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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 1.2.12. 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.

### Notation for Schema Diagram

<table>
<thead>
<tr>
<th>Notation</th>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice indicator</td>
<td><img src="image" alt="Choice Icon" /></td>
<td>Only one of the elements contained in the selected group can be present</td>
</tr>
<tr>
<td>Sequence indicator</td>
<td><img src="image" alt="Sequence Icon" /></td>
<td>Child elements must appear in the specified sequence</td>
</tr>
<tr>
<td>Element</td>
<td><img src="image" alt="Element Icon" /></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><img src="image" alt="Element with (+) Icon" /></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><img src="image" alt="Element with Min and Max Icon" /></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"
xmns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.2.12"
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="1.2.12" 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.

```xml
<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>
    <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>
```
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.

```xml
<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 -->
  </grid>
</receptorSet>
```
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>

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

<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>
<longitude>-53.71322</longitude>
</trackNode>
</trackNodes>
</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.

```
<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>

    <!-- 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>
  </annualizationGroup>
</annualization>
```

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

```
<AsifXml version="1.2.12" 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>
```

\(^1\) 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.
<emissionsUnits>Kilograms</emissionsUnits>

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

<!-- 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 -->
  <numWidth>100</numWidth>
  <numHeight>100</numHeight>
</grid>
</receptorSet>

<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 -->
<context>
    <!-- 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>
        <trackOpSet>
            <!-- Single track element -->
            <track>
                <!-- user-defined track name -->
                <name>DJM04R_EON.10803</name>
            </track>
        </trackOpSet>
    </case>
</context>

<!-- Additional scenario elements -->
<scenarioAirportLayoutSet>
    <scenarioAirportLayout>
        <airportLayoutName>KMDW</airportLayoutName>
    </scenarioAirportLayout>
    <scenarioAirportLayout>
        <airportLayoutName>KORD</airportLayoutName>
    </scenarioAirportLayout>
</scenarioAirportLayoutSet>
<!-- 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>
<trackNode>
<latitude>40.65640</latitude>
<longitude>-53.71322</longitude>
</trackNode>
</trackNodes>
</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>
</operation>
</operations>
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="1.2.12"
ccontent="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.

```xml
<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>
      </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.

```xml
<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>41.743501289605305</latitude>
      <longitude>-71.41515795554152</longitude>
    </taxiNode>
  </taxiNodeSet>
</taxiway>
</taxiwaySet>
```
<longitude>-71.397780701297123</longitude>
<elevation>16.76</elevation>
<speed>17.26</speed>
</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.

```xml
<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>
    <gateName>AC</gateName>
    <runwayName>05</runwayName>
    <direction>Inbound</direction>
    <taxiwayName>AC to 5</taxiwayName>
  </taxipath>
  <taxipath>
    <gateName>AC</gateName>
    <runwayName>23</runwayName>
    <direction>Outbound</direction>
    <taxiwayName>AC to 23</taxiwayName>
  </taxipath>
  <taxipath>
    <gateName>AC</gateName>
    <runwayName>23</runwayName>
    <direction>Inbound</direction>
    <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.

```xml
<trackSet>
  <track>
    <name>05_A_FixedWing</name>
    <!-- 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>
  </track>
</trackSet>
```
<id>0</id>
<dispersionWeight>1</dispersionWeight>
<trackNodes>
<trackNode>
<latitude>40.328096427261926</latitude>
<longitude>-72.555207007324171</longitude>
</trackNode>
<trackNode>
<latitude>41.730402908060768</latitude>
<longitude>-71.411541169494924</longitude>
</trackNode>
<trackNode>
<latitude>41.746840990965104</latitude>
<longitude>-71.397780701297123</longitude>
</trackNode>
</trackNodes>
</subtrack>
</track>

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.

<airportConfigGroupSet>
<airportConfigGroup>
<groupName>Baseline-Theodore Francis Green State-2004</groupName>
<airportConfig>
<configurationName>Configuration</configurationName>
<useDistribution>false</useDistribution>
<airportCapacity>
<capacityPoint>
<arrivalsPerHour>27</arrivalsPerHour>
<departuresPerHour>52</departuresPerHour>
</capacityPoint>
<capacityPoint>
<arrivalsPerHour>52</arrivalsPerHour>
<departuresPerHour>27</departuresPerHour>
</capacityPoint>
</airportCapacity>
<runwayAssignmentSet>
<runwayAssignment>
<aircraftSize>S</aircraftSize>
<runway>23</runway>
<arrivalPercentage>60</arrivalPercentage>
</runwayAssignment>
</runwayAssignmentSet>
</airportConfigGroup>
</airportConfigGroupSet>
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>
  </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>54.98675960838894</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>54.98675960838894</elevation>
    <receptorHeight>5.909999269584984</receptorHeight>
  </pointReceptor>
  <pointReceptor>
    <name>01S</name>
    <latitude>41.762630555759486</latitude>
    <longitude>-71.386077230440634</longitude>
    <elevation>54.98675960838894</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>
</scenario>
```
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.

```xml
<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>
```
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>
  <!--Number of minutes to complete a taxi-in-->
  <totalTaxiInTime>7</totalTaxiInTime>
  <!--Number of minutes to complete a taxi-out-->
  <totalTaxiOutTime>19</totalTaxiOutTime>
  <!--Number of minutes to complete an unimpeded taxi-in-->
  <unimpededTaxiInTime>0</unimpededTaxiInTime>
  <!--Number of minutes to complete an unimpeded taxi-out-->
</case>
```
<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>
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.

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.
<name>2004_Baseline_Theodore Francis Green State_Operations</name>

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

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

Step 6: **Full ASIF**
The full emissions dispersion sample ASIF is as follows:

```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="1.2.12" 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-->  
      <startDate>2004-01-01</startDate>
      <!-- Elevation of the airport above MSL in feet -->
      <elevation>55</elevation>
      <latitude>41.723999</latitude>
      <longitude>-71.428221</longitude>
    </airportLayout>
    <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>
        </polygonCoords>
      </building>
    </buildingSet>
  </airportLayoutSet>
</study>
</AsifXml>
```
<latitude>41.743130903444673</latitude>
<longitud:-71.4121461346995</longitud>
</vertex>
</polygonCoords>
</building>
</buildingSet>
<stationarySourceSet>
<stationarySource>
<!-- Name of the stationary source -->
<name>Emergency Generator-Baseline-KPVD-2004</name>
<pointStationarySource>
<pointCoord>
<!-- Lat/lon coordinates-->
<latitude>41.743248909982285</latitude>
<longitud:-71.41216809054572</longitud>
</pointCoord>
<!--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>
</stationarySourceSet>
<gateSet>
<gate>
<!-- Name -->
<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>
</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>41.74214308945087</latitude>
  <longitude>-71.413044097333525</longitude>
</vertex>
<vertex>
  <latitude>41.741863092355707</latitude>
  <longitude>-71.4124359172483</longitude>
</vertex>
<vertex>
  <latitude>41.743155492229967</latitude>
  <longitude>-71.411380309528937</longitude>
</vertex>
<vertex>
  <latitude>41.743501289605305</latitude>
  <longitude>-71.411515795554152</longitude>
</vertex>
</polygonCoords>
</gate>
</gateSet>
<taxiwaySet>
<taxiway>
  <name>AC to 23</name>
  <!-- Width of emmision 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>-71.397780701297123</longitude>
    </taxiNode>
  </taxiNodeSet>
</taxiway>
</taxiwaySet>
</taxiNode>
</taxiNodeSet>
</taxiway>
<taxiway>
<name>AC to 5</name>
<dispersionWidth>20</dispersionWidth>
<taxiNodeSet>
<taxiNode>
<latitude>41.742510605080867</latitude>
<longiudine>-71.411486738878608</longitude>
<elevation>16.76</elevation>
<speed>17.26</speed>
</taxiNode>
<taxiNode>
<latitude>41.730402908060768</latitude>
<longiudine>-71.411541169494924</longitude>
<elevation>16.76</elevation>
<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>
<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>
<longiudine>-71.397780701297123</longitude>
<elevation>54.986875960838894</elevation>
<glideSlope>3</glideSlope>
</runwayEnd>
</runway>
</runwaySet>
<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>
<gateName>AC</gateName>
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<runwayName>23</runwayName>
<direction>Outbound</direction>
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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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    <configurationName>Configuration</configurationName>
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    <useDistribution>false</useDistribution>
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      <!-- Pareto curve points for airport operations-->
      <capacityPoint>
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        <departuresPerHour>27</departuresPerHour>
      </capacityPoint>
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        <!-- Aircraft size for assignments; small (S), large (L), or heavy (H)-->
        <aircraftSize>S</aircraftSize>
        <runway>23</runway>
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  </airportConfig>
</airportConfigGroup>
</airportConfigGroupSet>
<!-- 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>

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<temporalFactorMonday>0.9916</temporalFactorMonday>
<temporalFactorTuesday>0.9867</temporalFactorTuesday>
<temporalFactorWednesday>1</temporalFactorWednesday>
<temporalFactorThursday>0.9245</temporalFactorThursday>
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<temporalFactorMarch>0.775</temporalFactorMarch>
<temporalFactorApril>0.8322</temporalFactorApril>
<temporalFactorMay>0.8741</temporalFactorMay>
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<activityProfileSet>
<activityProfile name="ActivityProfile-Baseline-KPVD-6-5-6">
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<dailyProfile>Example Daily-Baseline-KPVD</dailyProfile>
<monthlyProfile>Example Monthly-Baseline-KPVD</monthlyProfile>
</activityProfile>
</activityProfileSet>
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</airportLayoutSet>
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  <pointReceptor>
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    <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>
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    <longitude>-71.4141821642798</longitude>
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    <receptorHeight>5.909999269584984</receptorHeight>
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</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>
</scenario>
<!-- 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-->8</windSpeed>
<!-- Wind direction in degrees-->0</windDirection>
<!--Ceiling in feet-->99999.99</ceiling>
<!--Visibility in miles-->50</visibility>
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<emissionsUsage>
<!--Annualized ammount of emissions-->
<yearlyValue>500</yearlyValue>
<activityProfile>ActivityProfile-Baseline-KPVD-6-5-6</activityProfile>
</emissionsUsage>
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</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>
<groundSupportEquipmentGateAssignment>
<!--Gate the GSE is assigned to-->
<gate>AC</gate>
<!--Fraction of GSE assigned to gate-->
<fractionAssigned>1</fractionAssigned>
</groundSupportEquipmentGateAssignment>
</groundSupportEquipmentGateAssignmentSet>
</groundSupportEquipmentPopulationOperation>
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<case>
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<name>2004_Baseline_Theodore Francis Green State Operations</name>
<startTime>2004-01-01T00:00:00</startTime>
<duration>8760</duration>
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<!--Number of minutes to complete a taxi-out-->
<totalTaxiOutTime>19</totalTaxiOutTime>
<!--Number of minutes to complete an unimpeded taxi-in-->
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<!--Number of minutes to complete an unimpeded taxi-out-->
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</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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<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-->
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<!--Loading of the GSE-->
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<!--Operation time for a departure-->
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<!--Operation time for an arrival-->
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<!--Number of operations-->

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<!--Number of minutes to complete a taxi-out-->
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<!--Number of minutes to complete an unimpeded taxi-in-->
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<!--Number of minutes to complete an unimpeded taxi-out-->
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<!--Engine type-->
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<!--APU type-->
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<!--GSEs assigned to the aircraft-->
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<!-- Loading of the GSE-->
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<!--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>
<!--Loading of the GSE-->
<loadFactor>0.5</loadFactor>
<!--Operation time for a departure-->
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<!--Operation time for an arrival-->
<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>
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        <gseID>13</gseID>
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        <horsepower>107</horsepower>
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        <arrivalOpTime>37</arrivalOpTime>
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        <horsepower>107</horsepower>
        <loadFactor>0.5</loadFactor>
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    </groundSupportEquipmentLTOOperationSet>
  </aircraftType>
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  <arrivalGate>AC</arrivalGate>
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<!-- Define one or more groups of cases and groups -->
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<!-- Define rolloup weight for this group -->
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<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>
</annualizationGroup>
</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.
Thrust Type | Full Name
---|---
T | MaxTakeoff
C | MaxClimb
N | MaxContinuous
H | ReduceTakeoff
Q | ReduceClimb
S | MaxTakeoffHiTemp
B | MaxClimbHiTemp
M | MaxContinuousHiTemp
G | ReduceClimbHiTemp
P | ReduceClimbHiTemp
I | IdleApproach
J | IdleApproachHiTemp
R | MinimumThrust
K | UserCutback
U | UserValue

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>
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<tr>
<th>PARAM</th>
<th>Full Name</th>
</tr>
</thead>
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<td>Thrust (lbs)</td>
</tr>
<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>
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>
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<tr>
<td>J</td>
<td>Hover out of ground effect</td>
<td>Static</td>
<td>Dur</td>
</tr>
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<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>
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<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>
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<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>
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<td>E</td>
<td>Depart with horizontal acceleration</td>
<td>Move</td>
<td>Dist Spd</td>
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<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>
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<td>Start altitude at constant speed</td>
<td>--</td>
<td>Alt spd</td>
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Parameter values are defined as below:

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<tr>
<td>Dur</td>
<td>Duration (s)</td>
</tr>
<tr>
<td>Alt</td>
<td>Altitude (ft AFE)</td>
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<tr>
<td>Spd</td>
<td>Airspeed (kts)</td>
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</table>
### 5.2.2.1 Additional Helicopter Step Type Information

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<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>
### Step Type

<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:

\[
\text{Ground Effect Altitude} = 1.5 \times \text{Main Rotor Diameter}
\]

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.
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diagram

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properties
- content complex

children
- quarterHourlyProfile
dailyProfile
monthlyProfile

used by
- element activityProfileSet

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element activityProfile/quarterHourlyProfile
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quarterHourlyProfile
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Defines scaling factors for operations during a particular quarter-hour.
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properties
- content simple

used by
- element quarterHourlyProfileSet

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annotation documentation
- Defines scaling factors for operations during a particular quarter-hour.

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dailyProfile
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Defines scaling factors for operations on a particular day.
type string100
properties
- content simple

used by
- element dailyProfileSet

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<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
- Defines scaling factors for operations on a particular day.

element activityProfile/monthlyProfile
diagram
```
monthlyProfile
```
Defines scaling factors for operations during a particular match.
type string100
properties
- content simple

used by
- element monthlyProfileSet

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
Defines scaling factors for operations during a particular month.

### element `activityProfileSet`

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**Properties**
- content complex

**Children**
- `activityProfile`

**Used by**
- `operationalProfileSet`

**ComplexType**
- `airportLayoutType`

**Annotation**
- Supports the definition and use of QUARTER_HOURLY_PROFILES, DAILY_PROFILES, and MONTHLY_PROFILES variation of operations.

### element `airportCapacity`

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**Properties**
- content complex

**Children**
- `capacityPoint`

**Used by**
- `airportConfig`

**ComplexTypes**
- `airportLayoutType`, `scenarioAirportLayoutType`

**Annotation**
- 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 `airportConfig`
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.
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>airportConfig/configurationName</code></td>
<td><img src="configurationNameDiagram.png" alt="Diagram" /></td>
<td><code>string100</code></td>
<td>content simple</td>
<td></td>
<td>Runway configuration name.</td>
</tr>
<tr>
<td><code>airportConfig/useDistribution</code></td>
<td><img src="useDistributionDiagram.png" alt="Diagram" /></td>
<td><code>xs:boolean</code></td>
<td>minOcc 0, maxOcc 1</td>
<td></td>
<td>Flag to use a distribution for the configuration.</td>
</tr>
<tr>
<td><code>airportConfig/weight</code></td>
<td><img src="weightDiagram.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td>minOcc 0, maxOcc 1</td>
<td></td>
<td>Runway configuration weight factor.</td>
</tr>
<tr>
<td><code>airportConfig/startWindAngle</code></td>
<td><img src="startWindAngleDiagram.png" alt="Diagram" /></td>
<td><code>int0to360</code></td>
<td>minOcc 0, maxOcc 1</td>
<td>minInclusive: 0, maxExclusive: 360</td>
<td>Start wind angle. Valid values: 0.00 to 359.00. (degrees)</td>
</tr>
<tr>
<td><code>airportConfig/endWindAngle</code></td>
<td><img src="endWindAngleDiagram.png" alt="Diagram" /></td>
<td><code>int0to360</code></td>
<td>minOcc 0</td>
<td></td>
<td>End wind angle. Valid values: 0.00 to 359.00. (degrees)</td>
</tr>
<tr>
<td><strong>Element</strong></td>
<td><strong>Type</strong></td>
<td><strong>Properties</strong></td>
<td><strong>Facets</strong></td>
<td><strong>Annotation</strong></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>----------------</td>
<td>------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td><strong>airportConfig/minWindSpeed</strong></td>
<td>doubleExclusive100</td>
<td>minOcc 0</td>
<td>minInclusive 0, maxExclusive 100</td>
<td>Minimum wind speed. Valid values: 0.00 to 100.00. (kts)</td>
<td></td>
</tr>
<tr>
<td><strong>airportConfig/maxWindSpeed</strong></td>
<td>doubleExclusive100</td>
<td>minOcc 0</td>
<td>minInclusive 0, maxExclusive 100</td>
<td>Maximum wind speed. Valid values: 0.00 to 100.00. (kts)</td>
<td></td>
</tr>
<tr>
<td><strong>airportConfig/startHour</strong></td>
<td>doubleInclusive24</td>
<td>minOcc 0</td>
<td>minInclusive 0, maxInclusive 24</td>
<td>Start hour. Valid values: 0.00 to 23.00.</td>
<td></td>
</tr>
<tr>
<td><strong>airportConfig/endHour</strong></td>
<td>doubleInclusive24</td>
<td>minOcc 0</td>
<td>minInclusive 0, maxInclusive 24</td>
<td>End hour. Valid values: 0.00 to 23.00.</td>
<td></td>
</tr>
</tbody>
</table>

**Kind**
- simple

**Annotation**
- documentation
<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>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>End hour. Valid values: 0.00 to 23.00.</td>
</tr>
</tbody>
</table>

**element airportConfig/minCeiling**

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

**element airportConfig/maxCeiling**

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

**element airportConfig/minVisibility**

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

**element airportConfig/maxVisibility**

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

**element airportConfig/minTemperature**

- **diagram**: [Diagram]
- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
- **content**: simple
- **annotation**: documentation
  - Minimum temperature. Valid values: -100.00 to 150.00. (°C)
**element airportConfig/maxTemperature**

*Diagram*

- **Type**: xs:double
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
- **Content**: simple
- **Annotation**: documentation
  - Minimum temperature. Valid values: -100.00 to 150.00. (°F)

**element airportConfigSet**

*Diagram*

- **Properties**: content complex
- **Children**: airportConfig
- **Used by**: complexTypes airportLayoutType scenarioAirportLayoutType
- **Annotation**: documentation
  - Contains one or more airportConfig elements.

**element airportLayoutSet**

*Diagram*

- **Properties**: content complex
- **Children**: airportLayout
- **Used by**: elements AsIfXML study
- **Annotation**: documentation
  - Contains layouts for ASIF partial import into an existing study.

**element airportLayoutSet/airportLayout**

*Diagram*
**airportCode**

ICAO code of airport in the layout.

**startDateTime**

Date airport is included in the study.

**elevation**

Elevation of the layout in feet above MSL (ft). Valid values: -1000 to 10000.

**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 and fuel burn trends at individual airports.

**latitude**

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

**latitudeDMS**

Latitude expressed as degrees minutes seconds with optional indicator N, S, E, W.

**longitude**

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

**longitudeDMS**

Longitude expressed as degrees minutes seconds 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 optionalAlign leg.

**buildingSet**

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 plume values 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, APRV, GEE, roadways, and parking facilities.

**parkingFacilitySet**

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.

**StationarySourceSet**

Container of stationary sources contributing emissions.
element airportWeather

diagram

properties

children

used by

complexType airportWeatherStationId

diagram

element airportWeatherStationId

diagram

type xs:int

properties

element airportWeatherStation

diagram

type airportLayoutType

properties

children

annotation

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

element airportWeather

diagram

properties

children

used by

complexType airportWeatherStationId

diagram

element airportWeatherStationId

diagram

type xs:int

properties

element airportWeatherStation

diagram

annotation

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

diagram

type xs:dateTime

properties
  content simple

children
  airportWeatherStationld
  startDate
  endDate
  weatherStationCode
  weatherStationName
  latitude
  latitudeDMS
  longitude
  longitudeDMS
  weatherStationElevationFeet
  distanceToStation
  cooperativeId
  wbanId
  weatherData

used by
  element airportWeather
<table>
<thead>
<tr>
<th>element</th>
<th><code>airportWeatherStation/endDate</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="endDate" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:date</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><code>airportWeatherStation/weatherStationCode</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="weatherStationCode" /></td>
</tr>
<tr>
<td>type</td>
<td><code>string5</code></td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0, maxLength 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><code>airportWeatherStation/weatherStationName</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="weatherStationName" /></td>
</tr>
<tr>
<td>type</td>
<td><code>string25</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, maxLength 25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><code>airportWeatherStation/weatherStationElevationFeet</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="weatherStationElevationFeet" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:int</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><code>airportWeatherStation/distanceToStation</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="distanceToStation" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><code>airportWeatherStation/cooperativeId</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="cooperativeId" /></td>
</tr>
<tr>
<td>type</td>
<td><code>string6</code></td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0, maxLength 6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th><code>airportWeatherStation/wbanId</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="wbanId" /></td>
</tr>
<tr>
<td>type</td>
<td><code>string5</code></td>
</tr>
</tbody>
</table>
element annualization

```
<annualization>
  <name>Annualization name</name>
</annualization>
```

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

element annualization/name

```
<name>Annulization name</name>
```

type string255

annotation documentation
Name of annualization.

element annualizationCase

```
<annualizationCase>
  <name>Case name</name>
  <weight>Case weight</weight>
  <scaleFactor>Scale factor</scaleFactor>
</annualizationCase>
```

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

element annualizationCase/name

```
<name>Case name</name>
```

type string255

annotation documentation
Name of annualization.
element `annualizationCase/weight`

- **Diagram:**
  - **Type:** xs:double
  - **Properties:** content simple
  - **Annotation:**
    - **Documentation:** Weight associated with the case.

element `annualizationCase/scaleFactor`

- **Diagram:**
  - **Type:** xs:double
  - **Properties:**
    - minOcc 0
    - maxOcc 1
    - content simple
    - default 1
  - **Annotation:**
    - **Documentation:** Scale factor applied to results for the case.

element `annualizationGroup`

- **Diagram:**
  - **Properties:**
    - content complex
  - **Children:**
    - `weight`
    - `scaleFactor`
    - `annualizationGroup`
    - `annualizationCase`
  - **Used by:**
    - element `annualization`
    - group `annualizationGroupCase`
  - **Annotation:**
    - **Documentation:**
      - Contains one or more weighted annualization group cases.

element `annualizationGroup/weight`

- **Diagram:**
  - **Type:** xs:double
  - **Properties:** content simple
  - **Annotation:**
    - **Documentation:** Weight associated with the annualization group.
element annualizationGroup/scaleFactor

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale factor applied to results for the annualization group.</td>
</tr>
</tbody>
</table>

<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></td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default: 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale factor applied to results for the annualization group.</td>
<td></td>
</tr>
</tbody>
</table>

element areaStationarySource

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies the area in space occupied by a stationary source of emissions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>content: complex</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>children</th>
<th>pointCoord polygonCoords baseElevation releaseHeight sigmaZ</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>used by</th>
<th>element stationarySource</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specifies the area in space occupied by a stationary source of emissions.</td>
<td></td>
</tr>
</tbody>
</table>

element areaStationarySource/baseElevation

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation in MSL of area, valid values -500 to 5000 (m)</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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation in MSL of area, valid values -500 to 5000 (m)</td>
<td></td>
</tr>
</tbody>
</table>

element areaStationarySource/releaseHeight

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height at which emissions are released into the atmosphere, Valid values 0 to 100 (m)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc: 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc: 1</td>
</tr>
<tr>
<td></td>
<td>content: simple</td>
</tr>
<tr>
<td></td>
<td>default: 0</td>
</tr>
</tbody>
</table>
### areaStationarySource/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.

### AsifXml

**Diagram:**  
- Root node of the ASIF tree.
properties

- content complex

children

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

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>version</td>
<td>string16</td>
<td>optional</td>
<td></td>
<td></td>
<td>Study version. Used for revision control of a study.</td>
</tr>
</tbody>
</table>

annotation documentation

- Root node of the ASF tree.

attribute `AsfXml/@version`

<table>
<thead>
<tr>
<th>type</th>
<th>string16</th>
</tr>
</thead>
</table>

properties

- use optional

facets

- Kind: Annotation
- minLength: 0
- maxLength: 16

annotation documentation

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

attribute `AsfXml/@content`

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of <code>xs:string</code></th>
</tr>
</thead>
</table>

properties

- use required

facets

- Kind: Annotation
- enumeration: airportLayoutSet
- enumeration: annualization
- enumeration: case
- enumeration: fleet
- enumeration: receptorSets
- enumeration: scenario
- enumeration: study
- enumeration: boundary
- enumeration: trackOpSet
- enumeration: runup
- enumeration: userGroundSupportEquipmentSet
- enumeration: stationarySourceSet
- enumeration: operationalProfileSet
<table>
<thead>
<tr>
<th>Type</th>
<th>fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc 0, maxOcc 1, content complex</td>
</tr>
<tr>
<td>Children</td>
<td>auxiliaryPowerUnit, airframe, engine, engineMod, noiseGroup, airplane, flareSet, thrustSet, profileSet, noiseGroup, helicopter, noiseGroup, directivitySet, profileSet, badaAirplane, badaAltitudeDistributionSet, badaDefaultAltitudeDistributionSet, badaProfileSet, badaConfigSet, badaFuel, badaThrust, aircraft, energyShare</td>
</tr>
<tr>
<td>Annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Description</td>
<td>Contains study fleet data for ASIF partial import into existing study.</td>
</tr>
</tbody>
</table>

**Diagram:**

- **badaAirplane**
  - Describes a new user-defined BADA airplane.
- **badaAltitudeDistributionSet**
  - A block for defining a BADA altitude distribution set.
- **badaProfileSet**
  - A block used to define a custom BADA profile set.
- **badaConfigSet**
  - A block for a custom BADA airplane configuration coefficient set.
- **badaFuel**
  - A BADA fuel data record.
- **badaAltitudeDistributionSet**
  - Custom BADA airplane altitude distribution sets.
- **a u x i l i a r y P o w e r U n i t**
- **a i r f r a m e**
- **e n g i n e**
- **e n g i n e M o d**
- **a n p N o i s e G r o u p**
- **a n p A i r p l a n e**
- **a n p F l a p s S e t**
- **a n p T h r u s t S e t**
- **a n p P r o f i l e S e t**
- **a n p H e l i c o p t e r**
- **a n p H e l i o N o i s e G r o u p**
- **a n p H e l i c o p t e r D i r e c t i v i t y S e t**
- **a n p H e l i c o p t e r P r o f i l e S e t**
- **b a d a G a i n A i r p l a n e**
- **b a d a G a i n A l t i t u d e D i s t r i b u t i o n S e t**
- **b a d a G a i n D e f a u l t A l t i t u d e D i s t r i b u t i o n S e t**
- **b a d a G a i n P r o f i l e S e t**
- **b a d a G a i n C o n f i g S e t**
- **b a d a F u e l b a d a T h r u s t a i r c r a f t e n e r g y S h a r e**
An aircraft runup operation type.

type: runup

properties:
- minOcc: 1
- maxOcc: unbounded
element backbone

diagram

Represents the centerline of a set of dispersed tracks.

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

element backboneNode

diagram

A 3D node that is part of a backbone.

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

element backboneNode/halfwidth

diagram

Halfwidth in nautical miles. (nmi)

type xs:double

properties
content simple
annotation documentation
Halfwidth in nautical miles. (nmi)

element backboneNodes

diagram

A set of 3D nodes for the backbone.

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

element boilerHeaterTypeCode

diagram
![boilerHeaterTypeCode](image)
type | union of (restriction of xs:integer, restriction of xs:integer, restriction of xs:integer)
properties | content simple
used by | element categoryBoilerHeater
annotation | documentation
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.

element boundary

diagram
![boundary](image)
properties | content complex
children | polygon
used by | elements AsifXmI study
attributes | Name | Type | Use | Default | Fixed | Annotation
--- | --- | --- | --- | --- | --- | ---
dummy | xs: int | optional
annotation | documentation
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.

attribute boundary/@dummy

type | xs: int
properties | use optional

element boundary/polygon

diagram
![polygon](image)
type | polygon2DType
properties | minOcc 1
maxOcc unbounded
content complex
Set of coordinates defining the boundary.

**element building**

**diagram**

*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.

<table>
<thead>
<tr>
<th>properties</th>
<th>content</th>
<th>complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>name elevation height releaseHeight pointCoord polygonCoords</td>
<td></td>
</tr>
</tbody>
</table>

**used by**

**element buildingSet**

**annotation**

*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.

**element building/name**

**diagram**

**type**

**string255**

<table>
<thead>
<tr>
<th>properties</th>
<th>content</th>
<th>simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td>Kind Value Annotation minLength 0 maxLength 255</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

*Name of the building.*

**element building/elevation**

**diagram**

**type**

**xs:double**

<table>
<thead>
<tr>
<th>properties</th>
<th>content</th>
<th>simple</th>
</tr>
</thead>
</table>

**annotation**

*Elevation of building. Valid values: -500 to 5000. (m)*

**element building/height**

**diagram**

**type**

**xs:double**

<table>
<thead>
<tr>
<th>properties</th>
<th>content</th>
<th>simple</th>
</tr>
</thead>
</table>

**annotation**

*Height of building. Valid values 0 to 100 (m)*

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

*Type of coordinate specifying the area.*

*Choice of a single point coordinate.*

*Choice of a 2D polygon.*

---

*Annotation documentation*

*Set of coordinates defining the boundary.*

---

*Documentation*
type xs:double

properties content simple

annotation documentation
Height of building. Valid values: 0 to 100 (m)

element building/releaseHeight

... (diagram)

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

... (diagram)

properties content complex

children building

used by complexType airport_layoutType

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.

element capacityPoint

... (diagram)

properties content complex

children arrivalsPerHour departuresPerHour

used by element airport_capacity
Supports legacy IDMS 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**

- **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**

- **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, Name, Source, Start Time, Duration, Climate ID, Hourly Wx File, Hourly Wx MD6, Description
Describes general parameters for a case.

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>children</th>
<th>caseld name source startime duration climateId hourlyWxFile hourlyWxMD5 description totalTaxiInTime totalTaxiOutTime unimpeodedTaxiInTime unimpeodedTaxiOutTime case trackOpSet operation runup parkingFacilityOperationSet runwayOperationSet stationarySourceOperationSet groundSupportEquipmentPopulationOperationSet reference</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>used by</th>
<th>elements AsfXmi case caseSet</th>
</tr>
</thead>
</table>

| annotation      | documentation Describes general parameters for a case. |
element case/name
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>string255</th>
</tr>
</thead>
<tbody>
<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>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

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

element case/source
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>emissionsSourceType</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>enumeration</td>
<td>Container</td>
</tr>
<tr>
<td>enumeration</td>
<td>Aircraft</td>
</tr>
<tr>
<td>enumeration</td>
<td>GSE Population</td>
</tr>
<tr>
<td>enumeration</td>
<td>Parking Facilities</td>
</tr>
<tr>
<td>enumeration</td>
<td>Roadways</td>
</tr>
<tr>
<td>enumeration</td>
<td>Stationary Sources</td>
</tr>
</tbody>
</table>

element case/startTime
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:dateTime</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

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
diagram

<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</td>
<td>documentation</td>
</tr>
</tbody>
</table>

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 (h).
<table>
<thead>
<tr>
<th>Type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc: 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc: 1</td>
</tr>
<tr>
<td></td>
<td>content: simple</td>
</tr>
</tbody>
</table>

**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>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc: 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc: 1</td>
</tr>
<tr>
<td></td>
<td>content: simple</td>
</tr>
</tbody>
</table>

**Facets**: Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

**Annotation documentation**: ID of a climate condition.

**Element case/hourlyWxFile**

<table>
<thead>
<tr>
<th>Type</th>
<th>string255</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc: 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc: 1</td>
</tr>
<tr>
<td></td>
<td>content: simple</td>
</tr>
</tbody>
</table>

**Facets**: Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>255</td>
</tr>
</tbody>
</table>

**Annotation documentation**: The file containing the hourly weather data used for emissions calculations. This element is not supported in AEDT.

**Element case/hourlyWxMD5**

<table>
<thead>
<tr>
<th>Type</th>
<th>string16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc: 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc: 1</td>
</tr>
<tr>
<td></td>
<td>content: simple</td>
</tr>
</tbody>
</table>

**Facets**: Kind Value Annotation

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

**Annotation documentation**: 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.

**Element case/description**

<table>
<thead>
<tr>
<th>Type</th>
<th>string8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Properties</td>
<td>minOcc: 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc: 1</td>
</tr>
<tr>
<td></td>
<td>content: simple</td>
</tr>
</tbody>
</table>

**Facets**: Kind Value Annotation

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

**Annotation documentation**: Description of the case.
type **string255**

properties

minOcc 0
maxOcc 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>

annotation documentation

Description of the case.

element *case/totalTaxiInTime*

diagram

```
<totalTaxiInTime />
Number of minutes to complete a taxi-in. (min)
```

type **xs:double**

properties

minOcc 0
maxOcc 1
content simple

annotation documentation

Number of minutes to complete a taxi-in. (min)

element *case/totalTaxiOutTime*

diagram

```
<totalTaxiOutTime />
Number of minutes to complete a taxi-out. (min)
```

type **xs:double**

properties

minOcc 0
maxOcc 1
content simple

annotation documentation

Number of minutes to complete a taxi-out. (min)

element *case/unimpededTaxiInTime*

diagram

```
<unimpededTaxiInTime />
Number of minutes to complete an unimpeded taxi-in. (min)
```

type **xs:double**

properties

minOcc 0
maxOcc 1
content simple

annotation documentation

Number of minutes to complete an unimpeded taxi-in. (min)

element *case/unimpededTaxiOutTime*

diagram

```
<unimpededTaxiOutTime />
Number of minutes to complete an unimpeded taxi-out. (min)
```

type **xs:double**

properties

minOcc 0
maxOcc 1
content simple

annotation documentation

Number of minutes to complete an unimpeded taxi-out. (min)

element *case/runup*

diagram
**runup**

- **attributes**
  - dummy

- **type** runup

- **properties**
  - minOcc 1
  - maxOcc unbounded
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

**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
Placeholder for one or more cases.

**attribute** caseSet@dummy

| type     | xs:int |

**properties**
use optional

**element** categoryAircraftEngine

**diagram**

*engineCode*

**timePercentPower7**
Time at which engine is operating at 7% (taxi) power. Valid values 0 to 1000. (min)

**timePercentPower30**
Time at which engine is operating at 30% (approach) power. Valid values 0 to 1000. (min)

**timePercentPower85**
Time at which engine is operating at 85% (limb-out) power. Valid values 0 to 1000. (min)

**timePercentPower100**
Time at which engine is operating at 100% (takeoff) power. Valid values 0 to 1000. (min)

**properties**
content complex

**children**
engineCode timePercentPower7 timePercentPower30 timePercentPower85 timePercentPower100

**used by**
element stationarySource

**annotation**
documentation
Describes a category for the time an aircraft engine is at various power levels.

**element** categoryAircraftEngine/engineCode

**diagram**

*engineCode*

**type** string255

**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>255</td>
<td></td>
</tr>
</tbody>
</table>

**element** categoryAircraftEngine/timePercentPower7

**diagram**

*timePercentPower7*

**type** doubleExclusive1000

**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>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>
element category: Aircraft Engine

diagram

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

type doubleExclusive 1000

properties
content: simple
default: 0

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

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

---

element category: Aircraft Engine

diagram

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

type doubleExclusive 1000

properties
content: simple
default: 0

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

annotation documentation
Time at which engine is operating at 30% (approach) power. Valid values: 0 to 1000. (min)

---

element category: Aircraft Engine

diagram

```
Time at which engine is operating at 85% (climbout) power. Valid values: 0 to 1000. (min)
```

type doubleExclusive 1000

properties
content: simple
default: 0

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

annotation documentation
Time at which engine is operating at 85% (climbout) power. Valid values: 0 to 1000. (min)

---

element category: Aircraft Engine

diagram

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

type doubleExclusive 1000

properties
content: simple
default: 0

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

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

---

element category: Boiler Heater

diagram

```
boilerHeaterTypeCode

An integer value for the Boiler/Heater type represented. This value comes from the SUBCATEGORY_ID column of the SIN CATEGORY table in the AEBT PUEB database. Valid values: 1 to 37, 50 to 70, 80 to 93.
```

```
CO_EI

CO emissions index, dependent on fuel type. Valid values: 0 to 1500, (Kg/Mln, Ton or Kg/Mk/ther or Kg/1000 m3/s)
```

```
excludingCO_EI
```

---
Describes the operational characteristics of a source in the boiler/heater category.

