
|                         | Oceania - West                                | 238          |
|                         | Oman  | 239          |
|                         | Pacific                                       | 240          |
|                         | Pakistan                                      | 241          |
|                         | Palau   | 242          |
|                         | Panama  | 243          |
|                         | Papua New Guinea                              | 244          |
|                         | Paracel Islands                               | 245          |
|                         | Paraguay                                      | 246          |
|                         | Peru  | 247          |
|                         | Philippines                                   | 248          |
|                         | Philippines/Spratly Islands                   | 249          |
|                         | Pitcairn Island                               | 250          |
|                         | Poland  | 251          |
|                         | Portugal                                      | 252          |
|                         | Puerto Rico                                   | 253          |
|                         | Puerto Rico and surrounding Caribbean islands | 254          |
|                         | Qatar   | 255          |
|                         | Republic of Korea                             | 256          |
|                         | Republic of Moldova                           | 257          |
|                         | Reunion                                       | 258          |
|                         | Romania                                       | 259          |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>        | <b>Value</b> |
|-------------------------|--------------------------------------|--------------|
|                         | Russian Federation                   | 260          |
|                         | Rwanda                               | 261          |
|                         | Saint Lucia                          | 262          |
|                         | Saint Vincent and the Grenadines     | 263          |
|                         | San Marino                           | 264          |
|                         | Sao Tome and Principe                | 265          |
|                         | Saudi Arabia                         | 266          |
|                         | Senegal                              | 267          |
|                         | Seychelles                           | 268          |
|                         | Sierra Leone                         | 269          |
|                         | Singapore                            | 270          |
|                         | Slovakia                             | 271          |
|                         | Slovenia                             | 272          |
|                         | Solomon Islands                      | 273          |
|                         | Somalia                              | 274          |
|                         | South Africa                         | 275          |
|                         | South Africa and surrounding islands | 276          |
|                         | South America                        | 277          |
|                         | Spain                                | 278          |
|                         | Spain - Canary Islands               | 279          |
|                         | Spratly Islands                      | 280          |
|                         | Sri Lanka                            | 281          |
|                         | St. Kitts and Nevis                  | 282          |
|                         | St.Helena and Ascension Island       | 283          |
|                         | St.Pierre and Miquelon               | 284          |
|                         | Sudan                                | 285          |
|                         | Suriname                             | 286          |
|                         | Svalbard                             | 287          |
|                         | Swaziland                            | 288          |
|                         | Sweden                               | 289          |
|                         | Switzerland                          | 290          |
|                         | Syrian Arab Republic                 | 291          |
|                         | Taiwan                               | 292          |
|                         | Tajikistan                           | 293          |

| Enumeration Name | Enumerator Description                    | Value |
|------------------|---|-------|
|                  | Thailand                                  | 294   |
|                  | The former Yugoslav Republic of Macedonia | 295   |
|                  | The West Bank                             | 296   |
|                  | Togo                                      | 297   |
|                  | Tokelau                                   | 298   |
|                  | Tonga                                     | 299   |
|                  | Trinidad and Tobago                       | 300   |
|                  | Tromelin Island                           | 301   |
|                  | Tunisia                                   | 302   |
|                  | Turk and Caicos Islands                   | 303   |
|                  | Turkey                                    | 304   |
|                  | Turkmenistan                              | 305   |
|                  | Tuvalu                                    | 306   |
|                  | Uganda                                    | 307   |
|                  | Ukraine                                   | 308   |
|                  | Ukraine/Russian Federation                | 309   |
|                  | United Arab Emirates                      | 310   |
|                  | United Kingdom                            | 311   |
|                  | United Kingdom and associated islands     | 312   |
|                  | United Republic of Tanzania               | 313   |
|                  | United States                             | 314   |
|                  | United States (Central North-East)        | 315   |
|                  | United States (Central North-West)        | 316   |
|                  | United States (Central South)             | 317   |
|                  | United States (North-East)                | 318   |
|                  | United States (North-West)                | 319   |
|                  | United States (South-East)                | 320   |
|                  | United States (South-West)                | 321   |
|                  | Uruguay                                   | 322   |
|                  | US territories - North Pacific Ocean      | 323   |
|                  | Uzbekistan                                | 324   |
|                  | Vanuatu                                   | 325   |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>         | <b>Value</b> |
|-------------------------|---------------------------------------|--------------|
|                         | Vatican City                          | 326          |
|                         | Venezuela                             | 327          |
|                         | Viet Nam                              | 328          |
|                         | Virgin Islands                        | 329          |
|                         | Virgin Islands/British Virgin Islands | 330          |
|                         | Wake Island                           | 331          |
|                         | Western Sahara                        | 332          |
|                         | Western Samoa                         | 333          |
|                         | Yemen                                 | 334          |
|                         | Zambia                                | 335          |
|                         | Zimbabwe                              | 336          |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>           | <b>Value</b> |
|-------------------------|---|--------------|
| CruiseTable             |   |              |
|                         | ICAO Standard Cruise Table              | 0            |
|                         | Exception to ICAO Standard Cruise Table | 1            |
|                         | Modified Cruise Table                   | 2            |
|                         | Exception to Modified Cruise Table      | 3            |
|                         | Not Defined                             | 4            |
| DataSource              |   |              |
|                         | ARINC 424                               | 0            |
|                         | DAFIF                                   | 1            |
| DataTransferStatus      |   |              |
|                         | Error Data Lost                         | 0            |
|                         | Data Transfer Completed                 | 1            |
|                         | Data Transfer In Progress               | 2            |
| DayOfWeek               |   |              |
|                         | Monday                                  | 0            |
|                         | Tuesday                                 | 1            |
|                         | Wednesday                               | 2            |
|                         | Thursday                                | 3            |
|                         | Friday                                  | 4            |
|                         | Saturday                                | 5            |
|                         | Sunday                                  | 6            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                  | <b>Value</b> |
|-------------------------|--|--------------|
|                         | Not Defined                                    | 7            |
| Direction               |  |              |
|                         | East   | 0            |
|                         | West   | 1            |
|                         | Not defined                                    | 2            |
| DirectionRestriction    |  |              |
|                         | Forward Direction Route Coded                  | 0            |
|                         | Backward Direction Route Coded                 | 1            |
|                         | No Direction Restriction                       | 2            |
|                         | Not Defined                                    | 3            |
| DistanceDescription     |  |              |
|                         | Out to Specified Distance                      | 0            |
|                         | Beyond Specified Distance                      | 1            |
|                         | Not Defined                                    | 2            |
| EmissionType            |  |              |
|                         | A0 - Unmodulated Carrier                       | 0            |
|                         | A1 - Carrier Keyed                             | 1            |
|                         | A2 - Tone Keyed Modulation                     | 2            |
|                         | Not Defined                                    | 3            |
| EnrouteAirwayRouteType  |  |              |
|                         | Airline Airway (Tailored Data)                 | 0            |
|                         | Control  | 1            |
|                         | Direct Route                                   | 2            |
|                         | Helicopter Airway                              | 3            |
|                         | Officially Designated Airway                   | 4            |
|                         | RNAV Airway                                    | 5            |
|                         | Undesignated ATS Route                         | 6            |
|                         | Not Defined                                    | 7            |
| ExclusionIndicator      |  |              |
|                         | All Altitudes in Both Directions Restricted    | 0            |
|                         | All Altitudes in Backward Direction Restricted | 1            |
|                         | All Altitudes in Forward Direction Restricted  | 2            |
|                         | Not an all altitudes restriction               | 3            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                     | <b>Value</b> |
|-------------------------|---|--------------|
|                         | Not Defined                                       | 4            |
| FacilityRecordType      |   |              |
|                         | Airport   | 0            |
|                         | VHF Navaid  | 1            |
|                         | NDB Navaid  | 2            |
|                         | Terminal NDB                                      | 3            |
|                         | Not Defined                                       | 4            |
| FirUirType              |   |              |
|                         | FIR   | 0            |
|                         | UIR   | 1            |
|                         | Combined FIR/UIR                                  | 2            |
|                         | Not Defined                                       | 3            |
| FixDetails              |   |              |
|                         | Initial Approach Fix                              | 0            |
|                         | Intermediate Approach Fix                         | 1            |
|                         | Initial Approach Fix with Holding                 | 2            |
|                         | Initial Approach Fix with Final Approach Crse Fix | 3            |
|                         | Final End Point Fix                               | 4            |
|                         | Published/Database Final Approach Fix             | 5            |
|                         | Holding Fix                                       | 6            |
|                         | Final Approach Course Fix                         | 7            |
|                         | Published Missed Approach Point Fix               | 8            |
|                         | Not Defined                                       | 9            |
| FixFunction             |   |              |
|                         | Unnamed Stepdown Fix After Final Approach Fix     | 0            |
|                         | Unnamed Stepdown Fix Before Final Approach Fix    | 1            |
|                         | ATC Compulsory Waypoint                           | 2            |
|                         | Oceanic Gateway Waypoint                          | 3            |
|                         | First Leg of Missed Approach Procedure            | 4            |
|                         | Path Point Fix                                    | 5            |
|                         | Named Stepdown Fix                                | 6            |

