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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 import data into an existing AEDT study.

This Manual provides a description of the ASIF format for the ASIF schema version 1.2.16. It also provides an overview of ASIF usage and annotated sample studies. The Manual 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 Manual. 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 (+) Sign 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 Bound 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 Manual and the AEDT Supplemental Manual 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 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. The data types that can be imported via partial ASIF are listed below:

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

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

```xml
<AsifXml xmlns:AsifXml="http://www.faa.gov/ASIF"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.2.15"
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 ASIFs

Sample ASIFs, including full study files and partial ASIFs, are located in \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 create an ASIF for a simple study:
1. Create an empty study file.
2. Populate the airport layout section.
3. Define receptor set.
4. Define 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.

⚠️ Study name must be at least five characters long and must not contain periods (.) or spaces.

```xml
<AsifXml version="1.2.15" 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>

  <!-- 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. 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, KMDW airport is defined using user-specified runways.

```xml
<airportLayoutSet>
  <airportLayout>
    <!-- User can specify an airport with user-defined runway -->
    <airportCode type="ICAO">KMDW</airportCode>
    
    <!-- Airports can have one or more runways defined -->
    <runwaySet>
      <runway>
        <!-- Runway length (in feet) -->
        <length>5932</length>
        
        <!-- Runway width (in feet) -->
        <width>150</width>
        
        <!-- One or more runway ends -->
        <runwayEnd>
          <!-- user-defined name for runway end -->
          <name>04R</name>
          
          <!-- latitude and longitude of runway end -->
          <latitude>41.779496</latitude>
          <longitude>-87.75876</longitude>
          
          <!-- elevation in feet -->
          <elevation>0.0</elevation>
          
          <!-- threshold crossing height (in feet) -->
          <threshCrossHeight>50.0</threshCrossHeight>
          
          <!-- glide slope for an approach to this runway end -->
          <glideSlope>3.0</glideSlope>
          
          <!-- displaced threshold for departure -->
          <depDispThresh>0.0</depDispThresh>
          
          <!-- displaced threshold for approach -->
          <appDispThresh>0.0</appDispThresh>
          
          <!-- Percent change in airport average headwind -->
          <percentWind>0.0</percentWind>
        </runwayEnd>
        
        <runwayEnd>
          <name>22L</name>
          
          <latitude>41.791167</latitude>
          <longitude>-87.743554</longitude>
          
          <elevation>0.0</elevation>
          
          <threshCrossHeight>50.0</threshCrossHeight>
          
          <glideSlope>3.0</glideSlope>
      </runway>
  </runwaySet>
</airportLayout>
```

Step 3:  **Create receptor set**
If the study includes noise or dispersion analysis, then one or more receptor sets are required. 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>
<!-- Latitude and longitude of southwest corner of grid -->
<grid>
<!-- 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>
```

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_Scenario</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>
</scenario>
```
<!-- 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>
</scenarioAirportLayoutSet>

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

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

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

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

    <!-- Add trackOpSet elements here -->
  </case>
</caseSet>
</scenario>

Step 5: Populate cases with tracks and air operations

The trackOpSet element defines a single track and any number of aircraft operations to be flown on that track. A track can be composed of one or more subtracks with dispersion values. An un-dispersed track has one subtrack with dispersion weight of 1. A dispersed track consists of multiple subtracks. The sum of the dispersion weights for all subtracks within a given track must equal 1. Operations defined for the track will be dispersed based on the dispersion weight amongst any subtracks that make up the track.
<!-- 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, optional -->
<flightNumber>CKE545</flightNumber>

<!-- user-defined operation type, optional -->
$userType>MU3001</userType>
Step 6: **Create annualization**
Annualization is the process of performing a weighted summation\(^1\) over the noise and emission results from some or all of the cases within a scenario in order to create results that represent noise and emissions exposures over a time period of interest. Each scenario element may contain an annualization element describing the weighted annualization tree.

```xml
<annualization>
  <!-- user-defined annualization name -->
  <name>Baseline_Annualization</name>

  <!-- Define one or more groups of cases and groups -->
  <annualizationGroup>
    <!-- Define rollup weight for this group -->
    <weight>1.0</weight>
    <!-- Associate scenario case with this annualization group -->
    <annualizationCase>
      <!-- Specify case name -->
      <name>CaseA</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:

---
\(^1\) 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.
<AsifXml version="1.2.15" 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>

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

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

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

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

            <!-- latitude and longitude of runway end -->
            <latitude>41.779496</latitude>
            <longitude>-87.75876</longitude>

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

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

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

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

            <!-- displaced threshold for approach -->
            <appDispThresh>0.0</appDispThresh>
          </runwayEnd>
        </runway>
      </runwaySet>
    </airportLayout>
  </airportLayoutSet>
</study>
</AsifXml>
<!-- Percent change in airport average headwind -->
<percentWind>0.0</percentWind>
</runwayEnd>

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

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

<scenario>
  <!-- user-defined scenario name and description -->
  <name>Baseline_Scenario</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>A sample scenario</description>

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

<caseSet>
  <!-- One or more case elements -->
  <case>
    <!-- sequential case number unique in this scenario -->
    <caseId>0</caseId>
    <!-- user-defined case name -->
    <name>CaseA</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>04R_Dep</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>
<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, optional -->
<flightNumber>CKE545</flightNumber>

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

<!-- user-defined parameter data, optional -->
<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>
</case>
3.2  Create an Emissions Dispersion Study

An emissions dispersion study contains the same core elements as a simple study (Section 3.1). In addition, a typical dispersion study includes additional airport features (gates, taxiways, taxipaths), operational profiles, airport configuration, and stationary sources.

1. Create an empty study file.
2. Populate the airport layout section.
   a. Basic airport information (airport code and location)
   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

The following sections provide examples of the steps. This ASIF example should be used as an aid for understanding the ASIF format, and not as a data reference. This example is based on the STUDY_PVD
study included with AEDT installation; but it has been much simplified for illustrative purposes. Please note that both the aircraft operations and the non-aircraft operations in this study are defined using operational profiles. When running profile-based aircraft operations, the “Apply Delay & Sequencing Model on Taxi” modeling option must be selected, and operating configuration and taxi network must exist in the airport layout.

Step 1: Create empty study file
At a minimum, an ASIF consists of the standard XML declaration, a study section, and study metadata.

```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="1.2.15" content="study">
  <study>
    <name>PVD2004_small</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 and tracks, the airport layout section can contain buildings, stationary sources of emissions (such as generators, training fires, or boilers), gates, terminals, taxiways, taxipaths, airport configurations, and operational profiles.

Step 2a: Define airport layout
Define the basic airport layout properties including layout name, airport code, and location.

```xml
<airportLayoutSet>
  <airportLayout>
    <name>Baseline_PVD2004_layout</name>
    <airportCode type="ICAO">KPVD</airportCode>
    <startDate>2004-01-01</startDate>
    <elevation>55</elevation> <!-- in feet -->
    <taxiInTime>7</taxiInTime>   <!-- in minutes -->
    <taxiOutTime>19</taxiOutTime> <!-- in minutes -->
    <latitude>41.723999</latitude>
    <longitude>-71.428221</longitude>
  </airportLayout>
</airportLayoutSet>
```

Step 2b: Define 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 defines an emergency generator.
<stationarySourceSet>
  <stationarySource>
    <name>600kw Emergency Gen-Baseline-KPVD-2004</name>
    <pointStationarySource>
      <pointCoord>
        <latitude>41.743248909695488</latitude>
        <longitude>-71.412168090784959</longitude>
      </pointCoord>
      <baseElevation>16.764</baseElevation>   <!-- in meters -->
      <releaseHeight>12.192</releaseHeight>   <!-- in meters -->
      <gasVelocity>15</gasVelocity>           <!-- in meters/sec -->
      <stackDiameter>0.100584</stackDiameter> <!-- in meters -->
      <temperature>400</temperature>          <!-- in Fahrenheit -->
    </pointStationarySource>
    <categoryGenerator>
      <typeCode>2</typeCode>
      <powerRatingHorsepower>1340</powerRatingHorsepower>
      <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>
      <pollutionControlFactorTOC>0</pollutionControlFactorTOC>
      <pollutionControlFactorCO>0</pollutionControlFactorCO>
      <pollutionControlFactorNOx>0</pollutionControlFactorNOx>
      <pollutionControlFactorSOx>0</pollutionControlFactorSOx>
      <pollutionControlFactorPM10>0</pollutionControlFactorPM10>
      <pm25ToPm10Ratio>1</pm25ToPm10Ratio>
    </categoryGenerator>
  </stationarySource>
</stationarySourceSet>

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. For dispersion modeling, gates are modeled in AERMOD as either volume or area sources. A single-point gate (a pair of X/Y coordinates) is modeled as a volume source; while a polygon gate is modeled as an area source.

This example declares a terminal (polygon with eight points) which is defined by a set of latitude and longitude coordinates.

<gateSet>
  <gate>
    <name>AC</name>
    <elevation>16.76</elevation>            <!-- in meters -->
    <releaseHeight>1.49616</releaseHeight> <!-- in meters -->
    <sigmaY>0.1</sigmaY>
    <sigmaZ>0.1</sigmaZ>
    <polygonCoords>
      <vertex>
        <latitude>41.745139410943032</latitude>
        <longitude>-71.410155909148983</longitude>
      </vertex>
      <vertex>
        <latitude>41.74454094786433</latitude>
        <longitude>-71.408155909148983</longitude>
      </vertex>
      <vertex>
        <latitude>41.743248909695488</latitude>
        <longitude>-71.412168090784959</longitude>
      </vertex>
      <vertex>
        <latitude>41.742168090784959</latitude>
        <longitude>-71.413248909695488</longitude>
      </vertex>
      <vertex>
        <latitude>41.7410155909148983</latitude>
        <longitude>-71.414324890969549</longitude>
      </vertex>
      <vertex>
        <latitude>41.740947864324891</latitude>
        <longitude>-71.41539410943032</longitude>
      </vertex>
      <vertex>
        <latitude>41.73986432489097</latitude>
        <longitude>-71.41639410943032</longitude>
      </vertex>
      <vertex>
        <latitude>41.738847864324909</latitude>
        <longitude>-71.41739410943032</longitude>
      </vertex>
    </polygonCoords>
  </gate>
</gateSet>
Step 2d: Define 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.

Only the first two taxiways out of 24 are shown here for brevity. The entire taxiways are included in the example file.

```xml
<taxiwaySet>
  <taxiway>
    <name>A2 to 3</name>
    <dispersionWidth>22.86</dispersionWidth> <!-- in meters -->
    <taxiNodeSet>
      <taxiNode>
        <latitude>41.747442309926434</latitude>
        <longitude>-71.399033659570691</longitude>
        <elevation>16.76</elevation> <!-- in meters -->
        <speed>17</speed> <!-- in mph -->
      </taxiNode>
      <taxiNode>
        <latitude>41.746840990624833</latitude>
        <longitude>-71.397780701750833</longitude>
        <elevation>16.76</elevation>
        <speed>17</speed>
      </taxiNode>
    </taxiNodeSet>
  </taxiway>
</taxiwaySet>
```
<taxiNodeSet>
</taxiway>

<taxiway>
  <name>AC inout 1 to 2</name>
  <dispersionWidth>22.86</dispersionWidth>
  <taxiNodeSet>
    <taxiNode>
      <latitude>41.742510604805076</latitude>
      <longitude>-71.411486739128023</longitude>
      <elevation>16.76</elevation>
      <speed>17</speed>
    </taxiNode>
    <taxiNode>
      <latitude>41.742008226242724</latitude>
      <longitude>-71.410307016216962</longitude>
      <elevation>16.76</elevation>
      <speed>17</speed>
    </taxiNode>
  </taxiNodeSet>
</taxiway>

.............

</taxiwaySet>

Step 2e: Define runways
A runway in AEDT is defined by two runway ends. Runways are used by departing and arriving aircraft, and are linked to gates by taxipaths. The example below defines two runways: 05-23 and 16-34.

<runwaySet>
  <runway>
    <length>7069</length> <!-- in feet -->
    <width>150</width>    <!-- in feet -->
    <runwayEnd>
      <name>05</name>
      <latitude>41.73040290796537</latitude>
      <longitude>-71.411541169743472</longitude>
      <elevation>54.98676640419943</elevation> <!-- in feet -->
      <glideSlope>3</glideSlope>
    </runwayEnd>
    <runwayEnd>
      <name>23</name>
      <latitude>41.746840990624833</latitude>
      <longitude>-71.39780701750833</longitude>
      <elevation>54.98676640419943</elevation>
      <glideSlope>3</glideSlope>
    </runwayEnd>
  </runway>
  <runway>
    <length>5961</length>
    <width>150</width>
    <runwayEnd>
      <name>16</name>
  </runway>
</runwaySet>
<latitude>41.748017908874452</latitude>
<longitude>-71.4087003031238</longitude>
<elevation>54.986876640419943</elevation>
<glideSlope>3</glideSlope>
</runwayEnd>
<runwayEnd>
 <name>34</name>
 <latitude>41.735182619491127</latitude>
 <longitude>-71.395155630736014</longitude>
 <elevation>54.986876640419943</elevation>
 <glideSlope>3</glideSlope>
</runwayEnd>
</runway>
</runwaySet>
Step 2f: Assemble taxipaths

Taxipaths are a series of taxiways that aircraft takes from a gate to a runway end (outbound) or from a runway end to a gate (inbound). Taxipaths can be composed of multiple taxiway line segments; and separate taxipaths may share taxiways in common as paths across the airport.

Only the first two taxipaths out of eight are shown here for brevity. The entire taxipaths are included in the example file.

```xml
<taxipathSet>
  <taxipath>
    <gateName>AC</gateName>
    <runwayName>05</runwayName>
    <direction>Outbound</direction>
    <taxiwayName>AC inout 1 to 2</taxiwayName>
    <taxiwayName>T3 to 4</taxiwayName>
    <taxiwayName>T4 to 5</taxiwayName>
    <taxiwayName>T5 to 6</taxiwayName>
    <taxiwayName>E1 to 2</taxiwayName>
    <taxiwayName>S2 to 3</taxiwayName>
    <taxiwayName>S3 to 4</taxiwayName>
  </taxipath>
  <taxipath>
    <gateName>AC</gateName>
    <runwayName>05</runwayName>
    <direction>Inbound</direction>
    <taxiwayName>N5 to 6</taxiwayName>
    <taxiwayName>N4 to 5</taxiwayName>
    <taxiwayName>N3 to 4</taxiwayName>
    <taxiwayName>N2 to 3</taxiwayName>
    <taxiwayName>T1 to 2</taxiwayName>
    <taxiwayName>T2 to 3</taxiwayName>
    <taxiwayName>AC inout 1 to 2</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). This sample ASIF contains a total of 12 tracks consisting of arrival, departure, and touch & go tracks for each of the four runway ends. Only the first three tracks are shown here for brevity.

```xml
<trackSet>
  <track>
    <name>05_D_FixedWing</name>
    <optype>D</optype>
    <wingtype>F</wingtype>
    <airport type="ICAO">KPVD</airport>
    <runway>05</runway>
    <subtrack>
      <id>0</id>
      <dispersionWeight>1</dispersionWeight>
      <trackNodes>
        <trackNode>
          <latitude>41.73040290796537</latitude>
          <longitude>-71.411541169743472</longitude>
        </trackNode>
        <trackNode>
          <latitude>41.746840990624833</latitude>
          <longitude>-71.397780701750833</longitude>
        </trackNode>
        <trackNode>
          <latitude>43.13717876102565</latitude>
          <longitude>-70.202867639935235</longitude>
        </trackNode>
      </trackNodes>
    </subtrack>
  </track>
  <track>
    <name>23_D_FixedWing</name>
    <optype>D</optype>
    <wingtype>F</wingtype>
    <airport type="ICAO">KPVD</airport>
    <runway>23</runway>
    <subtrack>
      <id>0</id>
      <dispersionWeight>1</dispersionWeight>
      <trackNodes>
        <trackNode>
          <latitude>41.746840990624833</latitude>
          <longitude>-71.397780701750833</longitude>
        </trackNode>
        <trackNode>
          <latitude>41.73040290796537</latitude>
          <longitude>-71.411541169743472</longitude>
        </trackNode>
        <trackNode>
          <latitude>40.32809642691705</latitude>
          <longitude>-72.555207007763542</longitude>
        </trackNode>
      </trackNodes>
    </subtrack>
  </track>
</trackSet>
```
Step 2h: Define airport operating configurations

Airport operating configurations specify the weather conditions and times under which particular runway assignments are made for aircraft based on the aircraft weight category (Small, Large, or Heavy). Operating configurations are only used if the Delay and Sequencing Modeling is selected.

A single configuration is defined in this example, but multiple configurations could be defined in an airport layout. Please note that the following <airportConfig> section does not contain any activation parameters (such as wind direction, wind speed, hour of day, ceiling, visibility, and temperature). This means that all the activation parameters are set to no bound.

```xml
<airportConfigSet>
  <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>
  </airportConfig>
</airportConfigSet>
```
<arrivalPercentage>0.8</arrivalPercentage>
<departurePercentage>1.32</departurePercentage>
<tgoPercentage>0</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>S</aircraftSize>
<runway>23</runway>
<arrivalPercentage>50.74</arrivalPercentage>
<departurePercentage>52.33</departurePercentage>
<tgoPercentage>50</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>S</aircraftSize>
<runway>34</runway>
<arrivalPercentage>13.04</arrivalPercentage>
<departurePercentage>8.06</departurePercentage>
<tgoPercentage>15</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>S</aircraftSize>
<runway>05</runway>
<arrivalPercentage>35.42</arrivalPercentage>
<departurePercentage>38.29</departurePercentage>
<tgoPercentage>35</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>L</aircraftSize>
<runway>16</runway>
<arrivalPercentage>0.8</arrivalPercentage>
<departurePercentage>1.32</departurePercentage>
<tgoPercentage>0</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>L</aircraftSize>
<runway>23</runway>
<arrivalPercentage>50.74</arrivalPercentage>
<departurePercentage>52.33</departurePercentage>
<tgoPercentage>50</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>L</aircraftSize>
<runway>34</runway>
<arrivalPercentage>13.04</arrivalPercentage>
<departurePercentage>8.06</departurePercentage>
<tgoPercentage>15</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>L</aircraftSize>
<runway>05</runway>
<arrivalPercentage>35.42</arrivalPercentage>
<departurePercentage>38.29</departurePercentage>
<tgoPercentage>35</tgoPercentage>
</runwayAssignment>
<runwayAssignment>
<aircraftSize>H</aircraftSize>
<runway>16</runway>
<arrivalPercentage>0.8</arrivalPercentage>
Step 2i: Define operational profiles
Operational profiles allows the user to define variations in activity throughout a day, week, or year. The three types of operational profiles are Quarter-Hourly, Daily, and Monthly. When using operational profiles in a study, at least one profile for each profile type (Quarter Hourly, Daily, and Monthly) must defined.

These profiles provide a weighting factor that determines how often activity occurs during the time period. Aircraft and non-aircraft sources can all be assigned operational profiles. For this example, the same profiles are used for all both aircraft and non-aircraft sources; but in practice different profiles will be defined for aircraft, GSEs, or 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.
<dailyProfileSet>
  <dailyProfile>
    <profileName>Aircraft-Baseline-KPVD</profileName>
    <temporalFactorSunday>0.8889</temporalFactorSunday>
    <temporalFactorMonday>0.9354</temporalFactorMonday>
    <temporalFactorTuesday>0.9565</temporalFactorTuesday>
    <temporalFactorWednesday>0.9494</temporalFactorWednesday>
    <temporalFactorThursday>1</temporalFactorThursday>
    <temporalFactorFriday>0.9494</temporalFactorFriday>
    <temporalFactorSaturday>0.8103</temporalFactorSaturday>
  </dailyProfile>
  <dailyProfile>
    <profileName>Aircraft-Baseline-KPVD</profileName>
    <temporalFactorJanuary>0.6097</temporalFactorJanuary>
    <temporalFactorFebruary>0.768</temporalFactorFebruary>
    <temporalFactorMarch>0.7468</temporalFactorMarch>
    <temporalFactorApril>0.6508</temporalFactorApril>
    <temporalFactorMay>0.7803</temporalFactorMay>
    <temporalFactorJune>0.9452</temporalFactorJune>
    <temporalFactorJuly>0.9967</temporalFactorJuly>
    <temporalFactorAugust>1</temporalFactorAugust>
    <temporalFactorSeptember>0.963</temporalFactorSeptember>
    <temporalFactorOctober>0.9657</temporalFactorOctober>
    <temporalFactorNovember>0.8889</temporalFactorNovember>
    <temporalFactorDecember>0.8374</temporalFactorDecember>
  </dailyProfile>
</dailyProfileSet>

<monthlyProfileSet>
  <monthlyProfile>
    <profileName>Aircraft-Baseline-KPVD</profileName>
    <temporalFactorQuarterHourlyProfile>Aircraft-Baseline-KPVD</temporalFactorQuarterHourlyProfile>
    <temporalFactorDailyProfile>Aircraft-Baseline-KPVD</temporalFactorDailyProfile>
    <temporalFactorMonthlyProfile>Aircraft-Baseline-KPVD</temporalFactorMonthlyProfile>
  </monthlyProfile>
  <monthlyProfile>
    <profileName>Aircraft-Baseline-KPVD</profileName>
    <temporalFactorQuarterHourlyProfile>Aircraft-Baseline-KPVD</temporalFactorQuarterHourlyProfile>
    <temporalFactorDailyProfile>Aircraft-Baseline-KPVD</temporalFactorDailyProfile>
    <temporalFactorMonthlyProfile>Aircraft-Baseline-KPVD</temporalFactorMonthlyProfile>
  </monthlyProfile>
</monthlyProfileSet>
Step 3: **Define receptor set**
The receptor set defines a set of points or a grid in which noise or emission concentrations will be modeled. A receptor set is required for dispersion modeling.

```xml
<receptorSet>
  <name>CartesianReceptors-Baseline-KPVD</name>
  <pointReceptor>
    <name>01</name>
    <latitude>41.75569222957511</latitude>
    <longitude>-71.401734634031868</longitude>
    <elevation>54.986876640419943</elevation> <!-- in feet -->
    <receptorHeight>5.9099999999999993</receptorHeight> <!-- in feet -->
  </pointReceptor>
  ...
</receptorSet>
```

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

```xml
<scenario>
  <name>2004-Baseline</name>
  <startTime>2004-01-01T00:00:00</startTime>
  <duration>8784</duration> <!-- in hours -->
  <taxiModel>Sequencing</taxiModel>
  <timeInModeBasis>Performance</timeInModeBasis>
  <acftPerfModel>SAE1845</acftPerfModel>
  <bankAngle>false</bankAngle>
</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). The second case contains aircraft operations and GSEs 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.

Step 4c: Define the case for aircraft operations
This section defines aircraft operations, as well as GSEs assigned 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.
<id>D_1</id>
<aircraftType>
<airframeModel>Airbus A319-100 Series</airframeModel>
<engineCode>3CM028</engineCode>
<apuName>APU GTCP 36-300 (80HP)</apuName>
<groundSupportEquipmentLTOOperationSet>
<groundSupportEquipmentLTOOperation>
<gseID>8</gseID>
<fuelType>Diesel</fuelType>
<horsepower>88</horsepower>
<loadFactor>0.8</loadFactor>
<departureOpTime>3.9</departureOpTime> <!-- in minutes -->
</groundSupportEquipmentLTOOperation>
<groundSupportEquipmentLTOOperation>
<gseID>13</gseID>
<fuelType>Gasoline</fuelType>
<horsepower>107</horsepower>
<loadFactor>0.55</loadFactor>
<departureOpTime>8</departureOpTime>
<arrivalOpTime>8</arrivalOpTime>
</groundSupportEquipmentLTOOperation>
<groundSupportEquipmentLTOOperation>
<gseID>14</gseID>
<fuelType>Gasoline</fuelType>
<horsepower>107</horsepower>
<loadFactor>0.5</loadFactor>
<departureOpTime>11</departureOpTime>
<arrivalOpTime>12</arrivalOpTime>
</groundSupportEquipmentLTOOperation>
<groundSupportEquipmentLTOOperation>
<gseID>17</gseID>
<fuelType>Diesel</fuelType>
<horsepower>210</horsepower>
<loadFactor>0.53</loadFactor>
<departureOpTime>9.7</departureOpTime>
</groundSupportEquipmentLTOOperation>
<groundSupportEquipmentLTOOperation>
<gseID>29</gseID>
<fuelType>Diesel</fuelType>
<horsepower>175</horsepower>
<loadFactor>0.25</loadFactor>
<departureOpTime>14</departureOpTime>
</groundSupportEquipmentLTOOperation>
<groundSupportEquipmentLTOOperation>
<gseID>36</gseID>
<fuelType>Diesel</fuelType>
<horsepower>56</horsepower>
<loadFactor>0.25</loadFactor>
<arrivalOpTime>2.1</arrivalOpTime>
</groundSupportEquipmentLTOOperation>
<groundSupportEquipmentLTOOperation>
<gseID>41</gseID>
<fuelType>Diesel</fuelType>
<horsepower>235</horsepower>
<loadFactor>0.2</loadFactor>
<departureOpTime>8</departureOpTime>
<arrivalOpTime>7</arrivalOpTime>
<operation>
  <id>A_1</id>
  <aircraftType>
    <airframeModel>Airbus A319-100 Series</airframeModel>
    <engineCode>3CM028</engineCode>
    <apuName>APU GTCP 36-300 (80HP)</apuName>
  </aircraftType>
  <numOperations>366</numOperations>
  <opType>D</opType>
  <departureAirport type="ICAO">KPVD</departureAirport>
  <departureGate>AC</departureGate>
  <departureApuTime>3.5</departureApuTime> <!-- in minutes -->
  <taxiOutDuration>10.72</taxiOutDuration> <!-- in minutes -->
  <taxiInDuration>6.24</taxiInDuration> <!-- in minutes -->
  <activityProfile>ActivityProfile-Baseline-KPVD-0-0-0</activityProfile>
  <actypeWeight>146100</actypeWeight> <!-- in pounds -->
  <fuelSulfurContent>0.00068</fuelSulfurContent>
</operation>

<operation>
  <id>A_2</id>
  <groundSupportEquipmentLTOOperationSet>
    <groundSupportEquipmentLTOOperation>
      <gseID>8</gseID>
      <fuelType>Diesel</fuelType>
      <horsepower>88</horsepower>
      <loadFactor>0.8</loadFactor>
      <departureOpTime>3.9</departureOpTime>
    </groundSupportEquipmentLTOOperation>
    <groundSupportEquipmentLTOOperation>
      <gseID>13</gseID>
      <fuelType>Gasoline</fuelType>
      <horsepower>107</horsepower>
      <loadFactor>0.55</loadFactor>
      <departureOpTime>8</departureOpTime>
      <arrivalOpTime>8</arrivalOpTime>
    </groundSupportEquipmentLTOOperation>
    <groundSupportEquipmentLTOOperation>
      <gseID>14</gseID>
      <fuelType>Gasoline</fuelType>
      <horsepower>107</horsepower>
      <loadFactor>0.5</loadFactor>
      <departureOpTime>11</departureOpTime>
      <arrivalOpTime>12</arrivalOpTime>
    </groundSupportEquipmentLTOOperation>
    <groundSupportEquipmentLTOOperation>
      <gseID>17</gseID>
      <fuelType>Diesel</fuelType>
      <horsepower>210</horsepower>
      <loadFactor>0.53</loadFactor>
      <departureOpTime>9.7</departureOpTime>
    </groundSupportEquipmentLTOOperation>
  </groundSupportEquipmentLTOOperationSet>
</operation>

<operation>
  <id>A_3</id>
  <groundSupportEquipmentLTOOperationSet>
    <groundSupportEquipmentLTOOperation>
      <gseID>29</gseID>
      <fuelType>Diesel</fuelType>
      <horsepower>175</horsepower>
      <loadFactor>0.25</loadFactor>
    </groundSupportEquipmentLTOOperation>
  </groundSupportEquipmentLTOOperationSet>
</operation>
Step 5: **Full ASIF**
The full ASIF, `asif_emissions_study.xml`, is located in the directory: C:\Program Files\FAA\AEDT\Examples

1. Import the full ASIF in AEDT.
2. Create an annualization.
3. Create a metric result.

Please note that both the aircraft operations and the non-aircraft operations in this study are defined using operational profiles. When running profile-based aircraft operations, the “Apply Delay & Sequencing Model on Taxi” modeling option must be selected, and operating configuration and taxi network must exist in the airport layout.
# 4 User-Defined ANP and BADA 4 Profiles

## 4.1 Overview

There are three ways of creating and adding user-defined ANP and BADA 4 profiles in an AEDT study:

- By using the profile editor in the AEDT Graphical User Interface (GUI), Equipment tab (see Section 7.2.1 in AEDT User Manual);
- Creating and importing ASIF partial; and
- Direct database injection.

