# AEDT Standard Input File

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1 Introduction

The AEDT Standard Input File (ASIF) provides a standard file format to allow for the import of data into AEDT. The ASIF format allows users to create a new study by importing a complete study including airports, scenarios, cases, operations, tracks, and other study definitions. Users can also use the partial ASIF import to update existing AEDT studies.

This guide provides a description of the ASIF format for the ASIF schema version 1.2.13. It also provides an overview of ASIF usage and annotated sample studies. The guide is intended for analysts and programmers who wish to create ASIF.

It is recommended to use the ASIF schema documentation, AsifMerge.html, in conjunction with the guide. It provides diagrams that illustrate the structure and contents of each XML element as well as rules and properties of each element, see Section 1.2.

1.1 Overview of the ASIF Format

ASIF is based on the XML file format. XML is a text-based file format that is readable by both humans and computers. Data values are tagged with elements and organized in a hierarchical manner such that the elements can contain other elements or data. XML elements can also have attributes which provide metadata that affect how the ASIF importer processes the data in the XML file. This document assumes users have basic familiarity with the XML file format. For additional information about XML, see http://xmlfiles.com/xml/.

An ASIF can be created and edited in a standard XML editor. The XML Notepad and Notepad++ are XML editors that can be downloaded for free online.

1.2 ASIF Schema Documentation

The ASIF schema (.xsd) files are located under C:\Program Files\FAA\AEDT\Examples directory.

- ASIF.xsd
- ASIF_Airport.xsd
- ASIF_Common.xsd
- ASIF_Fleet.xsd
- ASIF_Receptors.xsd

The ASIF schema documentation, AsifMerge.html, is located under the C:\Program Files\FAA\AEDT\Examples\ASIF Schema Reference directory. This is a HTML file which contains schema diagrams that illustrate the structure and contents of each XML element. The links in the HTML file facilitates understanding the schema hierarchy and the rules and properties of each element.
The following table describes the notations used in the ASIF schema diagram.

<table>
<thead>
<tr>
<th>Notation</th>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice indicator</td>
<td></td>
<td>Only one of the elements contained in the selected group can be present</td>
</tr>
<tr>
<td>Sequence indicator</td>
<td></td>
<td>Child elements must appear in the specified sequence</td>
</tr>
<tr>
<td>Element</td>
<td></td>
<td>Represented by a rectangle with solid or dotted border</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Solid rectangle – required element</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dotted rectangle – optional element</td>
</tr>
<tr>
<td>Element with (+) sign</td>
<td></td>
<td>Indicates that the element has child element(s) and/or attribute(s)</td>
</tr>
<tr>
<td>Element with min and max bound</td>
<td></td>
<td>Specifies the min/max number of times an element can occur in the parent element</td>
</tr>
</tbody>
</table>

### 1.3 Importing External Studies

AEDT also supports import of INM and EDMS studies by converting these legacy tools into ASIF format and importing into AEDT. See the AEDT User Guide for more information on importing legacy studies.
2 ASIF Import Types

There are two types of ASIF import files: a full-study import and a partial-study import. The following sections describe each type of import file.

2.1 Full Study Import

AEDT supports the creation of new studies via ASIF. For a full-study import, the content attribute of the AsifXML element must be set to “study”.

Please see Section 3 for two sample studies.

2.2 Partial ASIF Import

Partial ASIF is used to import specific pieces of data into an existing AEDT study. A partial ASIF file is organized similarly to a full ASIF, except that it contains a single type of data – the content attribute of the AsifXML element must specify the data type. There are twelve data types that can compose a partial ASIF:

- airportLayoutSet
- annualization
- case
- fleet
- receptorSets
- scenario
- boundary
- trackOpSet
- runup
- userGroundSupportEquipmentSet
- stationarySourceSet
- operationalProfileSet

The format for a partial ASIF is outlined below. The header is the same as a full ASIF, except that the content attribute is not “study”. Instead, the content attribute should specify the data element that appears in the file.

```xml
<AsifXml xmlns:AsifXml="http://www.faa.gov/ASIF"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.2.13"
content="ENTER_CONTENT_TYPE_HERE">

<!-- The content block follows here: -->

<*content type here*>...

</*end content type*>>

</AsifXml>
```
Note that some of these elements rely on information provided in other data blocks. If this information is not provided by the base study when loading the partial ASIF, an error will be generated. For example, attempting to load a partial ASIF containing scenario data that references an airport that does not exist in the base study will cause an error.

2.3 Sample ASIF Files

Sample ASIF files, including full study files and partial ASIF files, are located in C:\Program Files\FAA\AEDT\Examples directory.

Full study ASIF

- asif_emissions_study.xml
- asif_sensor_path_study.xml
- asif_small.xml

Partial ASIF

- PartialASIF_airportLayoutSet.xml
- PartialASIF_annualization.xml
- PartialASIF_boundary.xml
- PartialASIF_operationalProfileSet.xml
- PartialASIF_receptorSets.xml
- PartialASIF_runup.xml
- PartialASIF_scenario.xml
- PartialASIF_stationarySourceSet.xml
- PartialASIF_userGroundSupportEquipmentSet.xml
3 ASIF Examples

This section provides simple steps to assist in the creation of ASIFs for possible studies. See Section 3.1 on developing an ASIF for a simple study and Section 3.2 for an emissions dispersion study.

3.1 Create a Simple Study

Follow the steps below to develop an ASIF for a simple study:

1. Create an empty study file.
2. Populate the airport section.
3. Create receptor set.
4. Create scenario and case hierarchy.
5. Populate the case with tracks and air operations.
6. Create annualization.

The following sections provide examples of each of the above steps. This example should be used as an aid for understanding the ASIF format, and not as a data reference.

Step 1: Create empty study file

At a minimum, an ASIF consists of the standard XML declaration, a study section, and study metadata.

```xml
<AsifXml version="1.2.13" content="study"
xmlns:AsifXml="http://www.faa.gov/ASIF"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<study xmlns:asif="http://www.faa.gov/ASIF">
  <!-- User-defined study name -->
  <name>ASIF_example</name>

  <!-- Study type - Emissions, Dispersion, Noise and Emissions, or Noise and Dispersion -->
  <studyType>Noise and Emissions</studyType>

  <!-- Indicate the units used in the study -->
  <emissionsUnits>Kilograms</emissionsUnits>

  <!-- User-defined study description -->
  <description>A sample study</description>

  <!-- Optional - Set the boundaries of the study area -->
  <boundary>
    <polygon>
      <vertex>
        <latitude>40.636993970695244</latitude>
        <longitude>-89.21758333055047</longitude>
      </vertex>
      <vertex>
        <latitude>40.636993970695244</latitude>
        <longitude>-86.59119444944956</longitude>
      </vertex>
      <vertex>
        <latitude>43.3047921364604</latitude>
        <longitude>-89.21758333055047</longitude>
      </vertex>
    </polygon>
  </boundary>
</study>
</AsifXml>
```
Step 2: Populate airport layouts section
AEDT requires all airports in the study area to be declared. The airport runway definitions are specified using the runwaySet element. If runways are not specified in ASIF, then the runway data from the Airport database will be used during the ASIF import.

In the example below, KORD is defined using system runways, and KMDW is defined using user-defined runways.

```
<airportLayoutSet>
  <airportLayout>
    <!-- Airport with no runway tags will import runways from the AEDT system data. -->
    <airportCode type="ICAO">KORD</airportCode>
  </airportLayout>
  <airportLayout>
    <!-- User can specify an airport with user-defined runway -->
    <airportCode type="ICAO">KMDW</airportCode>
    <!-- Airports can have one or more runways defined -->
    <runwaySet>
      <runway>
        <!-- Runway length (in feet) -->
        <length>5932</length>
        <!-- Runway width (in feet) -->
        <width>150</width>
        <!-- One or more runway ends -->
        <runwayEnd>
          <!-- user-defined name for runway end -->
          <name>04R</name>
        </runwayEnd>
        <!-- latitude and longitude of runway end -->
      </runway>
    </runwaySet>
  </airportLayout>
</airportLayoutSet>
```
<latitude>41.779496</latitude>
<longitude>-87.75876</longitude>

<!-- elevation in feet -->
<elevation>0.0</elevation>

<!-- threshold crossing height (in feet) -->
<threshCrossHeight>50.0</threshCrossHeight>

<!-- glide slope for an approach to this runway end -->
<glideSlope>3.0</glideSlope>

<!-- displaced threshold for departure -->
<depDispThresh>0.0</depDispThresh>

<!-- displaced threshold for approach -->
<appDispThresh>0.0</appDispThresh>

<!-- Percent change in airport average headwind -->
<percentWind>0.0</percentWind>

<runwayEnd>
<name>22L</name>
<latitude>41.791167</latitude>
<longitude>-87.743554</longitude>
<elevation>0.0</elevation>
<threshCrossHeight>50.0</threshCrossHeight>
<glideSlope>3.0</glideSlope>
<depDispThresh>0.0</depDispThresh>
<appDispThresh>0.0</appDispThresh>
<percentWind>0.0</percentWind>
</runwayEnd>
</runwaySet>
</airportLayout>
</airportLayoutSet>

Step 3: Create receptor set
If the study includes noise or dispersion analysis, then one or more receptorSet elements must be created. Receptor sets define locations (grid or point) where noise/dispersion measurements are taken. The example below defines a grid type receptor set.

<receptorSet>
<!-- user-defined name -->
:name>gridfile_100x100</name>
<grid>
<!-- Latitude and longitude of southwest corner of grid -->
<latitude>41.97872</latitude>
<longitude>-87.90439</longitude>

<!-- Width and height of grid (in nautical miles) -->
<width>100.0</width>
<height>100.0</height>

<!-- Number of points across height and width of grid -->

Step 4: **Create scenario and case hierarchy**

Scenarios contain a set of cases (i.e. operation group) that are used to group aircraft tracks and operations.

The following example demonstrates a simple scenario and case structure. A case can contain one or more child cases.

```xml
<scenario>
  <!-- user-defined scenario name and description -->
  <name>Baseline_1990</name>

  <!-- user-defined start time for scenario -->
  <startTime>2009-11-10T15:02:00</startTime>

  <!-- Duration of scenario (in hours) -->
  <duration>24</duration>

  <!-- Taxi model for scenario -->
  <taxiModel>UserSpecified</taxiModel>

  <!-- Aircraft performance model -->
  <acftPerfModel>SAE1845</acftPerfModel>

  <!-- Enable/disable bank angle calculations for aircraft performance modeling -->
  <bankAngle>true</bankAngle>

  <!-- Sulfur related settings -->
  <sulfurConversionRate>0.05</sulfurConversionRate>
  <fuelSulfurContent>6.8E-4</fuelSulfurContent>

  <!-- A description of the scenario -->
  <description>Simple scenario</description>

  <!-- List of airports to use for the scenario -->
  <scenarioAirportLayoutSet>
    <scenarioAirportLayout>
      <airportLayoutName>KMDW</airportLayoutName>
    </scenarioAirportLayout>
    <scenarioAirportLayout>
      <airportLayoutName>KORD</airportLayoutName>
    </scenarioAirportLayout>
  </scenarioAirportLayoutSet>

  <caseSet>
    <!-- One or more case elements -->
    <case>
      <!-- sequential case number unique in this scenario -->
      <caseId>0</caseId>
    </case>
  </caseSet>
</scenario>
```
Step 5: Populate cases with tracks and air operations

The `trackOpSet` element defines a single track and any number of aircraft operations to be flown on that track. A track can be composed of one or more subtracks with dispersion values. An un-dispersed track has one subtrack with dispersion weight of 1. A dispersed track consists of multiple subtracks. The sum of the dispersion weights for all subtracks within a given track must equal 1. Operations defined for the track will be dispersed based on the dispersion weight amongst any subtracks that make up the track.

```xml
<trackOpSet>
  <!-- Single track element -->
  <track>
    <!-- user-defined track name -->
    <name>DJM04R_EON.10803</name>
    <!-- Track operation type: A = Arrival, D = Departure, O = Overflight -->
    <optype>D</optype>
    <!-- Airport and runway for this track -->
    <airport type="ICAO">KMDW</airport>
    <runway>04R</runway>
    <!-- tracks can be composed of multiple dispersed subtracks -->
    <subtrack>
      <!-- the user-defined ID for the subtrack -->
      <id>0</id>
      <!-- The sum of the dispersionWeights for all subtracks within a given track must equal 1 -->
      <dispersionWeight>1.0</dispersionWeight>
      <!-- Set of trackNode or trackVector elements, all must be the same for each subtrack -->
      <trackNodes>
        <trackNode>
          <latitude>40.65640</latitude>
          <longitude>-73.71322</longitude>
        </trackNode>
      </trackNodes>
    </subtrack>
  </track>
</trackOpSet>
```
<latitude>40.65640</latitude>
<longi

</subtrack>
</track>

<operations>
<!-- operation element represents one or more flights on a track -->
<operation>
<!-- user-defined operation id -->
'id'>T9.1</id>

<!-- AEDT aircraftType for this operation -->
<aircraftType>
<airframeModel>Raytheon Beech 1900-C</airframeModel>
<engineCode>PT67B</engineCode>
<engineModCode>NONE</engineModCode>
</aircraftType>

<!-- number of times to fly this operation -->
<numOperations>1.0</numOperations>

<!-- user-defined flight number -->
<flightNumber>CKE545</flightNumber>

<!-- user-defined operation type -->
<userType>MU3001</userType>

<!-- user-defined parameter data -->
<userParam>J</userParam>

<!-- arrival or departure airport and runway -->
<departureAirport type="ICAO">KMDW</departureAirport>
<departureRunway>04R</departureRunway>
<arrivalAirport type="FAA">LIT</arrivalAirport>

<!-- offTime for departures or onTime for arrivals -->
<offTime>2009-11-10T15:02:00</offTime>

<!-- aircraft profile for this operation -->
<saeProfile>STANDARD</saeProfile>
</operation>
</operations>
</trackOpSet>
Step 6: **Create annualization**
Annualization is the process of performing a weighted summation\(^1\) over the noise and emission results from some or all of the cases within a scenario in order to create results that represent noise and emissions exposures over a time period of interest. Each scenario element may contain an annualization element describing the weighted annualization tree.

```xml
<annualization>
  <!-- user-defined scenario annualization name -->
  <name>Alternative.config</name>

  <!-- Define one or more groups of cases and groups -->
  <annualizationGroup>
    <!-- Define rolloup weight for this group -->
    <weight>2.0</weight>
  </annualizationGroup>

  <annualizationGroup>
    <weight>0.7</weight>
  </annualizationGroup>

  <!-- Associate scenario case with this annualization group -->
  <annualizationCase>
    <!-- Specify case name to include -->
    <name>PlanB</name>

    <!-- Define rollup weight for this case -->
    <weight>1.0</weight>
  </annualizationCase>
</annualization>
```

Step 7: **Full ASIF**
The full study ASIF is as follows:

```xml
<AsifXml version="1.2.13" content="study"
xmlns:AsifXml="http://www.faa.gov/ASIF"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <study xmlns:asif="http://www.faa.gov/ASIF">

    <!-- User-defined study name -->
    <name>ASIF_example</name>

    <!-- Study type - Emissions, Dispersion, Noise and Emissions, or Noise and Dispersion -->
    <studyType>Noise and Emissions</studyType>
  </study>
</AsifXml>
```

\(^1\) The word ‘summation’ is used figuratively and the actual process of correctly summing or adding together noise or emissions results depends upon the metric being used. For example: energy metric results would not be directly added together for a result since they are logarithmic values, but would rather be log-added.
<!-- Indicate the units used in the study -->
<emissionsUnits>Kilograms</emissionsUnits>

<!-- User-defined study description -->
<description>A sample study</description>

<!-- Optional - Set the boundaries of the study area -->
<boundary>
<polygon>
   <vertex>
      <latitude>40.636993970695244</latitude>
      <longitude>-89.21758333055047</longitude>
   </vertex>
   <vertex>
      <latitude>40.636993970695244</latitude>
      <longitude>-86.59119444944956</longitude>
   </vertex>
   <vertex>
      <latitude>43.3047921364604</latitude>
      <longitude>-86.53522348936178</longitude>
   </vertex>
   <vertex>
      <latitude>43.3047921364604</latitude>
      <longitude>-89.27355429063823</longitude>
   </vertex>
</polygon>
</boundary>

<airportLayoutSet>
<airportLayout>
   <!-- Airport with no runway tags will import runways from the AEDT system data. -->
   <airportCode type="ICAO">KORD</airportCode>
</airportLayout>

<airportLayout>
   <!-- User can specify an airport with user-defined runway -->
   <airportCode type="ICAO">KMDW</airportCode>
</airportLayout>

<!-- Airports can have one or more runways defined -->
<runwaySet>
   <runway>
      <!-- Runway length (in feet) -->
      <length>5932</length>

      <!-- Runway width (in feet) -->
      <width>150</width>

      <!-- One or more runway ends -->
      <runwayEnd>
         <!-- user-defined name for runway end -->
         <name>04R</name>

         <!-- latitude and longitude of runway end -->
         <latitude>41.779496</latitude>
         <longitude>-87.75876</longitude>
   </runway>
</runwaySet>
<!-- elevation in feet -->
<elevation>0.0</elevation>

<!-- threshold crossing height (in feet) -->
<threshCrossHeight>50.0</threshCrossHeight>

<!-- glide slope for an approach to this runway end -->
<glideSlope>3.0</glideSlope>

<!-- displaced threshold for departure-->
<depDispThresh>0.0</depDispThresh>

<!-- displaced threshold for approach -->
<appDispThresh>0.0</appDispThresh>

<!-- Percent change in airport average headwind -->
<percentWind>0.0</percentWind>

</runwayEnd>

</runway>
</runwaySet>
</airportLayout>
</airportLayoutSet>

<receptorSet>
<!-- user-defined name -->
<name>gridfile_100x100</name>
<grid>
<!-- Latitude and longitude of southwest corner of grid -->
<latitude>41.791167</latitude>
<longitude>-87.743554</longitude>
<elevation>0.0</elevation>
<threshCrossHeight>50.0</threshCrossHeight>
<glideSlope>3.0</glideSlope>
<depDispThresh>0.0</depDispThresh>
<appDispThresh>0.0</appDispThresh>
<percentWind>0.0</percentWind>

</runwayEnd>
</runway>
</runwaySet>
</airportLayout>
</airportLayoutSet>

<scenario>
<!-- user-defined scenario name and description -->
<name>Baseline_1990</name>
</scenario>
<!-- user-defined start time for scenario -->
<startTime>2009-11-10T15:02:00</startTime>

<!-- Duration of scenario (in hours) -->
<duration>24</duration>

<!-- Taxi model for scenario -->
<taxiModel>UserSpecified</taxiModel>

<!-- Aircraft performance model -->
<acftPerfModel>SAE1845</acftPerfModel>

<!-- Enable/disable bank angle calculations for aircraft performance modeling -->
<bankAngle>true</bankAngle>

<!-- Sulfur related settings -->
<sulfurConversionRate>0.05</sulfurConversionRate>
<fuelSulfurContent>6.8E-4</fuelSulfurContent>

<!-- A description of the scenario -->
<description>A sample scenario</description>

<!-- List of airports to use for the scenario -->
<scenarioAirportLayoutSet>
  <scenarioAirportLayout>
    <airportLayoutName>KMDW</airportLayoutName>
  </scenarioAirportLayout>
  <scenarioAirportLayout>
    <airportLayoutName>KORD</airportLayoutName>
  </scenarioAirportLayout>
</scenarioAirportLayoutSet>

<caseSet>
  <!-- One or more case elements -->
  <case>
    <!-- sequential case number unique in this scenario -->
    <caseId>0</caseId>

    <!-- user-defined case name -->
    <name>PlanB</name>

    <!-- Noise emissions source -->
    <source>Aircraft</source>

    <!-- Case start time and duration -->
    <startTime>2009-11-10T15:02:00</startTime>
    <duration>24</duration>
  </case>
</caseSet>

<trackOpSet>
  <!-- Single track element -->
  <track>
    <!-- user-defined track name -->
    <name>DJM04R_EON.10803</name>
  </track>
</trackOpSet>
<opctype>D</opctype>

<airport type="ICAO">KMDW</airport>
<runway>04R</runway>

<subtrack>
  <id>0</id>
  <dispersionWeight>1.0</dispersionWeight>
  <trackNodes>
    <trackNode>
      <latitude>40.65640</latitude>
      <longitude>-73.71322</longitude>
    </trackNode>
    <trackNode>
      <latitude>40.65640</latitude>
      <longitude>-53.71322</longitude>
    </trackNode>
  </trackNodes>
</subtrack>

<operations>
  <id>T9.1</id>
  <aircraftType>
    <airframeModel>Raytheon Beech 1900-C</airframeModel>
    <engineCode>PT67B</engineCode>
  </aircraftType>
  <numOperations>1.0</numOperations>
  <flightNumber>CKE545</flightNumber>
  <userType>MU3001</userType>
</operations>
3.2 Create an Emissions Dispersion Study

An emissions dispersion study contains the same core elements as a simple study (Section 3.1). In addition, it requires data on stationary sources and airport features.
1. Create an empty study file.
2. Populate the airport section.
   a. Basic airport layout
   b. Stationary sources
   c. Airport gates/terminals
   d. Taxiways
   e. Runways
   f. Taxipaths
   g. Tracks
   h. Airport configurations
3. Create receptor set.
4. Create scenario and case hierarchy.
   a. Airport scenario properties
   b. Non-aircraft operations case
   c. Aircraft operations case
5. Create annualization.

The following sections provide examples of the steps. This example should be used as an aid for understanding the ASIF format, and not as a data reference.

**Step 1: Create empty study file**

```xml
<?xml version="1.0" encoding="utf-8"?>
<AsifXml xmlns:xsd="http://www.w3.org/2001/XMLSchema"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.2.13"
         content="study">  
  <study>
    <name>emissions_sample_asif_short</name>
    <studyType>Dispersion</studyType>
    <emissionsUnits>Kilograms</emissionsUnits>
    <description>A sample emissions study</description>
    <!-- Add airport layouts here -->
    <!-- Add receptors here -->
    <!-- Add scenarios here -->
  </study>
</AsifXml>
```

**Step 2: Populate airport layouts section**

AEDT requires all airports in the study area to be declared. In addition to runways, declare stationary sources of emissions, such as generators, training fires, or boilers in this section. Also declare gates, terminals, and taxiways.

This sample demonstrates a simple case similar to the STUDY_PVD study included with AEDT installation. This sample uses simplified taxiway definitions, a single runway, and a single aircraft type.
Step 2a: Declare basic airport layout
The basic airport information and surrounding buildings can be defined according to the following example.

```xml
<airportLayoutSet>
    <airportLayout>
        <name>Baseline-Theodore Francis Green State-2004</name>
        <airportCode type="ICAO">KPVD</airportCode>
        <!-- Start date of the study-->
        <startDate>2004-01-01</startDate>
        <!--Elevation of the airport above MSL in feet-->
        <elevation>55</elevation>
        <latitude>41.723999</latitude>
        <longitude>-71.428221</longitude>
        <buildingSet>
            <building>
                <!--Name of the building-->
                <name>Terminal</name>
                <!--Elevation of the building in meters-->
                <elevation>16.764</elevation>
                <!--Height of building in meters-->
                <height>0</height>
                <polygonCoords>
                    <vertex>
                        <latitude>41.74214308945087</latitude>
                        <longitude>-71.413044097333525</longitude>
                    </vertex>
                    <vertex>
                        <latitude>41.7418685788759</latitude>
                        <longitude>-71.4124212593739</longitude>
                    </vertex>
                    <vertex>
                        <latitude>41.742856388006238</latitude>
                        <longitude>-71.411523291021965</longitude>
                    </vertex>
                    <vertex>
                        <latitude>41.743130903444673</latitude>
                        <longitude>-71.4121461346995</longitude>
                    </vertex>
                </polygonCoords>
            </building>
        </buildingSet>
    </airportLayout>
</airportLayoutSet>
```

Step 2b: Create stationary sources
Define each stationary source with an individual location definition, as well as other properties that describe the nature or amount of emissions. Each stationary source may have different elements associated with it. The example below gives the declaration for a simple emergency generator.

```xml
<stationarySourceSet>
    <stationarySource>
        <!-- Name of the stationary source -->
        <name>Emergency Generator-Baseline-KPVD-2004</name>
        <pointStationarySource>
            <pointCoord>
```

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Step 2c: Define airport gates/terminals

Airport gates can be defined as a point or a polygon. In AEDT, a polygon gate is referred as a terminal. This example declares a terminal which is defined by a set of latitude and longitude coordinates.

```
<gateSet>
  <gate>
    <name>AC</name>
    <elevation>16.76</elevation>
    <releaseHeight>1.499616</releaseHeight>
    <sigmaY>0.1</sigmaY>
    <sigmaZ>0.1</sigmaZ>
    <polygonCoords>
      ...coordinates...
    </polygonCoords>
  </gate>
</gateSet>
```
<longitude>-71.41015590887973</longitude>
</vertex>
<vertex>
<latitude>41.744540948170368</latitude>
<longitude>-71.408847926936545</longitude>
</vertex>
<vertex>
<latitude>41.739914698948347</latitude>
<longitude>-71.412700203804789</longitude>
</vertex>
<vertex>
<latitude>41.740535077331714</latitude>
<longitude>-71.414048427453068</longitude>
</vertex>
<vertex>
<latitude>41.739914698948347</latitude>
<longitude>-71.412700203804789</longitude>
</vertex>
<vertex>
<latitude>41.741863092355707</latitude>
<longitude>-71.4124359172483</longitude>
</vertex>
<vertex>
<latitude>41.74155492229967</latitude>
<longitude>-71.411380309528937</longitude>
</vertex>
<vertex>
<latitude>41.743501289605305</latitude>
<longitude>-71.41151579554152</longitude>
</vertex>
</polygonCoords>
</gate>
</gateSet>

Step 2d: Declare taxiways
Taxiways are line segments that link gates, runways, and other taxiways. They are composed of sequences of latitude and longitude coordinates, and specify the speed of aircraft that use them at each node.

<taxiwaySet>
<taxiway>
{name>AC to 23</name>
<!-- Width of emission dispersion around taxiway in meters-->
<dispersionWidth>20</dispersionWidth>
<taxiNodeSet>
<taxiNode>
<latitude>41.742510605080867</latitude>
<longitude>-71.411486738878608</longitude>
<!-- Elevation in meters-->
<elevation>16.76</elevation>
<!-- Speed of aircraft at node in meters/sec-->
<speed>17.26</speed>
</taxiNode>
<taxiNode>
<latitude>41.746840990965104</latitude>
<longitude>-71.41015590887973</longitude>
</taxiNode>
</taxiNodeSet>
</taxiway>
</taxiwaySet>
<longitude>-71.397780701297123</longitude>
<elevation>16.76</elevation>
<speed>17.26</speed>
</taxiNode>
</taxiNodeSet>
</taxiway>

<taxiway>
<name>AC to 5</name>
<dispersionWidth>20</dispersionWidth>
</taxiNodeSet>
<taxiNode>
<latitude>41.742510605080867</latitude>
<longitude>-71.411486738878608</longitude>
<elevation>16.76</elevation>
<speed>17.26</speed>
</taxiNode>
<taxiNode>
<latitude>41.730402908060768</latitude>
<longitude>-71.411541169494924</longitude>
<elevation>16.76</elevation>
<speed>17.26</speed>
</taxiNode>
</taxiNodeSet>
</taxiway>
</taxiwaySet>

Step 2e: Create runways
Runways are used by departing and arriving aircraft, and are linked by taxiways. A runway in AEDT is defined using two runway ends.

<runwaySet>
<runway>
<!-- Length of runway in feet-->
<length>7069</length>
<!-- Width of runway in feet-->
*width>150</width>
<runwayEnd>
<name>05</name>
<latitude>41.730402908060768</latitude>
<longitude>-71.411541169494924</longitude>
<!--Elevation of the runway in feet-->
<elevation>54.986875960838894</elevation>
<!-- Glide slope for runway's endpoint in degrees-->
<glideSlope>3</glideSlope>
</runwayEnd>
<runwayEnd>
<name>23</name>
<latitude>41.746840990965104</latitude>
<longitude>-71.397780701297123</longitude>
<elevation>54.986875960838894</elevation>
<glideSlope>3</glideSlope>
</runwayEnd>
</runway>
</runwaySet>
Step 2f: Assemble taxipaths
Taxipaths are a series of taxiways that guide an aircraft from a gate to a runway. In this example, simple two-point taxiways are used to connect the gate and the runway. In other studies, taxipaths can be composed of multiple taxiway line segments, and separate taxipaths may share taxiways in common as paths across the airport.

```
<taxipathSet>
  <taxipath>
    <!-- Name of the gate associated with the path-->
    <gateName>AC</gateName>
    <!-- Name of the runway associated with the path-->
    <runwayName>05</runwayName>
    <!-- Traffic direction-->
    <direction>Outbound</direction>
    <!-- Name of the taxiways in the path-->
    <taxiwayName>AC to 5</taxiwayName>
  </taxipath>
  <taxipath>
    <!-- Name of the gate associated with the path-->
    <gateName>AC</gateName>
    <!-- Name of the runway associated with the path-->
    <runwayName>05</runwayName>
    <!-- Traffic direction-->
    <direction>Inbound</direction>
    <!-- Name of the taxiways in the path-->
    <taxiwayName>AC to 5</taxiwayName>
  </taxipath>
  <taxipath>
    <!-- Name of the gate associated with the path-->
    <gateName>AC</gateName>
    <!-- Name of the runway associated with the path-->
    <runwayName>23</runwayName>
    <!-- Traffic direction-->
    <direction>Outbound</direction>
    <!-- Name of the taxiways in the path-->
    <taxiwayName>AC to 23</taxiwayName>
  </taxipath>
  <taxipath>
    <!-- Name of the gate associated with the path-->
    <gateName>AC</gateName>
    <!-- Name of the runway associated with the path-->
    <runwayName>23</runwayName>
    <!-- Traffic direction-->
    <direction>Inbound</direction>
    <!-- Name of the taxiways in the path-->
    <taxiwayName>AC to 23</taxiwayName>
  </taxipath>
</taxipathSet>
```

Step 2g: Define tracks
Tracks are paths flown by aircraft, and are defined for an aircraft type (fixed-wing or rotary-wing) and an operation type (arrival, departure, or touch & go). Each track is made up of nodes and defined for a runway. The following example provides the structure for one track – a full study must have at least one track defined for each operation type, runway, and wing type of aircraft in the study.

```
<trackSet>
  <track>
    <!-- Operation type for the track; arrival (A), departure (D), or touch & go (T)-->
    <optype>A</optype>
    <!-- Wing type; fixed (F) or rotary (R)-->
    <wingtype>F</wingtype>
    <airport type="ICAO">KPVD</airport>
    <runway>05</runway>
  <subtrack>
```
Step 2h: Create airport configurations

Airport configurations give the number of arrivals and departures per hour, and the distribution of flights across associated runways. A single configuration is used in the following example, but multiple configurations could be used in a study.

```xml
<airportConfigSet>
  <airportConfig>
    <configurationName>Configuration</configurationName>
    <!-- Flag to use an operation distribution-->
    <useDistribution>false</useDistribution>
    <!-- Pareto curve points for airport operations-->
    <airportCapacity>
      <!-- Aircraft size for assignments; small (S), large (L), or heavy (H)-->
      <aircraftSize>S</aircraftSize>
      <!-- Percent of arrival operations on runway; all arrival percentages must sum to 100%-->
      <arrivalPercentage>60</arrivalPercentage>
      <!-- Percent of departure operations on runway; all departure percentages must sum to 100%-->
    </runwayAssignmentSet>
    <runwayAssignment>
      <runway>23</runway>
    </runwayAssignment>
  </airportConfig>
</airportConfigSet>
```
<departurePercentage>60</departurePercentage>
<!-- Percent of touch & go operations on runway; all touch & go percentages must sum to 100%-->
<tgoPercentage>60</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>S</aircraftSize>
<runway>05</runway>
<arrivalPercentage>40</arrivalPercentage>
<departurePercentage>40</departurePercentage>
<tgoPercentage>40</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>L</aircraftSize>
<runway>23</runway>
<arrivalPercentage>60</arrivalPercentage>
<departurePercentage>60</departurePercentage>
<tgoPercentage>60</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>L</aircraftSize>
<runway>05</runway>
<arrivalPercentage>40</arrivalPercentage>
<departurePercentage>40</departurePercentage>
<tgoPercentage>40</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>H</aircraftSize>
<runway>23</runway>
<arrivalPercentage>60</arrivalPercentage>
<departurePercentage>60</departurePercentage>
<tgoPercentage>60</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>H</aircraftSize>
<runway>05</runway>
<arrivalPercentage>40</arrivalPercentage>
<departurePercentage>40</departurePercentage>
<tgoPercentage>40</tgoPercentage>
</runwayAssignment>
</runwayAssignmentSet>
</airportConfig>
</airportConfigSet>

**Step 2i: Declare operational profiles**

Three profiles are required when using operational profiles in AEDT – quarter-hourly, daily, and monthly. These profiles provide a weighting factor that determines how often activity occurs during the time period. Aircraft, stationary sources, and ground vehicles can all be assigned operational profiles. For this example, the same three profiles are being used for all vehicles, but in practice profiles will differ for GSEs, aircraft, and stationary sources.

Only the first part of the quarterly-hour profile is shown here for brevity. The entire profile is given in the example file.
<quarterHourlyProfileSet>
  <quarterHourlyProfile>
    <profileName>Example Quarter-Hour-Baseline-KPVD</profileName>
    <!-- Weighting of operations at this time bin-->
    <temporalFactor startHour="0" startMinutes="0">0.1777</temporalFactor>
    <temporalFactor startHour="0" startMinutes="15">0.1777</temporalFactor>
    <temporalFactor startHour="0" startMinutes="30">0.1777</temporalFactor>
    <temporalFactor startHour="0" startMinutes="45">0.1777</temporalFactor>
    <temporalFactor startHour="1" startMinutes="0">0.0967</temporalFactor>
    ...
  </quarterHourlyProfile>
</quarterHourlyProfileSet>

<dailyProfileSet>
  <dailyProfile>
    <profileName>Example Daily-Baseline-KPVD</profileName>
    <temporalFactorSunday>0.7939</temporalFactorSunday>
    <temporalFactorMonday>0.9916</temporalFactorMonday>
    <temporalFactorTuesday>0.9867</temporalFactorTuesday>
    <temporalFactorWednesday>1</temporalFactorWednesday>
    <temporalFactorThursday>0.9245</temporalFactorThursday>
    <temporalFactorFriday>0.8743</temporalFactorFriday>
    <temporalFactorSaturday>0.7887</temporalFactorSaturday>
  </dailyProfile>
</dailyProfileSet>

<monthlyProfileSet>
  <monthlyProfile>
    <profileName>Example Monthly-Baseline-KPVD</profileName>
    <temporalFactorJanuary>0.6265</temporalFactorJanuary>
    <temporalFactorFebruary>0.6791</temporalFactorFebruary>
    <temporalFactorMarch>0.775</temporalFactorMarch>
    <temporalFactorApril>0.8322</temporalFactorApril>
    <temporalFactorMay>0.8741</temporalFactorMay>
    <temporalFactorJune>0.9033</temporalFactorJune>
    <temporalFactorJuly>1</temporalFactorJuly>
    <temporalFactorAugust>0.9876</temporalFactorAugust>
    <temporalFactorSeptember>0.7994</temporalFactorSeptember>
    <temporalFactorOctober>0.9428</temporalFactorOctober>
    <temporalFactorNovember>0.8522</temporalFactorNovember>
    <temporalFactorDecember>0.7806</temporalFactorDecember>
  </monthlyProfile>
</monthlyProfileSet>

<activityProfileSet>
  <activityProfile name="ActivityProfile-Baseline-KPVD-6-5-6">
    <quarterHourlyProfile>Example Quarter-Hour-Baseline-KPVD</quarterHourlyProfile>
    <dailyProfile>Example Daily-Baseline-KPVD</dailyProfile>
    <monthlyProfile>Example Monthly-Baseline-KPVD</monthlyProfile>
  </activityProfile>
</activityProfileSet>
Step 3: Create receptor set
The receptor set defines a set of points or a grid in which noise or emission concentrations will be modeled. One or more receptorSet is required in order to generate emissions dispersion results.

```xml
<receptorSet>
  <name>CartesianReceptors-Baseline-KPVD</name>
  <pointReceptor>
    <name>01</name>
    <latitude>41.75569223042968</latitude>
    <longitude>-71.401734633637048</longitude>
    <!-- Elevation above MSL in feet-->
    <elevation>54.986875960838894</elevation>
    <!-- Height of the receptor above ground in feet-->
    <receptorHeight>5.909999269584984</receptorHeight>
  </pointReceptor>
  <pointReceptor>
    <name>01D</name>
    <latitude>41.732126660490067</latitude>
    <longitude>-71.4141821642798</longitude>
    <elevation>54.986875960838894</elevation>
    <receptorHeight>5.909999269584984</receptorHeight>
  </pointReceptor>
  <pointReceptor>
    <name>01S</name>
    <latitude>41.762630555759486</latitude>
    <longitude>-71.386077230440634</longitude>
    <elevation>54.986875960838894</elevation>
    <receptorHeight>5.909999269584984</receptorHeight>
  </pointReceptor>
</receptorSet>
```

Step 4: Create scenario and case hierarchy
A scenario contains a set of cases, which contain groups of aircraft operations, non-aircraft operations, and runup operations.

Step 4a: Define airport scenario properties
Define the basic scenario properties including airport information, weather data, and study time.

```xml
<scenario>
  <name>2004-Baseline</name>
  <!-- Scenario start time-->
  <startTime>2004-01-01T00:00:00</startTime>
  <!-- Scenario duration in hours-->
  <duration>8760</duration>
  <!-- Taxi model type for scenario-->
  <taxiModel>Sequencing</taxiModel>
  <!-- Time in mode; either Performance or ICAO-->
  <timeInModeBasis>Performance</timeInModeBasis>
  <!-- Aircraft performance model-->
  <acftPerfModel>SAE1845</acftPerfModel>
  <!-- Flag to include bank angle calculations-->
  <bankAngle>false</bankAngle>
  <!-- Portion of fuel that becomes sulfuric acid when combusted-->
  <sulfurConversionRate>0.005</sulfurConversionRate>
</scenario>
```
<description>A sample emissions study scenario</description>

<scenarioAirportLayoutSet>
  <scenarioAirportLayout>
    <airportLayoutName>Baseline-Theodore Francis Green State-2004</airportLayoutName>
    <!-- Height where vigorous mixing of gases takes place, in feet-->
    <mixingHeight>2226</mixingHeight>
    <!-- Flag to use hourly meteorological data, rather than annual averages-->
    <useHourlyMetData>true</useHourlyMetData>
    <!-- Average temperature in Fahrenheit-->
    <averageTemperature>50.4</averageTemperature>
    <!-- Average daily high temperature in Fahrenheit-->
    <dailyHighTemperature>69.35</dailyHighTemperature>
    <!-- Average daily low temperature in Fahrenheit-->
    <dailyLowTemperature>48.65</dailyLowTemperature>
    <!-- Average barometric pressure in inches Hg.-->
    <pressure>29.92</pressure>
    <!-- Average barometric pressure at MSL in inches Hg.-->
    <pressureMSL>29.92</pressureMSL>
    <!-- Relative humidity percentage-->
    <humidity>60</humidity>
    <!-- Wind speed at surface-->
    <windSpeed>8</windSpeed>
    <!-- Wind direction in degrees-->
    <windDirection>0</windDirection>
    <!-- Ceiling in feet-->
    <ceiling>99999.99</ceiling>
    <!-- Visibility in miles-->
    <visibility>50</visibility>
  </scenarioAirportLayout>
</scenarioAirportLayoutSet>

Step 4b: Define the case for non-aircraft operations
This study contains two cases. The first case contains non-aircraft operations (i.e., stationary source operations and GSE populations). The second case contains aircraft operations and GSEs specifically assigned to those aircraft.

The example below declares the first case (non-aircraft operations). The second case (aircraft operations) is described in the next Step 4c.

<case>
  <caseId>-1623425151</caseId>
  <name>2004_Baseline_Theodore Francis Green State_NonAircraft</name>
  <startTime>2004-01-01T00:00:00</startTime>
  <duration>8760</duration>
  <stationarySourceOperationSet>
    <stationarySourceOperation>
      <refName>Emergency Generator-Baseline-KPVD-2004</refName>
      <emissionsUsage>
        <!--Annualized amount of emissions-->
        <yearlyValue>500</yearlyValue>
        <activityProfile>ActivityProfile-Baseline-KPVD-6-5-6</activityProfile>
      </emissionsUsage>
    </stationarySourceOperation>
  </stationarySourceOperationSet>
</case>
Step 4c: Define the case for aircraft operations

This case defines aircraft operations, as well as GSEs assigned specifically to those aircraft. In this example, a single aircraft type is used with a simplified set of assigned GSEs. In practice, a variety of aircraft types and GSEs would appear in a single study.

<case>
<caseId>466140608</caseId>
<name>2004_Baseline_Theodore Francis Green State_Operations</name>
<startTime>2004-01-01T00:00:00</startTime>
<duration>8760</duration>
<operation>
$id>D_1</id>
<aircraftType>
  <!--Aircraft type-->
  <airframeModel>Airbus A319-100 Series</airframeModel>
  <!--Engine type-->
  <engineCode>3CM028</engineCode>
  <!--APU type-->
  <apuName>APU GTCP 36-300 (80HP)</apuName>
  <!--GSEs assigned to the aircraft-->
  <groundSupportEquipmentLTOOperationSet>
<groundSupportEquipmentLTOOperation>
  <gseID>13</gseID>
  <fuelType>Gasoline</fuelType>
  <horsepower>107</horsepower>
  <!-- Loading of the GSE-->
  <loadFactor>0.55</loadFactor>
  <!--Operation time for a departure-->
  <departureOpTime>38</departureOpTime>
  <!--Operation time for an arrival-->
  <arrivalOpTime>37</arrivalOpTime>
</groundSupportEquipmentLTOOperation>
<groundSupportEquipmentLTOOperation>
  <gseID>14</gseID>
  <fuelType>Gasoline</fuelType>
  <horsepower>107</horsepower>
  <loadFactor>0.5</loadFactor>
  <departureOpTime>24</departureOpTime>
  <arrivalOpTime>24</arrivalOpTime>
</groundSupportEquipmentLTOOperation>
</groundSupportEquipmentLTOOperationSet>
</aircraftType>
<!--Number of operations-->
<numOperations>5</numOperations>
<!--Type of operation; A, D, or T-->
<opType>D</opType>
<departureAirport type="ICAO">KPVD</departureAirport>
<departureGate>AC</departureGate>
<!--Operation time for APU for departure in minutes-->
<departureApuTime>3.5</departureApuTime>
<!--Taxi-out duration in minutes-->
<taxiOutDuration>10.72</taxiOutDuration>
<!--Taxi-in duration in minutes-->
<taxiInDuration>6.24</taxiInDuration>
<!--Activity profile to use-->
<activityProfile>ActivityProfile-Baseline-KPVD-6-5-6</activityProfile>
<!--Aircraft's weight in pounds-->
<actypeWeight>146100</actypeWeight>
<!--Sulfur content of the fuel used in this operation in percentage-->
<fuelSulfurContent>0.00068</fuelSulfurContent>
</operation>
<operation>
  <id>A_1</id>
  <aircraftType>
    <airframeModel>Airbus A319-100 Series</airframeModel>
    <engineCode>3CM028</engineCode>
    <apuName>APU GTCP 36-300 (80HP)</apuName>
    <groundSupportEquipmentLTOOperationSet>
      <groundSupportEquipmentLTOOperation>
        <gseID>13</gseID>
        <fuelType>Gasoline</fuelType>
        <horsepower>107</horsepower>
        <loadFactor>0.55</loadFactor>
        <departureOpTime>38</departureOpTime>
        <arrivalOpTime>37</arrivalOpTime>
      </groundSupportEquipmentLTOOperation>
    </groundSupportEquipmentLTOOperationSet>
  </aircraftType>
</operation>
Step 5: **Create annualization**

Like the noise study (Section 3.1), the emissions results must be annualized in order to create results that represent emissions over a time period of interest.

```xml
<annualization>
  <!-- user-defined scenario annualization name -->
  <name>Sample Annualization</name>

  <!-- Define one or more groups of cases and groups -->
  <annualizationGroup>
    <!-- Define rollup weight for this group -->
    <weight>1.0</weight>

    <annualizationGroup>
      <weight>1.0</weight>

    <!-- Associate scenario case with this annualization group -->
    <annualizationCase>
      <!-- Specify case name to include -->
      <name>2004_Baseline_Theodore Francis Green State_Operations</name>

      <!-- Define rollup weight for this case -->
      <weight>1.0</weight>

    </annualizationCase>
  </annualizationGroup>
</annualization>
```

Step 6: **Full ASIF**

The full emissions dispersion sample ASIF is as follows:
<?xml version="1.0" encoding="utf-8"?>
<AsifXml xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.2.13"
content="study">
  <study>
    <name>emissions_sample_asif_short</name>
    <studyType>Dispersion</studyType>
    <emissionsUnits>Kilograms</emissionsUnits>
    <description>A sample emissions study</description>
    <airportLayoutSet>
      <airportLayout>
        <name>Baseline-Theodore Francis Green State-2004</name>
        <airportCode type="ICAO">KPVD</airportCode>
        <!-- Start date of the study-->
        <!-- Start date of the study-->
        <startDate>2004-01-01</startDate>
        <!-- Elevation of the airport above MSL in feet-->
        <!-- Elevation of the airport above MSL in feet-->
        <elevation>55</elevation>
        <!-- latitude 41.723999 -->
        <latitude>41.723999</latitude>
        <!-- longitude -71.428221 -->
        <longitude>-71.428221</longitude>
      </buildingSet>
      <stationarySourceSet>
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          <!-- Name of the stationary source -->
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          <pointStationarySource>
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              <!-- Lat/lon coordinates---
              <!-- Lat/lon coordinates---
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              <longitude>-71.413044097333525</longitude>
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            </vertex>
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    </airportLayoutSet>
  </study>
</AsifXml>
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  <!--Elevation in meters-->
  <baseElevation>16.764</baseElevation>
  <!-- Release height in meters-->
  <releaseHeight>12.192</releaseHeight>
  <!-- Velocity of release gas in meters/sec-->
  <gasVelocity>15</gasVelocity>
  <!-- Diameter of stack where gas escapes the source in meters-->
  <stackDiameter>0.100584</stackDiameter>
  <!-- Temperature at point in Fahrenheit-->
  <temperature>400</temperature>
</pointStationarySource>
<categoryGenerator>
  <!-- Type code of object-->
  <typeCode>2</typeCode>
  <!-- Horsepower rating-->
  <powerRatingHorsepower>1340</powerRatingHorsepower>
  <!-- Weighting factors for emissions elements-->
  <CO_EF>3.03</CO_EF>
  <TOC_EF>1.14</TOC_EF>
  <NOx_EF>14</NOx_EF>
  <SOx_EF>0.93</SOx_EF>
  <PM10_EF>0.998</PM10_EF>
  <!-- Percent of emissions removed by pollution control measures-->
  <pollutionControlFactorTOC>0</pollutionControlFactorTOC>
  <pollutionControlFactorCO>0</pollutionControlFactorCO>
  <pollutionControlFactorNOx>0</pollutionControlFactorNOx>
  <pollutionControlFactorSOx>0</pollutionControlFactorSOx>
  <pollutionControlFactorPM10>0</pollutionControlFactorPM10>
  <pm25ToPm10Ratio>1</pm25ToPm10Ratio>
</categoryGenerator>
</stationarySource>
<gateSet>
  <gate>
    <name>AC</name>
    <!-- Elevation of the gate in meters-->
    <elevation>16.76</elevation>
    <releaseHeight>1.499616</releaseHeight>
    <!-- Horizontal dispersion parameter-->
    <sigmaY>0.1</sigmaY>
    <!-- Vertical dispersion parameter-->
    <sigmaZ>0.1</sigmaZ>
    <polygonCoords>
      <!-- Coordinates of gate vertices-->
      <vertex>
        <latitude>41.745139411257995</latitude>
        <longitude>-71.41015590887973</longitude>
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      <vertex>
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        <longitude>-71.408847926936545</longitude>
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</gateSet>
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</polygonCoords>
</gate>
</gateSet>
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	<taxiway>
		<name>AC to 23</name>
	<!-- Width of emission dispersion around taxiway in meters-->
	<dispersionWidth>20</dispersionWidth>
	<taxiNodeSet>
		<taxiNode>
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			<longitude>-71.411486738878608</longitude>
		<!-- Elevation in meters-->
		<elevation>16.76</elevation>
		<!-- Speed of aircraft at node in meters/sec-->
		<speed>17.26</speed>
		</taxiNode>
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			<longitude>-71.397780701297123</longitude>
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		<elevation>16.76</elevation>
		<!-- Speed of aircraft at node in meters/sec-->
		<speed>17.26</speed>
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		<!-- Elevation in meters-->
		<elevation>16.76</elevation>
		<!-- Speed of aircraft at node in meters/sec-->
		<speed>17.26</speed>
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<speed>17.26</speed>
</taxiNode>
</taxiNodeSet>
</taxiway>
</taxiwaySet>
<runwaySet>
<runway>
<!-- Length of runway in feet-->
<length>7069</length>
<!-- Width of runway in feet-->
<width>150</width>
<runwayEnd>
<name>05</name>
<latitude>41.730402908060768</latitude>
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<!--Elevation of the runway in feet-->
<elevation>54.986875960838894</elevation>
<!-- Glide slope for runway's endpoint in degrees-->
<glideSlope>3</glideSlope>
</runwayEnd>
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<!-- Name of the gate associated with the path-->
<gateName>AC</gateName>
<!-- Name of the runway associated with the path-->
<runwayName>05</runwayName>
<!-- Traffic direction-->
<direction>Outbound</direction>
<!-- Name of the taxiways in the path-->
<taxiwayName>AC to 5</taxiwayName>
</taxipath>
<taxipath>
<gateName>AC</gateName>
<runwayName>05</runwayName>
<direction>Inbound</direction>
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</taxipath>
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<runwayName>23</runwayName>
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<taxiwayName>AC to 23</taxiwayName>
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<!-- Operation type for the track; arrival (A), departure (D), or touch & go (T)--> 
<optype>A</optype>
<!-- Wing type; fixed (F) or rotary (R)--> 
<wingtype>F</wingtype>
<airport type="ICAO">KPVD</airport>
<runway>05</runway>
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<!-- ID of the subtrack--> 
:id>0</id>
<!-- Dispersion of traffic across this subtrack--> 
<dispersionWeight>1</dispersionWeight>
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<!-- Nodes that make up this track--> 
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<optype>D</optype>
<wingtype>F</wingtype>
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    <configurationName>Configuration</configurationName>
    <!-- Flag to use an operation distribution-->
    <useDistribution>false</useDistribution>
    <!-- Pareto curve points for airport operations-->
    <airportCapacity>
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        <arrivalsPerHour>27</arrivalsPerHour>
        <departuresPerHour>52</departuresPerHour>
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        <departuresPerHour>27</departuresPerHour>
      </capacityPoint>
    </airportCapacity>
    <runwayAssignmentSet>
      <runwayAssignment>
        <!-- Aircraft size for assignments; small (S), large (L), or heavy (H)-->
        <aircraftSize>S</aircraftSize>
        <runway>23</runway>
        <!-- Percent of arrival operations on runway; all arrival percentages must sum to 100%-->
        <arrivalPercentage>60</arrivalPercentage>
        <!-- Percent of departure operations on runway; all departure percentages must sum to 100%-->
        <departurePercentage>60</departurePercentage>
        <!-- Percent of touch & go operations on runway; all touch & go percentages must sum to 100%-->
        <tgoPercentage>60</tgoPercentage>
      </runwayAssignment>
      <runwayAssignment>
        <aircraftSize>S</aircraftSize>
        <runway>05</runway>
        <arrivalPercentage>40</arrivalPercentage>
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        <tgoPercentage>40</tgoPercentage>
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</airportConfig>
</quarterHourlyProfileSet>
<quarterHourlyProfile>
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  <!-- Weighting of operations at this time bin-->
  <temporalFactor startHour="0" startMinutes="0">0.1777</temporalFactor>
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  <temporalFactor startHour="1" startMinutes="45">0.0967</temporalFactor>
  <temporalFactor startHour="2" startMinutes="0">0.046</temporalFactor>
  <temporalFactor startHour="2" startMinutes="15">0.046</temporalFactor>
  <temporalFactor startHour="2" startMinutes="30">0.046</temporalFactor>
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  <temporalFactor startHour="3" startMinutes="15">0.0683</temporalFactor>
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  <receptorHeight>5.909999269584984</receptorHeight>
</pointReceptor>
</receptorSet>
<scenario>
  <name>2004-Baseline</name>
  <!-- Scenario start time-->
  <startTime>2004-01-01T00:00:00</startTime>
  <!-- Scenario duration in hours-->
  <duration>8760</duration>
  <!-- Taxi model type for scenario-->
  <taxiModel>Sequencing</taxiModel>
  <!-- Time in mode; either Performance or ICAO-->
  <timeInModeBasis>Performance</timeInModeBasis>
  <!-- Aircraft performance model-->
  <acftPerfModel>SAE1845</acftPerfModel>
  <!-- Flag to include bank angle calculations-->
  <bankAngle>false</bankAngle>
  <!-- Portion of fuel that becomes sulfuric acid when combusted-->
  <sulfurConversionRate>0.005</sulfurConversionRate>
  <description>A sample emissions study scenario</description>
  <scenarioAirportLayoutSet>
    <scenarioAirportLayout>
      <airportLayoutName>Baseline-Theodore Francis Green State-2004</airportLayoutName>
      <!-- Height where vigorous mixing of gases takes place, in feet-->
      <mixingHeight>2226</mixingHeight>
      <!-- Flag to use hourly meteorological data, rather than annual averages-->
      <useHourlyMetData>true</useHourlyMetData>
      <!-- Average temperature in Fahrenheit-->
      <averageTemperature>50.4</averageTemperature>
      <!-- Average daily high temperature in Fahrenheit-->
      <dailyHighTemperature>69.35</dailyHighTemperature>
      <!-- Average daily low temperature in Fahrenheit-->
      <dailyLowTemperature>48.65</dailyLowTemperature>
      <!-- Average barometric pressure in inches Hg.-->
      <pressure>29.92</pressure>
      <!-- Average barometric pressure at MSL in inches Hg.-->
      <pressureMSL>29.92</pressureMSL>
      <!-- Relative humidity percentage-->
      <humidity>60</humidity>
      <!-- Wind speed at surface-->
      <windSpeed>8</windSpeed>
      <!-- Wind direction in degrees-->
      <windDirection>0</windDirection>
      <!-- Ceiling in feet-->
      <ceiling>99999.99</ceiling>
      <!-- Visibility in miles-->
    </airportLayout>
  </scenarioAirportLayoutSet>
</scenario>
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<duration>8760</duration>
<stationarySourceOperationSet>
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<emissionsUsage>
<!--Annualized ammount of emissions-->
<yearlyValue>500</yearlyValue>
<activityProfile>ActivityProfile-Baseline-KPVD-6-5-6</activityProfile>
</emissionsUsage>
</stationarySourceOperation>
</stationarySourceOperationSet>
<groundSupportEquipmentPopulationOperationSet>
<groundSupportEquipmentPopulationOperation>
<!--ID for GSE type-->
<gseID>30</gseID>
<!--Fuel used by the GSE-->
<fuelType>Diesel</fuelType>
<!--GSE type-->
<gseType>Generator</gseType>
<!--Number of GSEs-->
<numUnits>1</numUnits>
<!--Operation time, yearly, in hours-->
<annualOpTime>1630</annualOpTime>
<!--Profile of activity to use-->
<activityProfile>ActivityProfile-Baseline-KPVD-6-5-6</activityProfile>
<!--Horsepower of GSE-->
<horsepower>158</horsepower>
<!--User nonroad flag-->
<useNonRoad>false</useNonRoad>
</groundSupportEquipmentGateAssignmentSet>
</groundSupportEquipmentPopulationOperation>
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<duration>8760</duration>
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</operation>
<aircraftType>
<!--Aircraft type-->
<airframeModel>Airbus A319-100 Series</airframeModel>
<!--Engine type-->
<engineCode>3CM028</engineCode>
<!--APU type-->
<apuName>APU GTCP 36-300 (80HP)</apuName>
<!--GSEs assigned to the aircraft-->
</groundSupportEquipmentLTOOperationSet>
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</aircraftType>
<!--Number of operations--> 
<numOperations>5</numOperations>
<!--Type of operation; A, D, or T-->
<opType>D</opType>
<!--Operation time for APU for departure in minutes--> 
<departureApuTime>3.5</departureApuTime>
<!--Taxi-out duration in minutes--> 
<taxiOutDuration>10.72</taxiOutDuration>
<!--Taxi-in duration in minutes--> 
<taxiInDuration>6.24</taxiInDuration>
<!--Activity profile to use--> 
<activityProfile>ActivityProfile-Baseline-KPVD-6-5-6</activityProfile>
<!--Aircraft's weight in pounds--> 
<actypeWeight>146100</actypeWeight>
<!--Sulfur content of the fuel used in this operation in percentage--> 
<fuelSulfurContent>0.00068</fuelSulfurContent>
</operation>
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<engineCode>3CM028</engineCode>
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</groundSupportEquipmentLTOOperationSet>
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</groundSupportEquipmentLTOOperationSet>
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<opType>A</opType>
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<arrivalApuTime>3.5</arrivalApuTime>
	<taxiOutDuration>10.72</taxiOutDuration>
	<taxiInDuration>6.24</taxiInDuration>
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</case>
</caseSet>
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        <!-- Define rollup weight for this group -->
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    </annualizationGroup>
    <annualizationGroup>
        <weight>1.0</weight>
    </annualizationGroup>
    <!-- Associate scenario case with this annualization group -->
    <annualizationCase>
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        <!-- Define rollup weight for this case -->
        <weight>1.0</weight>
    </annualizationCase>
</annualization>
</scenario>
</study>
</AsifXml>
4 ASIF Design Consideration

4.1 Event Consolidation

AEDT calculates noise for all air operations (e.g. all instances of an aircraft and track) in a given case, which differs from the legacy tool, NIRS. In order to optimize noise modeling performance in AEDT, it is suggested to combine like operations in a case into a representative single air operation for entry into the ASIF.