| Enumeration Name | Enumerator Description                               | Value |
|------------------|--|-------|
|                  | Not Defined  | 7     |
| FixRecordType    |  |       |
|                  | Airport  | 0     |
|                  | VHF Navaid   | 1     |
|                  | NDB Navaid   | 2     |
|                  | Terminal NDB   | 3     |
|                  | Enroute Waypoint                                     | 4     |
|                  | Airport Waypoint                                     | 5     |
|                  | Heliport Waypoint                                    | 6     |
|                  | Runway   | 7     |
|                  | SID  | 8     |
|                  | STAR   | 9     |
|                  | Navaid (VHF or NDB)                                  | 10    |
|                  | Waypoint (Terminal or Enroute)                       | 11    |
|                  | ATS Route  | 12    |
|                  | Not Defined  | 13    |
| FixPointType     |  |       |
|                  | VOR (navaid)   | 0     |
|                  | VORTAC (navaid)                                      | 1     |
|                  | TACAN (navaid)                                       | 2     |
|                  | VORDME (navaid)                                      | 3     |
|                  | NDB (navaid)   | 4     |
|                  | NDBDME (navaid)                                      | 5     |
|                  | DME (navaid)   | 6     |
|                  | Atlantic (ATS Route)                                 | 7     |
|                  | Bahama (ATS Route)                                   | 8     |
|                  | Corridor (ATS Route)                                 | 9     |
|                  | Advisory (ADR) (ATS Route)                           | 10    |
|                  | Direct, Control Area Routes (ATS Route)              | 11    |
|                  | Military (ATS Route)                                 | 12    |
|                  | North American (NAR) (ATS Route)                     | 13    |
|                  | Oceanic (ATS Route)                                  | 14    |
|                  | RNAV (ATS Route)                                     | 15    |
|                  | Substitute, Canadian Control Area Tracks (ATS Route) | 16    |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                     | <b>Value</b> |
|-------------------------|---|--------------|
|                         | TACAN (ATS Route)                                 | 17           |
|                         | Airway (ATS Route)                                | 18           |
|                         | Not Defined                                       | 19           |
| FixRecordType           |   |              |
|                         | Airport   | 0            |
|                         | VHF Navaid  | 1            |
|                         | NDB Navaid  | 2            |
|                         | Terminal NDB                                      | 3            |
|                         | Enroute Waypoint                                  | 4            |
|                         | Airport Waypoint                                  | 5            |
|                         | Heliport Waypoint                                 | 6            |
|                         | Runway  | 7            |
|                         | Not Defined                                       | 8            |
| FixType                 |   |              |
|                         | Final Approach Fix                                | 0            |
|                         | Initial and Final Approach Fix                    | 1            |
|                         | Final Approach Course Fix                         | 2            |
|                         | Intermediate Approach Fix                         | 3            |
|                         | Off-Route Intersection                            | 4            |
|                         | Initial Approach Fix                              | 5            |
|                         | Final Approach Course Fix at Initial Approach Fix | 6            |
|                         | Final Approach Course Fix at Interm. Approach Fix | 7            |
|                         | Missed Approach Fix                               | 8            |
|                         | Initial Approach Fix and Missed Approach Fix      | 9            |
|                         | Oceanic Entry/Exit Waypoint                       | 10           |
|                         | Unnamed Stepdown Fix                              | 11           |
|                         | Named Stepdown Fix                                | 12           |
|                         | FIR/UIR or Controlled Airspace Intersection       | 13           |
|                         | Lat/Long Intersection, Full Degree of Latitude    | 14           |
|                         | Lat/Long Intersection, Half Degree of Latitude    | 15           |
|                         | Not Defined                                       | 16           |
| FlyOverType             |   |              |