Of these methods, the first two are preferred because they include application-provided constraint and error checking. The following table provides a feature summary of the three methods.

This Chapter focuses on the ASIF method and the direct database injection method for adding user-defined profiles.

- Section 4.2 and Section 4.3 provide information on creating ASIF files that can be imported using ASIF partial import and provide details that would facilitate direct database injection to create user-defined profiles.
- Section 4.4 describes how the AEDT GUI’s export functionality can be used to generate ASIF files that can subsequently be edited by the user to create their own or custom ANP and BADA 4 flight profiles.

<table>
<thead>
<tr>
<th>Three Different Methods of Adding User-Defined Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profile Editor in AEDT GUI</strong></td>
</tr>
<tr>
<td>Profile Editor in AEDT GUI</td>
</tr>
<tr>
<td>ASIF</td>
</tr>
<tr>
<td>Direct DB Injection</td>
</tr>
</tbody>
</table>

It is expected that users who create and use user-defined profiles are knowledgeable about the physics of flight performance modeling and understand the significance and use of individual profile elements. Users are responsible for entering valid values that are within the expected ranges for each type of parameter. For detailed explanations of flight profiles, please refer to the AEDT Technical Manual and the AEDT User Manual.

Using non-default profiles, for review of FAA federal actions or other FAA regulatory purposes, require prior approval by the FAA office of Environment and Energy (AEE). Please refer to the AEDT User Manual, Appendix J for further information on requesting approval for use of non-default profiles.
4.2 User-Defined ANP Profiles

Key Requirements for a New ANP Profile

User-defined ANP profiles can be added to an existing ANP aircraft or created in conjunction with a new ANP aircraft definition. A key requirement for a new profile is that the Profile Name cannot be a duplicate of an existing record for that aircraft type. The primary key that uniquely defines a Profile is composed of the Operation Type, Profile Name, and the Stage Length.

In addition, any user-defined ANP profiles should have a PROFILE_ID value in the FLT_ANP_AIRPLANE_PROFILES table that is both unique and greater than 100,000. When creating user-defined ANP profiles via the AEDT GUI or importing via ASIF, the requirement that the Profile ID be greater than 100,000 is automatically handled. When the user is creating user-defined ANP profiles via manual database injection, the user must ensure that this requirement is met.

ANP profile entries are stored in the FLT_ANP_AIRPLANE_PROFILES table in a study database. Each unique profile entry in this table is determined by the combination of the ANP Aircraft Type, the Operation Type, the Profile Name, and the Stage Length. The integer value for Profile ID also uniquely identifies each entry in this table. The table below provides a mapping of the input ASIF elements for ANP profiles to specific database columns.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ASIF Element Name</th>
<th>Column in Table</th>
<th>Reference Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANP Aircraft Type</td>
<td>anpAirplanId</td>
<td>ACFT_ID</td>
<td>FLT_ANP_AIRPLANES.ACFT_ID</td>
</tr>
<tr>
<td>Operation Type</td>
<td>operationType</td>
<td>OP_TYPE</td>
<td></td>
</tr>
<tr>
<td>Profile Name</td>
<td>profileGroupId</td>
<td>PROF_ID1</td>
<td></td>
</tr>
<tr>
<td>Stage Length</td>
<td>profileStageLength</td>
<td>PROF_ID2</td>
<td></td>
</tr>
<tr>
<td>Profile ID</td>
<td>n/a</td>
<td>PROFILE_ID</td>
<td></td>
</tr>
</tbody>
</table>

ANP profiles can consist of either procedure steps or fixed-points. Both types of profiles can be defined for any given ANP aircraft type.

ANP Profile – Procedure Steps

Individual steps for procedural ANP profiles are stored in the FLT_ANP_AIRPLANEPROCEDURES table. Each unique profile in this table is determined by the combination of the ANP Aircraft Type, the Operation Type, the Profile Name, and the Stage Length. Each unique row in this table is determined by the combination of the previous four fields plus the Step Number. The table below provides a mapping of the input ASIF elements for ANP procedural steps to specific database columns.
ANP Profile, Procedural Steps – Mapping of ASIF Elements to Database Table & Columns

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ASIF Element Name</th>
<th>Column in Table</th>
<th>Reference Columns (where applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANP Aircraft Type</td>
<td>anpAirplaneId</td>
<td>ACFT_ID</td>
<td>FLT_ANP_AIRPLANES.ACFT_ID</td>
</tr>
<tr>
<td>Operation Type</td>
<td>operationType</td>
<td>OP_TYPE</td>
<td>FLT_ANP_AIRPLANE_PROFILES.OP_TYPE</td>
</tr>
<tr>
<td>Profile Name</td>
<td>profileGroupId</td>
<td>PROF_ID1</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID1</td>
</tr>
<tr>
<td>Stage Length</td>
<td>profileStageLength</td>
<td>PROF_ID2</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID2</td>
</tr>
<tr>
<td>Step Number</td>
<td>stepNum</td>
<td>STEP_NUM</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID2</td>
</tr>
<tr>
<td>Flap ID</td>
<td>flapId (optional)</td>
<td>FLAP_ID (nullable)</td>
<td>FLT_ANP_AIRPLANE_FLAPS.FLAP_ID</td>
</tr>
<tr>
<td>Step Type</td>
<td>stepType (optional)</td>
<td>STEP_TYPE (nullable)</td>
<td></td>
</tr>
<tr>
<td>Thrust Type</td>
<td>thrustType (optional)</td>
<td>THRUST_TYPE (nullable)</td>
<td></td>
</tr>
<tr>
<td>First Parameter</td>
<td>param1</td>
<td>PARAM1</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID2</td>
</tr>
<tr>
<td>Second Parameter</td>
<td>param2</td>
<td>PARAM2</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID2</td>
</tr>
<tr>
<td>Third Parameter</td>
<td>param3 (optional)</td>
<td>PARAM3 (nullable)</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID2</td>
</tr>
</tbody>
</table>

Sample ASIF for User-Defined ANP Procedural Profile

Following is a sample ASIF block that allows for the partial import of user-defined ANP procedural profiles. Refer to the accompanying ASIF file named UserDefinedANPProfiles-ProcedureSteps.xml for the complete sample file.

```xml
<fleet>
  <anpProfileSet>
    <anpAirplaneId>1900D</anpAirplaneId>
    <profile>
      <operationType>A</operationType>
      <profileGroupId>USER</profileGroupId>
      <profileStageLength>1</profileStageLength>
      <weight>14000</weight>
      <procedureSteps>
        <step>
          <stepNum>1</stepNum>
          <flapId>ZERO-A</flapId>
          <stepType>D</stepType>
          <param1>6000</param1>
          <param2>160</param2>
          <param3>3</param3>
        </step>
        <step>
          <stepNum>2</stepNum>
          <stepType>B</stepType>
          <thrustType>V</thrustType>
          <param1>515.2</param1>
          <param2>84</param2>
          <param3>40</param3>
        </step>
        <!-- more steps -->
      </procedureSteps>
    </profile>
  </anpProfileSet>
</fleet>
```
ANP Profile – Fixed-Point

The points of fixed-point ANP profiles are stored in the FLT_ANP_AIRPLANE_PROFILE_POINTS table. Each unique profile in this table is determined by the combination of the ANP Aircraft Type, the Operation Type, the Profile Name, and the Stage Length. Each unique row in this table is determined by the combination of the previous four fields plus the Point Number. The table below provides a mapping of the input ASIF elements for ANP fixed-point profiles to specific database columns.

### ANP Profile, Fixed-Points – Mapping of ASIF Elements to Database Table & Columns

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ASIF Element Name</th>
<th>Column in Table</th>
<th>Reference Columns (where applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANP Aircraft Type</td>
<td>anpAirplaneId</td>
<td>ACFT_ID</td>
<td>FLT_ANP_AIRPLANES.ACFT_ID</td>
</tr>
<tr>
<td>Operation Type</td>
<td>operationType</td>
<td>OP_TYPE</td>
<td>FLT_ANP_AIRPLANE_PROFILES.OP_TYPE</td>
</tr>
<tr>
<td>Profile Name</td>
<td>profileGroupId</td>
<td>PROF_ID1</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID1</td>
</tr>
<tr>
<td>Stage Length</td>
<td>profileStageLength</td>
<td>PROF_ID2</td>
<td>FLT_ANP_AIRPLANE_PROFILES.PROF_ID2</td>
</tr>
<tr>
<td>Point Number</td>
<td>pointNum</td>
<td>PT_NUM</td>
<td></td>
</tr>
<tr>
<td>Distance</td>
<td>distance</td>
<td>DISTANCE</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>altitude</td>
<td>ALTITUDE</td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>speed</td>
<td>SPEED</td>
<td></td>
</tr>
<tr>
<td>Net Thrust per Engine</td>
<td>thrustSet</td>
<td>THR_SET</td>
<td></td>
</tr>
<tr>
<td>Operation Mode</td>
<td>opMode (optional)</td>
<td>OP_MODE (nullable)</td>
<td></td>
</tr>
</tbody>
</table>

**Sample ASIF for User-Defined ANP Fixed-Point Profile**

Following is a sample ASIF block that allows for the partial import of user-defined ANP fixed-point profiles. Refer to the accompanying ASIF file named *UserDefinedANPProfiles-ProfilePoints.xml* for the complete sample file.

```xml
<fleet>
  <anpProfileSet>
    <anpAirplaneId>1900D</anpAirplaneId>
    <profile>
      <operationType>A</operationType>
      <profileGroupId>USER</profileGroupId>
      <profileStageLength>1</profileStageLength>
      <weight>14000</weight>
      <profilePoints>
        <point>
          <pointNum>1</pointNum>
          <distance>-114487.00</distance>
          <altitude>6000.00</altitude>
          <speed>250.00</speed>
          <thrustSet>520.00</thrustSet>
        </point>
      </profilePoints>
    </profile>
  </anpProfileSet>
</fleet>
```
<opMode>A</opMode>
</point>
<point>
  <pointNum>2</pointNum>
  <distance>-57243.00</distance>
  <altitude>3000.00</altitude>
  <speed>124.00</speed>
  <thrustSet>3560.00</thrustSet>
  <opMode>A</opMode>
</point>
<!-- more points -->
</profilePoints>
</profile>
<!-- additional profiles -->
</anpProfileSet>
</fleet>

4.3 User-Defined BADA 4 Profiles (for Existing BADA 4 Aircraft)

Key Requirements for a New BADA 4 Profile

User-defined BADA 4 profiles can be added to an existing BADA 4 aircraft (either system or user-created) or created in conjunction with a new BADA 4 aircraft definition. BADA 4 profile entries are stored in the FltBada4AirplaneProfile table.

A user-defined BADA 4 profile entry has several key identifiers. The first is a unique Profile ID that is a value greater than or equal to 400,000. When creating user-defined BADA 4 profiles via the AEDT GUI, or when importing new profiles via ASIF, the requirement that the Profile ID be greater than or equal to 400,000 is automatically handled. When the user is creating user-defined BADA 4 profiles via manual database injection, the user must ensure that this requirement is met.

The other required identifying components are the reference ANP Aircraft Type and the reference BADA 4 Aircraft Model. These fields are references to an existing ANP Aircraft from the FLT_ANP_AIRPLANES table (ACFT_ID field) and an existing BADA 4 Aircraft from the FLT_BADA4_ACM table (BADA4_ID). In ASIF, the BADA 4 Aircraft reference field is specified with a combination of the BADA 4 Model and the BADA 4 Engine Model from the FLT_BADA4_ACM table that uniquely identify the BADA 4 Aircraft.

The table below provides a mapping of the input ASIF elements for BADA 4 profiles to specific database columns.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ASIF Element Name</th>
<th>Field Name in Table</th>
<th>Reference Fields (where applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profile ID</td>
<td>n/a</td>
<td>ProfileID</td>
<td></td>
</tr>
<tr>
<td>Profile Name</td>
<td>flightProcedure</td>
<td>FlightProcedure</td>
<td></td>
</tr>
<tr>
<td>Reference ANP Aircraft</td>
<td>anpAirplaneId</td>
<td>AnpAirplaneID</td>
<td>FLT_ANP_AIRPLANES.ACFT_ID</td>
</tr>
<tr>
<td>Reference BADA4 Aircraft</td>
<td>bada4AirplaneModel</td>
<td>Bada4AirplaneID</td>
<td>FLT_BADA4_ACM.BADA4_ID matched using the MODEL and ENGINE fields from FLT_BADA4_ACM</td>
</tr>
</tbody>
</table>
Note that unlike the other elements, the bada4AirplaneModel and bada4Engine elements specified in ASIF are only used to determine a specific record match to a BADA4_ID value from the FLT_BADA4_ACM table and are not explicitly persisted as part of the new profile.

In AEDT 3c, only procedural profiles may be defined for user-defined BADA 4 profiles. Individual steps for BADA 4 profiles are stored in the FltBada4AirplaneProcedure table. The records for each unique profile in this table are solely determined by the Profile ID key which references the parent profile in the FltBada4AirplaneProfile table. Each row in this table has a unique identifier in the form of the auto-incremented database field of ProcedureStepID. However, each unique procedure step for any given profile is determined by the combination of the Profile ID and the Step Number.

The table below provides a mapping of the input ASIF elements for BADA 4 procedure steps to specific database columns.

### BADA 4 Profile, Procedural Steps – Mapping of ASIF Elements to Database Table & Columns

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ASIF Element Name</th>
<th>Field Name in Table</th>
<th>Reference Fields (where applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step ID</td>
<td>n/a</td>
<td>ProcedureStepID</td>
<td></td>
</tr>
<tr>
<td>Profile ID</td>
<td>n/a</td>
<td>ProfileID</td>
<td>FltBada4AirplaneProfile.ProfileID</td>
</tr>
<tr>
<td>Step Number</td>
<td>stepNumber</td>
<td>StepNumber</td>
<td></td>
</tr>
<tr>
<td>Reference Configuration ID</td>
<td>configId</td>
<td>ConfigurationID</td>
<td>FLT_BADA4_AFCM_CONFIG.CONFIG_ID</td>
</tr>
<tr>
<td>Reference ANP Aircraft for Flaps</td>
<td>anpAirplaneId</td>
<td>AnpAirplaneID</td>
<td>FLT_ANP_AIRPLANE_FLAPS.ACFT_ID</td>
</tr>
<tr>
<td>Reference ANP Flap Setting</td>
<td>anpFlapId</td>
<td>AnpFlapID</td>
<td>FLT_ANP_AIRPLANE_FLAPS.FLAP_ID</td>
</tr>
<tr>
<td>Step Type</td>
<td>stepType</td>
<td>StepType</td>
<td></td>
</tr>
<tr>
<td>Thrust Type</td>
<td>thrustType</td>
<td>ThrustType</td>
<td></td>
</tr>
<tr>
<td>Altitude</td>
<td>altitude</td>
<td>Altitude</td>
<td></td>
</tr>
<tr>
<td>Calibrated Airspeed</td>
<td>calibratedAirspeed</td>
<td>CalibratedAirspeed</td>
<td></td>
</tr>
<tr>
<td>Mach Number</td>
<td>mach</td>
<td>MachNumber</td>
<td></td>
</tr>
<tr>
<td>Thrust</td>
<td>thrust</td>
<td>Thrust</td>
<td></td>
</tr>
<tr>
<td>Angle</td>
<td>angle</td>
<td>Angle</td>
<td></td>
</tr>
<tr>
<td>Climb Rate</td>
<td>climbRate</td>
<td>ClimbRate</td>
<td></td>
</tr>
<tr>
<td>Flight Segment Length</td>
<td>distance</td>
<td>Distance</td>
<td></td>
</tr>
<tr>
<td>Percent Acceleration</td>
<td>percent</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>Gear Down</td>
<td>gearDown</td>
<td>GearDown</td>
<td></td>
</tr>
</tbody>
</table>
**Sample ASIF for User-Defined BADA 4 Profile**

Following is a sample ASIF block that allows for the partial import of user-defined BADA 4 profiles. Refer to the accompanying ASIF file named *UserDefinedBADA4Profiles.xml* for the complete sample file.

```xml
<fleet>
  <bada4ProfileSet>
    <anpAirplaneId>737300</anpAirplaneId>
    <bada4AirplaneModel>737-300</bada4AirplaneModel>
    <bada4Engine>CFM56-3B1 (20K)</bada4Engine>
    <bada4Profile>
      <operationType>A</operationType>
      <flightProcedure>UserBADA4_A</flightProcedure>
      <weightClass>1</weightClass>
      <weight>102600</weight>
      <bada4ProcedureSteps>
        <step>
          <stepNumber>1</stepNumber>
          <configId>229</configId>
          <anpAirplaneId>737300</anpAirplaneId>
          <anpFlapId>ZERO</anpFlapId>
          <stepType>D</stepType>
          <altitude>6000</altitude>
          <calibratedAirspeed>250</calibratedAirspeed>
          <mach>0</mach>
          <thrust>0</thrust>
          <angle>3</angle>
          <climbRate>0</climbRate>
          <distance>0</distance>
          <percent>0</percent>
          <gearDown>0</gearDown>
        </step>
        <!-- more steps -->
        <!-- additional profiles -->
      </bada4ProcedureSteps>
    </bada4Profile>
  </bada4ProfileSet>
</fleet>
```

4.4 **Create User-Defined ANP and BADA 4 Profiles for New or Existing Aircraft by Using the GUI Export Aircraft Feature**

AEDT 3c GUI supports adding and editing user-defined ANP and BADA 4 flight profiles of existing fixed-wing aircraft as well as creating new user-defined aircraft. This section explains how to add custom ANP and BADA 4 flight profiles to existing and new aircraft by exporting existing aircraft, modifying the exported ASIF, and reimporting the modified ASIF.

**Create a New User-Defined Aircraft with Custom Profiles**

Follow the steps below to create a new user-defined aircraft with custom ANP and/or BADA 4 flight profiles:

**Step 1: Copy an existing system aircraft to create a new user-defined aircraft**

1. In AEDT, go to the *Equipment* tab, *Aircraft*. 
2. Select the aircraft to modify and click **Copy**.
3. Enter a suffix and click **Save**.
4. A new user-defined aircraft is created.

**Step 2: Export the new aircraft then delete it**
1. Select the new aircraft and click **Export Aircraft** button.
2. The aircraft data is exported as a partial ASIF.
3. Click the **Delete** button to delete the new aircraft. This aircraft is no longer needed, because it will be edited in the ASIF and imported back into AEDT.

**Step 3: Open and edit the exported ASIF**
1. Open the exported ASIF.
2. Under the `<anpProfileSet>` or the `<bada4ProfileSet>`, copy and paste one of the existing `<profile>` or `<bada4Profile>` sections.
3. Modify the new `<profile>` and/or `<bada4Profile>` section by editing the profile properties. Ensure that profile names within each section are unique. Refer to the AEDT User Manual Appendix for details on how to define profiles for civil airplanes and helicopters.
4. Add additional profiles as needed.
5. Save the ASIF.

**Step 4: Import the ASIF**
1. In AEDT, in the **Equipment** tab, click **Import Aircraft** button, select the updated ASIF and click **Open**. The new aircraft is listed in the **Equipment** tab.
2. Select the new aircraft and confirm that custom profiles have been added.

**Add Custom Profiles to Existing Aircraft**

Follow the steps below to add user-defined ANP and/or BADA 4 flight profiles to existing system or user-defined aircraft:

**Step 1: Export an existing aircraft and its profiles**
1. In AEDT, go to the **Equipment** tab, **Aircraft**.
2. Select the aircraft to export.
3. Select the new aircraft and click **Export Aircraft** button.
4. The aircraft data is exported as a partial ASIF.

**Step 2: Open and edit the exported ASIF**
1. Open the exported ASIF.
2. Edit the file to only keep the `<anpProfileSet>` and/or the `<bada4ProfileSet>` sections and remove all the other sections.
3. Modify the `<profile>` or `<bada4Profile>` sections by editing each profile’s properties. Ensure that the Profile Name is changed for each profile to be different from any of the profile names that already exist for that aircraft. Refer to the AEDT User Manual Appendix for details on how to define profiles for civil airplanes and helicopters.
4. Add additional profiles as needed.
5. Save the ASIF.
Step 3: **Import the ASIF**

1. In AEDT, in the *Equipment* tab, click *Import Aircraft* button, select the updated ASIF and click *Open*.
2. Select the relevant aircraft and confirm that custom profiles have been added.
5 ASIF Design Consideration

5.1 Airport Layout and Runways

When defining an airport under the <airportLayout> element, users have the option to specify runway definitions using the <runwaySet> element. If runways are not specified in ASIF, then the runway data from the AEDT Airport database will be copied during the ASIF import.

When you add an existing airport to a study in AEDT GUI, AEDT will create a new airport layout for each instance when there has been a runway modification (e.g., extended runways or renamed runways). For example, add the KATL airport in AEDT GUI and confirm that multiple airport layouts are listed, each with different effective - expiration date range.

However, if you import such airport using ASIF without providing runway specifications, then AEDT will copy all the runways (both expired and the latest) from the Airport database into a single airport layout instead of creating multiple layouts. This means that the single airport layout will contain duplicate runway items once such airport is imported into AEDT.

In the example below, KATL is defined without any runway specifications. During ASIF import, AEDT will copy the entire history of KATL runways from the Airport database into the study database.

```xml
<airportLayout>
  <airportCode type="ICAO">KATL</airportCode>
</airportLayout>
```

The following screenshot shows the single airport layout for the KATL airport in AEDT GUI after importing the above ASIF example. Note that some items are listed twice – runway ends 09L and 27R, runways 09L-27R, and helipad H1.

In such a case, it is recommended to delete the duplicate runway ends and runways from the study. Review the effective date and expiration date of the runway ends/runways in the study database to determine which ones are expired vs. latest. Alternatively, specify runways in the ASIF using the <runwaySet> element.
5.2 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.

5.3 Control Codes

The altitude and/or speed of an airplane as it passes over a track node can be controlled to some extent by assigning track controls to that track node. Track controls are an optional feature that are used to specify targets and restrictions on altitude and/or speed on tracks – altitude controls affect airplane altitude; and speed controls affect airplane speed.
Each track control has two components: a value and a code. The value establishes a reference altitude or speed (appropriate to the control type), and the code specifies how that value should be interpreted in flight analysis.

In the ASIF schema, an altitude control is assigned to a trackNode by providing the control altitude as trackNode/altitude, and the control code as trackNode/altitude/control. Likewise, a speed control is defined by providing trackNode/speed, and the control code as trackNode/speed/control. Note that no control is defined if any of the following are true:

- A value is not provided;
- A code is not provided; or
- The code provided has a value of "0" or "None".

Furthermore, AEDT will ignore the following controls:

- Altitude controls with altitude values below 500 ft. AFE.
- All speed controls, if using the Doc 29/BADA 3 performance model.
- All speed controls, if the operation is an overflight.
- All controls, if the operation is a circuit or touch-and-go.

Also note that if there are any controls defined on an overflight, there must be controls defined (and observed, per the control-ignoring rules above) on the first and last nodes of the track.

AEDT computes performance to the following extents:

- Departure and approach performance is computed between ground roll and the observed control that is trackwise furthest from ground roll.
- Overflight performance is computed from the first track point to the last track point (both of which must have observed controls).

Performance is computed as close as possible to the observed control values, subject to the airplane's performance capabilities, as described in the AEDT Technical Manual. The computed best effort to achieve these targeted values is checked against the restrictions implied by the control codes:

- Control code "1" or "At or Below": the airplane is not allowed above the value
- Control code "2" or "Match": the airplane is not allowed above or below the value
- Control code "3" or "At or Above": the airplane is not allowed below the value

If the best effort fails to comply with the restriction, the flight's performance is discarded by AEDT, logged in the error log, and its impact is excluded from environmental metrics. For more information on track controls, refer to Section 3.9.1 Track Control Flights in the AEDT Technical Manual.

When translating NIRS inputs to ASIF, omitting altitude controls with altitude values below 3000 ft AFE will lead to the most comparable result, as NIRS ignored these controls. 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.
### 5.4 Assign Default Ground Support Equipment (GSE) to Aircraft Operations

The `assignDefaultGse` element in the ASIF schema is used to assign default ground support equipment (GSE) to aircraft operation instead of writing out each GSE operation.