4.2 Number of Operations in a Case and Results Reuse

AEDT has the ability to reuse previously calculated results when running a new job. The smallest unit of results that can be reused is a set of air operations in a case. Run time can be optimized by designing the ASIF with this capability in mind.

4.3 Control Codes in AEDT

The nodeControlType in ASIF schema specifies the control code definition. AEDT will fly AtOrBelow control codes as close to the specified altitude as possible, which differs from the legacy tool NIRS that accepts any altitude at or below the specified altitude. Similarly, AEDT will fly AtOrAbove control codes as close to the specified altitude as possible while NIRS accepts any altitude at or above the specified altitude.

AEDT will not use control codes below 500 ft. AFE. Since NIRS does not use control codes below 3000 ft. AFE, any NIRS control codes that are converted to ASIF that are at or below 3000 feet should be changed to the AEDT AtOrBelow control code.

When modeling runway to runway operations using sensor path data, define the flight path using the ASIF sensorPath element rather than the track element. Sensor paths provide more direct control of altitude for an aircraft trajectory.

AEDT will fly the length of ground tracks without requiring altitude control codes at the beginning and end of the tracks.
5 Procedural Profiles

This section describes procedural profiles for civil aircraft and helicopters. Military aircraft utilize fixed point profiles. For more information on how to set up an ANP profile in the ASIF, see the `anpProfile` element in the ASIF schema documentation.

5.1 Civil Airplane Procedures

The following sections describe civil aircraft procedure steps and how they are combined into procedural profiles. Flap identifiers referred to in this section are created using the `anpFlaps` element. The recommended naming conventions for flap identifiers is as follows:

- Include a number in the flaps identifier to indicate the number of degrees that the flaps are extended.
- For approach identifiers, use the prefix “U”, to indicate that the gear is up during descent and the prefix “D” to indicate that the gear is down.
- Use “ZERO” to indicate that flaps are retracted. ZERO is often used in both departure and approach procedures, even though it is categorized as a departure identifier.

5.1.1 Aircraft Profile Operation Types

There are five types of flight operations for aircraft. The valid ASIF identifier is listed in the Operation Type column.

<table>
<thead>
<tr>
<th>Operation Type</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Approach</td>
</tr>
<tr>
<td>D</td>
<td>Departure</td>
</tr>
<tr>
<td>T</td>
<td>Touch and go</td>
</tr>
<tr>
<td>F</td>
<td>Circuit flight</td>
</tr>
<tr>
<td>V</td>
<td>Overflight</td>
</tr>
</tbody>
</table>

5.1.2 Aircraft Procedure Step Types

The procedure step types available in AEDT are listed in the table below. The valid ASIF identifier is listed in the Step Type column.

<table>
<thead>
<tr>
<th>Step Type</th>
<th>Full Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Takeoff</td>
<td>Start-roll to takeoff rotation, or touch-and-go power-on point to takeoff rotation</td>
</tr>
<tr>
<td>C</td>
<td>Climb</td>
<td>Departure climb to final altitude at constant calibrated airspeed</td>
</tr>
<tr>
<td>M</td>
<td>Cruise-Climb</td>
<td>Climb at constant angle to final altitude and speed</td>
</tr>
<tr>
<td>A</td>
<td>Accelerate</td>
<td>Departure climb and accelerate to final speed</td>
</tr>
</tbody>
</table>
### Step Type

<table>
<thead>
<tr>
<th>Step Type</th>
<th>Full Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Accel-Percent</td>
<td>Departure climb and accelerate using a constant energy split between acceleration and climbing</td>
</tr>
<tr>
<td>V</td>
<td>Level</td>
<td>Maintain altitude and speed</td>
</tr>
<tr>
<td>U</td>
<td>Level-Decel</td>
<td>Maintain altitude and reduce speed</td>
</tr>
<tr>
<td>W</td>
<td>Level-Idle</td>
<td>Maintain altitude over a given distance with engines at idle</td>
</tr>
<tr>
<td>S</td>
<td>Level-Stretch</td>
<td>Special step used to designate where to stretch a circuit flight profile to fit a touch-and-go track</td>
</tr>
<tr>
<td>D</td>
<td>Descend</td>
<td>Descend at constant angle to final altitude</td>
</tr>
<tr>
<td>E</td>
<td>Descend-Decel</td>
<td>Descend while reducing airspeed</td>
</tr>
<tr>
<td>F</td>
<td>Decend-Idle</td>
<td>Descend at a constant angle with engines at idle</td>
</tr>
<tr>
<td>L</td>
<td>Land</td>
<td>Land and roll a given distance</td>
</tr>
<tr>
<td>B</td>
<td>Decelerate</td>
<td>Used on approach after touchdown, brake with starting thrust for a given distance</td>
</tr>
</tbody>
</table>

### 5.1.2.1 Takeoff Step

For a takeoff step, input a flaps identifier and a thrust type. The flaps identifier should not have a U or D prefix because these coefficients are appropriate for descending flight paths.

MaxTakeoff thrust is typically used for takeoff, but other thrust types are available:

- MaxClimb thrust means that an airplane takes off using reduced thrust, thus requiring a longer runway.

- UserValue thrust means that the user supplies the takeoff thrust value. The thrust value is the corrected net thrust per engine in pounds or in percent of static thrust. AEDT uses the input value at both the start-roll point and at the rotation point.

For MaxTakeoff and MaxClimb thrust, AEDT uses jet or prop coefficients and SAE-AIR-1845 equations to compute thrust values. For jets, the start-roll thrust is computed at 0 knots, and the rotation thrust is computed using the takeoff speed, which comes from another SAE equation. For jets, the thrust is larger at start-roll than at rotation. For props, the thrust is the same at both points and equal to the thrust computed at the rotation point.

### 5.1.2.2 Climb Step

For a Climb step, enter a flaps identifier, thrust type, and input the final altitude (the "climb-to" altitude). The final altitude must be higher than the initial altitude. The calibrated air speed on a climb segment is constant, and it is equal to the final speed used on the previous step.

AEDT computes the climb angle and the ground distance based on the airplane weight and average thrust that can be generated for the given conditions. If the computed climb gradient is too small (1%), AEDT processing will stop and log it in the log file.
Typically, MaxTakeoff thrust is used for initial climb segments and MaxClimb thrust for later climb segments, but other thrust types are available:

- **UserValue thrust** can be assigned to the final climb-to point. AEDT does not adjust this input value for airport elevation, temperature, and pressure.

- **UserCutback thrust** can be assigned to the whole segment. The difference between UserValue and UserCutback is that AEDT applies the user-value-thrust to a point, whereas user-cutback-thrust is applied to a segment. For the cutback case, AEDT reduces the thrust over a 1000-foot segment, keeps it constant at the user-cutback value over the climb distance (less 1000 feet), and then returns it to normal thrust over a second 1000-foot segment. The input thrust is corrected net thrust per engine. AEDT does not correct for airport conditions.

### 5.1.2.3 Accelerate Step

For an Accelerate step, input a flaps identifier, thrust type, climb rate, and final speed (the "accelerate-to" speed). The final speed must be larger than the initial speed.

AEDT uses these input parameters and the SAE-AIR-1845 equations to compute the change in altitude and the distance flown.

The climb rate should be consistent with a sea-level standard-day profile. If necessary, AEDT adjusts the climb rate to account for the actual airport elevation, temperature, and pressure.

Zero climb rate is a valid input. AEDT computes a zero change in altitude, and the thrust is used to accelerate the airplane more quickly.

The five climb thrust types discussed above for the Climb step are also available for an acceleration segment.

### 5.1.2.4 Accel-Percent Step

For an Accel-Percent step, input a flaps identifier, thrust type, energy-share percentage, and final airspeed.

Energy-share comes from the notion that all available thrust is divided between acceleration and climbing. Unlike steps that maintain a constant airspeed while climbing, this step holds the energy-share constant for a given amount of thrust. For the energy-share percentage, enter the percent thrust dedicated to acceleration. An input of 70, for example, would result in 70% of thrust going to acceleration and the remaining 30% of thrust going to climbing.

### 5.1.2.5 Cruise-Climb Step

For a Cruise-Climb step, input a flaps identifier (usually ZERO), final altitude, climb speed, and the climb angle for the segment.

AEDT calculates the distance flown based on the change in altitude and the climb angle. AEDT calculates the corrected net thrust per engine by using the SAE-AIR-1845 descent equation with a positive angle, rather than a negative angle.
The difference between Climb and Cruise-Climb is that thrust for Climb is user-defined, whereas AEDT calculates thrust for Cruise-Climb based on the input climb angle. Climb thrust is larger than Cruise-Climb thrust. Climb steps are used after takeoff when near-maximum thrust is applied. During cruise, less thrust is used in climbing from one altitude to another.

5.1.2.6 Level-Stretch Step
For a Level-Stretch step, input a flaps identifier. A Level-Stretch step is used to create circuit flight profiles. Its purpose is to define where to put a variable length segment so that a CIR profile fits on top of a TGO track.

- There can be only one Level-Stretch step in a CIR profile.
- A Level-Stretch step must have a Level step before it and after it. This pair of Level steps should have the same altitude and speed values.

5.1.2.7 Level Step
For a Level step, input a flaps identifier, altitude, speed, and distance flown along the segment. The flaps identifier should be ZERO, or perhaps one with a U prefix (indicating that the landing gear is up).

Input the altitude and speed parameters logically:

- A previous Climb final altitude must equal the Level altitude.
- Also, the Level altitude must equal the next Descend start altitude.
- AEDT computes the amount of thrust needed to maintain level flight at constant speed for the given flaps configuration.

The difference between a Level step and a zero-climb Accelerate step is that the Level step uses a constant speed on the segment, and it uses a smaller value of thrust (and thus, lower noise level) than the Accelerate step. If speed changes during level flight, use a zero-climb Accelerate step.

5.1.2.8 Level-Decel Step
For a Level-Decel step, input a flaps identifier, altitude, initial airspeed, and distance flown along the segment. Unlike the Level step, airspeed is not held constant but allowed to decrease over the segment. AEDT computes the amount of thrust needed to maintain level flight while decelerating.

The Level-Decel step is subject to the same airspeed and altitude considerations as the Level step, e.g. a preceding climb segment has to end at the same altitude as the Level-Decel step.

5.1.2.9 Level-Idle Step
For a Level-Idle step, input the altitude, initial airspeed, and distance flown along the segment. Airspeed is allowed to decrease over the segment. Unlike Level and Level-Decel steps, thrust is calculated using idle thrust coefficients rather than a force balance.

The Level-Idle step is subject to the same airspeed and altitude considerations as the Level step, e.g. a preceding climb segment has to end at the same altitude as the Level-Idle step.
5.1.2.10 Descend Step
For a Descend step, input a flaps identifier, the starting altitude, starting speed, and the descent angle for the segment.

If a Level or Descend step follows the Descend step, it must have a lower altitude. The following step can have the same or a different speed.

5.1.2.11 Descend-Decel Step
For a Descend-Decel step, input a flaps identifier, the starting altitude, starting speed, and the descent angle for the segment. The Descend-Decel step differs from the Descend step in that it more explicitly accounts for deceleration effects during thrust calculations.

If a Level or Descend step follows the Descend-Decel step, it must have a lower altitude. The following step can have the same or a different speed.

5.1.2.12 Descend-Idle Step
For a Descend-Idle step, input the initial airspeed, initial altitude, and descent angle. The Descend-Idle step does not require that a flap setting be specified. The other Descend steps that require flap settings utilize a force balance equation to calculate thrust, but this step calculates the aircraft idle thrust directly from engine idle thrust coefficients.

5.1.2.13 Land Step
For the Land step, select a flaps identifier and input the touchdown rolling distance, which is the distance that the airplane moves before reversing thrust and/or braking.

The last Descend step and the Land step must both use a flaps identifier that has a D prefix (meaning that the landing gear is down).

AEDT computes the touchdown speed by using a SAE-AIR-1845 equation.

5.1.2.14 Decelerate Step
For a Decelerate step, input the segment distance, the starting speed, and the percent of static thrust at the start of the segment. When applicable, the percent of static thrust at the start of the segment represents the level of reverse thrust.

AEDT uses the percent value and the airplane static thrust to compute a thrust setting value for accessing the NPD curves. For those airplanes that use percent type noise, the percent value is used to access the NPD curves.

5.1.3 Aircraft Thrust Types and Parameters
The thrust types available in AEDT are listed in the table below. The valid ASIF identifier is listed in the Thrust Type column.
The following table shows the remaining parameters needed to create a procedural profile. These fields are called PARAM1, PARAM2, and PARAM3. They take on a different meaning for each combination of operation type, procedure type, and thrust type, see the two tables below.

<table>
<thead>
<tr>
<th>PARAM</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>THR</td>
<td>Thrust (lbs)</td>
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<tr>
<td>ALT</td>
<td>Altitude (ft AFE)</td>
</tr>
<tr>
<td>SPD</td>
<td>Speed (kts)</td>
</tr>
<tr>
<td>DIST</td>
<td>Distance (ft)</td>
</tr>
<tr>
<td>ANG</td>
<td>Angle (deg)</td>
</tr>
<tr>
<td>PCT</td>
<td>Percent</td>
</tr>
<tr>
<td>CLM</td>
<td>Climb Rate (ft/min)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thrust Type</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>MaxTakeoff</td>
</tr>
<tr>
<td>C</td>
<td>MaxClimb</td>
</tr>
<tr>
<td>N</td>
<td>MaxContinuous</td>
</tr>
<tr>
<td>H</td>
<td>ReduceTakeoff</td>
</tr>
<tr>
<td>Q</td>
<td>ReduceClimb</td>
</tr>
<tr>
<td>S</td>
<td>MaxTakeoffHiTemp</td>
</tr>
<tr>
<td>B</td>
<td>MaxClimbHiTemp</td>
</tr>
<tr>
<td>M</td>
<td>MaxContinuousHiTemp</td>
</tr>
<tr>
<td>G</td>
<td>ReduceClimbHiTemp</td>
</tr>
<tr>
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<td>ReduceClimbHiTemp</td>
</tr>
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<td>IdleApproach</td>
</tr>
<tr>
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<td>IdleApproachHiTemp</td>
</tr>
<tr>
<td>R</td>
<td>MinimumThrust</td>
</tr>
<tr>
<td>K</td>
<td>UserCutback</td>
</tr>
<tr>
<td>U</td>
<td>UserValue</td>
</tr>
</tbody>
</table>
### 5.1.4 How to Build an Approach Profile

Standard approach procedures generally have four Descend steps, a Land step, and two Decelerate steps, as follows:

- The four Descend steps start at 6000, 3000, 1500, and 1000 feet AFE. They bring an airplane from zero-flaps configuration, terminal-area entrance speed, down to landing-gear/flaps configuration, final-approach speed.

- For most AEDT airplanes, a 3-degree descent angle is used to model IFR approaches. For single-engine piston airplanes and for BEC58P, a 5-degree descent angle is used to model VFR approaches.

- For the Land step, the touchdown-roll distance is 10% of the total rollout distance. For those airplanes using 3-degree approaches, the relationship between the total roll-out distance and the max landing distance is:
(Roll-out distance) = 0.9 (Max landing distance) - 954

- For those airplanes using 5-degree approaches, the 954-foot value is replaced with 572 feet (the angle is steeper, so the in-air portion of the flight path after crossing the end of the runway is shorter).

- The first Decelerate distance is 90% of the total roll-out distance. The starting speed is less than the touchdown speed. The starting percentage thrust is 40% for narrow-body jets, 10% for wide-body jets, and 40% for props. The first deceleration segment represents reverse thrust action.

- The second Decelerate distance is zero, indicating the end of the profile. The starting speed is 30 knots, representing taxi speed. The starting percentage thrust is 10% of static thrust, representing taxi thrust.

### 5.1.5 How to Build a Departure Profile

AEDT standard departure procedures for civil jet airplanes tend to follow a pattern (but there are exceptions). A typical civil jet departure profile consists of the following procedure steps:

1. Takeoff using MaxTakeoff thrust and extended flaps.
2. Climb to 1000 feet using MaxTakeoff thrust and takeoff flaps.
3. Accelerate 10-20 knots using MaxTakeoff thrust, takeoff flaps, and 2/3 of the initial climb rate.
4. Accelerate 15-30 knots using MaxTakeoff thrust, reduced flaps, and ½ of the initial climb rate.
5. Accelerate to Vzf (zero-flaps minimum safe maneuvering speed) using MaxClimb thrust, minimal flaps, and 1000-fpm climb rate.
6. Climb to 3000 feet using MaxClimb thrust and zero flaps.
7. Accelerate to 250 knots using MaxClimb thrust, zero flaps, and 1000-fpm climb rate.
8. Climb to 5500 feet using MaxClimb thrust and zero flaps.
9. Climb to 7500 feet using MaxClimb thrust and zero flaps.
10. Climb to 10000 feet using MaxClimb thrust and zero flaps.

A standard departure profile for propeller-driven civil airplanes also tends to follow a pattern of procedure steps:

1. Takeoff using MaxTakeoff thrust and takeoff flaps.
2. Accelerate 10-15 knots using MaxTakeoff thrust, takeoff flaps, and a standard rate of climb.
3. Climb to 1000 feet using MaxTakeoff thrust and takeoff flaps.
4. Accelerate to Vzf using MaxTakeoff thrust, takeoff flaps, and a standard climb rate.
5. Climb to 3000 feet using MaxClimb thrust and zero flaps.

6. Climb to 5500 feet using MaxClimb thrust and zero flaps.

7. Climb to 7500 feet using MaxClimb thrust and zero flaps.

8. Climb to 10000 feet using MaxClimb thrust and zero flaps.

An AEDT standard airplane usually has more than one departure profile. AEDT profiles are distinguished by profile stage numbers from 1 to 9. Departure procedure steps are almost the same for all profile stages. Usually, the change is in the Accelerate step where the final speed value increases for heavier airplanes and the climb rate decreases for heavier airplanes.

5.1.6 How to Build an Overflight Profile

An overflight profile can be built with one procedure step. For example: Level using ZERO flaps, at 5000-foot altitude, at 250 knots, for a distance of 300,000 feet (about 50 nmi).

5.1.7 How to Build a Touch and Go Profile

A user-defined touch-and-go profile consists of the following steps:

1. Start in level flight at airport pattern altitude.

2. Descend.

3. Touch down on the runway.

4. Roll out.

5. Take off.

6. Climb.

7. End after leveling off at pattern altitude.

After associating a touch-and-go profile with a touch-and-go track, but before calculating flight path points, AEDT reorders and modifies the set of profile points so that the profile starts and ends at the touchdown point. While reordering the points, AEDT inserts an extra level segment in the downwind portion of the profile (between the last departure point and first approach point), so that the profile distance is the same as the track distance. Also, a final touchdown point is added at the end. When finished, the new profile starts at touchdown, ends at touchdown, and has horizontal coordinate distance equal to the touch-and-go ground track distance.

5.1.8 How to Build a Circuit Profile

A user-defined circuit profile consists of the following steps:

1. Start on the runway as a standard departure.
2. Take off.
3. Climb to pattern altitude.
4. Level out.
5. Descend from pattern altitude.
7. Decelerate to taxi speed.

After associating a circuit profile with a touch-and-go track (there are no circuit tracks in AEDT), AEDT inserts an extra level segment in the downwind portion of the profile, so that the profile distance is the same as the track distance. The place where the extra segment is inserted is determined by the “Level-Stretch” procedure step, which is provided by the user. After modifying a touch-and-go or circuit profile, AEDT merges the new profile points and the ground track points to compute a three-dimensional flight path.

5.1.9 Airplane Procedure Step Transitions

Procedure steps are combined in prescribed sequences. Certain sequences are not allowed. For example, a climb step may not be followed by a descend step. Procedures must comply with the step transition diagrams provided here.

The step transition diagrams use a simple convention to represent procedures:

- Ellipses represent procedure steps.
- Arrows represent a valid transition from one step to another.
- Arrows point in the direction of the allowed transition – e.g. Land to Decelerate is accepted, but Decelerate to Land is not.
- A double sided arrow means that the transition is valid in both directions.
- An arrow looping back to a step indicates that the step can be repeated.
- A box surrounding two or more steps is used to simplify the diagram.
- Arrows connected to the box apply to each step within.
- Each step within the box can transition to any other within the box.
Figure 1: Airplane Approach Step Transition Diagram

Figure 2: Airplane Departure Step Transition Diagram
Figure 3: Airplane Touch and Go Step Transition Diagram

Figure 4: Airplane Circuit Step Transition Diagram
5.2 Helicopter Procedures

The following sections describe helicopter procedure steps and how they are combined into procedural profiles.

5.2.1 Helicopter Profile Operation Types

There are four types of flight operations for helicopters:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Single-Letter Identifier</th>
<th>Description</th>
<th>Begin</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP</td>
<td>A</td>
<td>Approach</td>
<td>In Air</td>
<td>Helipad</td>
</tr>
<tr>
<td>DEP</td>
<td>D</td>
<td>Departure</td>
<td>Helipad</td>
<td>In Air</td>
</tr>
<tr>
<td>TAX</td>
<td>T</td>
<td>Taxi</td>
<td>Helipad</td>
<td>Helipad</td>
</tr>
<tr>
<td>OVF</td>
<td>V</td>
<td>Overflight</td>
<td>In Air</td>
<td>In Air</td>
</tr>
</tbody>
</table>

5.2.2 Helicopter Procedure Step Types

The following table describes the procedure steps that are used to define helicopter profiles. The first seven types are the primary NPD operating modes. The next nine are secondary NPD operating modes which can be derived from the primary modes or defined as separate curves. The last step (start altitude) facilitates profile creating as is not associated with an NPD operating mode.
<table>
<thead>
<tr>
<th>Step Type</th>
<th>Description</th>
<th>State</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Approach at constant speed</td>
<td>Move</td>
<td>Dist Alt</td>
</tr>
<tr>
<td>D</td>
<td>Depart at constant speed</td>
<td>Move</td>
<td>Dist Alt</td>
</tr>
<tr>
<td>X</td>
<td>Level flyover at constant speed</td>
<td>Move</td>
<td>Dist</td>
</tr>
<tr>
<td>G</td>
<td>Ground idle</td>
<td>Static</td>
<td>Dur</td>
</tr>
<tr>
<td>H</td>
<td>Flight idle</td>
<td>Static</td>
<td>Dur</td>
</tr>
<tr>
<td>I</td>
<td>Hover in ground effect</td>
<td>Static</td>
<td>Dur</td>
</tr>
<tr>
<td>J</td>
<td>Hover out of ground effect</td>
<td>Static</td>
<td>Dur</td>
</tr>
<tr>
<td>V</td>
<td>Vertical ascent in ground effect</td>
<td>Static</td>
<td>Dur Alt</td>
</tr>
<tr>
<td>W</td>
<td>Vertical ascent out of ground effect</td>
<td>Static</td>
<td>Dur Alt</td>
</tr>
<tr>
<td>Y</td>
<td>Vertical descent in ground effect</td>
<td>Static</td>
<td>Dur Alt</td>
</tr>
<tr>
<td>Z</td>
<td>Vertical descent out of ground effect</td>
<td>Static</td>
<td>Dur Alt</td>
</tr>
<tr>
<td>B</td>
<td>Approach with horizontal deceleration</td>
<td>Move</td>
<td>Dist Spd</td>
</tr>
<tr>
<td>C</td>
<td>Approach with descending deceleration</td>
<td>Move</td>
<td>Dist Alt Spd</td>
</tr>
<tr>
<td>E</td>
<td>Depart with horizontal acceleration</td>
<td>Move</td>
<td>Dist Spd</td>
</tr>
<tr>
<td>F</td>
<td>Depart with climbing acceleration</td>
<td>Move</td>
<td>Dist Alt Spd</td>
</tr>
<tr>
<td>T</td>
<td>Taxi at constant speed</td>
<td>Move</td>
<td>Spd</td>
</tr>
<tr>
<td>S</td>
<td>Start altitude at constant speed</td>
<td>--</td>
<td>Alt spd</td>
</tr>
</tbody>
</table>

Parameter values are defined as below:

<table>
<thead>
<tr>
<th>PARAM</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dist</td>
<td>Distance (ft)</td>
</tr>
<tr>
<td>Dur</td>
<td>Duration (s)</td>
</tr>
<tr>
<td>Alt</td>
<td>Altitude (ft AFE)</td>
</tr>
<tr>
<td>Spd</td>
<td>Airspeed (kts)</td>
</tr>
</tbody>
</table>
### 5.2.2.1 Additional Helicopter Step Type Information

<table>
<thead>
<tr>
<th>Step Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Altitude</td>
<td>This step is used to start a profile at a given altitude and speed. Input the starting altitude and speed.</td>
</tr>
<tr>
<td>Level Fly</td>
<td>This step is used to maintain altitude and speed for a given distance. Input the track distance covered by the step. Altitude and speed are defined by the previous step.</td>
</tr>
<tr>
<td>App Const Speed</td>
<td>This step is used to descend at constant speed to a given altitude over a given distance. Input the track distance covered by the step and the final altitude. The initial altitude and speed are defined by the previous step.</td>
</tr>
<tr>
<td>App Desc Decel</td>
<td>This step is used to descend and decelerate to a final altitude and speed over a given distance. Input the track distance covered by the step, the final altitude, and the final speed. The initial altitude and speed are defined by the previous step.</td>
</tr>
<tr>
<td>App Horiz Decel</td>
<td>This step is used to decelerate to a final speed at constant altitude over a given distance. Input the track distance covered by the step and the final speed. The altitude and initial speed are defined by the previous step.</td>
</tr>
<tr>
<td>App Vertical</td>
<td>This step is used to maintain horizontal position while descending to a final altitude over a given duration. Input the duration of the step and the final altitude. The horizontal position of the step is calculated from the previous step and the horizontal speed is zero.</td>
</tr>
<tr>
<td>Hover</td>
<td>This step is used to maintain altitude and horizontal position for a given duration. Input the duration of the step. The altitude is defined by the previous step, the horizontal position of the step is calculated from the previous step, and the horizontal speed is zero.</td>
</tr>
<tr>
<td>Ground Idle</td>
<td>This step is used to maintain ground idle for a given duration. Input the duration of the step. The altitude is zero, the horizontal position of the step is calculated from the previous step, and the horizontal speed is zero.</td>
</tr>
<tr>
<td>Flight Idle</td>
<td>This step is used to maintain flight idle for a given duration. Input the duration of the step. The altitude is zero, the horizontal position of the step is calculated from the previous step, and the horizontal speed is zero.</td>
</tr>
<tr>
<td>Dep Vertical</td>
<td>This step is used to maintain horizontal position while ascending to a final altitude over a given duration. Input the duration of the step and the final altitude. The horizontal position of the step is calculated from the previous step and the horizontal speed is zero.</td>
</tr>
<tr>
<td>Dep Horiz Accel</td>
<td>This step is used to accelerate to a final speed over a given distance. Input the track distance covered by the step and the final speed. The altitude and initial speed are defined by the previous step.</td>
</tr>
<tr>
<td>Dep Climb Accel</td>
<td>This step is used to climb and accelerate to a final altitude and speed over a given distance. Input the track distance covered by the step, the final altitude, and the final speed. The initial altitude and speed are defined by the previous step.</td>
</tr>
</tbody>
</table>
### AEDT Standard Input File

#### ASIF Reference Guide: 2d

<table>
<thead>
<tr>
<th>Step Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dep Const Speed</td>
<td>This step is used to climb at constant speed to a given altitude over a given distance. Input the track distance covered by the step and the final altitude. The initial altitude and speed are defined by the previous step.</td>
</tr>
<tr>
<td>Taxi</td>
<td>This step is used to taxi at a given speed. Input the speed. The track distance is calculated based on the assigned taxi ground track, and the altitude is defined by the previous step. Helicopters defined as not having wheels must taxi at an altitude greater than zero.</td>
</tr>
</tbody>
</table>

Helicopter procedure steps explicitly define a helicopter’s flight path. There are no thrust calculations for helicopter flight paths as there are for fixed-wing aircraft. Rather, each procedure step correlates with a helicopter flight operational mode and each mode has its own set of NPD data.

Some helicopter procedure steps correlate with different helicopter flight operational modes (and therefore different NPD and directivity data) depending on their altitude. When constructing flight paths with the Hover, DepVertical, and App Vertical procedure steps, AEDT calculates a ground effect altitude as follows:

Ground Effect Altitude = 1.5 x Main Rotor Diameter

If the procedure step stays below the ground effect altitude, the procedure step correlates with the corresponding In Ground Effect flight operational mode. If the step stays at or above the ground effect altitude the procedure correlates with the corresponding Out of Ground Effect flight operational mode. If a given Dep Vertical or App Vertical procedure step crosses the ground effect altitude, AEDT automatically divides the step into two at the ground effect altitude and assigns flight operational modes to the two steps as appropriate.

### 5.2.3 How to Build a Helicopter Approach Profile

Helicopter approach profiles can be much more dynamic than fixed-wing airplane approach profiles. There are many more ways to operate a helicopter than there are to operate an airplane. AEDT provides a standard approach profile for each helicopter in the database, however these standard profiles may not be appropriate for all helicopter modeling. Additionally, general guidelines are not as appropriate for helicopter approach operations as they are for fixed-wing airplanes. It is strongly recommended to evaluate the helicopter flight operations being modeled to determine if using the standard AEDT helicopter procedures is appropriate. In most cases consulting with helicopter operators to design helicopter profiles that are appropriate for your study is needed. All helicopter approach profiles must start with a Start Altitude step.

For reference, AEDT standard helicopter approach procedures consist of the following procedure steps:

1. Start Altitude, with altitude set to 1000 feet AFE and speed set equal to the helicopter’s level reference speed.
2. Level Fly, with distance set to 87250.0 ft (approximately 14 nautical miles).
3. App Horiz Decel, maintaining an altitude of 1000 ft while decelerating to the helicopter’s approach reference speed over a distance of 5000 ft.

4. App Const Speed, maintaining the helicopter’s approach reference speed while descending to an altitude of 500 feet AFE over a track distance of 4800 feet.

5. App Desc Decel, descending to an altitude of 15 feet AFE while decelerating to a speed of 0 knots over a distance of 2850 feet.

6. App Vertical, maintaining horizontal position while descending to 0 feet AFE over a duration of 3 seconds.

7. Flight Idle for a duration of 30 seconds.

8. Ground Idle for a duration of 30 seconds.

5.2.4 How to Build a Helicopter Departure Profile

Helicopter approach profiles can be much more dynamic than fixed-wing airplane approach profiles. There are many more ways to operate a helicopter than there are to operate an airplane. AEDT provides a standard approach profile for each helicopter in the database, however these standard profiles may not be appropriate for all helicopter modeling. Additionally, general guidelines are not as appropriate for helicopter approach operations as they are for fixed-wing airplanes. It is strongly recommended to evaluate the helicopter flight operations being modeled to determine if using the standard AEDT helicopter procedures is appropriate. In most cases consulting with helicopter operators to design helicopter profiles that are appropriate for your study is needed.

For reference, AEDT standard helicopter departure procedures consist of the following procedure steps:

1. Ground Idle for a duration of 30 seconds.

2. Flight Idle for a duration of 30 seconds.

3. Dep Vertical, maintaining horizontal position while ascending to an altitude of 15 ft AFE over a duration of 3 seconds.

4. Dep Horiz Accel, maintaining altitude while accelerating to a speed of 30 knots over a distance of 100 feet.

5. Dep Climb Accel, climbing to an altitude of 30 feet AFE while accelerating to the helicopter’s depart reference speed over a distance of 500 feet.

6. Dep Const Speed, maintaining speed while climbing to an altitude of 1000 feet AFE over a track distance of 3500 feet.

7. Dep Horizontal Accel, maintaining altitude while accelerating to the helicopter’s level reference speed over a track distance of 2800 feet.

8. Level Fly, with distance set to 93100 feet (approximately 15 nautical miles).
5.2.5 How to Build a Helicopter Overflight Profile

A typical helicopter overflight profile begins in the air at the start of an overflight track, follows the track, and ends in the air. Overflight profiles may include any of the steps defined in section 6.2.2 except for the Taxi step, and it must start with a Start Altitude step.

5.2.6 How to Build a Helicopter Taxi Profile

A typical helicopter taxi profile consists of the following steps:

1. Start with Ground Idle
2. Flight Idle
3. Departure Vertical
4. Taxi
5. Approach Vertical
6. Flight Idle
7. Ground Idle

5.2.7 Helicopter Procedure Step Transitions

Procedure steps are combined in prescribed sequences. However, certain sequences are not allowed. For example, an approach profile cannot use an ascent step. Procedures must comply with the step transition diagrams provided here.

The step transition diagrams use a simple convention to represent procedures:

- Ellipses represent procedure steps.
- Arrows represent a valid transition from one step to another.
- Arrows point in the direction of the allowed transition – e.g. you can go from Flight, Idle to Ground, Idle on an approach, but not back.
- A double sided arrow means that the transition is valid in both directions.
- An arrow looping back to a step indicates that the step can be repeated.
- A box surrounding two or more steps is used to simplify the diagram.
- Arrows connected to the box apply to each step within.
- Each step within the box can transition to any other within the box. However, speeds and altitudes must be compatible. For example, on an approach a transition from an App.Horiz.Decel step to a Hover step is valid only when the App.Horiz.Decel step has a speed of 0 knots.
Figure 6: Helicopter Approach Step Transition Diagram
Figure 7: Helicopter Departure Step Transition Diagram

Figure 8: Helicopter Taxi Transition Diagram
Figure 9: Helicopter Overflight Step Transition Diagram
6 ASIF Schema Documentation

Click on the following links to view descriptions for ASIF elements, groups, complex types and simple types.
Groups
- airportActivityGroup
- airframeGroup
- locationGroup
- nodeIdGroup
- oneOrThreeCoords2DGroup
- airportReceptorGroup
- utmCoordGroup

Complex types
- aircraft
- airframe
- aircraftEngine
- aircraftEngineMode
- aircraftType
- airframe
- airport
- airportCode
- airportLayoutType
- airframeType
- mediumHelicopter
- smallHelicopter
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- largeHelicopter
- mediumHelicopter
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- smallPlane
- largeHelicopter
- mediumHelomorphic STRUCTURE
element activityProfile

diagram

attributes

name

quarterlyProfile

Defines scaling factors for operations during a particular quarter hour.

dailyProfile

Defines scaling factors for operations on a particular day.

monthlyProfile

Defines scaling factors for operations during a particular month.

properties | content complex
children | quarterHourlyProfile dailyProfile monthlyProfile
--- | ---
used by | element activityProfileSet
attributes | Name Type Use Default Fixed Annotation
name | string100 required
annotation documentation Supports legacy EDM5 studies relating to content combinations of QUARTER_HOURLY_PROFILES, DAILY_PROFILES, and MONTHLY_PROFILES.

attribute activityProfile/@name

type | string100
properties use required
facets | Kind Value Annotation
minLength 0
maxLength 100

element activityProfile/quarterHourlyProfile
diagram

```
quarterHourlyProfile
```

type | string100
properties content simple
used by | element quarterHourlyProfileSet
facets | Kind Value Annotation
minLength 0
maxLength 100
annotation documentation Defines scaling factors for operations during a particular quarter-hour.

element activityProfile/dailyProfile
diagram

```
dailyProfile
```

type | string100
properties content simple
used by | element dailyProfileSet
facets | Kind Value Annotation
minLength 0
maxLength 100
annotation documentation Defines scaling factors for operations on a particular day.

element activityProfile/monthlyProfile
diagram

```
monthlyProfile
```

type | string100
properties content simple
used by | element monthlyProfileSet
facets | Kind Value Annotation
minLength 0
maxLength 100
annotation documentation Defines scaling factors for operations during a particular month.
**element activityProfileSet**

- diagram
- properties: content complex
- children: activityProfile
- used by: element operationalProfileSet
  - complexType: airportLayoutType
  - attributes:
    - Name: dummy
    - Type: xs:int
    - Use: optional
- annotation: documentation supports the definition and use of QUARTER_HOURLY_PROFILES, DAILY_PROFILES, and MONTHLY_PROFILES variation of operations.

**attribute activityProfileSet/@dummy**

- type: xs:int
- properties: use optional

**element airportCapacity**

- diagram
- properties: content complex
- children: capacityPoint
- used by: element airportConfig
  - complexTypes: airportLayoutType, scenarioAirportLayoutType
  - attributes:
    - Name: dummy
    - Type: xs:int
    - Use: optional
- annotation: documentation supports legacy EDMS studies relating to content contained in the RUNWAY_CONFIGURATIONS table. This element supports the definition of airport capacities based on various points within an airport.

**attribute airportCapacity/@dummy**

- type: xs:int
- properties: use optional

**element airportConfig**

- diagram
Supports legacy EDMS studies relating to content contained in the RUNWAY_CONFIGURATIONS table. This element supports the definition of airports and their runway configurations for a given scenario layout. Airports operate under different configurations (the pattern of aircraft arrivals and departures on specific runways) over the course of a year depending on the weather, capacity, and noise abatement issues.
element airportConfig/configurationName
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>string100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength: 0</td>
</tr>
<tr>
<td></td>
<td>maxLength: 100</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Runway configuration name.</td>
</tr>
</tbody>
</table>

element airportConfig/useDistribution
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:boolean</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0 maxOcc: 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Flag to use a distribution for the configuration.</td>
</tr>
</tbody>
</table>

element airportConfig/weight
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0 maxOcc: 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Runway configuration weight factor.</td>
</tr>
</tbody>
</table>

element airportConfig/startWindAngle
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>int0to360</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0 maxOcc: 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive: 0</td>
</tr>
<tr>
<td></td>
<td>maxExclusive: 360</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Start wind angle. Valid values: 0.00 to 359.00. (degrees)</td>
</tr>
</tbody>
</table>

element airportConfig/endWindAngle
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>int0to360</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0 maxOcc: 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
</tbody>
</table>
element airportConfig/minWindSpeed
  diagram 
  type doubleExclusive100
  properties minOcc 0
  maxOcc 1
  content simple
  facets Kind Value Annotation
  minInclusive 0
  maxExclusive 100
  annotation documentation
  Minimum wind speed. Valid values: 0.00 to 100.00. (kts)

element airportConfig/maxWindSpeed
  diagram 
  type doubleExclusive100
  properties minOcc 0
  maxOcc 1
  content simple
  facets Kind Value Annotation
  minInclusive 0
  maxExclusive 100
  annotation documentation
  Maximum wind speed. Valid values: 0.00 to 100.00. (kts)

element airportConfig/startHour
  diagram 
  type doubleInclusive24
  properties minOcc 0
  maxOcc 1
  content simple
  facets Kind Value Annotation
  minInclusive 0
  maxInclusive 24
  annotation documentation
  Start hour. Valid values: 0.00 to 23.00.

element airportConfig/endHour
  diagram 
  type doubleInclusive24
  properties minOcc 0
  maxOcc 1
  content simple
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation
End hour. Valid values: 0.00 to 23.00.

**element** `airportConfig/minCeiling`

- **diagram**
- **type** `xs:double`
- **properties**
  - `minOcc`: 0
  - `maxOcc`: 1
- **annotation** documentation
  Minimum ceiling. Valid values: 0.00 to 100000.00. (ft)

**element** `airportConfig/maxCeiling`

- **diagram**
- **type** `xs:double`
- **properties**
  - `minOcc`: 0
  - `maxOcc`: 1
- **annotation** documentation
  Maximum ceiling. Valid values: 0.00 to 100000.00. (ft)

**element** `airportConfig/minVisibility`

- **diagram**
- **type** `xs:double`
- **properties**
  - `minOcc`: 0
  - `maxOcc`: 1
- **annotation** documentation
  Minimum visibility. Valid values: 0.00 to 100.00. (mi)

**element** `airportConfig/maxVisibility`

- **diagram**
- **type** `xs:double`
- **properties**
  - `minOcc`: 0
  - `maxOcc`: 1
- **annotation** documentation
  Maximum visibility. Valid values: 0.00 to 100.00. (mi)

**element** `airportConfig/minTemperature`

- **diagram**
- **type** `xs:double`

Minimum temperature. Valid values: -100.00 to 150.00. (°C)
element `airportConfig/maxTemperature`

*Diagram*

- **Properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple

- **Annotation**
  - documentation: Minimum temperature. Valid values: -100.00 to 150.00. (°F)

- **Type** `xs:double`

- **Properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple

- **Annotation**
  - documentation: Maximum temperature. Valid values: -100.00 to 150.00. (°F)

---

element `airportConfigSet`

*Diagram*

- **Properties**
  - content: complex

- **Children**
  - `airportConfig`

- **Used by**
  - `airportLayoutType` `scenarioAirportLayoutType`

- **Annotation**
  - documentation: Contains one or more `airportConfig` elements.

---

element `airportLayoutSet`

*Diagram*

- **Properties**
  - content: complex

- **Children**
  - `airportLayout`

- **Used by**
  - `AsifXml` `study`

- **Attributes**
  - Name | Type | Use | Default | Fixed | Annotation
  - dummy | `xs:int` | optional

- **Annotation**
  - documentation: Contains layouts for ASIF partial import into an existing study.

attribute `airportLayoutSet/@dummy`

- **Type** `xs:int`
type  
  
properties  
  
annotation  

Contains information about the available layout of each airport in the study.

element airportWeather

diagram

properties  

children  

used by  

element airportWeather/airportWeatherStationId

diagram

type  

properties  

element airportWeatherStation

diagram


properties: content complex

children:
- airportWeatherStationId
- startDate
- endDate
- weatherStationCode
- weatherStationName
- latitude
- latitudeDMS
- longitude
- longitudeDMS
- utmN
- utmE
- utmZone
- weatherStationElevationFEet
- distanceToStation
- cooperativeId
- wbanId
- weatherData

used by:
- element airportWeatherStation

---

element airportWeatherStation/airportWeatherStationId

diagram: [diagram image]
type: xs:int

properties: content simple

element airportWeatherStation/startDate

diagram: [diagram image]
type: xs:date

properties: content simple
element airportWeatherStation/endDate
diagram endDate
type xs:date
properties content simple

element airportWeatherStation/weatherStationCode
diagram weatherStationCode
type string5
properties minOcc 0
   maxOcc 1
   content simple
facets Kind Value Annotation
   minLength 0
   maxLength 5

element airportWeatherStation/weatherStationName
diagram weatherStationName
type string25
properties content simple
facets Kind Value Annotation
   minLength 0
   maxLength 25

element airportWeatherStation/weatherStationElevationFeet
diagram weatherStationElevationFeet
type xs:int
properties content simple

element airportWeatherStation/distanceToStation
diagram distanceToStation
type xs:double
properties content simple

element airportWeatherStation/cooperativeld
diagram cooperativeld
type string6
properties minOcc 0
   maxOcc 1
   content simple
facets Kind Value Annotation
   minLength 0
   maxLength 6

element airportWeatherStation/wbanId
diagram wbanId
type string5
properties minOcc 0
   maxOcc 1
**element annualization**

**diagram**

- `name`
  - Name of annualization.

**properties**
- content complex

**children**
- `name annualizationGroup`

**used by**
- `AsifXml scenario`

**annotation**
- documentation
  - Contains annualizations for ASIF partial import into an existing study.

**element annualization/name**

**diagram**

- `name`
  - Name of annualization.

**type**
- string255

**properties**
- content simple

**children**
- Kind Value Annotation
  - minLength 0
  - maxLength 255

**annotation**
- documentation
  - Description of the case.

**element annualizationCase**

**diagram**

- `name`
  - Name of annualization.

**type**
- string255

**properties**
- content complex

**children**
- `name weight scaleFactor`

**used by**
- group `annualizationGroupCase`

**annotation**
- documentation
  - Collection of study cases whose results are weighted in the scenario annualization rollup.

**element annualizationCase/name**

**diagram**

- `name`
  - Description of the case.

**type**
- string255

**properties**
- content simple

**children**
- Kind Value Annotation
  - minLength 0
  - maxLength 255

**annotation**
- documentation
  - Description of the case.
### element annualizationCase

**Diagram:**
- Weight associated with the case.

**Type:** `xs:double`

**Properties:**
- Content: simple

**Annotation:**
- Documentation: Weight associated with the case.

### element annualizationCase/scaleFactor

**Diagram:**
- Scale factor applied to results for the case.

**Type:** `xs:double`

**Properties:**
- Minimum Occurrence: 0
- Maximum Occurrence: 1
- Content: simple
- Default: 1

**Annotation:**
- Documentation: Scale factor applied to results for the case.

### element annualizationGroup

**Diagram:**
- Contains one or more weighted annualization group cases.
- Allows for grouping cases into groups, and groups into parent groups.
- Collection of study cases whose results are weighted in the standard annualization rollover.

**Properties:**
- Content: complex

**Children:**
- weight
- scaleFactor
- annualizationGroup
- annualizationCase

**Used by:**
- element annualization
  - group

**Annotation:**
- Documentation: Contains one or more weighted annualization group cases.

### element annualizationGroup/weight

**Diagram:**
- Weight associated with the annualization group.

**Type:** `xs:double`

**Properties:**
- Content: simple

**Annotation:**
- Documentation: Weight associated with the annualization group.

### element annualizationGroup/scaleFactor

**Diagram:**
- Scale factor applied to results for the case.
type xs:double

properties
- minOcc: 0
- maxOcc: 1
- content: simple
- default: 1

annotation documentation
Scale factor applied to results for the annualization group.

element areaStationarySource
diagram

properties
- content: complex

children
- pointCoord
- polygonCoords
- baseElevation
- releaseHeight
- sigmaZ

used by element stationarySource

annotation documentation
Specifies the area in space occupied by a stationary source of emissions.

element areaStationarySource/baseElevation
diagram

properties
- content: simple

annotation documentation
Elevation in MSL of area, valid values -500 to 5000 (m)

element areaStationarySource/releaseHeight
diagram

properties
- minOcc: 0
- maxOcc: 1
- content: simple
- default: 0

facets
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Height at which emissions are released into the atmosphere. Valid values: 0 to 100 (m)

Vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.
**properties**

- **content**: complex

**children**

- `options`
- `airportLayoutSet`
- `annualization`
- `boundary`
- `case`
- `fleet`
- `operation`
- `runup`
- `receptorSet`
- `scenario`
- `study`
- `trackOpSet`
- `userGroundSupportEquipmentSet`
- `stationarySourceSet`
- `operationalProfileSet`

**attributes**

- `version`
  - **Type**: string16
  - **Use**: optional
  - **Default**: fixed
  - **Fixed**: annotation
  - **Annotation documentation**: Study version. Used for revision control of a study.

- `content`
  - **derived by**: xs:string
  - **Use**: required

**attribute AsifXml/@version**

- **Type**: string16

**properties**

- **use**: optional

**facets**

- **kind**: Annotation
- **value**: enumeration
- **minLength**: 0
- **maxLength**: 16

**annotation**: documentation

- **Study version. Used for revision control of a study.**

**attribute AsifXml/@content**

- **Type**: restriction of xs:string

**properties**

- **use**: required

**facets**

- **kind**: Annotation
- **value**: enumeration
- **enumeration**: airportLayoutSet, annualization, boundary, case, fleet, receptorSets, scenario, study, boundary, trackOpSet, runup, receptorSet, scenario, boundary, trackOpSet, runup, userGroundSupportEquipmentSet, stationarySourceSet, operationalProfileSet

**element AsifXml/fleet**

- **diagram**: [Diagram image]
<table>
<thead>
<tr>
<th>type</th>
<th>fleet</th>
</tr>
</thead>
</table>
| properties | minOcc 0  
|          | maxOcc 1  
| content  | complex |
| children | auxiliaryPowerUnit  
|          | airframe  
|          | engineMod  
|          | anpNoiseGroup  
|          | anpAirplane  
|          | anpFlapsSet  
|          | anpThrustSet  
|          | anpProfileSet  
|          | anpHelicopter  
|          | anpHeloDirectivitySet  
|          | anpHeloProfileSet  
|          | badaAirplane  
|          | badaAltitudeDistributionSet  
|          | badaDefaultAltitudeDistributionSet  
|          | badaProfileSet  
|          | badaConfigSet  
|          | badaFuel  
|          | badaThrust  
|          | aircraft  
|          | energyShare |
| annotation | documentation  
|           | Contains study fleet data for ASIF partial import into existing study. |

**element AsfXml/runup**

**diagram**
An aircraft runup operation type.

- **id**
  - User-provided runup identifier.

- **aircraftType**
  - Aircraft type employed in this runup operation.

- **flightNumber**
  - Optional flight number.

- **tailNumber**
  - Optional tail number.

- **numOperations**
  - The number of occurrences of this operation.

- **Airport**
  - The airport code at which this operation occurs.

- **coord2DGroup**
  - Specified in a coordinate using latitude and longitude.

- **latLonCoordGroup**
  - Latitude specified in degrees and decimal format. Can include optional attribute positive.

- **latitude**
  - Latitude expressed as dd:mm:ss with optional indicator N., S., E., W.

- **latitudeDM**
  - Latitude specified as degrees in decimal format. Can include optional attribute positive.

- **longitude**
  - Longitude specified as degrees in decimal format. Can include optional attribute positive.

- **longitudeDM**
  - Longitude expressed as dd:mm:ss with optional indicator N., S., E., W.

- **utmN**
  - UTM Northing of the point in decimal meters north of the equator.

- **utmE**
  - UTM Easting of the point in decimal meters east from a central meridian.

- **utmZone**
  - UTM Zone of the point. A default zone can be set in the &utmzone tag.

- **opTime**
  - The runup operation time.

- **duration**
  - The duration of the runup.

- **heading**
  - The direction of the aircraft.

- **thrust**
  - The thrust employed for this runup operation.

<table>
<thead>
<tr>
<th>type</th>
<th>runup</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 1 maxOcc: unbounded content: complex</td>
</tr>
<tr>
<td>children</td>
<td>id, aircraftType, flightNumber, tailNumber, numOperations, airport, latitude, latitudeDM, longitude, longitudeDM, utmN, utmE, utmZone, opTime, duration, heading, thrust</td>
</tr>
</tbody>
</table>
An aircraft runup operation type.

**element backbone**

- **diagram**
- **properties**
  - content complex
- **children**
  - dispersionWeight
  - backboneNodes
- **used by**
  - element track
- **annotation**
  - documentation
  - Represents the centerline of a set of dispersed tracks.

**element backboneNode**

- **diagram**
- **properties**
  - content complex
- **children**
  - trackNode
  - halfwidth
- **used by**
  - element backboneNodes
- **annotation**
  - documentation
  - A 3D node that is part of a backbone.

**element backboneNode/halfwidth**

- **type**
  - xs:double
- **properties**
  - content simple
- **annotation**
  - documentation
  - Halfwidth in nautical miles. (nmi)

**element backboneNodes**

- **diagram**
- **properties**
  - content complex
- **children**
  - backboneNode
- **used by**
  - element backbone
- **annotation**
  - documentation
  - The set of 3D nodes for the backbone.

**element boilerHeaterTypeCode**
An integer value for the Boiler/Heater type represented. This value comes from the SUBCATEGORY_ID column of the STN_CATEGORY table in the AEDT FLEET database. Valid values: 1 to 37, 50 to 75, 80 to 93.

Specifies the boundaries of a study or other element contained within a study. When a study boundary is specified, all flight paths resulting from departure, arrival, and overflight operations are calculated to and/or from the study boundary.

Set of coordinates defining the boundary.

Set of coordinates defining the polygon.

Set of coordinates defining the boundary.
Buildings have no effect on the concentrations estimated from volume and area sources such as aircraft, APU, GSE, roadways, and parking facilities.

**element building/name**

- **type**: string255
- **properties**: content simple
- **facets**
  - minLength: 0
  - maxLength: 255
- **annotation** documentation
  - Name of the building.

**element building/elevation**

- **type**: xs:double
- **properties**: content simple
- **annotation** documentation
  - Elevation of building. Valid values: -500 to 5000, (m)

**element building/height**

- **type**: xs:double
- **properties**: content simple
- **annotation** documentation
  - Height of building. Valid values: 0 to 100, (m)
element building/releaseHeight

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

**properties**
- minOcc: 0
- maxOcc: 1
- content: simple

**annotation**
- documentation: Height at which emissions are released into the atmosphere. Valid values 0 to 100 (m)

---

element buildingSet

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**properties**
- content: complex

**children**
- building

**used by**
- complexType airportLayoutType

**attributes**
- dummy: xs:int
  - optional

**annotation**
- documentation: Supports legacy EDMS studies relating to content contained in the BUILDINGS table. This element supports the definition of airport buildings. These building sources affect the emitted point source plumes by essentially serving as obstacles to those sources, and therefore have a significant impact on concentrations resulting from stationary source emissions. Buildings have no effect on the concentrations estimated from volume and area sources such as aircraft, APU, GSE, roadways, and parking facilities.