| Enumeration Name              | Enumerator Description                                    | Value |
|-------------------------------|---|-------|
|                               | Flyover -End SID/STAR Rte, APCH Transition/Final Approach | 0     |
|                               | End of Terminal Procedure Route Type                      | 1     |
|                               | Uncharted Airway Intersection                             | 2     |
|                               | Fly-Over Waypoint (overfly)                               | 3     |
|                               | Not Defined   | 4     |
| FrequencyClass                |   |       |
|                               | UHF/VHF   | 0     |
|                               | LF/MF   | 1     |
|                               | Not defined   | 2     |
| FrequencyDirectionRestriction |   |       |
|                               | East direction only                                       | 0     |
|                               | West direction only                                       | 1     |
|                               | Both East and West  | 2     |
|                               | Not defined   | 3     |
| FrequencyType                 |   |       |
|                               | Aerodrome Traffic Frequency                               | 0     |
|                               | Common Traffic Advisory Frequency                         | 1     |
|                               | Mandatory Frequency                                       | 2     |
|                               | Secondary Frequency                                       | 3     |
|                               | Air/Ground  | 4     |
|                               | Discrete Frequency  | 5     |
|                               | Air/Air   | 6     |
|                               | Not Defined   | 7     |
| GlsStationType                |   |       |
|                               | LAAS/GLS  | 0     |
|                               | SCAT-1  | 1     |
|                               | Not defined   | 2     |
| GpsFmsIndicator               |   |       |
|                               | No GPS or FMS Overlay Authorized                          | 0     |
|                               | GPS Overlay, Navaids Operating & Monitored                | 1     |
|                               | GPS Overlay, Navaids Installed/Not Monitored              | 2     |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>    | <b>Value</b> |
|-------------------------|----------------------------------|--------------|
|                         | GPS Overlay, Title includes GPS  | 3            |
|                         | FMS Overlay Authorized           | 4            |
|                         | FMS and GPS Overlay Authorized   | 5            |
|                         | Not Defined                      | 6            |
| GuardTransmit           |                                  |              |
|                         | Receive Voice Communications     | 0            |
|                         | Transmit Voice Communications    | 1            |
|                         | Receive and Transmit Voice Comms | 2            |
|                         | Not Defined                      | 3            |
| HoldingPatternType      |                                  |              |
|                         | High Altitude                    | 0            |
|                         | Low Altitude                     | 1            |
|                         | SID                              | 2            |
|                         | STAR                             | 3            |
|                         | Approach                         | 4            |
|                         | Missed Approach                  | 5            |
|                         | All Altitude                     | 6            |
|                         | Not Defined                      | 7            |
| IlsBackCourse           |                                  |              |
|                         | Usable                           | 0            |
|                         | Unusable                         | 1            |
|                         | Restricted                       | 2            |
|                         | Not Defined                      | 3            |
| LandingAidCategory      |                                  |              |
|                         | ILS Localizer Without Glideslope | 0            |
|                         | CAT I                            | 1            |
|                         | CAT II                           | 2            |
|                         | CAT III                          | 3            |
|                         | IGS                              | 4            |
|                         | LDA With Glideslope              | 5            |
|                         | LDA Without Glideslope           | 6            |
|                         | SDF With Glideslope              | 7            |
|                         | SDF Without Glideslope           | 8            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b> | <b>Value</b> |
|-------------------------|-------------------------------|--------------|
|                         | Not Defined                   | 9            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                  | <b>Values</b> |
|-------------------------|--|---------------|
| LightingSystem          | Unidentified                                   | 0             |
|                         | PCL - Pilot Controlled Lighting                | 1             |
|                         | SF - Sequenced Flashing Lights                 | 2             |
|                         | TDZL - Touchdown Zone Lighting                 | 3             |
|                         | CL - Centerline Lighting System                | 4             |
|                         | HIRL - High Intensity Runway Lights            | 5             |
|                         | MIRL - Medium Intensity Runway Lighting System | 6             |
|                         | LIRL - Low Intensity Runway Lighting System    | 7             |
|                         | RAIL - Runway Alignment Lights                 | 8             |
|                         | REIL - Runway End Identifier Lights            | 9             |
|                         | A - ALSF-2                                     | 10            |
|                         | A1 - ALSF-1                                    | 11            |
|                         | A2 - SALS or SALSF                             | 12            |
|                         | A3 - SSALR                                     | 13            |
|                         | A4 - MALS and MALSF or SSALS and SSALF         | 14            |
|                         | A5 - MALSR                                     | 15            |
|                         | AF - Overrun Centerline                        | 16            |
|                         | AI - Centerline and Bar                        | 17            |
|                         | B - US Configuration (b)                       | 18            |
|                         | BE - Hong Kong Curve                           | 19            |
|                         | BF - Center row                                | 20            |
|                         | BG - Left Center Row                           | 21            |
|                         | BN - Former NATO Standard ©                    | 22            |
|                         | BO - Center Row                                | 23            |
|                         | BP - NATO standard                             | 24            |
|                         | BQ - Center and Double Row                     | 25            |
|                         | BR - Portable Approach                         | 26            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>   | <b>Values</b> |
|-------------------------|---|---------------|
|                         | BS - Center Row   | 27            |
|                         | G - Helicopter Approach Lighting System (HALS)                            | 28            |
|                         | J2 - CALVERT II (BRITISH)   | 29            |
|                         | E - Two Parallel row  | 30            |
|                         | F - Left Row (High Intensity)   | 31            |
|                         | I - Air Force Overrun   | 32            |
|                         | J - CALVERT I (BRITISH)   | 33            |
|                         | M - Single Row Centerline   | 34            |
|                         | N - Narrow Multi-cross  | 35            |
|                         | O - Centerline High Intensity   | 36            |
|                         | Q - Alternate Centerline and Bar  | 37            |
|                         | S - Cross   | 38            |
|                         | T - Center Row  | 39            |
|                         | U - Singapore Centerline  | 40            |
|                         | X - Centerline 2 Crossbars  | 41            |
|                         | ODALS - Omni-directional Approach Lighting System                         | 42            |
|                         | V(VASI) - Visual Approach Slope Indicator                                 | 43            |
|                         | V1 (T-VASI) - T-Visual Approach Slope Indicator                           | 44            |
|                         | V2 (PVASI) - Pulsating Visual Approach Slope Indicator                    | 45            |
|                         | V3 (JUMBO) - VASI with a TCH to accommodate long bodied or jumbo aircraft | 46            |
|                         | V4 - Tri-color Arrival Approach (TRICOLOR)                                | 47            |
|                         | V5 (APAP) - Alignment of Elements System                                  | 48            |
|                         | RETIL - Rapid Exit Taxiway Indicator Lighting                             | 49            |
|                         | PAPI - Precision Approach Path Indicator                                  | 50            |
|                         | OLS - Optical landing System  | 51            |
|                         | WAVEOFF   | 52            |
|                         | PORTABLE  | 53            |
|                         | FLOODS  | 54            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                     | <b>Values</b> |
|-------------------------|---|---------------|
|                         | LIGHTS  | 55            |
|                         | LCVASI - Low Cost Visual Approach Slope Indicator | 56            |
|                         | Lighting Provisional3                             | 57            |
|                         | Lighting Provisional4                             | 58            |
|                         | Lighting Provisional5                             | 59            |
|                         | Lighting Provisional6                             | 60            |
|                         | Lighting Provisional7                             | 61            |
|                         | Lighting Provisional8                             | 62            |
|                         | Lighting Provisional9                             | 63            |
|                         | Lighting Provisional10                            | 64            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>              | <b>Values</b> |
|-------------------------|--|---------------|
| LocationReference       |  |               |
|                         | Prior to threshold/approach end (near end) | 0             |
|                         | On the runway                              | 1             |
|                         | On the overrun (far end)                   | 2             |
|                         | Not defined                                | 3             |
| MagneticTrueIndication  |  |               |
|                         | Magnetic                                   | 0             |
|                         | True                                       | 1             |
|                         | Mixed Magnetic and True                    | 2             |
|                         | Other than Magnetic or True                | 3             |
|                         | Not Defined                                | 4             |
| MarkerPower             |  |               |
|                         | Low  | 0             |
|                         | High                                       | 1             |
|                         | Not Defined                                | 2             |
| MarkerShape             |  |               |
|                         | Elliptical                                 | 0             |
|                         | Bone                                       | 1             |
|                         | Not Defined                                | 2             |
| MarkerType              |  |               |
|                         | Inner Marker Beacon                        | 0             |
|                         | Middle Marker Beacon                       | 1             |
|                         | Outer Marker Beacon                        | 2             |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>     | <b>Values</b> |
|-------------------------|-----------------------------------|---------------|
|                         | Back Marker Beacon                | 3             |
|                         | Bone Marker Beacon                | 4             |
|                         | Fan Marker Beacon                 | 5             |
|                         | Low Power Fan Marker Beacon       | 6             |
|                         | Z Marker Beacon                   | 7             |
|                         | Not Defined                       | 10            |
| MaximumTirePressure     |                                   |               |
|                         | High - No Limit                   | 0             |
|                         | Medium - Limited to 217 psi       | 1             |
|                         | Low - Limited to 145 psi          | 2             |
|                         | Very Low - Limited to 73 psi      | 3             |
|                         | Not Defined                       | 4             |
| MilitaryRouteType       |                                   |               |
|                         | Instrument Route                  | 0             |
|                         | Visual Route                      | 1             |
|                         | Slow Route                        | 2             |
|                         | Not Defined                       | 3             |
| MlsCollocation          |                                   |               |
|                         | DME Collocated With MLS Azimuth   | 0             |
|                         | DME Collocated With MLS Elevation | 1             |
|                         | DME Non Collocated With MLS       | 2             |
|                         | Not Defined                       | 3             |
| Modulation              |                                   |               |
|                         | Amplitude Modulated Frequency     | 0             |
|                         | Frequency Modulated Frequency     | 1             |
|                         | Not Defined                       | 2             |
| MonitoredFrequency      |                                   |               |
|                         | VHF Emergency Frequency 121.5     | 0             |
|                         | UHF Emergency Frequency 243.0     | 1             |
|                         | VHF/UHF Emergency Frequencies     | 2             |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>          | <b>Values</b> |
|-------------------------|--|---------------|
|                         | VHF 121.5 and VHF/UHF Emergency Freq   | 3             |
|                         | UHF 243.0 and VHF/UHF Emergency Freq   | 4             |
|                         | VHF 121.5 and UHF 243.0 Emergency Freq | 5             |
|                         | Not Defined                            | 6             |
| NameFormatType          |  |               |
|                         | Abeam Fix                              | 0             |
|                         | Bearing and Distance Fix               | 1             |
|                         | Airport Name as Fix                    | 2             |
|                         | FIR Fix                                | 3             |
|                         | Phonetic Letter Name Fix               | 4             |
|                         | Airport Ident as Fix                   | 5             |
|                         | Latitude/Longitude Fix                 | 6             |
|                         | Multiple Word Name Fix                 | 7             |
|                         | Navaid Ident as Fix                    | 8             |
|                         | Published Five-Letter Name Fix         | 9             |
|                         | Published Less Than 5-Letter Fix       | 10            |
|                         | Published More Than 5-Letter Fix       | 11            |
|                         | Airport/Runway Related Fix             | 12            |
|                         | UIR Fix                                | 13            |
|                         | Official 5-letter Localizer Name       | 14            |
|                         | Unofficial 5-letter Localizer          | 15            |
|                         | Not Defined                            | 16            |
| NavaidCollocation       |  |               |
|                         | Collocated Navaid                      | 0             |
|                         | Non Collocated Navaid                  | 1             |
|                         | DME Collocated With ILS Localizer      | 2             |
|                         | DME Collocated With ILS Glide Slope    | 3             |
|                         | DME Non Collocated With ILS            | 4             |
|                         | DME Collocated With MLS Azimuth        | 5             |
|                         | DME Collocated With MLS Elevation      | 6             |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>            | <b>Values</b> |
|-------------------------|--|---------------|
|                         | DME Non Collocated With MLS              | 7             |
|                         | Not Defined                              | 8             |
| NavaidRangePower        |  |               |
|                         | Terminal                                 | 0             |
|                         | Low Altitude                             | 1             |
|                         | High Altitude                            | 2             |
|                         | 200 Watts or More                        | 3             |
|                         | 50 to 1999 Watts                         | 4             |
|                         | 25 to Less Than 50 Watts                 | 5             |
|                         | Less Than 25 Watts                       | 6             |
|                         | Not Defined                              | 7             |
| NavaidStatus            |  |               |
|                         | In-Service                               | 0             |
|                         | Out of Service                           | 1             |
|                         | On Test                                  | 2             |
|                         | Not Defined                              | 3             |
| NavaidType              |  |               |
|                         | VOR                                      | 0             |
|                         | DME                                      | 1             |
|                         | VOR/DME                                  | 2             |
|                         | TACAN - Channels 17-59 and 70-126        | 3             |
|                         | Military TACAN - Channels 1-16 and 60-69 | 4             |
|                         | VORTAC                                   | 5             |
|                         | ILS/DME                                  | 6             |
|                         | ILS/TACAN                                | 7             |
|                         | MLS/Narrow Spectrum DME                  | 8             |
|                         | MLS/Precision DME                        | 9             |
|                         | NDB                                      | 10            |
|                         | NDB-DME                                  | 11            |
|                         | SABH                                     | 12            |
|                         | Marine Beacon                            | 13            |
|                         | VOR Test Station                         | 14            |
|                         | Not Defined                              | 15            |
| NotamSystem             |  |               |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>            | <b>Values</b> |
|-------------------------|--|---------------|
|                         | FAA/DOD Full Coverage                    | 0             |
|                         | FAA/DOD Partial Coverage                 | 1             |
|                         | US Army Flight Operations Detachment     | 2             |
|                         | German Federal Armed Forces              | 3             |
|                         | Not Defined                              | 4             |
| ObjectStatus            |  |               |
|                         | Station is alive / Reset status to alive | 0             |
|                         | Station is killed / Set status to killed | 1             |
|                         | Leave station status as it is            | 2             |
| ObjectType              |  |               |
|                         | Airport                                  | 0             |
|                         | AirspaceBoundary                         | 1             |
|                         | AirwayRestriction                        | 2             |
|                         | Approach                                 | 3             |
|                         | Comms                                    | 4             |
|                         | ControlledAirspace                       | 5             |
|                         | EnrouteAirway                            | 6             |
|                         | FirUir                                   | 7             |
|                         | Gate                                     | 8             |
|                         | Gls                                      | 9             |
|                         | Helipad                                  | 10            |
|                         | Heliport                                 | 11            |
|                         | HoldingPattern                           | 12            |
|                         | Ils                                      | 13            |
|                         | Marker                                   | 14            |
|                         | Mls                                      | 15            |
|                         | Msa                                      | 16            |
|                         | Navaid                                   | 17            |
|                         | OffRouteTerrainClearanceAlt              | 18            |
|                         | PresetSite                               | 19            |
|                         | RestrictiveAirspace                      | 20            |
|                         | Runway                                   | 21            |
|                         | Sid                                      | 22            |
|                         | SpecialUseAirspace                       | 23            |