In this departure operation example, the `assignDefaultGse` is set to true. This will assign the default GSE for “Airbus A319-100 Series” to the operation. The default GSEs for the Airbus A319-100 Series, departure operation are listed in the table below. The default GSE assignments for airframe is stored in the `FLT_GSE_AC_DEFAULTS` table.

```xml
<operation>
  <id>D_1</id>
  <aircraftType>
    <airframeModel>Airbus A319-100 Series</airframeModel>
    <engineCode>3CM028</engineCode>
    <apuName>APU GTCP 36-300 (80HP)</apuName>
    <assignDefaultGse>true</assignDefaultGse>
  </aircraftType>
  <numOperations>1</numOperations>
  <opType>D</opType>
</operation>
```

### Default GSEs for Airbus A319-100 Series – Departure Operation

<table>
<thead>
<tr>
<th>GSE Name</th>
<th>Duration (mins)</th>
<th>Horsepower</th>
<th>Load Factor</th>
<th>Manufacture Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric - None - Air Conditioner</td>
<td>23</td>
<td>0</td>
<td>0.75</td>
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<td>Diesel - ACE 180 - Air Start</td>
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<td>425</td>
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<td>&quot;Diesel - Stewart &amp; Stevenson TUG GT-35, Douglas TBL-180 - Aircraft Tractor&quot;</td>
<td>8</td>
<td>88</td>
<td>0.8</td>
<td>NA</td>
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<tr>
<td>Gasoline - Stewart &amp; Stevenson TUG MA 50 - Baggage Tractor</td>
<td>38</td>
<td>107</td>
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<td>Gasoline - Stewart &amp; Stevenson TUG 660 - Belt Loader</td>
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<td>107</td>
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<tr>
<td>Diesel - Hi-Way F650 - Cabin Service Truck</td>
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<td>Electric - Gate Service - Water Service</td>
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To specify individual GSEs for the aircraft operation, use the `groundSupportEquipmentLTOOperationSet`, as follows:

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    <airframeModel>Airbus A319-100 Series</airframeModel>
    <engineCode>3CM028</engineCode>
    <apuName>APU GTCP 36-300 (80HP)</apuName>
  </aircraftType>
  <groundSupportEquipmentLTOOperationSet>
    <groundSupportEquipmentLTOOperation>
      <gseID>8</gseID>
      <fuelType>Diesel</fuelType>
      <horsepower>88</horsepower>
      <loadFactor>0.8</loadFactor>
      <departureOpTime>3.9</departureOpTime>
    </groundSupportEquipmentLTOOperation>
    <groundSupportEquipmentLTOOperation>
      <gseID>13</gseID>
      <fuelType>Gasoline</fuelType>
      <horsepower>107</horsepower>
      <loadFactor>0.55</loadFactor>
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      <fuelType>Gasoline</fuelType>
      <horsepower>107</horsepower>
      <loadFactor>0.5</loadFactor>
      <departureOpTime>11</departureOpTime>
      <arrivalOpTime>12</arrivalOpTime>
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      <fuelType>Diesel</fuelType>
      <horsepower>210</horsepower>
      <loadFactor>0.53</loadFactor>
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      <fuelType>Diesel</fuelType>
      <horsepower>175</horsepower>
      <loadFactor>0.25</loadFactor>
      <departureOpTime>14</departureOpTime>
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      <fuelType>Diesel</fuelType>
      <horsepower>56</horsepower>
      <loadFactor>0.25</loadFactor>
      <arrivalOpTime>2.1</arrivalOpTime>
  </groundSupportEquipmentLTOOperationSet>
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```
</groundSupportEquipmentLTOOperation>
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  <fuelType>Diesel</fuelType>
  <horsepower>235</horsepower>
  <loadFactor>0.2</loadFactor>
  <departureOpTime>8</departureOpTime>
  <arrivalOpTime>7</arrivalOpTime>
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<opType>D</opType>
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........
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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<th>Simple types</th>
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<td></td>
<td></td>
</tr>
<tr>
<td>windRose</td>
<td>string42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>windRoseData</td>
<td>string5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>windRoseStation</td>
<td>string50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>studyType</td>
<td>string9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>taxiModelType</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>timeInModeBasisType</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trackType</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>trainingFireFuelType</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vectorTrackType</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wingType</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yesNoType</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**element activityProfile**
<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>quarterHourlyProfile dailyProfile monthlyProfile</td>
</tr>
<tr>
<td>used by</td>
<td>element activityProfileSet</td>
</tr>
<tr>
<td>attributes</td>
<td>Name  Type  Use  Default  Fixed  Annotation</td>
</tr>
<tr>
<td></td>
<td>name    string100  required</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Supports legacy EDMS studies relating to content combinations of QUARTER_HOURLY_PROFILES, DAILY_PROFILES, and MONTHLY_PROFILES.</td>
</tr>
</tbody>
</table>

**attribute activityProfile/@name**
- **type**: string100
- **properties**: use required
- **facets**
  - Kind: Annotation
  - minLength: 0
  - maxLength: 100

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

**element activityProfile/dailyProfile**
- **diagram**
- **type**: string100
- **properties**: content simple
- **used by**: element dailyProfileSet
- **facets**
  - Kind: Value Annotation
  - minLength: 0
  - maxLength: 100
- **annotation**: documentation
  - Defines scaling factors for operations on a particular day.
element **activityProfile/monthlyProfile**

- **Diagram**
  - *monthlyProfile*

- **Type** `string100`

- **Properties** content simple

- **Used by** element `monthlyProfileSet`

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

- **Annotation**
  - *documentation*
  - Defines scaling factors for operations during a particular month.

**element activityProfileSet**

- **Diagram**
  - *activityProfileSet*

- **Properties** content complex

- **Children** `activityProfile`

- **Used by** element `operationalProfileSet`

- **ComplexType** `airportLayoutType`

- **Attributes**
  - Name: `dummy`
  - Type: `xs:int`
  - Use: optional

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

**attribute activityProfileSet/@dummy**

- **Type** `xs:int`

- **Properties** use optional

**element airportCapacity**

- **Diagram**
  - *airportCapacity*

- **Properties** content complex

- **Children** `capacityPoint`

- **Used by** element `airportConfig`

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

- **Attributes**
  - Name: `dummy`
  - Type: `xs:int`
  - Use: optional
Supports legacy EDMS studies relating to content contained in the RUNWAY_CONFIGURATIONS table. This element supports the definition of airport capacities based on various points within an airport.

**attribute** airportCapacity/@dummy

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>use optional</td>
</tr>
</tbody>
</table>

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

**element airportConfig/configurationName**

**Diagram**

```
configurationName
Runway configuration name.
```

**Type** `string100`

**Properties**

- `content` simple

**Facets**

- `minLength` 0
- `maxLength` 100

**Annotation** documentation

- Runway configuration name.

**element airportConfig/useDistribution**

**Diagram**

```
useDistribution
Flag to use a distribution for the configuration.
```

**Type** `xs:boolean`

**Properties**

- `minOcc` 0
- `maxOcc` 1

**Content** simple

**Annotation** documentation

- Flag to use a distribution for the configuration.

**element airportConfig/weight**

**Diagram**

```
weight
Runway configuration weight factor.
```

**Type** `xs:double`

**Properties**

- `minOcc` 0
- `maxOcc` 1

**Content** simple

**Annotation** documentation

- Runway configuration weight factor.

**element airportConfig/startWindAngle**

**Diagram**

```
startWindAngle
Start wind angle, Valid values: 0.00 to 359.00. (degrees)
```

**Type** `int0to360`

**Properties**

- `minOcc` 0
- `maxOcc` 1

**Content** simple

**Facets**

- `minInclusive` 0
- `maxExclusive` 360

**Annotation** documentation

- Start wind angle. Valid values: 0.00 to 359.00. (degrees)
element airportConfig/endWindAngle
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>int0to360</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxExclusive</td>
<td>360</td>
</tr>
<tr>
<td>annotation documentation</td>
<td></td>
</tr>
</tbody>
</table>

End wind angle. Valid values: 0.00 to 359.00. (degrees)

element airportConfig/minWindSpeed
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
</tr>
<tr>
<td>annotation documentation</td>
<td></td>
</tr>
</tbody>
</table>

Minimum wind speed. Valid values: 0.00 to 100.00. (kts)

element airportConfig/maxWindSpeed
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
</tr>
<tr>
<td>annotation documentation</td>
<td></td>
</tr>
</tbody>
</table>

Maximum wind speed. Valid values: 0.00 to 100.00. (kts)

element airportConfig/startHour
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive24</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content: simple</td>
<td></td>
</tr>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>minInclusive</td>
<td>0</td>
</tr>
<tr>
<td>maxInclusive</td>
<td>24</td>
</tr>
<tr>
<td>annotation documentation</td>
<td></td>
</tr>
</tbody>
</table>

Start hour. Valid values: 0.00 to 23.00.
element `airportConfig/endHour`

diagram

```
endHour

End hour. Valid values: 0.00 to 23.00.
```

type `doubleInclusive24`

properties

<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>24</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

End hour. Valid values: 0.00 to 23.00.

---

element `airportConfig/minCeiling`

diagram

```
minCeiling

Minimum ceiling. Valid values: 0.00 to 100000.00. (ft)
```

type `xsd:double`

properties

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

Minimum ceiling. Valid values: 0.00 to 100000.00. (ft)

---

element `airportConfig/maxCeiling`

diagram

```
maxCeiling

Maximum ceiling. Valid values: 0.00 to 100000.00. (ft)
```

type `xsd:double`

properties

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

Maximum ceiling. Valid values: 0.00 to 100000.00. (ft)

---

element `airportConfig/minVisibility`

diagram

```
minVisibility

Minimum visibility. Valid values: 0.00 to 100.00. (mi)
```

type `xsd:double`

properties

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

Minimum visibility. Valid values: 0.00 to 100.00. (mi)

---

element `airportConfig/maxVisibility`

diagram

```
maxVisibility

Maximum visibility. Valid values: 0.00 to 100.00. (mi)
```

type `xsd:double`

properties

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minOcc</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation

Maximum visibility. Valid values: 0.00 to 100.00. (mi)
**element airportConfig/minTemperature**

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

**annotation**

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

**element airportConfig/maxTemperature**

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

**annotation**

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

**element airportConfigSet**

- **properties**:
  - content: complex

**children**

- airportConfig

**used by**

- complexTypes: airportLayoutType, scenarioAirportLayoutType

**annotation**

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

**element airportLayoutSet**

- **properties**:
  - content: complex

**annotation**

- Contains information about the available layout of each airport in the study.
children: `airportLayout`

used by: elements `AsiXml study`

attributes:

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

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

attribute `airportLayoutSet/@dummy`

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
</table>

properties: use optional

element `airportLayoutSet/airportLayout`

```xml
<airportLayoutType>
  <name>Text</name>
  <airportCode>Text</airportCode>
  <startYear>Text</startYear>
  <elevation>Text</elevation>
  <peakMonthAverageDayScalingFactor>Text</peakMonthAverageDayScalingFactor>
  <taxiInTime>Text</taxiInTime>
  <taxiOutTime>Text</taxiOutTime>
</airportLayoutType>
```
element airportWeather

diagram

properties content complex

children airportWeatherStationId airportWeatherStation

used by complexType airport

element airportWeather/airportWeatherStationId

diagram

type xs:int

properties content simple

element airportWeatherStation
<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Facets</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>airportWeatherStation/endDate</code></td>
<td></td>
<td><code>xs:date</code></td>
<td>content simple</td>
<td></td>
</tr>
<tr>
<td><code>airportWeatherStation/weatherStationCode</code></td>
<td></td>
<td><code>string5</code></td>
<td>minOcc 0, maxOcc 1</td>
<td>content simple, minLength 0, maxLength 5</td>
</tr>
<tr>
<td><code>airportWeatherStation/weatherStationName</code></td>
<td></td>
<td><code>string25</code></td>
<td>content simple</td>
<td>content simple, minLength 0, maxLength 25</td>
</tr>
<tr>
<td><code>airportWeatherStation/weatherStationElevationFeet</code></td>
<td></td>
<td><code>xs:int</code></td>
<td>content simple</td>
<td></td>
</tr>
<tr>
<td><code>airportWeatherStation/distanceToStation</code></td>
<td></td>
<td><code>xs:double</code></td>
<td>content simple</td>
<td></td>
</tr>
<tr>
<td><code>airportWeatherStation/cooperativeld</code></td>
<td></td>
<td><code>string6</code></td>
<td>minOcc 0, maxOcc 1</td>
<td>content simple, minLength 0, maxLength 6</td>
</tr>
<tr>
<td><code>airportWeatherStation/wbanId</code></td>
<td></td>
<td><code>string5</code></td>
<td>minOcc 0, maxOcc 1</td>
<td></td>
</tr>
</tbody>
</table>
element **annualization**

- **diagram**
  - `name`
    - **type** string
    - **description** Name of annualization.

- **properties** content complex

- **children** `name annualizationGroup`

- **used by** elements `AsiPXml scenario`

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

**element annualization/name**

- **diagram**
  - `name`
    - **type** string255

- **properties** content simple

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

- **annotation documentation**
  - Name of annualization.

**element annualizationCase**

- **diagram**
  - `name`
  - `weight`
  - `scaleFactor`
  - **description** Collection of study cases whose results are weighted in the scenario annualization rollup.

- **properties** content complex

- **children** `name weight scaleFactor`

- **used by** group `annualizationGroupCase`

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

**element annualizationCase/name**

- **diagram**
  - `name`
    - **type** string255

- **properties** content simple

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

- **annotation documentation**
  - Description of the case.
element annualizationCase/weight
documentation
Weight associated with the case.

diagram

annotation
documentation
Weight associated with the case.

diagram
type xs:double
properties content simple

annotation
documentation
Scale factor applied to results for the case.

diagram
type xs:double
properties minOcc 0
maxOcc 1
content simple
default 1

annotation
documentation
Scale factor applied to results for the case.

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.

diagram
type xs:double
properties content simple

annotation
documentation
Weight associated with the annualization group.

diagram
diagram
diagram
diagram

annotation
documentation
Weight associated with the annualization group.
element areaStationarySource

- **Diagram**: Ovals indicate mandatory elements, with lines showing the connections. The diagram includes a note on specifying the area in space occupied by a stationary source of emissions.

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

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

children:
- pointCoord
- polygonCoords
- baseElevation
- releaseHeight
- sigmaZ

used by:
- element stationarySource

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

---

element areaStationarySource/baseElevation

- **Diagram**: Shows a rectangle labeled "baseElevation" as part of the areaStationarySource.

- **Type**: xs:double
- **Properties**:
  - content: simple
- **Annotation**: Documentation: Elevation in MSL of area, valid values -500 to 5000 (m)

---

element areaStationarySource/releaseHeight

- **Diagram**: Shows a rectangle labeled "releaseHeight" as part of the areaStationarySource.

- **Type**: doubleInclusive100
- **Properties**:
  - minOccurs: 0
  - maxOccurs: 1
  - content: simple
  - default: 0

- **Facets**:
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
**element areaStationarySource/sigmaZ**

- **diagram**
  - Vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.
- **type** xs:double
- **properties**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
  - default: 0
- **annotation** documentation
  - Height at which emissions are released into the atmosphere. Valid values: 0 to 100 (m)

**element AsiXml**

- **diagram**
  - Root node of the ASIF tree.
  - Contains default option values applied to the study.
  - Contains layouts for ASIF partial import into an existing study.
  - Contains annualizations for ASIF partial import into an existing study.
  - Specifies the boundaries of a study or other element contained within a study. When a study boundary is specified, all flight paths resulting from departures, arrivals, and overflight operations are calculated to and/or from the study boundary.
  - Describes general parameters for a case.
  - Contains study fuel data for ASIF partial import into existing study.
  - Describes an aircraft flight operation.
  - An aircraft runway operation type.
properties content complex
children options airportLayoutSet annualization boundary case fleet operation runup receptorSet scenario study trackOpSet userGroundSupportEquipmentSet stationarySourceSet operationalProfileSet
attributes Name Type Use Default Fixed Annotation
documentation version string16 optional fixed string16 Study version. Used for revision control of a study.
documentation content derived by: xs:string required
annotation documentation Root node of the ASIF tree.

attribute AsifXml/@version

type string16

properties use optional

facets Kind Value Annotation

annotation documentation Study version. Used for revision control of a study.

attribute AsifXml/@content

type restriction of xs:string

properties use required

facets Kind Value 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

element AsifXml/fleet

diagram
contains study fleet data for ASIF partial import into existing study.
An aircraft runup operation type.

- **type** runup
- **properties**
  - minOcc 1
  - maxOcc unbounded
### Content

<table>
<thead>
<tr>
<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>
</tr>
</tbody>
</table>

### Annotation

Documentation:

- An aircraft runup operation type.

### Diagrams

#### Element backbone

- **Diagram**

  - Represents the centerline of a set of dispersed tracks.
  - The set of 3D nodes for the backbone.

  ```
  backbone
  backboneNodes
  ``

- **Properties**

  - Content complex

- **Children**

  - dispersionWeight
  - backboneNodes

- **Used by**

  - element track

- **Annotation**

  - Represents the centerline of a set of dispersed tracks.

#### Element backboneNode

- **Diagram**

  - A flight track node.
  - A 3D node that is part of a backbone.

  ```
  backboneNode
  trackNode
  halfwidth
  ``

- **Properties**

  - Content complex

- **Children**

  - trackNode
  - halfwidth

- **Used by**

  - element backboneNodes

- **Annotation**

  - A 3D node that is part of a backbone.

#### Element backboneNode/halfwidth

- **Type**

  - xs:double

- **Properties**

  - Content simple

- **Annotation**

  - Documentation:

    - Halffield in nautical miles. (nmi)

#### Element backboneNodes

- **Diagram**

  - The set of 3D nodes for the backbone.

  ```
  backboneNodes
  backboneNode
  ``

- **Properties**

  - Content complex

- **Children**

  - backboneNode
element **boilerHeaterTypeCode**

- **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**

- **properties**: content complex
- **children**: polygon
- **used by**: elements AsfXml study

**attributes**

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

**annotation documentation**

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**

- **type**: polygon2DType
- **properties**: minOcc 1, maxOcc unbounded, content complex
- **children**: dummy vertex
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.

properties content complex
children name elevation height releaseHeight pointCoord polygonCoords
used by element buildingSet
annotation documentation

Name of the building.

type string255
properties content simple
facets Kind  Value Annotation
     minLength: 0
     maxLength: 255

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

type xs:double
properties content simple
annotation documentation

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

Elevation of building. Valid values: -500 to 5000. (m)
Type: `xs:double`

Properties: content simple

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

**Element: building/releaseHeight**

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

Type: `xs:double`

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

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

**Element: buildingSet**

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.

Properties:
- content complex

Children:
- building

Used by:
- complexType `airportLayoutType`

Attributes:
- Name: dummy
- Type: `xs:int`
- Use: optional

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

Attribute: `buildingSet/@dummy`

Type: `xs:int`

Properties:
- use optional

**Element: capacityPoint**

Diagram:
Supports legacy EDMS studies relating to content contained in the RUNWAY_CONFIGURATIONS table. This element supports the definition of airport capacities based on various points within an airport.

**Element `capacityPoint/arrivalsPerHour`**

- **Diagram**
  ![Diagram of arrivalsPerHour](image1)

- **Type**: `xs:double`
- **Properties**: `content simple`
- **Annotation**
  Documentation: Number of arrivals per hour. Valid values: 0.00 to 400.00. (operations per hour)

**Element `capacityPoint/departuresPerHour`**

- **Diagram**
  ![Diagram of departuresPerHour](image2)

- **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**
  ![Diagram of case](image3)
<table>
<thead>
<tr>
<th><strong>properties</strong></th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>children</strong></td>
<td>caseId name source startTime duration climateld hourlyWxFile hourlyWxMD5 description case trackOpSet operation runup parkingFacilityOperationSet roadwayOperationSet stationarySourceOperationSet groundSupportEquipmentPopulationOperationSet reference</td>
</tr>
<tr>
<td><strong>used by</strong></td>
<td>elements AsXml case caseSet</td>
</tr>
<tr>
<td><strong>annotation</strong></td>
<td>documentation Describes general parameters for a case.</td>
</tr>
</tbody>
</table>
**element case/name**

- **type** string255
- **properties** content simple
- **facets**
  - Kind: Value
  - Annotation: minLength 0
  - Annotation: maxLength 255

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

**element case/source**

- **type** emissionsSourceType
- **properties** minOcc 0
  - maxOcc 1
  - content simple
- **facets**
  - Kind: Value
  - Annotation: enumeration Container
  - Annotation: enumeration Aircraft
  - Annotation: enumeration GSE Population
  - Annotation: enumeration Parking Facilities
  - Annotation: enumeration Roadways
  - Annotation: enumeration Stationary Sources

**element case/startTime**

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

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

**element case/duration**

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

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

**diagram**

```
climateId
```

**type** string8

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

**annotation** documentation

ID of a climate condition.

**element case/hourlyWxFile**

**diagram**

```
hourlyWxFile
```

**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

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

**element case/hourlyWxMD5**

**diagram**

```
hourlyWxMD5
```

**type** string16

**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>16</td>
<td></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**

**diagram**

```
description
```

**type** string255

Description of the case.
| properties       | minOcc 0
|                 | maxOcc 1
|                 | content simple
| facets          | Kind | Value | Annotation |
|                 | minLength 0
|                 | maxLength 255
| annotation      | documentation |
|                 | Description of the case.

element case/runup

  diagram
runup

attributes

dummy

id
User-provided runup identifier.

aircraftType
Aircraft type employed in this runup operation.

flightNumber
Optional flight number.

tailNumber
Optional tail number.

numOperations
The number of occurrences of this operation.

airport
The airport code at which this operation occurs.

coordinates

latCoordGroup
Specifies a coordinate using latitude and longitude.

coordIDGroup
Indicates how a two-dimensional group is specified.

UTC

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 datapointType element.

optTime
The runup operation time.

duration
The duration of the runup.

heading
The orientation of the aircraft.

thrust
The thrust employed for this runup operation.

type runup

properties
minOcc 1
maxOcc unbounded
### 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>id</td>
<td>x:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>aircraftType</td>
<td>xs:string</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flightNumber</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tailNumber</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>numOperations</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>airport</td>
<td>xs:string</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>latitude</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>latitudeDMS</td>
<td>xs:string</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>longitude</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>longitudeDMS</td>
<td>xs:string</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>utmN</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>utmE</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>utmZone</td>
<td>xs:string</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>opTime</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>duration</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>heading</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>thrust</td>
<td>xs:int</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Element: `case/reference`  

- **Diagram:**

- **Type:** string255  
- **Properties:** content simple  
- **Facets:**
  - Kind: String  
  - Value: Annotation  
  - Annotation: MinLength: 0  
  - MaxLength: 255  

- **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: String  
  - Value: Annotation  
  - Annotation: MinLength: 0  
  - MaxLength: 255  

- **Documentation:**
  Scenario under which an existing case appears.

### Element: `case/reference/refCase`  

- **Diagram:**

- **Type:** string255  
- **Properties:** content simple  
- **Facets:**
  - Kind: String  
  - Value: Annotation  
  - Annotation: MinLength: 0  
  - MaxLength: 255  

- **Documentation:**
  Existing case that appears under the refScenario.

### Element: `caseSet`  

- **Diagram:**

- **Properties:** content complex  
- **Children:**
  - case  
- **Used by:**
  - element: scenario
<table>
<thead>
<tr>
<th>attributes</th>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation
Placeholder for one or more cases.

**attribute** `caseSet/@dummy`

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

**properties** use optional

**element** `categoryAircraftEngine`

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

<table>
<thead>
<tr>
<th>children</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><code>engineCode</code></td>
<td><code>timePercentPower7</code></td>
<td><code>timePercentPower30</code></td>
<td><code>timePercentPower85</code></td>
</tr>
</tbody>
</table>

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

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

**element** `categoryAircraftEngine/engineCode`

- **type** `string255`

**properties** content simple

**facets**
Kind | Value | Annotation
---|-------|------------|
minLength: 0 | | |
maxLength: 255 | | |

**element** `categoryAircraftEngine/timePercentPower7`

- **type** `doubleExclusive1000`

**properties** content simple

**default** 0

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

**annotation** documentation
Time at which engine is operating at 7% (taxi) power. Valid values: 0 to 1000. (min)
element categoryAircraftEngine/timePercentPower30
diagram

<table>
<thead>
<tr>
<th>timePercentPower30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time at which engine is operating at 30% (approach) power. Valid values: 0 to 1000. (min)</td>
</tr>
</tbody>
</table>

type doubleExclusive1000
properties content simple
default 0
facets Kind Value Annotation
    minInclusive 0
    maxExclusive 1000
annotation documentation
    Time at which engine is operating at 30% (approach) power. Valid values: 0 to 1000. (min)


element categoryAircraftEngine/timePercentPower85
diagram

<table>
<thead>
<tr>
<th>timePercentPower85</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time at which engine is operating at 85% (climbout) power. Valid values: 0 to 1000. (min)</td>
</tr>
</tbody>
</table>

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


element categoryAircraftEngine/timePercentPower100
diagram

<table>
<thead>
<tr>
<th>timePercentPower100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time at which engine is operating at 100% (takeoff) power. Valid values: 0 to 1000. (min)</td>
</tr>
</tbody>
</table>

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

element categoryBoilerHeater
diagram

<table>
<thead>
<tr>
<th>boilerHeaterTypeCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>An integer value for the boiler heater type represented. The value comes from the SUBCATEGORY_ID column of the STN,CATEGORY table in the AUDI PLIB databases. Valid values: 1 to 37, 39 to 78, 80 to 93.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2 emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Natural Cm3 or Kg/1000 m3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>pollutionControlFactorCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000.</td>
</tr>
</tbody>
</table>
Describes the operational characteristics of a source in the boiler/heater category.

element categoryBoilerHeater/CO_EI

diagram

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 m^3)

element categoryBoilerHeater/pollutionControlFactorCO

diagram

type doubleInclusive100

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 categoryBoilerHeater/TNMOC_EI**

- **diagram**
  ![TNMOC_EI](image)
  TNMOC 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**
<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
  TNMOC emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)

**element categoryBoilerHeater/pollutionControlFactorTNMOC**

- **diagram**
  ![pollutionControlFactorTNMOC](image)
  Percent of total non-methane organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)

- **type** `doubleInclusive100`

- **properties**
  - content `simple`
  - default `0`

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

- **annotation**
  documentation
  Percent of total non-methane organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)

**element categoryBoilerHeater/VOC_EI**

- **diagram**
  ![VOC_EI](image)
  VOC 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**
<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
  VOC emissions index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m³)

**element categoryBoilerHeater/pollutionControlFactorVOC**

- **diagram**
  ![pollutionControlFactorVOC](image)
  Percent of volatile organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)

- **type** `doubleInclusive100`

- **properties**
  - content `simple`
  - default `0`

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

- **annotation**
  documentation
  Percent of volatile organic compounds removed by pollution control measures. Valid values: 0 to 1000. (%)
**element categoryBoilerHeater/TOC_EI**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>TOC_EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>doubleInclusive1000</td>
</tr>
<tr>
<td>Properties</td>
<td>content simple</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</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Total organic compound emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)</td>
</tr>
</tbody>
</table>

**element categoryBoilerHeater/pollutionControlFactorTOC**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>pollutionControlFactorTOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>doubleInclusive1000</td>
</tr>
<tr>
<td>Properties</td>
<td>content simple</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</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Percent of total organic compounds removed by pollution control measures. Valid values: 0 to 100. (%)</td>
</tr>
</tbody>
</table>

**element categoryBoilerHeater/THC_EI**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>THC_EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>doubleInclusive1000</td>
</tr>
<tr>
<td>Properties</td>
<td>content simple</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</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Total hydrocarbon emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)</td>
</tr>
</tbody>
</table>

**element categoryBoilerHeater/pollutionControlFactorHC**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>pollutionControlFactorHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>doubleInclusive100</td>
</tr>
<tr>
<td>Properties</td>
<td>content simple</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</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Percent of hydrocarbons removed by pollution control measures. Valid values: 0 to 100. (%)</td>
</tr>
</tbody>
</table>
element categoryBoilerHeater/NOx_EI
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
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</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>NOx emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)</td>
</tr>
</tbody>
</table>

element categoryBoilerHeater/pollutionControlFactorNOx
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Percent of nitrous oxides removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
</tr>
</tbody>
</table>

element categoryBoilerHeater/constantTermSOx
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>SOx emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m^3)</td>
</tr>
</tbody>
</table>

element categoryBoilerHeater/sulfurTermSOx
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>SOx sulfur Index, fuel dependent. Valid values: 0 to 1000. (Kg/1000 m^3 - %Sulfur or Kg/Metric Ton - %Sulfur)</td>
</tr>
</tbody>
</table>
SOx sulfur EI term, fuel dependent. Valid values: 0 to 1000. (Kg/1000 m$^3$ - %Sulfur, or Kg/Kiloliter - %Sulfur, or Kg/Metric Ton - %Sulfur)

**Element Category**

**PollutionControlFactorSOx**

- **Type**: doubleInclusive100
- **Properties**
  - content simple
  - default 0
- **Facets**
  - Kind Value Annotation
    - minInclusive 0
    - maxInclusive 100
- **Annotation**
  - documentation
  - Percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%)

**Element Category**

**ConstantTermPm10**

- **Type**: doubleInclusive1000
- **Properties**
  - content simple
  - default 0
- **Facets**
  - Kind Value Annotation
    - minInclusive 0
    - maxInclusive 1000
- **Annotation**
  - documentation
  - PM10 emissions Index, dependent on fuel type. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter or Kg/1000 m$^3$)

**Element Category**

**SulfurTermPm10**

- **Type**: doubleInclusive1000
- **Properties**
  - minOcc 0
  - maxOcc 1
  - content simple
- **Facets**
  - Kind Value Annotation
    - minInclusive 0
    - maxInclusive 1000
- **Annotation**
  - documentation
  - PM10 sulfur EI term, fuel dependent. Valid values: 0 to 1000. (Kg/1000 m$^3$ - %Sulfur, or Kg/Kiloliter - %Sulfur, or Kg/Metric Ton - %Sulfur)

**Element Category**

**AshTermPm10**

- **Type**: doubleInclusive1000
- **Properties**
  - content simple
  - default 0
- **Facets**
  - Kind Value Annotation
    - minInclusive 0
    - maxInclusive 1000
<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM10 ash term. Valid values: 0 to 1000/(Kg/Metric Ton - %Ash)</td>
<td></td>
</tr>
</tbody>
</table>

**Element: categoryBoilerHeater/fuelAshContent**

- **Diagram:**
  ![Diagram](image1)

- **Type:** `doubleExclusive100`

- **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>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

- **Annotation:**
  documentation
  Percent of fuel that is ash. Valid values: 0 to 1000. (%)

**Element: categoryBoilerHeater/pollutionControlFactorPM10**

- **Diagram:**
  ![Diagram](image2)

- **Type:** `doubleInclusive100`

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

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

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

**Element: categoryBoilerHeater/pm25ToPm10Ratio**

- **Diagram:**
  ![Diagram](image3)

- **Type:** `doubleInclusive1`

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

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

**Element: categoryBoilerHeater/fuelCalciumSulfurRatio**

- **Diagram:**
  ![Diagram](image4)

- **Type:** `doubleExclusive1000`

- **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>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxExclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

- **Annotation:**
  documentation
### element categoryBoilerHeater/fuelSulfurContent

**Diagram:**

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

- **Type:** doubleExclusive100
- **Properties:**
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Facets:**
  - Kind: Annotation
  - minInclusive: 0
  - maxExclusive: 100
- **Annotation:**
  - documentation:
    - Percent of fuel that is sulfur. Valid values 0 to 1000. (%)

### element categoryDeicingArea

**Diagram:**