**element categoryBoilerHeater/CO_EI**

- **diagram**
  - CO_EI
  - CO emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)
- **type** doubleInclusive1000
- **properties**
  - content simple
  - default 0
- **facets**
  - Kind Value Annotation
  - minInclusive 0
  - maxInclusive 1000
- **annotation** documentation
  - CO emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)

**element categoryBoilerHeater/pollutionControlFactorCO**

- **diagram**
  - pollutionControlFactorCO
  - Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%)
- **type** doubleInclusive1000
- **properties**
  - content simple
  - default 0
- **facets**
  - Kind Value Annotation
  - minInclusive 0
<table>
<thead>
<tr>
<th>Element</th>
<th>Category</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>categoryBoilerHeater/TNMOC_EI</strong></td>
<td>TNMOC emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)</td>
<td></td>
</tr>
<tr>
<td><strong>categoryBoilerHeater/pollutionControlFactorTNMOC</strong></td>
<td>Percent of total non-methane organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
<td></td>
</tr>
<tr>
<td><strong>categoryBoilerHeater/VOC_EI</strong></td>
<td>VOC emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)</td>
<td></td>
</tr>
<tr>
<td><strong>categoryBoilerHeater/pollutionControlFactorVOC</strong></td>
<td>Percent of volatile organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
<td></td>
</tr>
</tbody>
</table>
Percent of volatile 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)

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

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

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

SOx emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)
element category:BoilerHeater/pollutionControlFactorSOx

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>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

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

element category:BoilerHeater/constantTermPm10

diagram

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

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

element category:BoilerHeater/sulfurTermPm10

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
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<tbody>
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<tr>
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annotation documentation
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)

element category:BoilerHeater/ashTermPm10

diagram

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

annotation documentation
PM10 ash term. Valid values: 0 to 1000. (Kg/Metric Ton - %Ash)
properties | content: simple
default: 0

facets | Kind | Value | Annotation
minInclusive: 0
maxInclusive: 1000

annotation | documentation:
PM10 ash term. Valid values: 0 to 1000 (Kg/Metric Ton - %Ash)

element category: BoilerHeater/fuelAshContent
diagram

type: doubleExclusive100

properties | minOcc: 0
maxOcc: 1
content: simple

facets | Kind | Value | Annotation
minInclusive: 0
maxExclusive: 100

annotation | documentation:
Percent of fuel that is ash. Valid values: 0 to 1000. (%)

element category: BoilerHeater/pollutionControlFactorPM10
diagram

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 category: BoilerHeater/pm25ToPm10Ratio
diagram

type: doubleInclusive1

properties | content: simple
default: 1

facets | Kind | Value | Annotation
minInclusive: 0
maxInclusive: 1

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

element category: BoilerHeater/fuelCalciumSulfurRatio
diagram

type: doubleExclusive1000

properties | minOcc: 0
**element** categoryBoilerHeater/fuelSulfurContent

**diagram**

![Diagram](image1.png)

**type** doubleExclusive100

**properties** minOcc 0
maxOcc 1
content simple

**facets** Kind Value Annotation
minInclusive 0
maxExclusive 100

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

---

**element** categoryDeicingArea

**diagram**

![Diagram](image2.png)

**properties** content complex

**children** typeCode VOC_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**

![Diagram](image3.png)

**type** int1to4

**properties** content simple

**facets** Kind Value Annotation
minInclusive 1
maxInclusive 4

**annotation** documentation
Describes this category.
element categoryDeicingArea/VOC_EI

diagram

VOC_EI

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

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/Kiloliter)

element categoryDeicingArea/ethyleneGlycolDensity

diagram

ethyleneGlycolDensity

Ethylene glycol solution density. Valid values: 0 to 1000. (g/L)

type doubleExclusive2000

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxExclusive 2000

annotation documentation
Ethylene glycol solution density. Valid values: 0 to 1000. (g/L)

element categoryDeicingArea/propyleneGlycolDensity

diagram

propyleneGlycolDensity

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

type doubleExclusive2000

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxExclusive 2000

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

element categoryDeicingArea/solutionConcentrationPercent

diagram

solutionConcentrationPercent

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

type doubleExclusive100

properties content simple
default 50

facets Kind Value Annotation
minInclusive 0
maxExclusive 100

annotation documentation
Concentration of deicing solution. Valid values: 0 to 1000. (%)

element categoryFuelTank
Describes the operational characteristics of a source in the fuel tank category.

**element categoryFuelTank/typeCode**

- **Diagram**: A diagram showing the categoryFuelTank with a typeCode attribute.
- **Type**: `int1to25` (integer range from 1 to 25).
- **Properties**: `content simple`.
- **Facets**: `minInclusive 1`, `maxInclusive 25`.
- **Annotation**: Documentation that describes the typeCode.

**element categoryFuelTank/tankDiameter**

- **Diagram**: A diagram showing the categoryFuelTank with a tankDiameter attribute.
- **Type**: `doubleExclusive1000` (double with exclusive values from 0 to 1000).
- **Properties**: `content simple` with a `default 0`.
- **Facets**: `minInclusive 0`, `maxExclusive 1000`.
- **Annotation**: Documentation that describes the diameter.

**element categoryFuelTank/horizontalTank**

- **Diagram**: A diagram showing the categoryFuelTank with a horizontalTank attribute.
- **Properties**: `content complex`.
- **Children**: `tankLength`.
- **Annotation**: Documentation that describes a horizontal tank.

**element categoryFuelTank/horizontalTank/tankLength**
type: **doubleExclusive1000**

properties:
- content: simple
- default: 0

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

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

element: categoryFuelTank/verticalTank

diagram:
- maximumSolutionLevel
- tankHeight
- averageSolutionLevel
- meanWindSpeed

properties:
- content: complex
- children: [maximumSolutionLevel, tankHeight, averageSolutionLevel, meanWindSpeed]

annotation: documentation
Describes a vertical tank.

element: categoryFuelTank/verticalTank/maximumSolutionLevel

diagram:
- maximumSolutionLevel

properties:
- content: simple
- default: 0

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

annotation: documentation
Maximum height of solution inside the tank. Valid values: 0 to 1000. (m)

element: categoryFuelTank/verticalTank/tankHeight

diagram:
- tankHeight

properties:
- content: simple
- default: 0

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

annotation: documentation
Height of tank. Valid values: 0 to 1000. (m)
Element categoryFuelTank/verticalTank/averageSolutionLevel

diagram

type doubleExclusive1000

properties
- content: simple
- default: 0

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

annotation
documentation
Average height of solution inside the tank. Valid values: 0 to 1000. (m)

Element categoryFuelTank/verticalTank/meanWindSpeed

diagram

type doubleExclusive1000

properties
- minOcc: 0
- maxOcc: 1
- content: simple
- default: 5

facets
- Kind: Value
- Annotation
  - minInclusive: 0
  - maxExclusive: 100

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

Element categoryFuelTank/reidVaporPressure

diagram

type int6to13

properties
- minOcc: 0
- maxOcc: 1
- content: simple
- default: 10

facets
- Kind: Value
- Annotation
  - minInclusive: 6
  - maxInclusive: 13

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

Element categoryGenerator

diagram
Describes the operational characteristics of a source in the generator category.

- **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)

- **pollutionControlFactorTOC**
  - Percent of total organic compounds removed by pollution control measures. Valid values 0 to 1000.
    - (%)

- **CO_EI**
  - CO emissions index. Valid values 0 to 1000.
    - (Kg/kiloton or Kg/1000 m³)

- **VOC_EI**
  - VOC emissions index. Valid values 0 to 1000.
    - (Kg/kiloton or Kg/1000 m³)

- **NOx_EI**
  - NOx emissions index. Valid values 0 to 1000.
    - (Kg/kiloton or Kg/1000 m³)

- **SOx_EI**
  - SOx emissions index. Valid values 0 to 1000.
    - (Kg/kiloton or Kg/1000 m³)

- **PM10_EI**
  - PM10 emissions index. Valid values 0 to 1000.
    - (Kg/kiloton or Kg/1000 m³)

- **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)
element `categoryGenerator/typeCode`

- diagram
- type `int1to8`
- properties `content simple`
- facets
  - Kind: Value Annotation
  - minInclusive: 1
  - maxInclusive: 8
- annotation
  - documentation
    - Describes this category.

element `categoryGenerator/powerRatingHorsepower`

- diagram
- type `doubleValue10000`
- properties `content simple`
- default: 0
- facets
  - Kind: Value Annotation
  - minInclusive: 0
  - maxInclusive: 10000
- annotation
  - documentation
    - The rated power of the generator in horsepower. Valid values: 0 to 10000. (hp)

element `categoryGenerator/CO_EF`

- diagram
- type `doubleValue1000`
- properties `content simple`
- default: 0
- facets
  - Kind: Value Annotation
  - minInclusive: 0
  - maxInclusive: 1000
- annotation
  - documentation
    - CO emissions factor. Valid values: 0 to 1000. (grams/hp-hr)

element `categoryGenerator/TOC_EF`

- diagram
- type `doubleValue1000`
- properties `content simple`
- default: 0
- facets
  - Kind: Value Annotation

annotation documentation
- Describes the operational characteristics of a source in the generator category.
element categoryGenerator/NOx_EF

diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
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<tbody>
<tr>
<td>minInclusive</td>
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<tr>
<td>maxInclusive</td>
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</tbody>
</table>

documentation

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

element categoryGenerator/SOx_EF

diagram

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
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<tbody>
<tr>
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<td>maxInclusive</td>
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documentation

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

element categoryGenerator/PM10_EF

diagram

<table>
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<th>Type</th>
<th>Value</th>
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<tr>
<td>maxInclusive</td>
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</table>

documentation

PM10 emissions factor. Valid values: 0 to 1000. (grams/hp-hr)

element categoryGenerator/pollutionControlFactorTOC

diagram

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

documentation

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

documentation

CO emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m^3)

documentation

VOC emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m^3)

documentation

NOx emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m^3)

documentation

SOx emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m^3)
SOx emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m³)

**element categoryGenerator/PM10_EI**

- **diagram**
  - ![PM10_EI](image)
- **type doubleInclusive1000**
- **properties** content simple
default 0
- **facets**
  - Kind Value Annotation
    - minInclusive 0
    - maxInclusive 1000
- **annotation documentation**
  - PM10 emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m³)

**element categoryGenerator/pollutionControlFactorVOC**

- **diagram**
  - ![pollutionControlFactorVOC](image)
- **type doubleInclusive100**
- **properties** content simple
default 0
- **facets**
  - Kind Value Annotation
    - minInclusive 0
    - maxInclusive 100
- **annotation documentation**
  - Amount of volatile organic compounds emitted. Valid values: 0 to 1000. (%)

**element categoryGenerator/fuelSulfurContent**

- **diagram**
  - ![fuelSulfurContent](image)
- **type doubleExclusive100**
- **properties** content simple
default 0
- **facets**
  - Kind Value Annotation
    - minInclusive 0
    - maxExclusive 100
- **annotation documentation**
  - 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. (%)

**element categoryGenerator/pollutionControlFactorCO**

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

element categoryGenerator/pollutionControlFactorNOx
diagram

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

element categoryGenerator/pollutionControlFactorSOx
diagram

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

element categoryGenerator/pollutionControlFactorPM10
diagram

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

element categoryGenerator/pm25ToPm10Ratio
diagram

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PM 2.5 to PM 10 ratio. (dimensionless)
element categoryIncinerator

diagram

- 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 (g/mb). 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/typeCode

diagram

- typeCode
  - Describes this category.

properties

- content simple

facets

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### element categoryIncinerator/CO_EI

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<tr>
<td><img src="image1" alt="CO_EI" /></td>
<td>CO emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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<td>CO emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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### element categoryIncinerator/VOC_EI

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<tr>
<td><img src="image2" alt="VOC_EI" /></td>
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<td>VOC emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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### element categoryIncinerator/NOx_EI

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<tr>
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<td>NOx emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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### element categoryIncinerator/SOx_EI

<table>
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<tr>
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<table>
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<td>SOx emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)</td>
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</table>
element categoryIncinerator/PM10_EI
diagram
PM10_EI.png

PM10 emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)

type doubleInclusive1000

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxInclusive 1000

annotation documentation
PM10 emissions index. Valid values: 0 to 1000. (Kg/Metric Ton)

element categoryIncinerator/pollutionControlFactorCO
diagram
pollutionControlFactorCO.png

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

type doubleInclusive1000

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxInclusive 100

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

element categoryIncinerator/pollutionControlFactorVOC
diagram
pollutionControlFactorVOC.png

Amount of volatile organic compounds emitted (kg/unit). Valid values: 0 to 1000. (%)

type doubleInclusive1000

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxInclusive 100

annotation documentation
Amount of volatile organic compounds emitted (kg/unit). Valid values: 0 to 1000. (%)

element categoryIncinerator/pollutionControlFactorNOx
diagram
pollutionControlFactorNOx.png

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

type doubleInclusive1000

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxInclusive 100

annotation documentation
Percent of nitrous oxides removed by pollution control measures. Valid values: 0 to 1000. (%)
### Category: Incinerator / Pollution Control Factor

#### SOx

**Diagram:**

[SOx Diagram]

**Type:** `doubleInclusive100`

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

**Facets:**
- `minInclusive`: `0`
- `maxInclusive`: `100`

**Annotation:**

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

#### PM10

**Diagram:**

[PM10 Diagram]

**Type:** `doubleInclusive100`

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

**Facets:**
- `minInclusive`: `0`
- `maxInclusive`: `100`

**Annotation:**

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

#### PM2.5 to PM10 Ratio

**Diagram:**

[PM2.5 to PM10 Ratio Diagram]

**Type:** `doubleInclusive1`

**Properties:**
- `content`: `simple`
- `default`: `1`

**Facets:**
- `minInclusive`: `0`
- `maxInclusive`: `1`

**Annotation:**

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

#### Other

**Diagram:**

[Other Diagram]
Describes the operational characteristics of a source in the "other" category.

**element categoryOther/fuelUnits**

**properties**
- content: complex
- minOcc: 0

**children**
- fuelUnits
- CO_EI
- THC_EI
- NOx_EI
- SOx_EI
- PM10_EI
- pollutionControlFactorCO
- pollutionControlFactorHC
- pollutionControlFactorNOx
- pollutionControlFactorSOx
- pollutionControlFactorPM10
- pm25ToPm10Ratio

**used by**
- element stationarySource

**annotation**
- documentation: Describes the operational characteristics of a source in the "other" category.

**type**
- initToS

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

facets:
- Kind: Value
  Annotation: facets
  - 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=Kiloliters, 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>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

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

element categoryOther/THC_EI

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>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

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

element categoryOther/NOx_EI

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>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

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

element categoryOther/SOx_EI

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>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

annotation:
documentation
SOx emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)
<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>0</td>
<td>SOx emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td>0</td>
<td>PM10 emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit)</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>0</td>
<td>Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
<td>Value</td>
<td>Annotation</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
<td>0</td>
<td>Percent of hydrocarbons removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td>0</td>
<td>Percent of nitrogen oxides removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td>default 0</td>
<td>0</td>
</tr>
</tbody>
</table>
Percent of nitrous oxides removed by pollution control measures. Valid values: 0 to 1000. (%)

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

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

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

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.
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.
  - facade
    - **surfaceWindSpeedFraction**
      - Surface wind speed fraction. Valid values 0 to 1000 (unitsless)
  - facade
    - **surfaceRoughness**
      - The surface roughness of the pile. Valid values 0 to 1000 (cm)
  - facade
    - **frictionVelocity**
      - Friction velocity. Valid values 0 to 1000 (m/s)
  - facade
    - **fastestMileOfWind**
      - Fastest mile of wind. Valid values 0 to 1000 (m/s)
  - facade
    - **meanWindSpeed**
      - Average wind speed at sand or salt pile. Valid values 0 to 1000 (m/s)
  - facade
    - **moistureContent**
      - Percentage of sand or salt pile that is moisture. Valid values 0 to 1000 (%)
  - facade
    - **massDisturbedPerDisturbance**
      - The mass disturbed per disturbance. Valid values 0 to 1000 (Metric Ton)
  - facade
    - **erodedSurfaceArea**
      - Eroded surface area of pile. Valid values 0 to 1000. (

**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**

- **diagram**
  - facade
    - **surfaceWindSpeedFraction**
      - Surface wind speed fraction. Valid values 0 to 1000 (unitsless)
<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>default</td>
<td>0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1</td>
</tr>
</tbody>
</table>

**annotation documentation**
Surface wind speed fraction. Valid values: 0 to 1000. (unitless)

### Category: Sand Salt Pile / Surface Roughness

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusiveRange100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>default</td>
<td>0.01</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>minExclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
</tr>
</tbody>
</table>

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

### Category: Sand Salt Pile / Friction Velocity

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>default</td>
<td>0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
</tr>
</tbody>
</table>

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

### Category: Sand Salt Pile / Fastest Mile Of Wind

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>default</td>
<td>0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
</tr>
</tbody>
</table>

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

### Category: Sand Salt Pile / Mean Wind Speed

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>default</td>
<td>0</td>
</tr>
</tbody>
</table>

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

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

**Element: CategorySandSaltPile/moistureContent**

**Diagram**

- **Type**: `doubleExclusiveRange100`
- **Properties**: content simple
default 0.01
- **Facets**: Kind Value Annotation
  - Kind: moistureContent
  - Value: 0
  - Annotation: Percentage of sand or salt pile that is moisture. Valid values: 0 to 1000. (%)

**Element: CategorySandSaltPile/massDisturbedPerDisturbance**

**Diagram**

- **Type**: `doubleExclusive1000`
- **Properties**: content simple
default 0
- **Facets**: Kind Value Annotation
  - Kind: massDisturbedPerDisturbance
  - Value: 0
  - Annotation: The mass disturbed per disturbance. Valid values: 0 to 1000. (Metric Tons)

**Element: CategorySandSaltPile/erodedSurfaceArea**

**Diagram**

- **Type**: `doubleExclusive10000`
- **Properties**: content simple
default 0
- **Facets**: Kind Value Annotation
  - Kind: erodedSurfaceArea
  - Value: 0
  - Annotation: Eroded surface area of pile. Valid values: 0 to 1000. (m²)

**Element: CategorySolventDegreaser**

**Diagram**

- **Type**: `categorySolventDegreaser`
- **SolutionDensity**: Density of the degreasing solution. Valid values: 0 to 1000. (g/L)
- **percentSolventDisposed**: Percentage of solvent removed by environmental controls. Valid values: 0 to 1000. (%)
### categorySolventDegreaser/TypeCode
- **Type**: int1to13
- **Properties**: simple
- **Facets**:
  - minInclusive: 1
  - maxInclusive: 13
- **Annotation**: Describes the category.

### categorySolventDegreaser/SolutionDensity
- **Type**: doubleExclusive2000
- **Properties**: simple
- **Facets**:
  - minInclusive: 0
  - maxExclusive: 2000
- **Annotation**: Density of the deicing solution. Valid values: 0 to 1000 (g/L)

### categorySolventDegreaser/PercentSolventDisposed
- **Type**: xs:double
- **Properties**: simple
- **Facets**:
  - default: 0
- **Annotation**: Percentage of solvent removed by environmental controls. Valid values: 0 to 1000 (%)

### categorySurfaceCoatingPainting
- **Type**: complex
- **Properties**:
  - **Children**:
    - typeCode
    - VOC_EI
    - pollutionControlFactorVOC
- **Annotation**: Describes the operational characteristics of a source in the solvent degreaser category.
used by: element stationarySource.

annotation documentation: Describes the operational characteristics of a source in the surface coating or painting category.

**element categorySurfaceCoatingPainting/typeCode**

<table>
<thead>
<tr>
<th>diagram</th>
<th>typeCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes the category.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>int1to8</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>minInclusive</td>
<td>1</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>8</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Describes this category.</td>
</tr>
</tbody>
</table>

**element categorySurfaceCoatingPainting/VOC_EI**

<table>
<thead>
<tr>
<th>diagram</th>
<th>VOC_EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC emissions index. Valid values: 0 to 1200. (kg/kiloliter)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>default</td>
<td>0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>VOC emissions index. Valid values: 0 to 1200. (kg/kiloliter)</td>
</tr>
</tbody>
</table>

**element categorySurfaceCoatingPainting/pollutionControlFactorVOC**

<table>
<thead>
<tr>
<th>diagram</th>
<th>pollutionControlFactorVOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of volatile organic compounds removed by environmental controls. Valid values: 0 to 2000. (%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>default</td>
<td>0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>100</td>
</tr>
<tr>
<td>annotation documentation</td>
<td>Percentage of volatile organic compounds removed by environmental controls. Valid values: 0 to 2000. (%)</td>
</tr>
</tbody>
</table>

**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**

- **type** int1to5
- **properties** content simple
- **facets** Kind Value Annotation
  - minInclusive 1
  - maxInclusive 5
- **annotation** documentation
  - Describes this category.

**element categoryTrainingFire/CO**

- **type** xs:double
- **properties** content simple
- **annotation** documentation
  - Amount of carbon monoxide emitted. Valid values: 0 to 3000. (g/gal)

**element categoryTrainingFire/VOC**

- **type** xs:double
- **properties** content simple
<table>
<thead>
<tr>
<th>element</th>
<th>category</th>
<th>Training Fire/NOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td></td>
<td><img src="image1" alt="NOx Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
<td></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amount of nitrous oxides emitted. Valid values: 0 to 100. (g/gal)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>category</th>
<th>Training Fire/SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td></td>
<td><img src="image2" alt="SOx Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
<td></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amount of sulfur oxides emitted. Valid values: 0 to 10. (g/gal)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>category</th>
<th>Training Fire/PM10</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td></td>
<td><img src="image3" alt="PM10 Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
<td></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amount of 10-micron particulate matter emitted. Valid values: 0 to 1000. (g/gal)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>centroid</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td></td>
</tr>
</tbody>
</table>
element centroid/stateFips

- diagram
  - Optional census state identifier.

- type xs:int

- properties content simple

- annotation documentation
  Optional census state identifier.

properties content complex

children stateFips, countyFips, blockId, blockId, latitude, latitudeDMS, longitude, longitudeDMS, utmN, utmE, utmZone, elevation, count

used by group receptorGroup

annotation documentation
  Describes the geometric center of a polygon.
<table>
<thead>
<tr>
<th>element</th>
<th>centroid/countyFips</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>xs:int</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Optional census county identifier.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>centroid/blockId</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>xs:int</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Optional census BLOCK ID.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>centroid/bnaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>string6</code></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>Optional census BNA ID.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>centroid/elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>xs:double</code></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>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>centroid/count</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>xs:int</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The population count of the centroid. Valid values: 0 to 999999.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td></td>
</tr>
</tbody>
</table>
properties: content complex
children: identifier temperature pressure humidity headWind seaLevelPressure dewPoint windDirection visibility
used by: element study
annotation: documentation
Characterizes the climate during the study.

**element climate/identifier**

**diagram**

**type** string 8

**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>8</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**
documentation
Identifier of the climate condition.

**element climate/temperature**

**diagram**

**type** xs:float

**properties** content simple

**annotation**
documentation
Temperature in the climate condition. (°F)

**element climate/pressure**

**diagram**

**annotation**
documentation
Atmospheric pressure in the climate condition. (in Hg)
<table>
<thead>
<tr>
<th>element</th>
<th>type</th>
<th>properties</th>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>climate/humidity</td>
<td>xs:float</td>
<td>content simple</td>
<td>documentation</td>
<td>Atmospheric pressure in the climate condition. (in Hg)</td>
</tr>
<tr>
<td>diagram</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>climate/headWind</td>
<td>xs:float</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>documentation</td>
</tr>
<tr>
<td>diagram</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>climate/seaLevelPressure</td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>documentation</td>
</tr>
<tr>
<td>diagram</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>climate/dewPoint</td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>documentation</td>
</tr>
<tr>
<td>diagram</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>climate/windDirection</td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>maxOcc 1</td>
<td>documentation</td>
</tr>
<tr>
<td>diagram</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
element climate/visibility

diagram

- Wind direction. Valid values: 0-360. (degrees)

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

annotation documentation
Visibility in the climate condition. (mi)

element dailyProfile

diagram

- 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.

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

diagram

- Name of profile.

properties
- type: string100
- content: simple

facets
- Kind Value Annotation
- minLength: 0
element dailyProfile/temporalFactorSunday
diagram

type doubleMin0

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.

element dailyProfile/temporalFactorMonday
diagram

type doubleMin0

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.

element dailyProfile/temporalFactorTuesday
diagram

type doubleMin0

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.

element dailyProfile/temporalFactorWednesday
diagram

type doubleMin0

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.

**element dailyProfile/temporalFactorThursday**

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

| type | doubleMin0 |
| 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**

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

| type | doubleMin0 |
| properties |
| minOcc 0 | maxOcc 1 |
| content simple |

| facets |
| Kind | Value | Annotation |
| mininclusive 0 |

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

**element dailyProfile/temporalFactorSaturday**

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

| type | doubleMin0 |
| properties |
| minOcc 0 | maxOcc 1 |
| content simple |

| facets |
| Kind | Value | Annotation |
| mininclusive 0 |

| annotation |
| documentation |
| Factor applied to activity for operations on Saturdays. Valid values: 0.0000 to 1.0000. |

**element dailyProfileSet**

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

| properties |
| content complex |

| children |
| dailyProfile |

| used by |
| element operationalProfileSet |

| complexType |
| airportLayoutType |

| annotation |
| documentation |
Supports the definition and use of DAILY_PROFILES for the daily variation of operations.

**element dispersionWeight**

- **diagram**
  
  ![Diagram](image)

- **properties** content complex
- **children** dispersionWeight1 dispersionWeight3 dispersionWeight5 dispersionWeight7 dispersionWeight9
- **used by** element backbone
- **annotation**
  
  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**
  
  ![Diagram](image)

- **type** dispersionWeight1Type
- **properties** content complex
- **children** backbone

**element dispersionWeight/dispersionWeight3**

- **diagram**
  
  ![Diagram](image)

- **type** dispersionWeight3Type
- **properties** content complex
- **children** backbone weight1 weight11

**element dispersionWeight/dispersionWeight5**

- **diagram**
  
  ![Diagram](image)
Description of the amount of emissions for a given activity profile.

**Element emissionsUsage**

- **Diagram**: Describes the amount of emissions for a given activity profile.
- **Properties**: content complex
- **Children**: yearlyValue, hourlyValue, byPeakQuarterHour, activityProfile
- **Used by**: parkingFacilityOperation, roadwayOperation, stationarySourceOperation
- **Annotation Documentation**: Describes the amount of emissions for a given activity profile.

**Element emissionsUsage/yearlyValue**

- **Diagram**: Annualized amount of emissions.
- **Properties**: content complex
- **Children**: yearlyValue, hourlyValue, byPeakQuarterHour, activityProfile
element emissionsUsage/hourlyValue
diagram

- type: xs:double
- properties: 
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- annotation: documentation
  Annualized amount of emissions.

element emissionsUsage/byPeakQuarterHour
diagram

- 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

- type: string40
- properties: 
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- used by: 
  - element: activityProfileSet
- facets: 
  - Kind: Annotation
    min: 0
    max: 40
- annotation: documentation
  An activity profile type (e.g. reference to one of hourlyProfile, dailyProfile or weeklyProfile).

element engineModeEmissionFactors
diagram
element engineModeEmissionFactors/time

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation: Time engine operates in a given mode. Valid values: nonnegative. (minutes)</td>
</tr>
</tbody>
</table>

element engineModeEmissionFactors/fuel

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation: Rate of fuel burn in given mode. Valid values: nonnegative. (kg/s)</td>
</tr>
</tbody>
</table>

element engineModeEmissionFactors/CO

diagram

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>time, fuel, CO, HC, NOx, PM, SN</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation: Supports legacy EDMS studies relating to content contained in the USER_CREATED_AIRCRAFT table. This element supports the definition of custom emission factor elements.</td>
</tr>
</tbody>
</table>
type xs:double

properties
minOcc 0
maxOcc 1
content simple
default 0

annotation documentation
Amount of carbon monoxide emitted. Valid values: nonnegative. (kg/s)

element engineModeEmissionFactors/HC
diagram

Amount of hydrocarbons emitted. Valid values: nonnegative. (kg/s)

type xs:double

properties
minOcc 0
maxOcc 1
content simple
default 0

annotation documentation
Amount of hydrocarbons emitted. Valid values: nonnegative. (kg/s)

element engineModeEmissionFactors/NOx
diagram

Amount of nitrous oxide emitted. Valid values: nonnegative. (kg/s)

type xs:double

properties
minOcc 0
maxOcc 1
content simple
default 0

annotation documentation
Amount of nitrous oxide emitted. Valid values: nonnegative. (kg/s)

element engineModeEmissionFactors/PM
diagram

Amount of particulate matter emitted. Valid values: nonnegative. (kg/s)

type xs:double

properties
minOcc 0
maxOcc 1
content simple
default 0

annotation documentation
Amount of particulate matter emitted. Valid values: nonnegative. (kg/s)

element engineModeEmissionFactors/SN
diagram

Smoke number for the engine mode. Valid values: nonnegative. (kg/s)

type xs:double

properties
minOcc 0
maxOcc 1
Smoke number for the engine mode. Valid values: nonnegative. (kg/s)

**element gate**

- **name**: identifying name of gate.
- **elevation**: gate's elevation above mean sea level in meters. Valid values: 500 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 EDMS Application Manual. Valid values: variable, by airport. (m)
- **sigmaZ**: vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: variable, by airport. (m)
- **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**

- **type**: string 40

**properties**
- **content**: simple

**facets**
- minLength: 0
- maxLength: 40

**annotation documentation**
Identifying name of gate.

**element gate/elevation**

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

**Element: gate/releaseHeight**

Diagram:
```
ReleaseHeight
Height above ground level at which emissions are released into the atmosphere. Valid values: Variable, by airport. (m)
```

Type: xs:double

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

Annotation: Documentation

**Element: gate/sigmaY**

Diagram:
```
SigmaY
Horizontal dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: Variable, by airport. (m)
```

Type: xs:double

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

Annotation: Documentation

**Element: gate/sigmaZ**

Diagram:
```
SigmaZ
Vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: Variable, by airport. (m)
```

Type: xs:double

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

Annotation: Documentation

**Element: gateSet**

Diagram:
```
gateSet
This element supports the definition of gates within an airport layout. In dispersion analyses, AGU and APU emissions originate from the gate locations. Gates are needed for sequence modeling, which includes all dispersion analyses.
```

Supports legacy EDMS studies relating to content contained in the GATES table. This element supports the definition of gates within an airport layout.
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.
Describes a grid of points.

**element grid/dynamic**

- **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.

**element grid/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.

**element grid/receptorHeight**

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

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

**element grid/width**

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

**annotation**: documentation
Width of the grid. (nm)
<table>
<thead>
<tr>
<th>element</th>
<th>grid/height</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of grid height" /></td>
</tr>
</tbody>
</table>

- **Type:** xs:double
- **Properties:** content simple
- **Annotation:** documentation
  
  Width of the grid. (nm).

<table>
<thead>
<tr>
<th>element</th>
<th>grid/numWidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of numWidth" /></td>
</tr>
</tbody>
</table>

- **Type:** xs:int
- **Properties:** content simple
- **Annotation:** documentation
  
  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 $i \times \frac{\text{width}}{\text{numWidth}}$ where $i$ is the index of the point (0 ... numWidth - 1). Valid values: 1 to 999.

<table>
<thead>
<tr>
<th>element</th>
<th>grid/numHeight</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of numHeight" /></td>
</tr>
</tbody>
</table>

- **Type:** xs:int
- **Properties:** content simple
- **Annotation:** documentation
  
  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 $i \times \frac{\text{height}}{\text{numHeight}}$ where $i$ is the index of the point (0 ... numHeight - 1). Valid values: 1 to 999.

<table>
<thead>
<tr>
<th>element</th>
<th>grid/xrOffset</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of xrOffset" /></td>
</tr>
</tbody>
</table>

- **Type:** xs:double
- **Properties:** minOcc 0, maxOcc 1, default 0
- **Annotation:** documentation
  
  The X-offset of the receptor grid in nautical miles.

<table>
<thead>
<tr>
<th>element</th>
<th>grid/ydOffset</th>
</tr>
</thead>
</table>


diagram

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

type xs:double

properties

- minOcc 0
- maxOcc 1
- content simple
default 0

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

element groundSupportEquipmentGateAssignment

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

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

diagram

Gate to which GSE is assigned.

type string20

properties

- content simple

used by

element gateSet

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>20</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Gate to which GSE is assigned.

element groundSupportEquipmentGateAssignment/fractionAssigned

diagram

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.

type doubleInclusive1

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
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

...
element groundSupportEquipmentLTEOperation

properties content complex
children gseID fuelType horsepower loadFactor manufactureYear departureOpTime arrivalOpTime
used by element groundSupportEquipmentLTEOperationSet
annotation documentation Describes operation of GSE operation.

element groundSupportEquipmentLTEOperation/gseID

properties content simple
type xs:int

annotation documentation The GSE ID.

element groundSupportEquipmentLTEOperation/fuelType

properties content

type fuelType
<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td>pattern</td>
<td>G</td>
</tr>
</tbody>
</table>

**element groundSupportEquipmentLTOOperation/horsepower**

- **diagram**
  - **horspower**
    - GSE horsepower in bore hp. Valid values: 0.00 to 10000.00. (hp)

- **type** xs:double
- **properties**
  - minOcc 0
  - maxOcc 1
- **content simple**
- **annotation documentation**
  - GSE horsepower in bore hp. Valid values: 0.00 to 10000.00. (hp)

**element groundSupportEquipmentLTOOperation/loadFactor**

- **diagram**
  - **loadFactor**
    - Load factor of GSE (will be empty for APU). Valid values: 0.00 to 100.00.