| Enumeration Name      | Enumerator Description                 | Values |
|-----------------------|--|--------|
|                       | Star                                   | 24     |
|                       | SupplementalTerminalData               | 25     |
|                       | TerminalProcedureClimb                 | 26     |
|                       | TerminalProcedureFeederRoute           | 27     |
|                       | TerminalProcedureMinima                | 28     |
|                       | VfrRoute                               | 29     |
|                       | Waypoint                               | 30     |
| ObjectUpdateType      |  |        |
|                       | Object has not been updated            | 0      |
|                       | Object has been deleted from database  | 1      |
|                       | Object has changed                     | 2      |
|                       | Object has been added to database      | 3      |
|                       | Object status has changed              | 4      |
| OperatingHours        |  |        |
|                       | 24 Hours                               | 0      |
|                       | Sunrise to Sunset                      | 1      |
|                       | No Hours Listed                        | 2      |
|                       | Refer to Remarks                       | 3      |
|                       | Unknown Hours                          | 4      |
| PadShape              |  |        |
|                       | Rectangular                            | 0      |
|                       | Circular                               | 1      |
|                       | Not Defined                            | 2      |
| ParachuteJumpAreaType |  |        |
|                       | Bearing/Distance to a point            | 0      |
|                       | A point                                | 1      |
|                       | Bearing/Distance to an area            | 2      |
|                       | Geographic area (defined by coords)    | 3      |
|                       | Area defined by 2 brgs & 2 distances   | 4      |
|                       | Multiple areas defined by brg/distance | 5      |
|                       | Unspecified, Call Tower                | 6      |
|                       | Not Defined                            | 7      |