```
VOC_EI
- ethyleneGlycolDensity
- propyleneGlycolDensity
- solutionConcentrationPercent
```

- **Properties:**
  - content: complex
- **Children:**
  - typeCode VOC_EI ethyleneGlycolDensity propyleneGlycolDensity solutionConcentrationPercent
- **Used by:**
  - element stationarySource
- **Annotation:**
  - documentation:
    - Describes the operational characteristics of a source in the deicing area category.

### element categoryDeicingArea/typeCode

- **Type:** int1to4
- **Properties:**
  - content: simple
- **Facets:**
  - Kind: Annotation
  - minInclusive: 1
  - maxInclusive: 4
- **Annotation:**
  - documentation:
    - Describes this category.

### element categoryDeicingArea/VOC_EI

- **Type:** doubleInclusive1000

```
VOC emissions index, fuel type dependent. Valid values 0 to 1000. (Kg/Metric Ton or Kj/Kiloliter)
```
| properties | content simple  
default 0 |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<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</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>VOC emissions index, fuel type dependent. Valid values: 0 to 1000. (Kg/Metric Ton or Kg/Kiloliter)</td>
</tr>
</tbody>
</table>

element categoryDeicingArea/ethyleneGlycolDensity

| diagram | ![ethyleneglycol_density](image) |
| 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 | ![proplanglycol_density](image) |
| 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 | ![solution_concentration](image) |
| 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

| diagram | ![fuel_tank](image) |
Describes the operational characteristics of a source in the fuel tank category.

element categoryFuelTank/typeCode

diagram

type int1to25

property content simple

facets Kind Value Annotation
minInclusive 1
maxInclusive 25

annotation documentation
Describes this category.

element categoryFuelTank/tankDiameter

diagram

type doubleExclusive1000

property content simple

facets Kind Value Annotation
minInclusive 0
maxExclusive 1000

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

element categoryFuelTank/horizontalTank

diagram

property content complex

children tankLength

annotation documentation
Describes a horizontal tank.

element categoryFuelTank/horizontalTank/tankLength

diagram

property content
**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>

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

element **categoryFuelTank/verticalTank**

**diagram**  

![Diagram of vertical tank elements]

**properties**  
content complex

**children**  
`maximumSolutionLevel`  
`tankHeight`  
`averageSolutionLevel`  
`meanWindSpeed`

**annotation**  
documentation  
Describes a vertical tank

element **categoryFuelTank/verticalTank/maximumSolutionLevel**

**diagram**  

![Diagram of maximum solution level]

**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>

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

element **categoryFuelTank/verticalTank/tankHeight**

**diagram**  

![Diagram of tank height]

**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>

**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** `doubleExclusive100`
- **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
element categoryGenerator/typeCode

diagram

<table>
<thead>
<tr>
<th>diagram</th>
<th>Describes this category.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>int1to8</th>
</tr>
</thead>
</table>

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

<table>
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<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
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<td></td>
<td>maxInclusive</td>
<td>8</td>
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</tr>
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<table>
<thead>
<tr>
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<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describes this category.</td>
</tr>
</tbody>
</table>

element categoryGenerator/powerRatingHorsepower

diagram

<table>
<thead>
<tr>
<th>diagram</th>
<th>The rated power of the generator in horsepower. Valid values: 0 to 10000. (hp)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive10000</th>
</tr>
</thead>
</table>

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

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

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The rated power of the generator in horsepower. Valid values: 0 to 10000. (hp)</td>
</tr>
</tbody>
</table>

element categoryGenerator/CO_EF

<table>
<thead>
<tr>
<th>diagram</th>
<th>CO emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
</table>

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

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

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</td>
</tr>
</tbody>
</table>

element categoryGenerator/TOC_EF

<table>
<thead>
<tr>
<th>diagram</th>
<th>TOC emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minInclusive</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
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<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TOC emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</td>
</tr>
</tbody>
</table>
element categoryGenerator/NOx_EF

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>NOx emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</td>
</tr>
</tbody>
</table>

element categoryGenerator/SOx_EF

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
</tr>
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<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>SOx emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</td>
</tr>
</tbody>
</table>

element categoryGenerator/PM10_EF

diagram

<table>
<thead>
<tr>
<th>type</th>
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</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
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<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>PM10 emissions factor. Valid values: 0 to 1000. (grams/hp-hr)</td>
</tr>
</tbody>
</table>

element categoryGenerator/pollutionControlFactorTOC

diagram

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

type doubleInclusive1000
properties content simple
default 0
facets Kind Value Annotation
minInclusive 0
maxInclusive 1000
annotation documentation
CO emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m⁻³)

element categoryGenerator/VOC_EI
diagram

type doubleInclusive1000
properties content simple
default 0
facets Kind Value Annotation
minInclusive 0
maxInclusive 1000
annotation documentation
VOC emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m⁻³)

element categoryGenerator/NOx_EI
diagram

type doubleInclusive1000
properties content simple
default 0
facets Kind Value Annotation
minInclusive 0
maxInclusive 1000
annotation documentation
NOx emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m⁻³)

element categoryGenerator/SOx_EI
diagram

type doubleInclusive1000
properties content simple
default 0
facets Kind Value Annotation
minInclusive 0
maxInclusive 1000
annotation documentation
SOx emissions index. Valid values: 0 to 1000. (Kg/Kiloliter or Kg/1000 m⁻³)
**element categoryGenerator/PM10_EI**

<table>
<thead>
<tr>
<th>diagram</th>
<th>PM10_EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram Description</td>
<td>PM10 emissions index. Valid values 0 to 1000. (Kg/Kiloliter or Kg/1000 m(^3))</td>
</tr>
<tr>
<td>type</td>
<td>doubleInclusive1000</td>
</tr>
</tbody>
</table>
| properties | content simple 
default 0 |
| facets | Kind Value Annotation 
minInclusive 0 
maxInclusive 1000 |
| annotation | documentation |
| Doc | PM10 emissions index. Valid values 0 to 1000. (Kg/Kiloliter or Kg/1000 m\(^3\)) |

**element categoryGenerator/pollutionControlFactorVOC**

<table>
<thead>
<tr>
<th>diagram</th>
<th>pollutionControlFactorVOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram Description</td>
<td>Amount of volatile organic compounds emitted. Valid values 0 to 1000. (%)</td>
</tr>
<tr>
<td>type</td>
<td>doubleInclusive100</td>
</tr>
</tbody>
</table>
| properties | content simple 
default 0 |
| facets | Kind Value Annotation 
minInclusive 0 
maxInclusive 100 |
| annotation | documentation |
| Doc | Amount of volatile organic compounds emitted. Valid values 0 to 1000. (%) |

**element categoryGenerator/fuelSulfurContent**

<table>
<thead>
<tr>
<th>diagram</th>
<th>fuelSulfurContent</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram Description</td>
<td>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. (%)</td>
</tr>
<tr>
<td>type</td>
<td>doubleExclusive100</td>
</tr>
</tbody>
</table>
| properties | content simple 
default 0 |
| facets | Kind Value Annotation 
minInclusive 0 
maxExclusive 100 |
| annotation | documentation |
| Doc | 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**

<table>
<thead>
<tr>
<th>diagram</th>
<th>pollutionControlFactorCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram Description</td>
<td>Percent of carbon monoxide removed by pollution control measures. Valid values 0 to 1000. (%)</td>
</tr>
<tr>
<td>type</td>
<td>doubleInclusive100</td>
</tr>
</tbody>
</table>
| properties | content simple 
default 0 |
| facets | Kind Value Annotation 
minInclusive 0 
maxInclusive 100 |
| annotation | documentation |
| Doc | Percent of carbon monoxide removed by pollution control measures. Valid values 0 to 1000. (%) |
element categoryGenerator/pollutionControlFactorNOx

diagram

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

element categoryGenerator/pollutionControlFactorSOx

diagram

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<td>facets</td>
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<tr>
<td></td>
<td>maxInclusive 100</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
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<td>Percent of sulfur oxides removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
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element categoryGenerator/pollutionControlFactorPM10

diagram

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</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
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<tr>
<td></td>
<td>minInclusive 0</td>
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<tr>
<td></td>
<td>maxInclusive 100</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Percent of 10-micron particulate matter removed by pollution control measures. Valid values: 0 to 1000. (%)</td>
</tr>
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</table>

element categoryGenerator/pm25ToPm10Ratio

diagram

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 1</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minInclusive 0</td>
</tr>
<tr>
<td></td>
<td>maxInclusive 1</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>PM 2.5 to PM 10 ratio. (dimensionless)</td>
</tr>
</tbody>
</table>

element categoryIncinerator

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

---

Properties:
- **content complex**
- **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**
  - Describes this category.
- **type int1to2**
- **properties content simple**
- **facets**
  - Kind Value Annotation
  - minInclusive 1
  - maxInclusive 2
- **annotation documentation**
  - Describes this category.
element categoryIncinerator/CO_EI

diagram

<table>
<thead>
<tr>
<th>type</th>
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</thead>
<tbody>
<tr>
<td>properties</td>
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<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
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<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

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

element categoryIncinerator/VOC_EI

diagram

<table>
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<th>type</th>
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</thead>
<tbody>
<tr>
<td>properties</td>
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<tr>
<td></td>
<td>default 0</td>
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<tr>
<td>facets</td>
<td>Kind</td>
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<td></td>
<td>minInclusive</td>
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<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

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

element categoryIncinerator/NOx_EI

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
</tr>
<tr>
<td></td>
<td>minInclusive</td>
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<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

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

element categoryIncinerator/SOx_EI

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleInclusive1000</th>
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</thead>
<tbody>
<tr>
<td>properties</td>
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<tr>
<td></td>
<td>default 0</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
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<td></td>
<td>minInclusive</td>
</tr>
<tr>
<td></td>
<td>maxInclusive</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

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

element categoryIncinerator/PM10_EI

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

<table>
<thead>
<tr>
<th><strong>facet</strong></th>
<th><strong>Value</strong></th>
<th><strong>Annotation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
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<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>1000</td>
<td></td>
</tr>
</tbody>
</table>

**Element** `categoryIncinerator/pollutionControlFactorCO`

**Diagram**

**Type** `doubleInclusive100`

**Properties**

- **Content** simple
- **Default** 0

**Facets**

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

**Annotation**

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

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

**Element** `categoryIncinerator/pollutionControlFactorVOC`

**Diagram**

**Type** `doubleInclusive100`

**Properties**

- **Content** simple
- **Default** 0

**Facets**

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

**Annotation**

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

**Element** `categoryIncinerator/pollutionControlFactorNOx`

**Diagram**

**Type** `doubleInclusive100`

**Properties**

- **Content** simple
- **Default** 0

**Facets**

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

**Annotation**

Percent of nitrous oxides removed by pollution control measures. Valid values: 0 to 1000. (%)
**element categoryIncinerator/pollutionControlFactorPM10**

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

**element categoryIncinerator/pm25ToPm10Ratio**

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

**element categoryOther**
Describes the operational characteristics of a source in the "other" category.

```
properties:
categoryOther/fuelUnits

children:
fuelUnits CO_EI THC_EI NOx_EI SOx_EI PM10_EI pollutionControlFactorCO pollutionControlFactorHC pollutionControlFactorNOx pollutionControlFactorSOx pollutionControlFactorPM10

used by:
stationarySource

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

element categoryOther/fuelUnits

diagram


type: int0to5
```
| properties | minOcc 0  
|           | maxOcc 1  
|           | content simple  
|           | default 0  |
| facets | Kind | Value | Annotation |
|        | minInclusive | 0 | |
|        | maxInclusive | 1 | |
| 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 Cycles, 5 = Gallons. |

**element categoryOther/CO_EI**

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

| properties | content simple  
|           | default 0  |
| facets | Kind | Value | Annotation |
|        | minInclusive | 0 | |
|        | maxInclusive | 1000 | |
| annotation | documentation | CO emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit) |

**element categoryOther/THC_EI**

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

| properties | content simple  
|           | default 0  |
| facets | Kind | Value | Annotation |
|        | minInclusive | 0 | |
|        | maxInclusive | 1000 | |
| annotation | documentation | Hydrocarbon emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit) |

**element categoryOther/NOx_EI**

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

| properties | content simple  
|           | default 0  |
| facets | Kind | Value | Annotation |
|        | minInclusive | 0 | |
|        | maxInclusive | 1000 | |
| annotation | documentation | NOx emissions index per unit of fuel. Valid values: 0 to 1000. (kg/unit) |

**element categoryOther/SOx_EI**

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

| properties | content simple  
|           | |
| properties | content simple  
|           | |
| properties | content simple  
<p>| | |
|           | |</p>
<table>
<thead>
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<tr>
<td>maxInclusive</td>
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</tr>
</tbody>
</table>

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

**element** categoryOther/PM10_EI

**diagram**

**type** doubleinclusive1000

**properties**

- content simple
- default 0

**facets**

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

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

**element** categoryOther/pollutionControlFactorCO

**diagram**

**type** doubleinclusive100

**properties**

- content simple
- default 0

**facets**

<table>
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<tr>
<td>maxInclusive</td>
<td>100</td>
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**annotation**: Percent of carbon monoxide removed by pollution control measures. Valid values: 0 to 1000. (%)

**element** categoryOther/pollutionControlFactorHC

**diagram**

**type** doubleinclusive100

**properties**

- content simple
- default 0

**facets**

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

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

**element** categoryOther/pollutionControlFactorNOx

**diagram**

**type** doubleinclusive100

**properties**

- content simple
- default 0

**facets**

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

element categoryOther/pollutionControlFactorSOx

diagram

type doubleInclusive100

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxInclusive 100

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

element categoryOther/pollutionControlFactorPM10

properties content simple
default 0

facets Kind Value Annotation
minInclusive 0
maxInclusive 100

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

element categoryOther/pm25ToPm10Ratio

properties content simple
default 1

facets Kind Value Annotation
minInclusive 0
maxInclusive 1

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

element categoryRecordCode

properties content complex

children recordCode
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.

`categorySandSaltPile` element

- `typeCode` element
  - Describes the category.

- `surfaceWindSpeedFraction` element
  - Surface wind speed fraction. Valid values 0 to 1.000. (unitsless)

- `surfaceRoughness` element
  - The surface roughness of the pile, valid values 0 to 1000. (cm)

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

- `fastestMileOfWind` element
  - Fastest mile of wind. Valid values 0 to 1000. (m/s)

- `meanWindSpeed` element
  - Mean wind speed at sand or salt pile. Valid values: 0 to 1000. (m/s)

- `moistureContent` element
  - Moisture content. Percentage of sand or salt pile that is moist. Valid values: 0 to 1000. (unitless)

- `massDisturbedPerDisturbance` element
  - The mass disturbed per disturbance. Valid values: 0 to 1000. (Mnt. Tons)

- `erodedSurfaceArea` element
  - Eroded surface area of pile. Valid values: 0 to 1000. (meters*2)

**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.
**Surface wind speed fraction. Valid values: 0 to 1000.**

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

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

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

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

diagram

<table>
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<tr>
<td></td>
<td>Percentage of sand or salt pile that is moisture. Valid values: 0 to 1000. (%)</td>
</tr>
</tbody>
</table>

element categorySandSaltPile/massDisturbedPerDisturbance

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</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></td>
<td>minInclusive 0</td>
</tr>
<tr>
<td></td>
<td>maxExclusive 1000</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>The mass disturbed per disturbance. Valid values: 0 to 1000. (Metric Tons)</td>
</tr>
</tbody>
</table>

element categorySandSaltPile/erodedSurfaceArea

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive10000</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td></td>
<td>default 0</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></td>
<td>minInclusive 0</td>
</tr>
<tr>
<td></td>
<td>maxExclusive 10000</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Eroded surface area of pile. Valid values: 0 to 1000. (meters²)</td>
</tr>
</tbody>
</table>

element categorySolventDegreaser

diagram

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>typeCode, solutionDensity, percentSolventDisposed</td>
</tr>
</tbody>
</table>
used by element stationarySource

annotation documentation
Describes the operational characteristics of a source in the solvent degreaser category.

**element categorySolventDegreaser/typeCode**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>typeCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes this category.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>int1to13</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes this category.</td>
<td></td>
</tr>
</tbody>
</table>

**element categorySolventDegreaser/solutionDensity**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>solutionDensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of the deicing solution. Valid values: 0 to 1000. (g/L)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>doubleExclusive2000</th>
</tr>
</thead>
</table>

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

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

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density of the deicing solution. Valid values: 0 to 1000. (g/L)</td>
<td></td>
</tr>
</tbody>
</table>

**element categorySolventDegreaser/percentSolventDisposed**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>percentSolventDisposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of solvent removed by environmental controls. Valid values: 0 to 1000. (%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
</table>

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

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

**element categorySurfaceCoatingPainting**

<table>
<thead>
<tr>
<th>Diagram</th>
<th>typeCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC_EI</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>children</th>
<th>typeCode</th>
<th>VOC_EI</th>
<th>pollutionControlFactorVOC</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes the operational characteristics of a source in the surface coating or painting category.</td>
<td></td>
</tr>
</tbody>
</table>
### categorySurfaceCoatingPainting/typeCode

**Diagram**: Describes the category.

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>int1to8</code></td>
<td></td>
</tr>
</tbody>
</table>

**Properties**: simple

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

**Annotation**: Describes this category.

---

### categorySurfaceCoatingPainting/VOC_EI

**Diagram**: VOC emissions index. Yield values 0 to 1000 (kg/kiloliter)

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>doubleInclusive1000</code></td>
<td></td>
</tr>
</tbody>
</table>

**Properties**: 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>1000</td>
<td></td>
</tr>
</tbody>
</table>

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

---

### categorySurfaceCoatingPainting/pollutionControlFactorVOC

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>doubleInclusive100</code></td>
<td></td>
</tr>
</tbody>
</table>

**Properties**: 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>100</td>
<td></td>
</tr>
</tbody>
</table>

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

---

### 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: Annotation
  - minInclusive: 1
  - maxInclusive: 5
- **Documentation**: Describes this category.

**Element: categoryTrainingFire/CO**
- **Type**: xs:double
- **Properties**: content simple
- **Documentation**: Amount of carbon monoxide emitted. Valid values: 0 to 3000. (g/gal)

**Element: categoryTrainingFire/VOC**
- **Type**: xs:double
- **Properties**: content simple
- **Documentation**: Amount of volatile organic compounds emitted. Valid values: 0 to 100. (g/gal)
Amount of volatile organic compounds emitted. Valid values: 0 to 100. (g/gal)

element categoryTrainingFire/NOx

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Amount of nitrous oxides emitted. Valid values: 0 to 100. (g/gal)</td>
</tr>
</tbody>
</table>

element categoryTrainingFire/SOx

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Amount of sulfur oxides emitted. Valid values: 0 to 10. (g/gal)</td>
</tr>
</tbody>
</table>

element categoryTrainingFire/PM10

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Amount of 10-micron particulate matter emitted. Valid values: 0 to 1000. (g/gal)</td>
</tr>
</tbody>
</table>

element centroid

diagram
element centroid/stateFips

documentation
Describes the geometric center of a polygon.

properties content
children stateFips countyFips blockId bnaId latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation count
used by group receptorGroup

properties content simple
annotation documentation
Optional census state identifier.
element centroid/countyFips

diagram
countyFips
Optional census county identifier.

type xs:int

properties content simple

annotation documentation
Optional census county identifier.

element centroid/blockId

diagram
blockId
Optional census BLOCK ID.

type xs:int

properties content simple

annotation documentation
Optional census BLOCK ID.

element centroid/bnaId

diagram
bnaId
Optional census BNA ID.

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 6

annotation documentation
Optional census BNA ID.

element centroid/elevation

diagram
elevation
The centroid's elevation above MSL (ft) if terrain not used. If not specified, AEDT will use elevation of operation airport.

properties minOcc 0
maxOcc 1
content simple

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

element centroid/count

diagram
count
The population count of the centroid. Valid values: 0 to 999999.

properties content simple

annotation documentation
The population count of the centroid. Valid values: 0 to 999999.

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

**element** climate/temperature

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

**element** climate/pressure

- **diagram**
  - pressure
  - Atmospheric pressure in the climate condition. (in Hg)
- **properties** content simple
- **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>climate/humidity</td>
<td>xs:double</td>
<td>content simple</td>
<td>documentation</td>
<td>Humidity in the climate condition. (%)</td>
</tr>
<tr>
<td>climate/headWind</td>
<td>xs:float</td>
<td>minOcc 0, maxOcc 1</td>
<td>content simple</td>
<td>Velocity of headwind. (kts)</td>
</tr>
<tr>
<td>climate/seaLevelPressure</td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1</td>
<td>content simple</td>
<td>Atmospheric pressure at sea level. (in Hg)</td>
</tr>
<tr>
<td>climate/dewPoint</td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1</td>
<td>content simple</td>
<td>Dew point in the climate condition. (°F)</td>
</tr>
<tr>
<td>climate/windDirection</td>
<td>xs:double</td>
<td>minOcc 0, maxOcc 1</td>
<td>content simple</td>
<td>Wind direction, valid values 0-360, (degrees)</td>
</tr>
</tbody>
</table>
element climate/visibility

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>

annotation documentation

Visibility in the climate condition. (mi)

---

element dailyProfile

diagram

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

<table>
<thead>
<tr>
<th>type</th>
<th>string100</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation: minLength 0, maxLength 100</td>
</tr>
</tbody>
</table>

annotation documentation
**Element `dailyProfile/temporalFactorSunday`**

- **Type:** `doubleMin0`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
- **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`**

- **Type:** `doubleMin0`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
- **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`**

- **Type:** `doubleMin0`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
- **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`**

- **Type:** `doubleMin0`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
- **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`**
element dailyProfile/temporalFactorFriday

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

element dailyProfile/temporalFactorSaturday

documentation
Factor applied to activity for operations on Saturdays. Valid values: 0.0000 to 1.0000.
Supports the definition and use of DAILY_PROFILES for the daily variation of operations.

**attribute** `dailyProfileSet/@dummy`
- **type** `xs:int`  
- **properties** `use` `optional`

**element** `dispersionWeight`

**diagram**

```
  dispersionWeight1
  dispersionWeight3
  dispersionWeight5
  dispersionWeight7
  dispersionWeight9
```

**properties**
- **content** `complex`
- **children** `dispersionWeight1 dispersionWeight3 dispersionWeight5 dispersionWeight7 dispersionWeight9`
- **used by** `element backbone`

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

**element** `dispersionWeight/dispersionWeight1`

**diagram**

```
  dispersionWeight1
  dispersionWeight1Type
```

**type** `dispersionWeight1Type`

**properties**
- **content** `complex`
- **children** `backbone`

**element** `dispersionWeight/dispersionWeight3`

**diagram**