- **type** xs:double
- **properties**
  - minOcc 0
  - maxOcc 1
- **content simple**
- **annotation documentation**
  - Load factor of GSE (will be empty for APU). Valid values: 0.00 to 100.00.

**element groundSupportEquipmentLTOOperation/manufactureYear**

- **diagram**
  - **manufactureYear**
    - 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.)

- **type** xs:int
- **properties**
  - minOcc 0
  - maxOcc 1
- **content simple**
- **annotation 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.)

**element groundSupportEquipmentLTOOperation/departureOpTime**

- **diagram**
  - **departureOpTime**
    - The number of minutes used for a departure aircraft operation. Valid values: 0.00 to 480.00. (min)

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

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

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.

**children**
- `groundSupportEquipmentLTOOperation`

**used by** `complexType` `aircraftType`

**annotation**: documentation

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.

**element** `groundSupportEquipmentPopulationOperation`

- **diagram**
- **properties** `content complex`
- **children**
  - `groundSupportEquipmentLTOOperation`
- **used by** `complexType` `aircraftType`

**annotation**: documentation

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.
The GSE ID.

The type of GSE.

GSE number of units. Valid values 0 to 10000.

Operation time, yearly. Valid values 0 to 8760 (h).

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

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 defined version flag.

The manufacture year and age of the equipment. If not using system defaults. Valid values 1999 to 2050. (Latest valid date will be the year of the study.)

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.

element groundSupportEquipmentPopulationOperation/gseID
diagram

F gseID
The GSE ID.

type xs:int

properties content simple

annotation documentation
The GSE ID.

element groundSupportEquipmentPopulationOperation/fuelType
diagram

F fuelType
The type of GSE.

type fuelType
<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>pattern</td>
</tr>
</tbody>
</table>

**element groundSupportEquipmentPopulationOperation/gseType**

**diagram**

`gseType`

The type of GSE.

**type** `xs:string`

**properties** content simple

**annotation** documentation

The type of GSE.

**element groundSupportEquipmentPopulationOperation/numUnits**

**diagram**

`numUnits`

GSE number of units. Valid values: 0 to 10000.

**type** `xs:double`

**properties** content simple

**annotation** documentation

GSE number of units. Valid values: 0 to 10000.

**element groundSupportEquipmentPopulationOperation/annualOpTime**

**diagram**

`annualOpTime`

Operation time, yearly. Valid values: 0 to 8784. (hr)

**type** `xs:double`

**properties** content simple

**annotation** documentation

Operation time, yearly. Valid values: 0 to 8784. (hr)

**element groundSupportEquipmentPopulationOperation/pkQtrHourOpTime**

**diagram**

`pkQtrHourOpTime`

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

**type** `xs:double`

**properties** content simple

**annotation** documentation

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

**element groundSupportEquipmentPopulationOperation/activityProfile**

**diagram**

`activityProfile`

Activity profile; (quarterly, daily, monthly).

**type** `string40`

**properties** content simple

**used by** element `activityProfileSet`

**facets** Kind | Value | Annotation
<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>40</td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

Activity profile; (quarterly, daily, monthly).
element groundSupportEquipmentPopulationOperation/horsepower
diagram


type xs:double
properties
minOcc 0
maxOcc 1
content simple
annotation documentation
Horsepower is in hp units. Valid values: 0 to 10000. (hp)


element groundSupportEquipmentPopulationOperation/loadFactor
diagram


type xs:double
properties
minOcc 0
maxOcc 1
content simple
annotation documentation
Load factor of GSE. (Will be empty for APU.) Valid values: 0 to 100.


element groundSupportEquipmentPopulationOperation/useNonRoad
diagram


type xs:boolean
properties
content simple
annotation documentation
User non-road version flag.


element groundSupportEquipmentPopulationOperation/manufactureYear
diagram


type xs:int
properties
minOcc 0
maxOcc 1
content simple
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.)


element groundSupportEquipmentPopulationOperationSet
diagram

properties
content complex
children
groundSupportEquipmentPopulationOperation
used by group airportActivityGroup
element monthlyProfile

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.

`profileName`

Name of profile.

`temporalFactor:January`

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

`temporalFactor:February`

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

`temporalFactor:March`

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

`temporalFactor:April`

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

`temporalFactor:May`

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

`temporalFactor:June`

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

`temporalFactor:July`

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

`temporalFactor:August`

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

`temporalFactor:September`

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

`temporalFactor:October`

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

`temporalFactor:November`

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

`temporalFactor:December`

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

properties
content complex

children

used by
element monthlyProfileSet

annotation documentation
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

diagram
type string

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

Name of profile.

element monthlyProfile/temporalFactorJanuary

diagram

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

type double

properties

<table>
<thead>
<tr>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</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>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

diagram

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

type double

properties

<table>
<thead>
<tr>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</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>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

diagram

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

type double

properties

<table>
<thead>
<tr>
<th>minOcc</th>
<th>maxOcc</th>
<th>content</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</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>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

 Factor applied to activity for operations during April. Valid values: 0.0000 to 1.0000.
<table>
<thead>
<tr>
<th>element</th>
<th>monthlyProfile/temporalFactorMay</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td>Factor applied to activity for operations during May. Valid values: 0.0000 to 1.0000.</td>
</tr>
<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 during May. Valid values: 0.0000 to 1.0000. |

<table>
<thead>
<tr>
<th>element</th>
<th>monthlyProfile/temporalFactorJune</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td>Factor applied to activity for operations during June. Valid values: 0.0000 to 1.0000.</td>
</tr>
<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 during June. Valid values: 0.0000 to 1.0000. |

<table>
<thead>
<tr>
<th>element</th>
<th>monthlyProfile/temporalFactorJuly</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td>Factor applied to activity for operations during July. Valid values: 0.0000 to 1.0000.</td>
</tr>
<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 during July. Valid values: 0.0000 to 1.0000. |

<table>
<thead>
<tr>
<th>element</th>
<th>monthlyProfile/temporalFactorAugust</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td>Factor applied to activity for operations during August. Valid values: 0.0000 to 1.0000.</td>
</tr>
<tr>
<td>type</td>
<td>doubleMin0</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
</tbody>
</table>
Factor applied to activity for operations during August. Valid values: 0.0000 to 1.0000.

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

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

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

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`

**Annotation Documentation:**
Supports the definition and use of MONTHLY_PROFILES for the monthly variation of operations.

---

**element `operation`**

**Diagram:**

- `id`: User specified identifier for the operation. One purpose served by the field is to allow the user to tie the ABDT 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 a 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. It, however, has no outside data source that needs to be tied to the ABDT AirOperations, or if such an 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 if the need ever arises. Nevertheless, one can leave all of 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.
- `aircraftType`: Type of aircraft in the flight.
- `cruiseAltitude`: Override aircraft cruise attitude for this operation, (ft)
- `numOperations`: Number of operations composing this operation.
- `opType`:
operation

Describes an aircraft flight operation.

carrier

Carrier flying the flight. Not fully supported in AEDT.

flightnumber

Flight number. Not fully supported in AEDT.

tailnumber

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

userdata

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

usertype

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

userParam

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

departureAirport

Departure airport's ICAO code. Required if the operation is used with a flightLegs or &flightLegs element. Also required if used with an &trackOpLegsElement modeling departures, circuits, runways, or touch-and-goes.

departureRunway

Airport's departure runway ID. Required if the operation is used with a flightLegs or &flightLegs element. Also required if used with an &trackOpLegsElement modeling departures, circuits, runways, or touch-and-goes.

departureGate

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

departureApuTime

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

arrivalAirport

Arrival airport's ICAO code. Required if the operation is used with a flightLegs or &flightLegs element. Also required if used with an &trackOpLegsElement modeling arrivals, circuits, runways, or touch-and-goes.

arrivalRunway

Airport's arrival runway ID. Required if the operation is used with a flightLegs or &flightLegs element. Also required if used with an &trackOpLegsElement modeling arrivals, circuits, runways, or touch-and-goes.

arrivalGate

Airport's arrival gate. Not fully supported in AEDT.

arrivalApuTime

Number of minutes the auxiliary power unit is attached to an arrival aircraft (min).

time

Wheels-off time. Required for any departure or runway, circuit, runway, or touch-and-go operation.

onTime

Wheels-on time. Required for any arrival operation.

enrouteStartTime

Time aircraft reaches the first
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 a unique number or set of characters. This will allow the user to distinguish the AirOperations. 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

- `aircraftType`: Type of aircraft in the flight.

- `anpAircraftId`/`airframeModel`/`engineCode`/`engineModCode`/`apuName`/`groundSupportEquipmentLTOperationSet`

annotation: 

<table>
<thead>
<tr>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of aircraft in the flight.</td>
</tr>
</tbody>
</table>

element operation/cruiseAltitude

diagram

- `cruiseAltitude`: Override aircraft cruise altitude for this operation. (ft)

annotation: 

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

element operation/numOperations

diagram

- `numOperations`: Number of operations comprising this operation.

annotation: 

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

element operation/opType

diagram

- `opType`: 

annotation: 

<table>
<thead>
<tr>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of operations comprising this operation.</td>
</tr>
</tbody>
</table>
### element operation/carrier

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /> Carrier flying the flight. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string4</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>content</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>
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<td>maxLength</td>
<td>4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carrier flying the flight. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

### element operation/flightNumber

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2.png" alt="Diagram" /> Flight number. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string16</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>content</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>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flight number. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

### element operation/tailNumber

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Diagram" /> Flight's tail number. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string8</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>content</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>
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<td>maxLength</td>
<td>8</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flight's tail number. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

### element operation/userType

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Diagram" /> User-defined aircraft type. Cannot be an aircraftType. Not fully supported in AEDT.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string12</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>content</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></td>
<td></td>
</tr>
</tbody>
</table>
User-defined aircraft type. Cannot be an aircraftType. Not fully supported in AEDT.

element operation/userParam

diagram

type string16

properties
minOcc 0
maxOcc 1
content simple

facets
Kind Value Annotation
minLength 0
maxLength 16

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

element operation/departureAirport

diagram

type airportCode

properties
minOcc 0
maxOcc 1
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
Departure airport's ICAO code. Required if the operation is used with a &lt;flight&gt; or &lt;operation&gt; element. Also required if used with a &lt;trackOpSet&gt; element. Modeling departures, circuits, runups, or touch-and-goes.

element operation/departureRunway

diagram

type string8

properties
minOcc 0
maxOcc 1
content simple

facets
Kind Value Annotation
minLength 0
maxLength 8

annotation documentation
element operation/departureGate

diagram Airport's departure gate. Not fully supported in AEDT.

type string40

properties
- minOcc 0
- maxOcc 1
  - content simple

facets
- Kind: Value Annotation
  - minLength: 0
  - maxLength: 40

annotation documentation Airport's departure gate. Not fully supported in AEDT.

element operation/departureApuTime

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

type xs:double

properties
- minOcc 0
- maxOcc 1
  - content simple

annotation documentation Number of minutes the auxiliary power unit is attached to a departing aircraft. (min)

element operation/arrivalAirport

diagram

properties
- minOcc 0
- maxOcc 1
  - 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 Arrival airport's ICAO code. Required if the operation is used with a &lt;flight&gt; or &lt;operation&gt; element. Also required if used with a &lt;trackOpSet&gt; modeling arrivals, circuits, runups, or touch-and-goes.

element operation/arrivalRunway
**Operation/Arrival Runway ID**

Type: `string8`

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

Facets:
- Kind: `Annotation`
- `minLength`: 0
- `maxLength`: 8

Annotation documentation:
Airport's arrival runway ID. Required if the operation is used with a `<flight>` or a `<trackOpSet>` modeling arrivals, circuits, runups, or touch-and-goes.

**Operation/Arrival Gate**

Type: `string40`

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

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

Annotation documentation:
Airport's arrival gate. Not fully supported in AEDT.

**Operation/Arrival Apu Time**

Type: `xs:double`

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

Annotation documentation:
Number of minutes the auxiliary power unit is attached to an arrival aircraft. (min)

**Operation/Off Time**

Type: `xs:dateTime`

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

Annotation documentation:
Wheels-off time. Required for any departure or runup, circuit, runup, or touch-and-go operation.

**Operation/On Time**

Diagram
element operation/enrouteStartTime

documentation
Wheels on time. Required for any arrival operation.

Time aircraft reaches the first en route node. Required for en route or overflight flights. Not fully supported in AEDT.

element operation/outTime

documentation
Time aircraft pushed back from the gate for a departure. When present, taxiOutDuration = (offTime - outTime). Not fully supported in AEDT.

element operation/taxiOutDuration

documentation
Number of seconds during taxi-out. Required for emissions modeling, optional for noise modeling. Not fully supported in AEDT. (s)

element operation/inTime

documentation
Time aircraft arrives at arrival gate. When present, taxiOutDuration = (onTime - inTime). Not fully supported in AEDT.
Time aircraft arrives at arrival gate. When present, \( \text{taxiInDuration} = (\text{onTime} - \text{inTime}) \).

**element operation/taxiInDuration**

- **diagram**
  - ![Diagram](image)
  - **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**
  - ![Diagram](image)
  - **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**
  - ![Diagram](image)
  - **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**
  - ![Diagram](image)
Override 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**

**element operation/badaProfiles**

**element operation/stageLength**
element operation/actypeWeight

```

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>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>operation/actypeWeight-Semitism</td>
<td>Aircraft's weight. (lb)</td>
</tr>
</tbody>
</table>

element operation/departureStageLength

```

diagram

```

<table>
<thead>
<tr>
<th>type</th>
<th>string1</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>

<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>operation/departureStageLength</td>
<td>Overrides default departure stage length. Applicable if the phase is a departure phase.</td>
</tr>
</tbody>
</table>

element operation/arrivalStageLength

```

diagram

```

<table>
<thead>
<tr>
<th>type</th>
<th>string1</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>

<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>operation/arrivalStageLength</td>
<td>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>
</tbody>
</table>
**element operation/glideSlope**

- **Diagram**: Glide slope angle for this operation. (degrees)
- **Type**: xs:double
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**: documentation

**element operation/fuelSulfurContent**

- **Diagram**: Sulfur content of the fuel used in this operation. (%)
- **Type**: xs:double
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**: documentation

**element operationalProfileSet**

- **Diagram**: operationalProfileSet
- **Properties**: content: complex
- **Children**: quarterHourlyProfileSet, dailyProfileSet, monthlyProfileSet, activityProfileSet
- **Used by**: element AsiXm1

**element operations**

- **Diagram**: operations
- **Properties**: content: complex
attribute operations/@dummy

type xs:int

properties use optional

element options

diagram

Contains default option values applied to the study.

properties content complex

children utmZoneDefault

used by element AsfXm1

annotation documentation

Default UTM zone number.

element options/utmZoneDefault

type xs:int

properties content simple
default -1

annotation documentation

Default UTM zone number.

element parkingFacility

diagram

Supports legacy EDMMS studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking space geometries for scenario layouts.

properties content complex
<table>
<thead>
<tr>
<th>children</th>
<th>name</th>
<th>numberOfLevels</th>
<th>topReleaseHeight</th>
<th>spacing</th>
<th>elevation</th>
<th>pointCoord</th>
<th>polygonCoords</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>annotation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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/name**

- **type**: `string40`
- **properties**: `content simple`

**element parkingFacility/numberOfLevels**

- **type**: `xs:int`
- **properties**: `minOcc 0`
- **properties**: `maxOcc 1`
- **content**: `default 1`

**element parkingFacility/topReleaseHeight**

- **type**: `xs:double`
- **properties**: `minOcc 0`
- **properties**: `maxOcc 1`

**element parkingFacility/spacing**

- **type**: `xs:double`
- **properties**: `minOcc 0`
- **properties**: `maxOcc 1`

**element parkingFacility/elevation**

- **type**: `xs:float`
**type**: xs:double

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

**annotation**
Elevation of parking facility in MSL. Valid values: range of 0 - 328, airport specific.(m)

**element parkingFacilityOperation**

- **diagram**

  - **refName**
    - Identifying name of parking facility.

  - **useAnnualFigures**
    - Indicates if the quantities in the element are annualized.

  - **vehicleType**
    - Type of vehicle involved in the operation. Valid values:
      - 0 = Default Fleet Mix
      - 1 = Passenger Car
      - 2 = Light Truck 1
      - 3 = Light Truck 2
      - 4 = Light Truck 3
      - 5 = Light Truck 4
      - 6 = Class 11
      - 7 = Heavy Trucks
      - 8 = Class 2
      - 9 = Class 3
      - 10 = Class 4
      - 11 = Class 5
      - 12 = Class 6
      - 13 = Class 7
      - 14 = Class 8
      - 15 = School Bus
      - 16 = Transit and Urban Buses
      - 17 = Motorcycle

  - **emissionsUsage**
    - Describes the amount of emissions for a given activity profile.

  - **averageSpeed**
    - Average speed during the operation. Valid values: 2.5 to 40, (mph)

  - **averageDistanceTraveled**
    - Average distance traveled during the operation. Valid values: 0 to 32000, (m)

  - **averageIdleTime**
    - Average time vehicle is idle while conducting the operation. Valid values: 0 to 30, (min)

  - **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**
- refName
- useAnnualFigures
- vehicleType
- fuelType
- emissionsUsage
- averageSpeed
- averageDistanceTraveled
- averageIdleTime
- vehicleEmissionFactors

**used by**
- element parkingFacilityOperationSet

**annotation**
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.
element parkingFacilityOperation/refName

diagram

```
refName
Identifying name of parking facility.
```

type string40

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 40

annotation documentation
Identifying name of parking facility.

element parkingFacilityOperation/useAnnualFigures

diagram

```
useAnnualFigures
Indicates if the quantities in the element are annualized.
```

type xs:boolean

properties minOcc 0
maxOcc 1
content simple
default false

annotation documentation
Indicates if the quantities in the element are annualized.

element parkingFacilityOperation/vehicleType

diagram

```
vehicleType
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 Busses, 16 = Motorcycle.
```

type groundVehicleType

properties content simple

facets Kind Value Annotation
pattern 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 Busses|16|Motorcycle

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

```
fuelType
Type of fuel involved in the operation.
```

type fuelType

properties minOcc 0
maxOcc 1
content simple
default G
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>G</td>
<td>Gasoline</td>
<td>D</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 to 40. (mph)
- **Type**: xs:double
- **Properties**
  - minOcc 0
  - maxOcc 1
  - content simple
  - default 10
- **Annotation documentation**: Average speed during the operation. Valid values: 2.5 to 40. (mph)

**element parkingFacilityOperation/averageDistanceTraveled**

- **Diagram**
  - Average distance traveled during the operation. Valid values: 0 to 32808. (m)
- **Type**: xs:double
- **Properties**
  - minOcc 0
  - maxOcc 1
  - content simple
  - default 0
- **Annotation documentation**: Average distance traveled during the operation. Valid values: 0 to 32808. (m)

**element parkingFacilityOperation/averageIdleTime**

- **Diagram**
  - Average time vehicle is idle while conducting the operation. Valid values: 0 to 30. (min)
- **Type**: xs:double
- **Properties**
  - minOcc 0
  - maxOcc 1
  - content simple
  - default 0
- **Annotation documentation**: Average time vehicle is idle while conducting the operation. Valid values: 0 to 30. (min)

**element parkingFacilityOperationSet**

- **Diagram**
  - 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**
  - parkingFacilityOperation
- **Used by**
  - group airportActivityGroup
- **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.
**element parkingFacilitySet**

- **diagram**

```
+---+-----------------+---+
|   | parkingFacilitySet |   |
|   +---+--------------+   |
|     | parkingFacility |   |
```

- **properties**
  - content complex

- **children**
  - parkingFacility

- **used by**
  - complexType `airport_layoutType`

- **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.

**element pointReceptor**

- **diagram**

```
+---+----------+---+---+---+---+
|   | pointReceptor |   |   |   |   |
|   +--------------+---+---+---+---+
|     | name         | coord2DGroup |   |   |   |
|     +--------------+---+---+---+---+
|     | latitude     | latitudeDMS |   |   |   |
|     | longitude    | longitudeDMS |   |   |   |
|     | elevation    |               |   |   |   |
|     | receptorHeight |              |   |   |   |
|     +--------------+---+---+---+---+
|     | coord2DGroup |   |   |   |   |
|     |             |               |   |   |   |
|     |             |               |   |   |   |
|     |             |               |   |   |   |
|     |             |               |   |   |   |
|     |             |               |   |   |   |
```

- **properties**
  - content complex

- **children**
  - name latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation receptorHeight

- **used by**
  - group `receptorGroup`

- **annotation**
  - documentation
    Element specification for a point receptor.
**element pointReceptor/elevation**

- **Diagram**: Elevation of the receptor above MSL. (ft.)
- **Type**: `xs:double`
- **Properties**:
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: simple
- **Annotation**: Elevation of the receptor above MSL. (ft.)

**element pointReceptor/receptorHeight**

- **Diagram**: Height of the receptor above ground (ft.)
- **Type**: `xs:double`
- **Properties**:
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: simple
- **Annotation**: Height of the receptor above ground (ft.)

**element pointStationarySource**

- **Diagram**:
  - `pointCoord`
  - `baseElevation`
  - `releaseHeight`
  - `gasVelocity`
  - `stackDiameter`
  - `temperature`
  - `aboveAmbientTemperature`
- **Properties**: content complex
- **Children**: `pointCoord` `baseElevation` `releaseHeight` `gasVelocity` `stackDiameter` `temperature` `aboveAmbientTemperature`
used by:  element `stationarySource`

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

### element `pointStationarySource/pointCoord`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th><code>coord2DType</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content: complex</td>
</tr>
<tr>
<td>children</td>
<td><code>latitude longitude longitudeDMS utmN utmE utmZone</code></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation: Type of 2-D coordinates specifying the point.</td>
</tr>
</tbody>
</table>

### element `pointStationarySource/baseElevation`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th><code>xs:double</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content: simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation: Elevation of point. Valid values: -500 to 5000. (m)</td>
</tr>
</tbody>
</table>

### element `pointStationarySource/releaseHeight`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th><code>doubleInclusive100</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td><code>minOcc 0 maxOcc 1 content: simple</code></td>
</tr>
</tbody>
</table>
element pointStationarySource/gasVelocity

diagram

```
Velocity at which gas escapes from the source. Valid values: 1 to 30 (m/s)
```

type doubleInclusiveRange1to30

properties

minOcc 0
maxOcc 1
ccontent 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

```
Diameter of stack where gas escapes from the source. Valid values: 0.1 to 50 (m)
```

type doubleExclusive0Inclusive10

properties

minOcc 0
maxOcc 1
ccontent simple
default 0.1

facets Kind Value Annotation
maxInclusive 10
minExclusive 0

annotation documentation

Diameter of stack where gas escapes from the source. Valid values: 0.1 to 50 (m)

element pointStationarySource/temperature

diagram

```
Temperature at point. Valid values 0 to 600 (°F)
```

type doubleInclusiveRange0to600

properties

minOcc 0
maxOcc 1
ccontent simple
default 32

facets Kind Value Annotation
minInclusive 0
maxInclusive 600

annotation documentation

Temperature at point. Valid values: 0 to 600, (°F)

element pointStationarySource/aboveAmbientTemperature

diagram

```
Indicates if temperature is absolute (False) or if temperature is relative to current ambient temperature (True).
```

null
element polarGrid

supports related DOMS studies relating to the NETWORK_POLAR_RECEP_TORS table. Two-dimensional grid of individual receptors over an annular sector (polar) of the airport or study area.

type \textit{xs:boolean}

properties
- \textit{minOcc} 0
- \textit{maxOcc} 1
- \textit{content} simple
- \textit{default} false

annotation documentation
Indicates if temperature is absolute (False) or if temperature is relative to current ambient temperature (True).
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**

- **Diagram**
  - `originSource`
  - Diagram: "originSource"
- **Type** `originSourceType`
- **Properties** content `simple`
- **Facets**
  - `pattern`: Gate|Parking Facility|Roadway|Runway|Stationary Source|Taxiway|Training Fire
- **Annotation** documentation

Refers to an existing gate, parking facility, roadway, runway, stationary source, taxiway, or training fire.

**Element polarGrid/originName**

- **Diagram**
  - `originName`
  - Diagram: "originName"
- **Type** `string40`
- **Properties** content `simple`
- **Facets**
  - `minLength`: 0
  - `maxLength`: 40
- **Annotation** documentation

Refers to an existing gate, parking facility, roadway, runway, stationary source, taxiway, or training fire.

**Element polarGrid/elevation**

- **Diagram**
  - `elevation`
  - Diagram: "elevation"
- **Type** `xs:double`
- **Properties**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: `simple`
- **Annotation** documentation

Altitude of point (meters).

**Element polarGrid/height**

- **Diagram**
  - `height`
  - Diagram: "height"
- **Type** `xs:double`
- **Properties**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: `simple`
- **Annotation** documentation

Height of point (meters).
**element polarGrid/ringStart**
- **type**: `xs:double`
- **properties**: `minOcc 0`, `maxOcc 1`, `default 0`
- **annotation**: documentation

Initial radius of first ring from center point.

**element polarGrid/ringSpacing**
- **type**: `xs:double`
- **properties**: `minOcc 0`, `maxOcc 1`, `default 1`
- **annotation**: documentation

Spacing between rings starting from the first ring. Valid values: 0 to 1000.

**element polarGrid/ringCount**
- **type**: `xs:int`
- **properties**: `minOcc 0`, `maxOcc 1`, `default 1`
- **annotation**: documentation

Total number of rings, including first ring. Valid values: 0 to 100.

**element polarGrid/vectorStart**
- **type**: `xs:double`
- **properties**: `minOcc 0`, `maxOcc 1`, `default 0`
- **annotation**: documentation

Angle of point along a ring. 0 = north. Valid values: 0 to 360 (degrees)
**element polarGrid/vectorSpacing**

- **diagram**

- **type** `xs:double`

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

- **annotation**
  - `documentation` Number of degrees between receptors. Valid values: 1 to 90. (degrees)

**element polarGrid/vectorCount**

- **diagram**

- **type** `xs:int`

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

- **annotation**
  - `documentation` Number of receptors along the ring. Valid values: 1 to 36.

**element polarGrid/xrOffset**

- **diagram**

- **type** `xs:double`

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

- **annotation**
  - `documentation` The X-offset of the receptor grid in nautical miles.

**element polarGrid/ydOffset**

- **diagram**

- **type** `xs:double`

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

- **annotation**
  - `documentation` The Y-offset of the receptor grid in nautical miles.

**element polarReceptor**

- **diagram**

- **type**

- **properties**

- **annotation**

- **documentation**

- **default**

- **content**

- **minOcc**

- **maxOcc**
Supports legacy EDMS studies relating to the NETWORK_POLAR_RECEPTORS and DISCRETE_POLAR_RECEPTORS table. Defines receptor points within a polar grid.

**element polarReceptor/originSource**

- **diagram**
- **type** `originSourceType`
- **properties** `content simple`
- **facets**
  - pattern `Gate|Parking Facility|Roadway|Runway|Stationary Source|Taxiway|Training Fire`

**element polarReceptor/originName**

- **diagram**
<table>
<thead>
<tr>
<th>element</th>
<th>polarReceptor/distanceFromSource</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="distanceFromSource" /></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 | Distance of point from polar origin. Valid values: 0 through 9999999.999999 (ft) |

<table>
<thead>
<tr>
<th>element</th>
<th>polarReceptor/directionFromSource</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="directionFromSource" /></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 | Direction of point from polar origin. Valid values: 0 through 360. (degrees) |

<table>
<thead>
<tr>
<th>element</th>
<th>polarReceptor/elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="elevation" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
</tbody>
</table>
| properties | | minOcc 0  
 maxOcc 1  
 content simple  
 default 0 |
| annotation | documentation |
| documentation | Altitude of point. (meters). |

<table>
<thead>
<tr>
<th>element</th>
<th>polarReceptor/height</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="height" /></td>
</tr>
<tr>
<td>type</td>
<td><code>xs:double</code></td>
</tr>
</tbody>
</table>
| properties | | minOcc 0  
 maxOcc 1  
 content simple  
 default 0 |
| annotation | documentation
### Element: `quarterHourlyProfile`

**Diagram:**

- **Profile Name:** Name of profile.
- **Temporal Factor:** Factor applied to activity for operations during the indicated quarter hour. Valid values: 0.0000 to 1.0000.

**Properties:**
- **content:** complex

**Children:**
- `profileName`
- `temporalFactor`

**Use by:**
- `quarterHourlyProfileSet`

**Annotation Documentation:**
Supports legacy EDM studies relating to content contained in the QUARTER_HOURLY_PROFILES. This element supports the definition of temporal factors on a quarter-hourly operational basis.

### Element: `quarterHourlyProfile/profileName`

**Diagram:**

- **Name:** Name of profile.

**Type:** string

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

**Facets:**
- Kind: Value: Annotation
  - minLength: 0
  - maxLength: 100

**Annotation Documentation:**
Name of profile.

### Element: `quarterHourlyProfile/temporalFactor`

**Diagram:**

- **Start Hour:** The starting hour as an integer between 0 and 23.
- **Start Minutes:** The starting quarter-hourly minute value as either 0, 15, 30, or 45.

**Type:** extension of `doubleMin0`

**Properties:**
- minOcc: 0
- maxOcc: unbounded

**Content:** complex

**Facets:**
- Kind: Value: Annotation
  - minInclusive: 0

**Attributes:**
- **Name:** int
- **Type:** int
- **Use:** required
- **Default:**
- **Fixed:**

**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:** int

- **Use:** required
- **Default:**
- **Fixed:**

**Annotation Documentation:**
The starting hour as an integer between 0 and 23.

### Attribute `quarterHourlyProfile/temporalFactor/@startMinutes`

**Type:** quarterHourMinutes

- **Use:** required

**Annotation Documentation:**
The starting quarter-hourly minute value as either 0, 15, 30, or 45.
The starting hour as an integer between 0 and 23.

The starting quarter-hourly minute value as either 0, 15, 30, or 45.

Supports the definition and use of QUARTER_HOURLY_PROFILES for the quarter hourly variation of operations.
**Properties**

- Content: complex

**Children**

- `name`
- `centroid`
- `pointReceptor`
- `grid`
- `polarReceptor`
- `polarGrid`

**Used by**

- `AsfXml:study`

**Annotation**

- Documentation: Contains one or more receptor sets at various locations.

---

**Element: `receptorSet/name`**

**Diagram**

- `name`

**Type**

- `string255`

**Properties**

- Content: simple

**Facets**

- Kind: string255
- Value: Description of the receptor set.
- Annotation: Descriptive name of the receptor set.

**Annotation**

- Documentation: Descriptive name of the receptor set.

---

**Element: `recordCode`**

**Diagram**

- `recordCode`

**Type**

- `union of (restriction of xs:int, restriction of xs:int)`

**Properties**

- Content: simple

**Used by**

- `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**

**diagram**

```
roadway
   name
   width
```

- **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**

**diagram**

```
name
```

- **type** string40
- **properties** content simple
- **facets** Kind Value Annotation
  - minLength 0
  - maxLength 40
- **annotation** documentation
  Identifying name for the roadway.

**element roadway/width**

**diagram**

```
width
```

- **type** xs:double
- **properties** minOccurs 0
  - maxOcc 1
  - content simple
  - default 0
- **annotation** documentation
  Roadway’s width. Valid values: 1 to 99. (m)

**element roadway/coordinates**

**diagram**

```
coordinates
```

- **properties** minOccurs 0
  - maxOcc 1
  - content complex
- **children** vertex
- **annotation** documentation
  Set of three-dimensional coordinates describing the roadway.
element roadway/coordinates/vertex

diagram

type coord3DElevationType

properties
  minOcc 2
  maxOcc unbounded
  content complex

children
  latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation

annotation
documentation
  A point representing one of the coordinates.

element roadwayOperation

diagram
roadwayOperation

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.

element roadwayOperation/refName

diagram

refName

Identifying name of roadway operation.

type string40

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 40

annotation documentation
Identifying name of roadway operation.

element roadwayOperation/useAnnualFigures

diagram

useAnnualFigures

Indicates if the quantities in the element are annualized.

vehicleType

Type of vehicle involved in the operation. Valid values (the numeric corresponds to the text value other are valid) 0 = Default Fleet, 1 = Passenger Cars, 2 = Light Trucks 1, 3 = Light Trucks 2, 4 = Light Trucks 3, 5 = Light Trucks 4, 6 = Class 1 Heavy Trucks, 7 = Class 2 Heavy Trucks, 8 = Class 3 Heavy Trucks, 9 = Class 4 Heavy Trucks, 10 = Class 5 Heavy Trucks, 11 = Class 6 Heavy Trucks, 12 = Class 7 Heavy Trucks, 13 = Class 8 Heavy Trucks, 14 = School Buses, 15 = Transit and Urban Buses, 16 = Motorcycle.

fuelType

Type of fuel involved in the operation. Valid values G = gasoline, D = diesel.

emissionsUsage

Describes the amount of emissions for a given activity profile.

vehicleEmissionFactors

Supports legacy EDMS studies relating to content contained in the ROADWAYS table. This element supports the definition of custom emission factor specifications for roadways and parking.

speed

Speed during the operation. Valid values 5 to 65 (mph).

roundTripDistance

Round trip vehicle distance. (mi)
**element roadwayOperation/vehicleType**

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

**annotation documentation**
Indicates if the quantities in the element are annualized.

**element roadwayOperation/vehicleType**

**diagram**

```
<type> vehicleType</type>
```

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/>
```

Type of fuel involved in the operation. Valid values: G = gasoline, D = diesel.
element roadwayOperation/roundTripDistance

documentation
Speed during the operation. Valid values: 5 to 65. (mph)

type doubleInclusive4000

properties
minOcc 0
maxOcc 1

facets
minInclusive 0
maxInclusive 4000

annotation
documentation
Round trip vehicle distance. (mi)

element roadwayOperationSet

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.

properties
content complex

children
roadwayOperation

used by
group airportActivityGroup

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.

element roadwaySet

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.

properties
content complex

children
roadway

used by
complexType airportLayoutType

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.

element runway

annotation
Describes dimensions of a runway.

**element runway/length**

- **diagram**
  - Length of runway. Valid values: nonnegative. (ft)
- **type** `xs:short`
- **properties** content simple
- **annotation** documentation
  - Length of runway. Valid values: nonnegative. (ft)

**element runway/width**

- **diagram**
  - Width of runway. Valid values: nonnegative. (ft)
- **type** `xs:short`
- **properties** content simple
- **annotation** documentation
  - Width of runway. Valid values: nonnegative. (ft)

**element runway/runwayEnd**

- **diagram**

  1.2 Characterizes the runway's endpoint.
runwayEnd

- **name**
  - ID of the runway's endpoint.