| Enumeration Name  | Enumerator Description                  | Values |
|-------------------|---|--------|
| PathDataSelector  |   |        |
|                   | Not defined                             | 0      |
| PathTermination   |   |        |
|                   | Initial Fix (IF)                        | 0      |
|                   | Track to a Fix (TF)                     | 1      |
|                   | Course to a Fix (CF)                    | 2      |
|                   | Direct to a Fix (DF)                    | 3      |
|                   | Fix to an Altitude (FA)                 | 4      |
|                   | Track from a Fix from a Distance (FC)   | 5      |
|                   | Track from a Fix to DME Distance (FD)   | 6      |
|                   | From a Fix to Manual Termination (FM)   | 7      |
|                   | Course to an Altitude (CA)              | 8      |
|                   | Course to a DME Distance (CD)           | 9      |
|                   | Course to an Intercept (CI)             | 10     |
|                   | Course to a Radial Termination (CR)     | 11     |
|                   | Constant Radius Arc (RF)                | 12     |
|                   | Arc to a Fix (AF)                       | 13     |
|                   | Heading to Altitude Termination (VA)    | 14     |
|                   | Heading to DME Distance Termin. (VD)    | 15     |
|                   | Heading to an Intercept (VI)            | 16     |
|                   | Heading to a Manual Termination (VM)    | 17     |
|                   | Heading to a Radial Termination (VR)    | 18     |
|                   | Procedure Turn (PI)                     | 19     |
|                   | Crse Reversal Altitude Termination (HA) | 20     |
|                   | Crse Reversal Single Circuit Term. (HF) | 21     |
|                   | Course Reversal Manual Termination (HM) | 22     |
|                   | Not Defined                             | 23     |
| PathTurnDirection |   |        |

| Enumeration Name         | Enumerator Description             | Values |
|--------------------------|------------------------------------|--------|
|                          | Left                               | 0      |
|                          | Right                              | 1      |
|                          | Not Defined                        | 2      |
| PathType                 |                                    |        |
|                          | Arrival Route                      | 0      |
|                          | Departure Route                    | 1      |
|                          | Holding Pattern                    | 2      |
|                          | Part of a Terminal Traffic Pattern | 3      |
|                          | VFR Transition                     | 4      |
|                          | Other                              | 5      |
|                          | Not Defined                        | 6      |
| PavementEvaluationMethod |                                    |        |
|                          | Technical                          | 0      |
|                          | By Experience Using Pavement       | 1      |
|                          | Not Defined                        | 2      |
| PavementSubgradeCategory |                                    |        |
|                          | High                               | 0      |
|                          | Medium                             | 1      |
|                          | Low                                | 2      |
|                          | Ultra-Low                          | 3      |
|                          | Not Defined                        | 4      |
| PavementType             |                                    |        |
|                          | Rigid                              | 0      |
|                          | Flexible                           | 1      |
|                          | Water                              | 2      |
|                          | Not Defined                        | 3      |
| PointReportingType       |                                    |        |
|                          | Compulsory Reporting Point         | 0      |
|                          | Non-Compulsory Reporting Point     | 1      |
|                          | Not Defined                        | 2      |
| PointFunction            |                                    |        |
|                          | Alternate Entry Point              | 0      |
|                          | Alternate Exit Point               | 1      |
|                          | Alternate Entry/Exit Point         | 2      |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                 | <b>Values</b> |
|-------------------------|---|---------------|
|                         | Entry Point (Starting Point)                  | 3             |
|                         | Turning Point                                 | 4             |
|                         | Exit Point (Ending Point)                     | 5             |
|                         | Not Defined                                   | 6             |
| PreferredRouteType      |   |               |
|                         | N-Ameri Rtes for N-Atlantic Traffic - Common  | 0             |
|                         | Preferential Routes                           | 1             |
|                         | Pacific Oceanic Transition Routes (PACOTS)    | 2             |
|                         | TACAN Routes (Australia)                      | 3             |
|                         | N-Ameri Rtes for N-Atlantic Trffic -Noncommon | 4             |
|                         | Preferred/Preferential Overflight Routes      | 5             |
|                         | Preferred Routes                              | 6             |
|                         | Traffic Orientation System Routes (TOS)       | 7             |
|                         | Tower Enroute Control Routes (TEC)            | 8             |
|                         | Not Defined                                   | 9             |
| PresetSiteType          |   |               |
|                         | Gate  | 0             |
|                         | CAL Site                                      | 1             |
|                         | Hold  | 2             |
|                         | Takeoff                                       | 3             |
|                         | Opposite End                                  | 4             |
|                         | Not Defined                                   | 5             |
|                         | Ramp  | 6             |
|                         | Parking Spot                                  | 7             |
|                         | Taxi  | 8             |
| PrimaryTimeCode         |   |               |
|                         | Active Continuously Including Holidays        | 0             |
|                         | Active Continuously Excluding Holidays        | 1             |
|                         | Active Non-Continuously, see Cont. Rec        | 2             |

| Enumeration Name             | Enumerator Description                   | Values |
|------------------------------|--|--------|
|                              | Active Times Announced by NOTAM          | 3      |
|                              | Not Defined                              | 4      |
| RadioClassCode               |  |        |
|                              | Non-Directional Beacon, 50-2000 Watts    | 0      |
|                              | Interference-Free 40NM up to 18000 feet  | 1      |
|                              | Interference-Free 25NM up to 12000 feet  | 2      |
|                              | Non-Directional Beacon, 50 Watts or less | 3      |
|                              | Non-Directional Beacon, 2000 Watts & up  | 4      |
|                              | Interference-Free Service Varies         | 5      |
|                              | Compass Locator, 25 Watts or less, 15NM  | 6      |
|                              | Not Defined                              | 7      |
| RangeReliability             |  |        |
|                              | Terminal Within 25 nm                    | 0      |
|                              | Low Altitude - Within 40 nm              | 1      |
|                              | High Altitude - Within 130 nm            | 2      |
|                              | Extended High Altitude - Beyond 130 nm   | 3      |
|                              | Out of Service                           | 4      |
|                              | High Level                               | 5      |
|                              | Low Level                                | 6      |
|                              | High and Low Level                       | 7      |
|                              | RNAV                                     | 8      |
|                              | Terminal                                 | 9      |
|                              | Not Defined                              | 10     |
| RefuelingAltitudeDescription |  |        |
|                              | At or above Altitude 1                   | 0      |
|                              | At or below Altitude 1                   | 1      |
|                              | Between Altitude 1 and 2                 | 2      |
|                              | At Altitude 1                            | 3      |
|                              | Not defined                              | 4      |
| RefuelingDirection           |  |        |