---

attribute buildingSet/@dummy

<table>
<thead>
<tr>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>xs:int</td>
</tr>
</tbody>
</table>

**properties**
- use: optional

---

element capacityPoint

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**properties**
- content: complex

**children**
- arrivalsPerHour
  - departuresPerHour
Supports legacy EDMS studies relating to content contained in the RUNWAY_CONFIGURATIONS table. This element supports the definition of airport capacities based on various points within an airport.

**element** capacityPoint/arrivalsPerHour

- **diagram**
  - Number of arrivals per hour. Valid values: 0.00 to 400.00 (operations per hour)
- **type** xs:double
- **properties** content simple
- **annotation** documentation
  - Number of arrivals per hour. Valid values: 0.00 to 400.00 (operations per hour)

**element** capacityPoint/departuresPerHour

- **diagram**
  - Number of departures per hour. Valid values: 0.00 to 400.00 (operations per hour)
- **type** xs:double
- **properties** content simple
- **annotation** documentation
  - Number of departures per hour. Valid values: 0.00 to 400.00 (operations per hour)

**element** case

- **diagram**
  - Case ID.
  - The name of the case (must be unique within the scenario).
  - Case’s start time, if not defined, the value specified in the scenario element will be used. Must match the value for start time for the scenario. Accepts dateTime string.
  - Case’s duration. If not defined, the value specified in the scenario element will be used. Must match the value for duration for the scenario. For ADT this is a restricted to 24 hour (1 day). All cases within a scenario must have the same duration as the scenario, (h).
  - ID of a climate condition.
  - The weather file’s MDS checkout. If not present, the MDS checkout will be constructed for the user at the time of importing the ASHP. This element is not supported in AEDT.
element case/caseld

diagram

<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>caseld name source startTime duration climateld hourlyWxFile hourlyWxMD5 description case trackOpSet operation runup parkingFacilityOperationSet roadwayOperationSet stationarySourceOperationSet groundSupportEquipmentPopulationOperationSet reference</td>
</tr>
<tr>
<td>used by</td>
<td>elements AsXml caseSet</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Describes general parameters for a case.</td>
</tr>
</tbody>
</table>

element case/name

diagram
element **case/source**

type **emissionsSourceType**

properties

minOcc 0
maxOcc 1
content simple

facets

documentation
Container
Aircraft
GSE Population
Parking Facilities
Roadways
Stationary Sources

annotation documentation
The name of the case (must be unique within the scenario).

---

element **case/startTime**

type **xs:dateTime**

properties

minOcc 0
maxOcc 1
content simple

annotation documentation
Case's start time. If not defined, the value specified in the scenario element will be used. Must match the value for startTime for the scenario. Accepts dateTime string.

---

element **case/duration**

type **xs:int**

properties

minOcc 0
maxOcc 1
content simple

annotation documentation
Case's duration. If not defined, the value specified in the scenario element will be used. Must match the value for duration for the scenario. For AEDT this is restricted to 24 hours (1 day). All cases within a scenario must have the same duration as the scenario. (hr).

---

element **case/climateId**
<table>
<thead>
<tr>
<th>type</th>
<th>string8</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value</td>
<td>Annotation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
<td>maxLength 8</td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>ID of a climate condition.</td>
<td></td>
</tr>
</tbody>
</table>

**element case/hourlyWxFile**

<table>
<thead>
<tr>
<th>type</th>
<th>string255</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value</td>
<td>Annotation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
<td>maxLength 255</td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>The file containing the hourly weather data used for emissions calculations. This element is not supported in AEDT.</td>
<td></td>
</tr>
</tbody>
</table>

**element case/hourlyWxMD5**

<table>
<thead>
<tr>
<th>type</th>
<th>string16</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value</td>
<td>Annotation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
<td>maxLength 16</td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>The weather file's MD5 checksum. If not present, the MD5 checksum will be computed for the user at the time of importing the ASIF. This element is not supported in AEDT.</td>
<td></td>
</tr>
</tbody>
</table>

**element case/description**

<table>
<thead>
<tr>
<th>type</th>
<th>string255</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value</td>
<td>Annotation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
<td>maxLength 255</td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>Description of the case.</td>
<td></td>
</tr>
</tbody>
</table>
**element case/runup**

**diagram**

- **runup**
  - **id**
    - User-provided runup identifier.
  - **aircraftType**
    - Aircraft type employed in the runup operation.
  - **flightNumber**
    - Optional flight number.
  - **tailNumber**
    - Optional tail number.
  - **numOperations**
    - The number of occurrences of this operation.
  - **airport**
    - The airport code at which this operation occurs.
  - **latitude**
    - Latitude specified as degrees in decimal format. Can include optional attribute positive.
  - **latitudeDMS**
    - Latitude expressed as dd'll'm'm'm' with optional indicator N, S, or.
  - **longitude**
    - Longitude specified as degrees in decimal format. Can include optional attribute positive.
  - **longitudeDMS**
    - Longitude expressed as dd'll'm'm'm' with optional indicator W, E, or.
  - **utm**
    - UTM Northing of the point in decimal meters north of the equator.
  - **utmCoordGroup**
    - Specifies a point using Universal Transverse Mercator coordinates.
  - **utmZone**
    - UTM Zone of the point. A default zone can be set in the &lt;optional&gt; tag.
  - **opTime**
    - The runup operation time.
  - **duration**
    - The duration of the runup.
  - **heading**
    - The orientation of the aircraft.
  - **thrust**
    - The thrust employed for this runup operation.

**type** runup

**properties**
- minOcc: 1
- maxOcc: unbounded
- content: complex
element case/reference

diagram

properties content complex

children refScenario refCase

annotation documentation

Refers to a case by its scenario name and case name. Conditions required: a) all airport layouts in the referenced scenario must be assigned to the target scenario, and b) the referenced case must have a unique name in the new scenario.

element case/reference/refScenario

diagram

type string255

properties content simple

facets Kind Value Annotation

minLength 0
maxLength 255

annotation documentation

Scenario under which an existing case appears.

element case/reference/refCase

diagram

type string255

properties content simple

facets Kind Value Annotation

minLength 0
maxLength 255

annotation documentation

Existing case that appears under the refScenario.

element caseSet

diagram

properties content complex

children case

used by element scenario

annotation documentation

Placeholder for one or more cases.

element categoryAircraftEngine

diagram
### element categoryAircraftEngine/engineCode

**Diagram**

```plaintext
engineCode
```

**Type**

`string255`

**Properties**

Content complex

**Facets**

- Kind: Value
- Annotation: minLength: 0, maxLength: 255

### element categoryAircraftEngine/timePercentPower7

**Diagram**

```plaintext
timePercentPower7
```

**Type**

`doubleExclusive1000`

**Properties**

Content simple

- Default: 0

**Facets**

- Kind: Value
- Annotation: minInclusive: 0, maxExclusive: 1000

**Annotation**

Documentation: Time at which engine is operating at 7% (taxi) power. Valid values: 0 to 1000. (min)

### element categoryAircraftEngine/timePercentPower30

**Diagram**

```plaintext
timePercentPower30
```

**Type**

`doubleExclusive1000`

**Properties**

Content simple

- Default: 0

**Facets**

- Kind: Value
- Annotation: minInclusive: 0

### element categoryAircraftEngine/timePercentPower65

**Diagram**

```plaintext
timePercentPower65
```

**Type**

`doubleExclusive1000`

**Properties**

Content simple

- Default: 0

**Facets**

- Kind: Value
- Annotation: minInclusive: 0

**Annotation**

Documentation: Time at which engine is operating at 65% (idle) power. Valid values: 0 to 1000. (min)

### element categoryAircraftEngine/timePercentPower100

**Diagram**

```plaintext
timePercentPower100
```

**Type**

`doubleExclusive1000`

**Properties**

Content simple

- Default: 0

**Facets**

- Kind: Value
- Annotation: minInclusive: 0

**Annotation**

Documentation: Time at which engine is operating at 100% (takeoff) power. Valid values: 0 to 1000. (min)
Time at which the engine is operating at 30% (approach) power. Valid values: 0 to 1000. (min)

**element** categoryAircraftEngine/timePercentPower85

- **diagram**
  - timePercentPower85
- **type** doubleExclusive1000
- **properties**
  - content: simple
  - default: 0
- **facets**
  - Kind: Value
  - Annotation: minInclusive 0, maxExclusive 1000
- **annotation**
  - documentation: Time at which the engine is operating at 85% (climbout) power. Valid values: 0 to 1000. (min)

Time at which the engine is operating at 100% (takeoff) power. Valid values: 0 to 1000. (min)

**element** categoryAircraftEngine/timePercentPower100

- **diagram**
  - timePercentPower100
- **type** doubleExclusive1000
- **properties**
  - content: simple
  - default: 0
- **facets**
  - Kind: Value
  - Annotation: minInclusive 0, maxExclusive 1000
- **annotation**
  - documentation: Time at which the engine is operating at 100% (takeoff) power. Valid values: 0 to 1000. (min)

Time at which the engine is operating at 100% (takeoff) power. Valid values: 0 to 1000. (min)

**element** categoryBoilerHeater

- **diagram**
  - boilerHeaterTypeCode
  - CO_EI
  - pollutionControlFactorCO
  - TNMOC_EI
  - pollutionControlFactorTNMOC
  - VOC_EI

- **annotation**
  - documentation: 

  An integer value for the Boiler/Heater type represented. This value comes from one of the Subcategory_ID columns in the EBT Category Codes database. Valid values: 1 to 57, 58 to 75, 80 to 93.
Describes the operational characteristics of a source in the boiler/heater category.

**element categoryBoilerHeater/CO_EI**

- **diagram**: CO_EI
- **type**: doubleInclusive1000
- **properties**: content simple
default 0
- **facets**: Kind Value Annotation
  - minInclusive 0
  - maxInclusive 1000
- **annotation**: CO emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)

**element categoryBoilerHeater/pollutionControlFactorCO**

- **diagram**: pollutionControlFactorCO
- **type**: doubleInclusive100
- **properties**: content simple
default 0
- **facets**: Kind Value Annotation
  - minInclusive 0
  - maxInclusive 100
- **annotation**: Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%)

**element categoryBoilerHeater/TNMOCEI**

- **diagram**: TNMOC_EI
- **type**: doubleInclusive1000
- **properties**: content simple
default 0
- **facets**: Kind Value Annotation
  - minInclusive 0
  - maxInclusive 1000
- **annotation**: TNMOC emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)
TNMOC emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)

VOC emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)

Percent of volatile organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)

Percent of total non-methane organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)
Total organic compound emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)

**Diagram**: [pollutionControlFactorTOC]

**Type**: `doubleInclusive100`

**Properties**
- Content: `simple`
- Default: 0

**Facets**
- Kind: `Value`
- Annotation: `Value`
  - minInclusive: 0
  - maxInclusive: 100

**Annotation**: Percent of total organic compounds removed by pollution control measures. Valid values: 0 to 100 (%)

---

Percent of total organic compounds removed by pollution control measures. Valid values: 0 to 100 (%)

**Diagram**: [THC_EI]

**Type**: `doubleInclusive1000`

**Properties**
- Content: `simple`
- Default: 0

**Facets**
- Kind: `Value`
- Annotation: `Value`
  - minInclusive: 0
  - maxInclusive: 1000

**Annotation**: Total hydrocarbon emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)

---

Percent of hydrocarbons removed by pollution control measures. Valid values: 0 to 100 (%)

**Diagram**: [pollutionControlFactorHC]

**Type**: `doubleInclusive100`

**Properties**
- Content: `simple`
- Default: 0

**Facets**
- Kind: `Value`
- Annotation: `Value`
  - minInclusive: 0
  - maxInclusive: 100

**Annotation**: Percent of hydrocarbons removed by pollution control measures. Valid values: 0 to 100 (%)

---

Total hydrocarbon emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)

**Diagram**: [NOx_EI]

**Type**: `doubleInclusive1000`

**Properties**
- Content: `simple`
- Default: 0

**Facets**
- Kind: `Value`
- Annotation: `Value`
  - minInclusive: 0
  - maxInclusive: 1000

**Annotation**: Total hydrocarbon emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)
<table>
<thead>
<tr>
<th>category</th>
<th>polluting control factor NOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image1.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleInclusive100</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind: Value: Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive: 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive: 100</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>NOx emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>category</th>
<th>constant term SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleInclusive1000</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind: Value: Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive: 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive: 1000</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>SOx emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>category</th>
<th>sulfur term SOx</th>
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<tr>
<td>diagram</td>
<td><img src="image3.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleInclusive1000</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind: Value: Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive: 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive: 1000</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>SOx sulfur EI term, fuel dependent. Valid values: 0 to 1000. (Kg/1000 m³ - %Sulfur, or Kg/Kiloliter - %Sulfur, or Kg/Metric Ton - %Sulfur)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>category</th>
<th>polluting control factor SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleInclusive100</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind: Value: Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive: 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive: 100</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
</tr>
</tbody>
</table>
Percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%)

**PM10 emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kilo liter or Kg/1000 m³)**

**PM10 sulfur EI term, fuel dependent. Valid values: 0 to 1000. (Kg/1000 m³ - %Sulfur, or Kg/Kilo liter - %Sulfur, or Kg/Metric Ton - %Sulfur)**

**PM10 ash term. Valid values: 0 to 1000. (Kg/Metric Ton - %Ash)**
Percent of fuel that is ash. Valid values: 0 to 1000. (%)  

PM 2.5 to PM 10 ratio. Valid values: 0 to 1000. (dimensionless)  

Ratio of calcium to sulfur within the fuel. Valid values: 0 to 1000. (dimensionless)  

Percent of fuel that is sulfur. Valid values: 0 to 1000. (%)
element categoryDeicingArea

diagram

| properties | content complex |
| children   | typeCode VOC_EI ethyleneGlycolDensity propyleneGlycolDensity solutionConcentrationPercent |
| used by    | element stationarySource |
| annotation | documentation Describes the operational characteristics of a source in the deicing area category. |

element categoryDeicingArea/typeCode

diagram

| type | int1to4 |
| properties | content simple |
| facets | Kind Value Annotation minInclusive 1 maxInclusive 4 |
| annotation | documentation Describes this category. |

element categoryDeicingArea/VOC_EI

diagram

| type | doubleInclusive1000 |
| properties | content simple default 0 |
| facets | Kind Value Annotation minInclusive 0 maxInclusive 1000 |
| annotation | documentation VOC emissions index, fuel type dependent. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kitoliter) |

element categoryDeicingArea/ethyleneGlycolDensity

diagram

| type | doubleExclusive2000 |
| properties | content simple default 0 |
| facets | Kind Value Annotation minInclusive 0 maxInclusive 1000 |
| annotation | documentation Ethylene glycol density, Valid values: 0 to 1000. (g/L) |

Percent of fuel that is sulfur. Valid values 0 to 1000. (%)
**ethyleneglycolDensity**

*Annotation*
Propylene glycol solution density. Valid values: 0 to 1000. (g/L)

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>2000</td>
<td></td>
</tr>
</tbody>
</table>

**solutionConcentrationPercent**

*Annotation*
Concentration of deicing solution. Valid values: 0 to 1000. (%)

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**fuelTank**

*Annotation*
Describes the operational characteristics of a source in the fuel tank category.

- **typeCode**
- **tankDiameter**
- **horizontalTank**
- **verticalTank**
- **reidVaporPressure**

**stationarySource** used by

*Annotation*
Describes a stationary source.
**Type Code**

Describes the category.

**Category Fuel Tank / Tank Diameter**

- **Type:** doubleExclusive

**Properties**

**Complex**

**Facets**

- Kind: Value Annotation
  - minInclusive: 0
  - maxExclusive: 1000

**Annotation**

- documentation: Diameter of tank. Valid values: 0 to 1000. (m)

**Category Fuel Tank / Horizontal Tank**

- **Diagram**

**Properties**

**Complex**

**Children**

- tankLength

**Annotation**

- documentation: Describes a horizontal tank.

**Category Fuel Tank / Horizontal Tank / Tank Length**

- **Type:** doubleExclusive

**Properties**

**Simple**

**Default**

- 0

**Facets**

- Kind: Value Annotation
  - minInclusive: 0
  - maxExclusive: 1000

**Annotation**

- documentation: Length of tank. Valid values: 0 to 1000. (m)

**Category Fuel Tank / Vertical Tank**

- **Diagram**
properties: content complex
children: maximumSolutionLevel tankHeight averageSolutionLevel meanWindSpeed
annotation: documentation
Describes a vertical tank.

<table>
<thead>
<tr>
<th>element</th>
<th>categoryFuelTank/verticalTank maximumSolutionLevel</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image1.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleExclusive1000</td>
</tr>
<tr>
<td>properties: content simple</td>
<td></td>
</tr>
<tr>
<td>default: 0</td>
<td></td>
</tr>
<tr>
<td>facets: Kind Value Annotation</td>
<td></td>
</tr>
<tr>
<td>minInclusive: 0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive: 1000</td>
<td></td>
</tr>
<tr>
<td>annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>documentation: Maximum height of solution inside the tank. Valid values: 0 to 1000. (m)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>categoryFuelTank/verticalTank tankHeight</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleExclusive1000</td>
</tr>
<tr>
<td>properties: content simple</td>
<td></td>
</tr>
<tr>
<td>default: 0</td>
<td></td>
</tr>
<tr>
<td>facets: Kind Value Annotation</td>
<td></td>
</tr>
<tr>
<td>minInclusive: 0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive: 1000</td>
<td></td>
</tr>
<tr>
<td>annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>documentation: Height of tank. Valid values: 0 to 1000. (m)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>categoryFuelTank/verticalTank averageSolutionLevel</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image3.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleExclusive1000</td>
</tr>
<tr>
<td>properties: content simple</td>
<td></td>
</tr>
<tr>
<td>default: 0</td>
<td></td>
</tr>
<tr>
<td>facets: Kind Value Annotation</td>
<td></td>
</tr>
<tr>
<td>minInclusive: 0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive: 1000</td>
<td></td>
</tr>
<tr>
<td>annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>documentation: Average height of solution inside the tank. Valid values 0 to 1000. (m)</td>
<td></td>
</tr>
</tbody>
</table>
Average height of solution inside the tank. Valid values: 0 to 1000. (m)

element categoryFuelTank/verticalTank/meanWindSpeed

diagram

<table>
<thead>
<tr>
<th>facet</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td>maxExclusive</td>
<td>100</td>
</tr>
</tbody>
</table>

annotation documentation
Average wind speed at the tank. Valid values: 0 to 1000. (m/s)

element categoryFuelTank/reidVaporPressure

diagram

<table>
<thead>
<tr>
<th>facet</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>6</td>
<td>maxInclusive</td>
<td>13</td>
</tr>
</tbody>
</table>

annotation documentation
Reid vapor pressure. Valid values: 0 to 1000. (PSI)

element categoryGenerator

diagram

- typeCode
- powerRating/horsepower
  - CO_EF
    - CO emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
  - TOC_EF
    - TOC emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
  - NOx_EF
    - NOx emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
  - SOx_EF
    - SOx emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
  - PM10_EF
    - PM10 emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
  - pollutionControlFactor/TOC
    - Percent of total organic compounds removed by pollution control measures. Valid values: 0 to 1000. (PSI)
Describes the operational characteristics of a source in the generator category.

- `categoryGenerator` element:
  - `typeCode` property:
    - Describes the category.
  - `properties` content: simple
  - `children`:
    - `CO_EL`:
      - CO emissions index. Valid values 0 to 1000 (kg/kiloton or kg/1000 m^3)
    - `VOC_EL`:
      - VOC emissions index. Valid values 0 to 1000 (kg/kiloton or kg/1000 m^3)
    - `NOX_EL`:
      - NOx emissions index. Valid values 0 to 1000 (kg/kiloton or kg/1000 m^3)
    - `SOX_EL`:
      - SOx emissions index. Valid values 0 to 1000 (kg/kiloton or kg/1000 m^3)
    - `PM10_EL`:
      - PM10 emissions index. Valid values 0 to 1000 (kg/kiloton or kg/1000 m^3)
    - `pollutionControlFactorVOC`:
      - Amount of volatile organic compounds emitted. Valid values 0 to 1000. (%)
    - `fuelSulfurContent`:
      - Percentage, by weight, of sulfur in the fuel used for emissions calculations as % or grams per 100 cu. ft. of gas vapor (fuel dependent). Valid values 0 to 1000. (%)
    - `pollutionControlFactorCO`:
      - Percent of carbon monoxide removed by pollution control measures. Valid values 0 to 1000. (%)
    - `pollutionControlFactorNOX`:
      - Percent of nitrogen oxides removed by pollution control measures. Valid values 0 to 1000. (%)
    - `pollutionControlFactorSOX`:
      - Percent of sulfur oxides removed by pollution control measures. Valid values 0 to 1000. (%)
    - `pollutionControlFactorPM10`:
      - Percent of 10-micron particulate matter removed by pollution control measures. Valid values 0 to 1000. (%)
    - `pm25ToPm10Ratio`:
      - PM 2.5 to PM 10 ratio. (dimensionless)

- `used by`: element `stationarySource` annotation documentation
- `element categoryGenerator/typeCode` diagram
  - `typeCode` property:
    - Describes the category.
  - `type` int1to8
  - `properties` content: simple
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
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</tr>
<tr>
<td>maxInclusive</td>
<td>8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
Describes this category.

**element categoryGenerator/powerRatingHorsepower**

diagram

```
<powerRatingHorsepower>
  The rated power of the generator in horsepower. Valid values: 0 to 10000. (hp)
</powerRatingHorsepower>
```

type
doubleInclusive10000

properties
content simple
default 0

facets
Kind | Value | Annotation |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>10000</td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
The rated power of the generator in horsepower. Valid values: 0 to 10000. (hp)

**element categoryGenerator/CO_EF**

diagram

```
<CO_EF>
  CO emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
</CO_EF>
```

type
doubleInclusive10000

properties
content simple
default 0

facets
Kind | Value | Annotation |
<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>minInclusive</td>
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<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
CO emissions factor. Valid values: 0 to 1000. (grams/hp-hr)

**element categoryGenerator/TOC_EF**

diagram

```
<TOC_EF>
  TOC emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
</TOC_EF>
```

type
doubleInclusive10000

properties
content simple
default 0

facets
Kind | Value | Annotation |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
TOC emissions factor. Valid values: 0 to 1000. (grams/hp-hr)

**element categoryGenerator/NOx_EF**

diagram

```
<NOx_EF>
  NOx emissions factor. Valid values: 0 to 1000. (grams/hp-hr)
</NOx_EF>
```

type
doubleInclusive10000

properties
content simple
default 0

facets
Kind | Value | Annotation |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>element categoryGenerator/(\text{SO}_x_\text{EF})</td>
<td>diagram</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>type doubleInclusive1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>properties content simple 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>facets Kind Value Annotation minInclusive 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxInclusive 1000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>annotation documentation (\text{SO}_x) emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element categoryGenerator/(\text{PM10}_\text{EF})</th>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type doubleInclusive1000</td>
<td></td>
</tr>
<tr>
<td>properties content simple 0</td>
<td></td>
</tr>
<tr>
<td>facets Kind Value Annotation minInclusive 0</td>
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</tr>
<tr>
<td>maxInclusive 1000</td>
<td></td>
</tr>
<tr>
<td>annotation documentation (\text{PM10}) emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th>element categoryGenerator/pollutionControlFactorTOC</th>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type doubleInclusive100</td>
<td></td>
</tr>
<tr>
<td>properties content simple 0</td>
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</tr>
<tr>
<td>facets Kind Value Annotation minInclusive 0</td>
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</tr>
<tr>
<td>maxInclusive 100</td>
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</tr>
<tr>
<td>annotation documentation Percent of total organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
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</table>

<table>
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<tr>
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<th>diagram</th>
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<tbody>
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<tr>
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</tr>
<tr>
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<tr>
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<tr>
<td>annotation documentation (\text{CO}) emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m^3)</td>
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<tr>
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</tr>
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<td>properties content simple</td>
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<td>default 0</td>
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<td>VOC emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m^3)</td>
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<table>
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<tbody>
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<td>facets Kind Value Annotation</td>
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<td>annotation documentation</td>
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<table>
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<th>diagram</th>
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<td>facets Kind Value Annotation</td>
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<tr>
<td>annotation documentation</td>
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<table>
<thead>
<tr>
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<th>diagram</th>
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<tr>
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<td>maxInclusive 1000</td>
<td></td>
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<tr>
<td>annotation documentation</td>
<td></td>
</tr>
<tr>
<td>PM10 emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m^3)</td>
<td></td>
</tr>
</tbody>
</table>
### VOC

**Diagram**: Amount of volatile organic compounds emitted. Valid values: 0 to 1000. (%)

**Type**: doubleInclusive100

**Properties**
- content: simple
- default: 0

**Facets**
- Kind: Value, Annotation
  - minInclusive: 0
  - maxInclusive: 100

**Annotation**: Amount of volatile organic compounds emitted. Valid values: 0 to 1000. (%)

### Sulfur Content

**Diagram**: Percentage, by weight, of sulfur in the fuel used for emissions calculations as % or grains per 100 cu ft of gas vapor (fuel dependent). Valid values: 0 to 1000. (%)

**Type**: doubleExclusive100

**Properties**
- content: simple
- default: 0

**Facets**
- Kind: Value, Annotation
  - minInclusive: 0
  - maxExclusive: 100

**Annotation**: Percentage, by weight, of sulfur in the fuel used for emissions calculations as % or grains per 100 cu ft of gas vapor (fuel dependent). Valid values: 0 to 1000. (%)

### CO

**Diagram**: Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%)

**Type**: doubleInclusive100

**Properties**
- content: simple
- default: 0

**Facets**
- Kind: Value, Annotation
  - minInclusive: 0
  - maxInclusive: 100

**Annotation**: Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%)

### NOx

**Diagram**: Percent of nitrous oxides removed by pollution control measures. Valid values 0 to 1000. (%)

**Type**: doubleInclusive100

**Properties**
- content: simple
- default: 0

**Facets**
- Kind: Value, Annotation
  - minInclusive: 0
  - maxInclusive: 100

**Annotation**: Percent of nitrous oxides removed by pollution control measures. Valid values 0 to 1000. (%)
<table>
<thead>
<tr>
<th><strong>element category</strong></th>
<th><strong>Generator/pollutionControlFactorSOx</strong></th>
<th><strong>Generator/pollutionControlFactorPM10</strong></th>
<th><strong>categoryGenerator/pm25ToPm10Ratio</strong></th>
<th><strong>categoryGenerator/incinerator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>diagram</strong></td>
<td><img src="image" alt="pollutionControlFactorSOx" /></td>
<td><img src="image" alt="pollutionControlFactorPM10" /></td>
<td><img src="image" alt="pm25ToPm10Ratio" /></td>
<td><img src="image" alt="incinerator" /></td>
</tr>
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<td><code>doubleInclusive100</code></td>
<td><code>doubleInclusive1</code></td>
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<td><strong>properties</strong></td>
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<td>content: simple</td>
<td>content: simple</td>
<td></td>
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<tr>
<td></td>
<td>default: 0</td>
<td>default: 0</td>
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<td>Annotation:</td>
<td>Annotation:</td>
<td>Annotation:</td>
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<td></td>
<td>minInclusive: 0</td>
<td>maxInclusive: 100</td>
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<td><strong>annotation</strong></td>
<td>documentation</td>
<td>documentation</td>
<td>documentation</td>
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</tr>
<tr>
<td></td>
<td>Percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
<td>Percent of 10-micron particulate matter removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
<td>PM 2.5 to PM 10 ratio. (dimensionless)</td>
<td></td>
</tr>
</tbody>
</table>

**PM 2.5 to PM 10 ratio. (dimensionless)**
Describes the operational characteristics of a source in the incinerator category.

- **typeCode**: Describes this category.
- **CO_EI**: CO emissions index. Valid values 0 to 1000. (kg/Metric Ton)
- **VOC_EI**: VOC emissions index. Valid values 0 to 1000. (kg/Metric Ton)
- **NOx_EI**: NOx emissions index. Valid values 0 to 1000. (kg/Metric Ton)
- **SOx_EI**: SOx emissions index. Valid values 0 to 1000. (kg/Metric Ton)
- **PM10_EI**: PM10 emissions index. Valid values 0 to 1000. (kg/Metric Ton)
- **pollutionControlFactorCO**: Percent of carbon monoxide removed by pollution control measures. Valid values 0 to 1000. (%)
- **pollutionControlFactorVOC**: Amount of volatile organic compounds emitted (kg/unit). Valid values 0 to 1000. (%)
- **pollutionControlFactorNOx**: Percent of nitrogen oxides removed by pollution control measures. Valid values 0 to 1000. (%)
- **pollutionControlFactorSOx**: Percent of sulfur oxides removed by pollution control measures. Valid values 0 to 1000. (%)
- **pollutionControlFactorPM10**: Percent of 10-micron particulate matter removed by pollution control measures. Valid values 0 to 1000. (%)
- **pm25ToPm10Ratio**: PM2.5 to PM10 ratio. Valid values 0 to 1000.

**properties**: content complex

**children**: `typeCode CO_EI VOC_EI NOx_EI SOx_EI PM10_EI pollutionControlFactorCO pollutionControlFactorVOC pollutionControlFactorNOx pollutionControlFactorSOx pollutionControlFactorPM10 pm25ToPm10Ratio`

**used by**: element `stationarySource`

**annotation**: documentation

Describes the operational characteristics of a source in the incinerator category.

**element categoryIncinerator**

**properties**

- **type**: `int1to2`
- **content**: simple
- **facets**: Kind Value Annotation
  - minInclusive: 1
  - maxInclusive: 2

**annotation**: documentation

Describes this category.
**element** categoryInincinerator/CO_EI

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
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<tr>
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<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>CO emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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</table>

**element** categoryInincinerator/VOC_EI

<table>
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<tr>
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<tr>
<td>annotation</td>
<td>documentation</td>
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<tr>
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<td>VOC emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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**element** categoryInincinerator/NOx_EI

<table>
<thead>
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<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>NOx emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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</table>

**element** categoryInincinerator/SOx_EI

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<tbody>
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<td>documentation</td>
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<td>SOx emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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**element** categoryInincinerator/PM10_EI

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<tr>
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<td>documentation</td>
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<tr>
<td>element</td>
<td>category/Incinerator/pollutionControlFactorCO</td>
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| facets  | Kind Value Annotation                        |
|         | minInclusive 0                              |
|         | maxInclusive 1000                           |
| annotation | documentation                                |
|         | PM10 emissions index. Valid values: 0 to 1000. (Kg/Metric Ton) |

<table>
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| facets  | Kind Value Annotation                         |
|         | minInclusive 0                               |
|         | maxInclusive 100                             |
| annotation | documentation                                |
|         | Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%) |

<table>
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| facets  | Kind Value Annotation                         |
|         | minInclusive 0                               |
|         | maxInclusive 100                             |
| annotation | documentation                                |
|         | Percent of nitrous oxides removed by pollution control measures. Valid values: 0 to 1000. (%) |

<table>
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| facets  | Kind Value Annotation                         |
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|         | maxInclusive 100                             |
| annotation | documentation                                |
|         | Percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%) |</p>
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<thead>
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<th>category</th>
<th>diagram</th>
<th>properties</th>
<th>facets</th>
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<tr>
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<td>pollutionControlFactorPM10</td>
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<td>content simple default 0</td>
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<tr>
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<td>Percent of 10-micron particulate matter removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
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<td>categoryOther</td>
<td>categoryOther</td>
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</table>
Describes the operational characteristics of a source in the "other" category.
maxOcc: 1
content: simple
default: 0

facets
Kind Value Annotation
minInclusive: 0
maxInclusive: 5

annotation documentation
Defines fuel units. Also defined in the STN_FUEL_UNITS table in FLEET. Valid values: 0 = Metric Tons, 1=Kloliters, 2 = 1000s of m3, 3 = Hours, 4 = Test Cyles, 5 = Gallons.

element categoryOther/CO_EI

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
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<tr>
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annotation documentation
CO emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)

element categoryOther/THC_EI

diagram

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<th>Annotation</th>
</tr>
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<tr>
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annotation documentation
Hydrocarbon emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)

element categoryOther/NOx_EI

diagram

<table>
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<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
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<tr>
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annotation documentation
NOx emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)

element categoryOther/SOx_EI

diagram

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<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
<td>maxInclusive</td>
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</table>

annotation documentation
SOx emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)
<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>maxInclusive</td>
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<td></td>
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</tr>
</tbody>
</table>

**annotation documentation**

SOx emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)

**element categoryOther/PM10_EI**

**diagram**

PM10 emissions index per unit of fuel. Valid values 0 to 1000. (kg/unit)

**type** doubleInclusive1000

**properties**

- content simple
- default 0

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
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<tbody>
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<tr>
<td>maxInclusive</td>
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</table>

**annotation documentation**

PM10 emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)

**element categoryOther/pollutionControlFactorCO**

**diagram**

Percent of carbon monoxide removed by pollution control measures. Valid values 0 to 1000. (%)

**type** doubleInclusive100

**properties**

- content simple
- default 0

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
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<tbody>
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</table>

**annotation documentation**

Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%)

**element categoryOther/pollutionControlFactorHC**

**diagram**

Percent of hydrocarbons removed by pollution control measures. Valid values 0 to 1000. (%)

**type** doubleInclusive100

**properties**

- content simple
- default 0

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**annotation documentation**

Percent of hydrocarbons removed by pollution control measures. Valid values: 0 to 1000. (%)

**element categoryOther/pollutionControlFactorNOx**

**diagram**

Percent of nitrogen oxides removed by pollution control measures. Valid values 0 to 1000. (%)

**type** doubleInclusive100

**properties**

- content simple
- default 0

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>
Percent of nitrous oxides removed by pollution control measures. Valid values: 0 to 1000. (%)

element categoryOther/pollutionControlFactorSOx
diagram

```
<element name="pollutionControlFactorSOx">
Percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%)
```
type doubleInclusive100
properties content simple
default 0
facets Kind Value Annotation
minInclusive 0
maxInclusive 100
annotation documentation

Percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%)

element categoryOther/pollutionControlFactorPM10
diagram

```
<element name="pollutionControlFactorPM10">
Percent of 10-micron particulate matter removed by pollution control measures. Valid values: 0 to 1000. (%)
```
type doubleInclusive100
properties content simple
default 0
facets Kind Value Annotation
minInclusive 0
maxInclusive 100
annotation documentation

Percent of 10-micron particulate matter removed by pollution control measures. Valid values: 0 to 1000. (%)

element categoryOther/pm25ToPm10Ratio
diagram

```
<element name="pm25ToPm10Ratio">
PM2.5 to PM10 Ratio. Valid values: 0 to 1000.
```
type doubleInclusive1
properties content simple
default 1
facets Kind Value Annotation
minInclusive 0
maxInclusive 1
annotation documentation

PM2.5 to PM10 Ratio. Valid values: 0 to 1000.

element categoryRecordCode
diagram

```
<element name="categoryRecordCode">
An integer value for a category to use at the basis of a new stationary source operation. This value comes from the CATEGORY_REC_ID column in the STN_CATEGORY table in the AERQ_FLEET database. Valid values: 0 to 87, 89 to 148.
```
properties content complex
children recordCode
used by element stationarySource
annotation documentation
An integer value for a category to use as the basis of a new stationary source operation. This value comes from the CATEGORY_REC_ID column in the STN_CATEGORY table in the AEDT FLEET database.

**element categorySandSaltPile**

- **typeCode**
  - Describes this category.

- **surfaceWindSpeedFraction**
  - Surface wind speed fraction. Valid values 0 to 1000. (unitless)

- **surfaceRoughness**
  - The surface roughness of the pile. Valid values 0 to 1000. (cm)

- **frictionVelocity**
  - Friction velocity. Valid values 0 to 1000. (m/s)

- **fastestMileOfWind**
  - Fastest mile of wind. Valid values 0 to 1000. (mi/s)

- **meanWindSpeed**
  - Average wind speed at sand or salt pile. Valid values 0 to 1000. (m/s)

- **moistureContent**
  - Percentage of sand or salt pile that is moisture. Valid values 0 to 1000. (%) (mass)

- **massDisturbedPerDisturbance**
  - The mass disturbed per disturbance. Valid values 0 to 1000. (kg/Ton)

- **erodedSurfaceArea**
  - Eroded surface area of pile. Valid values 0 to 1000. (ha/yr)

**properties**

- **content**
  - complex

**children**

- typeCode
- surfaceWindSpeedFraction
- surfaceRoughness
- frictionVelocity
- fastestMileOfWind
- meanWindSpeed
- moistureContent
- massDisturbedPerDisturbance
- erodedSurfaceArea

**used by** element **stationarySource**

**annotation**

- documentation
  - Describes the emissions characteristics of a source in the sand or salt pile category.

**element categorySandSaltPile/typeCode**

- **type**
  - int1to5

**properties**

- **content**
  - simple

**facets**

- Kind
- Value
- Annotation

- minInclusive: 1
- maxInclusive: 5

**annotation**

- documentation
  - Describes this category.

**element categorySandSaltPile/surfaceWindSpeedFraction**

- **type**
  - doubleInclusive1

**properties**

- **content**
  - simple

- default: 0
Facets:

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Annotation:
doctoration
Surface wind speed fraction. Valid values: 0 to 1000. (unitless)

element categorySandSaltPile/surfaceRoughness

diagram

The surface roughness of the pile. Valid values: 0 to 1000. (cm)

type doubleExclusiveRange100

properties

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minExclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Annotation:
doctoration
The surface roughness of the pile. Valid values: 0 to 1000. (cm)

element categorySandSaltPile/frictionVelocity

diagram

Friction velocity. Valid values: 0 to 1000. (m/s)

type doubleExclusive100

properties

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Annotation:
doctoration
Friction velocity. Valid values: 0 to 1000. (m/s)

element categorySandSaltPile/fastestMileOfWind

diagram

Fastest mile of wind. Valid values: 0 to 1000. (m/s)

type doubleExclusive100

properties

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Annotation:
doctoration
Fastest mile of wind. Valid values: 0 to 1000. (m/s)

element categorySandSaltPile/meanWindSpeed

diagram

Average wind speed at sand or salt pile. Valid values: 0 to 1000. (m/s)

type doubleExclusive100

properties

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Annotation:
doctoration
Average wind speed at sand or salt pile. Valid values: 0 to 1000. (m/s)
Average wind speed at sand or salt pile. Valid values: 0 to 1000. (m/s)

(element category SandSaltPile/moistureContent)

diagram

Type: doubleExclusiveRange100

Properties:
- Simple content
- Default: 0.01

Facets:
- Kind: Value, Annotation
  - minExclusive: 0
  - maxExclusive: 100

Annotation:
- Documentation: Percentage of sand or salt pile that is moisture. Valid values: 0 to 1000. (%)

(element category SandSaltPile/massDisturbedPerDisturbance)

diagram

Type: doubleExclusive1000

Properties:
- Simple content
- Default: 0

Facets:
- Kind: Value, Annotation
  - minInclusive: 0
  - maxExclusive: 1000

Annotation:
- Documentation: The mass disturbed per disturbance. Valid values: 0 to 1000. (Metric Tons)

(element category SandSaltPile/erodedSurfaceArea)

diagram

Type: doubleExclusive10000

Properties:
- Simple content
- Default: 0

Facets:
- Kind: Value, Annotation
  - minInclusive: 0
  - maxExclusive: 10000

Annotation:
- Documentation: Eroded surface area of pile. Valid values: 0 to 1000. (meters²)

(element category SolventDegreaser)

diagram

TypeCode

SolutionDensity

PercentSolventDisposed

Properties:
- Content: complex

Children:
- TypeCode, SolutionDensity, PercentSolventDisposed

Used by:
- Element: stationarySource

Annotation:
- Documentation
Describes the operational characteristics of a source in the solvent degreaser category.

**element categorySolventDegreaser/typeCode**

<table>
<thead>
<tr>
<th>properties content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td>minInclusive 1</td>
</tr>
<tr>
<td>maxInclusive 13</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Describes this category.</td>
</tr>
</tbody>
</table>

**element categorySolventDegreaser/solutionDensity**

<table>
<thead>
<tr>
<th>properties content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td>minInclusive 0</td>
</tr>
<tr>
<td>maxExclusive 2000</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Density of the deicing solution. Valid values: 0 to 1000. (g/L)</td>
</tr>
</tbody>
</table>

**element categorySolventDegreaser/percentSolventDisposed**

<table>
<thead>
<tr>
<th>properties content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Percentage of solvent removed by environmental controls. Valid values: 0 to 1000. (%)</td>
</tr>
</tbody>
</table>

**element categorySurfaceCoatingPainting**

<table>
<thead>
<tr>
<th>properties content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children typeCode VOC_EI pollutionControlFactorVOC</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Describes the operational characteristics of a source in the surface coating or painting category.</td>
</tr>
</tbody>
</table>

**element categorySurfaceCoatingPainting/typeCode**
element categorySurfaceCoatingPainting/VOC_EI

diagram

VOC emissions index. Valid values: 0 to 1000. (kg/kiloliter)

type doubleInclusive1000

properties content simple

default 0

facets Kind Value Annotation

minInclusive 0
maxInclusive 1000

annotation documentation

VOC emissions index. Valid values: 0 to 1000. (kg/kiloliter)


element categorySurfaceCoatingPainting/pollutionControlFactorVOC

diagram

Percentage of volatile organic compounds removed by environmental controls. Valid values: 0 to 1000. (%)

type doubleInclusive100

properties content simple

default 0

facets Kind Value Annotation

minInclusive 0
maxInclusive 100

annotation documentation

Percentage of volatile organic compounds removed by environmental controls. Valid values: 0 to 1000. (%)


element categoryTrainingFire

diagram

...
Supports legacy EDMS studies relating to content contained in the TRAINING_FIRES table. This element supports the definition of training fires for scenario layouts. Training fire data are used in both emissions and dispersion analyses.

element `categoryTrainingFire/typeCode`

diagram

Type `int1to5`

properties content simple

facets Kind Value Annotation

minInclusive 1

maxInclusive 5

annotation documentation

Describes this category.

element `categoryTrainingFire/CO`

diagram

Type `xs:double`

properties content simple

annotation documentation

Amount of carbon monoxide emitted. Valid values: 0 to 3000. (g/gal)

element `categoryTrainingFire/VOC`

diagram

Type `xs:double`

properties content simple
<table>
<thead>
<tr>
<th>element</th>
<th>category</th>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TrainingFire/NOx</td>
<td>Amount of volatile organic compounds emitted. Valid values: 0 to 100. (g/gal)</td>
</tr>
<tr>
<td></td>
<td>TrainingFire/SOx</td>
<td>Amount of nitrous oxides emitted. Valid values: 0 to 100. (g/gal)</td>
</tr>
<tr>
<td></td>
<td>TrainingFire/PM10</td>
<td>Amount of sulfur oxides emitted. Valid values: 0 to 10. (g/gal)</td>
</tr>
<tr>
<td></td>
<td>centroid</td>
<td>Amount of 10-micron particulate matter emitted. Valid values: 0 to 1000. (g/gal)</td>
</tr>
</tbody>
</table>
element centroid/stateFips

documentation
Describes the geometric center of a polygon.

diagram

- stateFips
  Optional census state identifier.
- countyFips
  Optional census county identifier.
- blockid
  Optional census BLOCK ID.
- bnid
  Optional census BNA ID.
- centroid
  Describes the geometric center of a polygon.
- latitude
  Latitude specified as degrees in decimal format. Can include optional attribute positive.
- latitudeDMS
  Latitude expressed as dd/mm/ss with optional indicator N, S.
- longitude
  Longitude specified as degrees in decimal format. Can include optional attribute positive.
- longitudeDMS
  Longitude expressed as dd/mm/ss with optional indicator E, W.
- utmE
  UTM Easterning of the point in meters east from a central meridian.
- utmN
  UTM Northing of the point in meters north of the equator.
- utmZone
  UTM Zone of the point. A default zone can be set in the <xref>zone</xref> tag.
- elevation
  The centroid's elevation above MSL (ft). If not used, if not specified, AEDT will use elevation of operation airport.
- count
  The population count of the centroid. Valid values 0 to 999999.

properties
content complex

children
stateFips countyFips blockid bnid latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation count

used by
group receptorGroup

annotation
documentation
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>centroid/countyFips</td>
<td><img src="countyFips.png" alt="Diagram" /></td>
<td><code>xs:int</code></td>
<td>content simple</td>
<td>Optional census county identifier.</td>
</tr>
<tr>
<td>centroid/blockId</td>
<td><img src="blockId.png" alt="Diagram" /></td>
<td><code>xs:int</code></td>
<td>content simple</td>
<td>Optional census BLOCK ID.</td>
</tr>
<tr>
<td>centroid/bnai</td>
<td><img src="bnai.png" alt="Diagram" /></td>
<td><code>string6</code></td>
<td>content simple</td>
<td>Optional census BNA ID.</td>
</tr>
<tr>
<td>centroid/elevation</td>
<td><img src="elevation.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td>minOcc 0, maxOcc 1, content simple</td>
<td>The centroid's elevation above MSL (ft) if terrain not used. If not specified, AEDT will use elevation of operation airport.</td>
</tr>
<tr>
<td>centroid/count</td>
<td><img src="count.png" alt="Diagram" /></td>
<td><code>xs:int</code></td>
<td>content simple</td>
<td>The population count of the centroid. Valid values: 0 to 999999.</td>
</tr>
<tr>
<td>climate</td>
<td><img src="climate.png" alt="Diagram" /></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Characterizes the climate during the study.

**element climate/identifier**

- **diagram**
  - Identifier of the climate condition.
- **type** `string8`
- **properties** content simple
- **facets**
  - Kind: Annotation
  - minLength: 0
  - maxLength: 8
- **annotation** documentation
  - Identifier of the climate condition.

**element climate/temperature**

- **diagram**
  - Temperature in the climate condition. (°F)
- **type** `xs:float`
- **properties** content simple
- **annotation** documentation
  - Temperature in the climate condition. (°F)

**element climate/pressure**

- **diagram**
  - Atmospheric pressure in the climate condition. (in Hg)
- **properties** content simple
- **annotation** documentation
  - Atmospheric pressure in the climate condition. (in Hg)
### type

| `xs:float` |

- **properties**: `content simple`
- **annotation**: `documentation`
  - Atmospheric pressure in the climate condition. (in Hg)

#### element `climate/humidity`

- **diagram**: ![Humidity](image)
  - Humidity in the climate condition. (%)
- **type**: `xs:double`
- **properties**: `content simple`
- **annotation**: `documentation`
  - Humidity in the climate condition. (%)

#### element `climate/headWind`

- **diagram**: ![Head Wind](image)
  - Velocity of headwind. (kts)
- **type**: `xs:float`
- **properties**: `minOcc 0`  
  - `maxOcc 1`  
  - `content simple`
- **annotation**: `documentation`
  - Velocity of headwind. (kts)

#### element `climate/seaLevelPressure`

- **diagram**: ![Sea Level Pressure](image)
  - Atmospheric pressure at sea level. (in Hg)
- **type**: `xs:double`
- **properties**: `minOcc 0`  
  - `maxOcc 1`  
  - `content simple`
- **annotation**: `documentation`
  - Atmospheric pressure at sea level. (in Hg)

#### element `climate/dewPoint`

- **diagram**: ![Dew Point](image)
  - Dew point in the climate condition. (°F)
- **type**: `xs:double`
- **properties**: `minOcc 0`  
  - `maxOcc 1`  
  - `content simple`
- **annotation**: `documentation`
  - Dew point in the climate condition. (°F)

#### element `climate/windDirection`

- **diagram**: ![Wind Direction](image)
  - Wind direction. Valid values: 0-360. (Degrees)
- **type**: `xs:double`
- **properties**: `minOcc 0`  
  - `maxOcc 1`  
  - `content simple`
- **annotation**: `documentation`
### element climate/visibility

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Climate Visibility Diagram" /></td>
</tr>
</tbody>
</table>

**type** `xs:double`

**properties**
- `minOcc`: 0
- `maxOcc`: 1
- `content`: simple

**annotation**
- `documentation`: Visibility in the climate condition. (mi)

### element dailyProfile

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Daily Profile Diagram" /></td>
</tr>
</tbody>
</table>

**properties**
- `content`: complex

**children**
- `profileName`
- `temporalFactorSunday`
- `temporalFactorMonday`
- `temporalFactorTuesday`
- `temporalFactorWednesday`
- `temporalFactorThursday`
- `temporalFactorFriday`
- `temporalFactorSaturday`

**used by**
- `element dailyProfileSet`

**annotation**
- `documentation`: Supports legacy EDMS studies relating to content contained in the DAILY_PROFILES. This element supports the definition of temporal factors on a daily operational basis.

### element dailyProfile/profileName

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Profile Name Diagram" /></td>
</tr>
</tbody>
</table>

**type** `string100`

**properties**
- `content`: simple

**facets**
- `minLength`: 0
- `maxLength`: 100

**annotation**
- `documentation`
### dailyProfile/temporalFactorSunday

<table>
<thead>
<tr>
<th>diagram</th>
<th>temporalFactorSunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
|          | maxOcc 1  
| content | simple  |
| facets  | Kind  Value Annotation  
|         | minInclusive 0  |
| annotation | documentation  
|          | Factor applied to activity for operations on Sundays. Valid values: 0.0000 to 1.0000.  |

### dailyProfile/temporalFactorMonday

<table>
<thead>
<tr>
<th>diagram</th>
<th>temporalFactorMonday</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
|          | maxOcc 1  
| content | simple  |
| facets  | Kind  Value Annotation  
|         | minInclusive 0  |
| annotation | documentation  
|          | Factor applied to activity for operations on Mondays. Valid values: 0.0000 to 1.0000.  |

### dailyProfile/temporalFactorTuesday

<table>
<thead>
<tr>
<th>diagram</th>
<th>temporalFactorTuesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
|          | maxOcc 1  
| content | simple  |
| facets  | Kind  Value Annotation  
|         | minInclusive 0  |
| annotation | documentation  
|          | Factor applied to activity for operations on Tuesdays. Valid values: 0.0000 to 1.0000.  |

### dailyProfile/temporalFactorWednesday

<table>
<thead>
<tr>
<th>diagram</th>
<th>temporalFactorWednesday</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
|          | maxOcc 1  
| content | simple  |
| facets  | Kind  Value Annotation  
|         | minInclusive 0  |
| annotation | documentation  
|          | Factor applied to activity for operations on Wednesdays. Valid values: 0.0000 to 1.0000.  |

### dailyProfile/temporalFactorThursday

<table>
<thead>
<tr>
<th>diagram</th>
<th>temporalFactorThursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
|          | maxOcc 1  
| content | simple  |
| facets  | Kind  Value Annotation  
|         | minInclusive 0  |
| annotation | documentation  
|          | Factor applied to activity for operations on Thursdays. Valid values: 0.0000 to 1.0000.  |
element `dailyProfile/`temporalFactorFriday``

diagram

```
<table>
<thead>
<tr>
<th>kind</th>
<th>value</th>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
```

**type** `doubleMin0`

**properties**
- `minOcc` 0
- `maxOcc` 1
- `content` simple

**annotation**

Factor applied to activity for operations on Fridays. Valid values: 0.0000 to 1.0000.

```
<table>
<thead>
<tr>
<th>name</th>
<th>value</th>
<th>default</th>
<th>fixed</th>
<th>annotation</th>
</tr>
</thead>
</table>
```


```xml
<element name="dailyProfile/" temporalFactorFriday">
  <annotation>Factor applied to activity for operations on Fridays. Valid values: 0.0000 to 1.0000.</annotation>
</element>
```

```
<table>
<thead>
<tr>
<th>name</th>
<th>value</th>
<th>default</th>
<th>fixed</th>
<th>annotation</th>
</tr>
</thead>
</table>
```

```
<table>
<thead>
<tr>
<th>name</th>
<th>value</th>
<th>default</th>
<th>fixed</th>
<th>annotation</th>
</tr>
</thead>
</table>
```


```xml
<element name="dailyProfile/" temporalFactorSaturday">
  <annotation>Factor applied to activity for operations on Saturdays. Valid values: 0.0000 to 1.0000.</annotation>
</element>
```

```
<table>
<thead>
<tr>
<th>name</th>
<th>value</th>
<th>default</th>
<th>fixed</th>
<th>annotation</th>
</tr>
</thead>
</table>
```


```xml
<element name="dailyProfile/" temporaFactorFriday">
  <annotation>Factor applied to activity for operations on Thursdays. Valid values: 0.0000 to 1.0000.</annotation>
</element>
```

```
<table>
<thead>
<tr>
<th>name</th>
<th>value</th>
<th>default</th>
<th>fixed</th>
<th>annotation</th>
</tr>
</thead>
</table>
```


```xml
<element name="dailyProfile/" temporaFactorFriday">
  <annotation>Factor applied to activity for operations on Fridays. Valid values: 0.0000 to 1.0000.</annotation>
</element>
```

```
<table>
<thead>
<tr>
<th>name</th>
<th>value</th>
<th>default</th>
<th>fixed</th>
<th>annotation</th>
</tr>
</thead>
</table>
```


```xml
<element name="dailyProfile/" temporaFactorFriday">
  <annotation>Factor applied to activity for operations on Saturdays. Valid values: 0.0000 to 1.0000.</annotation>
</element>
```

```
<table>
<thead>
<tr>
<th>name</th>
<th>value</th>
<th>default</th>
<th>fixed</th>
<th>annotation</th>
</tr>
</thead>
</table>
```


```xml
<element name="dailyProfileSet">
  <annotation>Supports the definition and use of DAILY_PROFILES for the daily variation of operations.</annotation>
</element>
```
Supports the definition and use of DAILY_PROFILES for the daily variation of operations.

attribute dailyProfileSet

type xs:int

properties use optional

element dispersionWeight

diagram

properties content complex

children dispersionWeight1 dispersionWeight3 dispersionWeight5 dispersionWeight7 dispersionWeight9

used by element backbone

annotation documentation
Dispersion weights associated with the subtracks for this backbone. Subtracks are numbered in increasing order from the backbone outward. The allowable number of subtracks for a backbone are 1, 3, 5, 7 and 9. Valid dispersion weight values are greater than one and less than or equal to 1. The sum of the dispersion weights for this backbone must equal 1.

element dispersionWeight/dispersionWeight1

diagram

properties content complex

children backbone

element dispersionWeight/dispersionWeight3

diagram

properties content complex

children backbone weight1 weight11
**type** dispersionWeight0Type

**properties** content complex

**children** backbone weight1 weightr1 weightl2 weightr2 weightl3 weightr3 weightl4 weightr4

element emissionsUsage

diagram

```
emissionsUsage --> yearlyValue
  describes the amount of emissions for a given activity profile.
```

**properties** content complex

**children** yearlyValue hourlyValue byPeakQuarterHour activityProfile

**used by** elements parkingFacilityOperation roadwayOperation stationarySourceOperation

**annotation** documentation

Describes the amount of emissions for a given activity profile.

element emissionsUsage/yearlyValue
**element emissionsUsage/hourlyValue**

- **Diagram:** ![Diagram](image)
- **Type:** `xs:double`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: `simple`
- **Annotation:**
  - **Documentation:** Annualized amount of emissions.

