Introduction

For Route, PANS-AIM requires some basic properties as part of the minimum AIP data set.

For Runway Direction, PANS-AIM requires some basic properties as part of the minimum AIP data set. These are

- identifier prefix
- flight rules
- designator

The diagram below shows the AIXM classes, including the relevant data types, needed to encode that information:
Route Designator

Each instance of a Route is identified by a designator which is used to group together all the segments of that route.

In AIXM 5.1.1, the designator of a route is "composed" by several attributes:

- **designatorPrefix**
  A prefix for the route designator, indicating whether the route is upper ATS ('U'), reserved for helicopters ('K'), reserved for supersonic flights ('S') or a TACAN route ('T').

- **designatorSecondLetter**
  The letter of the route designator. Depending on the region, letters may have special significance regarding the route usage limitations.

- **designatorNumber**
  The number of the route designator.

- **multipleIdentifier**
  A complementary letter for the route designator, indicating alternates for homonymous routes (especially for military training routes).

The route designator shall be compliant with the rules defined by ICAO Annex 11, Appendix 1, section 2 \(^1\) (see encoding rule below).

**Note**

TACAN route is neither listed in ICAO Annex 11 nor in PANS-AIM, but added in AIXM 5.1.1 to cover requirements from the military aeronautical information domain.

Flight rules

Another item that is identified as being part of the minimum AIP data set is the Information about the flight rules that apply on the route (IFR / VFR).

In AIXM 5.1.1, the Route.flightRule attribute is used for that purpose, which can take the values a shown on the figure below.
Route Type

PANS-AIM Appendix 1 (Aeronautical Data Catalogue) distinguishes between ATS Routes and Other Route. Also, those routes defined in ENR 3.1 - 3.4 may be considered as ATS routes as defined in ICAO Annex 11.

All other routes including those define in PANS AIM ENR 3.5 may be considered as Other routes.

In AIXM 5.1.1, the Route.type attribute is used to encode that information. The corresponding code list provides the following values:

- 'ATS': ATS Route as described in ICAO Annex 11
- 'NAT': North Atlantic Track (part of Organized Track System)
- 'OTHER'

Coding Examples

The figure below gives a simple example of the encoding of route "UM170" with 4 route segments:
The example above also contains other route usage data, which is coded as either:

- **RouteAvailability** (the Conditional route (CDR) usage, for example)
- **FlightRestriction** (the information at the bottom of the table, with route restrictions based on destination or other flight elements)

However, as this data is not required by PANS-AIM, it is currently also not part of these coding guidelines.

The example below shows the encoding of route "UA4", including the mapping from the AIXM UML to AIXM XML:

```
<ax:s:RouteTimeSlice gml:id="RTE_UA4">
  <gml:validTime>
    <gml:validTime>
      <gml:beginPosition>2017-01-01 00:00:00Z</gml:beginPosition>
      <gml:endPosition></gml:endPosition>
    </gml:validTime>
  </gml:validTime>
</ax:s:RouteTimeSlice>
```

More coding examples can be found in the [AIP Data Set - Specimen (DONLON)](#).

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>XPath Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTE-EX-01</td>
<td>Lower ATS Route</td>
<td>/aixm:RouteTimeSlice [@gml:id = &quot;RTE_A6&quot;]</td>
</tr>
<tr>
<td>RTE-EX-02</td>
<td>Upper ATS Route</td>
<td>/aixm:RouteTimeSlice [@gml:id = &quot;RTE_UA4&quot;]</td>
</tr>
<tr>
<td>RTE-EX-01</td>
<td>RNAV Route</td>
<td>/aixm:RouteTimeSlice [@gml:id = &quot;RTE_UL123&quot;]</td>
</tr>
<tr>
<td>RTE-EX-01</td>
<td>Helicopter Route</td>
<td>/aixm:RouteTimeSlice [@gml:id = &quot;RTE_HK123&quot;]</td>
</tr>
</tbody>
</table>

**References**