| <b>Enumeration Name</b> | <b>Enumerator Description</b> | <b>Values</b> |
|-------------------------|-------------------------------|---------------|
|                         | North                         | 0             |
|                         | South                         | 1             |
|                         | East                          | 2             |
|                         | West                          | 3             |
|                         | Northeast                     | 4             |
|                         | Northwest                     | 5             |
|                         | Southeast                     | 6             |
|                         | Southwest                     | 7             |
|                         | Not defined                   | 8             |
| RefuelingOperationType  |                               |               |
|                         | Anchor                        | 0             |
|                         | Track                         | 1             |
|                         | Anchor or Track               | 2             |
|                         | Not defined                   | 3             |
| RefuelingPointType      |                               |               |
|                         | Air refueling initial point   | 0             |
|                         | Air refueling control point   | 1             |
|                         | Navigation check point        | 2             |
|                         | Exit point                    | 3             |
|                         | Entry point (anchors only)    | 4             |
|                         | Anchor point (anchors only)   | 5             |
|                         | Anchor pattern (anchors only) | 6             |
|                         | Not defined                   | 7             |
| RestrictionType         |                               |               |
|                         | Altitude Exclusion            | 0             |
|                         | Cruising Table Replacement    | 1             |
|                         | Seasonal Restriction          | 2             |
|                         | Note Restriction              | 3             |
|                         | Not Defined                   | 4             |
| ReturnCode              |                               |               |
|                         | Ok                            | 0             |
|                         | Fail                          | 1             |
|                         | Not Found                     | 2             |
|                         | Request Pending               | 3             |
|                         | Request In Progress           | 4             |
|                         | Request Completed             | 5             |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                                    | <b>Values</b> |
|-------------------------|--|---------------|
|                         | Unappropriate Container Type Ident                               | 6             |
|                         | Container Ownership Unappropriate                                | 7             |
|                         | Status unavailable   | 8             |
|                         | User cancelled operation   | 9             |
|                         | File name not specified  | 10            |
|                         | Database Name not found  | 11            |
|                         | Client already registered  | 12            |
|                         | Client is not registered   | 13            |
|                         | Client is unauthorized   | 14            |
|                         | Request is not registered  | 15            |
|                         | Request is unauthorized  | 16            |
|                         | Duplicate Item   | 17            |
|                         | No Associated Runway   | 18            |
|                         | Kill command doesn't match Navaid component                      | 19            |
|                         | Unique Id doesn't match NavObject component                      | 20            |
|                         | NavObject already exists in the database                         | 21            |
|                         | Local area has not been defined                                  | 22            |
|                         | Service unavailable in current LOF DLL                           | 23            |
|                         | Gaussian's Coefficient are unavailable                           | 24            |
|                         | Gaussian's Coefficients model are out of date                    | 25            |
|                         | Theoretical Result. Computed with a magnetic model (WMM or IGRS) | 26            |
|                         | Accessing wrong magnetic model                                   | 27            |
|                         | DataType mismatch  | 28            |
|                         | Another client is already registered as editor                   | 29            |
|                         | Edition mode is not active                                       | 30            |
|                         | Edition mode activated   | 31            |
|                         | Edition mode deactivated   | 32            |

| <b>Enumeration Name</b>  | <b>Enumerator Description</b>                    | <b>Values</b> |
|--------------------------|--|---------------|
|                          | The supported Interface is not implemented       | 33            |
|                          | The requested service is not supported on server | 34            |
|                          | Null   | 250           |
|                          | No key is defined                                | 251           |
|                          | Null Object                                      | 252           |
|                          | Insertion Fail                                   | 253           |
|                          | Removal Fail                                     | 254           |
|                          | File Opened                                      | 255           |
|                          | File Closed                                      | 256           |
|                          | File Not Found                                   | 257           |
|                          | Parsing In Progress                              | 258           |
|                          | Database Empty                                   | 259           |
|                          | Container Owner                                  | 260           |
|                          | Unappropriate                                    |               |
|                          | No Object Found                                  | 261           |
|                          | Key wrongly assigned                             | 262           |
|                          | Restriction Not Satisfied                        | 263           |
|                          | Copy Failed                                      | 264           |
|                          | Selected Nav Type does not exists                | 265           |
|                          | The kill station command has been sent           | 266           |
| RouteAltitudeDescription |  |               |
|                          | At or above Altitude 1                           | 0             |
|                          | At or below Altitude 1                           | 1             |
|                          | Between Altitude 1 and 2                         | 2             |
|                          | At Altitude 1                                    | 3             |
|                          | As Assigned                                      | 4             |
|                          | Not defined                                      | 5             |
| RouteQualifier1          |  |               |
|                          | DME required                                     | 0             |
|                          | RNAV/E if applicable                             | 1             |
|                          | RNAV/F if applicable                             | 2             |
|                          | GPS required                                     | 3             |
|                          | GPS required, DME/DME to RNP<br>Not Authorized   | 4             |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>                | <b>Values</b> |
|-------------------------|--|---------------|
|                         | DME not required                             | 5             |
|                         | GPS or DME/DME to RNP required               | 6             |
|                         | DME/DME required                             | 7             |
|                         | VOR/DME RNAV                                 | 8             |
|                         | Not Defined                                  | 9             |
| RouteQualifier2         |  |               |
|                         | Primary Missed Approach                      | 0             |
|                         | Secondary Missed Approach                    | 1             |
|                         | Engine Out Missed Approach                   | 2             |
|                         | Procedure with Circle-to-Land Minimums       | 3             |
|                         | Procedure with Straight-In Minimums          | 4             |
|                         | Procedure Designed for Helicopter to Runway  | 5             |
|                         | Not Defined                                  | 6             |
| RouteQualifierType      |  |               |
|                         | RNAV, GPS required, DME/DME to RNP Not Auth. | 0             |
|                         | RNAV, GPS or DME/DME to RNP authorized       | 1             |
|                         | Not Defined                                  | 2             |
| RouteStatus             |  |               |
|                         | Open   | 0             |
|                         | Closed                                       | 1             |
|                         | Restricted                                   | 2             |
|                         | Alternate                                    | 3             |
|                         | Seasonal, Conditional                        | 4             |
|                         | Not defined                                  | 5             |
| RouteType               |  |               |
|                         | SID  | 0             |
|                         | STAR   | 1             |
|                         | Approach                                     | 2             |
|                         | Multiple                                     | 3             |
|                         | Not Defined                                  | 4             |
| RouteUse                |  |               |
|                         | Point-to-Point                               | 0             |

| Enumeration Name  | Enumerator Description                                  | Values |
|-------------------|---|--------|
|                   | Area-to-Area  | 1      |
|                   | Not Defined   | 2      |
| RoutingType       |   |        |
|                   | Designated Airway                                       | 0      |
|                   | Direct to Fix   | 1      |
|                   | Initial Fix   | 2      |
|                   | Route via Fix   | 3      |
|                   | Route via Fix not permitted                             | 4      |
|                   | Standard Instrument Departure                           | 5      |
|                   | Standard Terminal Arrival & Profile Descent             | 6      |
|                   | Not Defined   | 7      |
| RunwaySurfaceType |   |        |
|                   | Asphalt, Asphaltic Concrete, Tar, Macadam               | 0      |
|                   | Brick - Laid or Mortared                                | 1      |
|                   | Concrete  | 2      |
|                   | Composite - 50 percent or more of runway is permanent   | 3      |
|                   | Part concrete, asphalt, or bitumen-bound macadam        | 4      |
|                   | Permanent - Surface type unknown                        | 5      |
|                   | Bituminous, tar or asphalt mixed in place, oiled        | 6      |
|                   | Clay  | 7      |
|                   | Composite - less than 50 percent of runway is permanent | 8      |
|                   | Coral   | 9      |
|                   | Graded or rolled earth, grass on graded earth           | 10     |
|                   | Grass or earth not graded or rolled                     | 11     |
|                   | Gravel  | 12     |
|                   | Ice   | 13     |
|                   | Laterite  | 14     |
|                   | Macadam - crushed rock water bound                      | 15     |