**element emissionsUsage/byPeakQuarterHour**

- **Diagram:** ![Diagram](image)
- **Type:** `xs:boolean`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: `simple`
  - `default`: `false`
- **Annotation:**
  - **Documentation:** Indicates if the hourly value is the peak hourly value.

**element emissionsUsage/activityProfile**

- **Diagram:** ![Diagram](image)
- **Type:** `string40`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: `simple`
- **Used by:** `activityProfileSet`
- **Facets:**
  - **Kind** | **Value** | **Annotation**
  - `minLength`: 0
  - `maxLength`: 40
- **Annotation:**
  - **Documentation:** An activity profile type (e.g. reference to one of hourlyProfile, dailyProfile or weeklyProfile).

**element engineModeEmissionFactors**

- **Diagram:** ![Diagram](image)
Supports legacy EDMS studies relating to content contained in the USER_CREATED_AIRCRAFT table. This element supports the definition of custom emission factor elements.

**element engineModeEmissionFactors/time**

- **diagram**: Time engine operates in a given mode. Valid values: nonnegative. (minutes)
- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0
- **annotation**: Time engine operates in a given mode. Valid values: nonnegative. (minutes)

**element engineModeEmissionFactors/fuel**

- **diagram**: Rate of fuel burn in given mode. Valid values: nonnegative. (kg/s)
- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0
- **annotation**: Rate of fuel burn in given mode. Valid values: nonnegative. (kg/s)

**element engineModeEmissionFactors/CO**

- **diagram**: Amount of carbon monoxide emitted. Valid values: nonnegative. (kg/s)
<table>
<thead>
<tr>
<th>element name</th>
<th>type</th>
<th>properties</th>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>engineModeEmissionFactors/HC</td>
<td>xs:double</td>
<td>minOcc: 0</td>
<td>Amount of carbon monoxide emitted. Valid values: nonnegative. (kg/s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maxOcc: 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>default: 0</td>
<td></td>
</tr>
<tr>
<td>engineModeEmissionFactors/HC</td>
<td>xs:double</td>
<td>minOcc: 0</td>
<td>Amount of hydrocarbons emitted. Valid values: nonnegative. (kg/s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maxOcc: 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>default: 0</td>
<td></td>
</tr>
<tr>
<td>engineModeEmissionFactors/HC</td>
<td>xs:double</td>
<td>minOcc: 0</td>
<td>Amount of nitrous oxide emitted. Valid values: nonnegative. (kg/s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maxOcc: 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>default: 0</td>
<td></td>
</tr>
<tr>
<td>engineModeEmissionFactors/HC</td>
<td>xs:double</td>
<td>minOcc: 0</td>
<td>Amount of particulate matter emitted. Valid values: nonnegative. (kg/s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maxOcc: 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>default: 0</td>
<td></td>
</tr>
<tr>
<td>engineModeEmissionFactors/HC</td>
<td>xs:double</td>
<td>minOcc: 0</td>
<td>Smoke number for the engine mode. Valid values: nonnegative. (kg/s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maxOcc: 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>default: 0</td>
<td></td>
</tr>
</tbody>
</table>
### element gate

**Diagram**

- **name**
  - Identifying name of gate.

- **elevation**
  - Gate's elevation above mean sea level in meters. Valid values: 0 to 5000 m.

- **releaseHeight**
  - Height above ground level at which emissions are released into the atmosphere. Valid values: Variable, by airport (m).

- **sigmaY**
  - Horizontal dispersion parameter. For additional information, see the EEMS Application Manual. Valid values: Variable, by airport (n/s).

- **sigmaZ**
  - Vertical dispersion parameter. For additional information, see the EEMS Application Manual. Valid values: Variable, by airport (n/m).

- **oneOrThreeCoords3DGroupSet**
  - Type of coordinate specifying the area.

- **pointCoord**
  - Choice of a single point coordinate.

- **polygonCoords**
  - Choice of a 2D polygon.

**Properties**

- **content** complex

**Children**

- `name`
- `elevation`
- `releaseHeight`
- `sigmaY`
- `sigmaZ`
- `pointCoord`
- `polygonCoords`

**Used by**

- element `gateSet`

**Annotation**

**Documentation**

Supports legacy EDMS studies relating to content contained in the GATES table. This element supports the definition of gates within an airport layout. In dispersion analyses, GSE, AGE, and APU emissions originate from the gate locations. Gates are needed for sequence modeling, which includes all dispersion analyses.

### element gate/name

**Diagram**

- **name**
  - Identifying name of gate.

**Type**

- `string40`

**Properties**

- **content** simple

**Facets**

- Kind: `Annotation`
- `minLength`: 0
- `maxLength`: 40

**Annotation**

**Documentation**

Identifying name of gate.

### element gate/elevation

**Diagram**

- **elevation**
  - Gate's elevation above mean sea level in meters. Valid values: 0 to 5000 m.

**Type**

- `xs:double`

**Properties**

- `minOcc`: 0
- `maxOcc`: 1

**Content** simple

**Annotation**

**Documentation**
Gate's elevation above mean sea level in meters. Valid values: -500 to 5000. (m)

**element gate/releaseHeight**

- **Diagram**: Diagram showing the release height. Height above ground level at which emissions are released into the atmosphere. Valid values: Variable, by airport. (m)
- **Type**: xs:double
- **Properties**:
  - minOccurs: 0
  - maxOccurs: 1
  - content: simple
- **Annotation**: Documentation

**element gate/sigmaY**

- **Diagram**: Diagram showing the horizontal dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: Variable, by airport. (m)
- **Type**: xs:double
- **Properties**:
  - minOccurs: 0
  - maxOccurs: 1
  - content: simple
- **Annotation**: Documentation

**element gate/sigmaZ**

- **Diagram**: Diagram showing the vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: Variable, by airport. (m)
- **Type**: xs:double
- **Properties**:
  - minOccurs: 0
  - maxOccurs: 1
  - content: simple
- **Annotation**: Documentation

**element gateSet**

- **Diagram**: Diagram showing the gate set. Supports legacy EDMS studies related to content contained in the GATES table. This element supports the definition of gates within an airport layout. In dispersion analysis, GATE, ADE, and ASI emissions originate from the gate locations. Gates are needed for scenario modeling, which includes all dispersion analysis.
- **Properties**: content complex
- **Children**: gate
- **Used by**: complexType airportLayoutType
- **Annotation**: Documentation
Supports legacy EDMS studies relating to content contained in the GATES table. This element supports the definition of gates within an airport layout. In dispersion analyses, GSE, AGE, and APU emissions originate from the gate locations. Gates are needed for sequence modeling, which includes all dispersion analyses.

element grid

describes a grid of points.

width
Width of the grid, (m).

height
Height of the grid, (m).

numWidth
Number of points to spread across the width of the grid. The total number of points in the grid is numWidth * numHeight. Points will be located along width of grid using the formula \(i \times (width - numWidth)\) where \(i\) is the index of the point (0 ... numWidth - 1). Valid values: 1 to 999.

numHeight
Number of points to spread across the height of the grid. The total number of points in the grid is numWidth * numHeight. Points will be located along height of grid using the formula \(i \times (height - numHeight)\) where \(i\) is the index of the point (0 ... numHeight - 1). Valid values: 1 to 999.

receptorHeight
The height of the receptor above ground, (m).

elevation
The grid's elevation above MSL, (f) if terrain not used. If not specified, AEDIT will use elevation of operation airport.

coord2DGroupp
Indicate how a two-dimensional group is specified.

dynamic
Make the grid as either a dynamic grid or a receptor grid.

diagram

latitude
Latitude specified as degrees in decimal format. Can include optional attribute positive.

latitudeEDMS
Latitude expressed as dd'nn''mm'' with optional indicator N, S, E, W.

longitude
Longitude specified as degrees in decimal format. Can include optional attribute positive.

longitudeEDMS
Longitude expressed as dd'nn''mm'' with optional indicator N, S, E, W.

utmN
UTM Northing of the point in decimal meters north of the equator.

utmE
UTM Easting of the point in decimal meters east from a central meridian.

utmZone
UTM Zone of the point. A default zone can be set in the nitro/defaults tag.
### annotation documentation
Marks the grid as either a dynamic grid or a receptor grid.

#### elements

### grid/dynamic

#### diagram
![Diagram of a dynamic grid]

- **type**: xs:boolean
- **properties**:
  - minOcc 0
  - maxOcc 1
  - content simple
  - default false

#### annotation documentation
Marks the grid as either a dynamic grid or a receptor grid.

### grid/elevation

#### diagram
![Diagram of elevation]

- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
  - content simple

#### annotation documentation
The grid's elevation above MSL (ft) if terrain not used. If not specified, AEDT will use elevation of operation airport.

### grid/receptorHeight

#### diagram
![Diagram of receptor height]

- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
  - content simple

#### annotation documentation
The height of the receptor above ground. (m)

### grid/width

#### diagram
![Diagram of width]

- **type**: xs:double
- **properties**:
  - content simple

#### annotation documentation
Width of the grid. (nmi)
### Grid/Height

**Diagram**

Height of the grid (nmi).

**Type** `xs:double`

**Properties**
- content: simple

**Annotation**

Height of the grid (nmi).

### Grid/NumWidth

**Diagram**

Number of points to spread across the width of the grid. The total number of points in the grid is `numWidth` × `numHeight`. Points will be located along width of grid using the formula `i × (width÷numWidth)` where `i` is the index of the point (0 … `numWidth` – 1). Valid values: 1 to 999.

**Type** `xs:int`

**Properties**
- content: simple

### Grid/NumHeight

**Diagram**

Number of points to spread across the height of the grid. The total number of points in the grid is `numWidth` × `numHeight`. Points will be located along height of grid using the formula: `i × (width÷numHeight)` where `i` is the index of the point (0 … `numHeight` – 1). Valid values: 1 to 999.

**Type** `xs:int`

**Properties**
- content: simple

### Grid/XOffset

**Diagram**

The X-offset of the receptor grid in nautical miles.

**Type** `xs:double`

**Properties**
- minOcc: 0
- maxOcc: 1
- content: simple
- default: 0

**Annotation**

The X-offset of the receptor grid in nautical miles.

### Grid/YOffset

**Diagram**

The Y-offset of the receptor grid in nautical miles.

**Type** `xs:double`
The Y-offset of the receptor grid in nautical miles.

**element groundSupportEquipmentGateAssignment**

**diagram**

```
  gate
    Gate to which GSE is assigned.
```

**properties**
- minOcc: 0
- maxOcc: 1
- content: simple
- default: 0

**annotation documentation**
Supports legacy EDMS studies relating to content contained in the USER_CREATED_GSE table. This element supports the definition of user defined ground support equipment.

**children**
- **gate fractionAssigned**

**used by**
- element groundSupportEquipmentGateAssignmentSet

**annotation documentation**
Supports legacy EDMS studies relating to content contained in the USER_CREATED_GSE table. This element supports the definition of user defined ground support equipment.

**element groundSupportEquipmentGateAssignment/gate**

**type**
- `string20`

**properties**
- content: simple

**used by**
- element gateSet

**facets**
- Kind: Value: Annotation
  - minLength: 0
  - maxLength: 20

**annotation documentation**
Gate to which GSE is assigned.

**element groundSupportEquipmentGateAssignment/fractionAssigned**

**type**
- `doubleInclusive1`

**properties**
- content: simple

**facets**
- Kind: Value: Annotation
  - minInclusive: 0
  - maxInclusive: 1

**annotation documentation**
Fraction of GSE assigned to this gate. Must sum to 1.0 for all gate assignments for the GSE. Valid values: 0.0 to 1.0.

**element groundSupportEquipmentGateAssignmentSet**

**diagram**

```
  groundSupportEquipmentGateAssignmentSet
```

**annotation documentation**
Supports legacy EDMS studies relating to content contained in the USER_CREATED_GSE table. This element supports the definition of user defined ground support equipment.
attribute `groundSupportEquipmentGateAssignmentSet/@dummy`

type `xs:int`

properties use optional

element `groundSupportEquipmentLTOOperation`

diagram

properties content complex

children `gseID fuelType horsepower loadFactor manufactureYear departureOpTime arrivalOpTime`

used by element `groundSupportEquipmentLTOOperationSet`

annotation documentation

Describes operation of GSE operation.

element `groundSupportEquipmentLTOOperation/gseID`

diagram

`gseID`
The GSE ID.

type `xs:int`
<table>
<thead>
<tr>
<th>element</th>
<th>groundSupportEquipmentLTOOperation/fuelType</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image1.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td><code>fuelType</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>pattern</td>
<td><code>G</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>groundSupportEquipmentLTOOperation/horsepower</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
</tbody>
</table>
| properties | minOcc 0                          
|          | maxOcc 1                                    |
| content | simple                                      |
| annotation | documentation                         
| documentation | GSE horsepower in bore hp. Valid values: 0.00 to 10000.00. (hp) |

<table>
<thead>
<tr>
<th>element</th>
<th>groundSupportEquipmentLTOOperation/loadFactor</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image3.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
</tbody>
</table>
| properties | minOcc 0                          
|          | maxOcc 1                                    |
| content | simple                                      |
| annotation | documentation                         
| documentation | Load factor of GSE (will be empty for APU). Valid values: 0.00 to 100.00. |

<table>
<thead>
<tr>
<th>element</th>
<th>groundSupportEquipmentLTOOperation/manufactureYear</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:int</code></td>
</tr>
</tbody>
</table>
| properties | minOcc 0                          
|          | maxOcc 1                                    |
| content | simple                                      |
| annotation | documentation                         
| documentation | The manufacture year and age of the equipment, if not using system defaults. Valid values: 1940 to 2050. (Latest valid year will the year of the study.) |

<table>
<thead>
<tr>
<th>element</th>
<th>groundSupportEquipmentLTOOperation/departureOpTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image5.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
</tbody>
</table>
| properties | minOcc 0                          
|          | maxOcc 1                                    |
The number of minutes used for a departure aircraft operation. Valid values: 0.00 to 480.00. (min)

element groundSupportEquipmentLTOOperation/arrivalOpTime

diagram

The number of minutes used for an arrival aircraft operation. Valid values: 0.00 to 480.00. (min)

element groundSupportEquipmentLTOOperationSet

diagram

Supports legacy EDMS studies relating to content contained in the GSE_POPULATION table. This element supports the definition of user defined ground support equipment in operational usage.

attribute groundSupportEquipmentLTOOperationSet/@dummy

type xs:int

use optional

element groundSupportEquipmentPopulationOperation

diagram
The GSE ID.

The type of GSE.

GSE number of units. Valid values 0 to 10000.

Operation time, yearly. Valid values 0 to 7894 (hr)

Peak quarter hour operation time. Valid values 0 to 15 (min/hr)

Activity profile (quarterly, daily, monthly).

Horsepower is in hp units. Valid values 0 to 10000. (hp)

Load factor of GSE. (Will be empty for APLU). Valid values 0 to 100.

User version flag.

The manufacture year and age of the equipment. If not using system defaults. Valid values 1990 to 2050. (Latest valid date will be the year of the study.)

Supports legacy EDMS studies relating to content contained in the GSE_POPULATION and GSE_POPULATION_GATE_ASSIGNMENTS tables. This element supports the definition of ground support equipment in operational usage.
### Ground Support Equipment Population Operation

#### gseType
- **Type:** `xs:string`
- **Properties:** Content simple
- **Annotation:** Documentation

#### numUnits
- **Type:** `xs:double`
- **Properties:** Content simple
- **Annotation:** Documentation

#### annualOpTime
- **Type:** `xs:double`
- **Properties:** Content simple
- **Annotation:** Documentation

#### pkQtrHourOpTime
- **Type:** `xs:double`
- **Properties:** Content simple
- **Annotation:** Documentation

#### activityProfile
- **Type:** `string40`
- **Properties:** Content simple
- **Annotation:** Documentation

#### horsepower

**Facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>G</td>
<td>Gasoline</td>
</tr>
</tbody>
</table>
diagram

Horsepower is in hp units. Valid values: 0 to 10000. (hp)

```xml
<element name="groundSupportEquipmentPopulationOperation/loadFactor">
  <properties>
    <minOcc>0</minOcc>
    <maxOcc>1</maxOcc>
    <content>simple</content>
  </properties>
  <annotation>documentation
    Load factor of GSE. (Will be empty for APU.) Valid values: 0 to 100.
  </annotation>
</element>
```

```xml
<element name="groundSupportEquipmentPopulationOperation/useNonRoad">
  <properties>
    <content>simple</content>
  </properties>
  <annotation>documentation
    User non-road version flag.
  </annotation>
</element>
```

```xml
<element name="groundSupportEquipmentPopulationOperation/manufactureYear">
  <properties>
    <minOcc>0</minOcc>
    <maxOcc>1</maxOcc>
    <content>simple</content>
  </properties>
  <annotation>documentation
    The manufacture year and age of the equipment, if not using system defaults. Valid values: 1940 to 2050. (Latest valid date will be the year of the study.)
  </annotation>
</element>
```

```xml
<element name="groundSupportEquipmentPopulationOperationSet">
  <properties>
    <content>complex</content>
  </properties>
  <children>
    <groundSupportEquipmentPopulationOperation/>
  </children>
</element>
```
<table>
<thead>
<tr>
<th>Used by</th>
<th>Group:</th>
<th>\texttt{airportActivityGroup}</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dummy</td>
<td>\texttt{xs:int}</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Annotation**

Supports legacy EDMS studies relating to content contained in the GSE\_POPULATION table. This element supports the definition of user defined ground support equipment in operational usage.

**Attribute** \texttt{groundSupportEquipmentPopulationOperationSet@dummy}

<table>
<thead>
<tr>
<th>Type</th>
<th>\texttt{xs:int}</th>
</tr>
</thead>
</table>

**Properties**

<table>
<thead>
<tr>
<th>Use</th>
<th>Optional</th>
</tr>
</thead>
</table>

**Element** \texttt{monthlyProfile}

**Diagram**

Supports legacy EDMS studies relating to content contained in the MONTHLY\_PROFILES. This element supports the definition of temporal factors on a monthly operational basis.

**Properties**

<table>
<thead>
<tr>
<th>Content</th>
<th>Complex</th>
</tr>
</thead>
</table>

**Children**

- \texttt{profileName}
- \texttt{temporalFactorJanuary}
- \texttt{temporalFactorFebruary}
- \texttt{temporalFactorMarch}
- \texttt{temporalFactorApril}
- \texttt{temporalFactorMay}
- \texttt{temporalFactorJune}
- \texttt{temporalFactorJuly}
- \texttt{temporalFactorAugust}
- \texttt{temporalFactorSeptember}
- \texttt{temporalFactorOctober}
- \texttt{temporalFactorNovember}
- \texttt{temporalFactorDecember}

**Used by**

- \texttt{monthlyProfileSet}
Supports legacy EDMs studies relating to content contained in the MONTHLY_PROFILES. This element supports the definition of temporal factors on a monthly operational basis.

**element monthlyProfile/profileName**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string100</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

documentation

Name of profile.

**element monthlyProfile/temporalFactorJanuary**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td>content simple</td>
<td></td>
</tr>
</tbody>
</table>

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

documentation

Factor applied to activity for operations during January. Valid values: 0.0000 to 1.0000.

**element monthlyProfile/temporalFactorFebruary**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td>content simple</td>
<td></td>
</tr>
</tbody>
</table>

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

documentation

Factor applied to activity for operations during February. Valid values: 0.0000 to 1.0000.

**element monthlyProfile/temporalFactorMarch**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td>content simple</td>
<td></td>
</tr>
</tbody>
</table>

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

documentation

Factor applied to activity for operations during March. Valid values: 0.0000 to 1.0000.
element monthlyProfile/temporalFactorApril

diagram

**temporalFactorApril**

Factor applied to activity for operations during April. Valid values: 0.0000 to 1.0000.

type doubleMin0

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minInclusive 0

annotation documentation
Factor applied to activity for operations during April. Valid values: 0.0000 to 1.0000.

element monthlyProfile/temporalFactorMay

diagram

**temporalFactorMay**

Factor applied to activity for operations during May. Valid values: 0.0000 to 1.0000.

type doubleMin0

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minInclusive 0

annotation documentation
Factor applied to activity for operations during May. Valid values: 0.0000 to 1.0000.

element monthlyProfile/temporalFactorJune

diagram

**temporalFactorJune**

Factor applied to activity for operations during June. Valid values: 0.0000 to 1.0000.

type doubleMin0

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minInclusive 0

annotation documentation
Factor applied to activity for operations during June. Valid values: 0.0000 to 1.0000.

element monthlyProfile/temporalFactorJuly

diagram

**temporalFactorJuly**

Factor applied to activity for operations during July. Valid values: 0.0000 to 1.0000.

type doubleMin0

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minInclusive 0

annotation documentation
Factor applied to activity for operations during July. Valid values: 0.0000 to 1.0000.

element monthlyProfile/temporalFactorAugust

diagram

**temporalFactorAugust**

Factor applied to activity for operations during August. Valid values: 0.0000 to 1.0000.
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>element</td>
<td>monthlyProfile/temporalFactorAugust</td>
</tr>
<tr>
<td>diagram</td>
<td><img src="temporalFactorAugust.png" alt="diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Factor applied to activity for operations during August. Valid values: 0.0000 to 1.0000.</td>
<td></td>
</tr>
</tbody>
</table>

| element | monthlyProfile/temporalFactorSeptember |
| diagram | ![diagram](temporalFactorSeptember.png) |
| type    | doubleMin0  |
| properties | minOcc 0  |
| maxOcc | 1  |
| content | simple |
| facets | Kind | Value | Annotation |
| minInclusive | 0 |
| annotation | documentation |
| Factor applied to activity for operations during September. Valid values: 0.0000 to 1.0000. |

| element | monthlyProfile/temporalFactorOctober |
| diagram | ![diagram](temporalFactorOctober.png) |
| type    | doubleMin0  |
| properties | minOcc 0  |
| maxOcc | 1  |
| content | simple |
| facets | Kind | Value | Annotation |
| minInclusive | 0 |
| annotation | documentation |
| Factor applied to activity for operations during October. Valid values: 0.0000 to 1.0000. |

| element | monthlyProfile/temporalFactorNovember |
| diagram | ![diagram](temporalFactorNovember.png) |
| type    | doubleMin0  |
| properties | minOcc 0  |
| maxOcc | 1  |
| content | simple |
| facets | Kind | Value | Annotation |
| minInclusive | 0 |
| annotation | documentation |
| Factor applied to activity for operations during November. Valid values: 0.0000 to 1.0000. |

| element | monthlyProfile/temporalFactorDecember |
| diagram | ![diagram](temporalFactorDecember.png) |
| type    | doubleMin0  |
| properties | minOcc 0  |
| maxOcc | 1  |
| content | simple |
| facets | Kind | Value | Annotation |
| minInclusive | 0 |
| annotation | documentation |
| Factor applied to activity for operations during December. Valid values: 0.0000 to 1.0000. |
**element monthlyProfileSet**

**diagram**

Supports the definition and use of MONTHLY_PROFILES for the monthly variation of operations.

**properties**

- content: complex

**children**

- monthlyProfile

**used by**

- element operationalProfileSet

**complexType**

- airportLayoutType

**attributes**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

Supports the definition and use of MONTHLY_PROFILES for the monthly variation of operations.

**attribute monthlyProfileSet/@dummy**

**type**

- xs:int

**properties**

- use: optional

**element operation**

**diagram**

User specified identifier for the operation. One purpose served by the field is to allow the user to tie the ABDT AirOperations tool to some original data source by setting the ID field to an identifying identifier from the original data source. Another purpose is to set each ID to a project-specific value for each AirOperation. The ID field is used in several ABDT lists and reports that print out the AirOperations. In addition, the Impact Evaluation Dialog uses the ID as its main method of distinguishing AirOperations when allowing the user to pick and choose operations to be moved to alternative flight tracks. If, however, the user has no outside data source that need to be tied to the ABDT AirOperations, or if each AirOperation is identical in the sense that no specific AirOperation is more valuable than another or that there will be no intent to distinguish one AirOperation over another, then the
supported approach is to just set the UserID field to a unique number or set of characters. This will allow the user to distinguish the AirOperations if the need ever arises. Nevertheless, one can leave all of the ID fields empty or non-unique set of ID's however, in doing so the user will be forced to use other identifying fields of the AirOperation if they should ever want to distinguish between AirOperations.

**aircraftType**

Type of aircraft in the flight.

**cruiseAltitude**

Override aircraft cruise altitude for this operation, (ft)

**numOperations**

Number of operations comprising this operation.

**opType**

Carrier flying the flight. Not fully supported in ABDT.

**flightNumber**

Flight number. Not fully supported in ABDT.

**tailNumber**

Flight's tail number. Not fully supported in ABDT.

**userType**

User-defined aircraft type. Cannot be an aircraftType. Not fully supported in ABDT.

**userParam**

User-defined parameter associated with the operation. Not fully supported in ABDT.

**departureAirport**

Departure airport's ICAO code. Required if the operation is used with a skiplightstop or @overtimeTags element. Also required if used with a @flightStopOrSegments modeling departures, circuits, runups, or touch-and-go.

**departureRunway**

Airport's departure runway ID. Required if the operation is used with a skiplightstop or @overtimeTags modeling departures, circuits, runups, or touch-and-go.

**departureGate**

Airport's departure gate. Not fully supported in ABDT.

**departureApTime**

Number of minutes the delays over this extra segment is attached to a departing aircraft, (min)

**arrivalAirport**

Arrival airport's ICAO code. Required if the operation is used with a skiplightstop or @overtimeTags modeling arrivals, circuits, runups, or touch-and-go.

**arrivalRunway**

Airport's arrival runway ID. Required if the operation is used with a skiplightstop or @overtimeTags modeling arrivals, circuits, runups, or touch-and-go.
Describes an aircraft flight operation.

element operation/id

diagram
**Type**: `string16`  

**Properties**:  
- `content`: `simple`  

**Facets**  

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>minLength</code></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><code>maxLength</code></td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

**Annotation**  
User specified identifier for the operation. One purpose served by this field is to allow the user to tie the AEDT AirOperations back to some original data source by setting the id field to an identifying identifier from the original data source. Another purpose is to set each ID to a project-specific value for each AirOperation. The ID field is used in several AEDT lists and reports that print out the AirOperations. In addition, the Impact Evaluation dialog uses the ID as its main method of distinguishing AirOperations when allowing the user to pick and choose operations to be moved to alternative flight tracks. If, however, the user has no outside data sources that need to be tied to the AEDT AirOperations, or if each AirOperation is identical in the sense that no specific AirOperation is more valuable than another or that there will be no intent to distinguish one AirOperation over another, then the suggested approach is to just set the UserID field to unique number or set of characters. This will allow the user to distinguish the AirOperations from one another. Nevertheless, one can leave all the id fields empty or non-unique set of ids; however, in doing so, the user will be forced to use other identifying fields of the AirOperation if they should ever want to distinguish between AirOperations.

**Element**: `operation/aircraftType`  

**Diagram**
**type** aircraftType

**properties** content complex

**children** anpAircraftId, airframeModel, engineCode, engineModCode, apuName, groundSupportEquipmentLTOOperationSet

**annotation** documentation
Type of aircraft in the flight.

**element** operation/cruiseAltitude

**diagram**

<table>
<thead>
<tr>
<th>cruiseAltitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Override aircraft cruise altitude for this operation. (ft)</td>
</tr>
</tbody>
</table>

**type** xs:double

**properties**
- minOcc: 0
- maxOcc: 1
- content simple

**annotation** documentation
Override aircraft cruise altitude for this operation. (ft)

**element** operation/numOperations

**diagram**

<table>
<thead>
<tr>
<th>numOperations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of operations comprising this operation.</td>
</tr>
</tbody>
</table>

**type** xs:double

**properties** content simple

**annotation** documentation
Number of operations comprising this operation.

**element** operation/opType

**diagram**

<table>
<thead>
<tr>
<th>opType</th>
</tr>
</thead>
</table>

**type** opType

**properties**
- minOcc: 0
- maxOcc: 1
- content simple

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>A</td>
</tr>
</tbody>
</table>
## Element Operation/Carrier

**Diagram:**
```
carrier
```

**Type:** string4

**Properties:**
- minOcc: 0
- maxOcc: 1
- content: simple

**Facets:**
- Kind: Value Annotation
- minLength: 0
- maxLength: 4

**Annotation:**
Carrier flying the flight. Not fully supported in AEDT.

## Element Operation/Flight Number

**Diagram:**
```
flightNumber
```

**Type:** string16

**Properties:**
- minOcc: 0
- maxOcc: 1
- content: simple

**Facets:**
- Kind: Value Annotation
- minLength: 0
- maxLength: 16

**Annotation:**
Flight number. Not fully supported in AEDT.

## Element Operation/Tail Number

**Diagram:**
```
tailNumber
```

**Type:** string8

**Properties:**
- minOcc: 0
- maxOcc: 1
- content: simple

**Facets:**
- Kind: Value Annotation
- minLength: 0
- maxLength: 8

**Annotation:**
Flight's tail number. Not fully supported in AEDT.

## Element Operation/User Type

**Diagram:**
```
userType
```

**Type:** string12

**Properties:**
- minOcc: 0
- maxOcc: 1
- content: simple

**Facets:**
- Kind: Value Annotation
- minLength: 0
- maxLength: 12

**Annotation:**
User-defined aircraft type. Cannot be an aircraftType. Not fully supported in AEDT.
element operation/userParam

```
<userParam>
User-defined parameter associated with the operation. Not fully supported in AEDT.
</userParam>
```

type string16

properties
- minOcc 0
- maxOcc 1
- content simple

facets
- Kind: String
- Value: Annotation
- minLength 0
- maxLength 16

annotation documentation
User-defined parameter associated with the operation. Not fully supported in AEDT.


element operation/departureAirport

```
<departureAirport>
Departure airport's ICAO code. Required if the operation is used with a <flight> or <operation> element. Also required if used with a <trackOpSet> modeling departures, circuits, runups, or touch-and-goes.
</departureAirport>
```

type airportCode

properties
- minOcc 0
- maxOcc 1
- content complex

facets
- Kind: String
- Value: Annotation
- minLength 0
- maxLength 4

attributes
```
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>airportCodeType</td>
<td>optional</td>
<td>ANY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>country</td>
<td>string3</td>
<td>optional</td>
<td>ANY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

annotation documentation
Departure airport's ICAO code. Required if the operation is used with a <flight> or <operation> element. Also required if used with a <trackOpSet> modeling departures, circuits, runups, or touch-and-goes.


element operation/departureRunway

```
<departureRunway>
Airport's departure runway ID. Required if the operation is used with a <flight> or <trackOpSet> modeling departures, circuits, runups, or touch-and-goes.
</departureRunway>
```

type string8

properties
- minOcc 0
- maxOcc 1
- content simple

facets
- Kind: String
- Value: Annotation
- minLength 0
- maxLength 8

annotation documentation
Airport's departure runway ID. Required if the operation is used with a <flight> or a <trackOpSet> modeling departures, circuits, runups, or touch-and-goes.


element operation/departureGate

```
<departureGate>

</departureGate>
```
**Type**: `string40`  

**Properties**:
- **minOcc**: 0  
- **maxOcc**: 1  
- **content**: `simple`

**Facets**:
- **Kind**: Value  
- **Value**: `Annotation`  
- **minLength**: 0  
- **maxLength**: 40

**Annotation**:
Airport's departure gate. Not fully supported in AEDT.

**Element**: `operation/departureApuTime`

**Diagram**:

**Type**: `xs:double`  

**Properties**:
- **minOcc**: 0  
- **maxOcc**: 1  
- **content**: `simple`

**Annotation**:
Number of minutes the auxiliary power unit is attached to a departing aircraft. (min)

**Element**: `operation/arrivalAirport`

**Diagram**:

**Type**: `airportCode`  

**Properties**:
- **minOcc**: 0  
- **maxOcc**: 1  
- **content**: `complex`

**Facets**:
- **Kind**: Value  
- **Value**: `Annotation`  
- **minLength**: 0  
- **maxLength**: 4

**Attributes**:
- **Name**: `type`  
- **Type**: `airportCodeType`  
- **Use**: `optional`  
- **Default**: `ANY`  
- **Fixed**: `ANY`  
- **Annotation**

**Annotation**:
Arrival airport's ICAO code. Required if the operation is used with a `<flight>` or `<operation>` element. Also required if used with a `<trackOpSet>` modeling arrivals, circuits, runups, or touch-and-goes.

**Element**: `operation/arrivalRunway`

**Diagram**:

**Type**: `string8`  

**Properties**:
- **minOcc**: 0
maxOcc: 1
content: simple

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td>maxLength</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Airport's arrival runway ID. Required if the operation is used with a &lt;flight&gt; or a &lt;trackOpSet&gt; modeling arrivals, circuits, runups, or touch-and-goes.</td>
</tr>
</tbody>
</table>

**element operation/arrivalGate**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string40</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>simple</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td>maxLength</td>
<td>40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Airport's arrival gate. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

**element operation/arrivalApuTime**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>simple</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of minutes the auxiliary power unit is attached to an arrival aircraft. (min)</td>
</tr>
</tbody>
</table>

**element operation/offTime**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:dateTime</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>simple</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wheels-off time. Required for any departure or runup, circuit, runup, or touch-and-go operation.</td>
</tr>
</tbody>
</table>

**element operation/onTime**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:dateTime</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>simple</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wheels on time. Required for any arrival operation.</td>
</tr>
</tbody>
</table>
**element operation/enrouteStartTime**

- **Diagram:**
  - Time aircraft reaches the first en route node. Required for en route or overflight flights. Not fully supported in AEDT.

- **Type:** `xs:dateTime`

- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1

- **Annotation:**
  - Documentation: Time aircraft reaches the first en route node. Required for en route or overflight flights. Not fully supported in AEDT.

---

**element operation/outTime**

- **Diagram:**
  - Time aircraft pushed back from the gate for a departure. When present, `taxiOutDuration = (offTime – outTime)`. Not fully supported in AEDT.

- **Type:** `xs:dateTime`

- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1

- **Annotation:**
  - Documentation: Time aircraft pushed back from the gate for a departure. When present, `taxiOutDuration = (offTime – outTime)`. Not fully supported in AEDT.

---

**element operation/taxiOutDuration**

- **Diagram:**
  - Number of seconds during taxi-out. Required for emissions modeling, optional for noise modeling. Not fully supported in AEDT.

- **Type:** `xs:double`

- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1

- **Annotation:**
  - Documentation: Number of seconds during taxi-out. Required for emissions modeling, optional for noise modeling. Not fully supported in AEDT.

---

**element operation/inTime**

- **Diagram:**
  - Time aircraft arrives at arrival gate. When present, `taxiInDuration = (onTime – inTime)`. Not fully supported in AEDT.

- **Type:** `xs:dateTime`

- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1

- **Annotation:**
  - Documentation: Time aircraft arrives at arrival gate. When present, `taxiInDuration = (onTime – inTime)`. Not fully supported in AEDT.

---

**element operation/taxiInDuration**

- **Diagram:**
  - Number of seconds during taxi-in. Required for emissions modeling, optional for noise modeling.

- **Type:** `xs:double`
| properties | minOcc: 0  
maxOcc: 1  
content: simple |
| annotation documentation | Number of seconds during taxi-in. Required for emissions modeling, optional for noise modeling. (s) |

**element operation/activityProfile**

- **diagram**: ActivityProfile
- **type**: string100
- **properties**:
  - minOcc: 0  
  - maxOcc: 1  
  - content: simple
- **used by**: element activityProfileSet
- **facets**:
  - Kind: Value: Annotation
    - minLength: 0  
    - maxLength: 100
- annotation documentation
  - References an existing hourly, daily, or monthly profile.

**element operation/saeProfile**

- **diagram**: SAEProfile
- **type**: profileType
- **properties**:
  - minOcc: 0  
  - maxOcc: 1  
  - content: simple
- **facets**:
  - Kind: Value: Annotation
    - minLength: 0  
    - maxLength: 8
- annotation documentation
  - Overrides default profile assignment for a flight’s arrival and departure phases using characteristics specified by SAE International. Applicable when the override is unambiguously arrival or departure.

**element operation/saeProfiles**

- **diagram**: SAEProfiles
- **type**: profiles
- **properties**:
  - minOcc: 0  
  - maxOcc: 1  
  - content: complex
- **children**: departureProfile, arrivalProfile
- annotation documentation
  - Overrides default profile assignment for a flight’s arrival and departure phases using characteristics specified by SAE International. Applicable when it is necessary to specify both the arrival and departure profiles.
element operation/badaProfile

diagram

- type profileType
- properties minOcc 0
  maxOcc 1
  content simple

- facets Kind Value Annotation
  minLength 0
  maxLength 8

- annotation documentation
  Overrides default profile assignment for a flight’s arrival and departure phases using characteristics specified by BADA. Applicable when the override is unambiguously arrival or departure.

element operation/badaProfiles

diagram

- type profiles
- properties minOcc 0
  maxOcc 1
  content complex

- children departureProfile arrivalProfile

- annotation documentation
  Overrides default profile assignment for a flight’s arrival and departure phases using characteristics specified by BADA. Applicable when it is necessary to specify both the arrival and departure profiles.

element operation/stageLength

diagram

- type string1
- properties minOcc 0
  maxOcc 1
  content simple

- facets Kind Value Annotation
  minLength 0
  maxLength 1

- annotation documentation
  Overrides default departure and arrival stage length values. Applicable when the override is unambiguously arrival or departure. If operation type is Arrival, then AEDT will always use 1 for stage length.

element operation/actypeWeight

diagram
<table>
<thead>
<tr>
<th>Element Name</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>operation/departureStageLength</code></td>
<td><img src="image1.png" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc: 0, maxOcc: 1</td>
<td>simple</td>
<td>documentation: Overrides default departure stage length. Applicable if the phase is a departure phase.</td>
</tr>
<tr>
<td><code>operation/arrivalStageLength</code></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td>string1</td>
<td>minOcc: 0, maxOcc: 1</td>
<td>simple</td>
<td>documentation: Overrides default arrival stage length. Applicable if the phase is an arrival phase. If operation type is Arrival, then AEDT will always use 1 for stage length.</td>
</tr>
<tr>
<td><code>operation/glideSlope</code></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc: 0, maxOcc: 1</td>
<td>simple</td>
<td>documentation: Glide slope angle for this operation. (Degrees)</td>
</tr>
<tr>
<td><code>operation/fuelSulfurContent</code></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc: 0, maxOcc: 1</td>
<td>simple</td>
<td>documentation: Sulfur content of the fuel used in this operation. (%)</td>
</tr>
</tbody>
</table>
element operationalProfileSet

documentation Sulfur content of the fuel used in this operation. (%)

children quarterHourlyProfileSet dailyProfileSet monthlyProfileSet activityProfileSet

used by AsifXml

---

element operations

documentation Contains a list of aircraft flight operations.

children operation

used by trackOpSet

---

element options

documentation Contains default option values applied to the study.

children utmZoneDefault

used by AsifXml

---

element options/utmZoneDefault

type xs:int

properties content simple
Default UTM zone number.

**element parkingFacility**

- **name**: Identifying name of parking facility.
- **numberOfLevels**: Number of levels in the parking facility. Valid values: 1 to 20.
- **topLevelReleaseHeight**: Height AGL at which occupants are released into the atmosphere. Valid values 0 to 100 (m).
- **spacing**: Distance between two parking spaces. (m)
- **elevation**: Elevation of parking facility in MSL. Valid value range of 0 - 338, airport specific (m)

**annotation documentation**

Supports legacy EDMS studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking garage geometries for scenario layouts.

**element parkingFacility/numberOfLevels**

Type: `xs:int`

**property**

- **minOcc**: 0
- **maxOcc**: 1
- **content**: simple
- **default**: 1

**annotation documentation**

Identifying number of levels in the parking facility.
Number of levels in the parking facility. Valid values: 1 to 20.

**Element: parkingFacility/topReleaseHeight**
- **Type:** xs:double
- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation:**
  Documentation: Height AGL at which emissions are released into the atmosphere. Valid values 0 to 100 (m)

**Element: parkingFacility/spacing**
- **Type:** xs:double
- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation:**
  Documentation: Distance between two parking spaces. (m)

**Element: parkingFacility/elevation**
- **Type:** xs:double
- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
default: 0
- **Annotation:**
  Documentation: Elevation of parking facility in MSL. Valid values: range of 0 - 328, airport specific.(m)

**Element: parkingFacilityOperation**
- **Diagram**
The diagram illustrates the properties and children of the `parkingFacilityOperation` element. The `refName` property is described as identifying the name of the parking facility. The `useAnnualFigures` property indicates if the quantities in the element are annualized. The `vehicleType` property defines the type of vehicle involved in the operation. The `emissionsUsage` property describes the amount of emissions for a given activity profile. The `averageSpeed` property gives the average speed used during the operation. The `averageDistanceTraveled` property provides the average distance traveled during the operation. The `averageIdleTime` property specifies the average time vehicle is idle while conducting the operation. The `vehicleEmissionFactors` property supports legacy EDMS studies relating to content contained in the ROADWAYS/PARKING table. This element supports the definition of custom emission factor specifications for roadways and parking.

**Element:** `parkingFacilityOperation/refName`  
**Type:** `string40`  
**Properties:** content simple  
**Facets:** Kind Value Annotation  
- minLength: 0  
- maxLength: 40  
**Annotation:**  
- Documentation: Identifying name of parking facility.
element parkingFacilityOperation/useAnnualFigures

diagram

Indicates if the quantities in the element are annualized.

-type xs:boolean

-properties

<table>
<thead>
<tr>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
<th>default</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>simple</td>
<td>false</td>
</tr>
</tbody>
</table>

annotation documentation

Indicates if the quantities in the element are annualized.

element parkingFacilityOperation/vehicleType

-diagram

Type of vehicle involved in the operation. Valid values: 0 = Default Fleet Mix, 1 = Passenger Cars, 2 = Light Trucks 1, 3 = Light Trucks 2, 4 = Light Trucks 3, 5 = Light Trucks 4, 6 = Class 2b Heavy Trucks, 7 = Class 3 Heavy Trucks, 8 = Class 4 Heavy Trucks, 9 = Class 5 Heavy Trucks, 10 = Class 6 Heavy Trucks, 11 = Class 7 Heavy Trucks, 12 = Class 8a Heavy Trucks, 13 = Class 8b Heavy Trucks, 14 = School Buses, 15 = Transit and Urban Buses, 16 = Motorcycle.

-type groundVehicleType

-properties

content simple

-facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern 0</td>
<td>Default Fleet Mix</td>
</tr>
<tr>
<td>1</td>
<td>Passenger Cars</td>
</tr>
<tr>
<td>2</td>
<td>Light Trucks 1</td>
</tr>
<tr>
<td>3</td>
<td>Light Trucks 2</td>
</tr>
<tr>
<td>4</td>
<td>Light Trucks 3</td>
</tr>
<tr>
<td>5</td>
<td>Light Trucks 4</td>
</tr>
<tr>
<td>6</td>
<td>Class 2b Heavy Trucks</td>
</tr>
<tr>
<td>7</td>
<td>Class 3 Heavy Trucks</td>
</tr>
<tr>
<td>8</td>
<td>Class 4 Heavy Trucks</td>
</tr>
<tr>
<td>9</td>
<td>Class 5 Heavy Trucks</td>
</tr>
<tr>
<td>10</td>
<td>Class 6 Heavy Trucks</td>
</tr>
<tr>
<td>11</td>
<td>Class 7 Heavy Trucks</td>
</tr>
<tr>
<td>12</td>
<td>Class 8a Heavy Trucks</td>
</tr>
<tr>
<td>13</td>
<td>Class 8b Heavy Trucks</td>
</tr>
<tr>
<td>14</td>
<td>School Buses</td>
</tr>
<tr>
<td>15</td>
<td>Transit and Urban Buses</td>
</tr>
<tr>
<td>16</td>
<td>Motorcycle</td>
</tr>
</tbody>
</table>

annotation documentation

Type of vehicle involved in the operation. Valid values: 0 = Default Fleet Mix, 1 = Passenger Cars, 2 = Light Trucks 1, 3 = Light Trucks 2, 4 = Light Trucks 3, 5 = Light Trucks 4, 6 = Class 2b Heavy Trucks, 7 = Class 3 Heavy Trucks, 8 = Class 4 Heavy Trucks, 9 = Class 5 Heavy Trucks, 10 = Class 6 Heavy Trucks, 11 = Class 7 Heavy Trucks, 12 = Class 8a Heavy Trucks, 13 = Class 8b Heavy Trucks, 14 = School Buses, 15 = Transit and Urban Buses, 16 = Motorcycle.

element parkingFacilityOperation/fuelType

-diagram

Type of fuel involved in the operation.

-type fuelType

-properties

content simple

-facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern G</td>
<td>Gasoline</td>
</tr>
<tr>
<td>D</td>
<td>Diesel</td>
</tr>
<tr>
<td>C</td>
<td>Compressed Natural Gas</td>
</tr>
<tr>
<td>L</td>
<td>Liquefied Petroleum Gas</td>
</tr>
<tr>
<td>E</td>
<td>Electric</td>
</tr>
</tbody>
</table>

annotation documentation

Type of fuel involved in the operation.

element parkingFacilityOperation/averageSpeed

-diagram

Average speed during the operation. Valid values: 2.5 = 40 (mph)

-type xs:double

-properties

minOcc 0
maxOcc 1
**Average speed during the operation. Valid values: 2.5 to 40. (mph)**

**Average distance traveled during the operation. Valid values: 0 to 32808. (m)**

**Average time vehicle is idle while conducting the operation. Valid values: 0 to 30. (min)**

**Supports legacy EDMS studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking garage activities for scenario layouts.**

**Supports legacy EDMS studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking garage activities for scenario layouts.**
properties
content complex

children
parkingFacility

used by
complexType airportLayoutType

attributes
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
Supports legacy EDMS studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking garage activities for scenario layouts.

attribute parkingFacilitySet/@dummy
type xs:int

properties use optional

element pointReceptor
diagram

properties
content complex
Element specification for a point receptor.

```
<table>
<thead>
<tr>
<th>children</th>
<th>name latitude DMS longitude DMS utmN utmE utmZone elevation receptorHeight</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>group receptorGroup</td>
</tr>
</tbody>
</table>

**element pointReceptor/name**

- **diagram**: [Diagram]
- **type**: string255
- **properties**: content simple
- **facets**: Kind Value Annotation
  - minLength 0
  - maxLength 255

**element pointReceptor/elevation**

- **diagram**: [Diagram]
  - Elevation of the receptor above MSL (ft.)
- **type**: xs:double
- **properties**: minOcc 0 maxOcc 1 content simple
- **annotation**: documentation
  - Elevation of the receptor above MSL (ft.)

**element pointReceptor/receptorHeight**

- **diagram**: [Diagram]
  - Height of the receptor above ground (ft.)
- **type**: xs:double
- **properties**: minOcc 0 maxOcc 1 content simple
- **annotation**: documentation
  - Height of the receptor above ground (ft.)

**element pointStationarySource**

- **diagram**: [Diagram]
element pointStationarySource

documentation Specifies the point in space occupied by a stationary source of emissions.

element pointStationarySource/pointCoord

diagram

properties content complex

children pointCoord baseElevation releaseHeight gasVelocity stackDiameter temperature aboveAmbientTemperature

used by element stationarySource

annotation documentation

used by element stationarySource
properties content complex
children latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone
annotation documentation
Type of 2-D coordinates specifying the point.

element pointStationarySource/baseElevation
diagram baseElevation
Elevation of point. Valid values: -500 to 5000. (m)
type xs:double
properties content simple
annotation documentation
Elevation of point. Valid values: -500 to 5000. (m)

element pointStationarySource/releaseHeight
diagram releaseHeight
Height above ground level at which emissions are released into the atmosphere. Valid values 0 to 100 (m)
type doubleInclusive100
properties minOcc 0
maxOcc 1
content simple
default 0
facets Kind Value Annotation
minInclusive 0
maxInclusive 100
annotation documentation
Height above ground level at which emissions are released into the atmosphere. Valid values 0 to 100 (m)

element pointStationarySource/gasVelocity
diagram gasVelocity
Velocity at which gas escapes from the source. Valid values: 1 to 30. (m/s)
type doubleInclusiveRange1to30
properties minOcc 0
maxOcc 1
content simple
default 1
facets Kind Value Annotation
minInclusive 1
maxInclusive 30
annotation documentation
Velocity at which gas escapes from the source. Valid values: 1 to 30. (m/s)

element pointStationarySource/stackDiameter
diagram stackDiameter
Diameter of stack where gas escapes from the source. Valid values: 0.1 to 50 (m)
type doubleExclusive0Inclusive10
properties minOcc 0
maxOcc 1
content simple
default 0.1
facets Kind Value Annotation
maxInclusive 10
**Element: pointStationarySource/temperature**

- **Diagram:**
  - Temperature at point. Valid values 0 to 600 (°F).

- **Type:** doubleInclusiveRange0to600

- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 32

- **Facets:**
  - Kind: Value
  - Annotation: minInclusive: 0
  - maxInclusive: 600

- **Annotation:** documentation
  - Diameter of stack where gas escapes from the source. Valid values: 0.1 to 50 (m)

**Element: pointStationarySource/aboveAmbientTemperature**

- **Diagram:**
  - Indicates if temperature is absolute (False) or if temperature is relative to current ambient temperature (True).

- **Type:** xs:boolean

- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: false

- **Annotation:** documentation
  - Indicates if temperature is absolute (False) or if temperature is relative to current ambient temperature (True).

**Element: polarGrid**

- **Diagram:**
  - Various coordinate groups and UTM zones with optional indicators.

- **Description:**
  - Latitude and Longitude specified as degrees in decimal format. Can include optional attribute positive.
  - UTM Northing and Easting coordinates.
  - UTM Zone of the point.
Supports legacy EDMS studies relating to the NETWORK_POLAR_RECEPTORS table. Two-dimensional grid of individual receptors over an annular sector (polar) of the airport or study area.

Properties:
- content: complex

Children:
- latitudeDMS longitudeDMS utmN utmE utmZone originSource originName elevation height ringStart ringSpacing ringCount vectorStart vectorSpacing vectorCount xOffset ydOffset

Used by:
- group receptorGroup

Annotation documentation:
Supports legacy EDMS studies relating to the NETWORK_POLAR_RECEPTORS table. Two-dimensional grid of individual receptors over an annular sector (polar) of the airport or study area.

Element polarGrid/originSource

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Origin Source</th>
</tr>
</thead>
</table>

Type: originSourceType

Properties:
- content: simple

Facets:
- Kind: Value Annotation
  - pattern: Gate|Parking Facility|Runway|Stationary Source|Taxiway|Training Fire

Annotation documentation:
(m)

Element polarGrid/originName

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Origin Name</th>
</tr>
</thead>
</table>

Refers to an existing gate, parking facility, roadway, runway, stationary source, taxiway, or training fire.
**element polarGrid/elevation**

Diagram: ![Altitude of point (meters).](image)

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation**:
  - documentation: Altitude of point (meters).

**element polarGrid/height**

Diagram: ![Height of point (meters).](image)

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0
- **annotation**:
  - documentation: Height of point (meters).

**element polarGrid/ringStart**

Diagram: ![Initial radius of first ring from center point.](image)

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 1
- **annotation**:
  - documentation: Initial radius of first ring from center point.

**element polarGrid/ringSpacing**

Diagram: ![Spacing between rings starting from the first ring. Valid values: 0 to 1000.](image)

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 1
- **annotation**:
  - documentation: Spacing between rings starting from the first ring. Valid values: 0 to 1000.

**element polarGrid/ringCount**

Diagram: ![](image)
**element** polarGrid/vectorStart

```
<element name="polarGrid/vectorStart"

type="xs:double"

properties:
- minOccurs: 0
- maxOccurs: 1
- content: simple
- default: 0

annotation: documentation

Angle of point along a ring. 0 = north. Valid values: 0 to 360. (degrees)
```

**element** polarGrid/vectorSpacing

```
<element name="polarGrid/vectorSpacing"

type="xs:double"

properties:
- minOccurs: 0
- maxOccurs: 1
- content: simple
- default: 1

annotation: documentation

Number of degrees between receptors. Valid values: 1 to 90. (degrees)
```

**element** polarGrid/vectorCount

```
<element name="polarGrid/vectorCount"

type="xs:int"

properties:
- minOccurs: 0
- maxOccurs: 1
- content: simple
- default: 1

annotation: documentation

Number of receptors along the ring. Valid values: 1 to 36.
```

**element** polarGrid/xrOffset

```
<element name="polarGrid/xrOffset"

type="xs:double"

properties:
- minOccurs: 0
- maxOccurs: 1
- content: simple
- default: 0

annotation: documentation

The offset of the receptor grid in nautical miles.
```
The X-offset of the receptor grid in nautical miles.

**element polarGrid/ydOffset**

<table>
<thead>
<tr>
<th>diagram</th>
<th>The Y-offset of the receptor grid in nautical miles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc: 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>default</td>
<td>0</td>
</tr>
</tbody>
</table>

The Y-offset of the receptor grid in nautical miles.

**element polarReceptor**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content complex</td>
</tr>
</tbody>
</table>

Latitudes specified as degrees in decimal format. Can include optional attribute positive.

Longitudes specified as degrees in decimal format. Can include optional attribute positive.

Coordinates for an area within a polar grid.

Supports legacy EPS and adds a polar grid. Delineates a receptor point using Mercator coordinates.

Distance from polar origin. Valid values: 0 through 360 (degrees).

Elevation. Altitude of point (meters).

Height. Height of point (meters).
element polarReceptor/originSource
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>originSourceType</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>pattern Gate</td>
</tr>
</tbody>
</table>

annotation documentation
Supports legacy EDMS studies relating to the NETWORK_POLAR_RECEPTORS and DISCRETE_POLAR_RECEPTORS table. Defines receptor points within a polar grid.

element polarReceptor/originName
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>string40</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
</tr>
<tr>
<td></td>
<td>maxLength 40</td>
</tr>
</tbody>
</table>

annotation documentation
Refers to an existing gate, parking facility, roadway, runway, stationary source, taxiway, or training fire.

element polarReceptor/distanceFromSource
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOccurs 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
</tbody>
</table>

annotation documentation
Distance of point from polar origin. Valid values: 0 through 999999.999999. (ft)

element polarReceptor/directionFromSource
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOccurs 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
</tbody>
</table>

annotation documentation
Direction of point from polar origin. Valid values: 0 through 360. (degrees)

element polarReceptor/elevation
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOccurs 0</td>
</tr>
<tr>
<td></td>
<td>maxOccurs 1</td>
</tr>
<tr>
<td>content</td>
<td></td>
</tr>
</tbody>
</table>
element polarReceptor/height

```
<height>
  Height of point. (meters).
</height>
```

properties

- type: xs:double
- minOcc: 0
- maxOcc: 1
- default: 0

annotation documentation

Height of point. (meters).

---

element quarterHourlyProfile

```
<profileName>
  Name of profile.
</profileName>
```

properties

- type: string100
- content: simple
- facets:
  - Kind: Value
  - Annotation: minLength: 0
  - maxLength: 100

annotation documentation

Name of profile.