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

- **latitudeDMS**
  - Latitude expressed as d°m'ss' with optional indicator N, S, +.

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

- **longitudeDMS**
  - Longitude expressed as d°m'ss' with optional indicator N, E, W.

- **elevation**
  - Runway endpoint's elevation above MSL in feet. (ft)

- **threshCrossHeight**
  - Approach threshold crossing height limit. (ft)

- **threshElevation**
  - Elevation of runway's endpoint above or below MSL. (ft)

- **glideSlope**
  - Glide slope for runway's endpoint. Valid values 2 to 6 (degrees).

- **incidence**
  - Altitude at which glide slope should be intercepted above ground level. (ft)

- **depDispThresh**
  - Displaced threshold length at departure end of runway. (ft)

- **arrDispThresh**
  - Displaced threshold length at arrival end of runway. (ft)

- **percentThick**
  - Percent change in airport average headwind. (ft)

- **isHellipad**
  - Indicates if this end of the runway is also a helipad. Valid values Y = yes, N = no.
Properties

<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc: 1</th>
<th>maxOcc: 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>complex</td>
<td></td>
</tr>
</tbody>
</table>

Children

- name
- latitude
- latitude DMS
- longitude
- longitude DMS
- utm N
- utm E
- utm Zone
- elevation
- thresh Cross Height
- thresh Elevation
- glide Slope
- intAltitude
depDispThresh
appDispThresh
percent Wind
isHelpad

Annotation
documentation
- Characterizes the runway’s endpoint.

Element: runwayAssignment

Diagram

```
runwayAssignment

| Name of the runway |
| Aircraft Size |
| Arrival Percentage |
| Departure Percentage |
| Tgo Percentage |
```

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

```
aircraftSize
```

Type

- AircraftSizeType

Properties

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

Facets

<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>

Element: runwayAssignment/runway

Diagram

```
runway
```

type

- string 8

Properties

- 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: 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxLength: 8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Annotation
documentation
- Name of the runway.

Element: runwayAssignment/arrivalPercentage
element runwayAssignment/departurePercentage

diagram

Type: doubleInclusive100

Properties minOcc 0, maxOcc 1, content simple

Facets Kind: Value Annotation, minInclusive 0, maxInclusive 100

Annotation: Percentage of departures of the given aircraft size using this runway. Valid values: 0 to 100. (%) 

element runwayAssignment/tgoPercentage

diagram

Type: doubleInclusive100

Properties minOcc 0, maxOcc 1, content simple

Facets Kind: Value Annotation, minInclusive 0, maxInclusive 100

Annotation: 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.

Properties content complex

Children: runwayAssignment

Used by: element airportConfig

Annotation: Defines an assignment of operations to runways by aircraft size.
element `scenario`

Encapsulates a scenario - such as Baseline or Alternative.

- `name` - Description of scenario.
- `startTime` - Start time of scenario. Accepts dateTime string.
- `duration` - Scenario's duration (hs).
- `taxiModel` - Taxi model for scenario.
- `timeInModeBasis` - 
- `actPerfModel` - Aircraft performance model.
- `bankAngle` - 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.
- `altitudeCutoff` - Altitude in MAA to cutoff trajectory modeling for the scenario. The constant altitude cutoff only affects noise impact calculation in AEDT. Fuel burn and emissions will be calculated until a flight reaches the study boundary, (ft).
- `sulfurConversionRate` - Portion of sulfur in the fuel that, when combusted, becomes sulfuric acid used for emissions calculations, (%).
- `fuelSulfurContent` - Percentage, by weight, of sulfur in the fuel used for emissions calculations. Default Value 0.0096 (0.96%) (%).
- `description` - A description of the scenario.
- `scenarioAirportLaytoutSet` - Contains a set of airport layout types.
- `caseSet` - Placeholder for one or more cases.
- `annualization` - Contains a periodization for ARF partial import into an existing study.

properties

- `content` - complex

children

- `runway`
Encapsulates a scenario - such as Baseline or Alternative

**element scenario/name**

- **Diagram**
  - Description of scenario.
- **Type** `string255`
- **Properties** `content` simple
- **Facets**
  - Kind Value Annotation
  - `minLength` 0
  - `maxLength` 255
- **Annotation**
  - Documentation
  - Description of scenario.

**element scenario/startTime**

- **Diagram**
  - 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**
  - Scenario's duration (hr).
- **Type** `xs:int`
- **Properties** `content` simple
- **Annotation**
  - Documentation
  - Scenario's duration (hr).

**element scenario/transportMode**

- **Diagram**
  - 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**
  - Time in mode basis.
- **Type** `timeInModeBasisType`
- **Properties**
  - `minOcc` 0
  - `maxOcc` 1
  - `content` simple
<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>default</td>
<td>ICAO</td>
<td></td>
</tr>
</tbody>
</table>

**element scenario/actfPerfModel**

- diagram: `actfPerfModel`
  - 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: `bankAngle`
  - 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

**element scenario/altitudeCutoff**

- diagram: `altitudeCutoff`
  - 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

**element scenario/sulfurConversionRate**

- diagram: `sulfurConversionRate`
  - Portion of sulfur in the fuel that, when combusted, becomes sulfuric acid used for emissions calculations. (%)
**element scenario/fuelSulfurContent**

- **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**

- **type**: string255
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **facets**:
  - Kind: Annotation
  - minLength: 0
  - maxLength: 255
- **annotation documentation**: A description of the scenario.

**element scenarioAirportLayoutSet**

- **content**: complex
- **children**:
  - scenarioAirportLayout
- **used by**:
  - element scenario
- **attributes**:
  - Name: scenarioAirportLayoutSet/@dummy
  - Type: xs:int
  - Use: optional
- **annotation documentation**: Contains a set of airport layout types.

**attribute scenarioAirportLayoutSet/@dummy**

- **type**: xs:int
- **properties**:
  - use: optional
Airport layout type.

**Properties**
- `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

diagram

Describes a single node of a radar flight path.

properties  content complex

children  lat long altitude messageTime sequenceNum speed thrust source

used by  element sensorPath

annotation  documentation

Describes a single node of a radar flight path.

element sensorNode/lat

diagram

Latitude for this location (decimal degrees).

type  xs:double

properties  content simple

annotation  documentation

Latitude for this location (decimal degrees).

element sensorNode/long

diagram

Longitude for this location (decimal degrees).

type  xs:double

properties  content simple

annotation  documentation

Longitude for this location (decimal degrees).

element sensorNode/altitude

diagram

Altitude at this location (ft)

type  xs:double
properties | content simple
annotation | documentation
Altitude at this location (ft)

**element sensorNode/messageTime**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time aircraft reaches this location. NOTE: Not used in AEDT.</td>
</tr>
</tbody>
</table>

type | xs:dateTime
properties | content simple
annotation | documentation
Time aircraft reaches this location. NOTE: Not used in AEDT.

**element sensorNode/sequenceNum**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order of this location in node list.</td>
</tr>
</tbody>
</table>

type | xs:int
properties | content simple
annotation | documentation
Order of this location in node list.

**element sensorNode/speed**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground speed of aircraft at this location (kts).</td>
</tr>
</tbody>
</table>

type | xs:double
properties | minOcc 0 maxOcc 1 content simple
annotation | documentation
Ground speed of aircraft at this location (kts).

**element sensorNode/thrust**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrust of aircraft at this location. NOTE: Not used in AEDT.</td>
</tr>
</tbody>
</table>

type | xs:double
properties | minOcc 0 maxOcc 1 content simple
annotation | documentation
Thrust of aircraft at this location. NOTE: Not used in AEDT. (lb)

**element sensorNode/source**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of the data for this node. NOTE: Not used in AEDT.</td>
</tr>
</tbody>
</table>

type | string255
properties | minOcc 0 maxOcc 1 content simple
facets | Kind Value Annotation
**element sensorPath**

- **Diagram**: Describes a flight path based on radar data.
  
  Describes a single node of a radar flight path.

- **Properties**: content complex

- **Children**: sensorNode

- **Used by**: element trackOpSet

- **Annotation**: documentation
  Describes a flight path based on radar data.

**element stationarySource**

- **Diagram**
stationarySource

- name
  Identifying name of the stationary source.

- pointStationarySource
  Specifies the point in space occupied by a stationary source of emissions.

- areaStationarySource
  Specifies the area in space occupied by a stationary source of emissions.

- volumeStationarySource
  Specifies the volume in space occupied by a stationary source of emissions.

- categoryRecordCode
  An integer value for a category to use as the basis of a new stationary sources operation. This value comes from the CATEGORY code ID column in the STN.CATEGORY table in the AEDT PUET database.

- categoryBoilerHeater
  Describes the operational characteristics of a source in the boiler/heater category.

- categoryGenerator
  Describes the operational characteristics of a source in the generator category.

- categoryInduction
  Describes the operational characteristics of a source in the induction category.

- categoryAircraftEngine
  Describes a category for the time an aircraft engine is at various power levels.

- categoryFuelTank
  Describes the operational characteristics of a source in the fuel tank category.

- categorySurfaceCoatingPainting
  Describes the operational characteristics of a source in the surface coating or painting category.

- categoryDeicingArea
  Describes the operational characteristics of a source in the deicing area category.

- categorySolventDegreaser
  Describes the operational characteristics of a source in the solvent degreaser category.

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

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

- categoryOther
  Describes the operational characteristics of a source in the "other" category.
**element stationarySource/name**

- **type**: `string40`
- **properties**: `content simple`
- **facets**:
  - `Kind`: `Value`, `Annotation`
  - `minLength`: 0
  - `maxLength`: 40
- **annotation**:
  - `documentation`:
    - Identifying name of the stationary source.

**element stationarySourceOperation**

- **properties**: `content complex`
- **children**:
  - `refName`, `elevation`, `pointCoord`, `emissionsUsage`
- **used by**:
  - `element stationarySourceOperationSet`
- **annotation**:
  - `documentation`:
    - Defines an operation at a stationary source that generates emissions.

**element stationarySourceOperation/refName**

- **type**: `string40`
- **properties**: `content simple`
- **facets**:
  - `Kind`: `Value`, `Annotation`
  - `minLength`: 0
  - `maxLength`: 40
- **annotation**:
  - `documentation`:
    - Identifier of the operation.

**element stationarySourceOperation/elevation**

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

**element stationarySourceOperation/pointCoord**
element `stationarySourceOperationSet`

```xml
<stationarySourceOperationSet>
  <stationarySourceOperation>
    <description>Container of operations conducted at a stationary source contributing emissions.</description>
    <operationName>Operation Name</operationName>
    <operationType>Operation Type</operationType>
    <operationParameters>Operation Parameters</operationParameters>
  </stationarySourceOperation>
  ...
</stationarySourceOperationSet>
```

properties content complex

children `stationarySourceOperation`

used by group `airportActivityGroup`

annotation documentation
  Container of operations conducted at a stationary source contributing emissions.

---

element `stationarySourceSet`

```xml
<stationarySourceSet>
  <stationarySource>
    <description>Specified a stationary source.</description>
    <sourceName>Source Name</sourceName>
    <sourceType>Source Type</sourceType>
    <sourceLocation>Source Location</sourceLocation>
  </stationarySource>
  ...
</stationarySourceSet>
```

properties content complex

children `stationarySource`

used by element `As if Xm !`
  complexType `airportLayoutType`

annotation documentation
  Container of stationary sources contributing emissions.
element **study/name**

- **Diagram**
  - **name**
    - Name of the study.

- **Type** `string255`

- **Properties**
  - content: simple

- **Facets**
  - Kind: Annotation
Name of the study.

**element study/studyType**

- **diagram**: studyType
- **type**: studyType
- **properties**: content simple
- **facets**
  - Kind | Value | Annotation
  - enumeration | Emissions | enumeration Emissions
  - enumeration | Dispersion | enumeration Dispersion
  - enumeration | Noise and Emissions | enumeration Noise and Emissions
  - enumeration | Noise and Dispersion | enumeration Noise and Dispersion

**element study/emissionsUnits**

- **diagram**: emissionsUnits
- **type**: emissionsUnitsType
- **properties**: content simple
- **facets**
  - Kind | Value | Annotation
  - enumeration | MetricTonnes | enumeration MetricTonnes
  - enumeration | Kilograms | enumeration Kilograms
  - enumeration | Grams | enumeration Grams
  - enumeration | ImperialTons | enumeration ImperialTons
  - enumeration | Pounds | enumeration Pounds

**element study/description**

- **diagram**: description
- **type**: string255
- **properties**: minOcc 0, maxOcc 1, content simple
- **facets**
  - Kind | Value | Annotation
  - minLength | 0 | minLength 0
  - maxLength | 255 | maxLength 255
- **annotation**: documentation
  - Optional description of the study.

**element study/terrainFiles**

- **diagram**: terrainFiles
- **type**: string255
- **properties**: minOcc 0, maxOcc 1, content simple
- **facets**
  - Kind | Value | Annotation
  - minLength | 0 | minLength 0
  - maxLength | 255 | maxLength 255
- **annotation**: documentation
  - List of files containing descriptions of terrain.

**element study/fleet**
defines aircraft fleet participating in the study.

**element subtrack**

- **diagram**
  - `subtrack`:
    - `dispersionWeight`:
      - `trackVectors`:
        - `trackNodes`:

- **properties**
  - content: complex

- **children**
  - `id` dispersionWeight trackVectors trackNodes

- **used by**
  - element `track`

- **annotation**
  - documentation
  - Intended to represent a dispersed child track of a parent track.
element `subtrack/id`

<table>
<thead>
<tr>
<th>diagram</th>
<th><code>id</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>ID for a subtrack.</td>
</tr>
</tbody>
</table>

| type | `xs:int` |
| properties | content simple |

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>ID for a subtrack.</td>
</tr>
</tbody>
</table>

element `subtrack/dispersionWeight`

| diagram | `dispersionWeight` |
| content | dispersion weight value; must be greater than one and less than or equal to 1. |

| type | `xs:double` |
| properties | content simple |

| used by | element `backbone` |

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
<td>dispersion weight value; must be greater than one and less than or equal to 1.</td>
</tr>
</tbody>
</table>

element `taxiNode`

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>content</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>children</th>
<th><code>latitude</code> <code>latitudeDM5</code> <code>longitude</code> <code>longitudeDM5</code> <code>utmN</code> <code>utmE</code> <code>utmZone</code> <code>elevation</code> <code>speed</code></th>
</tr>
</thead>
</table>

| used by | element `taxiNodeSet` |
Supports legacy EDMS studies relating to the TAXIWAYS table. Taxi nodes define the points for a given taxiway.

**element taxiNode/elevation**

- **diagram**
- **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**
- **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**
- **properties**
  - `content`: complex
- **children**
  - `taxiNode`
- **used by**
  - element `taxiway`
- **annotation**
  - documentation
  - Supports legacy EDMS studies relating to the TAXIWAYS table. Taxi nodes define the points for a given taxiway.

**element taxipath**

- **diagram**
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
Direction of the taxipath. Valid values: Inbound or Outbound.

**element** `taxipath/taxiwayName`

```
<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>string20</td>
</tr>
</tbody>
</table>
```

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

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

**annotation**
- documentation
  - References an existing taxiway.

**element** `taxipathSet`

```
<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>string6</td>
</tr>
</tbody>
</table>
```

**properties**
- `content`: complex

**children**
- `taxipath`

**used by**
- complexType `airportLayoutType`

**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>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>string6</td>
</tr>
</tbody>
</table>
```

**properties**
- `content`: complex

**children**
- `source` `taxiIn` `taxiOut`

**used by**
- complexType `airport`

**element** `taxiTime/source`

```
<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>string</td>
<td>string6</td>
</tr>
</tbody>
</table>
```

**properties**
- `minOcc`: 0
- `maxOcc`: 1
- `content`: simple
### element taxiTime/taxiIn

**Diagram:**

- **Type:** xs:int
- **Properties:**
  - minOccurs 0
  - maxOccurs 1
  - content simple

### element taxiTime/taxiOut

**Diagram:**

- **Type:** xs:int
- **Properties:**
  - minOccurs 0
  - maxOccurs 1
  - content simple

### element taxiway

**Diagram:**

- **Properties:** content complex
- **Children:**
  - name
  - dispersionWidth
  - taxiNodeSet
- **Used by:**
  - element taxiwaySet
- **Annotation:**
  - documentation
  - Supports legacy EDMs studies relating to the TAXWAYS table. Taxiways determine the ground segments where the aircraft operates.

#### element taxiway/name

**Diagram:**

- **Type:** string20
- **Properties:**
  - content simple
- **Facets:**
  - minLength 0
  - maxLength 20
- **Annotation:**
  - documentation
  - Identifying name for taxiway.

#### element taxiway/dispersionWidth

**Diagram:**

- **Facets:**
  - minLength 0
  - maxLength 20
- **Annotation:**
  - documentation
  - Width of emission dispersion around taxiway. Valid values 0 to 100 (ft).
**element taxiwaySet**

Diagram:

Supports legacy EDMS studies relating to the TAXIWAYS table. Taxiways determine the ground segments where the aircraft operates.

**properties**
- content: complex

**children**
- taxiway

**used by**
- complexType: airportLayoutType

**annotation**
- documentation:
  Supports legacy EDMS studies relating to the TAXIWAYS table. Taxiways determine the ground segments where the aircraft operates.

**element track**

Diagram:

A flight track that can be used for flight operations.

**properties**
- content: complex

**children**
- name
- optype
- wingtype
- airport
- runway
- vectorCourseHelipad
- backbone
- subtrack

**used by**
- elements: trackSet trackSet

**annotation**
- documentation:
  A flight track that can be used for flight operations.
## track/opType

**Diagram**

```

```

**Type**

`string64`

**Properties**

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

**Facets**

- **Kind**: Value Annotation
- **minLength**: 0
- **maxLength**: 64

**Annotation**

Documentation: The name of the track.

**Element**

**Diagram**

```

```

**Type**

`opType`

**Properties**

- **content**: simple

**Facets**

- **Kind**: Value Annotation
- **pattern**: A|Arrival|D|Departure|V|Overflight|T|TouchAndGo|R|Runup|W|RunwayToRunway|L|LandingTakeoff|X|Taxi

**Annotation**

Documentation: Type of operation. (A = arrival, D = departure)

## track/wingType

**Diagram**

```

```

**Type**

`wingType`

**Properties**

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

**Facets**

- **Kind**: Value Annotation
- **pattern**: F|FixedWing|R|RotaryWing

**Annotation**

Documentation: Type of wing. (F = fixed wing, R = rotary wing)

## track/airport

**Diagram**

```

```

**Type**

`airportCode`

**Properties**

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

**Facets**

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

**Attributes**

- **Name**: Type
- **Use**: Default
- **Fixed**: Annotation

- **Type**: `airportCodeType`
  - Optional
  - Default: ANY

- **Country**: `string3`
  - Optional
  - Default: ANY

**Annotation**

Documentation
The IATA airport code.

**element track/runway**

- **diagram**
  - ![Diagram](image1)
  - The name of the runway.
- **type** string
- **properties**
  - minOcc 0
  - maxOcc 1
  - content simple
- **used by** element runwaySet
- **facets**
  - Kind Value Annotation
    - minLength 0
    - maxLength 8
- **annotation** documentation
  - The name of the runway.

**element track/vectorCourseHelipad**

- **diagram**
  - ![Diagram](image2)
  - Direction for helicopter operations of vector type (angle from North).
- **type** xs:double
- **properties**
  - minOcc 0
  - maxOcc 1
  - content simple
- **annotation** documentation
  - Direction for helicopter operations of vector type (angle from North).

**element trackNode**

- **diagram**
  - ![Diagram](image3)
properties

- content complex

children

- id
description
latitude
latitudeDMS
longitude
longitudeDMS
utmN
utmE
utmZone
altitude
speed

used by

- elements backboneNode
- trackNodes

annotation
documentation

A flight track node.

element trackNode/altitude
diagram

\[ \text{Node's altitude above or below MSL. Includes attribute node. Valid values: -1500 to 15000. (ft)} \]

type extension of xs:double

properties

- minOcc 0
- maxOcc 1

content complex

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>control</td>
<td>nodeControlType</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation

Node's altitude above or below MSL. Includes attribute node. Valid values: -1500 to 15000. (ft)
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

```
\[\text{speed} \rightarrow \text{control}\]
```

type extension of xs:double

properties

- minOcc 0
- maxOcc 1
- content complex

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>control</td>
<td>nodeControlType</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation
documentation

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

```
\[\text{trackNodes} \rightarrow \text{trackNode}\]
```

properties

- content complex

children

- trackNode

used by

- element subtrack

annotation
documentation

A set of flight track nodes

---

element trackOpSet

diagram

```
\[\text{trackOpSet} \rightarrow \text{track} \rightarrow \text{trackOpSet} \rightarrow \text{trackref} \rightarrow \text{sensorPath} \rightarrow \text{operations}\]
```

properties

- content complex

children

- track trackref sensorPath operations
**element trackref**

*Diagram*

- **airportLayoutName**
  - Type: `string255`
  - Properties: content, simple
  - Facets:
    - Kind: Annotation
    - minLength: 0
    - maxLength: 255
  - Annotation: Airport layout associated with this track.

- **trackName**
  - Type: `string64`
  - Properties: content, simple
  - Facets:
    - Kind: Annotation
    - minLength: 0
    - maxLength: 64
  - Annotation: Name of flight track.

- **optype**
  - Type: `opType`
  - Properties: content, simple
  - Facets:
    - Kind: Annotation
    - Pattern: A|Arrival|D|Departure|V|Overflight|T|TouchAndGo|R|Runup|W|RunwayToRunway|L|LTO|LandingTakoff|X|Taxi

- **runway**
  - Annotation: Name of runway on the flight track.

**element trackref/airportLayoutName**

**element trackref/trackName**

**element trackref/optype**

**element trackref/runway**

**used by** elements **AsifXml case**

**annotation** documentation

Lists tracks and associated operations.
**element runwaySet**

<table>
<thead>
<tr>
<th>type</th>
<th>string8</th>
</tr>
</thead>
</table>
| properties | minOcc 0  
|           | maxOcc 1  |
|          | content simple |
| used by  | element runwaySet |
| facets | Kind Value Annotation  
|         | minLength 0  
|         | maxLength 8  |
| annotation | documentation  
|           | Name of runway on the flight track. |

**element trackSet**

| properties | content complex |
| children  | track |
| used by  | complexType airport.layoutType |
| annotation | documentation  
|           | A set of flight tracks. |

**element trackVector**

| properties | content complex |
| children  | id description type distance angle radius |
| used by  | element trackVectors |
| annotation | documentation  
|           | A flight track vector. |

**element trackVector/type**

| type  | vectorTrackType |
| properties | content simple |
| facets     | Kind Value Annotation pattern S|Straight|L|LeftTurn|R|RightTurn |
| annotation | documentation Type of vector. Valid values: S = Straight, L = LeftTurn, R = RightTurn. |

**element trackVector/distance**

- **type** xs:double
- **properties** content simple
- **annotation** documentation Distance flown along this vector. Valid values: nonnegative. (nmi)

**element trackVector/angle**

- **type** xs:double
- **properties** content simple
- **annotation** documentation Angle of the vector. (degrees)

**element trackVector/radius**

- **type** xs:double
- **properties** content simple
- **annotation** documentation Radius of the vector. Valid values: nonnegative. (nmi)

**element trackVectors**

- **properties** content complex
- **children** trackVector
- **used by** element subtrack
- **annotation** documentation A list of flight track vectors.

**element userDefinedAirportSet**

- **properties** content complex
- **children** userDefinedAirport
element userDefinedAirportSet/userDefinedAirport

- airport
  - airportCode
  - effDate
    Effective date for the airport.
  - expDate
    The expiration date for the airport.
  - name
    The name of airport.
  - state
    The airport state / territory name.
  - facilityType
    The facility type, i.e. airport, heliport, seaport.
  - cityName
    The name of city closest to the airport.
  - locationCoordGroup
    Specifies a coordinate using latitude and longitude.
  - coordinate
    Indicates how a two-dimensional group is specified.
  - lat
    Latitude specified as degrees in decimal format. Can include optional attribute positive.
  - latDMS
    Latitude expressed as dDD°mMM'S with optional indicator N, n, S, s.
  - long
    Longitude specified as degrees in decimal format. Can include optional attribute positive.
  - longDMS
    Longitude expressed as dDD°mMM'S with optional indicator N, n, S, s.
  - 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 xmlns:geos tag.
- elevation
  - elevation
    Airport elevation above mean sea level, UNITS: Feet above MSL
- patternAltitude
  - patternAltitude
    Pattern altitude (where provided) above ground level, UNITS: Feet above MSL
- tower
  - tower
    Flag to indicate if the airport has a tower.
- layout
  - layout
    Contains information for each user-defined airport. APT_CODE must not duplicate an existing system airport.
Contains information for each user-defined airport. APT_CODE must not duplicate an existing system airport.
<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td><code>gselID</code> gselName defaultLoadFactor defaultHorsepower defaultOpTimeDepartures defaultOpTimeArrivals defaultAnnualOpTime userEmissionFactors</td>
</tr>
<tr>
<td>used by</td>
<td>element <code>userGroundSupportEquipmentSet</code></td>
</tr>
<tr>
<td>documentation</td>
<td>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.</td>
</tr>
</tbody>
</table>

**element **`userGroundSupportEquipment/gselID`**

**diagram**

```plaintext```
User GSE ID (used as identifier (System GSE ID) in AIRCRAFT_GSE_ASSIGNMENTS, GSE_POPULATION, GSE_POPULATION_GATE_ASSIGNMENTS).
```

<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</td>
<td>documentation User GSE ID (used as identifier (System GSE ID) in AIRCRAFT_GSE_ASSIGNMENTS, GSE_POPULATION, GSE_POPULATION_GATE_ASSIGNMENTS).</td>
</tr>
</tbody>
</table>

**element **`userGroundSupportEquipment/gselName`**

**diagram**

```plaintext```
Custom GSE name.
```

<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 minLength 0 maxLength 40</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Custom GSE name.</td>
</tr>
</tbody>
</table>
element `userGroundSupportEquipment/defaultLoadFactor`

```
diagram default_loadFactor

GSE default load factor. Valid values: 0 to 100. (%)
```

type `doubleInclusive1`

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 defaultHorsepower

GSE default horsepower. Valid values: 0 to 10000. (hp)
```

type `xs:double`

properties content simple

annotation documentation

GSE default horsepower. Valid values: 0 to 10000. (hp)

---

element `userGroundSupportEquipment/defaultOpTimeDepartures`

```
diagram defaultOpTimeDepartures

GSE default operation time departures. Valid values: 0 to 1000. (min/LTO)
```

type `xs:double`

properties content simple

annotation documentation

GSE default operation time departures. Valid values: 0 to 1000. (min/LTO)

---

element `userGroundSupportEquipment/defaultOpTimeArrivals`

```
diagram defaultOpTimeArrivals

GSE default operation time arrivals. Valid values: 0 to 1000. (min/LTO)
```

type `xs:double`

properties content simple

annotation documentation

GSE default operation time arrivals. Valid values: 0 to 1000. (min/LTO)

---

element `userGroundSupportEquipment/defaultAnnualOpTime`

```
diagram defaultAnnualOpTime

GSE default operation time annual. Valid values: 0 to 8784. (min/LTO)
```

type `xs:double`

properties content simple

annotation documentation

GSE default operation time annual. Valid values: 0 to 8784. (min/LTO)

---

element `userGroundSupportEquipment/userEmissionFactors`

```
diagram
```

type

properties

annotation
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.

Amount of carbon monoxide emitted. Valid values 0 to 3000. (kg/unit)

Amount of hydrocarbons emitted. Valid values 0 to 100. (kg/unit)

Amount of nitrous oxides emitted. Valid values 0 to 100. (kg/unit)

Amount of sulfur oxides emitted. Valid values 0 to 10. (kg/unit)

Amount of 10-micron particulate matter emitted. Valid values 0 to 1000. (kg/unit)

User-defined fuel emission factor for diesel.

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.

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.

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.

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.
User-defined fuel emission factor for gasoline.

User-defined fuel emission factor for compressed natural gas.
**emissionFactorSet**

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

- **children**
  - CO
  - HC
  - NOx
  - SOx
  - PM10

**annotation**

User-defined fuel emission factor for liquefied petroleum gas.

---

**userGroundSupportEquipmentSet**

- **properties**
  - content: complex

- **children**
  - userGroundSupportEquipment

**used by**

AsifXml study

**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.

---

**vehicleEmissionFactors**

**diagram**
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

**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**

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.
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 total organic gases emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)
<table>
<thead>
<tr>
<th>Element</th>
<th>Type</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>vehicleEmissionFactors/NOx</td>
<td>xs:double</td>
<td><img src="image" alt="NOx diagram" /></td>
</tr>
<tr>
<td>vehicleEmissionFactors/SOx</td>
<td>xs:double</td>
<td><img src="image" alt="SOx diagram" /></td>
</tr>
<tr>
<td>vehicleEmissionFactors/PM-10</td>
<td>xs:double</td>
<td><img src="image" alt="PM-10 diagram" /></td>
</tr>
<tr>
<td>vehicleEmissionFactors/PM-2.5</td>
<td>xs:double</td>
<td><img src="image" alt="PM-2.5 diagram" /></td>
</tr>
<tr>
<td>vehicleEmissionFactors/Benzene</td>
<td>xs:double</td>
<td><img src="image" alt="Benzene diagram" /></td>
</tr>
<tr>
<td>vehicleEmissionFactors/MTBE</td>
<td>xs:double</td>
<td><img src="image" alt="MTBE diagram" /></td>
</tr>
</tbody>
</table>

**Annotation Documentation**

- **vehicleEmissionFactors/NOx**
  - *Type*: xs:double
  - *Properties*: content simple
  - *Annotation*: Amount of nitrous oxides emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

- **vehicleEmissionFactors/SOx**
  - *Type*: xs:double
  - *Properties*: content simple
  - *Annotation*: Amount of sulfur oxides emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

- **vehicleEmissionFactors/PM-10**
  - *Type*: xs:double
  - *Properties*: content simple
  - *Annotation*: Amount of 10-micron particulate matter emitted. (grams/vehicle-mile)

- **vehicleEmissionFactors/PM-2.5**
  - *Type*: xs:double
  - *Properties*: content simple
  - *Annotation*: Amount of 2.5-micron particulate matter emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

- **vehicleEmissionFactors/Benzene**
  - *Type*: xs:double
  - *Properties*: content simple
  - *Annotation*: Amount of benzene emitted. (grams/vehicle-mile)

- **vehicleEmissionFactors/MTBE**
  - *Type*: xs:double
  - *Properties*: content simple
  - *Annotation*: Amount of methyl tertiary butyl ether emitted. (grams/vehicle-mile)
<table>
<thead>
<tr>
<th>Element</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>vehicleEmissionFactors/Butadiene</code></td>
<td>Amount of butadiene emitted. (grams/vehicle-mile)</td>
</tr>
<tr>
<td><code>vehicleEmissionFactors/Formaldehyde</code></td>
<td>Amount of formaldehyde emitted. (grams/vehicle-mile)</td>
</tr>
<tr>
<td><code>vehicleEmissionFactors/Acetaldehyde</code></td>
<td>Amount of acetaldehyde emitted. (grams/vehicle-mile)</td>
</tr>
<tr>
<td><code>vehicleEmissionFactors/Acrolein</code></td>
<td>Amount of acrolein emitted. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

- **`vehicleEmissionFactors/Butadiene`**
  - Diagram: ![Butadiene](image)
  - Type: `xs:double`
  - Properties: `content simple`
  - Annotation: Amount of butadiene emitted. (grams/vehicle-mile)

- **`vehicleEmissionFactors/Formaldehyde`**
  - Diagram: ![Formaldehyde](image)
  - Type: `xs:double`
  - Properties: `content simple`
  - Annotation: Amount of formaldehyde emitted. (grams/vehicle-mile)

- **`vehicleEmissionFactors/Acetaldehyde`**
  - Diagram: ![Acetaldehyde](image)
  - Type: `xs:double`
  - Properties: `content simple`
  - Annotation: Amount of acetaldehyde emitted. (grams/vehicle-mile)

- **`vehicleEmissionFactors/Acrolein`**
  - Diagram: ![Acrolein](image)
  - Type: `xs:double`
  - Properties: `content simple`
  - Annotation: Amount of acrolein emitted. (grams/vehicle-mile)
**element volumeStationarySource/pointCoord**

**type** coord2DType

**properties** content complex

**children** latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone

**annotation**

Type of 2D coordinates specifying the volume.
element `volumeStationarySource/baseElevation`

diagram
```
baseElevation
```

Height of volume. (m)

type `xs:double`

properties

annotation documentation

Height of volume. (m)

element `volumeStationarySource/releaseHeight`

diagram
```
releaseHeight
```

Height 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 at which emissions are released into the atmosphere. Valid values 0 to 100 (m)

element `volumeStationarySource/sigmaZ`

diagram
```
sigmaZ
```

Vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.0. (m)