```
  dispersionWeight3
  dispersionWeight3Type
  backbone
  weightl1
  weightr1
```

**type** `dispersionWeight3Type`

**properties**
- **content** `complex`
- **children** `backbone weightl1 weightr1`

**element** `dispersionWeight/dispersionWeight5`
**element emissionsUsage**

- **type**: dispersionWeight9Type
- **properties**: content complex
- **children**: backbone weight1 weight1 weight2 weight3 weight4 weight5 weight6 weight7 weight8 weight9

**element emissionsUsage/yearlyValue**

- **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/hourlyValue

diagram

type xs:double

properties
  minOcc 0
  maxOcc 1

content simple

annotation documentation
Annualized amount of emissions.

---

element emissionsUsage/byPeakQuarterHour

diagram

Indicates if the hourly value is the peak hourly value.

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

An activity profile type (e.g. reference to one of hourlyProfile, dailyProfile or weeklyProfile).

type string40

properties
  minLength 0
  maxLength 40

used by element activityProfileSet

facets Kind Value Annotation

minLength 0

annotation documentation
An activity profile type (e.g. reference to one of hourlyProfile, dailyProfile or weeklyProfile).

---

element engineModeEmissionFactors
Properties: content complex

Children: time fuel CO HC NOx PM SN

Annotation: Supports legacy EDMS studies relating to content contained in the USER_CREATED_AIRCRAFT table. This element supports the definition of custom emission factor elements.

**element engineModeEmissionFactors/time**

- **Diagram:**
  ![Diagram](image)
  - **Type:** xs:double
  - **Properties:**
    - minOcc: 0
    - maxOcc: 1
    - content: simple
    - default: 0
  - **Annotation:**
    - Documentation: Time engine operates in a given mode. Valid values: nonnegative. (minutes)

**element engineModeEmissionFactors/fuel**

- **Diagram:**
  ![Diagram](image)
  - **Type:** xs:double
  - **Properties:**
    - minOcc: 0
    - maxOcc: 1
    - content: simple
    - default: 0
  - **Annotation:**
    - Documentation: Rate of fuel burn in given mode. Valid values: nonnegative. (kg/s)

**element engineModeEmissionFactors/CO**

- **Diagram:**
  ![Diagram](image)
  - **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:**
  ![Diagram](image)
  - **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:**
  ![Diagram](image)
  - **Type:** xs:double
  - **Properties:**
    - minOcc: 0
    - maxOcc: 1
    - content: simple
    - default: 0
  - **Annotation:**
    - Documentation: Amount of nitrogen oxides emitted. Valid values: nonnegative. (kg/s)

**element engineModeEmissionFactors/PM**

- **Diagram:**
  ![Diagram](image)
  - **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:**
  ![Diagram](image)
  - **Type:** xs:double
  - **Properties:**
    - minOcc: 0
    - maxOcc: 1
    - content: simple
    - default: 0
  - **Annotation:**
    - Documentation: Smoke number for the engine in a given mode. Valid values: nonnegative. (minutes)
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
content simple
default 0

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

diagram

- 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)
- oneOfThreeCoords2DGroupSet
  - Type of coordinate specifying the area.
- pointCoord
  - Choice of a single point coordinate.
- polygonCoords
  - Choice of a 2D polygon.

properties
- content complex

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

used by
- element gateSet

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

element gate/name

diagram

- name
  - Identifying name of gate.

type
- string40

properties
- content simple

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

annotation
- documentation
  - Identifying name of gate.

element gate/elevation

diagram

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

type
- xs:double

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

annotation
- documentation
**Element `gate/releaseHeight`**

- **Diagram**: [Diagram Image]
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**:
  - Documentation: Height above ground level at which emissions are released into the atmosphere. Valid values: Variable, by airport. (m)

**Element `gate/sigmaY`**

- **Diagram**: [Diagram Image]
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**:
  - Documentation: Horizontal dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: Variable, by airport. (m)

**Element `gate/sigmaZ`**

- **Diagram**: [Diagram Image]
- **Type**: `xs:double`
- **Properties**:
  - minOcc: 0
  - maxOcc: 1
  - content: simple
- **Annotation**:
  - Documentation: Vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: Variable, by airport. (m)

**Element `gateSet`**

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

element grid

describes a grid of points.

The grid's elevation above MSL (ft) if terrain not used. If not specified, ADEPT will use elevation of operation error.

The height of the receptor above ground, (m)

Width of the grid, (m).

Height of the grid, (m).

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:

\[ \text{width} = 4047.0 \times \text{numWidth} \]

where \( i \) is the index of the point (0 to 4047) and numWidth is 1 to 999.

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:

\[ \text{height} = 4047.0 \times \text{numHeight} \]

where \( i \) is the index of the point (0 to 4047) and numHeight is 1 to 999.
<table>
<thead>
<tr>
<th>properties</th>
<th>content</th>
<th>complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>dynamic latitude latitudeDMS longitude longitudeDMS utmN utmE utmzone elevation receptorHeight width height numWidth numHeight xOffsets yOffsets</td>
<td></td>
</tr>
<tr>
<td>used by</td>
<td>group</td>
<td>receptorGroup</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
<td>Describes a grid of points.</td>
</tr>
</tbody>
</table>

**Element grid/dynamic**

- **Diagram**
  ![Diagram of 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**

- **Diagram**
  ![Diagram of 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**

- **Diagram**
  ![Diagram of 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**

- **Diagram**
  ![Diagram of grid/width]

- **Type** xs:double

- **Properties**
  - content simple

- **Annotation**
  - documentation
  - Width of the grid. (nmi).
element `grid/height`

diagram

Height of the grid (nmi).

type `xs:double`

properties content simple

annotation documentation

Height of the grid (nmi).

---

element `grid/numWidth`

diagram

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

```
<grid/numWidth xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="xs:int">
</grid/numWidth>
```

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 \( \ldots \) numWidth - 1). Valid values: 1 to 999.

---

element `grid/numHeight`

diagram

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

```
<grid/numHeight xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="xs:int">
</grid/numHeight>
```

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 \( \ldots \) numHeight - 1). Valid values: 1 to 999.

---

element `grid/xrOffset`

diagram

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

```
<grid/xrOffset xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="xs:double">
</grid/xrOffset>
```

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 `grid/ydOffset`

diagram

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

```
<grid/ydOffset xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="xs:double">
</grid/ydOffset>
```

properties content simple

annotation documentation

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

**element** `groundSupportEquipmentGateAssignment`  

- **type** `xs:double`  
- **properties**  
  - `minOcc 0`
  - `maxOcc 1`
  - `content simple`
  - `default 0`
- **annotation** documentation  
  
  Supports legacy EDMS studies relating to content contained in the USER_CREATED_GSE table. This element supports the definition of user defined ground support equipment.

**element** `groundSupportEquipmentGateAssignment/gate`  

- **type** `string20`  
- **properties**  
  - `content simple`
- **used by** `element` `groundSupportEquipmentGateAssignmentSet`
- **annotation** documentation  
  
  Gate to which GSE is assigned.

**element** `groundSupportEquipmentGateAssignment/fractionAssigned`  

- **type** `doubleInclusive1`
- **properties**  
  - `content simple`
- **facets**  
  - `Kind` `Value Annotation`
    - `minInclusive 0`
    - `maxInclusive 1`
- **annotation** documentation  
  
  Fraction of GSE assigned to this gate. Must sum to 1.0 for all gate assignments for the GSE. Valid values: 0.0 to 1.0.

**element** `groundSupportEquipmentGateAssignmentSet`
### groundSupportEquipmentGateAssignment

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

**Children**
- groundSupportEquipmentGateAssignment

**Used by**
- element groundSupportEquipmentPopulationOperation

**Attributes**

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

**Annotation**
- **documentation**
  
  Supports legacy EDMS studies relating to content contained in the GSE_POPULATION_GATE_ASSIGNMENTS table. This element supports the definition of gate to ground support equipment assignments.

### groundSupportEquipmentGateAssignmentSet/@dummy

**Type**
- xs:int

**Properties**

- use optional

### groundSupportEquipmentLTOOperation

**Diagram**

- gseID
  - The GSE ID.
- fuelType
  - OSE horsepower in base hp. Valid values: 0.00 to 10000.00. (hp)
- horsepower
  - Load factor of GSE (will be empty for APU). Valid values: 0.00 to 1.00.
- loadFactor
  - The manufacture year and age of the equipment, if not using system defaults. Valid values: 1940 to 2050. (Latest valid year will be the year of the study)
- manufactureYear
- departureOpTime
  - The number of minutes used for a departure aircraft operation. Valid values: 0.00 to 480.00. (min)
- arrivalOpTime
  - The number of minutes used for an arrival aircraft operation. Valid values: 0.00 to 480.00. (min)

**Properties**

- **content** complex

**Children**

- gseID, fuelType, horsepower, loadFactor, manufactureYear, departureOpTime, arrivalOpTime

**Used by**
- element groundSupportEquipmentLTOOperationSet

**Annotation**

- **documentation**
  
  Describes operation of GSE operation.

### groundSupportEquipmentLTOOperation/gseID

**Diagram**

- gseID
  - The GSE ID.

**Type**
- xs:int
The GSE ID.

**element** `groundSupportEquipmentLTOOperation/fuelType`

*properties* content simple

*facets* Kind Value Annotation

- pattern: `G|Gasoline|D|Diesel|C|Compressed Natural Gas|L|Liquefied Petroleum Gas|E|Electric`

**element** `groundSupportEquipmentLTOOperation/horsepower`

*properties* `content simple`

*annotation* documentation

GSE horsepower in bore hp. Valid values: 0.00 to 10000.00. (hp)

**element** `groundSupportEquipmentLTOOperation/loadFactor`

*properties* `content simple`

*annotation* documentation

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

**element** `groundSupportEquipmentLTOOperation/manufactureYear`

*properties* `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`

*properties* `content simple`

*annotation* documentation

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

element groundSupportEquipmentLTOOperation/arrivalOpTime

diagram

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

element groundSupportEquipmentLTOOperationSet

diagram

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

attribute groundSupportEquipmentLTOOperationSet/@dummy

type xs:int

properties use optional

element groundSupportEquipmentPopulationOperation

diagram
Ground Support Equipment (GSE) Population Operation Set

- **gseID**: The GSE ID.
- **fuelType**: The type of GSE.
- **numUnits**: GSE number of units. Valid values 0 to 10000.
- **annualOpTime**: Operation time, yearly. Valid values 0 to 8760. (hr)
- **pkQtrHourOpTime**: Peak quarter hour operation time. Valid values 0 to 15. (min/4)
- **activityProfile**: Activity profile (quarterly, daily, monthly).
- **horsepower**: Horsepower is in hp units. Valid values 0 to 10000. (hp)
- **loadFactor**: Load factor of GSE. Will be empty for APU. Valid values 0 to 100.
- **useNonRoad**: Use non-road version flag.
- **manufactureYear**: The manufacture year and age of the equipment. If not using system defaults. Valid values 1940 to 2060. (Latest valid data 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**: 
  - **Type**: xs:int 
  - **Properties**: content simple 
  - **Annotation**: documentation

**Element: groundSupportEquipmentPopulationOperation/fuelType**

- **Diagram**: 
  - **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>pattern</td>
<td>G</td>
</tr>
</tbody>
</table>

**element groundSupportEquipmentPopulationOperation/gseType**

**diagram**

```
<gseType>
The type of GSE.
</gseType>
```

**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.
</numUnits>
```

**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)
</annualOpTime>
```

**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)
</pkQtrHourOpTime>
```

**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).
</activityProfile>
```

**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**
**element** `groundSupportEquipmentPopulationOperation/loadFactor`

- *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`

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

**element** `groundSupportEquipmentPopulationOperation/manufactureYear`

- *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`

- *properties*: `content` `complex`
- *children*: `groundSupportEquipmentPopulationOperation`
- *used by*: group `airportActivityGroup`
<table>
<thead>
<tr>
<th>attributes</th>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

attribute `groundSupportEquipmentPopulationOperationSet/@dummy`

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
</table>

properties use optional

element `monthlyProfile`

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

properties content complex

children `profileName temporalFactorJanuary temporalFactorFebruary temporalFactorMarch temporalFactorApril temporalFactorMay temporalFactorJune temporalFactorJuly temporalFactorAugust temporalFactorSeptember temporalFactorOctober temporalFactorNovember temporalFactorDecember`
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 | ![profileName](image)
|---|---
| type | `string100`
| properties | content simple
| facets | Kind | Value | Annotation |
| | minLength | 0 |
| | maxLength | 100 |
| annotation | documentation | Name of profile.

**element `monthlyProfile/temporalFactorJanuary`**

| diagram | ![temporalFactorJanuary](image)
|---|---
| type | `doubleMin0`
| properties | minOcc 0  
| | maxOcc 1  
| | content simple
| facets | Kind | Value | Annotation |
| | minInclusive | 0 |
| annotation | documentation | Factor applied to activity for operations during January. Valid values: 0.0000 to 1.0000.

**element `monthlyProfile/temporalFactorFebruary`**

| diagram | ![temporalFactorFebruary](image)
|---|---
| type | `doubleMin0`
| properties | minOcc 0  
| | maxOcc 1  
| | content simple
| facets | Kind | Value | Annotation |
| | minInclusive | 0 |
| annotation | documentation | Factor applied to activity for operations during February. Valid values: 0.0000 to 1.0000.

**element `monthlyProfile/temporalFactorMarch`**

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

 type doubleMin0

 properties minOcc 0
 maxOcc 1
 content simple

 facets Kind Value Annotation
 minInclusive 0

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

element monthlyProfile/temporalFactorMay
diagram

 type doubleMin0

 properties minOcc 0
 maxOcc 1
 content simple

 facets Kind Value Annotation
 minInclusive 0

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

element monthlyProfile/temporalFactorJune
diagram

 type doubleMin0

 properties minOcc 0
 maxOcc 1
 content simple

 facets Kind Value Annotation
 minInclusive 0

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

element monthlyProfile/temporalFactorJuly
diagram

 type doubleMin0

 properties minOcc 0
 maxOcc 1
 content simple

 facets Kind Value Annotation
 minInclusive 0

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

element monthlyProfile/temporalFactorAugust
diagram
type: `doubleMin0`

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

facets:
- Kind: Value
- Annotation: Value

annotation: documentation

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

element `monthlyProfile/temporalFactorSeptember`

diagram: [Diagram](#)

type: `doubleMin0`

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

facets:
- Kind: Value
- Annotation: Value

annotation: documentation

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

element `monthlyProfile/temporalFactorOctober`

diagram: [Diagram](#)

type: `doubleMin0`

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

facets:
- Kind: Value
- Annotation: Value

annotation: documentation

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

element `monthlyProfile/temporalFactorNovember`

diagram: [Diagram](#)

type: `doubleMin0`

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

facets:
- Kind: Value
- Annotation: Value

annotation: documentation

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

element `monthlyProfile/temporalFactorDecember`
**Type**: doubleMin0

**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>inclusive</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Annotation**: 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

**Attributes**

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

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

**Attribute**: monthlyProfileSet/@dummy

**Type**: xs:int

**Properties**: use optional

**Element**: operation

**Diagram**

- User specified identifier for the operation. One purpose served by this field is to allow the user to be the AEDT AirOperations tool to some original data source by passing the ID field to an identifying Identifier from the original data source. Another purpose is to set each ID to a projectProfile's value for each AirOperation. The ID field is used in several AEDT tools and reports that print out the AirOperations. In addition, the Impact Evaluation dialog uses the ID as the main method of distinguishing AirOperations when allowing the user to select and choose operations to be moved to alternative flight weeks. Note, 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 the AirOperation from one another, then the standard approach to tie.
Describes an aircraft flight operation.

- **Properties**: content complex
- **Children**: id, aircraftType, cruiseAltitude, numOperations, opType, carrier, flightNumber, tailNumber, userType, userParam, departureAirport, departureRunway, departureGate, departureApuTime, arrivalAirport, arrivalRunway, arrivalGate, arrivalApuTime, offTime, onTime, enrouteStartTime, outTime, taxiOutDuration, inTime, taxiInDuration
- **Used by Elements**: AsifXml case operations
- **Annotation**: documentation
  - Describes an aircraft flight operation.

**Element** operation/id

**Diagram**
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 if the need ever arises. Nevertheless, one can leave all the id fields empty or non-unique set of ids; however, in doing so, the user will be forced to use other identifying fields of the AirOperation if they should ever want to distinguish between AirOperations.

**element** operation/aircraftType

diagram
type `aircraftType`  

properties content complex  

children `anpAircraftId` `airframeModel` `engineCode` `engineModCode` `apuName` `groundSupportEquipmentLTOOperationSet` `assignDefaultGse`  

annotation documentation  

Type of aircraft in the flight.

element `operation/cruiseAltitude`  

diagram Override aircraft cruise altitude for this operation. (ft)  

type `xs:double`  

properties minOcc 0  

maxOcc 1  

content simple  

annotation documentation  

Override aircraft cruise altitude for this operation. (ft)

element `operation/numOperations`  

diagram Number of operations comprising this operation.  

type `xs:double`  

properties content simple  

annotation documentation  

Number of operations comprising this operation.

element `operation/opType`  

diagram  

type `opType`  

properties minOcc 0  

maxOcc 1
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>A</td>
<td>Arrival</td>
<td>D</td>
</tr>
</tbody>
</table>

**element operation/carrier**

- **diagram**
  
  Carrier flying the flight. Not fully supported in AEDT.

- **type** string4

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

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

- **annotation**
  - documentation
    - Carrier flying the flight. Not fully supported in AEDT.

**element operation/flightNumber**

- **diagram**
  
  Flight number. Not fully supported in AEDT.

- **type** string16

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

- **facets**
  - Kind Value Annotation
  - minLength 0
  - maxLength 16

- **annotation**
  - documentation
    - Flight number. Not fully supported in AEDT.

**element operation/tailNumber**

- **diagram**
  
  Flight’s tail number. Not fully supported in AEDT.

- **type** string8

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

- **facets**
  - Kind Value Annotation
  - minLength 0
  - maxLength 8

- **annotation**
  - documentation
    - Flight’s tail number. Not fully supported in AEDT.

**element operation/userType**

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

- **type** string12

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

- **facets**
  - Kind Value Annotation
  - minLength 0
  - maxLength 12
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; 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
Airport’s departure runway ID. Required if the operation is used with a &lt;flight&gt; or a &lt;trackOpSet&gt; modeling departures, circuits, runups, or touch-and-goes.
**element** operation/departureGate

**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

**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

**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
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

**type** string8

**annotation** documentation
Airport's arrival runway ID. 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.
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.

**element operation/arrivalGate**

Diagram:

```
arrivalGate
```

Type: string40

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

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

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

**element operation/arrivalApuTime**

Diagram:

```
arrivalApuTime
```

Type: xs:double

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

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

**element operation/offTime**

Diagram:

```
offTime
```

Type: xs:dateTime

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

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

**element operation/onTime**

Diagram:

```
onTime
```

Type: xs:dateTime

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

Annotation:
Wheels on time. Required for any arrival operation.
element **operation/enrouteStartTime**

diagram

```
  enrouteStartTime
```

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

type xs:dateTime

properties

- minOcc: 0
- maxOcc: 1

annotation documentation

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

---

**operation/outTime**

```
  outTime
```

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

type xs:dateTime

properties

- minOcc: 0
- maxOcc: 1

annotation documentation

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

---

**operation/taxiOutDuration**

```
  taxiOutDuration
```

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

type xs:double

properties

- minOcc: 0
- maxOcc: 1

annotation documentation

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

---

**operation/inTime**

```
  inTime
```

*Time aircraft arrives at arrival gate. When present, taxiInDuration = (onTime - inTime).*

type xs:dateTime

properties

- minOcc: 0
- maxOcc: 1

annotation documentation

*Time aircraft arrives at arrival gate. When present, taxiInDuration = (onTime - inTime).*

---

**operation/taxiInDuration**

```
  taxiInDuration
```

*Number of seconds during taxi-in. Required for emissions modeling, optional for noise modeling.*

type xs:double
Number of seconds during taxi-in. Required for emissions modeling, optional for noise modeling. (s)

**element operation/activityProfile**

- **diagram**
- **type** `string100`
- **used by** `activityProfileSet`
- **facets**
  - Kind: `Annotation`
  - Value: `minLength 0`
  - Value: `maxLength 100`
- **annotation**
  - `documentation`:
    - References an existing hourly, daily, or monthly profile.

**element operation/saeProfile**

- **diagram**
- **type** `profileType`
- **facets**
  - Kind: `Annotation`
  - Value: `minLength 0`
  - Value: `maxLength 255`
- **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**
- **type** `profiles`
- **children**
  - `departureProfile` `arrivalProfile`
- **annotation**
  - `documentation`:
    - Overrides default profile assignment for a flight’s arrival and departure phases using characteristics specified by SAE International. Applicable when it is necessary to specify both the arrival and departure profiles.
element operation/badaProfile

diagram

type profileType

properties
minOcc 0
maxOcc 1
content simple

facets
Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
Overides default profile assignment for a flight's arrival and departure phases using characteristics specified by BADA. Applicable when the override is unambiguously arrival or departure.

element operation/badaProfiles

diagram

type profiles

properties
minOcc 0
maxOcc 1
content complex

children departureProfile arrivalProfile

annotation documentation
Overides default profile assignment for a flight's arrival and departure phases using characteristics specified by BADA. Applicable when it is necessary to specify both the arrival and departure profiles.

element operation/stageLength

diagram

type string1

properties
minOcc 0
maxOcc 1
content simple

facets
Kind Value Annotation
minLength 0
maxLength 1

annotation documentation
Overides default departure and arrival stage length values. Applicable when the override is unambiguously arrival or departure. If operation type is Arrival, then AEDT will always use 1 for stage length.

element operation/actypeWeight
type xs:double

properties

minOcc 0
maxOcc 1
content simple

annotation documentation
Aircraft's weight. (lb)

element operation/departureStageLength
diagram

Type string1

properties

minOcc 0
maxOcc 1
content simple

facets

Kind Value Annotation
minLength 0
maxLength 1

annotation documentation
Overrides default departure stage length. Applicable if the phase is a departure phase.

element operation/arrivalStageLength
diagram

Type string1

properties

minOcc 0
maxOcc 1
content simple

facets

Kind Value Annotation
minLength 0
maxLength 1

annotation documentation
Overrides default arrival stage length. Applicable if the phase is an arrival phase. If operation type is Arrival, then AEDT will always use 1 for stage length.

element operation/glideSlope
diagram

Type xs:double

properties

minOcc 0
maxOcc 1
content simple

annotation documentation
Glide slope angle for this operation. (degrees)

element operation/fuelSulfurContent
diagram

Type xs:double
### element operationalProfileSet

**diagram**

- quarterHourlyProfileSet
- dailyProfileSet
- monthlyProfileSet
- activityProfileSet

**used by** element AsfXml

### element operations

**diagram**

- operations

**children** operation

**used by** element trackOpSet

**attributes**

- Name
- Type: xs:int
- Use: optional

**annotation** documentation

Contains a list of aircraft flight operations.

### attribute operations/@dummy

**type** xs:int

**properties** use optional

### element options

**diagram**

- options

**children** utmZoneDefault

**used by** element...
used by: element `AsiXml`

annotation documentation: Contains default option values applied to the study.

**element `options/utmZoneDefault`**

| diagram | Default UTM zone number. |
| type | `xs:int` |
| properties | content simple, default -1 |
| annotation documentation | Default UTM zone number. |

**element `parkingFacility`**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
</table>

```
| properties | content complex |
| children | namenumberOfLevels topReleaseHeight spacing elevation pointCoord polygonCoords |
| used by | element `parkingFacilitySet` |
| annotation documentation | Supports legacy EDMS studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking garage geometries for scenario layouts. |

**element `parkingFacility/name`**

| diagram |

```
| type | `string40` |
| properties | content simple |
| facets Kind Value Annotation minLength 0 maxLength 40 |
| annotation documentation | Identifying name of parking facility. |

**element `parkingFacility/numberOfLevels`**
Number of levels in the parking facility. Valid values: 1 to 20.

**element parkingFacility/topReleaseHeight**

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

**element parkingFacility/spacing**

Distance between two parking spaces. (m)

**element parkingFacility/elevation**

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

- **type**: string40
- **properties**: content simple
- **facets**:
  - Kind: Annotation
  - minLength: 0
  - maxLength: 40
- **annotation**: Identifying name of parking facility.

---

**Diagram**

[Diagram of parkingFacilityOperation/refName]
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

Type of vehicle involved in the operation. Valid values: 0 = Default Fleet Mix, 1 = Passenger Cars, 2 = Light Trucks 1, 3 = Light Trucks 2, 4 = Light Trucks 3, 5 = Light Trucks 4, 6 = Class 2b Heavy Trucks, 7 = Class 3 Heavy Trucks, 8 = Class 4 Heavy Trucks, 9 = Class 5 Heavy Trucks, 10 = Class 6 Heavy Trucks, 11 = Class 7 Heavy Trucks, 12 = Class 8a Heavy Trucks, 13 = Class 8b Heavy Trucks, 14 = School Buses, 15 = Transit and Urban Buses, 16 = Motorcycle.

type groundVehicleType

properties

- content simple

facets 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 Buses|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

Type of fuel involved in the operation.

type fuelType

properties

- minOcc 0
- maxOcc 1
- content simple
- default G

facets Kind Value Annotation

- pattern G|Gasoline|D|Diesel|C|Compressed Natural Gas|L|Liquefied Petroleum Gas|E|Electric

annotation documentation

Type of fuel involved in the operation.
Average speed during the operation. Valid values: 2.5 to 40. (mph)

element parkingFacilityOperation/averageDistanceTraveled

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>
</tbody>
</table>

annotation documentation
Average distance traveled during the operation. Valid values: 0 to 32808. (m)

element parkingFacilityOperation/averageIdleTime

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>
</tbody>
</table>

annotation documentation
Average time vehicle is idle while conducting the operation. Valid values: 0 to 30. (min)

element parkingFacilityOperationSet

diagram

| properties | content complex |

children parkingFacilityOperation

used by group airportActivityGroup

attributes

dummy xs:int, optional

annotation documentation
Supports legacy EDMS studies relating to content contained in the PARKING table. This element supports the definition of parking lot and parking garage activities for scenario layouts.

attribute parkingFacilityOperationSet/@dummy

type xs:int

properties use optional

element parkingFacilitySet

diagram
attribute parkingFacilitySet/@dummy

description: 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.

type: xs:int
use: optional

element pointReceptor

description: Element specification for a point receptor.

diagram:

- name
- locationCoordGroup
  - latitude
  - longitude
  - latitudeDMS
  - longitudeDMS
- coordIDGroup
  - elevation
  - receptorHeight
- utmCoordGroup
  - utmN
  - utmE
  - utmZone
Element specification for a point receptor.

**element pointReceptor/name**

- **diagram**: [Image]
- **type**: string255
- **properties**: content simple
- **facets**
  - Kind: Annotation
  - Value: Annotation
  - Annotation: minLength: 0
  - Annotation: maxLength: 255

**element pointReceptor/elevation**

- **diagram**: [Image]
- **type**: xs:double
- **properties**: minOcc: 0
  - maxOcc: 1
  - content simple
- **annotation**: documentation
  - Annotation: Elevation of the receptor above MSL (ft.)

**element pointReceptor/receptorHeight**

- **diagram**: [Image]
- **type**: xs:double
- **properties**: minOcc: 0
  - maxOcc: 1
  - content simple
- **annotation**: documentation
  - Annotation: Height of the receptor above ground (ft.)

**element pointStationarySource**

- **diagram**: [Image]
### properties
- content: complex

### children
- `pointCoord`
- `baseElevation`
- `releaseHeight`
- `gasVelocity`
- `stackDiameter`
- `temperature`
- `aboveAmbientTemperature`

### used by
- element `stationarySource`

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

#### element `pointStationarySource/pointCoord`

### diagram