---

element quarterHourlyProfile/temporalFactor

```
<temporalFactor>
  Factor applied to activity for operations during the indicated quarter hour. Valid values: 0.0000 to 1.0000.
</temporalFactor>
```

properties

- type: extension of doubleMin6
- minOcc: 0
- maxOcc: unbounded
- content: complex

annotation documentation

The starting hour as an integer between 0 and 23.

The starting quarter-hour minute value as within 0, 15, 30, or 45.
### facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

### attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>startHour</td>
<td>int0to23</td>
<td>required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>startMinutes</td>
<td>quarterHourMinutes</td>
<td>required</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### annotation
documentation
Factor applied to activity for operations during the indicated quarter hour. Valid values: 0.0000 to 1.0000.

#### attribute quarterHourlyProfile/temporalFactor/startHour

type int0to23

properties
use required

facets
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
The starting hour as an integer between 0 and 23.

#### attribute quarterHourlyProfile/temporalFactor/startMinutes

type quarterHourMinutes

properties
use required

facets
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
The starting quarter-hourly minute value as either 0, 15, 30, or 45.

#### element quarterHourlyProfileSet

diagram

properties
content complex

children
quarterHourlyProfile

used by
element operationalProfileSet
complexType airportLayoutType

attributes
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation
Supports the definition and use of QUARTER_HOURLY_PROFILES for the quarter hourly variation of operations.

#### attribute quarterHourlyProfileSet/dummy

type xs:int

properties
use optional

#### element receptorSet
<table>
<thead>
<tr>
<th>property</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td><em>name</em> centroid pointReceptor grid polarReceptor polarGrid</td>
</tr>
<tr>
<td>used by</td>
<td>elements AsfXml study</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

**element receptorSet/name**

| diagram | ![Diagram of receptorSet/name](image)
|----------|----------------------------------------
| type     | string255 |
| properties | content simple |
| facets    | Kind Value Annotation |
|          | minLength 0 |
|          | maxLength 255 |
| annotation| documentation |

**element recordCode**

| diagram | ![Diagram of recordCode](image)
|----------|----------------------------------------
| type     | union of (restriction of xs:int, restriction of xs:int) |
| properties | content simple |
| used by  | element categoryRecordCode |
| annotation| documentation |
An integer value for a category to use as the basis of a new stationary source operation. This value comes from the CATEGORY_REC_ID column in the STN_CATEGORY table in the AEDT FLEET database. Valid values: 0 to 87, 89 to 148.

**element roadway**

```
roadway

---

name
width
coordinates

---

Supports legacy EDMS studies relating to content contained in the ROADWAYS table. This element supports the definition of vehicle geometry on roadways for scenario layouts.
```

**properties**

- content: complex

**children**

- name
- width
- coordinates

**used by**

- element roadwaySet

**annotation**

- documentation
  - Supports legacy EDMS studies relating to content contained in the ROADWAYS table. This element supports the definition of vehicle geometry on roadways for scenario layouts.

**element roadway/name**

```
roadway/name

---

name

---

Identifying name for the roadway.
```

**type**

- string40

**properties**

- content: simple

**facets**

- Kind: String
- Value: Annotation
- minLength: 0
- maxLength: 40

**annotation**

- documentation
  - Identifying name for the roadway.

**element roadway/width**

```
roadway/width

---

width

---

Roadway's width. Valid values: 1 to 99 (m).
```

**type**

- xs:double

**properties**

- minOcc: 0
- maxOcc: 1
  - content: simple
  - default: 0

**annotation**

- documentation
  - Roadway's width. Valid values: 1 to 99 (m).

**element roadway/coordinates**

```
roadway/coordinates

---

coordinates
vertex

---

Set of three-dimensional coordinates describing the roadway.
```

**properties**

- minOcc: 0
- maxOcc: 1
  - content: complex

**children**

- vertex

**annotation**

- documentation
  - Set of three-dimensional coordinates describing the roadway.
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>coord3DElevationType</td>
<td>A point representing one of the coordinates.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>coord3DElevationType</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
</tr>
<tr>
<td>maxOcc</td>
</tr>
<tr>
<td>content</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>latitude</td>
</tr>
<tr>
<td>latitudeDMS</td>
</tr>
<tr>
<td>longitude</td>
</tr>
<tr>
<td>longitudeDMS</td>
</tr>
<tr>
<td>utmN</td>
</tr>
<tr>
<td>utmE</td>
</tr>
<tr>
<td>utmZone</td>
</tr>
<tr>
<td>elevation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>documentation</td>
</tr>
</tbody>
</table>

**element** roadwayOperation

**diagram**
element roadwayOperation/refName
diagram

```
refName
```

Identifying name of roadway operation.

**type**  
string40

**properties**  
content simple

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>40</td>
</tr>
</tbody>
</table>

**annotation**

Identifying name of roadway operation.

element roadwayOperation/useAnnualFigures
diagram

```
useAnnualFigures
```

Indicates if the quantities in the element are annualized.
Element roadwayOperation/vehicleType

Diagram

```
<vehicleType>
  Type of vehicle involved in the operation. Valid values (the numeral corresponds to the text value; either are valid): 0 = Default Fleet Mix, 1 = Passenger Cars, 2 = Light Trucks 1, 3 = Light Trucks 2, 4 = Light Trucks 3, 5 = Light Trucks 4, 6 = Class 2b Heavy Trucks, 7 = Class 3 Heavy Trucks, 8 = Class 4 Heavy Trucks, 9 = Class 5 Heavy Trucks, 10 = Class 6 Heavy Trucks, 11 = Class 7 Heavy Trucks, 12 = Class 8a Heavy Trucks, 13 = Class 8b Heavy Trucks, 14 = School Busses, 15 = Transit and Urban Busses, 16 = Motorcycle.
```

Element roadwayOperation/fuelType

Diagram

```
<fuelType>
  Type of fuel involved in the operation. Valid values: G = gasoline, D = diesel.
```

Element roadwayOperation/speed

Diagram

```
<speed>
  Speed during the operation. Valid values: 5 to 65 (mph).
```

Type int5to65

Properties

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>
**element roadwayOperation/roundTripDistance**

- **diagram**
- **type** `doubleInclusive4000`
- **properties**
  - `minOcc 0`
  - `maxOcc 1`
  - `content simple`
- **facets**
  - `Kind`  `Value`  `Annotation`
    - `minInclusive`  `0`
    - `maxInclusive`  `4000`
- **annotation**
  - `documentation`  `Round trip vehicle distance, (mi)`

**element roadwayOperationSet**

- **diagram**
- **properties**
  - `content complex`
- **children**
  - `roadwayOperation`
- **used by**
  - `group airportActivityGroup`
- **attributes**
  - `Name`  `Type`  `Use`  `Default`  `Fixed`  `Annotation`
    - `dummy`  `xs:int`  `optional`
- **annotation**
  - `documentation`  `Supports legacy EDMS studies relating to content contained in the ROADWAYS table. This element supports the definition of vehicle activity on roadways for scenario layouts.`

**attribute roadwayOperationSet/@dummy**

- **type** `xs:int`
- **properties**
  - `use optional`

**element roadwaySet**

- **diagram**
- **properties**
  - `content complex`
- **children**
  - `roadway`
- **used by**
  - `complexType airportLayoutType`
<table>
<thead>
<tr>
<th>attributes</th>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

don the legacy EDM5 studies relating to content contained in the ROADWAYS table. This element supports the definition of vehicle activity on roadways for scenario layouts.

attribute `roadwaySet/@dummy`

type `xs:int`

properties `use optional`

element `runway`

diagram

```
runway

Describes dimensions of a runway.
```

properties `content complex`

children `length width runwayEnd`

used by `element runwaySet`

annotation `documentation`  
Describes dimensions of a runway.

element `runway/length`

diagram

```
length

Length of runway. Valid values: nonnegative. (ft)
```

properties `content simple`

annotation `documentation`  
Length of runway. Valid values: nonnegative. (ft)

element `runway/width`

diagram

```
width

Width of runway. Valid values: nonnegative. (ft)
```

properties `content simple`

annotation `documentation`  
Width of runway. Valid values: nonnegative. (ft)

element `runway/runwayEnd`

diagram

```
```

runwayEnd

- name
  ID of the runway's endpoint.

- latitude
  Latitude specified as degrees in decimal format. Can include optional attribute positive.

- longitude
  Longitude specified as degrees in decimal format. Can include optional attribute positive.

- latlonCoordGroup
  Specifies a coordinate using latitude and longitude.

- latitudeDMSS
  Latitude expressed as dd' mm'' ss'' with optional indicator N, n, S, s.

- longitudeDMSS
  Longitude expressed as dd' mm'' ss'' with optional indicator E, e, W, w.

- utmN
  UTM Northing of the point in decimal meters north of the equator.

- utmE
  UTM Easting of the point in decimal meters east from a central meridian.

- utmZone
  UTM Zone of the point. A default zone can be set in the &optional tag.

- elevation
  Characteristics of the runway's endpoint.

- threshCrossHeight
  Approach threshold crossing height, ft. (5)

- threshElevation
  Elevation of runway's endpoint, above or below MSL. (6)

- glideSlope
  Glide slope for runway's endpoint. Valid values: 2 to 6 (degrees)

- incline
  Angle at which glide slope should be interpreted above ground level. (5)

- depDispThresh
  Displaced threshold length at departure end of runway. (6)

- appDispThresh
  Displaced threshold length at arrival end of runway. (6)

- percentThaw
  Percent change in airport average headwind. (6)

- isHilltop
  Indicates if this end of the runway is also a hilltop. Valid values: Y = yes, N = no.
element runwayAssignment

diagram

properties content complex
children aircraftSize runway arrivalPercentage departurePercentage tgoPercentage
used by element runwayAssignmentSet
annotation documentation Defines a assignment of operations to runways, by aircraft size.

element runwayAssignment/aircraftSize

diagram

type AircraftSizeType

properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
enumeration S
enumeration L
enumeration H

element runwayAssignment/runway

diagram

type string8

properties content simple
used by element runwaySet
facets Kind Value Annotation
minLength 0
maxLength 8
annotation documentation Name of the runway.

element runwayAssignment/arrivalPercentage

diagram
element runwayAssignment/departurePercentage

diagram

type doubleInclusive100

properties

minOcc 0  
maxOcc 1  
content simple

facets Kind Value Annotation

minInclusive 0  
maxInclusive 100

annotation documentation

Percentage of departures of the given aircraft size using this runway. Valid values: 0 to 100. (%) 

element runwayAssignment/togoPercentage

diagram

Percentage of touch and go of the given aircraft size using this runway. Valid values: 0 to 100. (%) 

Type doubleInclusive100

properties

minOcc 0  
maxOcc 1  
content simple

facets Kind Value Annotation

minInclusive 0  
maxInclusive 100

annotation documentation

Percentage of touch and go of the given aircraft size using this runway. Valid values: 0 to 100. (%) 

element runwayAssignmentSet

diagram

Contains a set of runway assignments.

Defined a assignment of operations to runways by aircraft size.

properties content complex

children runwayAssignment

used by element airportConfig

annotation documentation

Contains a set of runway assignments. 

element runwaySet
**Diagram:**

- `runwaySet` ➔ `runway` Container for runways.
- Describes dimensions of a runway.

**Properties:**
- `content complex`

**Children:**
- `runway`

**Used by:**
- `complexType` `airportLayoutType`

**Annotation:**
- **documentation**
  Container for runways.

---

**Element `scenario`**

- `name`
  Description of scenario.
- `startTime`
  Start time of scenario. Accepts date-time string.
- `duration`
  Scenario's duration (hr).
- `taxiModel`
  Taxi model for scenario.
- `timeInModeBasis`
  Time in mode basis.
- `actfPerfModel`
  Aircraft performance model.
- `bankAngle`
  Indicates if bank angle calculations should be included in calculations. NOTE: ARDT ignores this value and treats all scenarios as if their bank angle value was set to true.
- `altitudeCutoff`
  Altitude in MSL to cut off trajectory modeling for the scenario. This scenario altitude cutoff only affects noise impact calculations in ARDT. Fuel burns and emissions will be calculated until a flight reaches the study boundary. (ft)
- `sulfurConversionRate`
  Portion of sulfur in the fuel that, when combusted, becomes sulfur oxides used for emissions calculations. (\%)
- `fuelSulfurContent`
  Percentage, by weight, of sulfur in the fuel used for emissions calculations. Default Value: 0.0006 (0.006%) (\%)
- `description`
  A description of the scenario.
- `scenarioAirportLayoutSet`
  Contains a set of airport layout types.
- `caseSet`
  Placeholder for one or more cases.
- `annualization`
  Contains annualizations for ASIF partial import into an existing study.

**Properties:**
- `content complex`
children
<table>
<thead>
<tr>
<th>name start time</th>
<th>duration</th>
<th>taxi model</th>
<th>time basis</th>
<th>bank angle</th>
<th>altitude cutoff</th>
<th>sulfur conversion rate</th>
<th>fuel sulfur content</th>
<th>description</th>
<th>scenario airport layout set</th>
<th>case set</th>
<th>annualization</th>
</tr>
</thead>
</table>

used by
- elements: AsfXml study
- annotation: documentation
  Encapsulates a scenario - such as Baseline or Alternative

**element scenario/name**
- diagram: "name"
  Description of scenario.
- type: string 255
- properties: content simple
- facets:
  - Kind: Value Annotation
  - minLength: 0
  - maxLength: 255
- annotation: documentation
  Description of scenario.

**element scenario/startTime**
- diagram: "startTime"
  Start time of scenario. Accepts dateTime string.
- type: xs:dateTime
- properties: content simple
- annotation: documentation
  Start time of scenario. Accepts dateTime string.

**element scenario/duration**
- diagram: "duration"
  Scenario's duration (hr).
- type: xs:int
- properties: content simple
- annotation: documentation
  Scenario's duration (hr).

**element scenario/taxiModel**
- diagram: "taxiModel"
  Taxi model for scenario.
- type: taxiModelType
- properties: content simple
- facets:
  - Kind: Value Annotation
    - enumeration: UserSpecified
    - enumeration: Delayed
    - enumeration: Sequencing
- annotation: documentation
  Taxi model for scenario.

**element scenario/timeInModeBasis**
- diagram: "timeInModeBasis"
- type: timeInModeBasisType
- properties:
  - minOccurs: 0
  - maxOccurs: 1
  - content simple
  - default: ICAO
facets Kind Value Annotation
- enumeration Performance
- enumeration ICAO

**element scenario/acftPerfModel**

**diagram**

Aircraft performance model.

**type** aircraftPerformanceModelType

**properties** content simple

facets Kind Value Annotation
- enumeration ICAO
- enumeration SAE1845

**annotation** documentation

Aircraft performance model.

**element scenario/bankAngle**

**diagram**

Indicates if bank angle calculations should be included in calculations. NOTE: AEDT ignores this value and treats all scenarios as if their bank angle value was set to true.

**type** xs:boolean

**properties** content simple

**annotation** documentation

Indicates if bank angle calculations should be included in calculations. NOTE: AEDT ignores this value and treats all scenarios as if their bank angle value was set to true.

**element scenario/altitudeCutoff**

**diagram**

Altitude in MSL to cutoff trajectory modeling for this scenario. The scenario altitude cutoff only affects noise impact calculation in AEDT. Fuel burn and emissions will be calculated until a flight reaches the study boundary. (ft)

**type** xs:double

**properties**
- minOcc 0
- maxOcc 1
- content simple
- default 18000

**annotation** documentation

Altitude in MSL to cutoff trajectory modeling for this scenario. The scenario altitude cutoff only affects noise impact calculation in AEDT. Fuel burn and emissions will be calculated until a flight reaches the study boundary. (ft)

**element scenario/sulfurConversionRate**

**diagram**

Portion of sulfur in the fuel that, when combusted, becomes sulfuric acid used for emissions calculations. (%)  

**type** xs:double

**properties**
- minOcc 0
- maxOcc 1
- content simple

**annotation** documentation

Portion of sulfur in the fuel that, when combusted, becomes sulfuric acid used for emissions calculations. (%)
type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Percentage, by weight, of sulfur in the fuel used for emissions calculations. Default Values: 0.0006 (0.06%) (%)

**element scenario\description**

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>string255</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minLength</td>
</tr>
<tr>
<td></td>
<td>maxLength</td>
</tr>
</tbody>
</table>

annotation documentation
A description of the scenario.

**element scenarioAirportLayoutSet**

diagram

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>scenarioAirportLayout</td>
</tr>
<tr>
<td>used by</td>
<td>element scenario</td>
</tr>
</tbody>
</table>

annotation documentation
Contains a set of airport layout types.

**element scenarioAirportLayoutSet/scenarioAirportLayout**

diagram
Airport layout type.

Properties:
- type: scenarioAirportLayoutType
- minOcc: 1
- maxOcc: unbounded
- content: complex

Children:
- airportLayoutName
- mixingHeight
- useHourlyMetData
- averageTemperature
- dailyHighTemperature
- dailyLowTemperature
- pressure
- pressureMSL
- humidity
- windSpeed
- windDirection
- ceiling
- visibility
- airportConfigSet
- airportCapacity

Annotation:
Airport layout type.
element sensorNode

- lat
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Latitude for this location (decimal degrees).

- long
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Longitude for this location (decimal degrees).

- altitude
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Altitude at this location (ft).

- messageTime
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Time aircraft reaches this location, NOTE: Not used in AEDT.

- sequenceNum
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Order of this location in node list.

- speed
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Ground speed of aircraft at this location (kt).

- thrust
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Thrust of aircraft at this location, NOTE: Not used in AEDT. (lb)

- source
  - type: xs:double
  - properties: content simple
  - annotation: documentation
    Source of the data for this node, NOTE: Not used in AEDT.

annotation documentation
Describes a single node of a radar flight path.

Describes a single node of a radar flight path.
### element sensorNode/messageTime

Diagram:  

Type: xs:dateTime

Properties: content simple

Annotation: documentation  

Time aircraft reaches this location. NOTE: Not used in AEDT.

### element sensorNode/sequenceNum

Diagram:  

Type: xs:int

Properties: content simple

Annotation: documentation  

Order of this location in node list.

### element sensorNode/speed

Diagram:  

Type: xs:double

Properties: 
  - minOccurs: 0
  - maxOccurs: 1
  - content: simple

Annotation: documentation  

Ground speed of aircraft at this location (kts).

### element sensorNode/thrust

Diagram:  

Type: xs:double

Properties: 
  - minOccurs: 0
  - maxOccurs: 1
  - content: simple

Annotation: documentation  

Thrust of aircraft at this location. NOTE: Not used in AEDT. (lb)

### element sensorNode/source

Diagram:  

Type: string255

Properties: 
  - minOccurs: 0
  - maxOccurs: 1
  - content: simple

Facets: 

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>
### element sensorPath

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of the data for this node. NOTE: Not used in AEDT.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>sensorNode</td>
</tr>
<tr>
<td>used by</td>
<td>element trackOpSet</td>
</tr>
</tbody>
</table>

### element stationarySource

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes a flight path based on radar data.</td>
<td></td>
</tr>
</tbody>
</table>
**element stationarySource/name**

- **type**: string40
- **properties**: content simple
- **facets**:
  - Kind: Annotation
  - minLength: 0
  - maxLength: 40
- **annotation**: Identifying name of the stationary source.

**element stationarySourceOperation**

- **properties**: content complex
- **children**:
  - refName
  - elevation
  - pointCoord
  - emissionsUsage
- **used by**: element stationarySourceOperationSet
- **annotation**: Defines an operation at a stationary source that generates emissions.

**element stationarySourceOperation/refName**

- **type**: string40
- **properties**: content simple
- **facets**:
  - Kind: Annotation
  - minLength: 0
  - maxLength: 40
- **annotation**: Identifier of the operation.

**element stationarySourceOperation/elevation**

- **type**: xs:double
- **properties**:
  - minOccurs: 0
  - maxOccurs: 1
- **content**: simple

**element stationarySourceOperation/pointCoord**
**type** coord2DType

**properties**
- minOcc 0
- maxOcc 1
- content complex

**children**
- latitude
- latitudeDMS
- longitude
- longitudeDMS
- utmN
- utmE
- utmZone

**element** stationarySourceOperationSet

**diagram**

Container of operations conducted at a stationary source contributing emissions.

**properties**
- content complex

**children**
- stationarySourceOperation

**used by**
- group airportActivityGroup

**attributes**
- Name: dummy, Type: xs:int, Use: optional, Default: fixed, Annotation: documentation

**container**

Container of operations conducted at a stationary source contributing emissions.

**attribute** stationarySourceOperationSet/@dummy

**type** xs:int

**properties**
- use optional
### properties

- content complex

### children

- **stationarySource**

### used by

- element **AsfXml**
  - complexType **airportLayoutType**

### attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### annotation documentation

Container of stationary sources contributing emissions.

### attribute **stationarySourceSet/@dummy**

<table>
<thead>
<tr>
<th>Type</th>
<th>use optional</th>
</tr>
</thead>
</table>

```
<table>
<thead>
<tr>
<th>Type</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummy</td>
<td>xs:int</td>
</tr>
</tbody>
</table>
```
<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>name studyType emissionsUnits description boundary climate userDefinedAirportSet airportLayoutSet terrainFiles receptorSet fleet userGroundSupportEquipmentSet scenario</td>
</tr>
<tr>
<td>used by</td>
<td>element AsfXml</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Contains specific information about a study.</td>
</tr>
</tbody>
</table>

**element study/name**

- **diagram**
  - name
    - Name of the study.

- **type** string255

- **properties** content simple

- **facets**
  - Kind Value Annotation
element study/studyType

diagram

type studyType

properties content simple

facets Kind Value Annotation
  enumeration Emissions
  enumeration Dispersion
  enumeration Noise and Emissions
  enumeration Noise and Dispersion

element study/emissionsUnits

diagram

type emissionsUnitsType

properties content simple

facets Kind Value Annotation
  enumeration MetricTonnes
  enumeration Kilograms
  enumeration Grams
  enumeration ImperialTons
  enumeration Pounds

element study/description

diagram

type string255

properties minOcc 0
  maxOcc 1
  content simple

facets Kind Value Annotation
  minLength 0
  maxLength 255

annotation documentation
  Optional description of the study.

element study/terrainFiles

diagram

type string255

properties minOcc 0
  maxOcc 1
  content simple

facets Kind Value Annotation
  minLength 0
  maxLength 255

annotation documentation
  List of files containing descriptions of terrain.

element study/fleet

diagram

type string255

properties minOcc 0
  maxOcc 1
  content simple

facets Kind Value Annotation
  minLength 0
  maxLength 255

annotation documentation
  List of files containing descriptions of terrain.
auxiliaryPowerUnit

Describes a custom auxiliary power unit (APU). These are typically on-board generators providing power to a parked aircraft.

define engine

User defined engine information containing custom parameters that reflect an aircraft engine. This engine definition can then be used within a user-defined aircraft.

define engineMod

User defined engine model information containing custom parameters that reflect an aircraft engine model. This engine model definition can then be used within a user-defined aircraft.

ampNoiseGroup

This element contains the three spectral class references for a given aircraft noise group with the corresponding thrust setting type and model type.

ampAirplane

This defines a new ANP aircraft.

ampFlapsSet

Flap settings for an ANP aircraft type.

ampThrustSet

Specifies a set of thrust records for an ANP aircraft.

ampProfileSet

The profile set for an ANP aircraft.

ampHelicopterNoiseGroup

This element contains the three spectral class references for a given helicopter noise group with the corresponding thrust setting type and model type.

ampHelicopter

Creates a new ANP helicopter.

ampHelioDirectivitySet

A set of helicopter directivity.

ampHelioProfileSet

A profile set for an ANP helicopter.

badaAirplane

Defines aircraft fleet participating in the study.
defines aircraft fleet participating in the study.

**element subtrack**

**properties**
- content complex

**children**
- id
- dispersionWeight
- trackVectors
- trackNodes

**used by**
- element track

**annotation**
Intended to represent a dispersed child track of a parent track.
**element subtrack/id**

Diagram:

- **Id**
- **type**: xs:int
- **properties**: content: simple
- **annotation**: documentation

  ID for a subtrack.

**element subtrack/dispersionWeight**

Diagram:

- **dispersionWeight**
- **type**: xs:double
- **properties**: content: simple
- **used by**: element **backbone**
- **annotation**: documentation

  Dispersion weight value; must be greater than one and less than or equal to 1.

**element taxiNode**

Diagram:

- **taxiNode**
- **properties**: content: complex
- **children**: latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation speed
- **used by**: element **taxiNodeSet**
- **annotation**: documentation

  Supports legacy EDMS studies relating to the TAXWAYS table. Taxi nodes define the points for a given taxiway.
Supports legacy EDMS studies relating to the TAXIWAYS table. Taxi nodes define the points for a given taxiway.

**element taxiNode/elevation**

- **diagram**
  
  ![Elevation Diagram](image)

- **type** `xs:double`

- **properties**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: simple
  - `default`: 0

- **annotation**
  - documentation: Taxi node's elevation above MSL. Valid values: -500 to 5000. (m)

**element taxiNode/speed**

- **diagram**
  
  ![Speed Diagram](image)

- **type** `xs:double`

- **properties**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: simple
  - `default`: 0

- **annotation**
  - documentation: Speed of aircraft at node. Valid values: 1.00 to 60.00. (mph)

**element taxiNodeSet**

- **diagram**
  
  ![Taxi Node Set Diagram](image)

- **properties**
  - `content`: complex

- **children**
  - `taxiNode`

- **used by**
  - `taxiway`

- **annotation**
  - documentation: Supports legacy EDMS studies relating to the TAXIWAYS table. Taxi nodes define the points for a given taxiway.

**element taxipath**

- **diagram**
  
  ![Taxi Path Diagram](image)

- **annotation**
  - documentation: Supports legacy EDMS studies relating to the TAXIWAYS table. A taxipath is a sequence of taxiways, possibly just one, that connects a gate to a runway or vice versa. Taxiways are used to do the modeling of aircraft ground movement. They are needed for sequence modeling, which includes all departure analyses. Gates, taxiways and runways must be defined before taxipaths can be specified.
Supports legacy EDMS studies relating to the TAXIPATHS table. A taxipath is a sequence of taxiways, possibly just one, that connects a gate to a runway or vice versa. Taxipaths are used to do the modeling of aircraft ground movement. They are needed for sequence modeling, which includes all dispersion analyses. Gates, taxiways and runways must be defined before taxipaths can be specified.

**element taxipath/gateName**

- **type**: string40
- **properties**: content simple
- **facets**:
  - **Kind**: Value
  - **Annotation**: minLength 0, maxLength 40
- **annotation**: documentation
  - References an existing gate.

**element taxipath/runwayName**

- **type**: string8
- **properties**: content simple
- **facets**:
  - **Kind**: Value
  - **Annotation**: minLength 0, maxLength 8
- **annotation**: documentation
  - References an existing runway.

**element taxipath/direction**

- **type**: directionType
- **properties**: content simple
- **facets**:
  - **Kind**: Value
  - **Annotation**: pattern A|Arrival|D|Departure|I|Inbound|O|Outbound
- **annotation**: documentation
  - Direction of the taxipath. Valid values: Inbound or Outbound.

**element taxipath/taxiwayName**

- **type**: string20
- **properties**:
  - minOcc 1
  - maxOcc unbounded
- **facets**:
  - **Kind**: Value
  - **Annotation**: minLength 0, maxLength 20
**element taxipathSet**

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>taxipath</td>
</tr>
<tr>
<td>used by</td>
<td>complexType</td>
</tr>
</tbody>
</table>

**annotation documentation**

Supports legacy EDMS studies relating to the TAXIPATHS table. A taxipath is a sequence of taxiways, possibly just one, that connects a gate to a runway or vice versa. Taxipaths are used to do the modeling of aircraft ground movement. They are needed for sequence modeling, which includes all dispersion analyses. Gates, taxiways and runways must be defined before taxipaths can be specified.

**element taxiTime**

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>source, taxing, taxingOut</td>
</tr>
<tr>
<td>used by</td>
<td>complexType</td>
</tr>
</tbody>
</table>

**element taxiTime/source**

<table>
<thead>
<tr>
<th>type</th>
<th>string6</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0, maxOcc: 1</td>
</tr>
</tbody>
</table>

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**element taxiTime/taxing**

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0, maxOcc: 1</td>
</tr>
</tbody>
</table>

**element taxiTime/taxingOut**

| diagram | |
|---------| |
element taxiway

properties content complex
children name dispersionWidth taxiNodeSet
used by element taxiwaySet
annotation documentation
Supports legacy EDMS studies relating to the TAXIWAYS table. Taxiways determine the ground segments where the aircraft operates.

element taxiway/name

type string20

properties content simple
facets Kind Value Annotation
minLength 0
maxLength 20

annotation documentation
Identifying name for taxiway.

element taxiway/DispersionWidth

type doubleExclusive100

properties minOcc 0
maxOcc 1
content simple
default 1
facets Kind Value Annotation
minInclusive 0
maxExclusive 100

annotation documentation
Width of emission dispersion around taxiway. Valid values: 0 to 100. (ft)

element taxiwaySet

diagram

annotation documentation
Width of emission dispersion around taxiway. Valid values: 0 to 100. (ft)
**element track**

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>taxiway</td>
</tr>
<tr>
<td>used by</td>
<td>complexType airportLayoutType</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Supports legacy EDMS studies relating to the TAXIWAYS table. Taxiways determine the ground segments where the aircraft operates.</td>
</tr>
</tbody>
</table>

**diagram**

```
A flight track that can be used for flight operations.
```

**element track/name**

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>name optype wingtype airport runway vectorCourse Helipad backbone subtrack</td>
</tr>
<tr>
<td>used by</td>
<td>elements trackOpSet trackSet</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A flight track that can be used for flight operations.</td>
</tr>
</tbody>
</table>

**diagram**

```
The name of the track.
```

**type** string64

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc 0 maxOcc 1 content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td>Kind Value Annotation minLength 0 maxLength 64</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The name of the track.</td>
</tr>
</tbody>
</table>
The name of the runway.

**element track/vectorCourseHelipad**

```
vectorCourseHelipad
```

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation** documentation: Direction for helicopter operations of vector type (angle from North).

**element trackNode**

- **properties**:
  - content: complex
- **children**:
  - id
  - description
  - latitude
  - longitude
  - altitude
  - speed
  - utmN
  - utmE
  - utmZone
  - altitude
  - speed
- **used by**:
  - backboneNode
  - trackNodes
element trackNode/altitude

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>extension of xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0 maxOcc: 1 content: complex</td>
</tr>
<tr>
<td>attributes</td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td>control</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Node’s altitude above or below MSL (ft). Includes attribute node.

attribute trackNode/altitude/@control

type nodeControlType

properties use: optional

facets Kind | Value | Annotation
pattern 0|None|1|AtOrBelow|2|Match|3|AtOrAbove

element trackNode/speed

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>extension of xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0 maxOcc: 1 content: complex</td>
</tr>
<tr>
<td>attributes</td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td>control</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Speed of aircraft at node. Includes attribute node. Valid values: nonnegative. (kts)

attribute trackNode/speed/@control

type nodeControlType

properties use: optional

facets Kind | Value | Annotation
pattern 0|None|1|AtOrBelow|2|Match|3|AtOrAbove

element trackNodes

diagram

<table>
<thead>
<tr>
<th>properties</th>
<th>content: complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>trackNode</td>
</tr>
<tr>
<td>used by</td>
<td>element subtrack</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

A set of flight track nodes

element trackOpSet
| properties | content complex |
| children | track trackref sensorPath operations |
| used by | elements AsfXml case |
| annotation | documentation Lists tracks and associated operations. |

**element trackref**

| diagram | |
| properties | content complex |
| children | airportLayoutName trackName optype runway |
| used by | element trackOpSet |
| annotation | documentation Reference to a flight track. |

**element trackref/airportLayoutName**

| diagram | Airport layout associated with the track. |
| type | string255 |
| properties | content simple |
| facets | Kind Value Annotation
minLength 0
maxLength 255 |
| annotation | documentation Airport layout associated with this track. |

**element trackref/trackName**

| diagram | Name of flight track. |
| type | string64 |
| properties | content simple |
| facets | Kind Value Annotation
minLength 0
maxLength 64 |
**element trackref OPTYPE**

**type** `optype`

**properties** content simple

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>A</td>
<td>Arrival</td>
</tr>
</tbody>
</table>

**element trackref/Runway**

**type** `string8`

**properties**

- minOcc 0
- maxOcc 1
- content simple

**used by** element `runwaySet`

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

Name of runway on the flight track.

**element trackSet**

**properties** content complex

**children** `track`

**used by** complexType `airportLayoutType`

**annotation** documentation

A set of flight tracks.

**element trackVector**

**properties**

- `id` String identifier for the grouping of nodes.
- `description` An optional description for the grouping of nodes.

**children**

- `type` Type of vector. Valid values: 5 = Straight, 1 = LeftTurn, R = RightTurn.
- `distance` Distance flown along this vector. Valid values: nonnegative (mm).
- `angle` Angle of the vector. (Degree).
- `radius` Radius of the vector. Valid values: nonnegative (mm).
### element `trackVector/type`

**Diagram:**

- **Type:** `vectorTrackType`

**Properties:**
- `content` (simple)

**Facets:**
- **Kind:**
  - **Value:**
    - `pattern S|Straight|L|LeftTurn|R|RightTurn`

**Annotation:**
- **Documentation:**
  - Type of vector. Valid values: S = Straight, L = LeftTurn, R = RightTurn.

### element `trackVector/distance`

**Diagram:**

- **Type:** `xs:double`

**Properties:**
- `content` (simple)

**Annotation:**
- **Documentation:**
  - Distance flown along this vector. Valid values: nonnegative. (nmi)

### element `trackVector/angle`

**Diagram:**

- **Type:** `xs:double`

**Properties:**
- `content` (simple)

**Annotation:**
- **Documentation:**
  - Angle of the vector. (degrees)

### element `trackVector/radius`

**Diagram:**

- **Type:** `xs:double`

**Properties:**
- `content` (simple)

**Annotation:**
- **Documentation:**
  - Radius of the vector. Valid values: nonnegative. (nmi)

### element `trackVectors`

**Diagram:**

- **A list of flight track vectors.**
  - **A flight track vector.**

**Properties:**
- `content` (complex)

**Children:**
- `trackVector`

**Used by:**
- `subtrack`

**Annotation:**
- **Documentation:**
  - A flight track vector.
A list of flight track vectors.

```
element userDefinedAirportSet

diagram

```

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
</table>

```
children userDefinedAirport

```

```
used by element study

```

```
attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

```

```
annotation documentation
Contains user-defined airports.

```

```
attribute userDefinedAirportSet@dummy

type xs:int

```

```
properties use optional

```

```
element userDefinedAirportSetUserDefinedAirport

diagram

```

```
airport

```

```
flight

```

```
userDefinedAirport

```

```
attributes

```

```
Contains information for each user-defined airport. APT_CODE must not duplicate an existing system airport.

- **type**: `airport`
- **properties**
  - minOcc: 1
  - maxOcc: unbounded
  - content: complex
- **children**
  - `airportCode`
  - `effDate`
  - `expDate`
  - `name`
  - `state`
  - `facilityType`
  - `cityName`
  - `name`
  - `latDMS`
  - `latN`
  - `longDMS`
  - `longE`
  - `utmN`
  - `utmE`
  - `utmZone`
  - `elevation`
  - `patternAltitude`
  - `tower`
  - `layout`
  - `archiveFlag`
  - `altFlag`
  - `shelFlag`
  - `ordFlag`
  - `zone`
  - `airportWeather`
  - `windRose`
  - `taxiTime`
- **annotation**
  - documentation: Contains information for each user-defined airport. APT_CODE must not duplicate an existing system airport.
Properties: content complex

Children: gseID, gseName, defaultLoadFactor, defaultHorsepower, defaultOpTimeDepartures, defaultOpTimeArrivals, defaultAnnualOpTime, userEmissionFactors

Used by: element `userGroundSupportEquipmentSet`

Annotation: Supports legacy EDMs studies relating to content contained in the USER_CREATED_GSE table. This element supports the definition of user defined ground support equipment.

**Element: userGroundSupportEquipment/gseID**

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Diagram]</td>
</tr>
</tbody>
</table>

Type: xs:int

Properties: content simple

Annotation: User GSE ID (used as identifier (System GSE ID) in AIRCRAFT_GSE_ASSIGNMENTS, GSE_POPULATION, GSE_POPULATION_GATE_ASSIGNMENTS).

**Element: userGroundSupportEquipment/gseName**

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Diagram]</td>
</tr>
</tbody>
</table>

Type: string40

Properties: content simple

Facets: Kind | Value | Annotation
---|---|---
minLength | 0 | 
maxLength | 40 | 

Annotation: Custom GSE name.
**element** userGroundSupportEquipment/defaultLoadFactor

diagram

type doubleInclusive

properties content simple

facets:

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

GSE default load factor. Valid values: 0 to 100. (%)

**element** userGroundSupportEquipment/defaultHorsepower

diagram

type xs:double

properties content simple

annotation documentation

GSE default horsepower. Valid values: 0 to 10000. (hp)

**element** userGroundSupportEquipment/defaultOpTimeDepartures

diagram

type xs:double

properties content simple

annotation documentation

GSE default operation time departures. Valid values: 0 to 1000. (min/LTO)

**element** userGroundSupportEquipment/defaultOpTimeArrivals

diagram

type xs:double

properties content simple

annotation documentation

GSE default operation time arrivals. Valid values: 0 to 1000. (min/LTO)

**element** userGroundSupportEquipment/defaultAnnualOpTime

diagram

type xs:double

properties content simple

annotation documentation

GSE default operation time annual. Valid values: 0 to 8784. (min/LTO)

**element** userGroundSupportEquipment/userEmissionFactors
Describes user-defined fuel emission factors.

User-defined fuel emission factor for diesel.

User-defined fuel emission factor for gasoline.

User-defined fuel emission factor for compressed natural gas.

User-defined fuel emission factor for liquefied petroleum gas.

User-defined fuel emission factor for diesel.

User-defined fuel emission factor for gas.

User-defined fuel emission factor for CNG.

User-defined fuel emission factor for LPG.

Diagram:

- **emissionFactorsDiesel**
- **emissionFactorsGas**
- **emissionFactorsCNG**
- **emissionFactorsLPG**

**Properties**

- **content complex**

**Children**

- **emissionFactorsDiesel**
- **emissionFactorsGas**
- **emissionFactorsCNG**
- **emissionFactorsLPG**

**Annotation**

- Documentation: Describes user-defined fuel emission factors.
User-defined fuel emission factor for gasoline.

User-defined fuel emission factor for compressed natural gas.

User-defined fuel emission factor for liquefied petroleum gas.
element emissionFactorSet

type emissionFactorSet

properties
- minOcc: 0
- maxOcc: 1
- content: complex

children: CO HC NOx SOx PM10

annotation documentation
User-defined fuel emission factor for liquefied petroleum gas.

element userGroundSupportEquipmentSet

diagram

Supports legacy EDMS studies relating to content contained in the USER_CREATED_GSE table. This element supports the definition of user defined ground support equipment.

properties
- content: complex

children: userGroundSupportEquipment

used by elements AsifXml study

attributes
- Name: xs:string
- Type: xs:string
- Use: xs:unsigned short
- Default: xs:boolean
- Fixed: xs:boolean
- Annotation: xs:string

annotation documentation
Supports legacy EDMS studies relating to content contained in the USER_CREATED_GSE table. This element supports the definition of user defined ground support equipment.

attribute userGroundSupportEquipmentSet@dummy

type xs:int

properties use optional

element vehicleEmissionFactors

diagram

User-defined fuel emission factor for liquefied petroleum gas.
vehicleEmissionFactors

Supports legacy EDMS studies relating to content contained in the ROADWAYS/PARKING table. This element supports the definition of custom emission factor specifications for roadways and parking.

properties content complex

children CO NMHC VOC THC NOx SOx PM-10 PM-2.5 Benzene MTBE Butadiene Formaldehyde Acetaldehyde Acrolein

used by elements parkingFacilityOperation roadwayOperation

annotation documentation
Supports legacy EDMS studies relating to content contained in the ROADWAYS/PARKING table. This element supports the definition of custom emission factor specifications for roadways and parking.

element vehicleEmissionFactors/CO
Amount of carbon monoxide emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

Amount of non-methane hydrocarbons emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

Amount of volatile organic compounds emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

Amount of total hydrocarbons emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

Amount of total organic gases emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

Amount of nitrous oxides emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)
<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/SOX</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="SOx" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>documentation</td>
<td>Amount of sulfur oxides emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/PM-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="PM-10" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>documentation</td>
<td>Amount of 10-micron particulate matter emitted. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/PM-2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="PM-2.5" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>documentation</td>
<td>Amount of 2.5-micron particulate matter emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/Benzene</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Benzene" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>documentation</td>
<td>Amount of benzene emitted. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/MTBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="MTBE" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>documentation</td>
<td>Amount of methyl tertiary butyl ether emitted. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/Butadiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Butadiene" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>documentation</td>
<td>Amount of butadiene emitted. (grams/vehicle-mile)</td>
</tr>
<tr>
<td>element</td>
<td>type</td>
</tr>
<tr>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td>vehicleEmissionFactors/Butadiene</td>
<td>xs:double</td>
</tr>
<tr>
<td>vehicleEmissionFactors/Formaldehyde</td>
<td>xs:double</td>
</tr>
<tr>
<td>vehicleEmissionFactors/Acetaldehyde</td>
<td>xs:double</td>
</tr>
<tr>
<td>vehicleEmissionFactors/Acrolein</td>
<td>xs:double</td>
</tr>
<tr>
<td>volumeStationarySource</td>
<td></td>
</tr>
</tbody>
</table>
children | pointCoord baseElevation releaseHeight sigmaZ sigmaY
---|---
used by | element stationarySource
annotation | documentation

Specifies the volume in space occupied by a stationary source of emissions.

### element volumeStationarySource/pointCoord

**Diagram**

![Diagram of pointCoord](image)

- **type**: coord2DType
- **properties**: content complex
- **children**: latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone
- **annotation**: documentation

Type of 2D coordinates specifying the volume.

### element volumeStationarySource/baseElevation

**Diagram**

![Diagram of baseElevation](image)

- **type**: xs:double
- **properties**: content simple
- **annotation**: documentation

Height of volume. (m)

### element volumeStationarySource/releaseHeight

**Diagram**

![Diagram of releaseHeight](image)

- **type**: doubleInclusive100
- **properties**: minOcc 0 maxOcc 1 content simple

Height at which emissions are released into the atmosphere. Valid values 0 to 100 (m)
<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Height at which emissions are released into the atmosphere. Valid values 0 to 100 (m)

**element volumeStationarySource/sigmaZ**

diagram

```
< sigmaZ />
```

**type** xs:double

**properties**
- minOcc 0
- maxOcc 1
- content simple
- default 0

annotation documentation
Vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.0. (m)

**element volumeStationarySource/sigmaY**

diagram

```
< sigmaY />
```

**type** xs:double

**properties**
- minOcc 0
- maxOcc 1
- content simple
- default 0

annotation documentation
Horizontal dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.0. (m)

**element weatherData**

diagram

```
< weatherData />
```

**properties** content complex

**children** month temperature seaLevelPressure stationPressure dewPoint relativeHumidity windSpeed meanTemperature

**used by** element airportWeatherStation

**element weatherData/month**

diagram

```
< month />
```

**type** string3

**properties** content simple
<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**element weatherData/temperature**

- **Diagram**: ![Temperature Diagram]
- **Type**: `xs:decimal`
- **Properties**:
  - minOcc 0
  - maxOcc 1
  - content simple

**element weatherData/seaLevelPressure**

- **Diagram**: ![Sea Level Pressure Diagram]
- **Type**: `xs:decimal`
- **Properties**:
  - minOcc 0
  - maxOcc 1
  - content simple

**element weatherData/stationPressure**

- **Diagram**: ![Station Pressure Diagram]
- **Type**: `xs:decimal`
- **Properties**:
  - minOcc 0
  - maxOcc 1
  - content simple

**element weatherData/dewPoint**

- **Diagram**: ![Dew Point Diagram]
- **Type**: `xs:decimal`
- **Properties**:
  - minOcc 0
  - maxOcc 1
  - content simple

**element weatherData/relativeHumidity**

- **Diagram**: ![Relative Humidity Diagram]
- **Type**: `xs:double`
- **Properties**:
  - minOcc 0
  - maxOcc 1
  - content simple

**element weatherData/windSpeed**

- **Diagram**: ![Wind Speed Diagram]
- **Type**: `xs:decimal`
- **Properties**: content simple

**element weatherData/meanTemperature**

- **Diagram**: ![Mean Temperature Diagram]
- **Type**: `xs:decimal`
- **Properties**:
  - minOcc 0
  - maxOcc 1
  - content simple
element windRose

diagram

properties
content complex

children
windRoseStationId windRoseStation

used by
complexType airport

element windRose/windRoseStationId

diagram

property
content simple

facets
Kind Value Annotation
minLength 0
maxLength 5

element windRoseData

diagram

properties
content complex

children
directionRange centerDirection S01TO04KTS S04TO07KTS S07TO11KTS S11TO17KTS S17TO22KTS S22TO28KTS S28TO34KTS S34TO41KTS S41PLUSKTS DIRTOTAL

used by
element windRoseStation

element windRoseData/directionRange

diagram

type string14

properties
content simple

facets
Kind Value Annotation
minLength 0
maxLength 14

element windRoseData/centerDirection

diagram

type xs:int
<table>
<thead>
<tr>
<th>element windRoseData/S01TO04KTS</th>
<th>diagram</th>
<th>type</th>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![S04TO04KTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S04TO07KTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S07TO07KTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S07TO11KTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S11TO17KTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S11TO17KTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S17TO22KTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S17TO22KTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S22TO28KTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S22TO28KTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S28TO34KTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S28TO34KTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S34TO41KTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S34TO41KTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S41PLUSKTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S41PLUSKTS</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td></td>
<td>![S41PLUSKTS]</td>
<td>xs:int</td>
<td>content simple</td>
</tr>
<tr>
<td>type</td>
<td>xs:int</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**element windRoseData/DIRTOTAL**

<table>
<thead>
<tr>
<th>diagram</th>
<th>DIURTOTA</th>
<th>DIRT345</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:int</td>
<td></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td></td>
</tr>
</tbody>
</table>
good total userString windRoseData
used by element windRose

element windRoseStation/windRoseStationId
diagram

type string5
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 5

element windRoseStation/startDate
diagram

type xs:date
properties content simple

element windRoseStation/endDate
diagram

type xs:date
properties content simple

element windRoseStation/windRoseStationDescription
diagram

type string42
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 42

element windRoseStation/windRoseDataSource
diagram

type string32
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 32

element windRoseStation/windRoseDataSet
diagram

type string66
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 66

element windRoseStation/windRoseStationElevationFeet
diagram

type xs:int
<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
</table>

**element windRoseStation/averageWindSpeed**

<table>
<thead>
<tr>
<th>diagram</th>
<th>averageWindSpeed</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

**element windRoseStation/beginYear**

<table>
<thead>
<tr>
<th>diagram</th>
<th>beginYear</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

**element windRoseStation/endYear**

<table>
<thead>
<tr>
<th>diagram</th>
<th>endYear</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

**element windRoseStation/beginDayMonth**

<table>
<thead>
<tr>
<th>diagram</th>
<th>beginDayMonth</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string12</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>
| facets     | Kind Value Annotation
            | minLength 0  |
|            | maxLength 12    |

**element windRoseStation/endDayMonth**

<table>
<thead>
<tr>
<th>diagram</th>
<th>endDayMonth</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string11</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>
| facets     | Kind Value Annotation
            | minLength 0  |
|            | maxLength 11    |

**element windRoseStation/directionUnit**

<table>
<thead>
<tr>
<th>diagram</th>
<th>directionUnit</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string9</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>
| facets     | Kind Value Annotation
            | minLength 0  |
|            | maxLength 9     |

**element windRoseStation/calmCriteria**

<table>
<thead>
<tr>
<th>diagram</th>
<th>calmCriteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string11</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>
| facets     | Kind Value Annotation
            | minLength 0  |
element windRoseStation/calms
  diagram
  type xs:int
  properties content simple

element windRoseStation/missing
  diagram
  type xs:int
  properties content simple

element windRoseStation/good
  diagram
  type xs:int
  properties content simple

element windRoseStation/total
  diagram
  type xs:int
  properties content simple

element windRoseStation/userString
  diagram
  type string11
  properties content simple
  facets
  Kind Value Annotation
  minLength 0
  maxLength 11

group airportActivityGroup
  diagram
  children parkingFacilityOperationSet roadwayOperationSet stationarySourceOperationSet groundSupportEquipmentPopulationOperationSet
  used by element case
Contains a set of activities conducted at an airport.

**group annualizationGroup**

**diagram**

Contains one or more weighted annualization group cases.

**children**
- annualizationGroup
- annualizationCase

**used by**
- element annualizationGroup

**annotation documentation**
Allows for grouping cases into groups, and groups into parent groups.

**group coord2DGroup**

**diagram**

Indicates how a two-dimensional group is specified.

**children**
- latitude
- latitudeDMS
- longitude
- longitudeDMS
- utmN
- utmE
- utmZone

**used by**
- elements airportWeatherStation centroid grid pointReceptor polarGrid polarReceptor taxiNode trackNode windRoseStation
- airport airportLayoutType runway runwayEnd

**annotation documentation**
Indicates how a two-dimensional group is specified.
Specifies a coordinate using latitude and longitude.

**element latLonCoordGroup/latitude**

- **diagram**
  - Latitude specified as degrees in decimal format. Can include optional attribute positive.

- **type** latitudeDecimalType

- **properties**
  - content: complex

- **attributes**
  - Name: _positive_, Type: derived by: xs:string, Use: optional, Default: N, Fixed: N, Annotation: 

- **annotation**
  - Documentation: Latitude specified as degrees in decimal format. Can include optional attribute positive.

**element latLonCoordGroup/latitudeDMS**

- **diagram**
  - Latitude expressed as dd°mm'ss with optional indicator N, n, S, s.

- **type** latitudeDMSType

- **properties**
  - content: simple

- **facets**
  - Kind: pattern, Value: \[0-9][2-9]*[\-|\:|\"]\[0-9][2-9]*[\-|\:|\’][0-9][2-9]*\?[N|n|S|s]\]

- **annotation**
  - Documentation: Latitude expressed as dd°mm'ss with optional indicator N, n, S, s.

**element latLonCoordGroup/longitude**

- **diagram**
  - Longitude specified as degrees in decimal format. Can include optional attribute positive.

- **type** longitudeDecimalType

- **properties**
  - content: complex
**attributes** | **Name** | **Type** | **Use** | **Default** | **Fixed** | **Annotation**
--- | --- | --- | --- | --- | --- | ---
  | **positive** | **derived by:** xs:string | optional | E |  | **documentation**
  | annotation | documentation | Longitude specified as degrees in decimal format. Can include optional attribute positive.

**element latlonCoordGroup/longitudeDMS**

<table>
<thead>
<tr>
<th><strong>diagram</strong></th>
</tr>
</thead>
</table>

Longitude expressed as °°mm'sss with optional indicator N, n, S, s.

**type** | **longitudeDMSType**
--- | ---

**properties** | content simple
--- | ---

**facets** | Kind | Value | Annotation
--- | --- | --- | ---

pattern | [0-9][0-9][0-9](\[\-|:|\"])[0-9][0-9][0-9](\[\-|:|\"])[0-9][0-9][0-9](\[\-|:|\"])[E|e][W|w]

**annotation** | documentation
--- | ---

Longitude expressed as dd°mm'sss with optional indicator N, n, S, s.

**group nodeldGroup**

<table>
<thead>
<tr>
<th><strong>diagram</strong></th>
</tr>
</thead>
</table>

A group of nodes.

**children** | id description
--- | ---

**used by** | elements trackNode trackVector
--- | ---

**annotation** | documentation
--- | ---

A group of nodes.

**element nodeldGroup/id**

<table>
<thead>
<tr>
<th><strong>diagram</strong></th>
</tr>
</thead>
</table>

String identifier for the grouping of nodes.

**type** | **string16**
--- | ---

**properties** | minOcc 0 | maxOcc 1 | content simple
--- | --- | --- | ---

**facets** | Kind | Value | Annotation
--- | --- | --- | ---

minLength | 0 | maxLength 16

**annotation** | documentation
--- | ---

String identifier for the grouping of nodes.

**element nodeldGroup/description**

<table>
<thead>
<tr>
<th><strong>diagram</strong></th>
</tr>
</thead>
</table>

An optional description for the grouping of nodes.

**type** | **string16**
--- | ---

**properties** | minOcc 0 | maxOcc 1 | content simple
--- | --- | --- | ---

**facets** | Kind | Value | Annotation
--- | --- | --- | ---

minLength | 0 | maxLength 16

**annotation** | documentation
--- | ---

An optional description for the grouping of nodes.
**group oneOrThreeCoords2DGroupSet**

children: `pointCoord` `polygonCoords`

used by: elements `area` `StationarySource` `building` `gate` `parkingFacility`

annotation documentation
Type of coordinate specifying the area.

**element oneOrThreeCoords2DGroupSet/pointCoord**

type: `coord2DType`

properties: `content` `complex`

children: `latitude` `latitudeDMS` `longitude` `longitudeDMS` `utmN` `utmE` `utmZone`

annotation documentation
Choice of a single point coordinate.

**element oneOrThreeCoords2DGroupSet/polygonCoords**

type: `polygon2DType`

properties: `content` `complex`
**group receptorGroup**

- **diagram**

  - **children**
    - centroid
    - pointReceptor
    - grid
    - polarReceptor
    - polarGrid

- **used by**
  - element receptorSet

- **annotation**
  - documentation
    - Description of a receptor group.

**group utmCoordGroup**

- **diagram**

  - **children**
    - utmN
    - utmE
    - utmZone

- **used by**
  - complexType coord2DType
    - group coord2DGroup

- **annotation**
  - documentation
    - Specifies a point using Universal Transverse Mercator coordinates.

**element utmCoordGroup/utmN**

- **type**
  - xs:double

- **properties**
  - content simple
<table>
<thead>
<tr>
<th>element</th>
<th>utmCoordGroup/utmE</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="UTM Northing Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

UTM Northing of the point in decimal meters north of the equator.

<table>
<thead>
<tr>
<th>element</th>
<th>utmCoordGroup/utmZone</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="UTM Easting Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0 maxOcc 1 content simple default -1</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

UTM Easting of the point in decimal meters east from a central meridian.

<table>
<thead>
<tr>
<th>complexType</th>
<th>aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Aircraft Diagram" /></td>
</tr>
<tr>
<td>children</td>
<td>description airframeModel engineCode engineModCode anpAirplaneId badaAirplaneId anpHelicopterId</td>
</tr>
<tr>
<td>used by</td>
<td>element fleet/aircraft</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Main block for creating new user defined AEDT aircraft.

<table>
<thead>
<tr>
<th>element</th>
<th>aircraft/description</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Description Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>string255</td>
</tr>
</tbody>
</table>

The description for the user defined aircraft.
<table>
<thead>
<tr>
<th>element</th>
<th>aircraft/airframeModel</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="airframeModel" /></td>
</tr>
<tr>
<td>type</td>
<td>airframeModel</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minLength</td>
</tr>
<tr>
<td></td>
<td>maxLength</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The airframe model used for this user defined aircraft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>aircraft/engineCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="engineCode" /></td>
</tr>
<tr>
<td>type</td>
<td>engineCode</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minLength</td>
</tr>
<tr>
<td></td>
<td>maxLength</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The engine code used for this user defined aircraft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>aircraft/engineModCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="engineModCode" /></td>
</tr>
<tr>
<td>type</td>
<td>engineModCode</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc: 0, maxOcc: 1, content: simple, default: NONE</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minLength</td>
</tr>
<tr>
<td></td>
<td>maxLength</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The engine modification code used for this user defined aircraft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>aircraft/anpAirplaneId</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="anpAirplaneId" /></td>
</tr>
<tr>
<td>type</td>
<td>anpAirplaneId</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minLength</td>
</tr>
<tr>
<td>element</td>
<td>aircraft/badaAirplaneId</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of badaAirplaneId" /></td>
</tr>
<tr>
<td>type</td>
<td>badaAirplaneId</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The BADA airplane linked to this user defined aircraft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>aircraft/anpHelicopterId</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of anpHelicopterId" /></td>
</tr>
<tr>
<td>type</td>
<td>anpHelicopterId</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The ANP helicopter linked to this user defined helicopter.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>complexType</th>
<th>aircraftEngine</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of aircraftEngine" /></td>
</tr>
</tbody>
</table>
User defined engine information containing custom parameters that reflect an aircraft engine. This engine definition can be used within a user defined aircraft.
## aircraftEngine/code

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

Unique ICAO UID.

## aircraftEngine/model

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

Engine model.

## aircraftEngine/engineType

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>Jet</td>
<td>J</td>
</tr>
</tbody>
</table>

**annotation documentation**

Engine type. Valid values: J (jet), T (turboprop), P (piston).

## aircraftEngine/notes

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>200</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

Free-text notes for the engine.

## aircraftEngine/emissionsEngineModel

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

ICAO emissions model for the engine.
element aircraftEngine/performanceEngineModel

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
ICAO emissions model for the engine.

element aircraftEngine/manufacturer

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Engine manufacturer.

element aircraftEngine/combustor

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Combustor used on engine.

element aircraftEngine/superseded

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
ICAO UUID of engine that supersedes the given engine.
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

ICAO UID of engine that supersedes the given engine.

**element aircraftEngine/ratedEngineOut**

**diagram**