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
```

Horizontal dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.0. (m)

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
element weatherData/month

diagram

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
</table>

children

- month
- temperature
- seaLevelPressure
- stationPressure
- dewPoint
- relativeHumidity
- windSpeed
- meanTemperature

used by

- element airportWeatherStation

element weatherData/temperature

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
</table>

properties

- minOcc 0
- maxOcc 1

content simple

element weatherData/seaLevelPressure

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
</table>

properties

- minOcc 0
- maxOcc 1

content simple

element weatherData/stationPressure

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
</table>

properties

- minOcc 0
- maxOcc 1

content simple

element weatherData/dewPoint

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
</table>

properties

- minOcc 0
- maxOcc 1
element weatherData/relativeHumidity
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>
| properties | minOcc 0  
|          | maxOcc 1  |
| content simple |           |

element weatherData/windSpeed
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

element weatherData/meanTemperature
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
</table>
| properties | minOcc 0  
|          | maxOcc 1  |
| content simple |           |

element windRose
diagram

| properties | content complex |
| children | windRoseStationId windRoseStation |
| used by | complexType airport |

element windRose/windRoseStationId
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>string5</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 5</td>
</tr>
</tbody>
</table>

element windRoseData
diagram
element `windRoseData/directionRange`

diagram `directionRange`

type `string14`

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>14</td>
<td></td>
</tr>
</tbody>
</table>

element `windRoseData/centerDirection`

diagram `centerDirection`

type `xs:int`

properties content simple

element `windRoseData/S01TO04KTS`

diagram `S01TO04KTS`

type `xs:int`

properties content simple

element `windRoseData/S04TO07KTS`

diagram `S04TO07KTS`

type `xs:int`

properties content simple

element `windRoseData/S07TO11KTS`

diagram `S07TO11KTS`

type `xs:int`

properties content simple

element `windRoseData/S11TO17KTS`

diagram `S11TO17KTS`

type `xs:int`

properties content simple

element `windRoseData/S17TO22KTS`

diagram `S17TO22KTS`

type `xs:int`

properties content simple

element `windRoseData/S22TO28KTS`

diagram `S22TO28KTS`

type `xs:int`

properties content simple

element `windRoseData/S28TO34KTS`

diagram `S28TO34KTS`

type `xs:int`

properties content simple

element `windRoseData/S34TO41KTS`

diagram `S34TO41KTS`

type `xs:int`

properties content simple

element `windRoseData/S41PLUSKTS`

diagram `S41PLUSKTS`

type `xs:int`

properties content simple

used by element `windRoseStation`
<table>
<thead>
<tr>
<th>element</th>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
<tbody>
<tr>
<td>element windRoseData/S11TO17KTS</td>
<td>diagram</td>
<td><img src="image" alt="S11TO17KTS" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S17TO22KTS</td>
<td>diagram</td>
<td><img src="image" alt="S17TO22KTS" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S22TO28KTS</td>
<td>diagram</td>
<td><img src="image" alt="S22TO28KTS" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S28TO34KTS</td>
<td>diagram</td>
<td><img src="image" alt="S28TO34KTS" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S34TO41KTS</td>
<td>diagram</td>
<td><img src="image" alt="S34TO41KTS" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/S41PLUSKTS</td>
<td>diagram</td>
<td><img src="image" alt="S41PLUSKTS" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/DIRTOTAL</td>
<td>diagram</td>
<td><img src="image" alt="DIRTOTAL" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/DIRTOTAL</td>
<td>diagram</td>
<td><img src="image" alt="DIRTOTAL" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/DIRTOTAL</td>
<td>diagram</td>
<td><img src="image" alt="DIRTOTAL" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/DIRTOTAL</td>
<td>diagram</td>
<td><img src="image" alt="DIRTOTAL" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>element windRoseData/DIRTOTAL</td>
<td>diagram</td>
<td><img src="image" alt="DIRTOTAL" /></td>
</tr>
<tr>
<td></td>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td></td>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

### windRoseStation

| diagram | ![Diagram](image) |
element windRoseStation/windRoseStationId
diagram

type string5
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 5

element windRoseStation/startDate
diagram

type xs:dateTime
properties content simple

element windRoseStation/endDate
diagram

type xs:dateTime
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

used by element windRose
<table>
<thead>
<tr>
<th>element</th>
<th>type</th>
<th>properties</th>
<th>content</th>
<th>simple</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>windRoseStation/averageWindSpeed</code></td>
<td><code>xs:int</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>windRoseStation/beginYear</code></td>
<td><code>xs:int</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>windRoseStation/endYear</code></td>
<td><code>xs:int</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>windRoseStation/beginDayMonth</code></td>
<td><code>String12</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>windRoseStation/endDayMonth</code></td>
<td><code>String11</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>windRoseStation/directionUnit</code></td>
<td><code>String9</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><code>windRoseStation/calmCriteria</code></td>
<td><code>String11</code></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**element windRoseStation/calms**

```
<calms/>
```

- type: xs:int
- properties: content simple

**element windRoseStation/missing**

```
<missing/>
```

- type: xs:int
- properties: content simple

**element windRoseStation/good**

```
<good/>
```

- type: xs:int
- properties: content simple

**element windRoseStation/total**

```
<total/>
```

- type: xs:int
- properties: content simple

**element windRoseStation/userString**

```
<userString/>
```

- type: string11
- properties: content simple
- facets:
  - Kind: Value Annotation
  - minLength: 0
  - maxLength: 11

**group airportActivityGroup**

```
<airportActivityGroup/>
```

- diagram

---

The provided code represents an XML schema with definitions for various elements and properties. Each element has attributes for diagram, type, and properties, with specific facets defined for certain elements.
<table>
<thead>
<tr>
<th>children</th>
<th>用车FacilityOperationSet roadwayOperationSet stationarySourceOperationSet groundSupportEquipmentOperationSet</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>元素case</td>
</tr>
<tr>
<td>annotation</td>
<td>文档说明</td>
</tr>
<tr>
<td>documentation</td>
<td>包含一系列在机场进行的活动。</td>
</tr>
</tbody>
</table>

**group annualizationGroupCase**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>annualizationGroup annualizationCase</td>
</tr>
<tr>
<td>used by</td>
<td>元素annualizationGroup</td>
</tr>
<tr>
<td>annotation</td>
<td>文档说明</td>
</tr>
<tr>
<td>documentation</td>
<td>允许将案例分组为群组，并将群组分组为父群组。</td>
</tr>
</tbody>
</table>

**group coord2DGroup**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
</table>
Indicates how a two-dimensional group is specified.

`coord2DGroup` indicates how a two-dimensional group is specified.

The `coord2DGroup` element is used by:
- `airportWeatherStation`
- `centroid`
- `gridPointReceptor`
- `polarGrid` `polarReceptor` `taxiNode` `trackNode` `windRoseStation`
- `airport` `airportLayoutType` `runup` `runwayEnd`

**annotation documentation**

Specifies a coordinate using latitude and longitude.

`latitude` latitudeDM5 longitude longitudeDM5 utmN utmE utmZone

**used by**
- complexType `coord2DType`
- group `coord2DGroup`

**annotation documentation**

Specifies a coordinate using latitude and longitude.

`latitude` latitudeDM5 longitude longitudeDM5 utmN utmE utmZone

**used by**
- complexType `coord2DType`
- group `coord2DGroup`

**annotation documentation**

Specifies a coordinate using latitude and longitude.

`latitude` latitudeDM5 longitude longitudeDM5 utmN utmE utmZone

**used by**
- complexType `coord2DType`
- group `coord2DGroup`

**annotation documentation**

Specifies a coordinate using latitude and longitude.
**type**  
latitudeDecimalType

**properties**  
content complex

**attributes**  
Name | Type | Use | Default | Fixed | Annotation
--- | --- | --- | --- | --- | ---
positive | derived: xs:string | optional | N | | 

**annotation documentation**  
Latitude specified as degrees in decimal format. Can include optional attribute positive.

**element**  
lonCoordGroup/latitude

**type**  
latitudeDMSType

**properties**  
content simple

**facets**  
Kind | Value | Annotation
--- | --- | ---
pattern | [0-9]{2}[-|:|"][0-9]{2}[-|:|'][0-9]{2}(\.\d{3})?[N|n|S|s] | 

**annotation documentation**  
Latitude expressed as dd"mm'sss with optional indicator N, n, S, s.

**element**  
lonCoordGroup/longitude

**type**  
longitudeDecimalType

**properties**  
content complex

**attributes**  
Name | Type | Use | Default | Fixed | Annotation
--- | --- | --- | --- | --- | ---
positive | derived: xs:string | optional | E | | 

**annotation documentation**  
Longitude specified as degrees in decimal format. Can include optional attribute positive.

**element**  
lonCoordGroup/longitudeDMS

**type**  
longitudeDMSType

**properties**  
content simple

**facets**  
Kind | Value | Annotation
--- | --- | ---
pattern | [0-9]?[0-9]{2}[-|:|"][0-9]{2}[-|:|'][0-9]{2}(\.\d{3})?[E|e|W|w] | 

**annotation documentation**  
Longitude expressed as dd"mm'sss with optional indicator N, n, S, s.

**group**  
nodIdGroup

**diagram**
children
- `id` description

used by
- elements: `trackNode` `trackVector`

annotation
documentation
A group of nodes.

**element `nodeIdGroup/id`**

diagram

**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 `nodeIdGroup/description`**

diagram

**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**

diagram

**children**
- `pointCoord` `polygonCoords`

used by
- elements: `areaStationarySource` `building` `gate` `parkingFacility`

annotation
documentation
Type of coordinate specifying the area.

**element oneOrThreeCoords2DGroupSet/pointCoord**

**diagram**
type coord2DType

properties content complex

children latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone

annotation documentation Choice of a single point coordinate.

element oneOrThreeCoords2DGroupSet/polygonCoords
diagram

```
+---------------------+            +---------------------+
| polygon2DType       |            | dummy               |
|                     |            | vertex              |
|                     |            | 3, 3                |
| +-------------------+            | +-------------------|
|                   +            |                   |
|                    |            | A list of vertices defining the polygon.  |
```

type polygon2DType

properties content complex

children dummy vertex

annotation documentation Choice of a 2D polygon.

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

diagram

type: xs:double

properties: content simple

annotation: documentation

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

---

element utmCoordGroup/utmE

diagram
**element utmCoordGroup/utmZone**

```xml
<utmZone type="xs:double">
  <properties>
    <content simple/>
  </properties>
  <annotation>
    documentation
    UTM Easting of the point in decimal meters east from a central meridian.
  </annotation>
</utmZone>
```

**complexType aircraft**

```xml
class aircraft{
  <diagram>
    <description>
      The description for this user defined aircraft.
    </description>
  </diagram>

  <children>
    description airframeModel engineCode engineModCode anpAirplanId badaAirplanId anpHelicopterId
  </children>

  <used by element fleet/aircraft/>

  <annotation>
    documentation
    Main block for creating new user defined AEDT aircraft.
  </annotation>
}
```

**element aircraft/description**

```xml
<description type="xs:string">
  <properties>
    <minOcc 0/>
    <maxOcc 1/>
    <content simple/>
  </properties>
  <annotation>
    documentation
    The description for this user defined aircraft.
  </annotation>
</description>
```
The description for this user defined aircraft.

The airframe model used for this user defined aircraft.

The engine code used for this user defined aircraft.

The engine modification code used for this user defined aircraft.

The ANP airplane linked to this user defined aircraft.
**element aircraft/badaAirplaneId**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The BADA airplane linked to this user defined aircraft.</td>
</tr>
</tbody>
</table>

| type | badaAirplaneId |
| properties | content simple |
| facets Kind Value Annotation | minLength: 0 \nmaxLength: 255 |

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The BADA airplane linked to this user defined aircraft.</td>
</tr>
</tbody>
</table>

**element aircraft/anpHelicopterId**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The ANP helicopter linked to this user defined helicopter.</td>
</tr>
</tbody>
</table>

| type | anpHelicopterId |
| properties | content simple |
| facets Kind Value Annotation | minLength: 0 \nmaxLength: 255 |

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The ANP helicopter linked to this user defined helicopter.</td>
</tr>
</tbody>
</table>

**complexType aircraftEngine**

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
</table>
User defined engine information containing custom parameters that reflect an aircraft engine. This engine definition can that be used within a user defined aircraft.
<table>
<thead>
<tr>
<th>properties</th>
<th>minOcc 0</th>
</tr>
</thead>
<tbody>
<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></td>
<td>Annotation</td>
</tr>
<tr>
<td>minWidth</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>25</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>ICAO emissions model for the engine.</td>
</tr>
</tbody>
</table>

**element aircraftEngine/performanceEngineModel**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string25</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>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td>Annotation</td>
</tr>
<tr>
<td>minWidth</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>25</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>ICAO performance model for the engine.</td>
</tr>
</tbody>
</table>

**element aircraftEngine/manufacturer**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string100</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>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td>Annotation</td>
</tr>
<tr>
<td>minWidth</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>100</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Engine manufacturer.</td>
</tr>
</tbody>
</table>

**element aircraftEngine/combustor**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string50</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>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td>Annotation</td>
</tr>
<tr>
<td>minWidth</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>50</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Combustor used on engine.</td>
</tr>
</tbody>
</table>

**element aircraftEngine/superseded**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="Diagram" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string10</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>ICAO UID of engine that superseded the given engine.</td>
</tr>
</tbody>
</table>
element aircraftEngine/ratedEngineOut

diagram

```
<ratedEngineOut>
    Rated engine output (in kN). Valid values: Nonnegative.
</ratedEngineOut>
```

type xs:double

properties

- minOccurs 0
- maxOccurs 1

content simple

annotation documentation

Rated engine output (in kN). Valid values: Nonnegative.

---

element aircraftEngine/source

diagram

```
<source>
    Source of engine data.
</source>
```

type string100

properties

- minOccurs 0
- maxOccurs 1

content simple

facets Kind Value Annotation

- minLength 0
- maxLength 100

annotation documentation

Source of engine data.

---

element aircraftEngine/bypassRatio

diagram

```
<bypassRatio>
    Engine's bypass ratio. Valid values: Nonnegative.
</bypassRatio>
```

type xs:double

properties

- minOccurs 0
- maxOccurs 1

content simple

annotation documentation

Engine's bypass ratio. Valid values: Nonnegative.

---

element aircraftEngine/pressureRatio

diagram

```
<pressureRatio>
    Engine's pressure ratio. Valid values: Nonnegative.
</pressureRatio>
```

type xs:double

properties

- minOccurs 0
- maxOccurs 1

content simple

annotation documentation

Engine's pressure ratio. Valid values: Nonnegative.

---

element aircraftEngine/tfmtFlag

diagram

```
```

### Type: `string50`

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

- **Facets:**
  - `Kind`: Value
  - `Value`: Annotation
  - `minLength`: 0
  - `maxLength`: 50

- **Annotation:**
  - **Documentation:** Turbo-fan or mixed turn-fan flag. Valid values: TF (turbofan) or MTF (mixed turbofan).

---

### Element: `aircraftEngine/defaultSOx`

- **Diagram:**
  - `defaultSOx`: Sulfur oxides emitted (grams per kilogram of fuel). Valid values: Nonnegative.

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

- **Annotation:**
  - **Documentation:** Sulfur oxides emitted (grams per kilogram of fuel). Valid values: Nonnegative.

---

### Element: `aircraftEngine/taxiIdleEmissionFactors`

- **Diagram:**
  - `taxiIdleEmissionFactors`: Emission factor when aircraft is idling.

- **Properties:**
  - `content`: Complex

---

### Element: `engineModeEmissions`

- **Properties:**
  - `content`: Complex
Emission factor when aircraft is idling.

Emission factor when aircraft is taking off.

Emission factor when aircraft is climbing.

Type: `engineModeEmissions`

Properties: content complex

Children: time fuel HC NOx SOx SN PM

Annotation: documentation

Emission factor when aircraft is idling.

Emission factor when aircraft is taking off.

Emission factor when aircraft is climbing.
type: *engineModeEmissions*

properties: content complex

children: time fuel HC NOx SOx SN PM

annotation: Emission factor when aircraft is climbing.

element: aircraftEngine/airportApproachEmissionFactors

diagram: 

- **time**
  - Time engine operates in a given mode (minutes), valid values: Nonnegative.

- **fuel**
  - Fuel emission factor (g/kg), valid values: Nonnegative.

- **CO**
  - Amount of carbon monoxide emitted (g/kg), valid values: Nonnegative.

- **HC**
  - Amount of hydrocarbons emitted (g/kg), valid values: Nonnegative.

- **NOx**
  - Amount of nitrogen oxides emitted (g/kg), valid values: Nonnegative.

- **SOx**
  - Amount of sulfur oxides emitted (g/kg), valid values: Nonnegative.

- **SN**
  - Smoke number for the engine mode (m). Valid values: Nonnegative.

- **PM**
  - Amount of particulate matter emitted (g/kg), valid values: Nonnegative.
**engineModeEmissions**

- **time**
  - Time engine operates in a given mode (minutes). Valid values: Nonnegative.
- **fuel**
  - Fuel emission factor (g/kg). Valid values: Nonnegative.
- **CO**
  - Amount of carbon monoxide emitted (g/kg). Valid values: Nonnegative.
- **HC**
  - Amount of hydrocarbons emitted (g/kg). Valid values: Nonnegative.
- **NOx**
  - Amount of nitrogen oxides emitted (g/kg). Valid values: Nonnegative.
- **SOx**
  - Amount of sulfur oxides emitted (g/kg). Valid values: Nonnegative.
- **SN**
  - Smoke number for the engine mode (g/kg). Valid values: Nonnegative.
- **PM**
  - Amount of particulate matter emitted (g/kg). Valid values: Nonnegative.

Emission factor when aircraft is on approach.

**aircraftEngineMod**

- **code**
  - Unique ICAO UD.
- **description**
  - Description of engine modifications.

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.

**aircraftEngineMod/code**

- **code**
  - Unique ICAO UD.

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\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>255</td>
<td>Description of engine modifications.</td>
</tr>
</tbody>
</table>

type string255

properties content simple

facets

annotation documentation

Description of engine modifications.

complexType aircraftType
diagram

children

- anpAircraftId
- airframeModel
- engineCode
- engineModCode
- apuName
- groundSupportEquipmentLTOOperationSet

used by elements operation/aircraftType runup/aircraftType

annotation documentation

Characterizes an aircraft.

element aircraftType/anpAircraftId
diagram

type anpAirplaneId

properties content simple

facets

annotation documentation

Name of auxiliary power unit used by the type of aircraft.

element aircraftType/airframeModel
diagram

type string50


element aircraftType/engineCode

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
Airframe model.

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

<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
Engine modification code. (AEDT database reference table FLEET.FLT_ENGINE_MODS column ENGINE_MOD_CODE.)

element aircraftType/apuName

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
Name of auxiliary power unit used by this type of aircraft.

complexType airframe

diagram
This element supports the definition of custom airframes.

**element airframe/model**

**diagram**

<table>
<thead>
<tr>
<th>model</th>
<th>Unique description of airframe.</th>
</tr>
</thead>
<tbody>
<tr>
<td>engineCount</td>
<td>Number of engines on airframe.</td>
</tr>
<tr>
<td>engineLocation</td>
<td>Position of engine on airframe. Valid values F (Fuselage), T (Tail), W (Wing).</td>
</tr>
<tr>
<td>designationCode</td>
<td>Type of engine. Valid values C (Civil), G (General Aviation), M (Military).</td>
</tr>
<tr>
<td>maxRange</td>
<td>Number of miles airframe can fly fully fueled. Valid values Nonpositive.</td>
</tr>
<tr>
<td>introYear</td>
<td>Year airframe was introduced. Valid values Nonpositive.</td>
</tr>
<tr>
<td>euroGroupCode</td>
<td>European group code for this airframe. Valid values H1 (Helicopter Light), H2 (Helicopter Heavy), J1 (Jet Business), J2 (Jet Large), JM (Jet Medium), RJ (Jet Small), PD (Propeller), PP (Propeller/Prop), TP (Turboprop).</td>
</tr>
<tr>
<td>usageCode</td>
<td>Usage code for this airframe. Valid values H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).</td>
</tr>
<tr>
<td>sizeCode</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>engineType</td>
<td>Type of engine on this airframe. Valid values BE (Beck), J (Jet), P (Prop), T (Turboprop).</td>
</tr>
<tr>
<td>auxiliaryPowerUnitId</td>
<td>Identifier of an auxiliary power unit.</td>
</tr>
</tbody>
</table>

**used by** element `fleet/airframe`

**annotation documentation**

Unique description of airframe.
element airframe/engineCount
diagram
Number of engines on airframe.
type xs:int
properties content simple
annotation documentation Number of engines on airframe.

element airframe/engineLocation
diagram Position of engine on airframe. Valid values: F (Fuselage/Tail), W (Wing).
type string1
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 1
annotation documentation Position of engine on airframe. Valid values: F (Fuselage/Tail), W (Wing).

element airframe/designationCode
diagram Type of aviation. Valid values: C (Civil), G (General Aviation), M (Military).
type string1
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 1
annotation documentation Type of aviation. Valid values: C (Civil), G (General Aviation), M (Military).

element airframe/maxRange
diagram Number of miles airframe can fly fully fueled. Valid values: Nonnegative.
type xs:int
properties minOcc 0
maxOcc 1
content simple
annotation documentation Number of miles airframe can fly fully fueled. Valid values: Nonnegative.

element airframe/introYear
diagram Year airframe was introduced. Valid values: Nonnegative.
type xs:int
properties minOcc 0
maxOcc 1
content simple
Year airframe was introduced. Valid values: Nonnegative.

**element airframe/euroGroupCode**

- **diagam**
  - **type** `string2`
  - **properties** `minOcc 0` `maxOcc 1` `content simple`
  - **facets**
    - `Kind` `Value Annotation` `minLength 0` `maxLength 2`

**annotation documentation**
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).

**element airframe/usageCode**

- **diagam**
  - **type** `string1`
  - **properties** `content simple`
  - **facets**
    - `Kind` `Value Annotation` `minLength 0` `maxLength 1`

**annotation documentation**
Usage code for this airframe. Valid values: H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).

**element airframe/sizeCode**

- **diagam**
  - **type** `string1`
  - **properties** `content simple`
  - **facets**
    - `Kind` `Value Annotation` `minLength 0` `maxLength 1`

**annotation documentation**
Size code for this airframe. Valid values: H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).

**element airframe/engineType**

- **diagam**
  - **type** `string1`
  - **properties** `content simple`
facets | Kind | Value | Annotation
--- | --- | --- | ---
minLength | 0 |
maxLength | 1 |
annotation documentation
Type of engine on this airframe. Valid values: E (Electric), J (Jet), P (Piston), T (Turboprop).

element airframe/auxiliaryPowerUnitId

diagram

type apuName

properties
minOcc 0
maxOcc 1
content simple

facets | Kind | Value | Annotation
--- | --- | --- | ---
minLength | 0 |
maxLength | 30 |
annotation documentation
Identifier of an auxiliary power unit.

complexType airport

diagram

properties

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

latitudeDMS
Latitude expressed as DMS (Degrees, Minutes, Seconds) with optional indicator N, S, E, W.

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

longitudeDMS
Longitude expressed as DMS (Degrees, Minutes, Seconds) with optional indicator N, S, E, W.

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

utmCoordGroup
specifies a point using Universal Transverse Mercator coordinates.

utmCoordGroup
coordinates for a point in a specified coordinate system.

utmE
UTM Easterly of the point in decimal meters east from a central meridian.
element airport/airportCode

- diagram

- type airportCode

- properties content complex

- facets
  - Kind Value Annotation
  - minLength 0
  - maxLength 4
<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>type</td>
<td>Name</td>
<td>airportCodeType</td>
<td>optional</td>
<td>ANY</td>
<td>ANY</td>
<td></td>
</tr>
<tr>
<td>country</td>
<td>Type</td>
<td>string3</td>
<td>optional</td>
<td>ANY</td>
<td>ANY</td>
<td></td>
</tr>
</tbody>
</table>

**element airport/effDate**

**diagram**

```
<effDate>
  Effective date for the airport.
</effDate>
```

**type** xs:date

**properties** content simple

**annotation** documentation

Effective date for the airport.

**element airport/expDate**

**diagram**

```
<expDate>
  The expiration date for the airport.
</expDate>
```

**type** xs:date

**properties** content simple

**annotation** documentation

The expiration date for the airport.

**element airport/name**

**diagram**

```
<name>
  The name of airport.
</name>
```

**type** string100

**properties** minOcc 0

maxOcc 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>100</td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

The name of airport.

**element airport/state**

**diagram**

```
<state>
  The airport state / territory name.
</state>
```

**type** string50

**properties** minOcc 0

maxOcc 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>50</td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

The airport state / territory name.

**element airport/facilityType**

**diagram**

```
<facilityType>
  The facility type, i.e. airport, heliport, seaport.
</facilityType>
```

**type** string25

**properties** minOcc 0
### element airport/cityName

<table>
<thead>
<tr>
<th>Diagram</th>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="cityName" /></td>
<td>The name of city closest to the airport.</td>
</tr>
</tbody>
</table>

**Type**: string

**Properties**:
- minOccurs 0
- maxOccurs 1
- content simple

**Facets**:
- minLength 0
- maxLength 50

**Annotation** documentation: The name of city closest to the airport.

### element airport/elevation

<table>
<thead>
<tr>
<th>Diagram</th>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="elevation" /></td>
<td>Airport elevation above mean sea level. UNITS: Feet above MSL</td>
</tr>
</tbody>
</table>

**Type**: xs:double

**Properties**:
- content simple

**Annotation** documentation: Airport elevation above mean sea level. UNITS: Feet above MSL

### element airport/patternAltitude

<table>
<thead>
<tr>
<th>Diagram</th>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="patternAltitude" /></td>
<td>Pattern altitude (where provided) above ground level. UNITS: Feet AGL</td>
</tr>
</tbody>
</table>

**Type**: xs:int

**Properties**:
- minOccurs 0
- maxOccurs 1
- content simple

**Annotation** documentation: Pattern altitude (where provided) above ground level. UNITS: Feet AGL

### element airport/tower

<table>
<thead>
<tr>
<th>Diagram</th>
<th>annotation documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="tower" /></td>
<td>Flag to indicate if the airport has a tower.</td>
</tr>
</tbody>
</table>

**Type**: xs:boolean

**Properties**:
- minOccurs 0
- maxOccurs 1
- content simple

**Annotation** documentation: Flag to indicate if the airport has a tower.

### element airport/layout

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="layout" /></td>
</tr>
</tbody>
</table>
element airport/archiveFlag

diagram

Flag set to 1 if track, sub-track, segment, and group percentage data can be distributed.

type xs:boolean

properties
minOcc 0
maxOcc 1
content simple
default false

annotation documentation
Flag to indicate detailed layout information exists.

---

element airport/dafifId

diagram

DAFIF Airport ID.

type string7

properties
minOcc 0
maxOcc 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>7</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
DAFIF Airport ID.

---

element airport/faaId

diagram

FAA Airport ID.

type string15

properties
minOcc 0
maxOcc 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>15</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
FAA Airport ID.

---

element airport/shell1

diagram

Indicates if the airport is a shell 1 airport.

type xs:boolean
**element** airport/smad

- **Diagram:** Indicates if airport is a JPDO Systems Modeling and Analysis Division analysis airport.
- **Type:** xs:boolean
- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: false
- **Annotation documentation:** Indicates if this airport is a shell 1 airport.

**element** airport/zone

- **Diagram:** Zone info data for airport.
- **Type:** string100
- **Properties:**
  - content: simple
- **Facets:**
  - Kind: minLength
  - Value: 0
  - Annotation: maxLength: 100
- **Annotation documentation:** Zone info data for airport.

**complexType** airportCode

- **Diagram:** An airport code.
- **Type:** extension of string4
- **Properties:**
  - base: string4
- **Used by:**
  - elements:
    - track/airport
    - runup/airport
    - airp ort/airportCode
    - airp ort/layoutType
    - airp ort/operation/arrivalAirport
    - airp ort/operation/departureAirport
- **Facets:**
  - Kind: minLength
  - Value: 0
  - Annotation: maxLength: 4
- **Attributes:**
  - Name: type
    - Type: airportCodeType
    - Use: optional
    - Default: ANY
    - Fixed: ANY
  - Name: country
    - Type: string3
    - Use: optional
    - Default: ANY
    - Fixed: ANY
- **Annotation documentation:** An airport code.

**attribute** airportCode/@type

- **Type:** airportCodeType
- **Properties:**
  - use: optional
  - default: ANY
- **Facets:**
  - Kind: enumeration
  - Value: ICAO
  - Annotation: enumeration IATA
  - Annotation: enumeration FAA
attribute `airportCode/@country`

<table>
<thead>
<tr>
<th>type</th>
<th><code>string3</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>use optional &lt;br/&gt;default ANY</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 3</td>
<td></td>
</tr>
</tbody>
</table>

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. Valid values: -1590 to 15906
- `peakMonthAverageDayScheduling...`: 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.
- `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, °.
- `utmNorth`: UTM Northing of the point in decimal meters north of the equator.
- `utmEast`: UTM Eastering 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 AirportsLocation tag.
ParkingFacilitySet
Supports legacy EDM5 studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking garage activities for scenario layouts.

StationarySourceSet
Container of stationary sources constituting emissions.

GateSet
Supports legacy EDM5 studies relating to content contained in the GATES table. This element supports the definition of gates within an airport layout. In dispersion analysis, GSE, PGE, and APU emissions originate from the gate locations. Gates are needed for sequence modeling, which includes all dispersion analyses.

RoadwaySet
Supports legacy EDM5 studies relating to content contained in the ROADWAYS table. This element supports the definition of vehicle activity on roadways for scenario layouts.

TaxwaySet
Supports legacy EDM5 studies relating to the TAXWAYS table. Taxiways determine the ground segments where the aircraft operate.

RunwaySet
Container for runways.

TaxipathSet
Supports legacy EDM5 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 movements. They are needed for sequence modeling, which includes all dispersion analyses. Gates, taxiways and runways must be defined before taxipaths can be specified.

TrackSet
A set of flight tracks.

AirportConfigSet
Contains one or more airportConfig elements.

AirportCapacity
Supports legacy EDM5 studies relating to content contained in the RUNWAY_CAPACITY table. This element supports the definition of airport capacities based on various points within an airport.
Fields defining an airport and its layout.

**element airportLayoutType/name**

- **diagram**
  - **name**
    - ID of the layout. Must be unique.

- **type** `string255`

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

- **facets**
  - `Kind` `Value` `Annotation`
  - `minLength 0`
  - `maxLength 255`

- **annotation**
  - documentation
  - ID of the layout. Must be unique.

**element airportLayoutType/airportCode**

- **diagram**
  - **airportCode**
    - ICAO code of airport in the layout.

- **type** `airportCode`

- **properties**
  - `content` `complex`

- **facets**
  - `Kind` `Value` `Annotation`
  - `minLength 0`
  - `maxLength 4`

- **attributes**
  - **Name**
    - `type`
    - `country`
  - **Type**
    - `airportCodeType`
    - `string3`
  - **Use**
    - `optional`
    - `optional`
  - **Default**
    - `ANY`
    - `ANY`
  - **Fixed**
    - 
  - **Annotation**
    - `documentation`
    - ICAO code of airport in the layout.
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>airportLayoutType/startDate</strong></td>
<td><img src="image" alt="Start Date Diagram" /></td>
<td>xs:date</td>
<td>minOcc: 0, maxOcc: 1</td>
<td>Date airport is included in the study.</td>
</tr>
<tr>
<td><strong>airportLayoutType/elevation</strong></td>
<td><img src="image" alt="Elevation Diagram" /></td>
<td>xs:double</td>
<td>minOcc: 0, maxOcc: 1</td>
<td>Elevation of the layout in feet above MSL. (ft) Valid values: -1500 to 15000.</td>
</tr>
<tr>
<td><strong>airportLayoutType/peakMonthAverageDayScalingFactor</strong></td>
<td><img src="image" alt="Peak Month Scaling Factor Diagram" /></td>
<td>xs:double</td>
<td>minOcc: 0, maxOcc: 1</td>
<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>
</tr>
<tr>
<td><strong>complexType anpAirplane</strong></td>
<td><img src="image" alt="Airplane Diagram" /></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Creates a new ANP airplane.

**element** `anpAirplane/anpAirplaneId`

**children** `anpAirplaneId description sizeCode owner engineTypeCode numberEngines maxGrossWeightTakeoff maxGrossWeightLand maxDeStop depThrustCoeffType thrustStatic thrustRestore noiseId noiseCategory minBurn`

**used by** `element fleet/anpAirplane`

**annotation** `documentation Creates a new ANP-airplane.`
**element anpAirplane/description**

- **type**: string255
- **properties**: minLength 0, maxLength 255
- **annotation**: Description of ANP airplane.

**element anpAirplane/sizeCode**

- **type**: anpSizeCode
- **properties**: content simple
- **facets**: pattern Heavy|H|Large|L|Small|S
- **annotation**: Size code for this airframe. Valid values: H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).

**element anpAirplane/owner**

- **type**: anpOwnerType
- **properties**: content simple
- **facets**: pattern Commercial|C|Military|M|General|G
- **annotation**: The owner category: commercial, general aviation, military.

**element anpAirplane/enginTypeCode**

- **type**: engineType
- **properties**: content simple
- **facets**: pattern Jet|J|Turbo|Turboprop|T|Prop|Pistone|P
- **annotation**: The engine type code: prop, jet, turbo, turboprop.
The engine type code: prop, jet, turbo.

**element anpAirplane/numberEngines**
- **diagram**
- **type** xs:int
- **properties** content simple
- **annotation** documentation
  Number of engines on this airplane. Valid values: 1 through 8.

**element anpAirplane/maxGrossWeightTakeoff**
- **diagram**
- **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**
- **diagram**
- **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**
- **diagram**
- **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**
- **diagram**
- **type** anpCoeffType
- **properties** minOcc 0
  maxOcc 1
  content simple
- **facets** Kind Value Annotation
Type of thrust coefficients: J=jet, P=prop.

**element anpAirplane/thrustStatic**

- **Diagram**: Static rated thrust or 100% thrust (lb, min =0, max = 200000).

- **Type**: xs.int

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

- **Annotation**: Static rated thrust or 100% thrust (lb, min =0, max = 200000).

**element anpAirplane/thrustRestore**

- **Diagram**: Flag indicating aircraft has automated thrust restoration system.

- **Type**: yesNoType

- **Properties**:
  - content: simple
  - default: N

- **Facets**:

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>Yes/Y</td>
<td>No/N</td>
</tr>
</tbody>
</table>

- **Annotation**: Flag indicating aircraft has automated thrust restoration system.

**element anpAirplane/noiseId**

- **Diagram**: ID of a Noise Group.

- **Type**: anpNoiseId

- **Properties**:
  - minOcc: 0
  - maxOcc: 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>maxLength 255</td>
</tr>
</tbody>
</table>

- **Annotation**: ID of a Noise Group.

**element anpAirplane/noiseCategory**

- **Diagram**: The noise category stage number.

- **Type**: xs.int

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

- **Annotation**: The noise category stage number.

**element anpAirplane/minBurn**

- **Diagram**
**complexType anpFlaps**

- **diagram**
  - **flapId**
    - Flap-setting identifier.
  - **operationType**
    - Operation associated with this profile. Valid values: A (Approach), D (Depart), T (TouchampGo), F (Circuit), V (Overfl)
  - **coeff_R**
    - The drag-overlift rate. Valid values: 0.0 to 1.34.
  - **coeff_CD**
    - The takeoff and landing calibrated pitot coefficient. Valid values: 0.0 to 1.34. (KNOTS*(B-1)C)
  - **coeff_B**
    - The takeoff distance coefficients. Valid values: 0.0 to 1.34. (FEET/(B)^3)

- **children**
  - flapId
  - operationType
  - coeff_R
  - coeff_CD
  - coeff_B

- **used by**
  - element anpFlapsSet/Flaps

- **annotation**
  - documentation
  - Flaps data element.

**element anpFlaps/flapId**

- **diagram**
  - **flapId**
    - Flap-setting identifier.

- **type** anpFlapId

- **properties**
  - content simple

- **facets**
  - Kind Value Annotation
    - minLength 0
    - maxLength 6

- **annotation**
  - documentation
  - Flap-setting identifier.

**element anpFlaps/operationType**

- **diagram**
  - **operationType**
    - Operation associated with this profile. Valid values: A (Approach), D (Depart), T (TouchampGo), F (Circuit), V (Overfl)

- **type** string

- **properties**
  - content simple

- **facets**
  - Kind Value Annotation
    - minLength 0
    - maxLength 1

- **annotation**
  - documentation
element anpFlaps/coeff_R

diagram

 coeff_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/coeff_CD

diagram

 coeff_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/coeff_B

diagram

 coeff_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

 anpFlapsSet

Flap settings set for an ANP aircraft type.

children anpAirplaneId flaps

used by element fleet/ANP/AirplaneId

annotation documentation

Flap settings set for an ANP aircraft type.

element anpFlapsSet/anpAirplaneId

diagram

 anpAirplaneId

Airplane's ANP ID.

type anpAirplaneId

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 255

annotation documentation

Airplane's ANP ID.

element anpFlapsSet/flaps
### anpFlaps

**Diagram**

- **flapId**: flap identification.
- **operationType**: operation associated with the profile. Valid values: A (Approach), D (Depart), T (TouchDown), F (Climb), V (|v=+R|

**Properties**

- **minOcc**: 1
- **maxOcc**: unbounded
- **content**: complex

**Children**

- flapId
- operationType
- coeff_R
- coeff_CD
- coeff_B

### 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), J (jet), T (turbojet).
- **numberRotors**: The number of rotors. Valid values: 1 to 9.
- **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**:
children:
- `anpHelicopterId`
- `noiseId`
- `directivityId`
- `description` `owner` `engineTypeCode` `numberRotors` `diameter` `rpm` `maxTakeoffWeight` `hasWheels`
- `modeType` `bLeft0` `bLeft1` `bLeft2` `bCenter0` `bCenter1` `bCenter2` `bRight0` `bRight1` `bRight2` `dBVerticalAscent` `dBVerticalDescent` `dBHorizontalAcceleration` `dBClimbAcceleration` `dBDescendDeceleration`

used by:
- `element fleetAnpHelicopter`

**element `anpHelicopter/anpHelicopterId`**

- **type**: `anpHeloid`
- **properties**: `content` `simple`
- **facets**:
  - Kind: Value Annotation
  - minLength: 0
  - maxLength: 255
- **annotation**: `documentation`
  - Unique ID number of ANP Helicopter.

**element `anpHelicopter/noiseId`**

- **type**: `anpHelioNoiseId`
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: `simple`
- **facets**:
  - Kind: Value Annotation
  - minLength: 0
  - maxLength: 255
- **annotation**: `documentation`
  - ID of a Noise Group.

**element `anpHelicopter/directivityId`**

- **type**: `anpHeloDirectivityId`
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: `simple`
- **facets**:
  - Kind: Value Annotation
  - minLength: 0
  - maxLength: 12
- **annotation**: `documentation`
  - Noise directivity ID for ANP helicopter.

**element `anpHelicopter/description`**

- **type**: `string255`
- **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></td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>255</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annotation</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Description of ANP Helicopter.</td>
</tr>
</tbody>
</table>

**Element anpHelicopter/owner**

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

<table>
<thead>
<tr>
<th>Type</th>
<th>anpOwnerType</th>
</tr>
</thead>
</table>

| 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>pattern</td>
<td>Commercial</td>
<td>C</td>
<td>General</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annotation</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The owner category. Valid values: C (commercial), G (general aviation), M (military).</td>
</tr>
</tbody>
</table>

**Element anpHelicopter/engineTypeCode**

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

<table>
<thead>
<tr>
<th>Type</th>
<th>engineType</th>
</tr>
</thead>
</table>

| 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>pattern</td>
<td>Jet</td>
<td>J</td>
<td>Turbo</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annotation</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The engine type code. Valid values: P (piston), J (jet), T (turboprop).</td>
</tr>
</tbody>
</table>

**Element anpHelicopter/numberRotors**

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

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

| Properties | minOcc 0 | maxOcc 1 | content simple |

<table>
<thead>
<tr>
<th>Annotation</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The number of rotors. Valid values: 1 to 9.</td>
</tr>
</tbody>
</table>

**Element anpHelicopter/diameter**

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

| Properties | minOcc 0 | maxOcc 1 | content simple |

<table>
<thead>
<tr>
<th>Annotation</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The helicopter diameter (feet). Valid values: 0 to 1000.</td>
</tr>
</tbody>
</table>
## AnpHelicopter/rpm

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

**Type**: xs:double

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

**Annotation**
- documentation: The helicopter rotor speed (revolutions per minute). Valid values: 0 to 1000.

## AnpHelicopter/maxTakeoffWeight

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

**Type**: xs:int

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

**Annotation**
- documentation: The max gross takeoff weight (pounds). Valid values: 0 to 50000.

## AnpHelicopter/hasWheels

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

**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).

## AnpHelicopter/modelType

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**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/bLefR0

<table>
<thead>
<tr>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>
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.

**element anpHelicopter/bCenter2**

**diagram**
![Diagram](image)

**type** `xs:double`

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

**annotation** documentation
Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/bRight0**

**diagram**
![Diagram](image)

**type** `xs:double`

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

**annotation** documentation
Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/bRight1**

**diagram**
![Diagram](image)

**type** `xs:double`

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

**annotation** documentation
Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/bRight2**

**diagram**
![Diagram](image)

**type** `xs:double`

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

**annotation** documentation
Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/dbVerticalAscent**

**diagram**
![Diagram](image)

**annotation** documentation
Decibel offset added to NPO levels, vertical ascent (dB). Valid values Min = -50 Max = 80.
element anpHelicopter/dbVerticalDescent

diagram

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.

element anpHelicopter/dbClimbAcceleration

diagram

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.

element anpHelicopter/dbDescendDeceleration
Decibel offset added to NPD levels, approach with descending deceleration (dB). Valid values: Min = -50 Max = 50.
element anpHeloDirectivity/groundType
diagram

type anpHeloGroundType
properties content simple
facets Kind Value Annotation
pattern Hard|H|Softare|S|File|F|None|N
annotation documentation Type of ground resistivity. Valid values: H (hard), S (soft), F (file), N (none).

element anpHeloDirectivity/opMode
diagram

type string1
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 1
annotation documentation Operational Mode. Valid values: A (approach), D (departure).

element anpHeloDirectivity/L180
diagram

type xs:double
properties minOcc 0
maxOcc 1
content simple
annotation documentation Decibel adjustment at 180 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

element anpHeloDirectivity/L165
diagram

type xs:double
properties minOcc 0
maxOcc 1
content simple
annotation documentation Decibel adjustment at 165 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

element anpHeloDirectivity/L150
diagram

type xs:double
Decibel adjustment at 150 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Element anpHeloDirectivity/L135

Decibel adjustment at 135 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Element anpHeloDirectivity/L120

Decibel adjustment at 120 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Element anpHeloDirectivity/L105

Decibel adjustment at 105 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Element anpHeloDirectivity/L090

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.

Decibel adjustment at 60 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 45 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 30 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 15 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
Decibel adjustment at 0 degrees along the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element** anpHelioDirectivity/C000

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="C000.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

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

**annotation** documentation
Decibel adjustment at 180 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element** anpHelioDirectivity/R015

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="R015.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

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

**annotation** documentation
Decibel adjustment at 15 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element** anpHelioDirectivity/R030

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="R030.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

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

**annotation** documentation
Decibel adjustment at 30 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element** anpHelioDirectivity/R045

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="R045.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

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

**annotation** documentation
Decibel adjustment at 45 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element** anpHelioDirectivity/R060

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="R060.png" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**type** xs:double

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

**annotation** documentation
Decibel adjustment at 60 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>anpHeloDirectivity/R075</code></td>
<td><img src="image1.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td><code>minOcc 0</code>&lt;br&gt;<code>maxOcc 1</code>&lt;br&gt;<code>content simple</code></td>
<td>Decibel adjustment at 75 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><code>anpHeloDirectivity/R090</code></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td><code>minOcc 0</code>&lt;br&gt;<code>maxOcc 1</code>&lt;br&gt;<code>content simple</code></td>
<td>Decibel adjustment at 90 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><code>anpHeloDirectivity/R105</code></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td><code>minOcc 0</code>&lt;br&gt;<code>maxOcc 1</code>&lt;br&gt;<code>content simple</code></td>
<td>Decibel adjustment at 105 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><code>anpHeloDirectivity/R120</code></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td><code>minOcc 0</code>&lt;br&gt;<code>maxOcc 1</code>&lt;br&gt;<code>content simple</code></td>
<td>Decibel adjustment at 120 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td><code>anpHeloDirectivity/R135</code></td>
<td><img src="image5.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td><code>minOcc 0</code>&lt;br&gt;<code>maxOcc 1</code>&lt;br&gt;<code>content simple</code></td>
<td>Decibel adjustment at 135 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>
element anpHelioDirectivity/R150

Decibel adjustment at 150 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

element anpHelioDirectivity/R165

Decibel adjustment at 165 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

element anpHelioDirectivity/R180

Decibel adjustment at 180 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

complexType anpHelioDirectivitySet

A set of helicopter directives.

children anpHelicopterId anpHelioDirectivity

used by element fleet/anpHelioDirectivitySet
A set of helicopter directivities.

**element anpHeloDirectivitySet/anpHelicopterId**

- **type**: anpHeloDirectid
- **properties**: content simple
- **facets**: Kind Value Annotation
  - minLength 0
  - maxLength 12

**annotation documentation**
Unique ID for ANP helicopters.

**element anpHeloDirectivitySet/anpHeloDirectivity**

- **groundType**
- **opMode**
- **L180**
- **L165**
- **L150**
- **L135**
- **L120**
- **L105**
- **L090**
- **L075**
- **L060**

Decibel adjustment at 180 degrees left of the nose (88). Valid values: Min = 98.9 Max = 999.9.

Decibel adjustment at 165 degrees left of the nose (88). Valid values: Min = 98.9 Max = 999.9.

Decibel adjustment at 150 degrees left of the nose (88). Valid values: Min = 98.9 Max = 999.9.

Decibel adjustment at 135 degrees left of the nose (88). Valid values: Min = 98.9 Max = 999.9.

Decibel adjustment at 120 degrees left of the nose (88). Valid values: Min = 98.9 Max = 999.9.

Decibel adjustment at 105 degrees left of the nose (88). Valid values: Min = 99.9 Max = 999.9.

Decibel adjustment at 90 degrees left of the nose (88). Valid values: Min = 99.9 Max = 999.9.

Decibel adjustment at 75 degrees left of the nose (88). Valid values: Min = 99.9 Max = 999.9.

Decibel adjustment at 60 degrees left of the nose (88). Valid values: Min = 99.9.
Max = 999.9.

- **L045**
  - Decibel adjustment at 45 degrees left of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **L030**
  - Decibel adjustment at 30 degrees left of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **L015**
  - Decibel adjustment at 15 degrees left of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **L000**
  - Decibel adjustment at 0 degrees left of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R015**
  - Decibel adjustment at 15 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R030**
  - Decibel adjustment at 30 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R045**
  - Decibel adjustment at 45 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R060**
  - Decibel adjustment at 60 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R075**
  - Decibel adjustment at 75 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R090**
  - Decibel adjustment at 90 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R105**
  - Decibel adjustment at 105 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R120**
  - Decibel adjustment at 120 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R135**
  - Decibel adjustment at 135 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R150**
  - Decibel adjustment at 150 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R165**
  - Decibel adjustment at 165 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.

- **R180**
  - Decibel adjustment at 180 degrees right of the nose (DB). Valid values: Min = -99.9 Max = 999.9.
complexType `anpHelicopterDirectivity`

properties
- `minOcc 1`
- `maxOcc unbounded`
- `content complex`

children
- `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`

annotation documentation

ANP Helicopter directivity.

complexType `anpHelicopterNoiseGroup`

diagram

children
- `noiseId`
- `spectralClassApproach`
- `spectralClassDeparture`
- `spectralClassFlyover`
- `speedApproach`
- `speedDeparture`
- `speedFlyover`
- `npdCurves`

used by
- element `fleet/anpHelicopterNoiseGroup`

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 `anpHelicopterNoiseGroup/noiseId`

diagram

type `anpHelicopterNoiseId`

properties
- `content simple`

facets
- Kind: `Value Annotation`
- `minLength 0`
- `maxLength 255`

annotation documentation

The noise group id.

element `anpHelicopterNoiseGroup/spectralClassApproach`

diagram
**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`

**Diagram**

**Type** `xs:short`

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

**Annotation**
- **Documentation:**
  The departure spectral class number. Valid values: 0 to 999.

---

**Element** `anpHeloNoiseGroup/spectralClassFlyover`

**Diagram**

**Type** `xs:short`

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

**Annotation**
- **Documentation:**
  The flyover spectral class number. Valid values: 0 to 999.

---

**Element** `anpHeloNoiseGroup/speedApproach`

**Diagram**

**Type** `xs:double`

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

**Annotation**
- **Documentation:**
  N 6.1 Approach reference speed (knots). Valid values: Min = 0.0 Max = 250.0.

---

**Element** `anpHeloNoiseGroup/speedDeparture`

**Diagram**

**Type** `xs:double`

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

**Annotation**
- **Documentation:**
  N 6.1 Depart reference speed (knots). Valid values: Min = 0.0 Max = 250.0.
element `anpHelioNoiseGroup/speedFlyover`

diagram