| Enumeration Name           | Enumerator Description                                   | Values |
|----------------------------|--|--------|
|                            | Membrane - plastic or other fiber material               | 16     |
|                            | Mix in place using non-bituminous binders (eg: portland) | 17     |
|                            | Pieced steel planking                                    | 18     |
|                            | Sand   | 19     |
|                            | Snow   | 20     |
|                            | Not Defined  | 21     |
| RvsmIndicator              |  |        |
|                            | Entry/Exit   | 0      |
|                            | Entry Only   | 1      |
|                            | Exit Only  | 2      |
|                            | RVSM Transition Waypoint                                 | 3      |
|                            | RVSM on Airway or Stand Alone                            | 4      |
|                            | Not Defined  | 5      |
| SegmentAltitudeDescription |  |        |
|                            | At or above altitude specified                           | 0      |
|                            | At or below altitude specified                           | 1      |
|                            | As assigned  | 2      |
|                            | At altitude specified                                    | 3      |
|                            | Recommended altitude                                     | 4      |
|                            | Not Defined  | 5      |
| SegmentNavaidType          |  |        |
|                            | VOR  | 0      |
|                            | VOR-TAC  | 1      |
|                            | TACAN  | 2      |
|                            | VOR-DME  | 3      |
|                            | NDB  | 4      |
|                            | NDB-DME  | 5      |
|                            | DME  | 6      |
|                            | ILS Locator  | 7      |
|                            | ILS DME  | 8      |
|                            | ILS Localizer  | 9      |
|                            | Waypoint   | 10     |
|                            | MLS  | 11     |
|                            | MLS-DME  | 12     |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>            | <b>Values</b> |
|-------------------------|--|---------------|
|                         | Not Defined                              | 13            |
| SegmentType             |  |               |
|                         | Starting Segment                         | 0             |
|                         | Next Segment                             | 1             |
|                         | Ending Segment                           | 2             |
|                         | Not Defined                              | 3             |
| ServerState             |  |               |
|                         | Off                                      | 0             |
|                         | Initializing                             | 1             |
|                         | Online                                   | 2             |
|                         | Partially Operational                    | 3             |
|                         | Not Operational                          | 4             |
|                         | Not Responding                           | 5             |
|                         | Not Available                            | 6             |
|                         | Parsing in Progress                      | 7             |
| ServiceIndicator        |  |               |
|                         | Airport Advisory Service                 | 0             |
|                         | Community Aerodrome Radio Station        | 1             |
|                         | Departure Service (not Control Unit)     | 2             |
|                         | Flight Information Service               | 3             |
|                         | Initial Contact                          | 4             |
|                         | Arrival Service (not Control Unit)       | 5             |
|                         | Pre-Departure Clearance (Data Link)      | 6             |
|                         | Aerodrome Flight Information Service     | 7             |
|                         | Terminal Area Control (not Control Unit) | 8             |
|                         | Aeronautical Enroute Information Service | 9             |
|                         | Not Defined                              | 10            |
| ServiceProvider         |  |               |
|                         | Not Defined                              | 0             |
| SidRouteType            |  |               |
|                         | Engine Out SID                           | 0             |

| Enumeration Name | Enumerator Description                    | Values |
|------------------|---|--------|
|                  | SID Runway Transition                     | 1      |
|                  | SID or SID Common Route                   | 2      |
|                  | SID Enroute Transition                    | 3      |
|                  | RNAV SID Runway Transition                | 4      |
|                  | RNAV SID or RNAV SID Common Route         | 5      |
|                  | RNAV SID Enroute Transition               | 6      |
|                  | FMS SID Runway Transition                 | 7      |
|                  | FMS SID or SID Common Route               | 8      |
|                  | FMS SID Enroute Transition                | 9      |
|                  | Vector SID Runway Transition              | 10     |
|                  | Vector SID Enroute Transition             | 11     |
|                  | Not Defined                               | 12     |
| SignalEmission   |   |        |
|                  | Double Sideband (A3)                      | 0      |
|                  | Single Sideband, Reduced Carrier (A3A)    | 1      |
|                  | Two Independent Sidebands (A3B)           | 2      |
|                  | Single Sideband, Full Carrier (A3H)       | 3      |
|                  | Single Sideband, Suppressed Carrier (A3J) | 4      |
|                  | Lower (single) Sideband, Carrier Unknown  | 5      |
|                  | Upper (single) Sideband, Carrier Unknown  | 6      |
|                  | Not Defined                               | 7      |
| SignalModulation |   |        |
|                  | 400 Hz                                    | 0      |
|                  | 1020 Hz                                   | 1      |
|                  | Not Defined                               | 2      |
| SpeedUnit        |   |        |
|                  | TAS in Knots                              | 0      |
|                  | TAS in Mach                               | 1      |
|                  | TAS in Kilometers/Hour                    | 2      |
|                  | Not Defined                               | 3      |
| StarRouteType    |   |        |

| <b>Enumeration Name</b> | <b>Enumerator Description</b>               | <b>Values</b> |
|-------------------------|---|---------------|
|                         | STAR Enroute Transition                     | 0             |
|                         | STAR or STAR Common Route                   | 1             |
|                         | STAR Runway Transition                      | 2             |
|                         | RNAV STAR Enroute Transition                | 3             |
|                         | RNAV STAR or RNAV STAR Common Route         | 4             |
|                         | RNAV STAR Runway Transition                 | 5             |
|                         | Profile Descent Enroute Transition          | 6             |
|                         | Profile Descent or Prof. Desc. Common Route | 7             |
|                         | Profile Descent Runway Transition           | 8             |
|                         | FMS STAR Enroute Transition                 | 9             |
|                         | FMS STAR or STAR Common Route               | 10            |
|                         | FMS STAR Runway Transition                  | 11            |
|                         | Not Defined                                 | 12            |

| <b>Enumeration Name</b> | <b>Enumerator Description</b> | <b>Value</b> |
|-------------------------|-------------------------------|--------------|
| StateEntry              |                               |              |
|                         | Unidentified                  | 0            |
|                         | Alabama                       | 1            |
|                         | Alaska                        | 2            |
|                         | Arizona                       | 3            |
|                         | Arkansas                      | 4            |
|                         | California                    | 5            |
|                         | Colorado                      | 6            |
|                         | Connecticut                   | 7            |
|                         | Delaware                      | 8            |
|                         | District of Columbia          | 9            |
|                         | Florida                       | 10           |
|                         | Georgia                       | 11           |
|                         | Hawaii                        | 12           |
|                         | Idaho                         | 13           |
|                         | Illinois                      | 14           |
|                         | Indiana                       | 15           |
|                         | Iowa                          | 16           |