```xml
< RatedEngineOut />
```

**type** `xs:double`

**properties**

- `minOcc`: 0
- `maxOcc`: 1
- `content`: `simple`

**annotation** documentation

Rated engine output (in kN). Valid values: Nonnegative.

**element aircraftEngine/source**

**diagram**

```xml
<source />
```

**type** `string100`

**properties**

- `minOcc`: 0
- `maxOcc`: 1
- `content`: `simple`

**facets**

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

Source of engine data.

**element aircraftEngine/bypassRatio**

**diagram**

```xml
<bypassRatio />
```

**type** `xs:double`

**properties**

- `minOcc`: 0
- `maxOcc`: 1
- `content`: `simple`

**annotation** documentation

Engine's bypass ratio. Valid values: Nonnegative.

**element aircraftEngine/pressureRatio**

**diagram**

```xml
<pressureRatio />
```

**type** `xs:double`

**properties**

- `minOcc`: 0
- `maxOcc`: 1
- `content`: `simple`

**annotation** documentation

Engine's pressure ratio. Valid values: Nonnegative.

**element aircraftEngine/tfmtFlag**

**diagram**

```xml
<tfmtFlag />
```

Turbo-fan or Mixed twin-fan flag. Valid values: TF (turbofan) or MTF (mixed turbofan).
<table>
<thead>
<tr>
<th>type</th>
<th>string 50</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>Value</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Turbo-fan or Mixed turn-fan flag. Valid values: TF (turbofan) or MTF (mixed turbofan).

**element aircraftEngine/defaultSOx**

```
<defaultSOx>
  Sulfur oxides emitted (grams per kilogram of fuel). Valid values: Nonnegative.
</defaultSOx>
```

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Sulfur oxides emitted (grams per kilogram of fuel). Valid values: Nonnegative.

**element aircraftEngine/taxiIdleEmissionFactors**

```
<taxiIdleEmissionFactors>
  Emission factor when aircraft is idling.
</taxiIdleEmissionFactors>
```

<table>
<thead>
<tr>
<th>type</th>
<th>engineModeEmissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content complex</td>
</tr>
<tr>
<td>children</td>
<td>time fuel CO HC NOx SOx SN PM</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Emission factor when aircraft is idling.

**element aircraftEngine/takeOffEmissionFactors**
Emission factor when aircraft is taking off.

**Element**: `aircraftEngine/climbEmissionFactors`

**Diagram**:
- **Type**: `engineModeEmissions`
- **Properties**: content complex
- **Children**: `time fuel CO HC NOx SOx SN PM`
- **Annotation**: documentation
  Emission factor when aircraft is taking off.
**Engine Mode Emissions**

**Properties**
- **content** complex

**Children**
- **time**
- **fuel**
- **CO**
- **HC**
- **NOx**
- **SOx**
- **SN**
- **PM**

**Annotation**
Emission factor when aircraft is climbing.

---

**element aircraftEngine/approachEmissionFactors**

**Diagram**
type: `engineModeEmissions`  
properties: `content` complex  
children: `time` `fuel` `CO` `HC` `NOx` `SOx` `SN` `PM`  
annotation: documentation

**Emission factor when aircraft is on approach.**

**complexType** `aircraftEngineMod`  

diagram  

children: `code` `description`  
used by: element `fleetEngineMod`  
annotation: documentation

**User defined engine modification information containing custom parameters that reflect an aircraft engine modification. This engine modification definition can be used within a user defined aircraft.**

**element** `aircraftEngineMod/code`  

diagram  

type: `engineModCode`  
properties: `content` simple  
facets: Kind    Value    Annotation    
minLength 0  
maxLength 50
element aircraftEngineMod
description

![Diagram of aircraftEngineMod]

type string255

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
Description of engine modifications.

complexType aircraftType
diagram

![Diagram of aircraftType]

children
- anpAircraftId
- airframeModel
- engineCode
- engineModCode
- apuName
- groundSupportEquipment
- TOOperationSet

used by
- elements: operation/aircraftType
- runup/aircraftType

annotation documentation
Characterizes an aircraft.

element aircraftType/anpAircraftId
diagram

![Diagram of anpAircraftId]

type anpAirplaneId

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 255

element aircraftType/airframeModel
diagram

![Diagram of airframeModel]

type string50

properties content simple

facets Kind Value Annotation
element aircraftType/engineCode
diagram

type string25

properties content simple

facets Kind Value Annotation
minLength: 0
maxLength: 25

annotation documentation
Engine code. Valid values: E (Electric), J (Jet), P (Piston), T (Turboprop).

element aircraftType/engineModCode
diagram

type engineModCode

properties minOcc: 0
maxOcc: 1

default: NONE

facets Kind Value Annotation
minLength: 0
maxLength: 50

annotation documentation
Engine modification code. (AEDT database reference table FLEET.FLT_ENGINE_MODS column ENGINE_MOD_CODE.)

element aircraftType/apuName
diagram

type xs:string

properties minOcc: 0
maxOcc: 1

content simple

annotation documentation
Name of auxiliary power unit used by this type of aircraft.

complexType airframe
This element supports the definition of custom airframes.
<table>
<thead>
<tr>
<th>element</th>
<th>diagram</th>
<th>type</th>
<th>properties</th>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>airframe/engineCount</td>
<td><img src="image1" alt="engineCount diagram" /></td>
<td>xs:int</td>
<td>content simple</td>
<td>Number of engines on airframe.</td>
</tr>
<tr>
<td>airframe/engineLocation</td>
<td><img src="image2" alt="engineLocation diagram" /></td>
<td>string1</td>
<td>content simple</td>
<td>Position of engine on airframe. Valid values: F (Fuselage/Tail), W (Wing).</td>
</tr>
<tr>
<td>airframe/designationCode</td>
<td><img src="image3" alt="designationCode diagram" /></td>
<td>string1</td>
<td>content simple</td>
<td>Type of aviation. Valid values: C (Civil), G (General Aviation), M (Military).</td>
</tr>
<tr>
<td>airframe/maxRange</td>
<td><img src="image4" alt="maxRange diagram" /></td>
<td>xs:int</td>
<td>minOcc 0, maxOcc 1</td>
<td>Number of miles airframe can fly fully fueled. Valid values: Nonnegative.</td>
</tr>
<tr>
<td>airframe/introYear</td>
<td><img src="image5" alt="introYear diagram" /></td>
<td>xs:int</td>
<td>minOcc 0, maxOcc 1</td>
<td>Year airframe was introduced. Valid values: Nonnegative.</td>
</tr>
</tbody>
</table>
### element airframe/airframe

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td>string2</td>
<td>minOcc: 0, maxOcc: 1</td>
<td>minLength: 0, maxLength: 2</td>
<td>European group code for this airframe. Valid values: H1 (Helicopter Light), H2 (Helicopter Heavy), JB (Jet Business), JL (Jet Large), JM (Jet Medium), JR (Jet Regional), JS (Jet Small), PP (Propeller), SS (Supersonic), TP (Turboprop).</td>
</tr>
</tbody>
</table>

### element airframe/sizeCode

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td>string1</td>
<td></td>
<td>minLength: 0, maxLength: 1</td>
<td>Size code for this airframe. Valid values: H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).</td>
</tr>
</tbody>
</table>

### element airframe/usageCode

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td>string1</td>
<td></td>
<td>minLength: 0, maxLength: 1</td>
<td>Usage code for this airframe. Valid values: H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).</td>
</tr>
</tbody>
</table>

### element airframe/engineType

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td>string1</td>
<td></td>
<td></td>
<td>Type of engine on this airframe. Valid values: E (Electric), J (Jet), P (Piston).</td>
</tr>
</tbody>
</table>

**annotation documentation**

Year airframe was introduced. Valid values: Nonnegative.
Type of engine on this airframe. Valid values: E (Electric), J (Jet), P (Piston), T (Turboprop).

Identifier of an auxiliary power unit.

Contains core airport.
Contains core airport information such as airport name, latitude/longitude, elevation, etc.
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>airport/effDate</td>
<td></td>
<td>xs:date</td>
<td>content simple</td>
<td>Effective date for the airport.</td>
</tr>
<tr>
<td>airport/expDate</td>
<td></td>
<td>xs:date</td>
<td>content simple</td>
<td>The expiration date for the airport.</td>
</tr>
<tr>
<td>airport/name</td>
<td></td>
<td>string100</td>
<td>minOcc 0, maxOcc 1</td>
<td>The name of airport.</td>
</tr>
<tr>
<td>airport/state</td>
<td></td>
<td>string50</td>
<td>minOcc 0, maxOcc 1</td>
<td>The airport state / territory name.</td>
</tr>
<tr>
<td>airport/facilityType</td>
<td></td>
<td>string25</td>
<td>minOcc 0, maxOcc 1</td>
<td>The facility type, i.e. airport, helipad, seaport</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
<td>Value</td>
<td>Annotation</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>-------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
<td>maxLength</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
The facility type, i.e. airport, heliport, seaport

**element airport/cityName**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>cityName</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>string50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
</tr>
<tr>
<td>maxOcc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td>maxLength</td>
<td>50</td>
</tr>
</tbody>
</table>

annotation documentation
The name of city closest to the airport.

**element airport/elevation**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>elevation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>xs:double</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
</tr>
</tbody>
</table>

annotation documentation
Airport elevation above mean sea level. UNITS: Feet above MSL

**element airport/patternAltitude**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>patternAltitude</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>xs:int</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
</tr>
<tr>
<td>maxOcc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>documentation</td>
</tr>
</tbody>
</table>

Pattern altitude (where provided) above ground level. UNITS: Feet AGL

**element airport/tower**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>tower</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>xs:boolean</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
</tr>
<tr>
<td>maxOcc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>documentation</td>
</tr>
</tbody>
</table>

Flag to indicate if the airport has a tower.

**element airport/layout**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>layout</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
</tr>
</thead>
<tbody>
<tr>
<td>xs:boolean</td>
</tr>
</tbody>
</table>

Flag to indicate detailed layout information exists.
<table>
<thead>
<tr>
<th>element</th>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>airport/archiveFlag</strong></td>
<td>Flag to indicate detailed layout information exists.</td>
</tr>
</tbody>
</table>

**Diagram:**

```
archiveFlag
---
Flag set to 1 if track, sub-track, segment, and group percentage data can be distributed.
```

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>default</td>
<td>false</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><strong>airport/dafifId</strong></th>
</tr>
</thead>
</table>

**Diagram:**

```
dafifId
---
DAFIF Airport ID.
```

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
</tbody>
</table>

**Facets:**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DAFIF Airport ID.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><strong>airport/faald</strong></th>
</tr>
</thead>
</table>

**Diagram:**

```
faald
---
FAA Airport ID.
```

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
</tbody>
</table>

**Facets:**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FAA Airport ID.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><strong>airport/shell1</strong></th>
</tr>
</thead>
</table>

**Diagram:**

```
shell1
---
Indicates if this airport is a shell 1 airport.
```

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>default</td>
<td>false</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indicates if this airport is a shell 1 airport.</td>
</tr>
</tbody>
</table>
element airport/smad

diagram

```
   smad
Indicates if airport is a JPDO Systems Modeling and Analysis Division analysis airport.
```

type xs:boolean

properties

<table>
<thead>
<tr>
<th>minOcc</th>
<th>maxOcc</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

content simple
default false

annotation documentation

Indicates if airport is a JPDO Systems Modeling and Analysis Division analysis airport.


element airport/zone

diagram

```
   zone
Zone info data for airport.
```

type string100

properties content simple

facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

Zone info data for airport.

complexType airportCode

diagram

```
   airportCode
An airport code.
```

type extension of string

properties base string

used by elements track/airport runup/airport airportCode airportLayoutType/airportCode operation/arriveAirport operation/departureAirport

facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>airportCodeType</td>
<td>optional</td>
<td>ANY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>country</td>
<td>string3</td>
<td>optional</td>
<td>ANY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

An airport code.

attribute airportCode/@type

type airportCodeType

properties use optional
default ANY

facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration</td>
<td>ICAO</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>IATA</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>FAA</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>OTHER</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>ANY</td>
<td></td>
</tr>
</tbody>
</table>

attribute airportCode/@country

type string3

properties use optional
complexType airportLayoutType

- name:
  ID of the layout. Must be unique.

- airportCode:
  ICAO code of airport in the layout.

- startDate:
  Date airport is included in the study.

- elevation:
  Elevation of the layout in feet above MSL. [0] Valid values: -1500 to 15000.

- peakMonthAverageDayScaling:
  Converts average Annual Day operations to Peak Month Average Day operations. This is to comply with regulatory reporting requirements for the Peak Month Average Day emissions fuel burn totals at individual airports.

- taxiInTime:
  Number of minutes to complete a taxi-in (min)

- taxiOutTime:
  Number of minutes to complete a taxi-out (min)

- locationCoordGroup:
  Specifies a coordinate using latitude and longitude.

  - @latitude:
    Latitude specified as degrees in decimal format. Can include optional attribute positive.

  - @latitudeDMS:
    Latitude specified as degrees in DMS format. Can include optional attribute positive.

  - @longitude:
    Longitude specified as degrees in decimal format. Can include optional attribute positive.

  - @longitudeDMS:
    Longitude specified as degrees in DMS format. Can include optional attribute positive.

- utmN:
  UTM Northing of the point in decimal meters north of the equator.

- utmE:
  UTM Easting of the point in decimal meters east from a central meridian.

- utmZone:
  UTM Zone of the point. A default zone can be set in the &lt;option&gt; tag.
Fields defining an airport and its layout.

**element airportLayoutType/name**

Diagram: ID of the layout. Must be unique.

<table>
<thead>
<tr>
<th>Type</th>
<th>string255</th>
</tr>
</thead>
</table>

**properties**

- minOccurs: 0
- maxOccurs: 1
- content: simple

**facets**

- Kind: Annotation
- minLength: 0
- maxLength: 255

**annotation**

ID of the layout. Must be unique.

**element airportLayoutType/airportCode**

Diagram: ICAO code of airport in the layout.

<table>
<thead>
<tr>
<th>Type</th>
<th>airportCode</th>
</tr>
</thead>
</table>

**properties**

- content: complex

**facets**

- Kind: Annotation
- minLength: 0
- maxLength: 4

**attributes**

- Name: type
- Type: airportCodeType
- Use: optional
- Default: ANY
- Fixed: False
- Annotation: documentation

- Name: country
- Type: string3
- Use: optional
- Default: ANY
- Fixed: False
- Annotation: ICAO code of airport in the layout.
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>airportLayoutType/startDate</strong></td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>airportLayoutType/elevation</strong></td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>airportLayoutType/peakMonthAverageDayScalingFactor</strong></td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>airportLayoutType/taxiInTime</strong></td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>airportLayoutType/taxiOutTime</strong></td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
</tbody>
</table>

diagram

<table>
<thead>
<tr>
<th>Type: xs:date</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties: minOcc 0</td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>Date airport is included in the study.</td>
<td></td>
</tr>
</tbody>
</table>

diagram

<table>
<thead>
<tr>
<th>Type: xs:double</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties: minOcc 0</td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>Elevation of the layout in feet above MSL. (ft) Valid values: -1500 to 15000.</td>
<td></td>
</tr>
</tbody>
</table>

diagram

<table>
<thead>
<tr>
<th>Type: xs:double</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties: minOcc 0</td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>Converts Average Annual Day operations to Peak Month Average Day operations. This is to comply with regulatory reporting requirements for the Peak Month Average Day emissions and fuel burn totals at individual airports.</td>
<td></td>
</tr>
</tbody>
</table>

diagram

<table>
<thead>
<tr>
<th>Type: xs:double</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties: minOcc 0</td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>Number of minutes to complete a taxi-in. (min)</td>
<td></td>
</tr>
</tbody>
</table>

diagram

<table>
<thead>
<tr>
<th>Type: xs:double</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties: minOcc 0</td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>Annotation: documentation</td>
<td></td>
</tr>
<tr>
<td>Number of minutes to complete a taxi-out. (min)</td>
<td></td>
</tr>
</tbody>
</table>
Number of minutes to complete a taxi-out. (min)
<table>
<thead>
<tr>
<th>Type</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>anpAirplaneId</code></td>
<td></td>
<td></td>
<td>ID of ANP airplane. Must be a new, unique value.</td>
</tr>
<tr>
<td><code>description</code></td>
<td><code>string255</code></td>
<td></td>
<td>Description of ANP airplane.</td>
</tr>
<tr>
<td><code>sizeCode</code></td>
<td><code>anpSizeCode</code></td>
<td></td>
<td>Size code for this airframe. Valid values: H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).</td>
</tr>
<tr>
<td><code>owner</code></td>
<td><code>anpOwnerType</code></td>
<td></td>
<td>The owner category: commercial, general aviation, military.</td>
</tr>
<tr>
<td><code>engineTypeCode</code></td>
<td><code>engineType</code></td>
<td></td>
<td>The engine type code: prop, jet, turbo.</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td></td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
<td>Value</td>
<td>Annotation</td>
</tr>
<tr>
<td></td>
<td>pattern</td>
<td>Jet</td>
<td>Jet</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>The engine type code: prop, jet, turbo.</td>
<td></td>
</tr>
</tbody>
</table>

**element anpAirplane/numberEngines**

```xml
diagram

numberEngines

Number of engines on this airplane. Valid values: 1 through 8.
```

type xs:int

properties content simple

annotation documentation Number of engines on this airplane. Valid values: 1 through 8.

**element anpAirplane/maxGrossWeightTakeoff**

```xml
diagram

maxGrossWeightTakeoff

Maximum gross weight on takeoff (min = 0, max = 999999, lbs).
```

type xs:int

properties minOcc 0

maxOcc 1

content simple

annotation documentation Maximum gross weight on takeoff (min = 0, max = 999999, lbs).

**element anpAirplane/maxGrossWeightLand**

```xml
diagram

maxGrossWeightLand

Maximum gross weight on landing (min = 0, max = 999999, lbs).
```

type xs:int

properties minOcc 0

maxOcc 1

content simple

annotation documentation Maximum gross weight on landing (min = 0, max = 999999, lbs).

**element anpAirplane/maxDsStop**

```xml
diagram

maxDsStop

FAR landing field length at maximum landing weight (min = 0, max = 20000, feet).
```

type xs:int

properties minOcc 0

maxOcc 1

content simple

annotation documentation FAR landing field length at maximum landing weight (min = 0, max = 20000, feet).

**element anpAirplane/depThrustCoeffType**

```xml
diagram

depThrustCoeffType

Type of thrust coefficients: J = Jet, P = Prop.
```

type anpCoeffType

properties minOcc 0
**element anpAirplane/thrustStatic**

- **type**: xs:int
- **properties**:
  - minOcc: 0
  - maxOcc: 1
- **annotation**:
  - documentation: Static rated thrust or 100% thrust (lb, min =0, max = 200000).

**element anpAirplane/thrustRestore**

- **type**: yesNoType
- **properties**:
  - content: simple
  - default: N
- **facets**:
  - Kind: Value: Annotation
    - pattern: Yes|Y|No|N
- **annotation**:
  - documentation: Flag indicating aircraft has automated thrust restoration system.

**element anpAirplane/noiseld**

- **type**: anpNoiseld
- **properties**:
  - minOcc: 0
  - maxOcc: 1
- **annotation**:
  - documentation: ID of a Noise Group.

**element anpAirplane/noiseCategory**

- **type**: xs:int
- **properties**:
  - minOcc: 0
  - maxOcc: 1
- **annotation**:
  - documentation: The noise category stage number.

**element anpAirplane/minBurn**
**complexType** `anpFlaps`

- **diagram**: [Diagram](#)

  - **type** `xs:double`
  - **properties**
    - `minOcc`: 0
    - `maxOcc`: 1
    - `content`: simple
  - **annotation** documentation
    - Minimum fuel burn rate. (kg/sec)

- **complexType** `anpFlaps` children
  - `flapId`
  - `operationType` `coeff_R` `coeff_CD` `coeff_B`

- **used by** element `anpFlapsSet/flaps`

- **annotation** documentation
  - Flaps data element.

**element** `anpFlaps/flapId`

- **diagram**: [Diagram](#)

  - **type** `anpFlapId`
  - **properties**
    - `content`: simple
  - **facets**
    - `minLength`: 0
    - `maxLength`: 6
  - **annotation** documentation
    - Flap-setting identifier.

**element** `anpFlaps/operationType`

- **diagram**: [Diagram](#)

  - **type** `string1`
  - **properties**
    - `content`: simple
  - **facets**
    - `minLength`: 0
    - `maxLength`: 1
  - **annotation** documentation
Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&Go), F (CircuitFlo), V (OverFlo)

**element anpFlaps/coef_R**

diagram

```
coef_R

The drag-over-lift ratio. Valid values: 0.0 to 1.34.
```

type xs:double

properties content simple

annotation documentation

The drag-over-lift ratio. Valid values: 0.0 to 1.34.

**element anpFlaps/coef_CD**

diagram

```
coef_CD

The takeoff and landing calibrated airspeed coefficient. Valid values: 0.0 to 1.34. (KNOTS/LB\(^{1/2}\))
```

type xs:double

properties content simple

annotation documentation

The takeoff and landing calibrated airspeed coefficient. Valid values: 0.0 to 1.34. (KNOTS/LB\(^{1/2}\))

**element anpFlaps/coef_B**

diagram

```
coef_B

The takeoff distance coefficient. Valid values: 0.0 to 1.34. (FEET/LB)
```

type xs:double

properties content simple

annotation documentation

The takeoff distance coefficient. Valid values: 0.0 to 1.34. (FEET/LB)

**complexType anpFlapsSet**

diagram

```
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Flap settings set for an ANP aircraft type.

**children** anpAirplaneld flaps

**used by** element fleet/anpFlapsSet

annotation documentation

Flap settings set for an ANP aircraft type.

**element anpFlapsSet/anpAirplaneld**

diagram

```
anpAirplaneld

Airplane's ANP ID.
```

type anpAirplaneld

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 255

annotation documentation

Airplane's ANP ID.

**element anpFlapsSet/flaps**

diagram

```
flaps

1:1
```

Airplane's ANP ID.
type anpFlaps

properties
- minOcc 1
- maxOcc unbounded
- content complex

children
- flapId
- operationType
- coeff_R
- coeff_CD
- coeff_B

complexType anpHelicopter
diagram

- anpHelicopterId
  - Unique ID number of ANP Helicopter.
- noiseId
  - ID of a Noise Group.
- directivityId
  - Noise directivity ID for ANP helicopter.
- description
  - Description of ANP Helicopter.
- owner
  - The owner category. Valid values: C (commercial), G (general aviation), M (military).
- engineTypeCode
  - The engine type code. Valid values: P (piston), T (turboprop).
- numberRotors
  - The number of rotors. Valid values: 1 to 9.
- diameter
  - The helicopter diameter (feet). Valid values: 0 to 1008.
- rpm
  - The helicopter rotor speed (revolutions per minute). Valid values: 0 to 1008.
- maxTakeoffWeight
  - The max gross takeoff weight (pounds). Valid values: 0 to 50000.
- hasWheels
element anpHelicopterId

diagram

```
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>
```

annotation documentation

Unique ID number of ANP Helicopter.

element noiseId

diagram

```
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>
```

annotation documentation

ID of a Noise Group.

element directivityId

diagram

```
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
```

annotation documentation

Noise directivity ID for ANP helicopter.

element description

diagram

```
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
```

annotation documentation

Description of ANP Helicopter.
**Description of ANP Helicopter.**

**element** anpHelicopter/owner

- **diagram**
  ![Diagram](image1)
- **type** anpOwnerType
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **facets**
  - Kind | Value | Annotation
  - pattern: Commercial|C|Military|M|General|G
- **annotation** documentation
  - The owner category. Valid values: C (commercial), G (general aviation), M (military).

**element** anpHelicopter/engineTypeCode

- **diagram**
  ![Diagram](image2)
- **type** engineType
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **facets**
  - Kind | Value | Annotation
  - pattern: Jet|J|Turbo|Turbo|P|Prop|Piston|P
- **annotation** documentation
  - The engine type code. Valid values: P (piston), J (jet), T (turboprop).

**element** anpHelicopter/numberRotors

- **diagram**
  ![Diagram](image3)
- **type** xs:int
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation** documentation
  - The number of rotors. Valid values: 1 to 9.

**element** anpHelicopter/diameter

- **diagram**
  ![Diagram](image4)
- **type** xs:double
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation** documentation
  - The helicopter diameter (feet). Valid values: 0 to 1000.

**element** anpHelicopter/rpm

- **diagram**
  ![Diagram](image5)
element anpHelicopter/rotorSpeed

type xs:double

properties
minOcc 0
maxOcc 1
content simple

annotation documentation
The helicopter rotor speed (revolutions per minute). Valid values: 0 to 1000.

element anpHelicopter/maxTakeoffWeight

type xs:int

properties
minOcc 0
maxOcc 1
content simple

annotation documentation
The max gross takeoff weight (pounds). Valid values: 0 to 50000.

element anpHelicopter/hasWheels

type yesNoType

properties
minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
pattern Yes|Y|No|N

annotation documentation
Flag indicating if the helicopter has wheels. Valid values: Y (yes), N (no).

element anpHelicopter/modelType

type string1

properties
minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 1

annotation documentation
The helicopter model type. Valid values: I (INM), N (NoiseMap).

element anpHelicopter/bLeft0

diagram

Actuall gepower noise at a function of speed. Left. Valid values: Min = -999.99 Mx = -999.99.
Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.
Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, vertical ascent. Valid values: Min = -999.99 Max = 999.99.
Decibel offset added to NPD levels, vertical ascent (dB). Valid values: Min = -50 Max = 50.

element anpHelicopter/dbVerticalDescent

diagram
Decibel offset added to NPD levels, vertical descent (dB). Valid values: Min = -50 Max = 50.

annotation documentation
Decibel offset added to NPD levels, vertical ascent (dB). Valid values: Min = -50 Max = 50.

element anpHelicopter/dbHorizontalAcceleration

diagram
Decibel offset added to NPD levels, depart horizontal acceleration (dB). Valid values: Min = -50 Max = 50.

annotation documentation
Decibel offset added to NPD levels, depart horizontal acceleration (dB). Valid values: Min = -50 Max = 50.

element anpHelicopter/dbClimbAcceleration

diagram
Decibel offset added to NPD levels, depart with climbing acceleration (dB). Valid values: Min = -50 Max = 50.

annotation documentation
Decibel offset added to NPD levels, depart with climbing acceleration (dB). Valid values: Min = -50 Max = 50.

element anpHelicopter/dbHorizontalDeceleration

diagram
Decibel offset added to NPD levels, approach with horizontal deceleration (dB). Valid values: Min = -50 Max = 50.

annotation documentation
Decibel offset added to NPD levels, approach with horizontal deceleration (dB). Valid values: Min = -50 Max = 50.

element anpHelicopter/dbDescendDeceleration

diagram
Decibel offset added to NPD levels, approach with descending deceleration (dB). Valid values: Min = -50 Max = 50.

annotation documentation
Decibel offset added to NPD levels, approach with descending deceleration (dB). Valid values: Min = -50 Max = 50.
Decibel offset added to NPD levels, approach with descending deceleration (dB). Valid values: Min = -50 Max = 50.
<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>Hard</td>
<td>H</td>
<td>Software</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of ground resistivity. Valid values: H (hard), S (soft), F (file), N (none).</td>
</tr>
</tbody>
</table>

**element anpHeloDirectivity/opMode**

```xml
diagram
<opMode>
  Operational Mode. Valid values: A (approach), D (departure).
</opMode>
```

<table>
<thead>
<tr>
<th>type</th>
<th>string1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Mode. Valid values: A (approach), D (departure).</td>
</tr>
</tbody>
</table>

**element anpHeloDirectivity/L180**

```xml
diagram
<diagram>
  Decibel adjustment at 180 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
</diagram>
```

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minLength</th>
<th>maxLength</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decibel adjustment at 180 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

**element anpHeloDirectivity/L165**

```xml
diagram
<diagram>
  Decibel adjustment at 165 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
</diagram>
```

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minLength</th>
<th>maxLength</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decibel adjustment at 165 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

**element anpHeloDirectivity/L150**

```xml
diagram
<diagram>
  Decibel adjustment at 150 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
</diagram>
```

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minLength</th>
<th>maxLength</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decibel adjustment at 150 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

**element anpHeloDirectivity/L135**

```xml
diagram
<diagram>
  Decibel adjustment at 135 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
</diagram>
```

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>minLength</th>
<th>maxLength</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decibel adjustment at 135 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>
Decibel adjustment at 135 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 120 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 105 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 90 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 75 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
<table>
<thead>
<tr>
<th>Element</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element anpHeloDirectivity/L060</strong></td>
<td>Decibel adjustment at 75 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image1" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>xs:double</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td>minOcc: 0; maxOcc: 1; content: simple</td>
</tr>
<tr>
<td><strong>Annotation</strong></td>
<td>Decibel adjustment at 60 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element anpHeloDirectivity/L045</strong></td>
<td>Decibel adjustment at 45 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>xs:double</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td>minOcc: 0; maxOcc: 1; content: simple</td>
</tr>
<tr>
<td><strong>Annotation</strong></td>
<td>Decibel adjustment at 45 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element anpHeloDirectivity/L030</strong></td>
<td>Decibel adjustment at 30 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image3" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>xs:double</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td>minOcc: 0; maxOcc: 1; content: simple</td>
</tr>
<tr>
<td><strong>Annotation</strong></td>
<td>Decibel adjustment at 30 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element anpHeloDirectivity/L015</strong></td>
<td>Decibel adjustment at 15 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>xs:double</td>
</tr>
<tr>
<td><strong>Properties</strong></td>
<td>minOcc: 0; maxOcc: 1; content: simple</td>
</tr>
<tr>
<td><strong>Annotation</strong></td>
<td>Decibel adjustment at 0 degrees along the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Element anpHeloDirectivity/C000</strong></td>
<td>Decibel adjustment at 0 degrees along the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>Diagram</strong></td>
<td><img src="image5" alt="Diagram" /></td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>xs:double</td>
</tr>
</tbody>
</table>
Decibel adjustment at 180 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element anpHeloDirectivity/R015**

Diagram:

Decibel adjustment at 15 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Type `xs:double`

**element anpHeloDirectivity/R030**

Diagram:

Decibel adjustment at 30 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Type `xs:double`

**element anpHeloDirectivity/R045**

Diagram:

Decibel adjustment at 45 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Type `xs:double`

**element anpHeloDirectivity/R060**

Diagram:

Decibel adjustment at 60 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Type `xs:double`

**element anpHeloDirectivity/R075**

Diagram:

Decibel adjustment at 60 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
<table>
<thead>
<tr>
<th>Diagram</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>anpHeloDirectivity/R090</strong></td>
<td>Decibel adjustment at 75 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>anpHeloDirectivity/R105</strong></td>
<td>Decibel adjustment at 90 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>anpHeloDirectivity/R120</strong></td>
<td>Decibel adjustment at 105 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><strong>anpHeloDirectivity/R135</strong></td>
<td>Decibel adjustment at 120 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td>Element</td>
<td>Documentation</td>
</tr>
<tr>
<td>---------</td>
<td>---------------</td>
</tr>
<tr>
<td>element anpHeloDirectivity/R150</td>
<td>Decibel adjustment at 150 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
<tr>
<td>properties</td>
<td><code>minOcc 0</code></td>
</tr>
<tr>
<td></td>
<td><code>maxOcc 1</code></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Decibel adjustment at 150 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>

| element anpHeloDirectivity/R165 | Decibel adjustment at 165 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9. |
| diagram | ![Diagram](image) |
| type | `xs:double` |
| properties | `minOcc 0` |
| | `maxOcc 1` |
| annotation | documentation |
| | Decibel adjustment at 165 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9. |

| element anpHeloDirectivity/R180 | Decibel adjustment at 180 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9. |
| diagram | ![Diagram](image) |
| type | `xs:double` |
| properties | `minOcc 0` |
| | `maxOcc 1` |
| annotation | documentation |
| | Decibel adjustment at 180 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9. |

| complexType anpHeloDirectivitySet | A set of helicopter directivities. |
| diagram | ![Diagram](image) |
| children | anpHelicopterId anpHeloDirectivity |
| used by | element fleet/anpHeloDirectivitySet |
| annotation | documentation |
| | A set of helicopter directivities. |

| element anpHeloDirectivitySet/anpHelicopterId | Unique ID for ANP helicopters. |
| diagram | ![Diagram](image) |
| type | anpHeloDirectId |
element anpHeloDirectivitySet/anpHeloDirectivity

diagram

- **groundType**
  - Type of ground resistivity. Valid values: H (hard), S (soft), F (fla), N (none).

- **opMode**
  - Operational Mode. Valid values: A (approach), D (departure).

- **L180**
  - Decibel adjustment at 180 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L165**
  - Decibel adjustment at 165 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L150**
  - Decibel adjustment at 150 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L135**
  - Decibel adjustment at 135 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L120**
  - Decibel adjustment at 120 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L105**
  - Decibel adjustment at 105 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L90**
  - Decibel adjustment at 90 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L75**
  - Decibel adjustment at 75 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L60**
  - Decibel adjustment at 60 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L45**
  - Decibel adjustment at 45 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L30**
  - Decibel adjustment at 30 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

- **L15**
  - Decibel adjustment at 15 degrees left of the nose (88°). Valid values: Min = -99.9, Max = 999.9.

**annotation documentation**

Unique ID for ANP helicopters.
AND Helicopter directivity.

Decibel adjustment at 0 degrees along the nose (GB). Valid values: Min = -99.9 Max = 999.0.

C000
Decibel adjustment at 0 degrees left of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R015
Decibel adjustment at 15 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R030
Decibel adjustment at 30 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R045
Decibel adjustment at 45 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R060
Decibel adjustment at 60 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R075
Decibel adjustment at 75 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R090
Decibel adjustment at 90 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R105
Decibel adjustment at 105 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R120
Decibel adjustment at 120 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R135
Decibel adjustment at 135 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R150
Decibel adjustment at 150 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R165
Decibel adjustment at 165 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

R180
Decibel adjustment at 180 degrees right of the nose (GB). Valid values: Min = -99.9 Max = 999.0.

<table>
<thead>
<tr>
<th>type</th>
<th>anpHeloDirectivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 1</td>
</tr>
<tr>
<td></td>
<td>maxOcc: unbounded</td>
</tr>
<tr>
<td></td>
<td>content: complex</td>
</tr>
<tr>
<td>children</td>
<td>groundType, opMode, L180, L165, L150, L135, L120, L105, L090, L075, L060, L045, L030, L015, C000, R015, R030, R045, R060, R075, R090, R105, R120, R135, R150, R165, R180</td>
</tr>
</tbody>
</table>
ANP Helicopter directivity.

complexType anpHeloNoiseGroup

This element contains the three spectral class references for a given aircraft Noise group with the corresponding thrust setting type and model type.

children

noiseld spectralClassApproach spectralClassDeparture spectralClassFlyover speedApproach speedDeparture speedFlyover npdCurves

used by

element fleet/anpHeloNoiseGroup

annotation documentation

This element contains the three spectral class references for a given aircraft Noise group with the corresponding thrust setting type and model type.

element anpHeloNoiseGroup/noiseld

type anpHeloNoiseld

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation

The noise group id.

element anpHeloNoiseGroup/spectralClassApproach

type xs:short

properties minOcc 0
maxOcc 1

content simple

annotation documentation

The approach spectral class number. Valid values: 0 to 999.

element anpHeloNoiseGroup/spectralClassDeparture

background
The departure spectral class number. Valid values: 0 to 999.

The flyover spectral class number. Valid values: 0 to 999.

N 6.1 Approach reference speed (knots). Valid values: Min = 0.0 Max = 250.0.

N 6.1 Depart reference speed (knots). Valid values: Min = 0.0 Max = 250.0.

N 6.1 Flyover reference speed (knots). Valid values: Min = 0.0 Max = 250.0.
The set of noise curves for this group.

**complexType** `anpHeloNPDCurve`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th><code>anpHeloNPDCurves</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0, maxOcc: 1</td>
</tr>
<tr>
<td>children</td>
<td><code>npdCurve</code></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation: The set of noise curves for this group.</td>
</tr>
</tbody>
</table>
The Noise Power Distance curve table for a specified noise ID, noise type, operation mode, and thrust setting.

- **child elements**: noiseType, opMode, sideType, L_200, L_400, L_630, L_1000, L_2000, L_4000, L_6300, L_10000, L_16000, L_25000
- **used by**: element `ampHeloNPDCurves/nosCurve`
- **annotation**: documentation

**element** `ampHeloNPDCurve/noiseType`

**diagram**
```
noiseType
  Type of noise described by the curve. Valid values: S (SLL), M (LMAX), E (EBNL), P (PNLTM).

opMode
  Engine operation mode.

sideType
  Operation side type. Valid values: L (left), C (center), R (right), S (static).

L_200
  Decibel level at 200 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_400
  Decibel level at 400 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_630
  Decibel level at 630 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_1000
  Decibel level at 1000 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_2000
  Decibel level at 2000 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_4000
  Decibel level at 4000 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_6300
  Decibel level at 6300 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_10000
  Decibel level at 10000 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_16000
  Decibel level at 16000 feet
  AGL: Valid values Min = -50.0 Max = 999.9

L_25000
  Decibel level at 25000 feet
  AGL: Valid values Min = -50.0 Max = 999.9
```

**type** `ampHeloNoiseType`

**properties** content simple

**facets** Kind Value Annotation pattern S|MI|E|P
Type of noise described by this curve. Valid values: S (SEL), M (LAMAX), E (EPNL), P (PNLTM).

**element anpHeloNPDCurve/opMode**

- **Diagram**
  - **Type**: `anpNpdOpMode`  
  - **Properties**: content simple  
  - **Facets**: Kind Value Annotation  
  - **Pattern**: A|D|H|I|V|Y|Z|B|C|F|X|S

**element anpHeloNPDCurve/sideType**

- **Diagram**
  - **Type**: `anpHeloSideType`  
  - **Properties**: content simple  
  - **Facets**: Kind Value Annotation  
  - **Pattern**: Left|L|Center|C|Right|R|Static|S

**element anpHeloNPDCurve/L_200**

- **Diagram**
  - **Type**: xs:double  
  - **Properties**: minOcc 0 maxOcc 1 content simple  
  - **Annotation**: Decibel level at 200 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**element anpHeloNPDCurve/L_400**

- **Diagram**
  - **Type**: xs:double  
  - **Properties**: minOcc 0 maxOcc 1 content simple  
  - **Annotation**: Decibel level at 400 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**element anpHeloNPDCurve/L_630**

- **Diagram**
  - **Type**: xs:double  
  - **Properties**: minOcc 0 maxOcc 1 content simple  
  - **Annotation**: Decibel level at 630 feet AGL. Valid values: Min = -50.0 Max = 999.9.
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
</table>
| `anpHeloNPDCurve/L_1000`      | ![Diagram](image1) | `xs:double` | `minOcc 0`
`maxOcc 1`
`content simple` | `Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.` |
| `anpHeloNPDCurve/L_2000`      | ![Diagram](image2) | `xs:double` | `minOcc 0`
`maxOcc 1`
`content simple` | `Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.` |
| `anpHeloNPDCurve/L_4000`      | ![Diagram](image3) | `xs:double` | `content simple`    | `Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.` |
| `anpHeloNPDCurve/L_6300`      | ![Diagram](image4) | `xs:double` | `minOcc 0`
`maxOcc 1`
`content simple` | `Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.` |
| `anpHeloNPDCurve/L_10000`     | ![Diagram](image5) | `xs:double` | `minOcc 0`
`maxOcc 1`
`content simple` | `Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.` |
Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**element anpHeloNPDCurve/L_16000**

- **type**: `xs:double`
- **properties**:
  - `minOcc`: 0
  - `maxOcc`: 1
- **content**: simple
- **annotation** documentation
  Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**element anpHeloNPDCurve/L_25000**

- **type**: `xs:double`
- **properties**:
  - `minOcc`: 0
  - `maxOcc`: 1
- **content**: simple
- **annotation** documentation
  Decibel level at 25000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**complexType anpHeloNPDCurves**

- **children**: `npdCurve`
- **used by**: element `anpHeloNoiseGroup/npdCurves`
- **annotation** documentation
  The set of noise curves.

**element anpHeloNPDCurves/npdCurve**

- **diagram**
Base noise data interpolated/extrapolated upon according to slant range distance and thrust setting for aircraft.
<table>
<thead>
<tr>
<th>element</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>anpHeloProcedureStep STEPNUM</td>
<td>Procedure data element.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>stepNum</td>
<td>Step number of the procedure. Must be unique in a sequence.</td>
</tr>
<tr>
<td>operationType</td>
<td>Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&amp;Go), F (Circuit), V (OverPt)</td>
</tr>
<tr>
<td>profileGroupId</td>
<td>Profile group identifier. Valid values: STANDARD, NOSEBUMP (NBA standard data)</td>
</tr>
<tr>
<td>profileStageLength</td>
<td>Profile stage number (min = 1, max = 9). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (e.g., 1 = 3 degree approach, 2 = 5 degree approach).</td>
</tr>
<tr>
<td>stepType</td>
<td>Type of step.</td>
</tr>
<tr>
<td>duration</td>
<td>Procedure’s duration (hours).</td>
</tr>
<tr>
<td>distance</td>
<td>Distance along the ground relative to start (min = 9999999999, max = 9999999999, feet).</td>
</tr>
<tr>
<td>altitude</td>
<td>Altitude of aircraft (min = -9999, max = 60000, feet).</td>
</tr>
<tr>
<td>speed</td>
<td>Ground speed at this point (min = 0, max = 800, knots).</td>
</tr>
</tbody>
</table>

**Example Usage**

```xml
<anpHeloProcedureStep>
  <stepNum>1</stepNum>
  <operationType>A</operationType>
  <profileGroupId>STANDARD</profileGroupId>
  <profileStageLength>1</profileStageLength>
  <stepType>Approach</stepType>
  <duration>0.5</duration>
  <distance>10000</distance>
  <altitude>2000</altitude>
  <speed>200</speed>
</anpHeloProcedureStep>
```
<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
</table>
| facets     | Kind Value Annotation  
            | minLength 0  
            | maxLength 1 |
| annotation | documentation  
            | Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&Go), F (CircuitFlt), V (OverFlt) |

**element anpHeloProcedureStep/profileGroupId**

- **Diagram**: Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).
- **Type**: string
- **Properties**: content simple
- **Facets**: Kind Value Annotation  
            | minLength 0  
            | maxLength 8 |
- **Annotation**: Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).

**element anpHeloProcedureStep/profileStageLength**

- **Diagram**: Profile stage number (min = 1, max = 9). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (e.g., 1 = 3 degree approach, 2 = 5 degree approach).
- **Type**: string
- **Properties**: content simple
- **Facets**: Kind Value Annotation  
            | minLength 0  
            | maxLength 1 |
- **Annotation**: Profile stage number (min = 1, max = 9). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (e.g., 1 = 3 degree approach, 2 = 5 degree approach).

**element anpHeloProcedureStep/stepType**

- **Diagram**: Type of step.
- **Type**: string
- **Properties**: content simple
- **Facets**: Kind Value Annotation  
            | minLength 0  
            | maxLength 1 |
- **Annotation**: Type of step.

**element anpHeloProcedureStep/duration**

- **Diagram**: Procedure's duration (hour).
### type \texttt{xs:double}

- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple

- **annotation**
  - documentation
    - Procedure's duration (hours).

#### element \texttt{anPeloProcedureStep/distance}

![Diagram of distance]

- **type** \texttt{xs:double}
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation**
  - documentation
    - Distance along the ground relative to start (min = 79999999.9, max = 99999999.9, feet).

#### element \texttt{anPeloProcedureStep/altitude}

![Diagram of altitude]

- **type** \texttt{xs:double}
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation**
  - documentation
    - Altitude of aircraft (min = -9999, max = 60000, feet).

#### element \texttt{anPeloProcedureStep/speed}

![Diagram of speed]

- **type** \texttt{xs:double}
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation**
  - documentation
    - Ground speed at this point (min = 0, max = 600, knots).

#### complexType \texttt{anPeloProfile}

- **diagram**

---

The table and diagrams are used to illustrate the attributes and properties of the elements, such as the duration of the procedure, the distance along the ground, altitude of the aircraft, and ground speed at a specific point. The details are provided in the documentation, indicating the minimum and maximum values allowed for each attribute.
Profile data element.

operationType: Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch & Go), F (CruiseFly), V (OverFLy)

profileGroupId: Profile group identifier, valid values: STANDARD, NOSEBEAM (DNM standard data).

profileStageLength: Profile stage number (min = 1, max = N). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (eg. 1 = 3 degree approach, 2 = 5 degree approach).

weight: Aircraft weight during this operation type. Valid values: 0 through 999999 (lbs)

useDirectivity: Use directivity? Y/Yes N/No

useTrack: Use track (start heading is relative to track)? Y/Yes N/No

headingTakeoffGround: Takeoff ground heading. Valid values: 360 through 360 (degrees)

headingTakeoffHover: Takeoff hover heading. Valid values: 180 through 360 (degrees)

headingLandGround: Landing ground heading. Valid values: 180 through 360 (degrees)

headingLandHover: Landing hover heading. Valid values: 360 through 0 (degrees)

step: The procedure step.

children: operationType profileGroupId profileStageLength weight useDirectivity useTrack headingTakeoffGround headingTakeoffHover headingLandGround headingLandHover step

used by: element anpHeloProfileSet/profile

annotation: documentation
Profile data element.

element anpHeloProfile/operationType

diagram:

- operationType:
  - Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch & Go), F (CruiseFly), V (OverFLy)

- type: string1

- properties: content simple
### AnnpHeloprofile/profileGroupId

**Diagram:**

- **Type:** string8
- **Properties:** content simple
- **Facets:**
  - Kind: minLength 0, maxLength 8
- **Annotation:**
  - Documentation: Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).

### AnnpHeloprofile/profileStageLength

**Diagram:**

- **Type:** string1
- **Properties:** content simple
- **Facets:**
  - Kind: minLength 0, maxLength 1
- **Annotation:**
  - Documentation: Profile stage number (min = 1, max = 9). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (e.g. 1 = 3 degree approach, 2 = 5 degree approach).

### AnnpHeloprofile/weight

**Diagram:**

- **Type:** xs:int
- **Properties:**
  - minOccurs 0, maxOccurs 1
  - content simple
- **Annotation:**
  - Documentation: Aircraft weight during this operation type. Valid values: 0 through 999999 (lb)

### AnnpHeloprofile/useDirectivity

**Diagram:**

- **Type:** yesNoType
- **Properties:**
  - minOccurs 0
element anpHeloProfile/useTrack

diagram

Type: yesNoType

Properties:
- minOcc: 0
- maxOcc: 1
- content: simple

Annotation: documentation
Use track (static heading is relative to track)? Y=Yes N=No.

element anpHeloProfile/headingTakeoffGround

diagram

Type: xs:double

Properties:
- content: simple

Annotation: documentation
Takeoff ground heading. Valid values: -180 through 360. (degrees)

element anpHeloProfile/headingTakeoffHover

diagram

Type: xs:double

Properties:
- content: simple

Annotation: documentation
Takeoff hover heading. Valid values: -180 through 360. (degrees)

element anpHeloProfile/headingLandGround

diagram

Type: xs:double

Properties:
- content: simple

Annotation: documentation
Landing ground heading. Valid values: -180 through 360. (degrees)

element anpHeloProfile/headingLandHover

diagram
type xs:double

properties
  minOcc 0
  maxOcc 1
  content simple

annotation
documentation
  Landing hover heading. Valid values: -180 through 360 (degrees)

element anpHeloProfile/step

diagram

complexType anpHeloProcedureStep

properties
  minOcc 0
  maxOcc unbounded
  content complex

children
  stepNum operationType profileGroupId profileStageLength stepType duration distance altitude speed

annotation
documentation
  The procedure steps.
element `anpHeloProfileSet/anpHelcopterId`

<table>
<thead>
<tr>
<th>diagram</th>
<th><code>anpHelcopterId</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>anpHeloId</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
</tr>
<tr>
<td></td>
<td>maxLength 255</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The anp helicopter id.</td>
</tr>
</tbody>
</table>

element `anpHeloProfileSet/profile`

diagram

A profile set for an ANP helicopter.

children `anpHeloProfileSet profile`

used by element `fleet/anpHeloProfileSet`

annotation documentation
A profile set for an ANP helicopter.
One or more ANP profiles.

- **type**: `ampHelioProfile`
- **properties**: `minOcc 1`, `maxOcc unbounded`, `content complex`
- **children**: `operationType`, `profileGroupId`, `profileStageLength`, `weight`, `useDirectivity`, `useTrack`, `headingTakeoffGround`, `headingTakeoffHover`, `headingLandGround`, `headingLandHover`, `step`
- **annotation**: `documentation`

One or more ANP profiles.
This element contains the three spectral class references for a given aircraft Noise group with the corresponding thrust setting type and model type.

**element anpNoiseGroup/noiseld**
- **type**: `anpNoiseld`
- **properties**: content simple
- **facets**: Kind Value Annotation
  - minLength: 0
  - maxLength: 255
- **annotation documentation**: Noise group's ID.

**element anpNoiseGroup/spectralClassApproach**
- **type**: `xs:short`
- **properties**: minOcc 0 maxOcc 1 content simple
- **annotation documentation**: Spectral class number for approach (min = 0, max = 999).

**element anpNoiseGroup/spectralClassDeparture**
- **type**: `xs:short`
- **properties**: minOcc 0 maxOcc 1 content simple
- **annotation documentation**: Spectral class number for departure (min = 0, max = 999).
element anpNoiseGroup/spectralClassAfterburner

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:short</th>
</tr>
</thead>
</table>
| properties | minOcc: 0
maxOcc: 1 |
| content | simple |

annotation documentation
Spectral class number for afterburner (min = 0, max = 999).

element anpNoiseGroup/thrustSetType

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>string1</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>
| facets | Kind Value Annotation
minLength: 0
maxLength: 1 |
| annotation | documentation
Type of thrust setting. Valid values: L (pounds), P (percent), X (other). |

element anpNoiseGroup/modelType

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>string1</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>
| facets | Kind Value Annotation
minLength: 0
maxLength: 1 |
| annotation | documentation
Type of distance-duration model. Valid values: I (INM), N (NoiseMap). |

element anpNoiseGroup/npdCurves

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>anpNPDCurves</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content complex</td>
</tr>
<tr>
<td>children</td>
<td>npdCurve</td>
</tr>
</tbody>
</table>
| annotation | documentation
The set of noise curves for ANP aircraft. |

complexType anpNPDCurve

diagram

| annotation documentation
The set of noise curves for ANP aircraft. |
The Noise Power Distance curve table for a specified noise ID, noise type, operation mode, and thrust setting.

```
noiseType

Type of noise described by the curve. Valid values S (SEL), M (LAMAX), E (EPNL), P (PNLTM).

opMode

Engine operation mode. Valid values A (Kipnovitch), D (Dipeters), X (Aizatmam).

netThrustPerEngine

Net thrust per engine (min = 0.10, max = 9999.99, lbs. or percentage depending on parent noise group THRUSET_TYPE value).

L_200

Decibel level at 200 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_400

Decibel level at 400 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_630

Decibel level at 630 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_1000

Decibel level at 1000 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_2000

Decibel level at 2000 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_4000

Decibel level at 4000 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_6300

Decibel level at 6300 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_10000

Decibel level at 10000 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_16000

Decibel level at 16000 feet AGL. Valid values Min = -50.0 Max = 999.9.

L_25000

Decibel level at 25000 feet AGL. Valid values Min = -50.0 Max = 999.9.
```

used by element `anpNPDCurves/anpCurve`

annotation documentation

The Noise Power Distance curve table for a specified noise ID, noise type, operation mode, and thrust setting.

element `anpNPDCurve/noiseType`

diagram

```
noiseType

Type of noise described by this curve. Valid values S (SEL), M (LAMAX), E (EPNL), P (PNLTM).
```

type `anpNpdNoiseType`

properties content simple
### Facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>S</td>
<td>M</td>
</tr>
</tbody>
</table>

**Annotation documentation**
Type of noise described by this curve. Valid values: S (SEL), M (LAMAX), E (EPNL), P (PNLT).

### Element anNPDCurve/opMode

**Diagram**
![Diagram](opMode)

**Type** anNPdcOpMode

**Properties** content simple

**Facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern</td>
<td>A</td>
<td>D</td>
</tr>
</tbody>
</table>

**Annotation documentation**
Engine operation mode. Valid values: A (Approach), D (Depart), X (Afterburner).

### Element anNPDCurve/netThrustPerEngine

**Diagram**
![Diagram](netThrustPerEngine)

**Type** xs:double

**Properties** content simple

**Annotation documentation**
Net thrust per engine (min = 0.10, max = 99999.00, lbs. or percentage depending on parent noise group THRUST_SET_TYPE value).