```
\text{speedFlyover}
N 6.1 Flyover reference speed (knots). Valid values: Min = 0.0 Max = 250.0.
```

type `xs:double`

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

annotation documentation
N 6.1 Flyover reference speed (knots). Valid values: Min = 0.0 Max = 250.0.

element `anpHelioNoiseGroup/npdCurves`

diagram

```
\text{npdCurves}
The set of noise curves for this group.
```

type `anpHelioNPDCurves`

properties
- `minOcc`: 0
- `maxOcc`: 1
- content: `complex`

children `npdCurve`

annotation documentation
The set of noise curves for this group.

complexType `anpHelioNPDCurve`

diagram
The Noise Power Distance curve table for a specified noise ID, noise type, operation mode, and thrust setting.
<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of noise described by this curve. Valid values: S (SBL), M (LAMAX), E (EPNL), P (PNLTM).</td>
<td></td>
</tr>
</tbody>
</table>

**element anpHelioNPDCurve/opMode**

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

<table>
<thead>
<tr>
<th>type</th>
<th>anpNedOpMode</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>pattern</td>
<td>A</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Engine operation mode.</td>
<td></td>
</tr>
</tbody>
</table>

**element anpHelioNPDCurve/sideType**

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

<table>
<thead>
<tr>
<th>type</th>
<th>anpHelioSideType</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td>pattern</td>
<td>Left</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Operation side type. Valid values: L (left), C (center), R (right), S (static)</td>
<td></td>
</tr>
</tbody>
</table>

**element anpHelioNPDCurve/L_200**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="L_200" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Decibel level at 200 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td></td>
</tr>
</tbody>
</table>

**element anpHelioNPDCurve/L_400**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="L_400" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Decibel level at 400 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td></td>
</tr>
</tbody>
</table>

**element anpHelioNPDCurve/L_630**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="L_630" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Decibel level at 630 feet AGL. Valid values: Min = -50.0 Max = 999.9.</td>
<td></td>
</tr>
</tbody>
</table>
Decibel level at 630 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**Element anpHeloNPDCurve/L_1000**

- **Diagram**
  - Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.
- **Type**: xs:double
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**:
  - Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**Element anpHeloNPDCurve/L_2000**

- **Diagram**
  - Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.
- **Type**: xs:double
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**:
  - Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**Element anpHeloNPDCurve/L_4000**

- **Diagram**
  - Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.
- **Type**: xs:double
- **Properties**:
  - content: simple
- **Annotation**:
  - Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**Element anpHeloNPDCurve/L_6300**

- **Diagram**
  - Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.
- **Type**: xs:double
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**:
  - Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**Element anpHeloNPDCurve/L_10000**

- **Diagram**
  - Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.
- **Type**: xs:double
- **Properties**:
  - minOcc: 0
Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Decibel level at 25000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

The set of noise curves.
type: `anpHeloNPDCurve`

properties:
- `minOcc`: 1
- `maxOcc`: unbounded
- `content`: complex

children:
- `noiseType`
- `opMode`
- `sideType`

values:
- `L_200`
- `L_400`
- `L_630`
- `L_1000`
- `L_2000`
- `L_4000`
- `L_6300`
- `L_10000`
- `L_20000`
- `L_40000`
- `L_63000`
- `L_100000`
- `L_200000`

annotation:
Base noise data interpolated/extrapolated upon according to slant range distance and thrust setting for aircraft.

diagram:
Procedure data element.

Step number of the procedure. Must be unique in a sequence.

Operation associated with this profile. Valid values: A (Approach), B (Descent), T (Touchdown), P (Climbout), I (ClimbIn)

Profile group identifier. Valid values: STANDARD, NOSEMBR (IENV standard data).

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 approach (e.g., 1 = 3 degree approach, 2 = 5 degree approach).

Type of step.

Procedure's duration (hours).

Distance along the ground relative to start (min = 999999999, max = 999999999, know).

Altitude of aircraft (min = -8999, max = 60000, know).

Ground speed at this point (min = 0, max = 800, know).

element anpHelioProcedureStep/stepNum

diagram

stepNum

Step number of the procedure. Must be unique in a sequence.

type xs:int

properties content simple

annotation documentation

Step number of the procedure. Must be unique in a sequence.

element anpHelioProcedureStep/operationType

diagram

operationType

Operation associated with this profile. Valid values: A (Approach), B (Descent), T (Touchdown), P (Climbout), I (ClimbIn)

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** `anpHelProcedureStep/profileGroupId`

**diagram**

**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** `anpHelProcedureStep/profileStageLength`

**diagram**

**type** `string1`

**properties** | content simple
---|---
facets | Kind | Value | Annotation
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).

**element** `anpHelProcedureStep/stepType`

**diagram**

**type** `string1`

**properties** | minOcc 0 | maxOcc 1
---|---
content | simple
facets | Kind | Value | Annotation
minLength | 0
maxLength | 1
annotation | documentation
Type of step.

**element** `anpHelProcedureStep/duration`
element `anpHelicopterProcedureStep/distance`

```
<distance type="xs:double">
  Distance along the ground relative to start (min = ?9999999.9, max = 9999999.9, feet).
</distance>
```

```

type `xs:double`

properties
- minOcc 0
- maxOcc 1

annotation documentation Distance along the ground relative to start (min = ?9999999.9, max = 9999999.9, feet).
```

```

element `anpHelicopterProcedureStep/altitude`

```
<altitude type="xs:double">
  Altitude of aircraft (min = -9999, max = 60000, feet).
</altitude>
```

```

type `xs:double`

properties
- minOcc 0
- maxOcc 1

annotation documentation Altitude of aircraft (min = -9999, max = 60000, feet).
```

```

element `anpHelicopterProcedureStep/speed`

```
<speed type="xs:double">
  Ground speed at this point (min = 0, max = 600, knots).
</speed>
```

```

type `xs:double`

properties
- minOcc 0
- maxOcc 1

annotation documentation Ground speed at this point (min = 0, max = 600, knots).
```

complexType `anpHelicopterProfile`

```
<anpHelicopterProfile>
    <duration type="xs:double">
        Procedure's duration (hours).
    </duration>
    <distance type="xs:double">
        Distance along the ground relative to start (min = ?9999999.9, max = 9999999.9, feet).
    </distance>
    <altitude type="xs:double">
        Altitude of aircraft (min = -9999, max = 60000, feet).
    </altitude>
    <speed type="xs:double">
        Ground speed at this point (min = 0, max = 600, knots).
    </speed>
</anpHelicopterProfile>
```
Profile data element.

- operationType
  - Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&Go), F (Cruise/FL), V (OverFL).

- profileGroupId
  - Profile group identifier, valid values: STANDARD, NOISEMAP, [DNM standard data].

- profileStageLength
  - 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).

- weight
  - Aircraft weight during this operation type. Valid values: 0 through 999999.99

- useDirectivity
  - Use directivity? Y = Yes, N = No.

- useTrack
  - Use track (static heading is relative to track)? Y = Yes, N = No.

- headingTakeoffGround
  - Takeoff ground heading. Valid values: 180 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: 180 through 360. (degrees)

- step
  - The procedure steps.

---

element anpHelProfileSet/profile

- annotation
documentation
Profile data element.

element anpHelProfile/operationType

diagram

- operationType
  - Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&Go), F (Cruise/FL), V (OverFL)

- type
  - string

- properties
  - content simple
### AnpHelopProfile/profileGroupId

- **Diagram:** Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).

- **Type:** string 8

- **Properties:** content simple

- **Facets:**
  - **Kind:** minLength
  - **Value:** 0
  - **Annotation:** documentation

- **Annotation documentation:** Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).

### AnpHelopProfile/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 1

- **Properties:** content simple

- **Facets:**
  - **Kind:** minLength
  - **Value:** 0
  - **Annotation:** documentation

### AnpHelopProfile/weight

- **Diagram:** Aircraft weight during this operation type. Valid values: 0 through 999999. (lb)

- **Type:** xs:int

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

- **Annotation documentation:** Aircraft weight during this operation type. Valid values: 0 through 999999. (lb)

### AnpHelopProfile/useDirectivity

- **Diagram:**
  - Use directivity? Y = Yes
  - N = No.

- **Type:** yesNoType
**element** `anpHeloProfile/useTrack`

- **type** `yesNoType`
- **annotation documentation**
  
  Use track (static heading is relative to track)? Y=Yes N=No.

**element** `anpHeloProfile/headingTakeoffGround`

- **type** `xs:double`
- **annotation documentation**
  
  Takeoff ground heading. Valid values: -180 through 360. (degrees)

**element** `anpHeloProfile/headingTakeoffHover`

- **type** `xs:double`
- **annotation documentation**
  
  Takeoff hover heading. Valid values: -180 through 360. (degrees)

**element** `anpHeloProfile/headingLandGround`

- **type** `xs:double`
- **annotation documentation**
  
  Landing ground heading. Valid values: -180 through 360. (degrees)

**element** `anpHeloProfile/headingLandHover`

- **annotation documentation**
  
  Landing hover heading. Valid values: -180 through 360. (degrees)
type `xs:double`

properties
- minOcc 0
- maxOcc 1
- content simple

annotation documentation
Landing hover heading. Valid values: -180 through 360 (degrees)

element `anpHeloprofile/step`

```
<step>
  <stepNum/>
  <operationType/>
  <profileGroupId/>
  <profileStageLength/>
  <stepType/>
  <duration/>
  <distance/>
  <altitude/>
  <speed/>
</step>
```

type `anpHeloprocedureStep`

properties
- minOcc 0
- maxOcc unbounded
- content complex

children `stepNum operationType profileGroupId profileStageLength stepType duration distance altitude speed`

annotation documentation
The procedure steps.
complexType `anPHelioProfileSet`

children `anPHelicopterId profile`

used by element `fleet/anPHelioProfileSet`

annotation documentation
A profile set for an ANP helicopter.

element `anPHelioProfileSet/anPHelicopterId`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th><code>anPHeloid</code></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 255</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The anp helicopter id.</td>
</tr>
</tbody>
</table>

element `anPHelioProfileSet/profile`
One or more ANP profiles.

The procedure steps.
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/noiseId**

- **type**: anpNoiseId
- **properties**: content simple
- **facets**:
  - 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).
Spectral class number for departure (min = 0, max = 999).

```
element anpNoiseGroup/spectralClassAfterburner
diagram

type xs:short
properties
  minOcc 0
  maxOcc 1
content simple
annotation documentation Spectral class number for afterburner (min = 0, max = 999).

```

```
element anpNoiseGroup/thrustSetType
diagram

type string1
properties content simple
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

type string1
properties content simple
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

type anpNPDCurves
properties content complex
children npdCurve
annotation documentation The set of noise curves for ANP aircraft.

complexType anpNPDCurve

diagram
<table>
<thead>
<tr>
<th>noiseType</th>
<th>opMode</th>
<th>netThrustPerEngine</th>
<th>L_200</th>
<th>L_400</th>
<th>L_630</th>
<th>L_1000</th>
<th>L_2000</th>
<th>L_4000</th>
<th>L_6300</th>
<th>L_10000</th>
<th>L_16000</th>
<th>L_25000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 are S (SEL), M (LMAX), E (EBNL), D (DNML), or percentage depending on parent noise group (THRUSET_TYPE value).

- **opMode**: Engine operation mode. Valid values are A (Approach), D (Departure), X (Afterburner).

- **netThrustPerEngine**: Net thrust per engine (min = 0.10, max = 999999.0, 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

**element** `anpNPDCurve/noiseType`  
*diagram*  
Type of noise described by this curve. Valid values are S (SEL), M (LMAX), E (EBNL), D (DNML), or percentage depending on parent noise group (THRUSET_TYPE value).

**type** `anpNpdNoiseType`  
*properties* content simple
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td></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 (PNLTM).

element anpNPDCurve/opMode

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

properties content simple

facets Kind Value Annotation
| | | |
| pattern | A|D|L|G|H|I|J|V|W|Y|Z|B|C|E|F|X|S |

annotation documentation
Engine operation mode. Valid values: A (Approach), D (Depart), X (Afterburner)

element anpNPDCurve/netThrustPerEngine

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

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 anpNPDCurve/L_200

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

properties content simple

annotation documentation
Decibel level at 200 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element anpNPDCurve/L_400

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

properties content simple

annotation documentation
Decibel level at 400 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element anpNPDCurve/L_630

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

properties content simple

annotation documentation
<table>
<thead>
<tr>
<th>Decibel level at 630 feet AGL. Valid values: Min = -50.0 Max = 999.9.</th>
</tr>
</thead>
</table>

**element anNPDCurve/L\_1000**

<table>
<thead>
<tr>
<th>Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</th>
</tr>
</thead>
</table>

**element anNPDCurve/L\_2000**

<table>
<thead>
<tr>
<th>Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</th>
</tr>
</thead>
</table>

**element anNPDCurve/L\_4000**

<table>
<thead>
<tr>
<th>Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</th>
</tr>
</thead>
</table>

**element anNPDCurve/L\_6300**

<table>
<thead>
<tr>
<th>Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.</th>
</tr>
</thead>
</table>

**element anNPDCurve/L\_10000**

<table>
<thead>
<tr>
<th>Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</th>
</tr>
</thead>
</table>

**element anNPDCurve/L\_16000**

<table>
<thead>
<tr>
<th>Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.</th>
</tr>
</thead>
</table>
Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

Decibel level at 25000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

The set of defined noise curves.

The set of defined noise curves.
**type**

`ampNPDCurve`

**properties**

- `minOcc`: 1
- `maxOcc`: unbounded
- `content`: complex

**children**

- `noiseType`
- `opMode`
- `netThrustPerEngine`
- `L_200`
- `L_400`
- `L_630`
- `L_1000`
- `L_2000`
- `L_4000`
- `L_6300`
- `L_10000`
- `L_16000`
- `L_25000`

**annotation**

Base noise data interpolated/extrapolated upon according to slant range distance and thrust setting for aircraft.

**complexType**

`ampProcedureStep`
<table>
<thead>
<tr>
<th>element</th>
<th>anpProcedureStep/stepNum</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image1.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:int</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Step number of the procedure. Must be unique in a sequence.

<table>
<thead>
<tr>
<th>element</th>
<th>anpProcedureStep/flapId</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>anpFlapId</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
maxOcc 1 
content simple |
| facets | Kind | Value | Annotation |
|        | minLength | 0 |
|        | maxLength | 6 |
| annotation | documentation |

Flap-setting identifier.

<table>
<thead>
<tr>
<th>element</th>
<th>anpProcedureStep/stepType</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image3.png" alt="Diagram" /></td>
</tr>
<tr>
<td>type</td>
<td>string1</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
maxOcc 1 
content simple |
element `anpProcedureStep/thrustType`

- **Diagram**
  - **Type**: `string1`
  - **Properties**:
    - `minOcc`: 0
    - `maxOcc`: 1
  - **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
  - **Annotation**: Documentation: Parameter particular for this step type (min = 0.0, max = 9999999.9).

complexType `anpProcedureSteps`

- **Diagram**
  - An array of procedure steps for the profile.
  - **Children**: `step`
A set of procedure steps for the profile.

**element anpProcedureSteps/step**

- **Diagram:**
  - **stepNum**
  - **flagId**
  - **stepType**
  - **thrustType**
  - **param1**
  - **param2**
  - **param3**

**Type** anpProcedureStep

**Properties**
- minOcc 1
- maxOcc unbounded
- content complex

**Children**
- stepNum flagId stepType thrustType param1 param2 param3

**Annotation** documentation

An ANP procedure step.
element anpProfile\operationType

diagram

<table>
<thead>
<tr>
<th>diag</th>
<th>operationType</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch &amp; Go), F (Circuit), V (Over)</td>
</tr>
</tbody>
</table>

<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</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>Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch &amp; Go), F (Circuit), V (Over)</td>
</tr>
</tbody>
</table>

element anpProfile\profileGroupId

diagram

<table>
<thead>
<tr>
<th>diag</th>
<th>profileGroupId</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Profile group identifier. Valid values: STANDARD, NOISEMAP (NORM standard data).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string8</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>
Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).

- **element anpProfile/profileStageLength**
  - **type** `string`
  - **properties** `content simple`
  - **facets**
    - Kind: minLength 0
    - Value: 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).

- **element anpProfile/weight**
  - **type** `xs:int`
  - **properties** `content simple`
  - **annotation** documentation
    Aircraft weight during this operation type (min = 0, max = 999999, lbs).

- **element anpProfile/procedureSteps**
  - **type** `anpProcedureSteps`
  - **properties** `content complex`
  - **children** `step`
  - **annotation** documentation
    Set of procedure steps associated with this profile.

- **element anpProfile/profilePoints**
  - **type** `anpProfilePoints`
  - **properties** `content complex`
  - **children** `point`
  - **annotation** documentation
Set of points associated with this profile.

complexType `anpProfilePoint`

- **pointNum**: Point index number. Must be sequential and unique, starting at 1.
- **distance**: Distance along the ground relative to start (min = 0, max = 9999999.9, feet).
- **altitude**: Altitude of aircraft (min = -9999, max = 60000, feet).
- **speed**: Ground speed at this point (min = 0, max = 600, knots).
- **thrustSet**: Corrected net thrust per engine at this point (min = 0, max = 9999, lbs or % max thrust).
- **opMode**: Operational mode. Valid values: A (Approach), O (Cruise), X (Overflight).

**annotation documentation**

A single profile point data element.

**element `anpProfilePoint/pointNum`**

- **type**: xs:short
- **properties**: content simple
- **annotation documentation**

Point index number. Must be sequential and unique, starting at 1.

**element `anpProfilePoint/distance`**

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

Distance along the ground relative to start (min = 0, max = 9999999.9, feet).

**element `anpProfilePoint/altitude`**

- **type**: xs:double
- **properties**: content simple
### element npProfilePoint/speed

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Altitude of aircraft (min = -9999, max = 60000, feet).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>npProfilePoint/speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of speed" /></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>

### element npProfilePoint/thrustSet

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corrected net thrust per engine at this point (min = 0.1, max = 99999, klbs or % max thrust).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>npProfilePoint/thrustSet</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of thrustSet" /></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>

### element npProfilePoint/opMode

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operational mode. Valid values: A (Approach), D (Departure), X (Overflight).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>npProfilePoint/opMode</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of opMode" /></td>
</tr>
<tr>
<td>type</td>
<td>string1</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>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>
</tbody>
</table>

### complexType npProfilePoints

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A set of point profile data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>complexType</th>
<th>npProfilePoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of npProfilePoints" /></td>
</tr>
<tr>
<td>children</td>
<td>point</td>
</tr>
<tr>
<td>used by</td>
<td>element npProfile/profilePoints</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

### element npProfilePoints/point

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A set of point profile data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>npProfilePoints/point</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram of point" /></td>
</tr>
</tbody>
</table>
type: `anpProfilePoint`

properties:
- minOcc: 1
- maxOcc: unbounded
- content: complex

children: `pointNum distance altitude speed thrustSet opMode`

complexType: `anpProfileSet`

diagram:

children:
- `anpAirplaneId profile`

used by:
- `fleet/anpProfileSet`

annotation:
- documentation
  - A profile set for an ANP airplane.

element: `anpProfileSet/anpAirplaneId`

diagram:

type: `anpAirplaneId`

properties:
- content: simple

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

annotation:
- documentation
  - Airplane's ANP ID.

element: `anpProfileSet/profile`

diagram:
One or more ANP profiles.

- **operationType**: Operation associated with this profile. Valid values: A (approach), D (Descent), T (Takeoff/Runup), F (Cruise/Fly), V (Veer/Fly).
- **profileGroupId**: Profile group identifier. Valid values: STANDARD, NUSEMAP (UN standard data).
- **profileStageLength**: Profile stage number (min = 1, max = 9). Approach stage numbers are not related to top 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 stages can mean different kinds of approaches (e.g. 1 - 3 degree approach, 2 - 5 degree approach).
- **weight**: Aircraft weight during this operation type (min = 0, max = 999999, low).
- **procedureSteps**: Set of procedure steps associated with this profile.
- **profilePoints**: Set of points associated with this profile.

**complexType** `anpThrustGeneral`
The type of generalized thrust-setting.

Corrected net thrust per engine coefficient. Valid values: -199999.9 through 99999.9. (lb).

Speed (TAS) adjustment coefficient. Valid values: 20000000 through 100000000. (lb/in TAS at sea level and RPM)

Altitude adjustment coefficient at MSL. (lb/ft)

Altitude squared adjustment coefficient at MSL. (lb/ft²)

Temperature adjustment coefficient. (lb/°F)

EPR or N1 (opt/min) adjustment coefficient. (lb/EPR)

Corrected net thrust per engine coefficient. Valid values: -199999.9 through 99999.9. (lb).

Corrected net thrust per engine coefficient. Valid values: -199999.9 through 99999.9. (lb).

General thrust data for an ANP aircraft.
type xs:double
properties content simple
annotation documentation
Speed (TAS) adjustment coefficient. Valid values: -200.0000 through 1000.0000. (lb/knot TAS at sea level and 59°F)

element anpThrustGeneral/coef_GA

diagram

Altitude adjustment coefficient at MSL. (lb/ft)

type xs:double
properties content simple
annotation documentation
Altitude adjustment coefficient at MSL. (lb/ft)

element anpThrustGeneral/coef_GB

diagram

Altitude-squared adjustment coefficient at MSL. (lb/ft²)

type xs:double
properties content simple
annotation documentation
Altitude-squared adjustment coefficient at MSL. (lb/ft²)

element anpThrustGeneral/coef_H

diagram

Temperature adjustment coefficient. (lb/°C)

type xs:double
properties content simple
annotation documentation
Temperature adjustment coefficient. (lb/°C)

element anpThrustGeneral/coef_K1

diagram

EPR or N1/sqrt(θ) adjustment coefficient. (lb/EPR)

type xs:double
properties content simple
annotation documentation
EPR or N1/sqrt(θ) adjustment coefficient. (lb/EPR)

element anpThrustGeneral/coef_K2

diagram

EPR or N1/sqrt(θ)-squared adjustment coefficient. (lb/EPR²)

type xs:double
properties content simple
The document appears to describe a complex type `anpThrustJet` with children `thrustType`, `coeff_E`, `coeff_F`, `coeff_GA`, `coeff_GB`, and `coeff_H`. The `thrustType` element is documented as providing data for an ANP aircraft. The `coeff_E` element is described as a corrected net thrust per engine coefficient, with valid values ranging from 0.0 through 500000.0 (lb). The `coeff_F` element, however, is not clearly documented in the provided text. It specifies that the type is `xs:double`, with simple content and documentation that mentions a corrected net thrust per engine coefficient, valid values ranging from 0.0 through 500000.0 (lb).
element anpThrustJet/coeff_GA

diagram

type xs:double

properties content simple

annotation documentation
  Altitude adjustment coefficient at MSL. (lb/ft)

element anpThrustJet/coeff_GB

diagram

type xs:double

properties content simple

annotation documentation
  Altitude-squared adjustment coefficient at MSL. (lb/ft^2)

element anpThrustJet/coeff_H

diagram

type xs:double

properties content simple

annotation documentation
  Temperature adjustment coefficient. (lb/°C)

complexType anpThrustProp

children thrustType efficiency power

used by element anpThrustSet/thrustProp

annotation documentation
  Prop thrust data for an ANP aircraft.

element anpThrustProp/thrustType
type string

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 1

annotation documentation
Type of thrust.

element anpThrustProp/efficiency

diagram

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

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

Specifies a set of thrust records for an ANP airplane.

children anpAirplaneId thrustGeneral thrustJet thrustProp tsfcCoefficients

used by element fleet/anpThrustSet

annotation documentation
Specifies a set of thrust records for an ANP airplane.

element anpThrustSet/anpAirplaneId

diagram

Airplane's ANP ID.

type anpAirplaneId

properties content simple

facets Kind Value Annotation
type `anpTsfcCoefficients`

properties:
- `minOcc` 0
- `maxOcc` unbounded
- `content` complex

children:
- `mode k1 k2 k3 k4 beta1 beta2 beta3 alpha`

complexType `anpTsfcCoefficients`
Arrival or departure mode.