```
coord2DType

<table>
<thead>
<tr>
<th>Type of 2D coordinates specifying the point.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>coord2DType</th>
</tr>
</thead>
<tbody>
<tr>
<td>latCoordGroup</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>latCoordGroup</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>lonCoordGroup</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>lonCoordGroup</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>utmCoordGroup</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>utmCoordGroup</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>utmN</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>utmE</td>
</tr>
</tbody>
</table>

| UTM Northing of the point in decimal meters north of the equator. |
| UTM Easting of the point in decimal meters east from a central meridian. |
| UTM Zone of the point. A default zone can be set in the `<gis:options>` tag. |
```

### type
- coord2DType
**element** pointStationarySource/baseElevation

**annotation** documentation
Elevation of point. Valid values: -500 to 5000. (m)

**type** xs:double

**element** pointStationarySource/releaseHeight

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

**type** doubleInclusive100

**element** pointStationarySource/gasVelocity

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

**type** doubleInclusiveRange1to30

**element** pointStationarySource/stackDiameter

**annotation** documentation
Diameter of stack where gas escapes from the source. Valid values: 0.1 to 10 (m)

**type** doubleExclusive0Inclusive10
**element** pointStationarySource/temperature

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

**type** doubleInclusiveRange0to600

**properties**
- minOcc 0
- maxOcc 1
- content simple
- default 32

**facets**
- Kind: 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).

**type** xs:boolean

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

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

**element** polarGrid

Diagram: Various coordinate systems (latitude, longitude, UTM) and their functionalities.
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**
- **type** originSourceType
- **properties** content simple
- **facets**
  - Kind: Annotation
  - Value: Gate|Parking Facility|Roadway|Runway|Stationary Source|Taxiway|Training Fire
- **annotation** documentation

**element** polarGrid/originName
- **diagram**

Properties:
- content complex

Children:
- latitude
- latitudeDMS
- longitude
- longitudeDMS
- utmN
- utmE
- utmZone
- originSource
- originName
- elevation
- height
- ringStart
- ringSpacing
- ringCount
- vectorStart
- vectorSpacing
- vectorCount
- xrOffset
- ydOffset

Used by:
- group: receptorGroup

Annotation documentation:
Supports legacy EDMS studies relating to the NETWORK_POLAR_RECEPTORS table. Two-Dimensional grid of individual receptors over an annular sector (polar) of the airport or study area.
**type** string40

**properties** content simple

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>40</td>
</tr>
</tbody>
</table>

**annotation** documentation

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

**element** polarGrid/elevation

**diagram**

Altitude of point (meters).

**type** xs:double

**properties**

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

**annotation** documentation

Altitude of point (meters).

**element** polarGrid/height

**diagram**

Height of point (meters).

**type** xs:double

**properties**

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

**annotation** documentation

Height of point (meters).

**element** polarGrid/ringStart

**diagram**

Initial radius of first ring from center point.

**type** xs:double

**properties**

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

**annotation** documentation

Initial radius of first ring from center point.

**element** polarGrid/ringSpacing

**diagram**

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

**type** xs:double

**properties**

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

**annotation** documentation

Spacing between rings starting from the first ring. Valid values: 0 to 1000.
### Polar Grid Elements

#### 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.

#### 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)

#### polarGrid/vectorSpacing
- **Type:** `xs:double`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `default`: 1
- **Annotation:**
  - **Documentation:**
  - Number of degrees between receptors. Valid values: 1 to 90. (degrees)

#### polarGrid/vectorCount
- **Type:** `xs:int`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `default`: 1
- **Annotation:**
  - **Documentation:**
  - Number of receptors along the ring. Valid values: 1 to 36.

#### polarGrid/xrOffset
- **Type:** `xs:double`
- **Properties:**
  - `minOcc`: 0
- **Annotation:**
  - **Documentation:**
  - The X-offset of the receptor grid in nautical miles.
| maxOcc 1  |
| content simple |
| default 0 |

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

**element** polarGrid/\( ydOffset \)

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Y-offset of the receptor grid in nautical miles.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>\texttt{xs:double}</th>
</tr>
</thead>
</table>

**properties**

| minOcc 0 |
| maxOcc 1 |
| content simple |
| default 0 |

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

**element** polarReceptor

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
</table>

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**
  - Kind: Pattern
  - Value: Annotation
  - Pattern: Gate|Parking Facility|Roadway|Runway|Stationary Source|Taxiway|Training Fire

**element** polarReceptor/originName

- **diagram**
type string40
properties content simple
facets Kind Value Annotation
minLength 0
maxLength 40
annotation documentation
Refers to an existing gate, parking facility, roadway, runway, stationary source, taxiway, or training fire.

element polarReceptor/distanceFromSource
diagram

type xs:double
properties minOcc 0
maxOcc 1
content simple
annotation documentation
Distance of point from polar origin. Valid values: 0 through 999999.999999. (ft)

element polarReceptor/directionFromSource
diagram

type xs:double
properties minOcc 0
maxOcc 1
content simple
annotation documentation
Direction of point from polar origin. Valid values: 0 through 360. (degrees)

element polarReceptor/elevation
diagram

type xs:double
properties minOcc 0
maxOcc 1
content simple
default 0
annotation documentation
Altitude of point. (meters).

element polarReceptor/height
diagram

type xs:double
properties minOcc 0
maxOcc 1
content simple
default 0
annotation documentation
Height of point. (meters).
element `quarterHourlyProfile`

```
Name of profile.
```

properties
- content complex

children
- `profileName`
- `temporalFactor`

used by
- `element quarterHourlyProfileSet`

annotation documentation
Supports legacy EDMS 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 of profile.
```

type `string100`

properties
- content simple

facets
- Kind: Value: Annotation
  - minLength: 0
  - maxLength: 100

annotation documentation
Name of profile.

element `quarterHourlyProfile/temporalFactor`

diagram

```
Factor applied to activity for operations during the indicated quarter hour. Valid values: 0.0000 to 1.0000.
```

type `extension of doubleMin0`

properties
- minOcc: 0
- maxOcc: unbounded
- content complex

facets
- Kind: Value: Annotation
  - minInclusive: 0

attributes
- Name: Type: Use: Default: Fixed: Annotation
  - `startHour`: `int0to23`: required: 
    - documentation: The starting hour as an integer between 0 and 23.
  - `startMinutes`: `quarterHourMinutes`: required
    - documentation: The starting quarter-hourly minute value as either 0, 15, 30, or 45.

annotation documentation
Factor applied to activity for operations during the indicated quarter hour. Valid values: 0.0000 to 1.0000.

attribute `quarterHourlyProfile/temporalFactor/@startHour`

type `int0to23`

properties
- use required

facets
- Kind: Value: Annotation
The starting hour as an integer between 0 and 23.

**attribute quarterHourlyProfile/temporalFactor/@startMinutes**
- **type**: quarterHourMinutes
- **properties**: use required
- **facets**: Kind Value Annotation
  - enumeration 0
  - enumeration 15
  - enumeration 30
  - enumeration 45

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

**element quarterHourlyProfileSet**
- **properties**: content complex
- **children**: quarterHourlyProfile
- **used by**: element operationalProfileSet
  - complexType: airportLayoutType
  - attributes:
    - Name  | Type  | Use  | Default | Fixed | Annotation
    - dummy | xs:int | optional
- **annotation**: documentation
  - Supports the definition and use of QUARTER_HOURLY_PROFILES for the quarter hourly variation of operations.

**attribute quarterHourlyProfileSet/@dummy**
- **type**: xs:int
- **properties**: use optional

**element receptorSet**
- **diagram**
element receptorSet

description

Contains one or more receptor sets at various locations.

properties

content complex

children

name centroid pointReceptor grid polarReceptor polarGrid

used by

elements AsfXml study

annotation
documentation

Descriptive name of the receptor set.

---

element recordCode

description

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

properties

content simple

used by

element categoryRecordCode

annotation
documentation

An integer value for a category to use as the basis of a new stationary source operation. This value comes from the CATEGORY_REC_ID column in the STN_CATEGORY table in the
AEDT FLEET database. Valid values: 0 to 87, 89 to 148.

**element roadway**

Supports legacy EDMS studies relating to content contained in the ROADWAYS table. This element supports the definition of vehicle geometry on roadways for scenario layouts.

**properties**

- **content**: complex

**children**

- name
- width
- coordinates

**used by**

- element roadwaySet

**annotation**

documentation

Identifying name for the roadway.

**element roadway/name**

- diagram

- type: string40

**properties**

- content: simple

**facets**

- minLength: 0
- maxLength: 40

**annotation**

documentation

Identifying name for the roadway.

**element roadway/width**

- diagram

- type: xs:double

**properties**

- minOcc: 0
- maxOcc: 1

**content**

- default: 0

**annotation**

documentation

Roadway's width. Valid values: 1 to 99. (m)

**element roadway/coordinates**

- diagram

- properties

  - minOcc: 0
  - maxOcc: 1

**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**
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

- **properties**: content complex
- **children**: refName useAnnualFigures vehicleType fuelType emissionsUsage vehicleEmissionFactors speed roundTripDistance
- **used by**: 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.

**element** roadwayOperation/useAnnualFigures

- **type**: string40
- **properties**: content simple
- **facets**:
  - Kind: Annotation
  - minLength: 0
  - maxLength: 40

**annotation documentation**
Identifying name of roadway operation.
element roadwayOperation/vehicleType

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>G</td>
<td>Default Fleet Mix</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Passenger Cars</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>J</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>K</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Light Trucks</td>
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<tr>
<td></td>
<td>O</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>Q</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>U</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>V</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>W</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>Z</td>
<td>Light Trucks</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>Class 2b Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Class 3 Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Class 4 Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Class 5 Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Class 6 Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Class 7 Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Class 8a Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Class 8b Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Class 8a Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Class 8b Heavy Trucks</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>School Busses</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Transit and Urban Busses</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Motorcycle</td>
</tr>
</tbody>
</table>

annotation documentation

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

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>G</td>
<td>Gasoline</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Diesel</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Compressed Natural Gas</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>Liquefied Petroleum Gas</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Electric</td>
</tr>
</tbody>
</table>

annotation documentation

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

element roadwayOperation/speed

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minInclusive</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>maxInclusive</td>
<td>65</td>
<td></td>
</tr>
</tbody>
</table>
element roadwayOperation/roundTripDistance

documentation
Round trip vehicle distance. (mi)

properties
- minOcc 0
- maxOcc 1
- content simple

facets
- Kind: Annotation
  - Value: Annotation
  - Annotation: 

annotation
documentation
Round trip vehicle distance. (mi)

element roadwayOperationSet

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
airportActivityGroup

attributes
- Name: dummy
  - Type: xs:int
  - Use: optional

annotation
documentation
Supports legacy EDMS studies relating to content contained in the ROADWAYS table. This element supports the definition of vehicle activity on roadways for scenario layouts.

attribute roadwayOperationSet/@dummy

documentation

properties
- use optional

element roadwaySet

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

attributes
- Name
  - Type
  - Use
  - Default
  - Fixed
  - Annotation
attribute roadwaySet/@dummy

type xs:int

properties use optional

element runway

diagram

properties content complex

children length width runwayEnd

used by element runwaySet

annotation documentation
Describes dimensions of a runway.

element runway/length

diagram

Length of runway. Valid values: nonnegative. (ft)

properties content simple

annotation documentation
Length of runway. Valid values: nonnegative. (ft)

element runway/width

diagram

Width of runway. Valid values: nonnegative. (ft)

properties content simple

annotation documentation
Width of runway. Valid values: nonnegative. (ft)

element runway/runwayEnd

diagram
runwayEnd

name
ID of the runway's endpoint.

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

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

uomCoordGroup
Specifies a coordinate using latitude and longitude.

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 &utm;optional=true; tag.

coord2DGroup
Indicates how a two-dimensional group is specified.

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

threshCrossHeight
Approach threshold crossing height, ft (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).

inAltitude
Altitude at which glide slope should be interpreted above ground level (ft).

depDgpsThresh
Displaced threshold length at departure end of runway (ft).

arrDgpsThresh
Displaced threshold length at arrival end of runway (ft).

pctnWind
Percent change in airport average headwind. (%)

ishelp
Indicates if the end of the runway is also a helipad. Valid values: Y = yes, N = no.
**element runwayAssignment**

**diagram**

```plaintext
runwayAssignment

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>name latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation threshCrossHeight threshElevation glideSlope intAltitude depDispThresh appDispThresh percentWind isHeliPad</td>
</tr>
</tbody>
</table>

**annotation**

- documentation: Characterizes the runway's endpoint.

**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</td>
<td>S</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>L</td>
<td></td>
</tr>
<tr>
<td>enumeration</td>
<td>H</td>
<td></td>
</tr>
</tbody>
</table>

**element runwayAssignment/runway**

**diagram**

```
runway
```

**type**

`string8`

**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</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

- documentation: Name of the runway.

**element runwayAssignment/arrivalPercentage**

**diagram**

```xml
arrivalPercentage
```

**type**

`string8`

**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</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

**annotation**

- documentation: Name of the runway.
**Element: runwayAssignment/departurePercentage**

- **Type:** `doubleInclusive100`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: simple
- **Facets:**
  - Kind: Value Annotation
  - `minInclusive`: 0
  - `maxInclusive`: 100
- **Annotation:**
  - Documentation: Percentage of departures of the given aircraft size using this runway. Valid values: 0 to 100. (%)

**Element: runwayAssignment/tgoPercentage**

- **Type:** `doubleInclusive100`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
  - `content`: simple
- **Facets:**
  - Kind: Value Annotation
  - `minInclusive`: 0
  - `maxInclusive`: 100
- **Annotation:**
  - Documentation: Percentage of touch and gos 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:**
  - Documentation: Contains a set of runway assignments.

**Element: runwaySet**
**Diagram**

```
runwaySet ----> runway
```

- **Container for runways.**
- **Describes dimensions of a runway.**

**Properties**
- content complex

**Children**
- runway

**Used by**
- complexType `airportLayoutType`

**Annotation**
- documentation
  - Container for runways.

**Element scenario**

```
<scenario>
  <name>Describes scenario.</name>
  <startTime>Start time of scenario. Accepts date-time string.</startTime>
  <duration>Scenario's duration (h). </duration>
  <taxModel>Taxi model for scenario.</taxModel>
  <timeinModelType>Time in model type.</timeinModelType>
  <actPerfModel>Aircraft performance model.</actPerfModel>
  <bankAngle>Indicates if bank angle calculation should be included in calculations. Note: AEDT ignores this value and treats all scenarios as if they bank angle value was set to true.</bankAngle>
  <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)</altitudeCutoff>
  <sulfurConversionRate>Portion of sulfur in the fuel that, when combusted, becomes sulfuric acid used for emissions calculations. (%)</sulfurConversionRate>
  <fuelSulfurContent>Percentage, by weight, of sulfur in the fuel used for emissions calculations. Default Value: 0.0065 (0.65%) (%)</fuelSulfurContent>
  <description>A description of the scenario.</description>
  <scenarioAirportLayoutSet>Contains a set of airport layout types.</scenarioAirportLayoutSet>
  <casuseSet>Placeholder for one or more cases.</casuseSet>
  <annualization>Contains annualizations for ARF partial import into an existing study.</annualization>
</scenario>
```

**Properties**
- content complex
<table>
<thead>
<tr>
<th>children</th>
<th>name startTime duration taxiModel timeInModeBasis acftPerfModel bankAngle altitudeCutoff sulfurConversionRate fuelSulfurContent description scenarioAirportLayoutSet caseSet annualization</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>elements AsfXml study</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation Encapsulates a scenario - such as Baseline or Alternative</td>
</tr>
</tbody>
</table>

**element scenario/name**

- **diagram**
- **type** string255
- **properties** content simple
- **facets** Kind Value Annotation
  - minLength 0
  - maxLength 255
- **annotation** documentation
  - Description of scenario.

**element scenario/startTime**

- **diagram**
- **type** xs:dateTime
- **properties** content simple
- **annotation** documentation
  - Start time of scenario. Accepts dateTime string.

**element scenario/duration**

- **diagram**
- **type** xs:int
- **properties** content simple
- **annotation** documentation
  - Scenario's duration (hr).

**element scenario/taxiModel**

- **diagram**
- **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**
- **type** timeInModeBasisType
- **properties** minOcc 0 maxOcc 1 content simple default ICAO
<table>
<thead>
<tr>
<th>facets</th>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kind</td>
<td>Value</td>
<td>Annotation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ICAO</td>
<td></td>
</tr>
</tbody>
</table>

**element scenario/acctPerfModel**

```xml
<scenario:acctPerfModel/>
```

**type** `aircraftPerformanceModelType`

**properties**
- `content` simple

**annotation** documentation
- Aircraft performance model.

**element scenario/bankAngle**

```xml
<scenario:bankAngle/>
```

**type** `xs:boolean`

**properties**
- `content` simple

**annotation** documentation
- Indicates if bank angle calculations should be included in calculations. NOTE: AEDT ignores this value and treats all scenarios as if their bank angle value was set to true.

**element scenario/altitudeCutoff**

```xml
<scenario:altitudeCutoff/>
```

**type** `xs:double`

**properties**
- `content` simple
- `default` 18000

**annotation** documentation
- Altitude in MSL to cutoff trajectory modeling for this scenario. The scenario altitude cutoff only affects noise impact calculation in AEDT. Fuel burn and emissions will be calculated until a flight reaches the study boundary. (ft)

**element scenario/sulfurConversionRate**

```xml
<scenario:sulfurConversionRate/>
```

**type** `xs:double`

**properties**
- `content` simple

**annotation** documentation
- Portion of sulfur in the fuel that, when combusted, becomes sulfuric acid used for emissions calculations. (%)

**element scenario/fuelSulfurContent**

```xml
<scenario:fuelSulfurContent/>
```
element scenario/description
description A description of the scenario.
diagram
type string255
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
minLength 0
maxLength 255
annotation documentation A description of the scenario.

element scenarioAirportLayoutSet
diagram
Contains a set of airport layout types.
children scenarioAirportLayout
used by element scenario
attributes Name Type Use Default Fixed Annotation
dummy xs:int optional
annotation documentation Contains a set of airport layout types.

attribute scenarioAirportLayoutSet/@dummy
type xs:int
properties use optional

element scenarioAirportLayoutSet/scenarioAirportLayout
diagram
type scenarioAirportLayoutType

properties
minOcc 1
maxOcc unbounded
content complex

children
airportLayoutName mixingHeight useHourlyMetData averageTemperature dailyHighTemperature dailyLowTemperature pressure pressureMSL humidity windSpeed windDirection ceiling visibility airportConfigSet airportCapacity

annotation
documentation
Airport layout type.
element sensorNode

Describes a single node of a radar flight path.

- **lat**
  - Longitude for this location (decimal degrees).
- **long**
  - Latitude for this location (decimal degrees).
- **altitude**
  - Altitude at this location (ft).
- **messageTime**
  - Time aircraft reached this location. NOTE: Not used in AEDT.
- **sequenceNum**
  - Order of this location in node list.
- **speed**
  - Ground speed of aircraft at this location (kts).
- **thrust**
  - Thrust of aircraft at this location. NOTE: Not used in AEDT (lbf).
- **source**
  - Source of the data for this node. NOTE: Not used in AEDT.

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

- **lat**
  - Latitude for this location (decimal degrees).

- type xs:double

- properties content simple

- annotation documentation
  - Latitude for this location (decimal degrees).

Element sensorNode/long

- **long**
  - Longitude for this location (decimal degrees).

- type xs:double

- properties content simple

- annotation documentation
  - Longitude for this location (decimal degrees).

Element sensorNode/altitude

- **altitude**
  - Altitude at this location (ft).

- type xs:double

- properties content simple
<table>
<thead>
<tr>
<th>annotation</th>
<th>documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altitude at this location (ft)</td>
<td></td>
</tr>
</tbody>
</table>

**element** `sensorNode/messageTime`  

diagram  

**type** `xs:dateTime`  

**properties**  

content simple  

**annotation**  

documentation  

Time aircraft reaches this location. NOTE: Not used in AEDT.

**element** `sensorNode/sequenceNum`  

diagram  

**type** `xs:int`  

**properties**  

content simple  

**annotation**  

documentation  

Order of this location in node list.

**element** `sensorNode/speed`  

diagram  

**type** `xs:double`  

**properties**  

minOcc 0  

maxOcc 1  

content simple  

**annotation**  

documentation  

Ground speed of aircraft at this location (kts).

**element** `sensorNode/thrust`  

diagram  

**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`  

diagram  

**type** `string255`  

**properties**  

minOcc 0  

maxOcc 1  

content simple  

**facets**  

Kind Value Annotation  

minLength 0  

maxLength 255
**element sensorPath**

- **Diagram**
  
- **Properties**
  - content complex

- **Children**
  - sensorNode

- **Used by**
  - element trackOpSet

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

**element stationarySource**

- **Diagram**
  
- **Properties**
  - name

- **Children**
  - pointStationarySource
  - areaStationarySource
  - volumeStationarySource
  - categoryRecordCode
  - categoryBoilerHeater
  - categoryGenerator
  - categoryIncinerator
  - categoryAircraftEngine
  - categoryFuelTank
  - categorySurfaceCoatingPainting
  - categoryDecilingArea
  - categorySolventDegreaser

- **Annotation**
  - documentation
  Specifies a stationary source.
element **stationarySource/name**

**Diagram**

Identifying name of the stationary source.

**Type** `string40`

**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>40</td>
<td></td>
</tr>
</tbody>
</table>

**Annotation**

- **documentation**

Identifying name of the stationary source.

---

**children**

- `name` stationarySource
- `pointStationarySource` areaStationarySource
- `volumeStationarySource` categoryRecordCode
- `categoryBoilerHeater` categoryGenerator
- `categoryIncinerator` categoryAircraftEngine
- `categoryFuelTank` categorySurfaceCoatingPainting
- `categoryDeicingArea` categorySolventDegreaser
- `categorySandSaltPile` categoryTrainingFire
- `categoryOther`

**used by**

- element `stationarySourceSet`

---

**element** `stationarySourceOperation`

**Diagram**

Defines an operation at a stationary source that generates emissions.

**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`

**Diagram**

Identifier of the operation.
<table>
<thead>
<tr>
<th><strong>type</strong></th>
<th><code>string40</code></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>properties</strong></td>
<td>content simple</td>
</tr>
<tr>
<td><strong>facets</strong></td>
<td>Kind</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
</tbody>
</table>

**annotation**

documentation
Identifier of the operation.

**element** `stationarySourceOperation/elevation`

diagram

```
  elevation
```

**type** `xs:double`

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

**element** `stationarySourceOperation/pointCoord`

diagram

```
  coord2DType
```

**type** `coord2DType`

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

**children**
- latitude
- latitudeDMS
- longitude
- longitudeDMS
- utmN
- utmE
- utmZone

**element** `stationarySourceOperationSet`

diagram

```
  stationarySourceOperationSet
```

Defines an operation at a stationary source that generates emissions.
properties | content complex
---|---
children | `stationarySourceOperation`
used by | group `airportActivityGroup`
attributes | Name | Type | Use | Default | Fixed | Annotation
dummy | xs:int | optional
annotation | documentation
Container of operations conducted at a stationary source contributing emissions.

attribute `stationarySourceOperationSet/@dummy`

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>use optional</td>
</tr>
</tbody>
</table>

element `stationarySourceSet`

diagram

properties | content complex
---|---
children | `stationarySource`
used by | element `AsflXml`
complexType | `airportLayoutType`
attributes | Name | Type | Use | Default | Fixed | Annotation
dummy | xs:int | optional
annotation | documentation
Container of stationary sources contributing emissions.

attribute `stationarySourceSet/@dummy`

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>use optional</td>
</tr>
</tbody>
</table>

element `study`

diagram
<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>name studyType emissionsUnits description boundary climate userDefinedAirportSet airportLayoutSet terrainFiles receptorSet fleet userGroundSupportEquipmentSet scenario</td>
</tr>
<tr>
<td>used by</td>
<td>element AsfXml</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Contains specific information about a study.</td>
</tr>
</tbody>
</table>

**element study/name**

<table>
<thead>
<tr>
<th>diagram</th>
<th>Name of the study.</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string255</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td></td>
<td>minLength 0</td>
</tr>
</tbody>
</table>
element study/studyType


diagram


type studyType

properties content simple

facets Kind Value Annotation
  enumeration Emissions
  enumeration Dispersion
  enumeration Noise and Emissions
  enumeration Noise and Dispersion

element study/emissionsUnits


diagram


type emissionsUnitsType

properties content simple

facets Kind Value Annotation
  enumeration MetricTonnes
  enumeration Kilograms
  enumeration Grams
  enumeration ImperialTons
  enumeration Pounds

element study/description


diagram


type string255

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
Optional description of the study.

element study/terrainFiles


diagram


type string255

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
List of files containing descriptions of terrain.

element study/fleet


diagram
**type** fleet

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

**children**
- auxiliaryPowerUnit
- airframe
- engine
- engineMod
- anpNoiseGroup
- anpAirplane
- anpFlapsSet
- anpProfileSet
- anpHelicopter
- anpHeloNoiseGroup
- anpHelicopter
- anpHeloDirectivitySet
- anpHeloProfileSet
- badaAirplane
- badaAltitudeDistributionSet
- badaDefaultAltitudeDistributionSet
- badaProfileSet
- badaConfigSet
- badaFuel
- badaThrust
- bada4ProfileSet
- aircraft
- energyShare

**annotation** documentation

Defines aircraft fleet participating in the study.

---

**element subtrack**

**diagram**

![Diagram of subtrack with properties and children]

**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.

<table>
<thead>
<tr>
<th>element</th>
<th>subtrack/id</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image1.png" alt="" /></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>

ID for a subtrack.

<table>
<thead>
<tr>
<th>element</th>
<th>subtrack/dispersionWeight</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image2.png" alt="" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>used by</td>
<td>element backbone</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

dispersion weight value; must be greater than one and less than or equal to 1.

<table>
<thead>
<tr>
<th>element</th>
<th>taxiNode</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image3.png" alt="" /></td>
</tr>
<tr>
<td>properties</td>
<td>content complex</td>
</tr>
<tr>
<td>children</td>
<td>latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation speed</td>
</tr>
<tr>
<td>used by</td>
<td>element taxiNodeSet</td>
</tr>
</tbody>
</table>
Supports legacy EDMS studies relating to the TAXIWAYS table. Taxi nodes define the points for a given taxiway.

**element taxiNode/elevation**

- **Diagram:** 
  ![Diagram](image1)
- **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:** 
  ![Diagram](image2)
- **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:** 
  ![Diagram](image3)
- **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:** 
  ![Diagram](image4)
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: Annotation
    - Value: minLength 0
    - Value: maxLength 40
  - **annotation** documentation
    - References an existing gate.

**element taxipath/runwayName**

- **type** string8
- **properties** content simple
  - **facets**
    - Kind: Annotation
    - Value: minLength 0
    - Value: maxLength 8
  - **annotation** documentation
    - References an existing runway.

**element taxipath/direction**

- **type** directionType
- **properties** content simple
  - **facets**
    - Kind: Annotation
      - pattern: A[Arrival][D][Departure][I][Inbound][O][Outbound]
**element taxipath/taxiwayName**

- **type**: string20
- **properties**: minOcc 1, maxOcc unbounded, content simple
- **facets**:
  - Annotation: minLength 0, maxLength 20

**annotation documentation**
References an existing taxiway.

**element taxipathSet**

- **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**

- **properties**: content complex
- **children**: source taxiIn taxiOut
- **used by**: complexType airport

**element taxiTime/source**

- **type**: string6
- **properties**: minOcc 0, maxOcc 1, content simple

**facets**:
- Annotation: Kind Value
element taxiTime/taxiIn
diagram

type xs:int

properties
minOcc 0
maxOcc 1
content simple

element taxiTime/taxiOut
diagram

type xs:int

properties
minOcc 0
maxOcc 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 TAXIWAYS table. Taxiways determine the ground segments where the aircraft operates.

element taxiway/name
diagram

type string20

properties
content simple

facets
Kind Value Annotation
minLength 0
maxLength 20

annotation
documentation
Identifying name for taxiway.

element taxiway/dispersionWidth
diagram

properties
minOcc 0
**element taxiwaySet**

- **diagram**: Diagram showing the structure of taxiwaySet.

- **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**: Diagram showing the structure of track.

- **properties**: content complex

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

- **used by**: elements trackOpSet trackSet

- **annotation** documentation

  A flight track that can be used for flight operations.

**element track/name**

- **diagram**: Diagram showing the structure of track/name. 

  - Name: The name of the track.
### Track/Optype

<table>
<thead>
<tr>
<th>type</th>
<th>string64</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>64</td>
</tr>
</tbody>
</table>

**Annotation**

The name of the track.

**Diagram**

```
Track/Optype
Type of track. (A = arrival, D = departure, V = overflight, T = Touch and Go)
```  

### Track/Type

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

**Annotation**

Type of track. (A = arrival, D = departure, V = overflight, T = Touch and Go)

**Diagram**