### Element anNPDCurve/L_200

**Diagram**
![Diagram](L_200)

**Type** xs:double

**Properties** content simple

**Annotation documentation**
Decibel level at 200 feet AGL. Valid values: Min = -50.0 Max = 999.9.

### Element anNPDCurve/L_400

**Diagram**
![Diagram](L_400)

**Type** xs:double

**Properties** content simple

**Annotation documentation**
Decibel level at 400 feet AGL. Valid values: Min = -50.0 Max = 999.9.

### Element anNPDCurve/L_630

**Diagram**
![Diagram](L_630)

**Type** xs:double

**Properties** content simple

**Annotation documentation**
Decibel level at 630 feet AGL. Valid values: Min = -50.0 Max = 999.9.
<table>
<thead>
<tr>
<th>Diagram Type</th>
<th>Description</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>anpNPDCurve/L_1000</td>
<td>Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td>Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
</tr>
<tr>
<td>anpNPDCurve/L_2000</td>
<td>Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td>Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
</tr>
<tr>
<td>anpNPDCurve/L_4000</td>
<td>Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td>Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
</tr>
<tr>
<td>anpNPDCurve/L_6300</td>
<td>Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td>Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
</tr>
<tr>
<td>anpNPDCurve/L_10000</td>
<td>Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td>Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
</tr>
<tr>
<td>anpNPDCurve/L_16000</td>
<td>Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td>Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
</tr>
</tbody>
</table>
Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Element `anpNPDCurve/L_25000`

- **Diagram:**
  ![Diagram](image)

- **Type:** `xs:double`

- **Properties:** Simple

- **Annotation:** Documentation: Decibel level at 25000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**complexType `anpNPDCurves`**

- **Diagram:**
  ![Diagram](image)

- **Children:** `npdCurve`

- **Used by:** Element `anpNoiseGroup/npdCurves`

- **Annotation:** Documentation: The set of defined noise curves.

**Element `anpNPDCurves/npdCurve`**

- **Diagram:**
  ![Diagram](image)
**complexType** anpNPDCurve

<table>
<thead>
<tr>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc: 1</td>
</tr>
<tr>
<td>maxOcc: unbounded</td>
</tr>
<tr>
<td>content: complex</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>children</th>
</tr>
</thead>
<tbody>
<tr>
<td>noiseType opMode netThrustPerEngine L_200 L_400 L_630 L_1000 L_2000 L_4000 L_6300 L_10000 L_16000 L_25000</td>
</tr>
</tbody>
</table>

**annotation**

Documentation:
Base noise data interpolated/extrapolated upon according to slant range distance and thrust setting for aircraft.
children stepNum flapId stepType thrustType param1 param2 param3

used by element anpProcedureSteps/step

annotation documentation
A single procedure step datum for the profile.

element anpProcedureStep/stepNum

diagram

<table>
<thead>
<tr>
<th>Step number of the procedure. Must be unique in a sequence.</th>
</tr>
</thead>
</table>

type xs:int

properties content simple

annotation documentation
Step number of the procedure. Must be unique in a sequence.

element anpProcedureStep/flapId

diagram

<table>
<thead>
<tr>
<th>Flap-setting identifier.</th>
</tr>
</thead>
</table>

type anpFlapId

properties minOcc 0 maxOcc 1 content simple

facets Kind Value Annotation
minLength 0 maxLength 6

annotation documentation
Flap-setting identifier.

element anpProcedureStep/stepType

diagram

<table>
<thead>
<tr>
<th>Type of step.</th>
</tr>
</thead>
</table>

type string1

properties minOcc 0 maxOcc 1 content simple
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td>maxLength</td>
<td>1</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>Type of step.</td>
<td></td>
</tr>
</tbody>
</table>

**element anpProcedureStep/thrustType**

- **diagram**
  - Type: string1
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **facets**
  - minLength: 0
  - maxLength: 1
- **annotation**
  - documentation: Type of thrust.

**element anpProcedureStep/param1**

- **diagram**
  - Type: xs:double
- **properties**
  - content: simple
- **annotation**
  - documentation: Parameter particular for this step type (min = 9999.0, max = 60000.0).

**element anpProcedureStep/param2**

- **diagram**
  - Type: xs:double
- **properties**
  - content: simple
- **annotation**
  - documentation: Parameter particular for this step type (min = 0, max = 600.0).

**element anpProcedureStep/param3**

- **diagram**
  - Type: xs:double
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **annotation**
  - documentation: Parameter particular for this step type (min = 0.0, max = 9999999.9).

**complexType anpProcedureSteps**

- **diagram**
  - A use of procedure steps for the profile.
  - An ANP procedure step.
- **children**
  - step
- **used by**
  - element anpProfile/procedureSteps
A set of procedure steps for the profile.

**Element:** anpProcedureSteps/step

**Diagram:**

- **stepNum**
- **flapId**
- **stepType**
- **thrustType**
- **param1**
- **param2**
- **param3**

**Properties:**

- minOccurs: 1
- maxOccurs: unbounded
- content: complex

**Children:**

- stepNum
- flapId
- stepType
- thrustType
- param1
- param2
- param3

**Annotation:**

- documentation
  
  An ANP procedure step.
children  
```
operationType profileGroupId profileStageLength weight procedureSteps profilePoints
```

used by  
```
element anpProfileSet/profile
```

annotation  
```
documentation
Profile data element.
```

element anpProfile/operationType  

```
diagram
```
```
operationType
```
```
Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&Go), F (CircuitFlt), V (OverFlt)
```

```
type string1
```

```
properties
```
```
content simple
```

```
facets
```
```
Kind Value Annotation
```
```
minLength 0
```
```
maxLength 1
```

```
annotation
documentation
```
```
Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&Go), F (CircuitFlt), V (OverFlt)
```

element anpProfile/profileGroupId  

```
diagram
```
```
profileGroupId
```
```
Profile group identifier. Valid values: STANDARD, NOISEMAP (NM standard data).
```

```
type string8
```

```
properties
```
```
content simple
```

```
facets
```
```
Kind Value Annotation
```
```
minLength 0
```
```
maxLength 8
```

```
annotation
documentation
```

Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).

**element anpProfile/profileStageLength**

*diagram*

Profile stage number (min = 1, max = 9). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (e.g. 1 = 3 degree approach, 2 = 5 degree approach).

<table>
<thead>
<tr>
<th>type</th>
<th>string1</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>1</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Profile stage number (min = 1, max = 9). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (e.g. 1 = 3 degree approach, 2 = 5 degree approach).</td>
</tr>
</tbody>
</table>

**element anpProfile/weight**

*diagram*

Aircraft weight during this operation type (min = 0, max = 999999, lbs).

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Aircraft weight during this operation type (min = 0, max = 999999, lbs).</td>
</tr>
</tbody>
</table>

**element anpProfile/procedureSteps**

*diagram*

Set of procedure steps associated with this profile.

<table>
<thead>
<tr>
<th>type</th>
<th>anpProcedureSteps</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content complex</td>
</tr>
<tr>
<td>children</td>
<td>step</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Set of procedure steps associated with this profile.</td>
</tr>
</tbody>
</table>

**element anpProfile/profilePoints**

*diagram*

Set of points associated with this profile.

<table>
<thead>
<tr>
<th>type</th>
<th>anpProfilePoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content complex</td>
</tr>
<tr>
<td>children</td>
<td>point</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Set of points associated with this profile.</td>
</tr>
</tbody>
</table>
complexType `anpProfilePoint`

children
- `pointNum` distance altitude speed thrustSet opMode

used by
- element `anpProfilePoints/point`

annotation documentation
A single profile point data element.

element `anpProfilePoint/pointNum`

diagram

- `pointNum`
  Point index number. Must be sequential and unique, starting at 1.

type `xs:short`

properties
- content simple

annotation documentation
Point index number. Must be sequential and unique, starting at 1.

element `anpProfilePoint/distance`

diagram

- `distance`
  Distance along the ground relative to start (min = 7999999.9, max = 9999999.9, feet).

type `xs:double`

properties
- content simple

annotation documentation
Distance along the ground relative to start (min = 7999999.9, max = 9999999.9, feet).

element `anpProfilePoint/altitude`

diagram

- `altitude`
  Altitude of aircraft (min = -9999, max = 60000, feet).

type `xs:double`

properties
- content simple

annotation documentation
Altitude of aircraft (min = -9999, max = 60000, feet).
### element anpProfilePoint/speed

**Diagram:**

```
<speed>
Ground speed at this point
(min = 0, max = 600, knots).
```

**Type:** xs:double

**Properties:** content simple

**Annotation:** documentation

Ground speed at this point (min = 0, max = 600, knots).

### element anpProfilePoint/thrustSet

**Diagram:**

```
<thrustSet>
Corrected net thrust per engine at this point (min = 0.1, max = 99999, kls or % max thrust).
```

**Type:** xs:double

**Properties:** content simple

**Annotation:** documentation

Corrected net thrust per engine at this point (min = 0.1, max = 99999, kls or % max thrust).

### element anpProfilePoint/opMode

**Diagram:**

```
<opMode>
Operational mode. Valid values: A (Approach), D (Departure), X (Overflight).
```

**Type:** string1

**Properties:**
- minOcc 0
- maxOcc 1

**Facets:**

- Kind: simple

**Annotation:** documentation

Operational mode. Valid values: A (Approach), D (Departure), X (Overflight).

### complexType anpProfilePoints

**Diagram:**

```
<anpProfilePoints>
A set of point profile data.
```

**Children:** point

**Used by:** element anpProfile/profilePoints

**Annotation:** documentation

A set of point profile data.

### element anpProfilePoints/point

**Diagram:**

```xml
```

**Annotation:** documentation

A set of point profile data.
**type**

- `anpProfilePoint`

**properties**

- `minOcc`: 1
- `maxOcc`: unbounded
- `content`: complex

**children**

- `pointNum`
- `distance`
- `altitude`
- `speed`
- `thrustSet`
- `opMode`

**complexType** `anpProfileSet`

**diagram**

- `anpProfileSet`:
  - `anpAirplaneld`:
    - `profile`:
      - `Airplane's ANP ID.`

**children**

- `anpAirplaneld`
- `profile`

**used by**

- `element fleet/anpProfileSet`

**annotation**

- `documentation`:
  - A profile set for an ANP airplane.

**element** `anpProfileSet/anpAirplaneld`

**diagram**

- `anpAirplaneld`

**type**

- `anpAirplaneld`

**properties**

- `content`: simple

**facets**

- `Kind`:
  - `Value`:
    - `Annotation`:
      - `minLength`: 0
      - `maxLength`: 255

**annotation**

- `documentation`:
  - Airplane's ANP ID.

**element** `anpProfileSet/profile`

**diagram**

- `profile`
One or more ANP profiles.

complexType anpProfile

properties
- minOcc 1
- maxOcc unbounded
- content complex

children
- operationType
- profileGroupId
- profileStageLength
- weight
- procedureSteps
- profilePoints

annotation
documentation
One or more ANP profiles.

complexType anpThrustGeneral

diagram
children

- **thrustType**
- **coeff_E**
- **coeff_F**
- **coeff_GA**
- **coeff_GB**
- **coeff_H**
- **coeff_K1**
- **coeff_K2**

used by element **anpThrustSet/thrustGeneral**

annotation documentation
General thrust data for an ANP aircraft.

element **anpThrustGeneral/thrustType**

diagram

**thrustType**
The type of generalized thrust-setting.

type **string1**

properties content simple

facets Kind Value Annotation
minLength: 0
maxLength: 1

annotation documentation
The type of generalized thrust-setting.

element **anpThrustGeneral/coeff_E**

diagram

**coeff_E**
Corrected net thrust per engine coefficient. Valid values: -99999.9 through 99999.9 (lb).

type **xs:double**

properties content simple

annotation documentation
Corrected net thrust per engine coefficient. Valid values: -99999.9 through 99999.9 (lb).

element **anpThrustGeneral/coeff_F**

diagram

**coeff_F**
Speed (TAS) adjustment coefficients. Valid values: -2000000 through 2000000. (in knots TAS at sea level and 50°F)

element anpThrustGeneral/coeff_GA

type xs:double

properties content simple

annotation documentation
Altitude adjustment coefficient at MSL. (lb/ft)

element anpThrustGeneral/coeff_GB

type xs:double

properties content simple

annotation documentation
Altitude-squared adjustment coefficient at MSL. (lb/ft^2)

element anpThrustGeneral/coeff_H

type xs:double

properties content simple

annotation documentation
Temperature adjustment coefficient. (lb/°C)

element anpThrustGeneral/coeff_K1

type xs:double

properties content simple

annotation documentation
EPR or N1/sqrt(theta) adjustment coefficient. (lb/EPR)

element anpThrustGeneral/coeff_K2

type xs:double

properties content simple
**complexType** anpThrustJet

```
  <thrustType>
    Type of thrust. Primary key
    UNITS: T = Max Takeoff, S = High Temp Takeoff, C = Max Climb, B = High Temp Climb, N = Max Continuous, M = High Temp Continuous
  </thrustType>

  <coeff_E>
    Corrected net thrust per engine coefficient. Valid values: 0.0 through 500000.0. (lb)
  </coeff_E>

  <coeff_F>
    Speed (TAS) adjustment coefficient. Valid values:
    -0.000000 through 1000.0000. (lb/TAS at sea level and BPR)
  </coeff_F>

  <coeff_GA>
    Attitude adjustment coefficients at MBL. (lb/°)
  </coeff_GA>

  <coeff_GB>
    Attitude adjusted adjustment coefficient at MBL. (lb/°²)
  </coeff_GB>

  <coeff_H>
    Temperature adjustment coefficient. (°C)
  </coeff_H>
```

**children**

- thrustType
- coeff_E
- coeff_F
- coeff_GA
- coeff_GB
- coeff_H

**used by**

- element anpThrustSet/thrustJet

**annotation**

documentation
Jet thrust data for an ANP aircraft.

---

**element** anpThrustJet/thrustType

```
  <thrustType>
    Type of thrust. Primary key
    UNITS: T = Max Takeoff, S = High Temp Takeoff, C = Max Climb, B = High Temp Climb, N = Max Continuous, M = High Temp Continuous
  </thrustType>
```

**type** string1

**properties**

- content simple

**facets**

- Kind: Annotation
  - minLength 0
  - maxLength 1

**annotation**

documentation
Type of thrust. Primary key UNITS: T = Max Takeoff, S = High Temp Takeoff, C = Max Climb, B = High Temp Climb, N = Max Continuous, M = High Temp Continuous

---

**element** anpThrustJet/coeff_E

```
  <coeff_E>
    Corrected net thrust per engine coefficient. Valid values: 0.0 through 500000.0. (lb)
  </coeff_E>
```

**type** xs:double

**properties**

- content simple

**annotation**

documentation
Corrected net thrust per engine coefficient. Valid values: 0.0 through 500000.0. (lb)

---

**element** anpThrustJet/coeff_F

```
  <coeff_F>
    Speed (TAS) adjustment coefficient. Valid values:
    -0.000000 through 1000.0000. (lb/TAS at sea level and BPR)
  </coeff_F>
```

---

**element** anpThrustJet/coeff_GA

---

**element** anpThrustJet/coeff_GB

---

**element** anpThrustJet/coeff_H

---
**Speed (TAS) adjustment coefficient.** Valid values: -200.00000 through 1000.00000. (lb/knot TAS at sea level and 59°F)

**Altitude adjustment coefficient at MSL.** (lb/ft)

**Altitude-squared adjustment coefficient at MSL.** (lb/ft²)

**Temperature adjustment coefficient.** (lb/°C)

---

### complexType `anpThrustProp`

- **thrustType**
  - Type of thrust.
- **efficiency**
  - The propeller efficiency ratio. Valid values 0.00 to 1.00.
- **power**
  - Not propulsive power per engine (hp). Valid values 0 to 9999.9.

**Prop thrust data for an ANP aircraft.**

---

### element `anpThrustProp/thrustType`

- **Type of thrust.**
**element anpThrustProp/efficiency**

diagram

```
efficiency
The propeller efficiency ratio. Valid values: 0.50 to 1.00.
```

type xs:double

properties content simple

annotation documentation

The propeller efficiency ratio. Valid values: 0.50 to 1.00.

**element anpThrustProp/power**

diagram

```
power
Net propulsive power per engine (HP). Valid values: 0 to 9999.9.
```

type xs:double

properties content simple

annotation documentation

Net propulsive power per engine (HP). Valid values: 0 to 9999.9.

**complexType anpThrustSet**

diagram

```
<table>
<thead>
<tr>
<th>anpAirplaneld</th>
<th>thrustGeneral</th>
<th>thrustJet</th>
<th>thrustProp</th>
<th>tsfcCoefficients</th>
</tr>
</thead>
</table>

Specifies a set of thrust records for an ANP airplane.
```

children anpAirplaneld thrustGeneral thrustJet thrustProp tsfcCoefficients

used by element fleet/anpThrustSet

annotation documentation

Specifies a set of thrust records for an ANP airplane.

**element anpThrustSet/anpAirplaneld**

diagram

```
anpAirplaneld
Airplane's ANP ID.
```

type anpAirplaneld

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 255

annotation documentation

Airplane's ANP ID.
element anpThrustSet/thrustGeneral

diagram

```
<table>
<thead>
<tr>
<th>type</th>
<th>anpThrustGeneral</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0, maxOcc: unbounded, content: complex</td>
</tr>
<tr>
<td>children</td>
<td>thrustType, coeff_E, coeff_F, coeff_GA, coeff_GB, coeff_H, coeff_K1, coeff_K2</td>
</tr>
</tbody>
</table>
```

element anpThrustSet/thrustJet

diagram
<table>
<thead>
<tr>
<th>Type</th>
<th>anpThrustJet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc 1, maxOcc unbounded</td>
</tr>
<tr>
<td>Content</td>
<td>complex</td>
</tr>
<tr>
<td>Children</td>
<td>thrustType, coeff_E, coeff_F, coeff_GA, coeff_GB, coeff_H</td>
</tr>
</tbody>
</table>

**element anpThrustSet/thrustProp**

<table>
<thead>
<tr>
<th>Type</th>
<th>anpThrustProp</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc 1, maxOcc unbounded</td>
</tr>
<tr>
<td>Content</td>
<td>complex</td>
</tr>
<tr>
<td>Children</td>
<td>thrustType, efficiency, power</td>
</tr>
</tbody>
</table>

**element anpThrustSet/tsfcCoefficients**

<table>
<thead>
<tr>
<th>Type</th>
<th>anpThrustSet/tsfcCoefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc 1, maxOcc unbounded</td>
</tr>
<tr>
<td>Content</td>
<td>complex</td>
</tr>
<tr>
<td>Children</td>
<td>tsfcCoefficients</td>
</tr>
</tbody>
</table>
**type**  
`anpTsfcCoefficients`

**properties**  
- `minOcc`: 0  
- `maxOcc`: unbounded  
- `content`: complex

**children**  
- `mode`  
- `k1`  
- `k2`  
- `k3`  
- `k4`  
- `beta1`  
- `beta2`  
- `beta3`  
- `alpha`

**complexType**  
`anpTsfcCoefficients`

**diagram**
**Mode**

Arrival or departure mode.

**k1**

Departure thrust specific fuel consumption constant coefficient.

**k2**

Departure thrust specific fuel consumption Mach number coefficient.

**k3**

Departure thrust specific fuel consumption altitude coefficient.

**k4**

Departure thrust specific fuel consumption Mach number coefficients.

**beta1**

Arrival thrust specific fuel consumption Mach number coefficients.

**beta2**

Arrival thrust specific fuel consumption Mach number coefficients.

**beta3**

Arrival thrust specific fuel consumption Mach number coefficients.

**alpha**

Arrival thrust specific fuel consumption constant coefficients.

### Element `anpTsfccoefficients`/mode

- **Type**: `string1`
- **Properties**: `content` simple
- **Facets**:
  - Kind: `Annotation`
  - `minLength`: 0
  - `maxLength`: 1
- **Annotation**: Documentation
  - Arrival or departure mode.

### Element `anpTsfccoefficients`/k1

- **Type**: `xs:double`
- **Properties**:
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content` simple
- **Annotation**: Documentation
  - Departure thrust specific fuel consumption constant coefficient.
element `anpTscfCoefficients/k2`

- **Diagram**: Departure thrust specific fuel consumption Mach number coefficient.
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: `simple`
- **Annotation**: Departure thrust specific fuel consumption Mach number coefficient.

element `anpTscfCoefficients/k3`

- **Diagram**: Departure thrust specific fuel consumption altitude coefficient.
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: `simple`
- **Annotation**: Departure thrust specific fuel consumption altitude coefficient.

element `anpTscfCoefficients/k4`

- **Diagram**: Departure thrust specific fuel consumption thrust coefficient.
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: `simple`
- **Annotation**: Departure thrust specific fuel consumption thrust coefficient.

element `anpTscfCoefficients/beta1`

- **Diagram**: Arrival thrust specific fuel consumption Mach number coefficient.
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: `simple`
- **Annotation**: Arrival thrust specific fuel consumption Mach number coefficient.

element `anpTscfCoefficients/beta2`

- **Diagram**: Arrival thrust specific fuel consumption altitude coefficient.
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: `simple`
- **Annotation**: Arrival thrust specific fuel consumption altitude coefficient.
**Arrival thrust specific fuel consumption altitude coefficient.**

### element anpTscCoefficients/beta3

- **Diagram:**
  - Arrangement: Line
  - Description: Arrival thrust specific fuel consumption thrust coefficient.

- **Type:** xs:double

- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple

- **Annotation:**
  - documentation: Arrival thrust specific fuel consumption thrust coefficient.

### element anpTscCoefficients/alpha

- **Diagram:**
  - Arrangement: Line
  - Description: Arrival thrust specific fuel consumption constant coefficient.

- **Type:** xs:double

- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple

- **Annotation:**
  - documentation: Arrival thrust specific fuel consumption constant coefficient.

### complexType auxiliaryPowerUnit

- **Diagram:**
  - Description: The element supports the definition of custom auxiliary power units. These are most often on-board generators that provide electrical power to the aircraft while its engines are shut down.

- **Children:**
  - name
  - baseAuxiliaryPowerUnit
  - defaultTimeArrivals
  - defaultTimeDepartures
  - CO
  - HC
  - NOx
  - SOx
  - PM

- **Used by:**
  - element fleet/auxiliaryPowerUnit
This element supports the definition of custom auxiliary power units. These are most often on-board generators that provide electrical power to the aircraft while its engines are shut down.

**element auxiliaryPowerUnit/name**
- **diagram**: [Diagram](image)
- **type**: `apuName`
- **properties**: `contentName`, `simple`
- **facets**: `Kind`, `Value`, `Annotation`
  - `minLength`: 0
  - `maxLength`: 30
- **annotation**: `documentation`
  - `Identifying name of APU`.

**element auxiliaryPowerUnit/baseAuxiliaryPowerUnit**
- **diagram**: [Diagram](image)
- **type**: `apuName`
- **properties**: `minOcc`, `maxOcc`, `simple`
  - `content`: `systemName`
  - `annotation`: `documentation`
  - `Base reference name, typically a system name.`

**element auxiliaryPowerUnit/defaultTimeArrivals**
- **diagram**: [Diagram](image)
- **type**: `xs:double`
- **properties**: `minOcc`, `maxOcc`, `simple`
  - `default`: 0
- **annotation**: `documentation`
  - `Default length of time APU used for powering arrival aircraft (minutes). Valid values: Nonnegative.`

**element auxiliaryPowerUnit/defaultTimeDepartures**
- **diagram**: [Diagram](image)
- **type**: `xs:double`
- **properties**: `minOcc`, `maxOcc`, `simple`
  - `default`: 0
- **annotation**: `documentation`
  - `Default length of time APU used for powering departure aircraft (minutes). Valid values: Nonnegative.`

**element auxiliaryPowerUnit/C0**
- **diagram**: [Diagram](image)
Amount of carbon monoxide emitted (kg/hour). Valid values [0…1,000].

**element auxiliaryPowerUnit/HC**

Amount of hydrocarbons emitted (kg/hour). Valid values [0…1,000].

**element auxiliaryPowerUnit/NOx**

Amount of nitrous noxide emitted (kg/hour). Valid values [0…1,000].

**element auxiliaryPowerUnit/SOx**

Amount of sulfur oxide emitted (kg/hour). Valid values [0…1,000].

**element auxiliaryPowerUnit/PM**

Amount of particulate matter emitted (kg/hour). Valid values [0…1,000].
complexType badaAirplane

  schema

  "badaAirplaneId"
  ID of a BADA airplane model. Must be unique.

  "mfgDescription"
  Manufacturer description.

  "numEngines"
  The number of engines.

  "engineTypeCode"
  The engine type code.

  "wakeCategory"
  The wake category.

  "referenceAircraftMass"
  Minimum aircraft mass (min = 6.0, max = 495.0, metric ton).

  "minAircraftMass"
  Minimum aircraft mass (min = 6.0, max = 455.0, metric ton).

  "maxAircraftMass"
  Maximum aircraft mass (min = 6.0, max = 455.0, metric ton).

  "maxPayloadMass"
  Maximum payload mass (min = 0.0, max = 455.0, metric ton).

  "weightGradient"
  Weight gradient on maximum altitude (min = 0.0, max = 10.0, (lb/ft²)).

  "maxOperatingSpeed"
  Maximum operating speed (min = 0.0, max = 600.0, knots cts).

  "maxOperatingMachNumber"
  Maximum operating Mach number (min = 0.0, max = 10.0, Mach).

  "maxOperatingAlitude"
  Maximum operating altitude (min = 99999.0, max = 60000.0, feet MSL).

  "maxAltitudeAtMaxTakeoffWeight"
  Maximum altitude at maximum takeoff weight and ISA (min = 99999.0, max = 60000.0, feet MSL).

  "TemperatureGradientOnMaximal..."
  Temperature gradient on maximum altitude.

  "wingSurfaceArea"
  Wing surface area (min = 0.0, max = 10000.0, square meters).

  "bufferOnsetLiftCoeff"
  Buffer onset lift coefficient (per orb) (min = 0.0, max = 10.0).

  "bufferingGradient"
  Buffering gradient (per orb).

  "machDragCoeff"
  Mach drag coefficient (min = 0.0, max = 10.0).

children badaAirplaneId mfgDescription numEngines engineTypeCode wakeCategory referenceAircraftMass minAircraftMass maxAircraftMass maxPayloadMass
element badaAirplane/badaAirplaneld

Diagram: ID of a BADA airplane model. Must be unique.

Type: badaAirplaneld

Properties: content

Facets:
- Kind: Value
- Annotation
- minLength: 0
- maxLength: 255

Annotation:
- documentation
- ID of a BADA airplane model. Must be unique.

element badaAirplane/mfgDescription

Diagram: Manufacturer description.

Type: string

Properties: content

Facets:
- Kind: Value
- Annotation
- minLength: 0
- maxLength: 255

Annotation:
- documentation
- Manufacturer description.

element badaAirplane/numEngines

Diagram: The number of engines.

Type: xs:int

Properties: content

Annotation:
- documentation
- The number of engines.

element badaAirplane/engineTypeCode

Diagram: The engine type code: J/T/P.

Type: engineType

Properties: content

Facets:
- Kind: Value
- Annotation
- pattern: Jet|J|Turbo|Turboprop|T|Prop|Piston|P

Annotation:
- documentation
- The engine type code: J/T/P.

element badaAirplane/wakeCategory

Diagram: The wake category.

Type: badaWakeType

Properties: content
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>Heavy</td>
<td>H</td>
<td>Light</td>
</tr>
</tbody>
</table>

annotation documentation

The wake category.

element badaAirplane/referenceAircraftMass
diagram

```
<referenceAircraftMass>
Minimum aircraft mass (min = 0.0, max = 455.0, metric ton).
</referenceAircraftMass>
```

type xs:double

properties content simple

annotation documentation

Minimum aircraft mass (min = 0.0, max = 455.0, metric ton).

element badaAirplane/minAircraftMass
diagram

```
<minAircraftMass>
Minimum aircraft mass (min = 0.0, max = 455.0, metric ton).
</minAircraftMass>
```

type xs:double

properties content simple

annotation documentation

Minimum aircraft mass (min = 0.0, max = 455.0, metric ton).

element badaAirplane/maxAircraftMass
diagram

```
<maxAircraftMass>
Maximum aircraft mass (min = 0.0, max = 455.0, metric ton).
</maxAircraftMass>
```

type xs:double

properties content simple

annotation documentation

Maximum aircraft mass (min = 0.0, max = 455.0, metric ton).

element badaAirplane/maxPayloadMass
diagram

```
<maxPayloadMass>
Maximum payload mass (min = 0.0, max = 455.0, metric ton).
</maxPayloadMass>
```

type xs:double

properties content simple

annotation documentation

Maximum payload mass (min = 0.0, max = 455.0, metric ton).

element badaAirplane/weightGradient
diagram

```
<weightGradient>
Weight gradient on maximum altitude (min = 0.0, max = 10.0, feet/kg).
</weightGradient>
```

type xs:double

properties content simple

annotation documentation

Weight gradient on maximum altitude (min = 0.0, max = 10.0, feet/kg).

element badaAirplane/maxOperatingSpeed
**maxOperatingSpeed**

- **type**: xs:double
- **properties**: content simple
- **annotation**: Maximum operating speed (min = 0.0, max = 600.0, knots cas).

**badaAirplane/maxOperatingMachNumber**

- **type**: xs:double
- **properties**: content simple
- **annotation**: Maximum operating Mach number (min = 0.0, max = 10.0, mach).

**badaAirplane/maxOperatingAltitude**

- **type**: xs:double
- **properties**: content simple
- **annotation**: Maximum operating altitude (min = 9999.0, max = 60000.0, feel MSL).

**badaAirplane/maxAltitudeAtMaxTakeoffWeight**

- **type**: xs:double
- **properties**: content simple
- **annotation**: Maximum altitude at maximum takeoff weight and ISA (min = 9999.0, max = 60000.0, feel MSL).

**badaAirplane/temperatureGradientOnMaximumAltitude**

- **type**: xs:double
- **properties**: content simple
- **annotation**: Temperature gradient on maximum altitude.

**badaAirplane/wingSurfaceArea**

- **type**: xs:double
- **properties**: content simple
- **annotation**: Wing surface area (min = 0.0, max = 1000.0, square meters).
element badaAirplane/buffetOnsetLiftCoeff

diagram

BuffetOnsetLiftCoeff
Buffet onset lift coefficient (jet only) (min = 0.0, max = 10.0).

type xs:double

properties content simple

annotation documentation
Buffet onset lift coefficient (jet only) (min = 0.0, max = 10.0).

element badaAirplane/buffetingGradient

diagram

buffetingGradient
Buffeting gradient (jet only).

type xs:double

properties content simple

annotation documentation
Buffeting gradient (jet only).

element badaAirplane/machDragCoeff

diagram

machDragCoeff
Mach drag coefficient (min = 0.0, max = 10.0).

type xs:double

properties content simple

annotation documentation
Mach drag coefficient (min = 0.0, max = 10.0).

complexType badaAltitudeDistribution

diagram

badaAltitudeDistribution
BADA altitude distribution data.

children altitudeCount distanceMean distanceStddev distanceLow distanceHigh altitude

used by element badaAltitudeDistributionSet\badaAltitudeDistribution

annotation documentation
BADA altitude distribution data.

element badaAltitudeDistribution/altitudeCount

diagram

altitudeCount
Flight counts for a selected altitude.
<table>
<thead>
<tr>
<th>Element Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>badaAltitudeDistribution/distanceMean</td>
<td>Flight counts for a selected altitude.</td>
</tr>
<tr>
<td>badaAltitudeDistribution/distanceStddev</td>
<td>Mean distance for a selected altitude. (nMi).</td>
</tr>
<tr>
<td>badaAltitudeDistribution/distanceLow</td>
<td>Standard deviation for the distance of a selected altitude. (nMi).</td>
</tr>
<tr>
<td>badaAltitudeDistribution/distanceHigh</td>
<td>Min distance for a selected altitude. (nMi).</td>
</tr>
<tr>
<td>badaAltitudeDistribution/altitude</td>
<td>Maximum distance for a selected altitude. (nMi).</td>
</tr>
</tbody>
</table>
**complexType badaAltitudeDistributionSet**

**element badaAirplaneId**

**element badaAltitudeDistribution**

**complexType badaConfig**
children | phase configName stallSpeed parasiticDrag inducedDrag
used by | element badaConfigSet/badaConfig
annotation documentation BADA Configuration Coefficient data.

element badaConfig/phase
diagram 

type badaPhaseType
properties content simple
facets Kind Value Annotation
pattern InitialClimb|IC|Takeoff|TO|Approach|AP|Landing|LD|Cruise|CR
annotation documentation .The phase of flight (IC=initial climb, TO=take-off, AP=approach, LD=landing).

element badaConfig/configName
diagram 

type string10
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
minLength 0
maxLength 10
annotation documentation The configuration identifier.

element badaConfig/stallSpeed
diagram 

type xs:double
properties minOcc 0
maxOcc 1
content simple
annotation documentation
element badaConfig/parasiticDrag

diagram

type xs:double

properties minOcc 0
    maxOcc 1
    content simple

annotation documentation
The parasitic drag coefficient. Valid values: 0.0 through 10.0.

element badaConfig/inducedDrag

diagram

type xs:double

properties minOcc 0
    maxOcc 1
    content simple

annotation documentation
The induced drag coefficient. Valid values: 0.0 through 10.0.

complexType badaConfigSet

diagram

children badaAirplaneld badaConfig

used by element fleet/badaConfigSet

annotation documentation
A block for a custom BADA airplane configuration coefficient set.

element badaConfigSet/badaAirplaneld

diagram

type badaAirplaneld

properties content simple

facets Kind Value Annotation
            minLength 0
            maxLength 255

annotation documentation
The BADA airplane ID for the profile set.

element badaConfigSet/badaConfig

diagram

Stall speed, CAS. Valid values: 0.0 through 600.0 (kts)
The BADA configuration coefficient data.

complexType badaConfig

- type: badaConfig
- properties:
  - minOcc: 1
  - maxOcc: unbounded
  - content: complex
- children: phase configName stallSpeed parasiticDrag inducedDrag
- annotation:
  - documentation:
    - The BADA configuration coefficient data.

complexType badaFuel

- diagram:
  - children: badaAirplaneld coeff_CFI coeff_CF2 coeff_CF3 coeff_CF4 coeff_CR
  - used by: element fleet/badaFuel
- annotation:
  - documentation:
    - A BADA Fuel data record.

element badaFuel/badaAirplaneld
## badAircraftId

**Type:** `badAircraftId`  
**Properties:** content (simple)  
**Facets:**  
- minLength: 0  
- maxLength: 255  
**Annotation:**  
- Documentation: The BADA aircraft ID

### BadFuelCoeff CF1

**Type:** `xs:double`  
**Properties:** content (simple)  
**Annotation:**  
- Documentation: 1st thrust specific fuel consumption coefficient. Valid values: 0.0 through 10.0. Variable units: (kg/(min•kN) (jet); kg/(min•kN•knot); (turboprop); kg/min (piston))

### BadFuelCoeff CF2

**Type:** `xs:double`  
**Properties:** content (simple)  
**Annotation:**  
- Documentation: 2nd thrust specific fuel consumption coefficient. Valid values: 0.0 through 1. (kts)

### BadFuelCoeff CF3

**Type:** `xs:double`  
**Properties:** content (simple)  
**Annotation:**  
- Documentation: 1st descent fuel flow coefficient. Min= Valid values: 0.0 through 100.0. (kg/min)

### BadFuelCoeff CF4

**Type:** `xs:double`  
**Properties:** content (simple)  
**Annotation:**  
- Documentation: 2nd descent fuel flow coefficient. Valid values: 0.0 through 1. (ft)
### Coef_CR

Cruise fuel flow correction coefficient. Valid values: 0.0 through 10.0.

**type**: xs:double  
**properties**: content simple  
**annotation documentation**: Cruise fuel flow correction coefficient. Valid values: 0.0 through 10.0.

**complexType** badaProfile

#### Diagram

- **massRangeValue**
  - Mass range. Valid values: LO (low range), A/V (average range), HI (high range).

- **companyCode1**
  - Three-letter company code.

- **companyCode2**
  - Two-letter company code.

- **companyName**
  - Name of airline that uses this procedure.

- **aircraftVersion**
  - Aircraft version to which this procedure applies.

- **engine**
  - Engine identifier.

- **climbSpeedBelowTransitionAltitude**
  - Standard climb speed (CAS) between 1,500/1,000 and 10,000 feet. Valid values: 0.0 through 600.0 (Kt).

- **climbSpeedAboveTransitionAltitude**
  - Standard climb speed (CAS) between 10,000 feet and Mach transition altitude. Valid values: 0.0 through 600.0 (Kt).

- **cruiseSpeedBelowTransitionAltitude**
  - Standard cruise speed (CAS) between 3,000 and 10,000 feet. Valid values: 0.0 through 600.0 (Kt).

- **cruiseSpeedAboveTransitionAltitude**
  - Standard cruise speed (CAS) above 10,000 feet until Mach transition altitude. Valid values: 0.0 through 600.0 (Kt).

- **cruiseMachNumber**
  - Standard cruise Mach number above transition altitude. Valid values: 0.0 through 10.0.

- **doosentSpeedUnderTransitionAltitude**
  - Standard doosent speed (CAS) between 3,000/2,000 and 10,000 feet. Valid values: 0.0 through 600.0 (Kt).

- **doosentSpeedOverTransitionAltitude**
  - Standard doosent speed (CAS) above 10,000 feet until Mach transition. Valid values: 0.0 through 600.0 (Kt).

- **doosentMachNumber**
  - Standard doosent Mach number above transition altitude. Valid values: 0.0 through 10.0.

**children**: massRangeValue companyCode1 companyCode2 companyName aircraftVersion engine climbSpeedBelowTransitionAltitude climbSpeedAboveTransitionAltitude
climbMachNumber cruiseSpeedBelowTransitionAltitude cruiseSpeedAboveTransitionAltitude cruiseMachNumber descentSpeedUnderTransitionAltitude descentSpeedOverTransitionAltitude descentMachNumber

used by element badaProfileSet/profile

annotation documentation
A BADA profile APF (airline procedures file) record.

element badaProfile/massRangeValue

diagram

```
<massRangeValue>
  Max. range. Valid values:
  LO (Low range), AV (Average range), HI (High range).
</massRangeValue>
```

type string2

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 2

annotation documentation
Mass range. Valid values: LO (low range), AV (average range), HI (high range).

element badaProfile/companyCode1

diagram

```
<companyCode1>
  Three-letter company code.
</companyCode1>
```

type string3

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 3

annotation documentation
Three-letter company code.

element badaProfile/companyCode2

diagram

```
<companyCode2>
  Two-letter company code.
</companyCode2>
```

type string2

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 2

annotation documentation
Two-letter company code.

element badaProfile/companyName

diagram

```
<companyName>
  Name of airline that uses this procedure.
</companyName>
```

type string15

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 15
Name of airline that uses this procedure.

**element badaProfile/aircraftVersion**

- **diagram**
- **type** string12
- **properties**
  - minOcc 0
  - maxOcc 1
  - content simple
- **facets**
  - Kind Value Annotation
    - minLength 0
    - maxLength 12
- **annotation**
  - documentation
  - Aircraft version to which this procedure applies.

**element badaProfile/engine**

- **diagram**
- **type** string12
- **properties**
  - minOcc 0
  - maxOcc 1
  - content simple
- **facets**
  - Kind Value Annotation
    - minLength 0
    - maxLength 12
- **annotation**
  - documentation
  - Engine identifier.

**element badaProfile/climbSpeedBelowTransitionAltitude**

- **diagram**
- **type** xs:short
- **properties**
  - content simple
- **annotation**
  - documentation
  - Standard climb speed (CAS) between 1,500/6,000 and 10,000 feet. Valid values: 0.0, through 600.0. (kts).

**element badaProfile/climbSpeedAboveTransitionAltitude**

- **diagram**
- **type** xs:short
- **properties**
  - content simple
- **annotation**
  - documentation
  - Standard climb speed (CAS) between 10,000 feet and Mach transition altitude. Valid values: 0.0 through 600.0. (kts).

**element badaProfile/climbMachNumber**

- **diagram**
- **type** xs:double
Standard climb Mach number above Mach transition altitude. Valid values: 0.0 through 10.0.

element badaProfile/cruiseSpeedBelowTransitionAltitude

diagram

type xs:short

properties content simple

annotation documentation
Standard cruise speed (CAS) between 3,000 and 10,000 feet. Valid values: 0.0 through 600.0. (kts).

element badaProfile/cruiseSpeedAboveTransitionAltitude

diagram

type xs:short

properties content simple

annotation documentation
Standard cruise speed (CAS) above 10,000 feet until Mach transition altitude. Valid values: 0.0 through 600.0. (kts).

element badaProfile/cruiseMachNumber

diagram

type xs:double

properties content simple

annotation documentation
Standard cruise Mach number above transition altitude. Valid values: 0.0 through 10.0.

element badaProfile/descentSpeedUnderTransitionAltitude

diagram

type xs:short

properties content simple

annotation documentation
Standard descent speed (CAS) between 3,000/6,000 and 10,000 feet. Valid values: 0.0 through 600.0. (kts)

element badaProfile/descentSpeedOverTransitionAltitude

diagram

type xs:short

properties content simple

annotation documentation
Standard descent speed (CAS) above 10,000 feet until Mach transition. Valid values: 0.0 through 600.0. (kts).
type xs:double

properties content simple

annotation documentation
Standard descent Mach number above transition altitude. Valid values: 0.0 through 10.0.

complexType badaProfileSet

diagram

children badaAirplaneld profile

used by element fleet/badaProfileSet

annotation documentation
A block used to define a custom BADA profile set.

element badaProfileSet/badaAirplaneld

diagram

type badaAirplaneld

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
The BADA airplane ID for the profile set.

element badaProfileSet/profile

diagram
The profile set data.
complexType badaThrust

diagram

children badaAirplaneld coeff_TC1 coeff_TC2 coeff_TC3 coeff_TC4 coeff_TC5 coeff_TDL coeff TDH coeff_APP coeff_LD descentAlt descentSpeed descentMach notes

used by element fleet/badaThrust

annotation documentation
A custom BADA thrust data record.

element badaThrust/badaAirplaneld

diagram

badaAirplaneld
The BADA airplane ID.

coeff_TC1
1st max climb thrust coefficient. Valid values: 0.0 through 1.

coeff_TC2
2nd max climb thrust coefficient. Valid values: 0.0 through 0.8.

coeff_TC3
3rd max climb thrust coefficient. Valid values: -1024000 to 6553600. Variable units (ft/ft², lbf, Newton, turbohp).

coeff_TC4
1st thrust temperature coefficient. Valid values: -45 through 100. (K)

coeff_TC5
2nd thrust temperature coefficient. Valid values: 0.0 through 30. (K)

coeff_TDL
Low altitude descent thrust coefficient. Valid values: 0.0 through 10.0

coeff_TDH
High altitude descent thrust coefficients. Valid values: 0.0 through 10.0.

coeff_APP
Approach thrust coefficient. Valid values: 0.0 through 10.0

coeff_LD
Landing thrust coefficient. Valid values: 0.0 through 10.0.

descentAlt
Transition altitude above MSL for calculation of descent thrust. Valid values: 0.0 through 6000.0. (ft)

descentSpeed
Reference descent speed. Valid values: 0.0 through 500.0. (KIAS)

descentMach
Reference descent Mach number. Valid values: 0.0 through 10.0.

notes
User notes.
<table>
<thead>
<tr>
<th>Type</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>badaAirplanId</td>
<td>The BADA airplane ID.</td>
</tr>
</tbody>
</table>

### Properties

- **Element: badaThrust/coef_TC1**
  - Type: xs:double
  - Annotation: 1st max climb thrust coefficient. Valid values: 0.0 through 1.

- **Element: badaThrust/coef_TC2**
  - Type: xs:double
  - Annotation: 2nd max climb thrust coefficient. Valid values: 0.0 through 1e9 (ft).

- **Element: badaThrust/coef_TC3**
  - Type: xs:double
  - Annotation: 3rd max climb thrust coefficient. Valid values: -1034000 to 665880. Variable units. (1/feet^2 (jet); Newton (turbojet); knot-Newton (piston)).

- **Element: badaThrust/coef_TC4**
  - Type: xs:double
  - Annotation: 1st thrust temperature coefficient. Valid values: -45 through 50 (K).

- **Element: badaThrust/coef_TC5**
  - Type: xs:double
  - Annotation: 2nd thrust temperature coefficient. Valid values: 0.0 through 10.0 (K).
2nd thrust temperature coefficient. Valid values: 0.0 through 10.0. (1/K)

element badaThrust/coeff_TDL

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Low altitude descent thrust coefficient. Valid values: 0.0 through 10.0</td>
</tr>
</tbody>
</table>

element badaThrust/coeff_TDH

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation High altitude descent thrust coefficient. Valid values: 0.0 through 10.0</td>
</tr>
</tbody>
</table>

element badaThrust/coeff_APP

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Approach thrust coefficient. Valid values: 0.0 through 10.0</td>
</tr>
</tbody>
</table>

element badaThrust/coeff_LD

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Landing thrust coefficient. Valid values: 0.0 through 10.0</td>
</tr>
</tbody>
</table>

element badaThrust/descentAlt

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Transition altitude above MSL for calculation of descent thrust. Valid values: -9999.0 through 60000.0. (ft)</td>
</tr>
</tbody>
</table>

element badaThrust/descentSpeed
element badaThrust/descentMach

diagram
descentMach
Reference descent Mach number. Valid values 0.0 through 10.0.

type xs:float

properties content simple

annotation documentation Reference descent Mach number. Valid values: 0.0 through 10.0.

element badaThrust/notes

diagram
textnotes
User notes.

type string255

properties minOcc 0
maxOcc 1

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation User notes.

complexType coord2DType

diagram

coord2DType
A 2D point coordinate.

latitude
Latitude specified as degrees in decimal format. Can include optional attribute positive.

latitudeDMS
Latitude expressed as decimal degrees with optional indicator N, n, S, s.

longitude
Longitude specified as degrees in decimal format. Can include optional attribute positive.

longitudeDMS
Longitude expressed as decimal degrees with optional indicator E, e, W, w.

utm
UTM Northing of the point in decimal meters north of the equator.

utmCoordGroup
Specifies a point using Universal Transverse Mercator coordinates.

utmN
UTM Northing of the point in decimal meters north of the central meridian.

utmZone
UTM zone of the point. A default zone can be set in the AltUtmZone tag.
Type of coordinates used to specify a point in three-dimensional space. The type is actually the type of the point in two-dimensional space along with an elevation.

**element coord3DElevationType/elevation**

**complexType dispersionWeight1Type**
Abstract type used to specify the dispersion weight for the backbone subtrack. This type is intended only to be a base class and will not be used in ASIF files directly.

Represents the centerline of a set of dispersed tracks.

Specify the dispersion weight for a backbone with 2 subtracks.

Specify the dispersion weight for the first left subtrack.

Specify the dispersion weight for the first right subtrack.
type xs:double

properties content simple

annotation documentation Specify the dispersion weight for the first right subtrack.

complexType dispersionWeight5Type
diagram

Specify the dispersion weight for a backbone with 4 subtracks.

element dispersionWeight5Type/weight1

type xs:double

properties content simple

annotation documentation Specify the dispersion weight for the first left subtrack.

element dispersionWeight5Type/weight2

type xs:double

properties content simple

annotation documentation Specify the dispersion weight for the first right subtrack.

element dispersionWeight5Type/weightr1

type xs:double

properties content simple

annotation documentation Specify the dispersion weight for the second left subtrack.

element dispersionWeight5Type/weightr2

type xs:double

properties content simple

annotation documentation Specify the dispersion weight for the second right subtrack.
complexType dispersionWeight7Type

diagram

Specify the dispersion weight for a backbone with 6 subtracks.

- backbone
  - weight1
  - weightr1
  - weightl2
  - weightr2
  - weightl3
  - weightr3

used by
- element dispersionWeight/dispersionWeight7Type
- complexType dispersionWeight9Type

annotation documentation
Specify the dispersion weight for a backbone with 6 subtracks.

element dispersionWeight7Type/weightl3

diagram

Specify the dispersion weight for the third left subtrack.

type xs:double

properties content simple

annotation documentation
Specify the dispersion weight for the third left subtrack.

element dispersionWeight7Type/weightr3

diagram

Specify the dispersion weight for the third right subtrack.

type xs:double

properties content simple

annotation documentation
Specify the dispersion weight for the third right subtrack.

complexType dispersionWeight9Type

diagram
Specify the dispersion weight for a backbone with 8 subtracks.

Specify the dispersion weight for the fourth left subtrack.

Specify the dispersion weight for the fourth right subtrack.
Specify the dispersion weight for the fourth right subtrack.

###complexType emissionFactorSet

####diagram

<table>
<thead>
<tr>
<th>CO</th>
<th>Amount of carbon monoxide emitted. Valid values: 0 to 3000. (kg/unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC</td>
<td>Amount of hydrocarbons emitted. Valid values: 0 to 100. (kg/unit)</td>
</tr>
<tr>
<td>NOx</td>
<td>Amount of nitrous oxides emitted. Valid values: 0 to 100. (kg/unit)</td>
</tr>
<tr>
<td>SOx</td>
<td>Amount of sulfur oxides emitted. Valid values: 0 to 10. (kg/unit)</td>
</tr>
<tr>
<td>PM10</td>
<td>Amount of 10-micron particulate matter emitted. Valid values: 0 to 2000. (kg/unit)</td>
</tr>
</tbody>
</table>

####children

- CO
- HC
- NOx
- SOx
- PM10

####used by

- elements: userGroundSupportEquipment/userEmissionFactors/emissionFactorsCNG
- userGroundSupportEquipment/userEmissionFactors/emissionFactorsDiesel
- userGroundSupportEquipment/userEmissionFactors/emissionFactorsGas
- userGroundSupportEquipment/userEmissionFactors/emissionFactorsLPG

####annotation
documentation

Supports legacy EDMS studies relating to content that contains emission factor definitions. This element supports the definition of various emission factors defined under GSE and training fires.

####element emissionFactorSet/CO

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Amount of carbon monoxide emitted. Valid values: 0 to 3000. (kg/unit)

####element emissionFactorSet/HC

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Amount of hydrocarbons emitted. Valid values: 0 to 100. (kg/unit)

####element emissionFactorSet/NOx

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Amount of nitrous oxides emitted. Valid values: 0 to 100. (kg/unit)
element emissionFactorSet/SOx
diagram

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SOx</td>
<td>Amount of sulfur oxides emitted. Valid values: 0 to 10 (kg/unit)</td>
</tr>
</tbody>
</table>

*type* xs:double

*properties* content simple

*annotation* documentation

Amount of sulfur oxides emitted. Valid values: 0 to 10 (kg/unit)

element emissionFactorSet/PM10
diagram

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PM10</td>
<td>Amount of 10-micron particulate matter emitted. Valid values: 0 to 1000 (kg/unit)</td>
</tr>
</tbody>
</table>

*type* xs:double

*properties* content simple

*annotation* documentation

Amount of 10-micron particulate matter emitted. Valid values: 0 to 1000 (kg/unit)

complexType energyShare
diagram

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An custom BADA energy share.</td>
</tr>
</tbody>
</table>

*children* anpAirplaneld badaAirplaneld transEnergyShare

*used by* element fleet/energyShare

*annotation* documentation

A custom BADA energy share.

element energyShare/anpAirplaneld
diagram

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>anpAirplaneld</td>
<td>The ANP airplane ID.</td>
</tr>
</tbody>
</table>

*type* anpAirplaneld

*properties* content simple

*facets* Kind Value Annotation

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>

*annotation* documentation

The ANP airplane ID.

element energyShare/badaAirplaneld
diagram

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>badaAirplaneld</td>
<td>The BADA airplane ID.</td>
</tr>
</tbody>
</table>

*type* badaAirplaneld

*properties* content simple

*facets* Kind Value Annotation

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
element energyShare\/transEnergyShare

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

**properties** content simple

**annotation** documentation

The proportion of available energy used for acceleration compared to altitude change in the ANP to BADA transition region.

complexType engineModeEmissions

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**children**

- time
- fuel
- CO
- NOx
- SOx
- SN
- PM

**used by** elements

- aircraftEngine/approachEmissionFactors
- aircraftEngine/climbEmissionFactors
- aircraftEngine/takeOffEmissionFactors
- aircraftEngine/taxiIdleEmissionFactors

**annotation** documentation

Describes custom emission factors user-defined aircraft engines.

element engineModeEmissions/time

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

**properties**

- minOccurs 0
- maxOccurs 1
- content simple
- default 0

**annotation** documentation

Time engine operates in a given mode (minutes). Valid values Nonnegative.
Time engine operates in a given mode (minutes). Valid values: Nonnegative.

**element engineModeEmissions/fuel**

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0

**annotation**: documentation
Fuel emission factor (g/kg). Valid values: Nonnegative.

**element engineModeEmissions/CO**

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0

**annotation**: documentation
Amount of carbon monoxide emitted (g/kg). Valid values: Nonnegative.

**element engineModeEmissions/HC**

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0

**annotation**: documentation
Amount of hydrocarbons emitted (g/kg). Valid values: Nonnegative.

**element engineModeEmissions/NOx**

- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0

**annotation**: documentation
Amount of nitrous oxide emitted (g/kg). Valid values: Nonnegative.

**element engineModeEmissions/SOx**

- **type**: xs:double
element `engineModeEmissions/SN`  

<table>
<thead>
<tr>
<th>diagram</th>
<th>Smoke number for the engine mode (g/kg). Valid values: Nonnegative.</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
maxOcc 1  
content simple |
| annotation | documentation  
Amount of sulfur oxide emitted (g/kg). Valid values: Nonnegative. |

```
complexType `fleet`
```

<table>
<thead>
<tr>
<th>diagram</th>
<th>Describes a custom auxiliary power unit (APU). These are typically unpressurized power plants providing power to a parked aircraft.</th>
</tr>
</thead>
</table>
|         | Supports the definition of custom airframes.  
|         | User-defined engine information containing custom parameters that reflect an aircraft engine. The engine definition can then be used within a user-defined aircraft.  
|         | User-defined engine modification information containing custom parameters that reflect an aircraft engine modification. This engine modification definition can then be used within a user-defined aircraft.  
|         | This element contains the three spectral view references for a given aircraft node group with the corresponding threat setting, type and modal type. |
Describes a custom auxiliary power unit (APU). These are typically on-board generators providing power to a parked aircraft.
Supports the definition of custom airframes.

<table>
<thead>
<tr>
<th>Type</th>
<th>airframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc 0&lt;br&gt;maxOcc unbounded&lt;br&gt;content complex</td>
</tr>
<tr>
<td>Children</td>
<td>model engineCount engineLocation designationCode maxRange introYear euroGroupCode usageCode sizeCode engineType auxiliaryPowerUnitId</td>
</tr>
<tr>
<td>Annotation</td>
<td>documentation&lt;br&gt;Supports the definition of custom airframes.</td>
</tr>
</tbody>
</table>

**Element fleet/engine**

**Diagram**
A diagram of an aircraft engine with properties including:

- **code**: Unique ICAO UID.
- **model**: Engine model.
- **engineType**: Engine type, valid values: J (jet), T (turbo), P (piston).
- **notes**: Free-text notes for the engine.
- **emissionsEngineModel**: ICAO emissions model for the engine.
- **performanceEngineModel**: ICAO performance model for the engine.
- **manufacturer**: Engine manufacturer.
- **combustor**: Combustor used on engine.
- **superseded**: ICAO UID of an engine that supersedes the given engine.
- **ratedEngineOut**: Rated engine output (in kN), valid values: Nonnegative.
- **source**: Source of engine data.
- **bypassRatio**: Engine's bypass ratio, valid values: Nonnegative.
- **pressureRatio**: Engine's pressure ratio, valid values: Nonnegative.
- **tfrnFlag**: Turbofan or Mixed turbofan flag, valid values: TF (turbofan) or MTF (mixed turbofan).
- **defaultSOX**: Sulfur oxides emitted (grams per kilogram of fuel), valid values: Nonnegative.
- **idleIdleEmissionFactors**: Emission factors when aircraft is idling.
- **takeOffEmissionFactors**: Emission factors when aircraft is taking off.
- **climbEmissionFactors**: Emission factors when aircraft is climbing.
- **approachEmissionFactors**: Emission factors when aircraft is on approach.