**k1**
- Departure thrust specific fuel consumption constant coefficient.

**beta1**
- Arrival thrust specific fuel consumption Mach number coefficient.

**beta2**
- Arrival thrust specific fuel consumption altitude coefficient.

**beta3**
- Arrival thrust specific fuel consumption thrust thrust coefficient.

**alpha**
- Arrival thrust specific fuel consumption constant coefficient.

**TSFC coefficient data for an ANP aircraft.**
element anpTsfCoefficients/k2

diagram Departure thrust specific fuel consumption Mach number coefficient.

type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Departure thrust specific fuel consumption Mach number coefficient.

element anpTsfCoefficients/k3

diagram Departure thrust specific fuel consumption altitude coefficient.

type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Departure thrust specific fuel consumption altitude coefficient.

element anpTsfCoefficients/k4

diagram Departure thrust specific fuel consumption thrust coefficient.

type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Departure thrust specific fuel consumption thrust coefficient.

element anpTsfCoefficients/beta1

diagram Arrival thrust specific fuel consumption Mach number coefficient.

type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Arrival thrust specific fuel consumption Mach number coefficient.

element anpTsfCoefficients/beta2

diagram Arrival thrust specific fuel consumption altitude coefficient.

type xs:double

properties minOcc 0
maxOcc 1
content simple
Arrival thrust specific fuel consumption altitude coefficient.

**element anpTsfCoefficents/beta3**
- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple

**element anpTsfCoefficents/alpha**
- **type**: xs:double
- **properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple

**complexType auxiliaryPowerUnit**

**children**:
- name
- baseAuxiliaryPowerUnit
- defaultTimeArrivals
- defaultTimeDepartures
- CO
- HC
- NOx
- SOx
- PM

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.
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**
  - *name*
    - Identifying name of APU.
- **type** `apuName`
- **properties** content `simple`
- **facets**
  - Kind: Value Annotation
    - minLength: 0
    - maxLength: 30
- **annotation documentation**
  - Identifying name of APU.

---

**element auxiliaryPowerUnit/baseAuxiliaryPowerUnit**

- **diagram**
  - *baseAuxiliaryPowerUnit*
    - Base reference name; typically a system name.
- **type** `apuName`
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content `simple`
- **facets**
  - Kind: Value Annotation
    - minLength: 0
    - maxLength: 30
- **annotation documentation**
  - Base reference name, typically a system name.

---

**element auxiliaryPowerUnit/defaultTimeArrivals**

- **diagram**
  - *defaultTimeArrivals*
    - Default length of time APU used for powering arrival aircraft (minutes). Valid values: Nonnegative.
- **type** `xs:double`
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content `simple`
  - default: 0
- **annotation documentation**
  - Default length of time APU used for powering arrival aircraft (minutes). Valid values: Nonnegative.

---

**element auxiliaryPowerUnit/defaultTimeDepartures**

- **diagram**
  - *defaultTimeDepartures*
    - Default length of time APU used for powering departure aircraft (minutes). Valid values: Nonnegative.
- **type** `xs:double`
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content `simple`
  - default: 0
- **annotation documentation**
  - Default length of time APU used for powering departure aircraft (minutes). Valid values: Nonnegative.
<table>
<thead>
<tr>
<th>element</th>
<th>auxiliaryPowerUnit/CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram CO" /></td>
</tr>
<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></td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>content</td>
<td>Amount of carbon monoxide emitted (kg/hour). Valid values [0…1,000].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>auxiliaryPowerUnit/HC</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram HC" /></td>
</tr>
<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></td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>content</td>
<td>Amount of hydrocarbons emitted (kg/hour). Valid values [0…1,000].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>auxiliaryPowerUnit/NOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram NOx" /></td>
</tr>
<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></td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>content</td>
<td>Amount of nitrous oxide emitted (kg/hour). Valid values [0…1,000].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>auxiliaryPowerUnit/SOx</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram SOx" /></td>
</tr>
<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></td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>content</td>
<td>Amount of sulfur oxide emitted (kg/hour). Valid values [0…1,000].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>auxiliaryPowerUnit/PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Diagram PM" /></td>
</tr>
<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></td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>content</td>
<td>Amount of particulate matter emitted (kg/hour). Valid values [0…1,000].</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Amount of particulate matter emitted (kg/hour). Valid values [0…1,000].</td>
<td></td>
</tr>
</tbody>
</table>

complexType **badaAirplane**
<table>
<thead>
<tr>
<th>used by</th>
<th>element <code>fleet/badaAirplane</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Block used to create a user defined BADA airplane.</td>
</tr>
</tbody>
</table>

**element badaAirplane/badaAirplaneId**

<table>
<thead>
<tr>
<th>diagram</th>
<th><code>badaAirplaneId</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>badaAirplaneId</code></td>
</tr>
<tr>
<td>properties</td>
<td>content <code>simple</code></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>ID of a BADA airplane model. Must be unique.</td>
</tr>
</tbody>
</table>

**element badaAirplane/mfgDescription**

<table>
<thead>
<tr>
<th>diagram</th>
<th><code>mfgDescription</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>string255</code></td>
</tr>
<tr>
<td>properties</td>
<td>content <code>simple</code></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>Manufacturer description.</td>
</tr>
</tbody>
</table>

**element badaAirplane/numEngines**

<table>
<thead>
<tr>
<th>diagram</th>
<th><code>numEngines</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>xs:int</code></td>
</tr>
<tr>
<td>properties</td>
<td>content <code>simple</code></td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The number of engines.</td>
</tr>
</tbody>
</table>

**element badaAirplane/engineTypeCode**

<table>
<thead>
<tr>
<th>diagram</th>
<th><code>engineTypeCode</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>engineType</code></td>
</tr>
<tr>
<td>properties</td>
<td>content <code>simple</code></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>pattern `Jet</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The engine type code: J/T/P.</td>
</tr>
</tbody>
</table>

**element badaAirplane/wakeCategory**

<table>
<thead>
<tr>
<th>diagram</th>
<th><code>wakeCategory</code></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>badaWakeType</code></td>
</tr>
<tr>
<td>properties</td>
<td>content <code>simple</code></td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
</tbody>
</table>
annotation
documentation

The wake category.

**element** badaAirplane/referenceAircraftMass
diagram

Minimum aircraft mass (min = 0.0, max = 455.0 metric ton).

**type** xs:double

**properties** content simple

**annotation** documentation
Minimum aircraft mass (min = 0.0, max = 455.0 metric ton).

**element** badaAirplane/minAircraftMass
diagram

Minimum aircraft mass (min = 0.0, max = 455.0 metric ton).

**type** xs:double

**properties** content simple

**annotation** documentation
Minimum aircraft mass (min = 0.0, max = 455.0 metric ton).

**element** badaAirplane/maxAircraftMass
diagram

Maximum aircraft mass (min = 0.0, max = 455.0 metric ton).

**type** xs:double

**properties** content simple

**annotation** documentation
Maximum aircraft mass (min = 0.0, max = 455.0 metric ton).

**element** badaAirplane/maxPayloadMass
diagram

Maximum payload mass (min = 0.0, max = 455.0 metric ton).

**type** xs:double

**properties** content simple

**annotation** documentation
Maximum payload mass (min = 0.0, max = 455.0, (metric ton)).

**element** badaAirplane/weightGradient
diagram

Weight gradient on maximum altitude (min = 0.0, max = 10.0, feet/kg).

**type** xs:double

**properties** content simple

**annotation** documentation
Weight gradient on maximum altitude (min = 0.0, max = 10.0, feet/kg).

**element** badaAirplane/maxOperatingSpeed
Maximum operating speed (min = 0.0, max = 600.0, knots cas).

Maximum operating Mach number (min = 0.0, max = 10.0, mach).

Maximum operating altitude (min = 19999.0, max = 60000.0, feel MSL).

Maximum altitude at maximum takeoff weight and ISA (min = 19999.0, max = 60000.0, feel MSL).

Temperature gradient on maximum altitude.

Wing surface area (min = 0.0, max = 10000.0, square meters).
Wing surface area (min = 0.0, max = 1000.0, square meters).

**element badaAirplane/buffetOnsetLiftCoeff**

- **diagram**
  ![buffetOnsetLiftCoeff](image)
  
- **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](image)
  
- **type** `xs:double`
- **properties** content simple
- **annotation** documentation
  Buffeting gradient (jet only).

**element badaAirplane/machDragCoeff**

- **diagram**
  ![machDragCoeff](image)
  
- **type** `xs:double`
- **properties** content simple
- **annotation** documentation
  Mach drag coefficient (min = 0.0, max = 10.0).

**complexType badaAltitudeDistribution**

- **diagram**
  ![badaAltitudeDistribution](image)
  
- **children** `altitudeCount`, `distanceMean`, `distanceStddev`, `distanceLow`, `distanceHigh`, `altitude`
- **used by** `element badaAltitudeDistributionSet/altitudeDistribution`
- **annotation** documentation
  BADA altitude distribution data.

**element badaAltitudeDistributionSet/altitudeDistribution**

- **diagram**
  ![badaAltitudeDistributionSet](image)
  
- **children** `altitudeCount`, `distanceMean`, `distanceStddev`, `distanceLow`, `distanceHigh`, `altitude`
- **used by** `element badaAltitudeDistributionSet/altitudeDistribution`
- **annotation** documentation
  BADA altitude distribution data.
element badaAltitudeDistribution/distanceMean

diagram

Mean distance for a selected altitude. (nMi).

type xs:double

properties
  minOcc 0
  maxOcc 1

content simple

annotation documentation
  Mean distance for a selected altitude. (nMi).


element badaAltitudeDistribution/distanceStddev

diagram

Standard deviation for the distance of a selected altitude. (nMi).

type xs:double

properties
  minOcc 0
  maxOcc 1

content simple

annotation documentation
  Standard deviation for the distance of a selected altitude. (nMi).


element badaAltitudeDistribution/distanceLow

diagram

Minimum distance for a selected altitude. (nMi).

type xs:double

properties
  minOcc 0
  maxOcc 1

content simple

annotation documentation
  Minimum distance for a selected altitude. (nMi).


element badaAltitudeDistribution/distanceHigh

diagram

Maximum distance for a selected altitude. (nMi).

type xs:double

properties
  minOcc 0
  maxOcc 1

content simple

annotation documentation
  Maximum distance for a selected altitude. (nMi).
**complexType badaAltitudeDistributionSet**

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

**children**
- `badaAirplaneId`
- `altitudeDistribution`

**used by**
- `fleet/badaAltitudeDistributionSet`
- `fleet/badaDefaultAltitudeDistributionSet`

**annotation**
- `documentation`:
  
  A block for defining a BADA altitude distribution set.

**element badaAltitudeDistributionSet/badaAirplaneId**

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

**type**
- `badaAirplaneId`

**properties**
- `content`: simple

**facets**
- `Kind`: Annotation
- `minLength`: 0
- `maxLength`: 255

**annotation**
- `documentation`:
  
  Airplane's BADA ID.

**element badaAltitudeDistributionSet/altitudeDistribution**

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

**type**
- `badaAltitudeDistribution`

**properties**
- `minOcc`: 1
- `maxOcc`: unbounded
- `content`: complex
complexType badaConfig

element badaConfig

  children phase configName stallSpeed parasiticDrag inducedDrag

  used by element badaConfigSet/badaConfig

  annotation documentation
  BADA Configuration Coefficient data.

element badaConfig/phase

  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

  type string10

  properties minOcc 0
  maxOcc 1

  facets Kind Value Annotation
  minLength 0
  maxLength 10

  annotation documentation
  The configuration identifier.

element badaConfig/stallSpeed

  type xs:double
element: badaConfig/parasiticDrag

diagram

The parasitic drag coefficient. Valid values: 0.0 through 10.0.

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

The induced drag coefficient. Valid values: 0.0 through 10.0.

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

A block for a custom BADA airplane configuration coefficient set.

children
badaAirplaneId badaConfig

used by
element fleet/badaConfigSet

annotation documentation
A block for a custom BADA airplane configuration coefficient set.

element: badaConfigSet/badaAirplaneId

diagram

The BADA airplane ID for the profile set.

type: badaAirplaneId

properties
content: simple

facets
Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
The BADA airplane ID for the profile set.
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
  - badaAirplaneId
    - The BADA aircraft ID
  - coeff_CF1
    - 1st thrust specific fuel consumption coefficient. Valid values: 0.0 through 10.0. Variable units: \( \text{kg/(kN.m)} \) (atc), \( \text{kg/(kN.m.s)} \) (turboprop), \( \text{kg/min} \) (pass)
  - coeff_CF2
    - 2nd thrust specific fuel consumption coefficient. Valid values: 0.0 through 1.0. (kts)
  - coeff_CF3
    - 1st descent fuel flow coefficient. Min. Valid values: 0.0 through 1000.0 (kg/min)
  - coeff_CF4
    - 2nd descent fuel flow coefficient. Valid values: 0.0 through 1.0. (T)
  - coeff_CR
    - Cruise fuel flow correction coefficient. Valid values: 0.0 through 10.0
- children: badaAirplaneId, coeff_CF1, coeff_CF2, coeff_CF3, coeff_CF4, coeff_CR
- used by: element fleet/badaFuel
- annotation: documentation
  A BADA Fuel data record.

**element badaFuel/badaAirplaneId**

- diagram
element badaFuel/coeff_CF1

documentation
1st thrust specific fuel consumption coefficient. Valid values: 0.0 through 10.0. Variable units: (kg/(min•kN) (jet); kg/(min•kN•knot); (turbo); kg/min (piston))

element badaFuel/coeff_CF2

documentation
2nd thrust specific fuel consumption coefficient. Valid values: 0.0 through 1. (kts)

element badaFuel/coeff_CF3

documentation
1st descent fuel flow coefficient. Min Valid values: 0.0 through 100.0.(kg/min)

element badaFuel/coeff_CF4

documentation
2nd descent fuel flow coefficient. Valid values: 0.0 through 1. (ft)

element badaFuel/coeff_CR
Cruise fuel flow correction coefficient. Valid values: 0.0 through 10.0.

complexType badaProfile

diagram

children: massRangeValue companyCode1 companyCode2 companyName aircraftVersion engine climbSpeedBelowTransitionAltitude climbSpeedAboveTransitionAltitude climbMachNumber cruiseSpeedBelowTransitionAltitude cruiseSpeedAboveTransitionAltitude cruiseMachNumber descentSpeedBelowTransitionAltitude descentSpeedAboveTransitionAltitude descentMachNumber
Climb Speed Above Transition Altitude  cruise Speed Below Transition Altitude  cruise Speed Above Transition Altitude  cruise Mach Number  
descent Speed Under Transition Altitude  descent Speed Over Transition Altitude  descent Mach Number

used by  
element badaProfileSetProfile

annotation  
documentation  
A BADA profile APF (airline procedures file) record.

element badaProfile/massRangeValue

diagram  

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LO</td>
<td>(low range)</td>
</tr>
<tr>
<td></td>
<td>AV</td>
<td>(average range)</td>
</tr>
<tr>
<td></td>
<td>HI</td>
<td>(high range)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
</tr>
<tr>
<td></td>
<td>maxLength 2</td>
</tr>
<tr>
<td></td>
<td>annotation documentation</td>
</tr>
<tr>
<td></td>
<td>Mass range. Valid values: LO (low range), AV (average range), HI (high range).</td>
</tr>
</tbody>
</table>

element badaProfile/companyCode1

diagram  

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Three-letter company code.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>properties minOcc 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td></td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
</tr>
<tr>
<td></td>
<td>maxLength 3</td>
</tr>
<tr>
<td></td>
<td>annotation documentation</td>
</tr>
<tr>
<td></td>
<td>Three-letter company code.</td>
</tr>
</tbody>
</table>

element badaProfile/companyCode2

diagram  

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Two-letter company code.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>properties minOcc 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td></td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
</tr>
<tr>
<td></td>
<td>maxLength 2</td>
</tr>
<tr>
<td></td>
<td>annotation documentation</td>
</tr>
<tr>
<td></td>
<td>Two-letter company code.</td>
</tr>
</tbody>
</table>

element badaProfile/companyName

diagram  

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Name of airline that uses this procedure.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>string15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>properties minOcc 0</td>
</tr>
<tr>
<td></td>
<td>maxOcc 1</td>
</tr>
<tr>
<td></td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
</tr>
</tbody>
</table>
Name of airline that uses this procedure.

**element** badaProfile/aircraftVersion

- **diagram**
  
  Aircraft version to which this procedure applies.

- **type** string12

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

- **facets**
  - Kind: Annotation
  - minLength 0
  - maxLength 12

- **annotation**
  - documentation
  - Aircraft version to which this procedure applies.

**element** badaProfile/engine

- **diagram**
  
  Engine identifier.

- **type** string12

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

- **facets**
  - Kind: Annotation
  - minLength 0
  - maxLength 12

- **annotation**
  - documentation
  - Engine identifier.

**element** badaProfile/climbSpeedBelowTransitionAltitude

- **diagram**
  
  Standard climb speed (CAS) between 1,500/6,000 and 10,000 feet. Valid values: 0.0, through 600.0. (kts).

- **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**
  
  Standard climb speed (CAS) between 10,000 feet and Mach transition altitude. Valid values: 0.0 through 600.0. (kts)

- **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**
  
  Standard climb Mach number above Mach transition altitude. Valid values: 0.0 through 10.0.
<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>badaProfile/cruiseSpeedBelowTransitionAltitude</td>
<td>xs:double</td>
<td>simple</td>
<td>Standard climb Mach number above Mach transition altitude. Valid values: 0.0 through 10.0.</td>
</tr>
<tr>
<td>badaProfile/cruiseSpeedAboveTransitionAltitude</td>
<td>xs:short</td>
<td>simple</td>
<td>Standard cruise (CAS) between 3,000 and 10,000 feet. Valid values: 0.0 through 600.0 (kts).</td>
</tr>
<tr>
<td>badaProfile/cruiseMachNumber</td>
<td>xs:double</td>
<td>simple</td>
<td>Standard cruise Mach number above transition altitude. Valid values: 0.0 through 10.0.</td>
</tr>
<tr>
<td>badaProfile/descentSpeedUnderTransitionAltitude</td>
<td>xs:short</td>
<td>simple</td>
<td>Standard descent speed (CAS) between 3,000/6,000 and 10,000 feet. Valid values: 0.0 through 600.0 (kts).</td>
</tr>
<tr>
<td>badaProfile/descentSpeedOverTransitionAltitude</td>
<td>xs:short</td>
<td>simple</td>
<td>Standard descent speed (CAS) above 10,000 feet until Mach transition Valid values: 0.0 through 600.0 (kts).</td>
</tr>
</tbody>
</table>
element badaProfile/descentMachNumber

diagram
descentMachNumber

Standard descent Mach number above transition altitude. Valid values: 0.0 through 10.0.

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 badaAirplaneId profile

used by element fleet/badaProfileSet

annotation documentation
A block used to define a custom BADA profile set.

element badaProfileSet/badaAirplaneId

diagram

badaAirplaneId

The BADA airplane ID for the profile set.

type badaAirplaneId

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
<table>
<thead>
<tr>
<th>type</th>
<th>badaProfile</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>massRangeValue companyCode1 companyCode2 companyName aircraftVersion engine climbSpeedBelowTransitionAltitude climbSpeedAboveTransitionAltitude climbMachNumber cruiseSpeedBelowTransitionAltitude cruiseSpeedAboveTransitionAltitude cruiseMachNumber descentSpeedUnderTransitionAltitude descentSpeedOverTransitionAltitude descentMachNumber</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The profile set data.</td>
</tr>
</tbody>
</table>
complexType badaThrust

diagram

badaAirplaneld
The BADA airplane ID.

coeff_TC1
1st max climb thrust coefficient. Valid values 0.0 through 1.0.

coeff_TC2
2nd max climb thrust coefficient. Valid values 0.0 through 1.0. (kT)

coeff_TC3
3rd max climb thrust coefficient. Valid values 0.0 through 1.0. (kT)

(coeff_TC4
1st thrust temperature coefficient. Valid values -45 through 100. (k)

coeff_TC6
2nd thrust temperature coefficient. Valid values 0.0 through 10.0. (k)

coeff_TDL
Low altitude descent thrust coefficient. Valid values 0.0 through 10.0

coeff_TDH
High altitude descent thrust coefficient. 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: -10000.0 through 888800.0. (ft)

descentSpeed
Reference descent speed. Valid values 0.0 through 660.0. (kts)

descentMach
Reference descent Mach number. Valid values 0.0 through 10.0

notes
User notes.

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
**type** badaAirplaneld

**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>255</td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

The BADA airplane ID.

**element badaThrust/coef TC1**

**diagram**

```
coef_TC1
1st max climb thrust coefficient. Valid values: 0.0 through 1.
```

**type** xs:double

**properties** content simple

**annotation** documentation

1st max climb thrust coefficient. Valid values: 0.0 through 1.

**element badaThrust/coef TC2**

**diagram**

```
coef_TC2
2nd max climb thrust coefficient. Valid values: 0.0 through 1e9. (ft)
```

**type** xs:double

**properties** content simple

**annotation** documentation

2nd max climb thrust coefficient. Valid values: 0.0 through 1e9. (ft)

**element badaThrust/coef TC3**

**diagram**

```
coef_TC3
3rd max climb thrust coefficient. Valid values: 0.0 through 1e9. Variable units. (1/feet^2 (jet); Newton (turboprop); knot-Newton (piston))
```

**type** xs:double

**properties** content simple

**annotation** documentation

3rd max climb thrust coefficient. Valid values: 0.0 through 1e9. Variable units. (1/feet^2 (jet); Newton (turboprop); knot-Newton (piston))

**element badaThrust/coef TC4**

**diagram**

```
coef_TC4
1st thrust temperature coefficient. Valid values: -45 through 50. (K)
```

**type** xs:double

**properties** content simple

**annotation** documentation

1st thrust temperature coefficient. Valid values: -45 through 50. (K)

**element badaThrust/coef TC5**

**diagram**

---
element \texttt{badaThrust/coeff\_TDL}

\begin{itemize}
\item \texttt{type xs:double}
\item \texttt{properties content simple}
\item \texttt{annotation documentation} \texttt{2nd thrust temperature coefficient. Valid values: 0.0 through 10.0. (1/K)}
\end{itemize}

element \texttt{badaThrust/coeff\_TDH}

\begin{itemize}
\item \texttt{type xs:double}
\item \texttt{properties content simple}
\item \texttt{annotation documentation} \texttt{Low altitude descent thrust coefficient. Valid values: 0.0 through 10.0}
\end{itemize}

element \texttt{badaThrust/coeff\_APP}

\begin{itemize}
\item \texttt{type xs:double}
\item \texttt{properties content simple}
\item \texttt{annotation documentation} \texttt{Approach thrust coefficient. Valid values: 0.0 through 10.0.}
\end{itemize}

element \texttt{badaThrust/coeff\_LD}

\begin{itemize}
\item \texttt{type xs:double}
\item \texttt{properties content simple}
\item \texttt{annotation documentation} \texttt{Landing thrust coefficient. Valid values: 0.0 through 10.0.}
\end{itemize}

element \texttt{badaThrust/descentAlt}

\begin{itemize}
\item \texttt{type xs:double}
\item \texttt{properties content simple}
\item \texttt{annotation documentation} \texttt{Transition altitude above MSL for calculation of descent thrust. Valid values: -0.9995 through 0.0000. (Ft)}
\end{itemize}
Transition altitude above MSL for calculation of descent thrust. Valid values: -9999.0 through 60000.0 (ft)

**Element: badaThrust/descentSpeed**

- **Diagram:**
  ![Diagram of descentSpeed](image)
- **Type:** xs:double
- **Properties:** content simple
- **Annotation:** documentation
  Reference descent speed. Valid values: 0.0 through 600.0 (kts)

**Element: badaThrust/descentMach**

- **Diagram:**
  ![Diagram of descentMach](image)
- **Type:** xs:float
- **Properties:** content simple
- **Annotation:** documentation
  Reference descent Mach number. Valid values: 0.0 through 10.0.

**Element: badaThrust/notes**

- **Diagram:**
  ![Diagram of notes](image)
- **Type:** string255
- **Properties:**
  - minOcc 0
  - maxOcc 1
  - content simple
- **Facets:**
  - Kind Value Annotation
    - minLength: 0
    - maxLength: 255
- **Annotation:** documentation
  User notes.

**Complex Type: coord2DType**

- **Diagram:**
  ![Diagram of coord2DType](image)
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

diagram

Type xs:float

annotation
documentation
Elevation or Z value for a coordinate.

complexType dispersionWeight1Type

diagram

children backbone

used by
element dispersionWeight/dispersionWeight1
complexType dispersionWeight3Type

annotation
documentation
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.

**element** `dispersionWeight1Type/backbone`

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Represents the centerline of a set of dispersed tracks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td><code>xs:double</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content simple</td>
</tr>
<tr>
<td>Used by</td>
<td><code>element</code> track</td>
</tr>
<tr>
<td>Annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Documentation</td>
<td>Represents the centerline of a set of dispersed tracks.</td>
</tr>
</tbody>
</table>

**complexType** `dispersionWeight3Type`

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Represents the dispersion weight for a backbone with 2 subtracks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>extension of <code>dispersionWeight1Type</code></td>
</tr>
<tr>
<td>Properties</td>
<td>base <code>dispersionWeight1Type</code></td>
</tr>
<tr>
<td>Children</td>
<td><code>backbone</code> <code>weight1</code> <code>weightr1</code></td>
</tr>
<tr>
<td>Used by</td>
<td><code>element</code> <code>dispersionWeight3Type</code> <code>weight1</code> <code>weightr1</code></td>
</tr>
<tr>
<td>Annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Documentation</td>
<td>Specify the dispersion weight for a backbone with 2 subtracks.</td>
</tr>
</tbody>
</table>

**element** `dispersionWeight3Type/weight1`

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Specify the dispersion weight for the first left subtrack.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td><code>xs:double</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content simple</td>
</tr>
<tr>
<td>Annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Documentation</td>
<td>Specify the dispersion weight for the first left subtrack.</td>
</tr>
</tbody>
</table>

**element** `dispersionWeight3Type/weightr1`

<table>
<thead>
<tr>
<th>Diagram</th>
<th>Specify the dispersion weight for the first right subtrack.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td><code>xs:double</code></td>
</tr>
<tr>
<td>Properties</td>
<td>content simple</td>
</tr>
<tr>
<td>Annotation</td>
<td>documentation</td>
</tr>
<tr>
<td>Documentation</td>
<td>Specify the dispersion weight for the first right subtrack.</td>
</tr>
</tbody>
</table>

**complexType** `dispersionWeight5Type`

<p>| Diagram | |
|---------| |</p>
<table>
<thead>
<tr>
<th><strong>type</strong></th>
<th>extension of <strong>dispersionWeight3Type</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>properties</strong></td>
<td>base <strong>dispersionWeight3Type</strong></td>
</tr>
<tr>
<td><strong>children</strong></td>
<td><strong>backbone weight1 weight1 weight1 weight1 weight1</strong></td>
</tr>
<tr>
<td><strong>used by</strong></td>
<td>element <strong>dispersionWeight5</strong> complexType <strong>dispersionWeight7Type</strong></td>
</tr>
<tr>
<td><strong>annotation</strong></td>
<td>documentation Specify the dispersion weight for a backbone with 4 subtracks.</td>
</tr>
</tbody>
</table>

**element dispersionWeight5Type/weightl2**

<table>
<thead>
<tr>
<th><strong>diagram</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>type</strong></td>
<td><strong>xs:double</strong></td>
</tr>
<tr>
<td><strong>properties</strong></td>
<td>content simple</td>
</tr>
<tr>
<td><strong>annotation</strong></td>
<td>documentation Specify the dispersion weight for the second left subtrack.</td>
</tr>
</tbody>
</table>

**element dispersionWeight5Type/weightr2**

<table>
<thead>
<tr>
<th><strong>diagram</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>type</strong></td>
<td><strong>xs:double</strong></td>
</tr>
<tr>
<td><strong>properties</strong></td>
<td>content simple</td>
</tr>
<tr>
<td><strong>annotation</strong></td>
<td>documentation Specify the dispersion weight for the second right subtrack.</td>
</tr>
</tbody>
</table>

**complexType dispersionWeight7Type**

| **diagram** |  |
type extension of dispersionWeight5Type

properties base dispersionWeight5Type

children backbone weight1 weightr1 weightl2 weightr2 weightl3 weightr3

used by element dispersionWeight7/weightl3

complexType dispersionWeight9Type

documentation Specify the dispersion weight for a backbone with 6 subtracks.

element dispersionWeight7Type/weightl3

diagram

  weightl3

  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

  weightr3

  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.

element dispersionWeight9Type/weight14

diagram

<table>
<thead>
<tr>
<th>property</th>
<th>type</th>
<th>content</th>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>xs:double</td>
<td></td>
<td>documentation</td>
</tr>
</tbody>
</table>

Specify the dispersion weight for the fourth left subtrack.

element dispersionWeight9Type/weightr4

diagram

<table>
<thead>
<tr>
<th>property</th>
<th>type</th>
<th>content</th>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>xs:double</td>
<td></td>
<td>documentation</td>
</tr>
</tbody>
</table>
Specify the dispersion weight for the fourth right subtrack.

complexType emissionFactorSet

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

type xs:double

properties content simple

annotation documentation
Amount of carbon monoxide emitted. Valid values: 0 to 3000. (kg/unit)

element emissionFactorSet/HC

type xs:double

properties content simple

annotation documentation
Amount of hydrocarbons emitted. Valid values: 0 to 100. (kg/unit)

element emissionFactorSet/NOx

type xs:double

properties content simple

annotation documentation
Amount of nitrous oxides emitted. Valid values: 0 to 100. (kg/unit)
Amount of nitrous oxides emitted. Valid values: 0 to 100. (kg/unit)

element emissionFactorSet/\text{SOX}

diagram

type \text{xs:double}

properties content simple

annotation documentation
Amount of sulfur oxides emitted. Valid values: 0 to 10. (kg/unit)

element emissionFactorSet/\text{PM10}

diagram

type \text{xs:double}

properties content simple

annotation documentation
Amount of 10-micron particulate matter emitted. Valid values: 0 to 1000. (kg/unit)

complexType \text{energyShare}

diagram

children \text{anpAirplaneId badaAirplaneId transEnergyShare}

used by element \text{fleetEnergyShare}

annotation documentation
A custom BADA energy share.

element \text{energyShare/anpAirplaneId}

diagram

type \text{anpAirplaneId}

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 255

annotation documentation
The ANP airplane ID.

element \text{energyShare/badaAirplaneId}

diagram

type \text{badaAirplaneId}

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>maxLength</td>
<td>255</td>
</tr>
</tbody>
</table>

annotation documentation
The BADA airplane ID.

element energyShare/transEnergyShare
diagram

| type | xs:double |
| annotation documentation |
| The proportion of available energy used for acceleration compared to altitude change in the ANP to BADA transition region. |

complexType engineModeEmissions
diagram

| children | time fuel CO HC 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
diagram

| type | xs:double |
| properties | minOcc 0 |
Time engine operates in a given mode (minutes). Valid values: Nonnegative.

**element engineModeEmissions/fuel**

diagram

```
Fuel emission factor (g/kg). Valid values: Nonnegative.
```

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**

diagram

```
Amount of carbon monoxide emitted (g/kg). Valid values: Nonnegative.
```

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**

diagram

```
Amount of hydrocarbons emitted (g/kg). Valid values: Nonnegative.
```

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**

diagram

```
Amount of nitrous oxide emitted (g/kg). Valid values: Nonnegative.
```

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**

diagram
type `xs:double`

properties
minOcc 0
maxOcc 1
content simple
default 0

annotation documentation
Amount of sulfur oxide emitted (g/kg). Valid values: Nonnegative.

element `engineModeEmissions/SN`

diagram

Smoke number for the engine mode (g/kg). Valid values: Nonnegative.

type `xs:double`

properties
minOcc 0
maxOcc 1
content simple

annotation documentation
Smoke number for the engine mode (g/kg). Valid values: Nonnegative.

element `engineModeEmissions/PM`

diagram

Amount of particulate matter emitted (g/kg). Valid values: Nonnegative.

type `xs:double`

properties
minOcc 0
maxOcc 1
content simple

annotation documentation
Amount of particulate matter emitted (g/kg). Valid values: Nonnegative.

complexType `fleet`

diagram

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.

User defined engine information containing custom parameters that reflect an aircraft engine. This 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. The engine modification definition can then be used within a user-defined aircraft.
Main block for creating user defined fleet/aircraft data.
Supports the definition of custom airframes.
User defined engine information containing custom parameters that reflect an aircraft engine. This engine definition can then be used within a user-defined aircraft.

This element contains the three spectral class references for a given aircraft noise group with the corresponding thrust setting type and model type.
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.