```
Track/Type
Type of track. (A = arrival, D = departure, V = overflight, T = Touch and Go)
```  

### Track/WingType

<table>
<thead>
<tr>
<th>type</th>
<th>wingType</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td>pattern</td>
<td>F</td>
</tr>
</tbody>
</table>

**Annotation**

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

### Track/Airport

<table>
<thead>
<tr>
<th>type</th>
<th>airportCode</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>complex</td>
</tr>
<tr>
<td>facets</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>Value</td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
</tr>
<tr>
<td>maxLength</td>
<td>4</td>
</tr>
</tbody>
</table>

**Attributes**

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

**Annotation**

The IATA airport code.
### element track/runway

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="runway" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>string8</td>
</tr>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
</tbody>
</table>

**used by** element runwaySet

**facets**

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

**annotation documentation**
The name of the runway.

### element track/vectorCourseHelipad

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="vectorCourseHelipad" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
</tbody>
</table>

**annotation documentation**
Direction for helicopter operations of vector type (angle from North).

### element trackNode

<table>
<thead>
<tr>
<th>diagram</th>
<th></th>
</tr>
</thead>
</table>

**element** `trackNode/altitude`

**diagram**

**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**

Node’s altitude above or below MSL (ft). Includes attribute node.
**attribute trackNode/altitude/@control**

<table>
<thead>
<tr>
<th>type</th>
<th>nodeControlType</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>use optional</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>pattern</td>
<td>0</td>
</tr>
</tbody>
</table>

**element trackNode/speed**

<table>
<thead>
<tr>
<th>type</th>
<th>extension of xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0 maxOcc 1 content complex</td>
</tr>
<tr>
<td>attributes</td>
<td>Name Type Use Default Fixed Annotation</td>
</tr>
<tr>
<td>control</td>
<td>nodeControlType optional</td>
</tr>
</tbody>
</table>

**annotation**

Documentation: Speed of aircraft at node. Includes attribute node. Valid values: nonnegative. (kts)

**attribute trackNode/speed/@control**

<table>
<thead>
<tr>
<th>type</th>
<th>nodeControlType</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>use optional</td>
</tr>
<tr>
<td>facets</td>
<td>Kind Value Annotation</td>
</tr>
<tr>
<td>pattern</td>
<td>0</td>
</tr>
</tbody>
</table>

**element trackNodes**

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>trackNode</td>
</tr>
<tr>
<td>used by</td>
<td>element subtrack</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation A set of flight track nodes</td>
</tr>
</tbody>
</table>

**element trackOpSet**

<table>
<thead>
<tr>
<th>properties</th>
<th>content complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>track trackref sensorPath operations</td>
</tr>
<tr>
<td>used by</td>
<td>elements AsiXml case</td>
</tr>
</tbody>
</table>
element trackref

diagram

- element airportLayoutName
  - type string255
  - properties content simple
  - facets Kind Value Annotation
    - minLength 0
    - maxLength 255
  - annotation documentation
    Airport layout associated with this track.

- element trackName
  - type string255
  - properties content simple
  - facets Kind Value Annotation
    - minLength 0
    - maxLength 255
  - annotation documentation
    Name of flight track.

- element optype
  - type trackType
  - properties content simple
  - facets Kind Value Annotation
    - pattern A|Arrival|D|Departure|V|Overflight|T|TouchAndGo|X|ArrivalHeliTaxi|O|DepartureHeliTaxi

- element runway
  - diagram
  - type string255
  - properties content simple
  - facets Kind Value Annotation
  - annotation documentation
    Name of runway on the flight track.
**type** string

**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**

**diagram**
A set of flight tracks.

**properties**
- content complex

**children** **track**

**used by** complexType **airportLayoutType**

**annotation** documentation
A set of flight tracks.

**element** **trackVector**

**diagram**
A flight track vector.

**properties**
- content complex

**children**
- id
- description
- type
- distance
- angle
- radius

**used by** element **trackVectors**

**annotation** documentation
A flight track vector.

**element** **trackVector/type**

**diagram**
Type of vector. Valid values: S = Straight, L = LeftTurn, R = RightTurn.

**type** **vectorTrackType**

**properties**
- content simple

**facets**
- Kind | Value | Annotation
- pattern | S|Straight|L|LeftTurn|R|RightTurn
Type of vector. Valid values: S = Straight, L = LeftTurn, R = RightTurn.


element trackVector/distance

diagram

Distance flown along this vector. Valid values: nonnegative. (nmi)

type xs:double

properties content simple

annotation documentation

Distance flown along this vector. Valid values: nonnegative. (nmi)

element trackVector/angle

diagram

Angle of the vector. (degrees)

type xs:double

properties content simple

annotation documentation

Angle of the vector. (degrees)

element trackVector/radius

diagram

Radius of the vector. Valid values: nonnegative. (nmi)

type xs:double

properties content simple

annotation documentation

Radius of the vector. Valid values: nonnegative. (nmi)

element trackVectors

diagram

A list of flight track vectors.

properties content complex

children trackVector used by element subtrack

annotation documentation

A list of flight track vectors.

element userDefinedAirportSet

diagram

Contains user-defined airports.

properties content complex

children userDefinedAirport used by element study

annotation documentation

Contains information for each user-defined airport. APT CODE must not duplicate an existing system airport.
attribute userDefinedAirportSet/@dummy

<table>
<thead>
<tr>
<th>name</th>
<th>type</th>
<th>properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummy</td>
<td>xs:int</td>
<td>optional</td>
</tr>
</tbody>
</table>

annotation documentation
Contains user-defined airports.

element userDefinedAirportSet/userDefinedAirport

Contains information for each user-defined airport. API_CODE must not duplicate an existing system airport.
<table>
<thead>
<tr>
<th>type</th>
<th>airport</th>
</tr>
</thead>
</table>
| properties | minOcc 1  
maxOcc unbounded  
content complex |
| children | airportCode effDate expDate name facilityType cityName latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone elevation patternAltitude tower layout archiveFlag dafifId faaId shell smad zone airportWeather windRose taxiTime |
| annotation | documentation  
Contains information for each user-defined airport. APT_CODE must not duplicate an existing system airport. |

**element userGroundSupportEquipment**

| diagram |  |
### userGroundSupportEquipment/gseID

**Diagram**

```
  **gseID**

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

**Type** `xs:int`

**Properties** content simple

**Annotation**

User GSE ID (used as identifier [System GSE ID] in AIRCRAFT_GSE_ASSIGNMENTS, GSE_POPULATION, GSE_POPULATION_GATE_ASSIGNMENTS).

### userGroundSupportEquipment/gseName

**Diagram**

```
  **gseName**

Custom GSE name.
```

**Type** `string40`

**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>40</td>
<td></td>
</tr>
</tbody>
</table>

**Annotation**

Custom GSE name.
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>userGroundSupportEquipment/defaultLoadFactor</code></td>
<td>Default load factor. Valid values: 0 to 100 (%).</td>
</tr>
<tr>
<td><code>userGroundSupportEquipment/defaultHorsepower</code></td>
<td>Default horsepower. Valid values: 0 to 10000 (hp).</td>
</tr>
<tr>
<td><code>userGroundSupportEquipment/defaultOpTimeDepartures</code></td>
<td>Default operation time departures. Valid values: 0 to 1000 (min/LTO).</td>
</tr>
<tr>
<td><code>userGroundSupportEquipment/defaultOpTimeArrivals</code></td>
<td>Default operation time arrivals. Valid values: 0 to 1000 (min/LTO).</td>
</tr>
<tr>
<td><code>userGroundSupportEquipment/defaultAnnualOpTime</code></td>
<td>Default operation time annual. Valid values: 0 to 8784 (min/LTO).</td>
</tr>
</tbody>
</table>

These elements are part of the userGroundSupportEquipment schema, providing default values for various properties such as load factor, horsepower, and operation times.
Describes user-defined fuel emission factors.

element `userGroundSupportEquipment/userEmissionFactors/emissionFactorsDiesel`

diagram

**properties**
- `content`: complex

**children**
- `emissionFactorsDiesel`
- `emissionFactorsGas`
- `emissionFactorsCNG`
- `emissionFactorsLPG`

**annotation**
- documentation
  - User-defined fuel emission factor for diesel.

**element `userGroundSupportEquipment/userEmissionFactors/emissionFactorsGas`

diagram

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

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

**annotation**
- documentation
  - 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 compressed natural gas.

User-defined fuel emission factor for LPG.
User-defined fuel emission factor for liquefied petroleum gas.

**element** userGroundSupportEquipmentSet

**properties**
- content complex

**children**
- userGroundSupportEquipment

**used by**
- elements AsiXml study

**attributes**
- Name Type Use Default Fixed Annotation
dummy xs:int optional

**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.

**attribute** userGroundSupportEquipmentSet/@dummy

**type** xs:int

**properties**
- use optional

**element** vehicleEmissionFactors

**diagram**
vehicleEmissionFactors

vehicleEmissionFactors/CO

CO
- Amount of carbon monoxide emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

NMHC
- Amount of nonmethane hydrocarbons emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

VOC
- Amount of volatile organic compounds emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

THC
- Amount of total hydrocarbons emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

TOG
- Amount of total organic gases emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

NOx
- Amount of nitrous oxides emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

SOx
- Amount of sulfur oxides emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

PM-10
- Amount of 10-micron particulate matter emitted. (grams/vehicle-mile)

PM-2.5
- Amount of 2.5-micron particulate matter emitted. Valid Values 0 to 20000. (grams/vehicle-mile)

Benzene
- Amount of benzene emitted. (grams/vehicle-mile)

MTBE
- Amount of methyl tertiary butyl ether emitted. (grams/vehicle-mile)

Butadiene
- Amount of butadiene emitted. (grams/vehicle-mile)

Formaldehyde
- Amount of formaldehyde emitted. (grams/vehicle-mile)

Acetaldehyde
- Amount of acetaldehyde emitted. (grams/vehicle-mile)

Acrolein
- Amount of acrolein emitted. (grams/vehicle-mile)

properties
content complex

children
CO NMHC VOC THC TOG NOx SOx PM-10 PM-2.5 Benzene MTBE Butadiene Formaldehyde Acetaldehyde Acrolein

used by
parkingFacilityOperation roadwayOperation

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

element vehicleEmissionFactors/CO
element `vehicleEmissionFactors/NMHC`

- **Diagram:**
  - Amount of non-methane hydrocarbons emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

- **Type:** xs:double

- **Properties:** content simple

- **Annotation:**
  - Amount of non-methane hydrocarbons emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

element `vehicleEmissionFactors/VOC`

- **Diagram:**
  - Amount of volatile organic compounds emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

- **Type:** xs:double

- **Properties:** content simple

- **Annotation:**
  - Amount of volatile organic compounds emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

element `vehicleEmissionFactors/THC`

- **Diagram:**
  - Amount of total hydrocarbons emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

- **Type:** xs:double

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

- **Annotation:**
  - Amount of total hydrocarbons emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

element `vehicleEmissionFactors/TOG`

- **Diagram:**
  - Amount of total organic gasses emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

- **Type:** xs:double

- **Properties:** content simple

- **Annotation:**
  - Amount of total organic gasses emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

element `vehicleEmissionFactors/NOx`

- **Diagram:**
  - Amount of nitrogen oxides emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)
element vehicleEmissionFactors/SOx

diagram SOx

Amount of sulfur oxides emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

type xs:double

properties content simple

annotation documentation

Amount of sulfur oxides emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

element vehicleEmissionFactors/PM-10

diagram PM-10

Amount of 10-micron particulate matter emitted. (grams/vehicle-mile)

type xs:double

properties content simple

annotation documentation

Amount of 10-micron particulate matter emitted. (grams/vehicle-mile)

element vehicleEmissionFactors/PM-2.5

diagram PM-2.5

Amount of 2.5-micron particulate matter emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

type xs:double

properties content simple

annotation documentation

Amount of 2.5-micron particulate matter emitted. Valid Values: 0 to 20000. (grams/vehicle-mile)

element vehicleEmissionFactors/Benzene

diagram Benzene

Amount of benzene emitted. (grams/vehicle-mile)

type xs:double

properties content simple

annotation documentation

Amount of benzene emitted. (grams/vehicle-mile)

element vehicleEmissionFactors/MTBE

diagram MTBE

Amount of methyl tertiary butyl ether emitted. (grams/vehicle-mile)

type xs:double

properties content simple

annotation documentation

Amount of methyl tertiary butyl ether emitted. (grams/vehicle-mile)

element vehicleEmissionFactors/Butadiene
<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/Formaldehyde</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Formaldehyde" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Amount of formaldehyde emitted. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/Acetaldehyde</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Acetaldehyde" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Amount of acetaldehyde emitted. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>vehicleEmissionFactors/Acrolein</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="Acrolein" /></td>
</tr>
<tr>
<td>type</td>
<td>xs:double</td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
<tr>
<td></td>
<td>Amount of acrolein emitted. (grams/vehicle-mile)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>element</th>
<th>volumeStationarySource</th>
</tr>
</thead>
<tbody>
<tr>
<td>diagram</td>
<td><img src="image" alt="volumeStationarySource" /></td>
</tr>
<tr>
<td>properties</td>
<td>content complex</td>
</tr>
</tbody>
</table>
Specifies the volume in space occupied by a stationary source of emissions.

**element volumeStationarySource/pointCoord**

- **type**: coord2DType
- **properties**: content complex
- **children**: latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone
- **annotation**: documentation
  Type of 2D coordinates specifying the volume.

**element volumeStationarySource/baseElevation**

- **type**: xs:double
- **properties**: content simple
- **annotation**: documentation
  Height of volume. (m)

**element volumeStationarySource/releaseHeight**

- **type**: doubleInclusive100
- **properties**: minOcc 0 maxOcc 1 content simple default 0
<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>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Element volumeStationarySource/sigmaZ**

- **Diagram**: Vertical dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.0 (m)
- **Type**: xs:double
- **Properties**:
  - minOccurs: 0
  - maxOccurs: 1
  - 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**: Horizontal dispersion parameter. For additional information, see the EDMS Application Manual. Valid values: 0.1 to 100.0. (m)
- **Type**: xs:double
- **Properties**:
  - minOccurs: 0
  - maxOccurs: 1
  - 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**:
- **Properties**: content complex

**Children**: month temperature seaLevelPressure stationPressure dewPoint relativeHumidity windSpeed meanTemperature

**Used by**: element airportWeatherStation

**Element weatherData/month**

- **Diagram**:
- **Type**: string3
- **Properties**: content simple

**Facets**:

<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>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
element `weatherData/temperature`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple</td>
</tr>
</tbody>
</table>

element `weatherData/seaLevelPressure`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple</td>
</tr>
</tbody>
</table>

element `weatherData/stationPressure`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple</td>
</tr>
</tbody>
</table>

element `weatherData/dewPoint`

diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:decimal</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple</td>
</tr>
</tbody>
</table>

element `weatherData/relativeHumidity`

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

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>
<tbody>
<tr>
<td>properties</td>
<td>minOcc 0, maxOcc 1, content simple</td>
</tr>
</tbody>
</table>
element windRose

diagram

properties
content complex

children
windRoseStationId windRoseStation

used by
complexType airport

element windRose/windRoseStationId

diagram

properties
content simple

facets
Kind Value Annotation
minLength 0
maxLength 5

element windRoseData

diagram

properties
content complex

children
directionRange centerDirection 501TO04KTS 504TO07KTS 507TO11KTS 511TO17KTS 517TO22KTS 522TO28KTS 528TO34KTS 534TO41KTS 541PLUSKTS DIRTOTAL

used by
element windRoseStation

element windRoseData/directionRange

diagram

properties
content simple

facets
Kind Value Annotation
minLength 0
maxLength 14

element windRoseData:centerDirection

diagram

properties
xs:int
<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
</table>

**element windRoseData/S01TO04KTS**  
- diagram: ![S01TO04KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S04TO07KTS**  
- diagram: ![S04TO07KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S07TO11KTS**  
- diagram: ![S07TO11KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S11TO17KTS**  
- diagram: ![S11TO17KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S17TO22KTS**  
- diagram: ![S17TO22KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S22TO28KTS**  
- diagram: ![S22TO28KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S28TO34KTS**  
- diagram: ![S28TO34KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S34TO41KTS**  
- diagram: ![S34TO41KTS.png]  
- type: xs:int  
- properties: content simple

**element windRoseData/S41PLUSKTS**  
- diagram: ![S41PLUSKTS.png]  
- type: xs:int  
- properties: content simple
<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

**element windRoseData/DIRTOTAL**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>[DIRTOTAL]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>type</th>
<th>xs:int</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

**element windRoseStation**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
</table>
properties

content complex

children

windRoseStationId startDate endDate windRoseStationDescription windRoseDataSource windRoseDataSet latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone windRoseStationElevationFeet averageWindSpeed beginYear endYear beginDayMonth endDayMonth directionUnit calmCriteria calms missing good total
used by element windRose

element windRoseStation/windRoseStationId

diagram

type string5

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 5

element windRoseStation/startDate

diagram

type xs:date

properties content simple

element windRoseStation/endDate

diagram

type xs:date

properties content simple

element windRoseStation/windRoseStationDescription

diagram

type string42

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 42

element windRoseStation/windRoseDataSource

diagram

type string32

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 32

element windRoseStation/windRoseDataSet

diagram

type string66

properties content simple

facets Kind Value Annotation

minLength 0

maxLength 66

element windRoseStation/windRoseStationElevationFeet

diagram

type xs:int
<table>
<thead>
<tr>
<th>properties</th>
<th>content simple</th>
</tr>
</thead>
</table>

**element windRoseStation/averageWindSpeed**

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

**element windRoseStation/beginYear**

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

**element windRoseStation/endYear**

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

**element windRoseStation/beginDayMonth**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="beginDayMonth" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>string12</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

**element windRoseStation/endDayMonth**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="endDayMonth" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>string11</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

**element windRoseStation/directionUnit**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="directionUnit" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>string9</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

**element windRoseStation/calmCriteria**

<table>
<thead>
<tr>
<th>diagram</th>
<th><img src="image" alt="calmCriteria" /></th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td><code>string11</code></td>
</tr>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

facets

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Contains a set of activities conducted at an airport.

**group annualizationGroupCase**

- **children**: annualizationGroup annualizationCase
- **used by**: element annualizationGroup
- **annotation documentation**: Allows for grouping cases into groups, and groups into parent groups.

**group coord2DGroup**

- **children**: latitude latitudeDMS longitude longitudeDMS utmN utmE utmZone
- **used by**: elements airportWeatherStation centroid grid pointReceptor polarGrid polarReceptor taxiNode trackNode windRoseStation
- **complexTypes**: airport airportLayoutType runway runwayEnd
- **annotation documentation**: Indicates how a two-dimensional group is specified.

**group latlonCoordGroup**

- **diagram**

**group annualizationGroup**

- **diagram**

- **annotation documentation**: Contains one or more weighted annualization group cases. Collection of study cases whose results are weighted in the scenario annualization rollout.
 Specifies a coordinate using latitude and longitude.

**element latlonCoordGroup/latitude**

- **type**: latitudeDecimalType
- **properties**: content complex
- **attributes**:
  - Name: positive
  - Type: derived by: xs:string
  - Use: optional
  - Default: N

**annotation**

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

**element latlonCoordGroup/latitudeDMS**

- **type**: latitudeDMSType
- **properties**: content simple
- **facets**:
  - Kind: pattern
  - Value: \([0-9]{2}\)["|\-|:]([0-9]{2}\)["|\-|:]([0-9]{2})(.\d{3})?[N|n|S|s]

**annotation**

Latitude expressed as dd''mm'sss with optional indicator N, n, S, s.

**element latlonCoordGroup/longitude**

- **type**: longitudeDecimalType
- **properties**: content complex
<table>
<thead>
<tr>
<th>attributes</th>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>positive</td>
<td>derived by: xs:string</td>
<td>optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

element latitudeCoordGroup/longitudeDMS
diagram
longitudeDMS:
Longitude expressed as dd°mm'sss with optional indicator N, n, S, s.
diagram
longitudeDMSType
properties content simple
facets Kind Value Annotation
pattern [0-9]{1,2}[°]|'|"[0-9]{2}|[°]|'|"[0-9]{2}|(\.|\d){3}|[^EeWw]
annotation documentation
Longitude expressed as dd°mm'sss with optional indicator N, n, S, s.
group nodeIdGroup
diagram
nodeIdGroup:
A group of nodes.
children id description
used by elements trackNode trackVector
annotation documentation
A group of nodes.
element nodeIdGroup/id
diagram
id:
String identifier for the grouping of nodes.
type string16
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
minLength 0
maxLength 16
annotation documentation
String identifier for the grouping of nodes.
element nodeIdGroup/description
diagram
description:
An optional description for the grouping of nodes.
type string16
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
minLength 0
maxLength 16
annotation documentation
An optional description for the grouping of nodes.
### Group `oneOrThreeCoords2DGroupSet`

- **Diagram**
  - **children**:
    - `pointCoord`
    - `polygonCoords`
  - **used by**:
    - `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**
  - **type** `polygon2DType`
  - **properties**
    - `content` `complex`

---

- Choice of a single point coordinate.
- Choice of a 2D polygon.
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**

- **type** xs:double
- **properties** content simple
- **annotation** documentation: UTM Easting of the point in decimal meters east from a central meridian.

**element utmCoordGroup/utmZone**

- **type** xs:int
- **properties**
  - minOccurs 0
  - maxOccurs 1
  - content simple
  - default -1
- **annotation** documentation: UTM Zone of the point. A default zone can be set in the &apos;options&apos; tag.

**complexType aircraft**

- **children**
  - description
  - airframeModel
  - engineCode
  - engineModCode
  - anpAirplaneId
  - badaAirplaneId
  - anpHelicopterId
  - bada4AirplaneModel
  - bada4Engine
  - bada4Suffix
  - bada4FlapsMapSourceAnpId
<table>
<thead>
<tr>
<th>used by</th>
<th>element: fleet/aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>annotation documentation</td>
<td>Main block for creating new user defined AEDT aircraft.</td>
</tr>
</tbody>
</table>

**element aircraft/description**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type: string255</td>
</tr>
<tr>
<td>properties: minOcc 0, maxOcc 1, content: simple</td>
</tr>
<tr>
<td>facets: Kind</td>
</tr>
<tr>
<td>minLength</td>
</tr>
<tr>
<td>maxLength</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
</tbody>
</table>

**element aircraft/airframeModel**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type: airframeModel</td>
</tr>
<tr>
<td>properties content: simple</td>
</tr>
<tr>
<td>facets: Kind</td>
</tr>
<tr>
<td>minLength</td>
</tr>
<tr>
<td>maxLength</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
</tbody>
</table>

**element aircraft/engineCode**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type: engineCode</td>
</tr>
<tr>
<td>properties content: simple</td>
</tr>
<tr>
<td>facets: Kind</td>
</tr>
<tr>
<td>minLength</td>
</tr>
<tr>
<td>maxLength</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
</tbody>
</table>

**element aircraft/engineModCode**

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type: engineModCode</td>
</tr>
<tr>
<td>properties minOcc 0, maxOcc 1, content: simple, default: NONE</td>
</tr>
<tr>
<td>facets: Kind</td>
</tr>
<tr>
<td>minLength</td>
</tr>
<tr>
<td>maxLength</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>element</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>aircraft/anpAirplaneId</td>
</tr>
<tr>
<td>aircraft/badaAirplaneId</td>
</tr>
<tr>
<td>aircraft/anpHelicopterId</td>
</tr>
<tr>
<td>aircraft/bada4AirplaneModel</td>
</tr>
<tr>
<td>aircraft/bada4Engine</td>
</tr>
</tbody>
</table>
element aircraft/bada4Suffix

diagram

User-defined BADA 4 model suffix.

type bada4Suffix

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
User-defined BADA 4 model suffix.

element aircraft/bada4FlapsMapSourceAnpId

diagram

Source ANP airplane ID for mapping ANP flaps to BADA 4.

type anpAirplaneId

properties content simple

facets Kind Value Annotation
minLength 0
maxLength 255

annotation documentation
Source ANP airplane ID for mapping ANP flaps to BADA 4.

complexType aircraftEngine
User defined engine information containing custom parameters that reflect an aircraft engine. This engine definition can that be used within a user defined aircraft.
**element aircraftEngine/code**

```
<code/>
```

**type** `engineCode`

**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

Unique ICAO UID.

---

**element aircraftEngine/model**

```
<model/>
```

**type** `engineModel`

**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

Engine model.

---

**element aircraftEngine/engineType**

```
<engineType>
  Engine type. Valid values: J (jet), T (turboprop), P (piston).
</engineType>
```

**type** `engineType`

**properties** content simple

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pattern</td>
<td>Jet</td>
<td>J</td>
</tr>
</tbody>
</table>

**annotation** documentation

Engine type. Valid values: J (jet), T (turboprop), P (piston).

---

**element aircraftEngine/notes**

```
<notes>
  Free-text notes for the engine.
</notes>
```

**type** `string200`

**properties**

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

**facets**

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>200</td>
<td></td>
</tr>
</tbody>
</table>

**annotation** documentation

Free-text notes for the engine.

---

**element aircraftEngine/emissionsEngineModel**

```
<emissionsEngineModel/>
```

**type** `string25`

**properties**

<table>
<thead>
<tr>
<th>minOcc</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

---
maxOcc 1
calendar
content simple

facets Kind Value Annotation
minLength 0
maxLength 25
annotation documentation
ICAO emissions model for the engine.

element aircraftEngine/performanceEngineModel
diagram
ICAO performance model for the engine.
type string25
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
minLength 0
maxLength 25
annotation documentation
ICAO performance model for the engine.

element aircraftEngine/manufacturer
diagram
Engine manufacturer.
type string100
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
minLength 0
maxLength 100
annotation documentation
Engine manufacturer.

element aircraftEngine/combustor
diagram
Combustor used on engine.
type string50
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
minLength 0
maxLength 50
annotation documentation
Combustor used on engine.

element aircraftEngine/superseded
diagram
ICAO UID of engine that
supersedes the given engine.
type string10
properties minOcc 0
maxOcc 1
content simple
facets Kind Value Annotation
element aircraftEngine/ratedEngineOut

diagram

Rated engine output (in kN). Valid values: Nonnegative.

type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Rated engine output (in kN). Valid values: Nonnegative.

--

element aircraftEngine/source

diagram

Source of engine data.

type string100

properties minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation

minLength 0
maxLength 100

annotation documentation
Source of engine data.

--

element aircraftEngine/bypassRatio

diagram

Engine’s bypass ratio. Valid values: Nonnegative.

type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Engine’s bypass ratio. Valid values: Nonnegative.

--

element aircraftEngine/pressureRatio

diagram

Engine’s pressure ratio. Valid values: Nonnegative.

type xs:double

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Engine’s pressure ratio. Valid values: Nonnegative.

--

element aircraftEngine/tfmtFlag

diagram

Turbofan or Mixed twin-fan
Eng. Valid values: TF (Turbofan) or MTF (mixed turbofan).

--
Turbo-fan or Mixed turn-fan flag. Valid values: TF (turbofan) or MTF (mixed turbofan).

Sulfur oxides emitted (grams per kilogram of fuel). Valid values: Nonnegative.

Emission factor when aircraft is idling.

Emission factor when aircraft is taking off.
**Type:** engineModeEmissions

**Properties:**
- Content: complex

**Children:**
- time
- fuel
- CO
- HC
- NOx
- SOx
- SN
- PM

**Annotation:**
- Documentation: Emission factor when aircraft is taking off.

**Element:** aircraftEngine/climbEmissionFactors
**Engine Mode Emissions**

- **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.