| <b>Enumeration Name</b> | <b>Enumerator Description</b> | <b>Value</b> |
|-------------------------|-------------------------------|--------------|
|                         | Kansas                        | 17           |
|                         | Kentucky                      | 18           |
|                         | Louisiana                     | 19           |
|                         | Maine                         | 20           |
|                         | Maryland                      | 21           |
|                         | Massachusetts                 | 22           |
|                         | Michigan                      | 23           |
|                         | Minnesota                     | 24           |
|                         | Mississippi                   | 25           |
|                         | Missouri                      | 26           |
|                         | Montana                       | 27           |
|                         | Nebraska                      | 28           |
|                         | Nevada                        | 29           |
|                         | New Hampshire                 | 30           |
|                         | New Jersey                    | 31           |
|                         | New Mexico                    | 32           |
|                         | New York                      | 33           |
|                         | North Carolina                | 34           |
|                         | North Dakota                  | 35           |
|                         | Ohio                          | 36           |
|                         | Oklahoma                      | 37           |
|                         | Oregon                        | 38           |
|                         | Pennsylvania                  | 39           |
|                         | Rhode Island                  | 40           |
|                         | South Carolina                | 41           |
|                         | South Dakota                  | 42           |
|                         | Tennessee                     | 43           |
|                         | Texas                         | 44           |
|                         | Utah                          | 45           |
|                         | Vermont                       | 46           |
|                         | Virginia                      | 47           |
|                         | Washington                    | 48           |
|                         | West Virginia                 | 49           |
|                         | Wisconsin                     | 50           |
|                         | Wyoming                       | 51           |

| Enumeration Name    | Enumerator Description                            | Values |
|---------------------|---|--------|
| SynchronisationType |   |        |
|                     | Synchronous                                       | 0      |
|                     | Asynchronous                                      | 1      |
|                     | Not Defined                                       | 2      |
| TakeoffMinimumType  |   |        |
|                     | Takeoff Not Standard                              | 0      |
|                     | Not Defined                                       | 1      |
| TimeCode            |   |        |
|                     | Active Continuously Including Holidays            | 0      |
|                     | Active Continuously Excluding Holidays            | 1      |
|                     | Active for Time of Operation Excluding Holidays   | 2      |
|                     | Active for Time of Operation Including Holidays   | 3      |
|                     | Not Defined                                       | 4      |
| TimeIndicator       |   |        |
|                     | Time Codes are Local Time                         | 0      |
|                     | Time Codes adjusted for Daylight Savings Time     | 1      |
|                     | Times shown in Universal Coordinated Time         | 2      |
|                     | Not Defined                                       | 3      |
| TrackDescription    |   |        |
|                     | Automatically at the fix after one full circuit   | 0      |
|                     | Automatically at a fix after reaching an altitude | 1      |
|                     | Manually  | 2      |
|                     | Not Defined                                       | 3      |
| TurnDirection       |   |        |
|                     | Left  | 0      |
|                     | Right   | 1      |
|                     | Left or Right                                     | 2      |
|                     | Not Defined                                       | 3      |
| WaypointDescription |   |        |
|                     | Airport as Waypoint                               | 0      |

| Enumeration Name  | Enumerator Description                        | Values |
|-------------------|---|--------|
|                   | Essential Waypoint                            | 1      |
|                   | Off Airway Waypoint                           | 2      |
|                   | Runway/Helipad as Waypoint                    | 3      |
|                   | Heliport as Waypoint                          | 4      |
|                   | NDB Navaid as Waypoint                        | 5      |
|                   | Phantom Waypoint                              | 6      |
|                   | Non-Essential Waypoint                        | 7      |
|                   | Transition Essential Waypoint                 | 8      |
|                   | VHF Navaid as Waypoint                        | 9      |
|                   | Airport or Heliport as Waypoint               | 10     |
|                   | VOR, VORDME, VORTAC as Waypoint               | 11     |
|                   | Tacan as Waypoint                             | 12     |
|                   | NDB, NDBDME as Waypoint                       | 13     |
|                   | ILS as Waypoint                               | 14     |
|                   | Not Defined                                   | 15     |
| WaypointType      |   |        |
|                   | Arc Center Fix Waypoint                       | 0      |
|                   | Combined Named Intersection and RNAV Waypoint | 1      |
|                   | Unnamed Charted Intersection                  | 2      |
|                   | Middle Marker as Waypoint                     | 3      |
|                   | NDB Navaid as Waypoint                        | 4      |
|                   | Terminal NDB Navaid as Waypoint               | 5      |
|                   | Outer Marker as Waypoint                      | 6      |
|                   | Named Intersection                            | 7      |
|                   | Uncharted Airway Intersection                 | 8      |
|                   | VFR Waypoint                                  | 9      |
|                   | RNAV Waypoint                                 | 10     |
|                   | Unnamed Charted Off Route Fix                 | 11     |
|                   | Named NDB                                     | 12     |
|                   | Off Route NDB                                 | 13     |
|                   | Named Off Route Fix                           | 14     |
|                   | Not Defined                                   | 15     |
| WaypointUsageType |   |        |
|                   | High and Low Altitude                         | 0      |

| Enumeration Name | Enumerator Description                     | Values |
|------------------|--|--------|
|                  | High Altitude                              | 1      |
|                  | Low Altitude                               | 2      |
|                  | Terminal Use Only                          | 3      |
|                  | RNAV                                       | 4      |
|                  | Runway or Displaced Threshold              | 5      |
|                  | Pitch and Catch (RNAV)                     | 6      |
|                  | Off Route Intersection in FAA Airspace     | 7      |
|                  | ATCAA and SUAS Waypoints in FAA High Alt   | 8      |
|                  | Not Defined                                | 9      |
| WeatherBroadcast |  |        |
|                  | Automatic Transcribed Weather Broadcast    | 0      |
|                  | Scheduled Weather Broadcast                | 1      |
|                  | Not Defined                                | 2      |
| WeatherCondition |  |        |
|                  | Visual Flight Rules                        | 0      |
|                  | Instrument Flight Rules                    | 1      |
|                  | Visual Meteorological Rules                | 2      |
|                  | Instrument Meteorological Rules            | 3      |
|                  | Notice to Airmen                           | 4      |
|                  | Visual and Instrument Flight Rules         | 5      |
|                  | Visual and Instrument Meteorological Rules | 6      |
|                  | Not Defined                                | 7      |
| GroupPermission  |  |        |
|                  | User                                       | 0      |
|                  | Editor                                     | 1      |
|                  | Admin                                      | 2      |
| LoggerMessage    |  |        |
|                  | Number of duplicate %s                     | 6      |
|                  | IDENT %s has %s duplicates                 | 7      |
| OutputTypeEnum   |  |        |
|                  | Container output                           | 0      |
|                  | Dual container output                      | 1      |

| Enumeration Name | Enumerator Description      | Values |
|------------------|-----------------------------|--------|
|                  | Status output               | 2      |
|                  | Container and status output | 3      |
|                  | Parser status output        | 4      |
|                  | String array output         | 5      |
|                  | Value output                | 6      |

# Annex A: Revision History

| Date       | Release | Editor  | Primary clauses modified | Description                   |
|------------|---------|---------|--------------------------|-------------------------------|
| 2016-04-04 | 1.0     | C. Reed |                          | Version for OAB review        |
| 2016-06-23 | R2      | C. Reed |                          | Version for approval vote     |
| 2016-11-20 |         | C. Reed |                          | Final version for publication |

## **Annex B: Bibliography**