**Type**: aircraftEngine

**Properties**:
- **minOcc**: 0
- **maxOcc**: unbounded
- **content**: complex
User defined engine information containing custom parameters that reflect an aircraft engine. This engine definition can then be used within a user-defined aircraft.

**element fleet/engineMod**

- **type**: `aircraftEngineMod`
- **properties**:
  - minOcc: 0
  - maxOcc: unbounded
  - content: complex
- **children**: `code description`
- **annotation**: User defined engine modification information containing custom parameters that reflect an aircraft engine modification. This engine modification definition can then be used within a user-defined aircraft.

**element fleet/ampNoiseGroup**

- **type**: `ampNoiseGroup`
- **properties**:
  - minOcc: 0
  - maxOcc: unbounded
  - content: complex
- **children**: `noiseId spectralClassApproach spectralClassDeparture spectralClassAfterburner thrustSetType modelType npdCurves`
- **annotation**: This element contains the three spectral class references for a given aircraft noise group with the corresponding thrust setting type and model type.

**element fleet/ampAirplane**
type anpAirplane

properties
minOcc: 0
maxOcc: unbounded
content complex

children
anpAirplaneId
description
sizeCode
owner
description
owner

capability
owner
description
owner

annotation
documentation
Creates a new ANP aircraft.
Flap settings for an ANP aircraft type.

Specifies a set of thrust records for an ANP aircraft.

The profile set for an ANP aircraft.
This element contains the three spectral class references for a given helicopter noise group with the corresponding thrust setting type and model type.

- **type**: `anpHelicopterNoiseGroup`
- **properties**: `minOcc 0`
  `maxOcc unbounded`
  `content complex`
- **children**: `noisedId` `spectralClassApproach` `spectralClassDeparture` `spectralClassFlyover` `speedApproach` `speedDeparture` `speedFlyover` `npdCurves`
- **annotation**: documentation

**element fleet/anpHelicopter**

- **type**: `anpHelicopter`
- **properties**: `anpHelicopterId` `noisedId` `directivityId` `description` `owner` `engineTypeCode` `numberRotors` `diameter`
The helicopter diameter (feet). Valid values: 0 to 1000.

**rpm**
The helicopter rotor speed (revolutions per minute). Valid values: 0 to 1000.

**maxTakeoffWeight**
The max gross takeoff weight (pounds). Valid values: 0 to 50000.

**hasWheels**
Flag indicating if the helicopter has wheels. Valid values: Y (yes), N (no).

**modelType**
The helicopter model type. Valid values: I (INM), N (NoseMap).

**bLeft0**
Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

**bLeft1**
Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

**bRight0**
Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

**bRight1**
Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

**dbVerticalAscent**
Decibel offset added to NPO levels. Vertical ascent (DB). Valid values: Min = -30 Max = 30.

**dbVerticalDescent**
Decibel offset added to NPO levels. Vertical descent (DB). Valid values: Min = -30 Max = 30.
type anpHelicopter

properties
  minOcc 0
  maxOcc unbounded
  content complex

children
  anpHelicopterId
  noiseId
directivityId
description
  owner
  engine
  TypeCode
  numberRotors
diameter
  rpm
  maxTakeoffWeight
  hasWheels
  modelType
  bLeft0
  bLeft1
  bLeft2
  bCenter0
  bCenter1
  bCenter2
  bRight0
  bRight1
  bRight2
  dBVerticalAscent
  dBVerticalDescent
  dBHorizontalAcceleration
  dBClimbAcceleration
  dBHorizontalDeceleration
  dBDescendDeceleration

annotation documentation
Creates a new ANP helicopter.

element fleet/anpHeloDirectivitySet
diagram

    anpHeloDirectivitySet
    .
    .
    .

    anpHelicopterId
    .
    .
    .

  A set of helicopter directivities.

  ANP Helicopter directivity.

type anpHeloDirectivitySet

properties
  minOcc 0
  maxOcc unbounded
  content complex

children
  anpHelicopterId
  anpHeloDirectivity

annotation documentation
A set of helicopter directivities.

element fleet/anpHeloProfileSet
diagram

    anpHeloProfileSet
    .
    .
    .

    anpHelicopterId
    .
    .
    .

  A profile set for an ANP helicopter.

  The anp helicopter id.

  One or more ANP profiles.

type anpHeloProfileSet

properties
  minOcc 0
  maxOcc unbounded
  content complex

children
  anpHelicopterId
  profile

annotation documentation
A profile set for an ANP helicopter.
badaAirplane

ID of a BADA airplane model. Must be unique.

manufacturer description
Manufacturer description.

numEngines
The number of engines.

engineTypeCode
The engine type code: JT, J, P.

wakeCategory
The wake category.

referenceAircraftMass
Minimum aircraft mass (min = 0.0, max = 455.0, metric ton).

minAircraftMass
Minimum aircraft mass (min = 0.0, max = 455.0, metric ton).

maxAircraftMass
Maximum aircraft mass (min = 0.0, max = 455.0, metric ton).

maxPayloadMass
Maximum payload mass (min = 0.0, max = 455.0, metric ton).

weightGradient
Weight gradient on maximum altitude (min = 0.0, max = 10.0, feet/kg).

maxOperatingSpeed
Maximum operating speed (min = 0.0, max = 600.0, knots max).

maxOperatingMachNumber
Maximum operating Mach number (min = 0.0, max = 10.0, Mach).

maxOperatingAltitude
Maximum operating altitude (min = 9999.0, max = 60000.0, feet MSL).

maxAltitudeAtMaxTakeoffWeight
Maximum altitude at maximum takeoff weight and ISA (min = 9999.0, max = 60000.0, feet MSL).

temperatureGradientOnMaximum...
Temperature gradient on maximum altitude.

wingSurfaceArea
Wing surface area (min = 0.0, max = 10000.0, square meters).

buffetOnsetLiftCoeff
Buffet onset lift coefficient (jet only) (min = 0.0, max = 10.0).

buffetingGradient
Buffeting gradient (jet only).

machDragCoeff
Mach drag coefficient (min = 0.0, max = 10.0).
Describes a new user-defined BADA airplane.

A block for defining a BADA altitude distribution set.

A block for defining the BADA default altitude distribution set.

A block used to define a custom BADA profile set.
**element fleet/badaConfigSet**

- **type**: badaConfigSet
- **properties**:
  - minOcc: 0
  - maxOcc: unbounded
  - content: complex
- **children**:
  - badaAirplaneId
  - badaConfig
- **annotation**:
  - documentation
  - A block for a custom BADA airplane configuration coefficient set.

**element fleet/badaFuel**

- **type**: badaFuel
- **properties**:
  - minOcc: 0
  - maxOcc: unbounded
  - content: complex
- **children**:
  - badaAirplaneId
  - coeff CF1
  - coeff CF2
  - coeff CF3
  - coeff CF4
  - coeff CR
- **annotation**:
  - documentation
  - A BADA fuel data record.

**element fleet/badaThrust**

- **type**: nadaThrust
- **properties**: to be determined
- **children**: to be determined
- **annotation**: to be determined
Custom BADA airplane thrust data sets.

**Element Fleet/Aircraft**

**Type** badaThrust

**Properties**
- minOcc: 0
- maxOcc: unbounded
- content: complex

**Children**
- badaAirplaneld
- coeff TC1
- coeff TC2
- coeff TC3
- coeff TC4
- coeff TC5
- coeff TDL
- coeff TDH
- coeff APP
- coeff LD
- descentAlt
- descentSpeed
- descentMach
- notes

**Annotation**
Documentation
- Custom BADA airplane thrust data sets.
diagram

**Diagram**

**Type** aircraft

**Properties**
- minOcc: 0
- maxOcc: unbounded
- content: complex

**Children**
- description
- airframeModel
- engineCode
- engineModCode
- anpAirplaneId
- badaAirplaneId
- anpHelicopterId

**Annotation**
- documentation
  - A block used to create new user defined AEDT aircraft.

**Diagram**

**Element** fleet/energyShare

**Diagram**

**Type** energyShare

**Properties**
- minOcc: 0
- maxOcc: unbounded
- content: complex

**Children**
- anpAirplaneId
- badaAirplaneId
- transEnergyShare

**Annotation**
- documentation
  - A custom BADA aircraft energy share set.

**Complex Type** latitudeDecimalType

**Diagram**

**Type** extension of xs:double
properties | base xs:double
---|---
used by | element `latlonCoordGroup/latitude`

attributes | Name | Type | Use | Default | Fixed | Annotation
---|---|---|---|---|---|---
positive | derived by: xs:string | optional | N | documentation | Latitude specified as degrees in decimal format. Can include optional attribute positive. (decimal degrees)

attribute `latitudeDecimalType/@positive`
- type: restriction of `xs:string`
- properties: use optional default N
- facets: Kind Value Annotation
  - pattern: N|n|S|s

complexType `longitudeDecimalType`
- diagram:
- type: extension of `xs:double`
- properties: base xs:double
- used by: element `latlonCoordGroup/longitude`
- attributes: Name | Type | Use | Default | Fixed | Annotation
  - positive | derived by: xs:string | optional | E | documentation | Longitude specified as degrees in decimal format. Can include optional attribute positive. (decimal degrees)

attribute `longitudeDecimalType/@positive`
- type: restriction of `xs:string`
- properties: use optional default E
- facets: Kind Value Annotation
  - pattern: E|e|W|w

complexType `polygon2DType`
- diagram:
- children: dummy vertex
- used by: elements `boundary/polygon oneOrThreeCoords2DGroupSet/polygonCoords`
- annotation: documentation
  - Describes a 2 dimensional polygon.

element `polygon2DType/dummy`
- diagram:
- type: `xs:int`
- properties: minOcc 0 maxOcc 1
- content: simple

element `polygon2DType/vertex`
### diagram

- **type**: `coord2DType`
- **properties**:
  - `minOcc`: 3
  - `maxOcc`: unbounded
  - `content`: complex
- **children**:
  - `latitude`
  - `latitudeDMS`
  - `longitude`
  - `longitudeDMS`
  - `utmN`
  - `utmE`
  - `utmZone`
- **annotation**:
  - documentation
  - A list of vertices defining the polygon.

### complexType `polygon3DElevationType`

- **diagram**
- **children**:
  - `dummy`
  - `vertex`
- **annotation**:
  - documentation
  - The elevation or Z value for a polygon.

### element `polygon3DElevationType/dummy`

- **type**: `xs:int`
- **properties**:
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: simple

### element `polygon3DElevationType/vertex`
complexType `coord3DElevationType`

properties
- `minOcc`: 3
- `maxOcc`: unbounded
- `content`: complex

children
- `latitude`
- `latitudeDMS`
- `longitude`
- `longitudeDMS`
- `utmN`
- `utmE`
- `utmZone`
- `elevation`

annotation
documentation
A list of vertices defining the polygon.

complexType `profiles`

diagram

children
- `departureProfile`
- `arrivalProfile`

used by
- elements `operation/badaProfiles` `operation/saeProfiles`

annotation
documentation
Contains an arrival and departure profile.

element `profiles/departureProfile`

diagram

type `profileType`

properties
- `content`: simple

facets
- Kind: Annotation
- `minLength`: 0
- `maxLength`: 8
<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A flight's departure profile.</td>
</tr>
</tbody>
</table>

**element** `profiles/arrivalProfile`

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="arrivalProfile" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>profileType</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A flight's arrival profile.</td>
</tr>
</tbody>
</table>

**complexType** `runup`

| diagram | |
|---------||
### element runup/aircraftType

**diagram**

![Diagram of aircraftType](image)

- **type**: `aircraftType`
- **properties**: `content complex`
- **children**: `airFrameId`, `airframeModel`, `engineCode`, `engineModCode`, `apuName`, `groundSupportEquipmentLTOOperationSet`
- **annotation documentation**: Aircraft type employed in this runup operation.

### element runup/flightNumber

**diagram**

![Diagram of flightNumber](image)

- **type**: `string16`
- **properties**: `content simple`
- **minOcc**: 0
- **maxOcc**: 1
- **facets**: Kind Value Annotation
  - minLength: 0
  - maxLength: 16
- **annotation documentation**: Optional flight number.

### element runup/tailNumber

**diagram**

![Diagram of tailNumber](image)

- **type**: `string8`
- **properties**: `content simple`
- **minOcc**: 0
- **maxOcc**: 1
- **facets**: Kind Value Annotation
  - minLength: 0
  - maxLength: 16
- **annotation documentation**: Optional tail number.
element runup/numOperations

diagram

The number of occurrences of this operation.

type xs:double

properties content simple

annotation documentation The number of occurrences of this operation.

element runup/airport

diagram

The airport code at which this operation occurs.

type airportCode

properties content complex

facets Kind Value Annotation

minLength 0

maxLength 4

attributes Name Type Use Default Fixed Annotation

type airportCodeType optional ANY

country string3 optional ANY

annotation documentation The airport code at which this operation occurs.

element runup/opTime

diagram

The runup operation time.

type xs:dateTime

properties content simple

annotation documentation The runup operation time.

element runup/duration

diagram

The duration of the runup.

type xs:double

properties content simple

annotation documentation The duration of the runup.

element runup/heading

diagram
**element runup/thrust**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/thrust_diagram.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

The thrust employed for this runup operation.

**complexType runwayEnd**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

The orientation of the aircraft.
**element runwayEnd/name**

<table>
<thead>
<tr>
<th>diagram</th>
<th>ID of the runway's endpoint.</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string8</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>8</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>ID of the runway's endpoint.</td>
</tr>
</tbody>
</table>

**element runwayEnd/elevation**

<table>
<thead>
<tr>
<th>diagram</th>
<th>Runway endpoint's elevation above MSL in feet (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Runway endpoint's elevation above MSL in feet (ft)</td>
</tr>
</tbody>
</table>

**element runwayEnd/threshCrossHeight**

<table>
<thead>
<tr>
<th>diagram</th>
<th>Approach threshold crossing height AGL (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0 maxOcc 1 content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Approach threshold crossing height AGL (ft)</td>
</tr>
</tbody>
</table>

**element runwayEnd/threshElevation**

<table>
<thead>
<tr>
<th>diagram</th>
<th>Elevation of runway’s endpoint above or below MSL (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0 maxOcc 1 content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Elevation of runway’s endpoint above or below MSL (ft)</td>
</tr>
</tbody>
</table>

**element runwayEnd/glideSlope**

<table>
<thead>
<tr>
<th>diagram</th>
<th>Glide slope for runway’s endpoint. Valid values: 2 to 6 (degrees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0 maxOcc 1 content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Glide slope for runway’s endpoint. Valid values: 2 to 6 (degrees)</td>
</tr>
</tbody>
</table>
element runwayEnd/intAltitude

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
</tbody>
</table>
| properties | minOcc: 0  
|          | maxOcc: 1                       |
| content  | simple                          |
| annotation | documentation 
|          | Altitude at which glide slope should be intercepted above ground level. (ft) |

element runwayEnd/depDispThresh

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
</tbody>
</table>
| properties | minOcc: 0  
|          | maxOcc: 1                       |
| content  | simple                          |
| annotation | documentation 
|          | Displaced threshold length at departure end of runway. (ft) |

element runwayEnd/appDispThresh

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
</tbody>
</table>
| properties | minOcc: 0  
|          | maxOcc: 1                       |
| content  | simple                          |
| annotation | documentation 
|          | Displaced threshold length at arrival end of runway. (ft) |

element runwayEnd/percentWind

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
</tbody>
</table>
| properties | minOcc: 0  
|          | maxOcc: 1                       |
| content  | simple                          |
| annotation | documentation 
|          | Percent change in airport average headwind, (%) |

element runwayEnd/isHelipad

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:string</td>
</tr>
</tbody>
</table>
| properties | minOcc: 0  
|          | maxOcc: 1                       |
| content  | simple                          |
| annotation | documentation 
|          | Indicates if this end of the runway is also a helipad. Valid values Y = yes, N = no. |
Indicates if this end of the runway is also a helipad. Valid values: Y = yes, N = no.

complexType scenarioAirportLayoutType

diagram

children:
- airportLayoutName
- mixingHeight
- useHourlyMetData
- averageTemperature
- dailyHighTemperature
- dailyLowTemperature
- pressure
- pressureMSL
- humidity
- windSpeed
- windDirection
- ceiling
- visibility
- airportConfigSet
- airportCapacity

used by:
- element scenarioAirportLayoutSet/scenarioAirportLayout

annotation:
- documentation:
  Describes weather conditions.
element scenarioAirportLayoutType/mixingHeight

diagram

Height at the top layer of atmosphere where relatively vigorous mixing of pollutants and other gases takes place for the airport in a given month. Varies diurnally and seasonally. (ft)

annotation documentation

Height at the top layer of atmosphere where relatively vigorous mixing of pollutants and other gases takes place for the airport in a given month. Varies diurnally and seasonally. (ft)

element scenarioAirportLayoutType/useHourlyMetData

diagram

If true, use user-defined hourly meteorological data to compute emissions. If false, use default annual averages to compute emissions. (true or false)

annotation documentation

If true, use user-defined hourly meteorological data to compute emissions. If false, use default annual averages to compute emissions. (true or false)

element scenarioAirportLayoutType/averageTemperature

diagram

Average temperature (°F)

annotation documentation

Average temperature (°F),

element scenarioAirportLayoutType/dailyHighTemperature

diagram

Average daily high temperature (°F)

annotation documentation

Average daily high temperature (°F),
element scenarioAirportLayoutType/dailyLowTemperature

diagram

Average daily low temperature (°F).

type xs:double

properties

maxOcc 1
maxOcc 1
content simple
default 0

annotation documentation

Average daily low temperature (°F).

element scenarioAirportLayoutType/pressure

diagram

Average barometric pressure. (in Hg)

type xs:double

properties

maxOcc 1
content simple
default 0

annotation documentation

Average barometric pressure at mean sea level.

element scenarioAirportLayoutType/pressureMSL

diagram

Average barometric pressure at mean sea level.

type xs:double

properties

maxOcc 1
content simple
default 0

annotation documentation

Average barometric pressure at mean sea level.

element scenarioAirportLayoutType/humidity

diagram

Relative humidity (%).

type xs:double

properties

maxOcc 1
content simple
default 0

annotation documentation

Relative humidity (%).

element scenarioAirportLayoutType/windSpeed

diagram

Wind speed at airport surface (mph).
### Wind Speed at Airport Surface (mph)

**Data Type:** `xs:double`  
**Properties:**  
- `minOcc`: 0  
- `maxOcc`: 1  
- `content`: simple  
- `default`: 0  

**Annotation:**  
Wind speed at airport surface (mph).

---

### Wind Direction

**Diagram:**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kind</td>
<td>Annotation</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxExclusive</td>
<td>360</td>
</tr>
</tbody>
</table>

**Data Type:** `int0to360`  
**Properties:**  
- `minOcc`: 0  
- `maxOcc`: 1  
- `content`: simple  
- `default`: 1  

**Annotation:**  
Wind direction. Valid values: 0-360, (degrees).

---

### Ceiling

**Diagram:**

**Data Type:** `xs:double`  
**Properties:**  
- `minOcc`: 0  
- `maxOcc`: 1  
- `content`: simple  
- `default`: 0  

**Annotation:**  
Ceiling (ft).

---

### Visibility

**Diagram:**

**Data Type:** `xs:double`  
**Properties:**  
- `minOcc`: 0  
- `maxOcc`: 1  
- `content`: simple  
- `default`: 0  

**Annotation:**  
Visibility (mi).

---

### Aircraft Performance Model Type

**Simple Type:** `aircraftPerformanceModelType`  
**Properties:**  
- `base`: `xs:string`  
- `used by`: `element scenarioAirportLayoutType/acftPerfModel`  
- `facets`:  
  - Kind: Annotation  
  - Enumeration: `ICAO`  
  - `SAE1845`  

**Annotation:**  
Type of aircraft performance model. Valid values: ICAO, SAE1845.

---

### Aircraft Size Type

**Simple Type:** `aircraftSizeType`  
**Properties:**  
- `base`: `xs:string`  

**Annotation:**  
This type is used to define the size of an aircraft.
simpleType `airframeModel`

type restriction of `xs:string`

properties base `xs:string`

used by elements `aircraft/airframeModel` `airframe/model`

facets Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enumeration L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enumeration H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Aircraft size.

---

simpleType `airportCodeType`

type restriction of `xs:string`

properties base `xs:string`

used by attribute `airportCode/@type`

facets Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>enumeration ICAO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enumeration IATA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enumeration FAA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enumeration OTHER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>enumeration ANY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
The type of an airport code.

---

simpleType `anpAirplaneId`

type restriction of `xs:string`

properties base `xs:string`

used by elements `aircraftType/anpAirplaneId` `aircraft/anpAirplaneId` `anpAirplane/anpAirplaneId` `anpThrustSet/anpAirplaneId` `anpFlapsSet/anpAirplaneId` `anpProfileSet/anpAirplaneId` `energyShare/anpAirplaneId` `anpProcedureStep/anpAirplaneId` `anpProfileSet/anpAirplaneId` `energyShare/anpAirplaneId`

facets Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
ID of ANP airplane. Must be a new, unique value.

---

simpleType `anpCoeffType`

type restriction of `xs:string`

properties base `xs:string`

used by element `anpAirplaneId/depThrustCoeffType`

facets Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern Jet</td>
<td>JI</td>
<td>Prop</td>
</tr>
</tbody>
</table>

---

simpleType `anpFlapId`

type restriction of `xs:string`

properties base `xs:string`

used by elements `anpFlaps/flapId` `anpProcedureStep/flapId`

facets Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

---
<table>
<thead>
<tr>
<th>Simple Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>simpleType anpHeloDirectId</code></td>
<td>Simple type defined as restriction of <code>xs:string</code>. Used by <code>anpHeloDirectivitySet/anpHelicopterId</code>.</td>
</tr>
<tr>
<td><code>simpleType anpHeloDirectivityId</code></td>
<td>Simple type defined as restriction of <code>xs:string</code>. Used by <code>anpHelicopter/directivityId</code>.</td>
</tr>
<tr>
<td><code>simpleType anpHeloGroundType</code></td>
<td>Simple type defined as restriction of <code>xs:string</code>. Used by <code>anpHeloDirectivity/groundType</code>.</td>
</tr>
<tr>
<td><code>simpleType anpHeloId</code></td>
<td>Simple type defined as restriction of <code>xs:string</code>. Used by <code>aircraft/anpHelicopterId</code> and <code>anpHelicopter/anpHelicopterId</code> and <code>anpHeloProfileSet/anpHelicopterId</code>.</td>
</tr>
<tr>
<td><code>simpleType anpHeloNoiselId</code></td>
<td>Simple type defined as restriction of <code>xs:string</code>. Used by <code>anpHelicopter/noiselId</code> and <code>anpHeloNoiseGroup/noiselId</code>.</td>
</tr>
<tr>
<td><code>simpleType anpHeloSideType</code></td>
<td>Simple type defined as restriction of <code>xs:string</code>. Used by <code>anpHeloNPDCurve/sideType</code>.</td>
</tr>
<tr>
<td><code>simpleType anpNoiseId</code></td>
<td>Simple type defined as restriction of <code>xs:string</code>. Used by <code>anpNoiseGroup/noiseId</code> and <code>anpAirplane/noiseId</code>.</td>
</tr>
</tbody>
</table>
simpleType anpNpdNoiseType

type restriction of xs: string

properties base xs: string

used by elements anpNPDCurve/noiseType anpHeloNPDCurve/noiseType

facets Kind Value Annotation
pattern S|M|E|P

simpleType anpNpdOpMode

type restriction of xs: string

properties base xs: string

used by elements anpNPDCurve/opMode anpHeloNPDCurve/opMode

facets Kind Value Annotation
pattern A|D|L|G|H|I|J|V|W|Y|Z|B|C|E|F|X|S

simpleType anpOwnerType

type restriction of xs: string

properties base xs: string

used by elements anpHelicopter/owner anpAirplane/owner

facets Kind Value Annotation
pattern Commercial|C|Military|M|General|G

simpleType anpSizeCode

type restriction of xs: string

properties base xs: string

used by element anpAirplane/sizeCode

facets Kind Value Annotation
pattern Heavy|H|Large|L|Small|S

simpleType apuName

type restriction of xs: string

properties base xs: string

used by elements airframe/auxiliaryPowerUnit/id auxiliaryPowerUnit/baseAuxiliaryPowerUnit auxiliaryPowerUnit/name

facets Kind Value Annotation
minLength 0
maxLength 30

annotation documentation
Name of the auxiliary power unit.

simpleType badaAirplaneId

type restriction of xs: string

properties base xs: string

used by elements aircraft/badaAirplaneId badaAirplane/badaAirplaneId badaAltitudeDistributionSet/badaAirplaneId badaProfileSet/badaAirplaneId badaConfigSet/badaAirplaneId badaFuel/badaAirplaneId badaThrust/badaAirplaneId energyShare/badaAirplaneId

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
ID of a BADA airplane model. Must be unique.

simpleType badaPhaseType

type restriction of xs: string
### simpleType badaWakeType

**type** restriction of xs:string

**properties** base xs:string

**used by** element badaAirplane/wakeCategory

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>InitialClimb</td>
<td>IC</td>
</tr>
</tbody>
</table>

### simpleType directionType

**type** restriction of xs:string

**properties** base xs:string

**used by** element taxipath/direction

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>A</td>
<td>Arrival</td>
</tr>
</tbody>
</table>

**annotation documentation**

Supports the direction type of a taxi path. Direction type can be either arrival, departure, inbound, or outbound.

### simpleType doubleExclusive0Inclusive10

**type** restriction of xs:double

**properties** base xs:double

**used by** element pointStationarySource/stackDiameter

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

A double value in the range (0,10).

### simpleType doubleExclusive10

**type** restriction of xs:double

**properties** base xs:double

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

A double value in the range [0,10).

### simpleType doubleExclusive100

**type** restriction of xs:double

**properties** base xs:double

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

A double value in the range [0,100).

### simpleType doubleExclusive1000

**type** restriction of xs:double

**properties** base xs:double

**used by** elements taxway/dispersionWidth categorySandSaltPile/fastestMileOfWind categorySandSaltPile/frictionVelocity categoryBoilerHeater/fuelAshContent categoryBoilerHeater/fuelSulfurContent categoryGenerator/fuelSulfurContent airportConfig/maxWindSpeed categoryFuelTank/verticalTank/meanWindSpeed categorySandSaltPile/meanWindSpeed airportConfig/minWindSpeed categoryDeicingArea/solutionConcentration/percent

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**

A double value in the range [0,1000).
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>1000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation: A double value in the range [0,1000).

### simpleType doubleExclusive10000

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>10000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation: A double value in the range [0,10000).

### simpleType doubleExclusive2000

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>2000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation: A double value in the range [0,2000).

### simpleType doubleExclusiveRange100

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minExclusive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation: A double value in the range (0,100).

### simpleType doubleInclusive1

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation: A double value in the range [0,1].
<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>runwayAssignment/arrivalPercentage runwayAssignment/departurePercentage categoryBoilerHeater/pollutionControlFactorCO categoryGenerator/pollutionControlFactorCO categoryIncinerator/pollutionControlFactorCO categoryOther/pollutionControlFactorCO categoryBoilerHeater/pollutionControlFactorNox categoryGenerator/pollutionControlFactorNox categoryIncinerator/pollutionControlFactorNox categoryOther/pollutionControlFactorNox categoryBoilerHeater/pollutionControlFactorPM10 categoryGenerator/pollutionControlFactorPM10 categoryIncinerator/pollutionControlFactorPM10 categoryOther/pollutionControlFactorPM10 categoryBoilerHeater/pollutionControlFactorSOx categoryGenerator/pollutionControlFactorSOx categoryIncinerator/pollutionControlFactorSOx categoryOther/pollutionControlFactorSOx categoryBoilerHeater/pollutionControlFactorTNMOC categoryGenerator/pollutionControlFactorTNMOC categoryIncinerator/pollutionControlFactorTNMOC categorySurfaceCoatingPainting/pollutionControlFactorVOC pointStationarySource/releaseHeight areaStationarySource/releaseHeight runwayAssignment/launchPercentage</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 100</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A double value in the range [0,100].</td>
</tr>
</tbody>
</table>

**simpleType doubleInclusive1000**

type restriction of xs:double

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>categoryBoilerHeater/ashTermPm10 categoryGenerator/CO_EF categoryBoilerHeater/CO_EI categoryOther/CO_EI categoryGenerator/CO_EI categoryIncinerator/CO_EI categoryBoilerHeater/constantTermSos categoryGenerator/NOx_EF categoryBoilerHeater/NOx_EI categoryIncinerator/NOx_EI categoryOther/NOx_EI categoryGenerator/PM10_EF categoryGenerator/PM10_EI categoryIncinerator/PM10_EI categoryOther/PM10_EI categoryGenerator/PM10_EF categoryGenerator/PM10_EI categoryIncinerator/PM10_EI categoryOther/PM10_EI categoryGenerator/SOx_EF categoryGenerator/SOx_EI categoryIncinerator/SOx_EI categoryOther/SOx_EI categoryGenerator/SOx_EF categoryGenerator/SOx_EI categoryIncinerator/SOx_EI categoryOther/SOx_EI categorySulfurTermPm10 categoryGenerator/STNMOCTCN categoryGenerator/TNMOCTCN categoryIncinerator/STNMOCTCN categoryGenerator/TNMOCTCN categoryOther/STNMOCTCN</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 1000</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A double value in the range [0,1000].</td>
</tr>
</tbody>
</table>

**simpleType doubleInclusive10000**

type restriction of xs:double

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>categoryGenerator/powerRatingHorsepower</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 10000</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A double value in the range [0,10000].</td>
</tr>
</tbody>
</table>

**simpleType doubleInclusive2000**

type restriction of xs:double

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 2000</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A double value in the range [0,2000].</td>
</tr>
</tbody>
</table>

**simpleType doubleInclusive24**

type restriction of xs:double

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>airportConfig/endHour airportConfig/startHour</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 0</td>
</tr>
</tbody>
</table>
A double value in the range [0,24].

**simpleType doubleInclusive4000**

- **type**: restriction of `xs:double`
- **properties**: base `xs:double`
- **used by**: element `roadwayOperation/roundTripDistance`
- **facets**: Kind | Value | Annotation
  | minInclusive | maxInclusive |
  | 0            | 4000         |
- **annotation**: documentation
  A double value in the range [0,4000].

**simpleType doubleInclusiveRange0to600**

- **type**: restriction of `xs:double`
- **properties**: base `xs:double`
- **used by**: element `pointStationarySource/temperature`
- **facets**: Kind | Value | Annotation
  | minInclusive | maxInclusive |
  | 0            | 600          |
- **annotation**: documentation
  A double value in the range [0,600].

**simpleType doubleInclusiveRange1to30**

- **type**: restriction of `xs:double`
- **properties**: base `xs:double`
- **used by**: element `pointStationarySource/gasVelocity`
- **facets**: Kind | Value | Annotation
  | minInclusive | maxInclusive |
  | 1            | 30           |
- **annotation**: documentation
  A double value in the range [1,30].

**simpleType doubleMin0**

- **type**: restriction of `xs:double`
- **properties**: base `xs:double`
- **used by**: elements `quarterHourlyProfile/temporalFactor`, `monthlyProfile/temporalFactor`, `April monthlyProfile/temporalFactor`, `August monthlyProfile/temporalFactor`, `December monthlyProfile/temporalFactor`, `February dailyProfile/temporalFactor`, `Friday monthlyProfile/temporalFactor`, `January monthlyProfile/temporalFactor`, `July monthlyProfile/temporalFactor`, `June monthlyProfile/temporalFactor`, `March monthlyProfile/temporalFactor`, `May dailyProfile/temporalFactor`, `Monday monthlyProfile/temporalFactor`, `November monthlyProfile/temporalFactor`, `October dailyProfile/temporalFactor`, `Saturday monthlyProfile/temporalFactor`, `September dailyProfile/temporalFactor`, `Sunday dailyProfile/temporalFactor`, `Thursday dailyProfile/temporalFactor`, `Tuesday dailyProfile/temporalFactor`, `Wednesday dailyProfile/temporalFactor`
- **facets**: Kind | Value | Annotation
  | minInclusive | |
  | 0            | |
- **annotation**: documentation
  A double value with a lower inclusive bound of 0.

**simpleType emissionsSourceType**

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: element `case/source`
- **facets**: Kind | Value | Annotation
  | Container | |
  | Aircraft | |
  | GSE Population | |
  | Parking Facilities |
simpleType `emissionsUnitsType`

type restriction of `xs:string`

properties base `xs:string`

used by element `study/emissionsUnits`

facets Kind | Value | Annotation
--- | --- | ---
enumeration | MetricTonnes | Annotation
enumeration | Kilograms | Annotation
enumeration | Grams | Annotation
enumeration | ImperialTons | Annotation
enumeration | Pounds | Annotation

annotation documentation
Unit of measure for a given emission.

simpleType `engineCode`

type restriction of `xs:string`

properties base `xs:string`

used by elements `aircraftEngine/code` `aircraft/engineCode`

facets Kind | Value | Annotation
--- | --- | ---
minLength | 0 | Annotation
maxLength | 255 | Annotation

annotation documentation
Code for an airframe's engine.

simpleType `engineModCode`

type restriction of `xs:string`

properties base `xs:string`

used by elements `aircraftEngineMod/code` `aircraft/` `engineModCode` `aircraftType/engineModCode`

facets Kind | Value | Annotation
--- | --- | ---
minLength | 0 | Annotation
maxLength | 50 | Annotation

annotation documentation
Airplane's engine modification code.

simpleType `engineModel`

type restriction of `xs:string`

properties base `xs:string`

used by element `aircraftEngine/model`

facets Kind | Value | Annotation
--- | --- | ---
minLength | 0 | Annotation
maxLength | 255 | Annotation

simpleType `engineType`

type restriction of `xs:string`

properties base `xs:string`

used by elements `aircraftEngine/engineType` `anpHelicopter/engineTypeCode` `anpAirplane/engineTypeCode` `badaAirplane/engineTypeCode`

facets Kind | Value | Annotation
--- | --- | ---
pattern | Jet|J|Turbo|Turboprop|T|Prop|Piston|P | Annotation

annotation documentation
Type of engine on this airframe. Valid values: E (Electric), J (Jet), P (Piston), T (Turboprop).
<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>maxInclusive</td>
<td>10</td>
<td>A real number in the range (0,10].</td>
</tr>
<tr>
<td></td>
<td>minExclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**simpleType floatExclusive10**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minExclusive</td>
<td>0</td>
<td>A real number in the range [0,10).</td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**simpleType floatExclusive100**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minExclusive</td>
<td>0</td>
<td>A real number in the range [0,100).</td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

**simpleType floatExclusive1000**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minExclusive</td>
<td>0</td>
<td>A real number in the range [0,1,000).</td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

**simpleType floatExclusive10000**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minExclusive</td>
<td>0</td>
<td>A real number in the range [0,10,000).</td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
<td>10000</td>
<td></td>
</tr>
</tbody>
</table>

**simpleType floatExclusive2000**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minExclusive</td>
<td>0</td>
<td>A real number in the range [0,2,000).</td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
<td>2000</td>
<td></td>
</tr>
</tbody>
</table>

**simpleType floatExclusiveRange100**

<table>
<thead>
<tr>
<th>Facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
<td>Value</td>
<td>Annotation</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>minExclusive</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation A real number in the range (0,100).

**simpleType floatInclusive1**

- **type**: restriction of `xs:float`
- **properties** base `xs:float`
- **facets**
  - Kind | Value | Annotation |
  - minInclusive | 0 |            |
  - maxInclusive  | 1 |            |
- **annotation** documentation A real number in the range [0,1].

**simpleType floatInclusive100**

- **type**: restriction of `xs:float`
- **properties** base `xs:float`
- **facets**
  - Kind | Value | Annotation |
  - minInclusive | 0 |            |
  - maxInclusive  | 100 |            |
- **annotation** documentation A real number in the range [0,100].

**simpleType floatInclusive1000**

- **type**: restriction of `xs:float`
- **properties** base `xs:float`
- **facets**
  - Kind | Value | Annotation |
  - minInclusive | 0 |            |
  - maxInclusive  | 1000 |            |
- **annotation** documentation A real number in the range [0,1000].

**simpleType floatInclusive10000**

- **type**: restriction of `xs:float`
- **properties** base `xs:float`
- **facets**
  - Kind | Value | Annotation |
  - minInclusive | 0 |            |
  - maxInclusive  | 10000 |            |
- **annotation** documentation A real number in the range [0,10000].

**simpleType floatInclusive2000**

- **type**: restriction of `xs:float`
- **properties** base `xs:float`
- **facets**
  - Kind | Value | Annotation |
  - minInclusive | 0 |            |
  - maxInclusive  | 2000 |            |
- **annotation** documentation A real number in the range [0,2000].

**simpleType floatInclusive24**

- **type**: restriction of `xs:float`
- **properties** base `xs:float`
- **facets**
  - Kind | Value | Annotation |
  - minInclusive | 0 |            |
  - maxInclusive  | 24 |            |

<table>
<thead>
<tr>
<th>annotation documentation</th>
<th>A real number in the range [0, 24].</th>
</tr>
</thead>
</table>

#### simpleType `floatInclusive4000`

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of <code>xs:float</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base <code>xs:float</code></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>4000</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>A real number in the range [0, 4000].</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------</td>
</tr>
</tbody>
</table>

#### simpleType `floatInclusiveRange1to30`

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of <code>xs:float</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base <code>xs:float</code></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value</td>
</tr>
<tr>
<td>minInclusive</td>
<td>1</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>30</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>A real number in the range [1, 30].</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------</td>
</tr>
</tbody>
</table>

#### simpleType `floatInclusiveRange32to600`

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of <code>xs:float</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base <code>xs:float</code></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value</td>
</tr>
<tr>
<td>minInclusive</td>
<td>32</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>600</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>A real number in the range [32, 600].</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------</td>
</tr>
</tbody>
</table>

#### simpleType `fuelType`

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of <code>xs:string</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base <code>xs:string</code></td>
</tr>
<tr>
<td>used by elements</td>
<td><code>parkingFacilityOperation/fuelType</code> <code>roadwayOperation/fuelType</code> <code>groundSupportEquipmentPopulationOperation/fuelType</code> <code>groundSupportEquipmentLTOOperation/fuelType</code></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value</td>
</tr>
<tr>
<td>pattern</td>
<td>G</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Supports legacy EDMS studies relating to content that contains different types of fuel use. Fuel types can be based on either gasoline, diesel, compressed natural gas, liquid propane gas, or electric based.</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------</td>
</tr>
</tbody>
</table>

#### simpleType `groundVehicleType`

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of <code>xs:string</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base <code>xs:string</code></td>
</tr>
<tr>
<td>used by elements</td>
<td><code>parkingFacilityOperation/vehicleType</code> <code>roadwayOperation/vehicleType</code></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value</td>
</tr>
<tr>
<td>pattern</td>
<td>0</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Supports legacy EDMS studies relating to the use of ground vehicles. Ground vehicle types can range from fleet mixes, passenger cars, and various light or heavy trucks.</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------------------------------------</td>
</tr>
</tbody>
</table>

#### simpleType `int0to23`

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of <code>xs:int</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base <code>xs:int</code></td>
</tr>
<tr>
<td>used by attribute</td>
<td><code>quarterHourlyProfile/temporalFactor/@startHour</code></td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

**simpleType int0to360**

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **used by**: elements `airportConfig/endWindAngle` `airportConfig/startWindAngle` `scenarioAirportLayoutType/windDirection`
- **facets**:
  - Kind: Value Annotation
  - minInclusive: 0
  - maxExclusive: 360
- **annotation**: documentation
  - An integer in the range [0,360].

**simpleType int0to5**

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **used by**: element `categoryOther/fuelUnits`
- **facets**:
  - Kind: Value Annotation
  - minInclusive: 0
  - maxInclusive: 5
- **annotation**: documentation
  - An integer in the range [0,5].

**simpleType int0to87**

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **facets**:
  - Kind: Value Annotation
  - minInclusive: 0
  - maxInclusive: 87
- **annotation**: documentation
  - An integer in the range [0,87].

**simpleType int1to13**

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **used by**: element `categorySolventDegreaser/TypeCode`
- **facets**:
  - Kind: Value Annotation
  - minInclusive: 1
  - maxInclusive: 13
- **annotation**: documentation
  - An integer in the range [1,13].

**simpleType int1to15**

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **facets**:
  - Kind: Value Annotation
  - minInclusive: 1
  - maxInclusive: 15
- **annotation**: documentation
  - An integer in the range [1,15].

**simpleType int1to2**

- **type**: restriction of `xs:int`
<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>element <em>categoryIncineratorTypeCode</em></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 1</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 2</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>An integer in the range [1,2].</td>
</tr>
</tbody>
</table>

**simpleType int1to25**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:int</td>
</tr>
<tr>
<td>used by</td>
<td>element <em>categoryFuelTankTypeCode</em></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 1</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 25</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>An integer in the range [1,25].</td>
</tr>
</tbody>
</table>

**simpleType int1to4**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:int</td>
</tr>
<tr>
<td>used by</td>
<td>element <em>categoryDeicingAreaTypeCode</em></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 1</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 4</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>An integer in the range [1,4].</td>
</tr>
</tbody>
</table>

**simpleType int1to5**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:int</td>
</tr>
<tr>
<td>used by</td>
<td>elements <em>categorySandSaltPileTypeCode categoryTrainingFireTypeCode</em></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 1</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 5</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>An integer in the range [1,5].</td>
</tr>
</tbody>
</table>

**simpleType int1to8**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:int</td>
</tr>
<tr>
<td>used by</td>
<td>elements <em>categoryGeneratorTypeCode categorySurfaceCoatingPaintingTypeCode</em></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 1</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 8</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>An integer in the range [1,8].</td>
</tr>
</tbody>
</table>

**simpleType int1to93**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:int</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 1</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 93</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>
An integer in the range \([1, 93]\).

### simpleType int5to65

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minInclusive</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>

#### annotation documentation
An integer in the range \([5, 65]\).

### simpleType int6to13

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minInclusive</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

#### annotation documentation
An integer in the range \([6, 13]\).

### simpleType int89to148

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>minInclusive</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>148</td>
<td></td>
</tr>
</tbody>
</table>

#### annotation documentation
An integer in the range \([89, 148]\).

### simpleType latitudeDMSType

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pattern</td>
<td>[0-9]{2}[°]</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

#### annotation documentation
Latitude expressed as dd"mm'sss with optional indicator N, n, S, s. (degrees)

### simpleType longitudeDMSType

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pattern</td>
<td>[0-9]?(0-9)[°]</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

#### annotation documentation
Longitude expressed as dd"mm'sss with optional indicator N, n, S, s. (degrees)

### simpleType nodeControlType

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### annotation documentation

---

All types are defined as `xs:int` base type restriction.

---

<table>
<thead>
<tr>
<th>element</th>
<th>used by</th>
</tr>
</thead>
<tbody>
<tr>
<td>roadwayOperation/speed</td>
<td>categoryFuelTank/reidVaporPressure</td>
</tr>
<tr>
<td>latitudeCoordGroup/latitudeDMS</td>
<td>nodeControlType</td>
</tr>
<tr>
<td>longitudeCoordGroup/longitudeDMS</td>
<td>nodeControlType</td>
</tr>
</tbody>
</table>
pattern 0|None|1|AtOrBelow|2|Match|3|AtOrAbove

**simpleType opType**

type restriction of xs:string

properties base xs:string

used by elements track/opType operation/opType trackref/opType

facets Kind Value Annotation

pattern A|Arrival|D|Departure|V|Overflight|F|Circuit|T|TouchAndGo|R|Runup|W|RunwayToRunway|L|LTO|LandingTakoff|X|Taxi

annotation documentation Type of altitude clearance at this point.

**simpleType originSourceType**

type restriction of xs:string

properties base xs:string

used by elements polarGrid/originSource polarReceptor/originSource

facets Kind Value Annotation

pattern Gate|Parking Facility|Roadway|Runway|Stationary Source|Taxiway|Training Fire

annotation documentation Supports the polarReceptor source type. Original source type can be either gate, parking facility, roadway, runway, stationary source, taxiway, and training fire.

**simpleType profileType**

type string8

properties base string8

used by elements profiles/arrivalProfile operation/badaProfile profiles/departureProfile operation/saeProfile

facets Kind Value Annotation

minLength 0
maxLength 8

annotation documentation An aircraft's flight profile.

**simpleType quarterHourMinutes**

type restriction of xs:int

properties base xs:int

used by attribute quarterHourlyProfile/temporalFactor/@startMinutes

facets Kind Value Annotation

enumeration 0
enumeration 15
enumeration 30
enumeration 45

annotation documentation Either 0, 15, 30, or 45.

**simpleType string1**

type restriction of xs:string

properties base xs:string

used by elements operation/arrivalStageLength operation/departureStageLength airframe/designationCode airframe/engInfo/engLocation airframe/engInfo/engModel airframe/enginfo/engDesignationCode airframe/enginfo/engEngLoc airframe/enginfo/engEngType

facets Kind Value Annotation

minLength 0
maxLength 1

annotation documentation An aircraft's flight profile.
simpleType string

properties base xs:string

used by elements badaConfig/configName aircraftEngine/superseded

facets Kind Value Annotation
minLength 0
maxLength 10

annotation documentation A string up to one character long.

simpleType string100

properties base xs:string

used by elements operation/activityProfile airportConfig/configurationName activityProfile/dailyProfile aircraftEngine/manufacturer activityProfile/monthlyProfile airport/name quarterHourlyProfile/profileName dailyProfile/profileName monthlyProfile/profileName activityProfile/quarterHourlyProfile aircraftEngine/source airport/zone attribute activityProfile/@name

facets Kind Value Annotation
minLength 0
maxLength 100

annotation documentation A string up to 10 characters long.

simpleType string11

properties base xs:string

used by elements windRoseStation/calmCriteria windRoseStation/endDayMonth windRoseStation/userString

facets Kind Value Annotation
minLength 0
maxLength 11

annotation documentation A string up to 100 characters long.

simpleType string12

properties base xs:string

used by elements badaProfile/aircraftVersion windRoseStation/beginDayMonth badaProfile/engine operation/userType

facets Kind Value Annotation
minLength 0
maxLength 12

annotation documentation A string up to 12 characters long.

simpleType string14

properties base xs:string

used by element windRoseData/directionRange

facets Kind Value Annotation
minLength 0
maxLength 14

annotation documentation A string up to 12 characters long.

simpleType string15

properties base xs:string

used by elements badaProfile/companyName airport/faald
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Annotation**

A string up to 15 characters long.

**simpleType** `string16`

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `nodeIdGroup/description operation/flightNumber runup/flightNumber case/hourlyWxMD5 operation/id nodeIdGroup/id operation/userParam` attribute `AsIfXml@version`
- **facets**
  - **Kind**: Value Annotation
  - **minLength**: 0
  - **maxLength**: 16
- **annotation**
  - documentation
  - A string up to 16 characters long.

**simpleType** `string2`

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `badaProfile/companyCode2 airframe/euroGroupCode badaProfile/massRangeValue`
- **facets**
  - **Kind**: Value Annotation
  - **minLength**: 0
  - **maxLength**: 2
- **annotation**
  - documentation
  - A string up to two characters long.

**simpleType** `string20`

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `groundSupportEquipmentGateAssignment/gate taxiway/name taxipath/taxiwayName`
- **facets**
  - **Kind**: Value Annotation
  - **minLength**: 0
  - **maxLength**: 20
- **annotation**
  - documentation
  - A string up to 20 characters long.

**simpleType** `string200`

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: element `aircraftEngine/notes`
- **facets**
  - **Kind**: Value Annotation
  - **minLength**: 0
  - **maxLength**: 200
- **annotation**
  - documentation
  - A string up to 200 characters long.

**simpleType** `string25`

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `aircraftEngine/emissionsEngineModel aircraftType/engineCode airport/facilityType aircraftEngine/performanceEngineModel airportWeatherStation/weatherStationName`
- **facets**
  - **Kind**: Value Annotation
  - **minLength**: 0
  - **maxLength**: 25
<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A string up to 25 characters long.</td>
</tr>
</tbody>
</table>

**simpleType string255**

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**
  - elements:
    - `trackrefairportLayoutName` 
    - `airportLayoutName` 
    - `study/description scenario` 
    - `airportLayoutName study/description scenario` 
    - `airportLayoutName description case/description aircraft/description aircraftEngineMod/description anpHelicopter/description anpAirplane/descriptioncategory` 
    - `airportEngineMod/description case/hourlyWsFile badaAirplane/mfgDescription building/name receptorSet/name pointReceptor/name study/name scenario/name case/name annualization/name annualizationCase/name airportLayoutType/name badaThrust/notes case/reference/refCase case/reference/refScenario sensor/Node/source study/terrainFiles`
- **facets**
  - Kind: Annotation
  - minLength: 0
  - maxLength: 255
- **annotation**: documentation
  - A string up to 255 characters long.

**simpleType string3**

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**
  - elements:
    - `badaProfile/companyCode1` 
    - `weatherData/month`
  - attribute:
    - `airportCode/@country`
- **facets**
  - Kind: Annotation
  - minLength: 0
  - maxLength: 3
- **annotation**: documentation
  - A string up to three characters long.

**simpleType string30**

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **facets**
  - Kind: Annotation
  - minLength: 0
  - maxLength: 30
- **annotation**: documentation
  - A string up to 30 characters long.

**simpleType string32**

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**
  - element `windRoseStation/windRoseDataSource`
- **facets**
  - Kind: Annotation
  - minLength: 0
  - maxLength: 32

**simpleType string4**

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**
  - element `operation/carrier`
  - `airportCode`
- **facets**
  - Kind: Annotation
  - minLength: 0
  - maxLength: 4
- **annotation**: documentation
  - A string up to four characters long.

**simpleType string40**
### simpleType `string42`

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>42</td>
<td></td>
</tr>
</tbody>
</table>

- **simpleType `string42`**
  - **type**: restriction of `xs:string`
  - **properties**: base `xs:string`
  - **used by**: `windRoseStation/windRoseStationDescription`

### simpleType `string5`

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

- **simpleType `string5`**
  - **type**: restriction of `xs:string`
  - **properties**: base `xs:string`
  - **used by**: `airportWeatherStation/wbanId` `airportWeatherStation/weatherStationCode` `windRose/windRoseStationId` `windRoseStation/windRoseStationId`

### simpleType `string50`

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

- **simpleType `string50`**
  - **type**: restriction of `xs:string`
  - **properties**: base `xs:string`
  - **used by**: `aircraftType/airframeModel` `airport/cityName` `aircraftEngine/combustor` `airport/state` `aircraftEngine/lfmFlag`

### simpleType `string6`

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

- **simpleType `string6`**
  - **type**: restriction of `xs:string`
  - **properties**: base `xs:string`
  - **used by**: `centroid/bnId` `airportWeatherStation/cooperativeId` `taxiTime/source`

### simpleType `string64`

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>64</td>
<td></td>
</tr>
</tbody>
</table>

- **simpleType `string64`**
  - **type**: restriction of `xs:string`
  - **properties**: base `xs:string`
  - **used by**: `track/name` `trackRef/trackName`
<table>
<thead>
<tr>
<th>Simple Type</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>simpleType string66</strong></td>
<td>A string up to 64 characters long.</td>
</tr>
<tr>
<td>properties base xs:string</td>
<td>used by element <code>windRoseStation/windRoseDataSet</code></td>
</tr>
<tr>
<td>facets Kind Value Annotation</td>
<td>minLength 0</td>
</tr>
<tr>
<td>maxLength 66</td>
<td></td>
</tr>
<tr>
<td><strong>simpleType string7</strong></td>
<td>A string up to 64 characters long.</td>
</tr>
<tr>
<td>properties base xs:string</td>
<td>used by element <code>airport/dafild</code></td>
</tr>
<tr>
<td>facets Kind Value Annotation</td>
<td>minLength 0</td>
</tr>
<tr>
<td>maxLength 7</td>
<td></td>
</tr>
<tr>
<td><strong>simpleType string8</strong></td>
<td>A string up to eight characters long.</td>
</tr>
<tr>
<td>properties base xs:string</td>
<td>used by elements <code>operation/arrivalRunway case/climateld operation/departureRunway climate/identifier runwayEnd/name anpHeloProfile/profileGroupId anpHeloProcedureStep/profileGroupId anpProfile/profileGroupId track/runway runwayAssignment/runway trackref/runway taxpath/runwayName operation/tailNumber runup/tailNumber</code></td>
</tr>
<tr>
<td>facets Kind Value Annotation</td>
<td>minLength 0</td>
</tr>
<tr>
<td>maxLength 8</td>
<td></td>
</tr>
</tbody>
</table>

**simpleType string9**

| properties base xs:string | used by element `windRoseStation/directionUnit` |
| facets Kind Value Annotation | minLength 0 |
| maxLength 9 | |

**simpleType studyType**

| properties base xs:string | used by element `study/studyType` |
| facets Kind Value Annotation | enumeration Emissions |
| enumeration Dispersion | enumeration Noise and Emissions |
| enumeration Noise and Dispersion | |
| annotation documentation | Type of study. NOTE: AEDT only supports the Noise and Emissions value. |

**simpleType taxiModelType**

| properties base xs:string | used by element `scenario/taxiModel` |
| facets Kind Value Annotation | |
Type of taxi modeling.

**simpleType** timeInModeBasisType

type restriction of xs:string

properties base xs:string

used by element scenario/timeInModeBasis

facets Kind Value Annotation
enumeration Performance Annotation
evaluation ICAO

annotation documentation
Time in mode can either be based on ICAO or performance.

**simpleType** trainingFireFuelType

type restriction of xs:string

properties base xs:string

facets Kind Value Annotation

annotation documentation
Supports legacy EDMS studies relating to training fire content. Training fire fuel types can be either JP-4, JP-5, JP-8, propane, or tekflame.

**simpleType** vectorTrackType

type restriction of xs:string

properties base xs:string

used by element track/trackType

facets Kind Value Annotation
pattern S|Straight|L|LeftTurn|R|RightTurn

annotation documentation
Type of vector.

**simpleType** wingType

type restriction of xs:string

properties base xs:string

used by element track/wingType

facets Kind Value Annotation
pattern F|FixedWing|R|RotaryWing

annotation documentation
Type of wing. If not specified, AEDT attempts to determine the wing type based on the optype.

**simpleType** yesNoType

type restriction of xs:string

properties base xs:string

used by elements anpHelicopter/hasWheels anpAirplane/thrustRestore anpHeloProfile/useDirectivity anpHeloProfile/useTrack

facets Kind Value Annotation
pattern Yes|Y|No|N

annotation documentation
Simple element allowing for either a choice of "yes" or "no".