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.
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 10000.

hasWheels

Flag indicating if the helicopter has wheels. Valid values Y (yes), N (no).

modelType

The helicopter model type. Valid values F (FMP), N (NosedMP).

blLeft

Adjust flyover noise as a function of speed, left. Valid values Min = -999.99 Max = 999.99.

blRight

Adjust flyover noise as a function of speed, right. Valid values Min = -999.99 Max = 999.99.

bcCenter0

Adjust flyover noise as a function of speed, center. Valid values Min = -999.99 Max = 999.99.

bcCenter1

Adjust flyover noise as a function of speed, center. Valid values Min = -999.99 Max = 999.99.

bcCenter2

Adjust flyover noise as a function of speed, center. Valid values Min = -999.99 Max = 999.99.

dbVerticalAscent

Decibel offset added to NPO (elevation vertical ascent) dB. Valid values Min = -60 Max = 60.

dbVerticalDescent

Decibel offset added to NPO (elevation vertical descent) dB. Valid values Min = -60 Max = 60.

anPhelicopter

Creates a new ANP helicopter.
element fleet\anpHelicopter

type \anpHelicopter

properties
- minOcc 0
- maxOcc unbounded
- content complex

children
- anpHelicopterId
- noiseId
directivityId description owner engineTypeCode numberRotors diameter rpm maxTakeoffWeight hasWheels modeType bLeft0 bLeft1 bLeft2 bCenter0 bCenter1 bCenter2 bRight0 bRight1 bRight2 dbVerticalAscent dbVerticalDescent dbHorizontalAcceleration dbClimbAcceleration dbDescendDeceleration

annotation documentation
Creates a new ANP helicopter.

element fleet\anpHeloDirectivitySet

diagram

A set of helicopter directivities.


type \anpHeloDirectivitySet

properties
- minOcc 0
- maxOcc unbounded
- content complex

children
- anpHelicopterId
- anpHeloDirectivity

annotation documentation
A set of helicopter directivities.

element fleet\anpHeloProfileSet

diagram

A profile set for an ANP helicopter.


type \anpHeloProfileSet

properties
- minOcc 0
- maxOcc unbounded
- content complex

children
- anpHelicopterId
- profile

annotation documentation
A profile set for an ANP helicopter.

element fleet/badaAirplane

diagram
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.
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**: badaThrust
Custom BADA airplane thrust data sets.
element fleet\textbackslash aircraft

diagram

A block used to create new user defined AEDT aircraft.

type \textit{aircraft}

properties
- \textit{minOcc} 0
- \textit{maxOcc} unbounded
- content complex

children
- \textit{description}
- \textit{airframeModel}
- \textit{engineCode}
- \textit{engineModCode}
- \textit{ampionAirplaneId}
- \textit{badaAirplaneId}
- \textit{ampionHelicopterId}

annotation
documentation

A block used to create new user defined AEDT aircraft.

element fleet\textbackslash energyShare

diagram

A custom BADA aircraft energy share set.

type \textit{energyShare}

properties
- \textit{minOcc} 0
- \textit{maxOcc} unbounded
- content complex

children
- \textit{ampionAirplaneId}
- \textit{badaAirplaneId}
- \textit{transEnergyShare}

annotation
documentation

A custom BADA aircraft energy share set.
type extension of xs:double

properties base xs:double

used by element lationCoordGroup/latitude

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>positive</td>
<td>derived by: xs:string</td>
<td>optional</td>
<td>N</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Latitude specified as degrees in decimal format. Can include optional attribute positive. (decimal degrees)

attribute latitudeDecimalType/@positive

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
<th>properties</th>
<th>facets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>use optional</td>
<td>default N</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Annotation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>pattern N</td>
</tr>
</tbody>
</table>

complexType longitudeDecimalType

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>extension of xs:double</th>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>base xs:double</td>
<td></td>
</tr>
</tbody>
</table>

used by element lationCoordGroup/longitude

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>positive</td>
<td>derived by: xs:string</td>
<td>optional</td>
<td>E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Longitude specified as degrees in decimal format. Can include optional attribute positive. (decimal degrees)

attribute longitudeDecimalType/@positive

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>use optional</td>
<td>default E</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

complexType polygon2DType

| diagram |

<table>
<thead>
<tr>
<th>children</th>
<th>dummy vertex</th>
</tr>
</thead>
</table>

used by elements boundary/polygon oneOrThreeCoords2DGroupSet/polygonCoords

annotation documentation
Describes a 2 dimensional polygon.

element polygon2DType/dummy

| diagram |
element polygon2DType/vertex

complexType coord2DType

diagram

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

diagram

type xs:int
element polygon3DElevationType/vertex

diagram

type 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/iadaProfiles operation/iadaProfiles |
| annotation | documentation | Contains an arrival and departure profile. |

element profiles/departureProfile

diagram

| departureProfile |
| A flight's departure profile. |
type `profileType`

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 8

annotation documentation
A flight's departure profile.

element `profiles/arrivalProfile`

diagram

```
arrivalProfile
```

A flight's arrival profile.

type `profileType`

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 8

annotation documentation
A flight's arrival profile.

complexType `runup`

diagram
attribute runup/@dummy

type xs:int

properties use optional

element runup/id

diagram

User-provided runup identifier.

type string16

properties content simple

facets Kind Value Annotation

minLength 0
maxLength 16

annotation documentation

User-provided runup identifier.

element runup/aircraftType

diagram

Aircraft type employed in this runup operation.

type aircraftType

properties content complex

children ampAircraftId airframeModel engineCode engineModCode apuName groundSupportEquipmentLTOOperationSet

annotation documentation

Aircraft type employed in this runup operation.

element runup/flightNumber

diagram

Optional flight number.

type string16

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation

minLength 0
maxLength 16
element runup/tailNumber

diagram

type string8

properties
- minOccurs 0
- maxOccurs 1
- content simple

facets
- Kind: Annotation
- minLength 0
- maxLength 8

annotation documentation
Optional tail number.

element runup/numOperations

diagram

type xs:double

properties
- content simple

annotation documentation
The number of occurrences of this operation.

element runup/airport

diagram

type airportCode

properties
- content complex

facets
- Kind: Annotation
- minLength 0
- maxLength 4

attributes
- Name: type
  - Type: airportCodeType
  - Use: optional
  - Default: ANY
  - Fixed: Annotation
- Name: country
  - Type: string3
  - Use: optional
  - Default: ANY

annotation documentation
The airport code at which this operation occurs.

element runup/opTime

diagram

type xs:dateTime

properties
- content simple

annotation documentation
The runup operation time.

element runup/duration
The duration of the runup.

**element runup/heading**

- **type**: `xs:double`
- **properties**: `content simple`
- **annotation documentation**: The orientation of the aircraft.

The orientation of the aircraft.

**element runup/thrust**

- **type**: `xs:double`
- **properties**: `content simple`
- **annotation documentation**: The thrust employed for this runup operation.

The thrust employed for this runup operation.

**complexType runwayEnd**

- **type**: `runwayEnd`
**element runwayEnd/name**

- **diagram**
  - ID of the runway's endpoint.
- **type** `string8`
- **properties** content `simple`
- **facets**
  - Kind Value Annotation
  - minLength 0
  - maxLength 8
- **annotation** documentation
  - ID of the runway's endpoint.

**element runwayEnd/elevation**

- **diagram**
  - Runway endpoint's elevation above MSL in feet (ft)
- **type** `xs:double`
- **properties** content `simple`
- **annotation** documentation
  - Runway endpoint's elevation above MSL in feet (ft)

**element runwayEnd/threshCrossHeight**

- **diagram**
  - Approach threshold crossing height AGL (ft)
- **type** `xs:double`
- **properties**
  - minOccurs 0
  - maxOccurs 1
  - content `simple`
- **annotation** documentation
  - Approach threshold crossing height AGL (ft)

**element runwayEnd/threshElevation**

- **diagram**
  - Elevation of runway's endpoint above or below MSL (ft)
- **type** `xs:double`
- **properties**
  - minOccurs 0
  - maxOccurs 1
  - content `simple`
- **annotation** documentation
  - Elevation of runway's endpoint above or below MSL (ft)

**element runwayEnd/glideSlope**

- **diagram**
  - Glide slope for runway's endpoint. Valid values 2 to 6 (degrees)
- **type** `xs:double`
- **properties**
  - minOccurs 0
  - maxOccurs 1
  - content `simple`
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>runwayEnd/intAltitude</td>
<td>Glide slope for runway's endpoint. Valid values: 2 to 6 (degrees)</td>
</tr>
<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: Altitude at which glide slope should be intercepted above ground level. (ft)</td>
</tr>
<tr>
<td>runwayEnd/depDispThresh</td>
<td>Displaced threshold length at departure end of runway. (ft)</td>
</tr>
<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: Displaced threshold length at departure end of runway. (ft)</td>
</tr>
<tr>
<td>runwayEnd/appDispThresh</td>
<td>Displaced threshold length at arrival end of runway. (ft)</td>
</tr>
<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: Displaced threshold length at arrival end of runway. (ft)</td>
</tr>
<tr>
<td>runwayEnd/percentWind</td>
<td>Percent change in airport average headwind. (%)</td>
</tr>
<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: Percent change in airport average headwind. (%)</td>
</tr>
<tr>
<td>runwayEnd/isHeliPad</td>
<td>Indicates if this end of the runway is also a helipad. Valid values Y = yes, N = no.</td>
</tr>
<tr>
<td>type</td>
<td>xs:string</td>
</tr>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1</td>
</tr>
</tbody>
</table>
Indicates if this end of the runway is also a helipad. Valid values: Y = yes, N = no.

complexType `scenarioAirportLayoutType`

- `airportLayoutName`: Airport layout name.
- `mixingHeight`: 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. Values may vary daily and seasonally, (ft)
- `useHourlyMetData`: If true, use user-defined hourly meteorological data to compute emissions. If false, use default annual averages to compute emissions. (true or false)
- `averageTemperature`: Average temperature (°F).
- `dailyHighTemperature`: Average daily high temperature (°F).
- `dailyLowTemperature`: Average daily low temperature (°F).
- `pressure`: Average barometric pressure. (in Hg)
- `pressureMSL`: Average atmospheric pressure at mean sea level. (in Hg)
- `humidity`: Relative humidity (%).
- `windSpeed`: Wind speed at airport surface (mph).
- `windDirection`: Wind direction. Valid values: 0-360 (degrees)
- `ceiling`: Ceiling (ft).
- `visibility`: Visibility (mi).
- `airportConfigSet`: Contains one or more airportConfig elements.
- `airportCapacity`: Supports legacy EDMS studies relating to content associated in the RUNWAY CONFIGURATION ONS table. This element supports the definition of airport capacity based on a variety of factors within an airport.

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/airportLayoutName**

- **type**: `string255`
- **properties**: `content simple`
- **facets**:
  - `Kind`: `Annotation`
  - `minLength`: 0
  - `maxLength`: 255
- **annotation**: `documentation`
  - `Airport layout name.`

**element scenarioAirportLayoutType/mixingHeight**

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

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

- **type**: `xs:double`
- **properties**:
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content simple`
  - `default 0`
- **annotation**: `documentation`
  - `Average temperature (°F)

**element scenarioAirportLayoutType/dailyHighTemperature**
<table>
<thead>
<tr>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Daily High Temperature" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
<td>Average daily high temperature (°F)</td>
</tr>
<tr>
<td><img src="image" alt="Daily Low Temperature" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
<td>Average daily low temperature (°F)</td>
</tr>
<tr>
<td><img src="image" alt="Pressure" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
<td>Average barometric pressure. (in Hg)</td>
</tr>
<tr>
<td><img src="image" alt="Pressure MSL" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
<td>Average barometric pressure at mean sea level.</td>
</tr>
<tr>
<td><img src="image" alt="Humidity" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
<td>Relative humidity (%)</td>
</tr>
<tr>
<td>element</td>
<td>diagram</td>
<td>type</td>
<td>properties</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>---------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>scenarioAirportLayoutType/windSpeed</td>
<td><img src="https://via.placeholder.com/150" alt="Wind Speed Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
</tr>
<tr>
<td>scenarioAirportLayoutType/windDirection</td>
<td><img src="https://via.placeholder.com/150" alt="Wind Direction Diagram" /></td>
<td>int[0,360]</td>
<td>minOcc 0, maxOcc 1, content simple, default 1</td>
</tr>
<tr>
<td>scenarioAirportLayoutType/ceiling</td>
<td><img src="https://via.placeholder.com/150" alt="Ceiling Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
</tr>
<tr>
<td>scenarioAirportLayoutType/visibility</td>
<td><img src="https://via.placeholder.com/150" alt="Visibility Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1, content simple, default 0</td>
</tr>
</tbody>
</table>

**simpleType aircraftPerformanceModelType**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
<th>base</th>
<th>used by element scenario/aftPerfModel</th>
</tr>
</thead>
<tbody>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**simpleType AircraftSizeType**

```
complexType AircraftSizeType
  type restriction of xs:string
  properties base xs:string
  used by element runwayAssignment/aircraftSize
  facets Kind Value Annotation
         enumeration S
         enumeration L
         enumeration H
  annotation documentation
          Aircraft size.
```

**simpleType airframeModel**

```
complexType airframeModel
  type restriction of xs:string
  properties base xs:string
  used by elements aircraft/airframeModel/airframe/model
  facets Kind Value Annotation
          minLength 0
          maxLength 255
  annotation documentation
          Refers to an existing airframe model.
```

**simpleType airportCodeType**

```
complexType airportCodeType
  type restriction of xs:string
  properties base xs:string
  used by attribute airportCode@type
  facets Kind Value Annotation
         enumeration ICAO
         enumeration IATA
         enumeration FAA
         enumeration OTHER
         enumeration ANY
  annotation documentation
          The type of an airport code.
```

**simpleType anpAirplaneId**

```
complexType anpAirplaneId
  type restriction of xs:string
  properties base xs:string
  used by elements aircraft/airframeId aircraft/anpAirplaneId anpAirplane/anpAirplaneId anpThrustSet/anpAirplaneId anpFlapsSet/anpAirplaneId anpProfileSet/anpAirplaneId energyShare/anpAirplaneId
  facets Kind Value Annotation
          minLength 0
          maxLength 255
  annotation documentation
          ID of ANP airplane. Must be a new, unique value.
```

**simpleType anpCoeffType**

```
complexType anpCoeffType
  type restriction of xs:string
  properties base xs:string
  used by element anpAirplane/depThrustCoeffType
  facets Kind Value Annotation
```
### simpleType `anpFlapId`

<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>

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `anpFlaps/flapId`, `anProcedureStep/flapId`

### simpleType `anpHeloDirectId`

<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>

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: element `anHeloDirectivitySet/anHeliId`

### simpleType `anpHeloDirectivityId`

<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>

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: element `anHeliId`

### simpleType `anpHeloGroundType`

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>Hard</td>
<td>H</td>
</tr>
</tbody>
</table>

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: element `anHeloDirectivity/groundType`

### simpleType `anpHeloId`

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `aircraft/anHeliId`, `anHeli/anHeliId`, `anHeloProfileSet/anHeliId`

<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 the helicopter.

### simpleType `anpHeloNoiseId`

<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>

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `anHeli/noiseId`, `anHeloNoiseGroup/noiseId`

### simpleType `anpHeloSideType`

- **type**: restriction of `xs:string`
<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>element a np Helo NPDCurve/sideType</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation pattern Left</td>
</tr>
</tbody>
</table>

**simpleType anpNoiseId**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements a npNoiseGroup/noiselId a npAirplane/noiselId</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation pattern S</td>
</tr>
</tbody>
</table>

**simpleType anpNpdNoiseType**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements a npNPDCurve/noiseType a npHelioNPDCurve/noiseType</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation pattern S</td>
</tr>
</tbody>
</table>

**simpleType anpNpdOpMode**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements a npNPDCurve/opMode a npHelioNPDCurve/opMode</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation pattern A</td>
</tr>
</tbody>
</table>

**simpleType anpOwnerType**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements a npHelicopter/owner a npAirplane/owner</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation pattern Commercial</td>
</tr>
</tbody>
</table>

**simpleType anpSizeCode**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>element a npAirplane/sizeCode</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation pattern Heavy</td>
</tr>
</tbody>
</table>

**simpleType apuName**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements a irframe/auxiliaryPowerUnitId a nuxiliaryPowerUnitId/base a nuxiliaryPowerUnitId auxiliaryPowerUnitId a nuxiliaryPowerUnitId/name</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation pattern Heavy</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Name of the auxiliary power unit.</td>
</tr>
</tbody>
</table>

**simpleType badaAirplaceId**
<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements: badaConfigSet/badaAirplaneId badaAltitudeDistributionSet/badaAirplaneId badaProfileSet/badaAirplaneId badaConfigSet/badaAirplaneId badaFuel/badaAirplaneId badaThrust/badaAirplaneId energyShare/badaAirplaneId</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>ID of a BADA airplane model. Must be unique.</td>
</tr>
</tbody>
</table>

**simpleType badaPhaseType**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>element: badaConfig/phase</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>pattern</td>
</tr>
</tbody>
</table>

**simpleType badaWakeType**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>element: badaAirplane/wakeCategory</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>pattern</td>
</tr>
</tbody>
</table>

**simpleType directionType**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>element: taxipath/direction</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>pattern</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Supports the direction type of a taxi path. Direction type can be either arrival, departure, inbound, or outbound.</td>
</tr>
</tbody>
</table>

**simpleType doubleExclusive0Inclusive10**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:double</td>
</tr>
<tr>
<td>used by</td>
<td>element: pointStationarySource/stackDiameter</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td></td>
<td>minExclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A double value in the range (0,10).</td>
</tr>
</tbody>
</table>

**simpleType doubleExclusive10**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:double</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A double value in the range [0,10).</td>
</tr>
</tbody>
</table>

**simpleType doubleExclusive100**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:double</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxExclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>A double value in the range [0,10).</td>
</tr>
<tr>
<td>Facets</td>
<td>Kind</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
</tbody>
</table>

Documentation:
A double value in the range [0,100).

```xml
<complexType name="doubleExclusive1000">
  <simpleType name="double">
    <restriction base="xs:double">
      <maxExclusive value="1000"/>
    </restriction>
  </simpleType>
</complexType>
```

Documentation:
A double value in the range [0,1000).

```xml
<complexType name="doubleExclusive10000">
  <simpleType name="double">
    <restriction base="xs:double">
      <maxExclusive value="2000"/>
    </restriction>
  </simpleType>
</complexType>
```

Documentation:
A double value in the range [0,2000).

```xml
<complexType name="doubleExclusiveRange100">
  <simpleType name="double">
    <restriction base="xs:double">
      <maxExclusive value="100"/>
    </restriction>
  </simpleType>
</complexType>
```

Documentation:
A double value in the range (0,100).
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1</td>
</tr>
</tbody>
</table>

**simpleType doubleInclusive100**

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

**simpleType doubleInclusive1000**

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

**simpleType doubleInclusive2000**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>10000</td>
</tr>
</tbody>
</table>
### Type `doubleInclusive24`

**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>A double value in the range [0,24].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

**SimpleType `doubleInclusive24`**

**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>A double value in the range [0,24].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>24</td>
<td></td>
</tr>
</tbody>
</table>

---

### Type `doubleInclusive4000`

**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>A double value in the range [0,4000].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>4000</td>
<td></td>
</tr>
</tbody>
</table>

**SimpleType `doubleInclusive4000`**

**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>A double value in the range [0,4000].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>4000</td>
<td></td>
</tr>
</tbody>
</table>

---

### Type `doubleInclusiveRange0to600`

**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>A double value in the range [0,600].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>600</td>
<td></td>
</tr>
</tbody>
</table>

**SimpleType `doubleInclusiveRange0to600`**

**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>A double value in the range [0,600].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>600</td>
<td></td>
</tr>
</tbody>
</table>

---

### Type `doubleInclusiveRange1to30`

**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>1</td>
<td>A double value in the range [1,30].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

**SimpleType `doubleInclusiveRange1to30`**

**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>1</td>
<td>A double value in the range [1,30].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

---

### Type `doubleMin0`

**Type**: restriction of `xs:double`  
**Properties**: base `xs:double`  
**Used by**  
- `quarterlyProfile`  
- `monthlyProfile`  
- `temporalFactorApril`  
- `temporalFactorAugust`  
- `temporalFactorDecember`  
- `temporalFactorFebruary`  
- `temporalFactorJanuary`  
- `temporalFactorJuly`  
- `temporalFactorJune`  
- `temporalFactorMarch`  
- `temporalFactorMay`  
- `temporalFactorMonday`  
- `temporalFactorFriday`  

**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>

**SimpleType `doubleMin0`**

**Type**: restriction of `xs:double`  
**Properties**: base `xs:double`  
**Used by**  
- `quarterlyProfile`  
- `monthlyProfile`  
- `temporalFactorApril`  
- `temporalFactorAugust`  
- `temporalFactorDecember`  
- `temporalFactorFebruary`  
- `temporalFactorJanuary`  
- `temporalFactorJuly`  
- `temporalFactorJune`  
- `temporalFactorMarch`  
- `temporalFactorMay`  
- `temporalFactorMonday`  
- `temporalFactorFriday`  

---

### Type `doubleInclusiveRange10to600`

**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>10</td>
<td>A double value in the range [10,600].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>600</td>
<td></td>
</tr>
</tbody>
</table>

**SimpleType `doubleInclusiveRange10to600`**

**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>10</td>
<td>A double value in the range [10,600].</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation
A double value with a lower inclusive bound of 0.

**simpleType emissionsSourceType**

type restriction of xs:string

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:string</th>
</tr>
</thead>
</table>

used by element case/source

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

**annotation** documentation
Source of emissions.

**simpleType emissionsUnitsType**

type restriction of xs:string

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:string</th>
</tr>
</thead>
</table>

used by element study/emissionsUnits

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

**annotation** documentation
Unit of measure for a given emission.

**simpleType engineCode**

type restriction of xs:string

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:string</th>
</tr>
</thead>
</table>

used by elements aircraft/engine/code aircraft/engineCode

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

**annotation** documentation
Code for an airframe's engine.

**simpleType engineModCode**

type restriction of xs:string

<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:string</th>
</tr>
</thead>
</table>

used by elements aircraft/engineMod/code aircraft/engineModCode aircraftType/engineModCode

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

**annotation** documentation
Airplane's engine modification code.

**simpleType engineModel**

type restriction of xs:string
simpleType `engineType`

- type: restriction of `xs:string`
- properties: base `xs:string`
- used by: elements `aircraftEngine/engineType`, `anhelicopter/engineTypeCode`, `anpAirplane/engineTypeCode`, `badAirplane/engineTypeCode`
- facets:
  - Kind: Value: Annotation
    - `minLength`: 0
    - `maxLength`: 255
- annotation:
  - documentation: Type of engine on this airframe. Valid values: E (Electric), J (Jet), P (Piston), T (Turbo).
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maxExclusive</td>
<td>10000</td>
</tr>
</tbody>
</table>

annotation documentation
A real number in the range [0,10,000).

**simpleType floatExclusive2000**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:float</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:float</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
A real number in the range [0,2,000).

**simpleType floatExclusiveRange100**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:float</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:float</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
A real number in the range (0,100).

**simpleType floatInclusive1**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:float</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:float</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
A real number in the range [0,1].

**simpleType floatInclusive100**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:float</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:float</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
A real number in the range [0,100].

**simpleType floatInclusive1000**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:float</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:float</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
A real number in the range [0,1,000].

**simpleType floatInclusive10000**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:float</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:float</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Facets</td>
<td>Kind</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td><strong>maxInclusive</strong></td>
<td>10000</td>
</tr>
</tbody>
</table>

**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 [0,2,000].

**simpleType floatInclusive24**

- **type**: restriction of `xs:float`
- **properties**: base `xs:float`
- **facets**: Kind Value Annotation
  - `minInclusive`: 0
  - `maxInclusive`: 24
- **annotation documentation**: A real number in the range [0,24].

**simpleType floatInclusive4000**

- **type**: restriction of `xs:float`
- **properties**: base `xs:float`
- **facets**: Kind Value Annotation
  - `minInclusive`: 0
  - `maxInclusive`: 4000
- **annotation documentation**: A real number in the range [0,4,000].

**simpleType floatInclusiveRange1to30**

- **type**: restriction of `xs:float`
- **properties**: base `xs:float`
- **facets**: Kind Value Annotation
  - `minInclusive`: 1
  - `maxInclusive`: 30
- **annotation documentation**: A real number in the range [1,30].

**simpleType floatInclusiveRange32to600**

- **type**: restriction of `xs:float`
- **properties**: base `xs:float`
- **facets**: Kind Value Annotation
  - `minInclusive`: 32
  - `maxInclusive`: 600
- **annotation documentation**: A real number in the range [32,600].

**simpleType fuelType**

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by elements**: `parkingFacilityOperation/fuelType` `roadwayOperation/fuelType` `groundSupportEquipmentOperation/PopulationOperation/fuelType` `groundSupportEquipmentOperation/LTOOperation/fuelType`
- **facets**: Kind Value Annotation
annotation
documentation
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.

**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</td>
<td>elements <code>parkingFacilityOperation/vehicleType</code> <code>roadwayOperation/vehicleType</code></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Fleet Mix:
- Default Fleet Mix
- Passenger Car
- Light Truck
  - Class 1
  - Class 2
  - Class 3
  - Class 4
  - Class 5
  - Class 6
  - Class 7
  - Class 8
  - Class 9
  - Class 10
  - Class 11
  - Class 12
  - Class 13
  - Class 14
  - Class 15
  - Class 16
  - Motorcycle

**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 <code>quarterHourlyProfile/temporalFactor/@startHour</code></td>
<td></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value Annotation</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

An integer in the range [0,23].

**simpleType** `int0to360`

<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 elements <code>airportConfig/endWindAngle</code> <code>airportConfig/startWindAngle</code> <code>scenarioAirportLayoutType/windDirection</code></td>
<td></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value Annotation</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

An integer in the range [0,360].

**simpleType** `int0to5`

<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 element <code>categoryOther/fuelUnits</code></td>
<td></td>
</tr>
<tr>
<td>facets Kind</td>
<td>Value Annotation</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

An integer in the range [0,5].

**simpleType** `int0to87`

<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>facets Kind</td>
<td>Value Annotation</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

An integer in the range [0,87].
### simpleType int1to13

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>13</td>
<td>An integer in the range [1,13].</td>
</tr>
</tbody>
</table>

### simpleType int1to15

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>15</td>
<td>An integer in the range [1,15].</td>
</tr>
</tbody>
</table>

### simpleType int1to2

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>2</td>
<td>An integer in the range [1,2].</td>
</tr>
</tbody>
</table>

### simpleType int1to25

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>25</td>
<td>An integer in the range [1,25].</td>
</tr>
</tbody>
</table>

### simpleType int1to4

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>4</td>
<td>An integer in the range [1,4].</td>
</tr>
</tbody>
</table>

### simpleType int1to5

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>5</td>
<td>An integer in the range [1,5].</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>1</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>5</td>
<td>An integer in the range [1,5].</td>
</tr>
</tbody>
</table>

### simpleType `int1to8`

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **used by**: elements `categoryGenerator/typeCode`, `categorySurfaceCoatingPainting/typeCode`

### simpleType `int1to93`

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **facets**: Kind Value Annotation
  - minInclusive: 1
  - maxInclusive: 93
- **annotation**: documentation
  - An integer in the range [1,93].

### simpleType `int5to65`

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **used by**: element `roadwayOperation/speed`

### simpleType `int6to13`

- **type**: restriction of `xs:int`
- **properties**: base `xs:int`
- **used by**: element `categoryFuelTank/reidVaporPressure`

### simpleType `int89to148`

- **type**: restriction of `xs:int`
- **facets**: Kind Value Annotation
  - minInclusive: 89
  - maxInclusive: 148
- **annotation**: documentation
  - An integer in the range [89,148].

### simpleType `latitudeDMSType`
<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>element <code>latlonCoordGroup/latitudeDMS</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>`[0-9]{2}[-</td>
<td>:</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>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>element <code>latlonCoordGroup/longitudeDMS</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>`[0-9]{2}[0-9][0-9][-</td>
<td>:</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>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by attributes</td>
<td><code>trackNode/altitude/@control</code> <code>trackNode/speed/@control</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>`None</td>
<td>AtOrBelow</td>
</tr>
</tbody>
</table>

| annotation documentation | Type of altitude clearance at this point. |

### simpleType opType

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by elements</td>
<td><code>track/opType</code> <code>operation/opType</code> <code>trackRef/opType</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets 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 | Type of operation. |

### simpleType originSourceType

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by elements</td>
<td><code>polarGrid/originSource</code> <code>polarReceptor/originSource</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>`Gate</td>
<td>Parking Facility</td>
</tr>
</tbody>
</table>

| 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

<table>
<thead>
<tr>
<th>type</th>
<th>string8</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base string8</td>
</tr>
<tr>
<td>used by elements</td>
<td><code>profiles/arrivalProfile</code> <code>operation/badaProfile</code> <code>profiles/departureProfile</code> <code>operation/saeProfile</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>facets 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 | An aircraft's flight profile. |
### simpleType quarterHourMinutes

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

Either 0, 15, 30, or 45.

### simpleType string1

<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>

A string up to one character long.

### simpleType string10

<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>

A string up to 10 characters long.

### simpleType string100

<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>

A string up to 100 characters long.

### simpleType string11

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

A string.
**simpleType string12**

<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>11</td>
<td></td>
</tr>
</tbody>
</table>

A string up to 12 characters long.

**simpleType string14**

<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>14</td>
<td></td>
</tr>
</tbody>
</table>

A string up to 14 characters long.

**simpleType string15**

<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>

A string up to 15 characters long.

**simpleType string16**

<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>16</td>
<td></td>
</tr>
</tbody>
</table>

A string up to 16 characters long.

**simpleType string20**

<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>2</td>
<td></td>
</tr>
</tbody>
</table>

A string up to two characters long.
<table>
<thead>
<tr>
<th>properties</th>
<th>base xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>elements groundSupportEquipmentGateAssignment/gate_taxiwayName taxiway/taxiWayName</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation minLength 0 maxLength 20</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation A string up to 20 characters long.</td>
</tr>
</tbody>
</table>

**simpleType string200**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>element aircraftEngine/notes</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation minLength 0 maxLength 200</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation A string up to 200 characters long.</td>
</tr>
</tbody>
</table>

**simpleType string25**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements aircraftEngine/missionsEngineModel aircraftEngine/engineCode airport/facilityType aircraftEngine/performanceEngineModel airportWeatherStation/weatherStationName</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation minLength 0 maxLength 25</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation A string up to 25 characters long.</td>
</tr>
</tbody>
</table>

**simpleType string255**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements trackref/airportLayoutName scenarioAirportLayoutType/airportLayoutName study/description scenario/description case/description aircraft/description aircraftEngine/mission aircraftEngine/engineType aircraftEngine/engineCode airport/facilityType aircraftEngine/performanceEngineModel airportWeatherStation/weatherStationName badaProfile/companyCode badaProfile/companyCode badaProfile/companyCode1 badaProfile/companyCode1 weatherData/month attribute airportCode/@country</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation minLength 0 maxLength 255</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation A string up to 255 characters long.</td>
</tr>
</tbody>
</table>

**simpleType string3**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base xs:string</td>
</tr>
<tr>
<td>used by</td>
<td>elements badaProfile/companyCode1 weatherData/month attribute airportCode/@country</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation minLength 0 maxLength 3</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation A string up to three characters long.</td>
</tr>
</tbody>
</table>

**simpleType string30**

<table>
<thead>
<tr>
<th>type</th>
<th>restriction of xs:string</th>
</tr>
</thead>
</table>
### properties
- base `xs:string`

### facets
- Kind | Value | 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 | Value | Annotation |
- minLength | 0 | |
- maxLength | 32 | |

#### simpleType `string4`
- type | restriction of `xs:string`
- properties | base `xs:string`
- used by | element `operation/crrier` complexType `airportCode` |
- facets
- Kind | Value | Annotation |
- minLength | 0 | |
- maxLength | 4 | |

#### simpleType `string40`
- type | restriction of `xs:string`
- properties | base `xs:string`
- used by | elements `groundSupportEquipmentPopulationOperation/activityProfile emissionsUsage/activityProfile operation/arrivalGate operation/arrivalGateTaxiPath/gateName userGroundSupportEquipment/gseName gate/name stationarySource/name parkingFacility/name runway/name polarGrid/originName polarReceptor/originName stationarySourceOperation/refName parkingFacilityOperation/refName runwayOperation/refName` |
- facets
- Kind | Value | Annotation |
- minLength | 0 | |
- maxLength | 40 | |

#### simpleType `string42`
- type | restriction of `xs:string`
- properties | base `xs:string`
- used by | element `windRoseStation/windRoseStationDescription` |
- facets
- Kind | Value | Annotation |
- minLength | 0 | |
- maxLength | 42 | |

#### simpleType `string5`
- type | restriction of `xs:string`
- properties | base `xs:string`
- used by | elements `airportWeatherStation/wbanId airportWeatherStation/weatherStationCode windRose/windRoseStationId windRoseStation/windRoseStationId` |
- facets
- Kind | Value | Annotation |
- minLength | 0 | |
- maxLength | 5 | |
### simpleType string50

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `aircraftType/airframeModel` `airport/cityName` `aircraftEngine/combustor` `airport/state` `aircraftEngine/fmtFlag`
- **facets**
  - Kind Value Annotation
  - `minLength`: 0
  - `maxLength`: 50
- **annotation documentation**: A string up to 50 characters long.

### simpleType string6

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `centroid/bnai` `airportWeatherStation/cooperativeId` `taxiTime/source`
- **facets**
  - Kind Value Annotation
  - `minLength`: 0
  - `maxLength`: 6
- **annotation documentation**: A string up to six characters long.

### simpleType string64

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `track/name` `trackRef/trackName`
- **facets**
  - Kind Value Annotation
  - `minLength`: 0
  - `maxLength`: 64
- **annotation documentation**: A string up to 64 characters long.

### simpleType string66

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: element `windRoseStation/windRoseDataSet`
- **facets**
  - Kind Value Annotation
  - `minLength`: 0
  - `maxLength`: 66

### simpleType string7

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: element `airport/dacfId`
- **facets**
  - Kind Value Annotation
  - `minLength`: 0
  - `maxLength`: 7

### simpleType string8

- **type**: restriction of `xs:string`
- **properties**: base `xs:string`
- **used by**: elements `operation/arrivalRunway/case/climateId` `operation/departureRunway/climate/identifier` `runwayEnd/name` `anpHeloProfile/profileGroupId` `anpHeloProcedure/step/profileGroupId` `anpProfile/profileGroupId` `track/runway/runwayAssignment/runway` `trackRef/runway` `taxiPath/runway/Name` `operation/tailNumber` `runup/tailNumber`

### simpleType profileType
<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>

annotation documentation A string up to eight characters long.

**simpleType** `string9`

| type | restriction of `xs:string` |
| properties | base `xs:string` |
| used by | `windRoseStation/directionUnit` |

**simpleType** `studyType`

| type | restriction of `xs:string` |
| properties | base `xs:string` |
| used by | `study/studyType` |

facets

type restriction of `xs:string`     
properties base `xs:string`     
used by element `study/studyType`     
facets Kind Value Annotation     
enum Emissions     
enum Dispersion     
enum Noise and Emissions     
enum Noise and Dispersion     

annotation documentation Type of study. NOTE: AEDT only supports the Noise and Emissions value.

**simpleType** `taxiModelType`

| type | restriction of `xs:string` |
| properties | base `xs:string` |
| used by | `scenario/taxiModel` |

facets

type restriction of `xs:string`     
properties base `xs:string`     
used by element `scenario/taxiModel`     
facets Kind Value Annotation     
enum UserSpecified     
enum Delayed     
enum UserSpecified     
enum Sequencing     

annotation documentation Type of taxi modeling.

**simpleType** `timeInModeBasisType`

| type | restriction of `xs:string` |
| properties | base `xs:string` |
| used by | `scenario/timeInModeBasis` |

facets

type restriction of `xs:string`     
properties base `xs:string`     
used by element `scenario/timeInModeBasis`     
facets Kind Value Annotation     
enum Performance     
enum 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**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>S</td>
<td>Straight</td>
</tr>
</tbody>
</table>

**annotation documentation**

Type of vector.

**simpleType wingType**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>F</td>
<td>FixedWing</td>
</tr>
</tbody>
</table>

**annotation documentation**

Type of wing. If not specified, AEDT attempts to determine the wing type based on the optype.

**simpleType yesNoType**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>Yes</td>
<td>Y</td>
</tr>
</tbody>
</table>

**annotation documentation**

Simple element allowing for either a choice of "yes" or "no".