**Element**

- **Aircraft Engine/Approach Emission Factors**

**Annotation**

- Emission factor when aircraft is climbing.

**Diagram**
**complexType** `aircraftEngineMod`

- **content** `code` **complexType**
  - **description** `Unique ICAO UID`
  - **code**

- **children** `code description`

- **used by** element `fleet/engineMod`

**annotation documentation**

User defined engine modification information containing custom parameters that reflect an aircraft engine modification. This engine modification definition can be used within a user defined aircraft.

**element** `aircraftEngineMod/code`

- **type** `engineModCode`

- **properties** `content` **simple**

- **facets**
  - Kind Value Annotation
  - minLength 0
  - maxLength 50
### aircraftEngineMod

**element** `aircraftEngineMod`  
**description**

Description of engine modifications.

**complexType** `aircraftType`  
**diagram**

Characterizes an aircraft.

**children**
- `anpAircraftId`
- `airframeModel`
- `engineCode`
- `engineModCode`
- `apuName`
- `groundSupportEquipmentLTOOperationSet`
- `assignDefaultGse`

**used by**
- elements `operation/aircraftType`
- `runup/aircraftType`

**annotation**
- documentation

### anpAircraftId

**element** `anpAircraftId`  
**type** `anpAirplaneId`

**properties**
- content: simple

**facets**
- minLength: 0
- maxLength: 255

### airframeModel

**element** `airframeModel`  
**diagram**

Airframe model.
element aircraftType/engineCode

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 (Turbojet).

element aircraftType/engineModCode

type engineModCode

properties minOcc 0
  maxOcc 1
  content simple
  default NONE

facets Kind Value Annotation
  minLength 0
  maxLength 50

annotation documentation
  Engine modification code. (AEDT database reference table FLEET.FLT_ENGINE_MODS column ENGINE_MOD_CODE.)

element aircraftType/apuName

type xs:string

properties minOcc 0
  maxOcc 1
  content simple

annotation documentation
  Name of auxiliary power unit used by this type of aircraft.

element aircraftType/assignDefaultGse

type xs:boolean

properties minOcc 0
  maxOcc 1
  content simple
Whether the application should assign default GSE for this operation or not

complexType airframe
diagram

This element supports the definition of custom airframes.

children model engineCount engineLocation designationCode maxRange introYear euroGroupCode usageCode sizeCode engineType auxiliaryPowerUnitId

used by element fleet/airframe

annotation documentation
This element supports the definition of custom airframes.

element airframe/model
diagram

type airframeModel

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

**annotation documentation**
Unique description of airframe.

**element airframe/engineCount**

- **diagram**
  ![Diagram](image)
  
  Number of engines on airframe.

- **type** `xs:int`

- **properties**
  `content simple`

- **annotation documentation**
  Number of engines on airframe.

**element airframe/engineLocation**

- **diagram**
  ![Diagram](image)
  
  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**
  ![Diagram](image)
  
  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**
  ![Diagram](image)
  
  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**
  ![Diagram](image)
  
  Year airframe was introduced. Valid values: Nonnegative.
### element `airframe/euroGroupCode`

**Diagram:**

![Diagram of `euroGroupCode` element]

- **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`

**Diagram:**

![Diagram of `usageCode` element]

- **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`

**Diagram:**

![Diagram of `sizeCode` element]

- **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`

**Diagram:**

![Diagram of `engineType` element]

- **Type:**
- **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 (Propeller), T (Turboprop).
<table>
<thead>
<tr>
<th>type</th>
<th>string1</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content simple</td>
</tr>
</tbody>
</table>

**Facets**

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

**Annotation**

Documentation:
Type of engine on this airframe. Valid values: E (Electric), J (Jet), P (Piston), T (Turboprop).

**Element** `airframe/auxiliaryPowerUnitId`

- **Diagram**: Identifier of an auxiliary power unit.

**Type** `apuName`

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

- **Facets**
  - minLength: 0
  - maxLength: 30

- **Annotation**
  - Documentation: Identifier of an auxiliary power unit.

**ComplexType** `airport`

- **Diagram**:

  - `airportCode`
  - `effDate`
  - `expDate`
  - `name`
  - `state`
  - `facilityType`
  - `cityName`
  - `locationCoordGroup`
    - `latitude`
    - `longitude`
    - `latitudeDMS`
    - `longitudeDMS`
Contains core airport information such as airport name, latitude/longitude, elevation, etc.

- **airportCode**
- **effDate**
- **expDate**
- **name**
- **facilityType**
- **cityName**
- **latitude**
- **latitudeDMS**
- **longitude**
- **longitudeDMS**
- **utmN**
- **utmE**
- **utmZone**
- **elevation**
- **patternAltitude**
- **tower**
- **layout**
- **archiveFlag**
- **dafifId**
- **faaId**
- **shell1**
- **smad**
- **zone**
- **airportWeather**
- **windRose**
- **taxiTime**

**used by**
- **element** `userDefinedAirportSet/userDefinedAirport`

**annotation**
- **documentation**

**element** `airport/airportCode`

- **type** `airportCode`
- **properties**
  - **content** `complex`
facets
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

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

element airport/effDate
diagram

| type | xs:date | |
| properties | content simple | |
| annotation | documentation | Effective date for the airport. |

element airport/expDate
diagram

| type | xs:date | |
| properties | content simple | |
| annotation | documentation | The expiration date for the airport. |

element airport/name
diagram

| type | string100 | |
| properties | minOcc 0 | maxOcc 1 | content simple | |
| facets | Kind | Value | Annotation |
| | minLength | 0 | |
| | maxLength | 100 | |
| annotation | documentation | The name of airport. |

element airport/state
diagram

| type | string50 | |
| properties | minOcc 0 | maxOcc 1 | content simple | |
| facets | Kind | Value | Annotation |
| | minLength | 0 | |
| | maxLength | 50 | |
| annotation | documentation | The airport state / territory name. |

element airport/facilityType
diagram

| type | string25 | |
|
### element airport/cityName

**diagram**

The name of city closest to the airport.

**type** `string50`

**properties**

- minOcc 0
- maxOcc 1
- content simple

**facets**

- Kind Value Annotation
  - minLength 0
  - maxLength 50

**annotation**

The name of city closest to the airport.

### element airport/elevation

**diagram**

Airport elevation above mean sea level. UNITS: Feet above MSL.

**type** `xs:double`

**properties**

- content simple

**annotation**

Airport elevation above mean sea level. UNITS: Feet above MSL.

### element airport/patternAltitude

**diagram**

Pattern altitude (where provided) above ground level. UNITS: Feet AGL.

**type** `xs:int`

**properties**

- minOcc 0
- maxOcc 1
- content simple

**annotation**

Pattern altitude (where provided) above ground level. UNITS: Feet AGL.

### element airport/tower

**diagram**

Flag to indicate if the airport has a tower.

**type** `xs:boolean`

**properties**

- minOcc 0
- maxOcc 1
- content simple

**annotation**

Flag to indicate if the airport has a tower.

### element airport/layout

**diagram**
type xs:boolean

properties
minOcc 0
maxOcc 1
content simple
default false

annotation documentation
Flag to indicate detailed layout information exists.

element airport/archiveFlag
diagram

```
archiveFlag
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 set to 1 if track, sub-track, segment, and group percentage data can be distributed.

element airport/dafifId
diagram

```
daifId
DAFIF Airport ID.
```

type string7

properties
minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 7

annotation documentation
DAFIF Airport ID.

element airport/faaId
diagram

```
faaId
FAA Airport ID.
```

type string15

properties
minOcc 0
maxOcc 1
content simple

facets Kind Value Annotation
minLength 0
maxLength 15

annotation documentation
FAA Airport ID.

element airport/shell1
diagram

```
shell1
Indicates if this airport is a shell 1 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/smad
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>xs:boolean</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td></td>
</tr>
<tr>
<td>minOcc</td>
<td>0</td>
</tr>
<tr>
<td>maxOcc</td>
<td>1</td>
</tr>
<tr>
<td>content</td>
<td>simple</td>
</tr>
<tr>
<td>default</td>
<td>false</td>
</tr>
</tbody>
</table>

annotation documentation
Indicates if airport is a JPDO Systems Modeling and Analysis Division analysis airport.

element airport/zone
diagram

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

facets Kind Value Annotation
minLength 0
maxLength 100

annotation documentation
Zone info data for airport.

complexType airportCode
diagram

<table>
<thead>
<tr>
<th>type</th>
<th>extension of string4</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>base string4</td>
</tr>
<tr>
<td>used by</td>
<td>elements</td>
</tr>
<tr>
<td></td>
<td>track/airport runup/airport airport/airportCode airportLayoutType/airportCode operation/arrivalAirport operation/departureAirport</td>
</tr>
</tbody>
</table>

facets Kind Value Annotation
minLength 0
maxLength 4

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

annotation documentation
An airport code.

attribute airportCode/@type

type airportCodeType

properties use optional
default ANY

facets Kind Value Annotation
enumeration ICAO
enumeration IATA
enumeration FAA
enumeration OTHER
enumeration ANY
attribute airportCode/@country

type string3

properties
  use optional
  default ANY

facets
  Kind Value Annotation
  minLength 0
  maxLength 3

complexType airportLayoutType
diagram

Fields defining an airport and its layout.

**element** airportLayoutType/name

- **diagram**
  - ID of the layout. Must be unique.
- **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
  - ID of the layout. Must be unique.

**element** airportLayoutType/airportCode

- **diagram**
  - ICAO code of airport in the layout.
- **type** airportCode
- **properties**
  - content complex
- **facets**
<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
- **attributes**
<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Use</th>
<th>Default</th>
<th>Fixed</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
<td>airportCodeType</td>
<td>optional</td>
<td>ANY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>country</td>
<td>string</td>
<td>optional</td>
<td>ANY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------</td>
<td>----------</td>
<td>-----</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**
ICAO code of airport in the layout.

**element airportLayoutType(startDate)**

**diagram**

**type xs:date**

**properties**
minOcc 0
maxOcc 1
content simple

**annotation documentation**
Date airport is included in the study.

**element airportLayoutType(elevation)**

**diagram**

**type xs:double**

**properties**
minOcc 0
maxOcc 1
content simple

**annotation documentation**
Elevation of the layout in feet above MSL. (ft) Valid values: -1500 to 15000.

**element airportLayoutType(peakMonthAverageDayScalingFactor)**

**diagram**

**type xs:double**

**properties**
minOcc 0
maxOcc 1
content simple
default 1.0

**annotation documentation**
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.

**element airportLayoutType(taxiInTime)**

**diagram**

**type xs:double**

**properties**
minOcc 0
maxOcc 1
content simple

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

**element airportLayoutType(taxiOutTime)**

**diagram**

**type xs:double**
Number of minutes to complete a taxi-out. (min)
Creates a new ANP airplane.

```
<element name="anpAirplane/anpAirplaneId">
  <type>anpAirplaneId</type>
  <properties>
    <content>simple</content>
  </properties>
  <facets>
    <minLength>0</minLength>
    <maxLength>255</maxLength>
  </facets>
  <annotation>
    ID of ANP airplane. Must be a new, unique value.
  </annotation>
</element>

<element name="anpAirplane/description">
  <type>string255</type>
  <properties>
    <minOcc>0</minOcc>
    <maxOcc>1</maxOcc>
  </properties>
  <facets>
    <minLength>0</minLength>
    <maxLength>255</maxLength>
  </facets>
  <annotation>
    Description of ANP airplane.
  </annotation>
</element>

<element name="anpAirplane/sizeCode">
  <type>anpSizeCode</type>
  <properties>
    <content>simple</content>
  </properties>
  <facets>
    <pattern>Heavy|H|Large|L|Medium|M|Small|S</pattern>
  </facets>
  <annotation>
    Size code for this airframe. Valid values: H (Heavy), L (Large), M (Medium), S (Small), T (Light), V (Very Light).
  </annotation>
</element>

<element name="anpAirplane/owner">
  <type>anpOwnerType</type>
  <properties>
    <minOcc>0</minOcc>
    <maxOcc>1</maxOcc>
  </properties>
  <facets>
    <pattern>Commercial|C|Military|M|General|G</pattern>
  </facets>
  <annotation>
    The owner category: commercial, general aviation, military.
  </annotation>
</element>

<element name="anpAirplane/engineTypeCode">
  <type></type>
  <properties>
    <content>simple</content>
  </properties>
  <facets>
    <pattern></pattern>
  </facets>
  <annotation>
    The owner category: commercial, general aviation, military.
  </annotation>
</element>
```
**engineType**

**Annotate**
- The engine type code: prop, jet, turbo.

**Diagram**

**element anpAirplane/numberEngines**

**Type** `xs:int`

**Properties**
- `content simple`

**Annotation**
- Number of engines on this airplane. Valid values: 1 through 8.

**Diagram**

**element anpAirplane/maxGrossWeightTakeoff**

**Type** `xs:int`

**Properties**
- `minOcc 0`
- `maxOcc 1`

**Annotation**
- Maximum gross weight on takeoff (min = 0, max = 999999, lbs).

**Diagram**

**element anpAirplane/maxGrossWeightLand**

**Type** `xs:int`

**Properties**
- `minOcc 0`
- `maxOcc 1`

**Annotation**
- Maximum gross weight on landing (min = 0, max = 999999, lbs).

**Diagram**

**element anpAirplane/maxDsStop**

**Type** `xs:int`

**Properties**
- `minOcc 0`
- `maxOcc 1`

**Annotation**
- FAR landing field length at maximum landing weight (min =0, max = 20000, feet).

**Diagram**

**element anpAirplane/depThrustCoeffType**
**anpCoeffType**

- **Diagram:** Type of thrust coefficients: J=jet, P=prop.
- **Properties:**
  - minOcc 0
  - maxOcc 1
  - content simple
- **Facets:**
  - Kind  Value  Annotation
  - pattern: Jet|J|Prop|P
- **Annotation:** Type of thrust coefficients: J=jet, P=prop.

**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).

**anpAirplane/thrustRestore**

- **Diagram:** Flag indicating aircraft has automated thrust restoration system.
- **Type:** yesNoType
- **Properties:**
  - content simple
  - default N
- **Facets:**
  - Kind  Value  Annotation
  - pattern: Yes|Y|No|N
- **Annotation:** Flag indicating aircraft has automated thrust restoration system.

**anpAirplane/noiseId**

- **Diagram:** ID of a Noise Group.
- **Type:** anpNoiseId
- **Properties:**
  - minOcc 0
  - maxOcc 1
  - content simple
- **Facets:**
  - Kind  Value  Annotation
  - minLength 0
  - maxLength 255
- **Annotation:** ID of a Noise Group.

**anpAirplane/noiseCategory**

- **Diagram:** The noise category maps number.
- **Type:** xs:int
- **Properties:**
  - minOcc 0
  - maxOcc 1
The noise category stage number.

element `anpAirplane/minBurn`

diagram

```
minBurn
Minimum fuel burn rate.
(kg/sec)
```

type `xs:double`

properties

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

content simple

annotation documentation Minimum fuel burn rate. (kg/sec)

complexType `anpFlaps`

diagram

```
flapId
Flap-setting identifier.
```

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

<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>

annotation documentation Flap-setting identifier.

element `anpFlaps/operationType`

diagram

```
operationType
Operation associated with this profile. Valid values: A (Approach), 0 (Depart), T (TouchAndGo), F (Cruise), Y (OverPh)
```

type `string1`
### AnpFlaps/coef_R

**Diagram**
![Diagram of coef_R](image)

**Type** `xs:double`

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

**Annotation**
Operation associated with this profile. Valid values: A (Approach), D (Depart), T (Touch&Go), F (CircuitFlt), V (OverFlt).

The drag-over-lift ratio. Valid values: 0.0 to 1.34.

### AnpFlaps/coef_CD

**Diagram**
![Diagram of coef_CD](image)

**Type** `xs:double`

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

**Annotation**
The takeoff and landing calibrated airspeed coefficient. Valid values: 0.0 to 1.34. (KNOTS/LB^1/2).

### AnpFlaps/coef_B

**Diagram**
![Diagram of coef_B](image)

**Type** `xs:double`

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

**Annotation**
The takeoff distance coefficient. Valid values: empty or 0.0 to 1.34. (FEET/LB).

### ComplexType AnpFlapsSet

**Diagram**
![Diagram of AnpFlapsSet](image)

**Children**
- `anpAirplaneId`
- `flaps`

**Used by**
- `fleet/anpFlapsSet`

**Annotation**
Flap settings set for an ANP aircraft type.
<table>
<thead>
<tr>
<th>type</th>
<th>anpAirplaneId</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>

**element anpFlapsSet/flaps**

```
<anpFlapsSet>
  <flaps>
    <flapId />
    <operationType />
    <coeff_R />  # Takeoff lift-off ratio. Valid values: 0.6 to 1.34.
    <coeff_CD />  # Takeoff and landing calibrated airspeed coefficient. Valid values: 0.0 to 1.34 (KNOTS/1.15).
    <coeff_B />   # Takeoff distance coefficient. Valid values: 0.0 to 1.34 (FEET/1).
  </flaps>
</anpFlapsSet>
```

<table>
<thead>
<tr>
<th>type</th>
<th>anpFlaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>minOcc</td>
</tr>
<tr>
<td></td>
<td>maxOcc</td>
</tr>
<tr>
<td>content</td>
<td>complex</td>
</tr>
</tbody>
</table>

**complexType anpHelicopter**

```
<anpHelicopter>
  <anpHelicopterId />
  <noisedId />  # 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 (propeller), J (jet), T (turbofan).
  <numberRotors />  # The number of rotors: Valid values: 1 to 6.
  <diameter />  # The helicopter diameter (feet): Valid values: 0 to 10.
</anpHelicopter>
```
<table>
<thead>
<tr>
<th>children</th>
<th>anpHelicopterId  noiseld  directivityId  description  owner  engineTypeCode  numberRotors  diameter  rpm  maxTakeoffWeight  hasWheels  modelType  bLeft0  bLeft1  bLeft2  bCenter0  bCenter1  bCenter2  bRight0  bRight1  bRight2  dbVerticalAscent  dbVerticalDescent  dbHorizontalAcceleration  dbClimbAcceleration  dbHorizontalDeceleration  dbDescendDeceleration</th>
</tr>
</thead>
<tbody>
<tr>
<td>used by</td>
<td>element fleet/anpHelicopter</td>
</tr>
</tbody>
</table>

**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/noiseld**

- **type**: anpHeloNoiseld
- **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
Noise directivity ID for ANP helicopter.

**element** anpHelicopter/description

- **diagram**
  - **type** string255
  - **properties**
    - minOcc 0
    - maxOcc 1
    - content simple
  - **facets**
    - Kind            Value                Annotation
    - minLength       0                   0
    - maxLength       255                 0

**element** anpHelicopter/owner

- **diagram**
  - **type** anpOwnerType
  - **properties**
    - minOcc 0
    - maxOcc 1
    - content simple
  - **facets**
    - Kind          Value                Annotation
    - pattern        Commercial|C|Military|M|General|G

**element** anpHelicopter/engineTypeCode

- **diagram**
  - **type** engineType
  - **properties**
    - minOcc 0
    - maxOcc 1
    - content simple
  - **facets**
    - Kind          Value                Annotation
    - pattern        Jet|J|Turbo|Turboprop|T|Prop|Piston|P

**element** anpHelicopter/numberRotors

- **diagram**
  - **type** xs:int
  - **properties**
    - minOcc 0
    - maxOcc 1
    - content simple
  - **annotation**
    - documentation
      - The number of rotors. Valid values: 1 to 9.

**element** anpHelicopter/diameter
<table>
<thead>
<tr>
<th>element</th>
<th>diagram</th>
<th>type</th>
<th>properties</th>
<th>annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>anpHelicopter/diameter</code></td>
<td><img src="image1.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td>minOcc: 0, maxOcc: 1, content: simple</td>
<td>The helicopter diameter (feet). Valid values: 0 to 1000.</td>
</tr>
<tr>
<td><code>anpHelicopter/rpm</code></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><code>xs:double</code></td>
<td>minOcc: 0, maxOcc: 1, content: simple</td>
<td>The helicopter rotor speed (revolutions per minute). Valid values: 0 to 1000.</td>
</tr>
<tr>
<td><code>anpHelicopter/maxTakeoffWeight</code></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><code>xs:int</code></td>
<td>minOcc: 0, maxOcc: 1, content: simple</td>
<td>The max gross takeoff weight (pounds). Valid values: 0 to 50000.</td>
</tr>
<tr>
<td><code>anpHelicopter/hasWheels</code></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td><code>yesNoType</code></td>
<td>minOcc: 0, maxOcc: 1, content: simple</td>
<td>Flag indicating if the helicopter has wheels. Valid values: Y (yes), N (no).</td>
</tr>
<tr>
<td><code>anpHelicopter/modelType</code></td>
<td><img src="image5.png" alt="Diagram" /></td>
<td><code>string</code></td>
<td>minOcc: 0, maxOcc: 1</td>
<td>The helicopter model type. Valid values: I (Military), N (Not Military).</td>
</tr>
<tr>
<td>facets</td>
<td>Kind</td>
<td>Value</td>
<td>Annotation</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>-------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>minLength</td>
<td>0</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**annotation documentation**
The helicopter model type. Valid values: I (INM), N (NoiseMap).

**element anpHelicopter/bLeft0**

- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
- **content simple**: Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/bLeft1**

- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
- **content simple**: Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/bLeft2**

- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
- **content simple**: Adjust flyover noise as a function of speed, left. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/bCenter0**

- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
- **content simple**: Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.

**element anpHelicopter/bCenter1**

- **type**: xs:double
- **properties**:
  - minOcc 0
  - maxOcc 1
- **content simple**: Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.
Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, center. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.
Adjust flyover noise as a function of speed, right. Valid values: Min = -999.99 Max = 999.99.

<table>
<thead>
<tr>
<th>Element</th>
<th>Diagram</th>
<th>Type</th>
<th>Properties</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>anpHelicopter/dbVerticalAscent</td>
<td><img src="image" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>Decibel offset added to NPD levels, vertical ascent (dB). Valid values: Min = -50 Max = 50.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>content</td>
<td></td>
</tr>
<tr>
<td>anpHelicopter/dbVerticalDescent</td>
<td><img src="image" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>Decibel offset added to NPD levels, vertical descent (dB). Valid values: Min = -50 Max = 50.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>content</td>
<td></td>
</tr>
<tr>
<td>anpHelicopter/dbHorizontalAcceleration</td>
<td><img src="image" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>Decibel offset added to NPD levels, depart horizontal acceleration (dB). Valid values: Min = -50 Max = 50.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>content</td>
<td></td>
</tr>
<tr>
<td>anpHelicopter/dbClimbAcceleration</td>
<td><img src="image" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>Decibel offset added to NPD levels, depart with climbing acceleration (dB). Valid values: Min = -50 Max = 50.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>content</td>
<td></td>
</tr>
<tr>
<td>anpHelicopter/dbHorizontalDeceleration</td>
<td><img src="image" alt="Diagram" /></td>
<td>xs:double</td>
<td>minOcc 0</td>
<td>Decibel offset added to NPD levels, approach with horizontal deceleration (dB). Valid values: Min = -50 Max = 50.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>maxOcc 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>content</td>
<td></td>
</tr>
</tbody>
</table>
### Decibel Offset Added to NPD Levels, Approach with Horizontal Deceleration (dB)

**Valid values:** Min = -50 Max = 50.

**Complex Type:** `anpHeloDirectivity`

#### Diagram

- **`groundType`**
  - Type of ground resistivity.
  - Valid values: H (hard), S (soft), F (fluid), N (none).

- **`opMode`**
  - Operational Mode. Valid values: A (approach), D (departure).

- **`L180`**
  - Decibel adjustment at 180 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L165`**
  - Decibel adjustment at 165 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L150`**
  - Decibel adjustment at 150 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L135`**
  - Decibel adjustment at 135 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L120`**
  - Decibel adjustment at 120 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L105`**
  - Decibel adjustment at 105 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L90`**
  - Decibel adjustment at 90 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L75`**
  - Decibel adjustment at 75 degrees left of the nose (dB).
  - Valid values: Min = -99.9 Max = 99.9.

- **`L60`**
  - Decibel adjustment at 60 degrees left of the nose (dB).

---

**Element:** `anpHelicopter/dbDescendDeceleration`

- **Diagram:**
  - Decibel offset added to NPD levels, approach with horizontal deceleration (dB).
  - Valid values: Min = -50 Max = 50.

- **Type:** `xs:double`

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

- **Annotation:**
  - Decibel offset added to NPD levels, approach with horizontal deceleration (dB). Valid values: Min = -50 Max = 50.
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 0 degrees left of the nose (db).
Valid values: Min = -99.9
Max = 999.9.

C000
Decibel adjustment at 180 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.
element anpHeloDirectivitySet/anpHeloDirectivity

element anpHeloDirectivity/groundType

diagram

type anpHeloGroundType

properties content simple

facets Kind Value Annotation
pattern Hard|H|Software|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

properties minOcc 0
maxOcc 1
content simple

annotation documentation
Decibel adjustment at 150 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
Decibel adjustment at 150 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 135 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 120 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 105 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 90 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
Decibel adjustment at 90 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**Element anpHeloDirectivity/L075**

Diagram:

Type: xs:double

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

Annotation: documentation

Decibel adjustment at 75 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**Element anpHeloDirectivity/L060**

Diagram:

Type: xs:double

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

Annotation: documentation

Decibel adjustment at 60 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**Element anpHeloDirectivity/L045**

Diagram:

Type: xs:double

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

Annotation: documentation

Decibel adjustment at 45 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**Element anpHeloDirectivity/L030**

Diagram:

Type: xs:double

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

Annotation: documentation

Decibel adjustment at 30 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**Element anpHeloDirectivity/L015**

Diagram:

Type: xs:double

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

Annotation: documentation

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.

Decibel adjustment at 180 degrees left of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 15 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 30 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

Decibel adjustment at 45 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>anpHeloDirectivity/R075</td>
<td>Decibel adjustment at 75 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td>anpHeloDirectivity/R090</td>
<td>Decibel adjustment at 90 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td>anpHeloDirectivity/R105</td>
<td>Decibel adjustment at 105 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
<tr>
<td>anpHeloDirectivity/R120</td>
<td>Decibel adjustment at 120 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.</td>
</tr>
</tbody>
</table>
Decibel adjustment at 120 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element anpHeloDirectivity/R135**

- **Diagram**
  ![Diagram of anpHeloDirectivity/R135]

- **Type** `xs:double`
- **Properties**
  - `minOcc` 0
  - `maxOcc` 1
  - `content` `simple`
- **Annotation**
  - **Documentation**: Decibel adjustment at 135 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element anpHeloDirectivity/R150**

- **Diagram**
  ![Diagram of anpHeloDirectivity/R150]

- **Type** `xs:double`
- **Properties**
  - `minOcc` 0
  - `maxOcc` 1
  - `content` `simple`
- **Annotation**
  - **Documentation**: Decibel adjustment at 150 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element anpHeloDirectivity/R165**

- **Diagram**
  ![Diagram of anpHeloDirectivity/R165]

- **Type** `xs:double`
- **Properties**
  - `minOcc` 0
  - `maxOcc` 1
  - `content` `simple`
- **Annotation**
  - **Documentation**: Decibel adjustment at 165 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**element anpHeloDirectivity/R180**

- **Diagram**
  ![Diagram of anpHeloDirectivity/R180]

- **Type** `xs:double`
- **Properties**
  - `minOcc` 0
  - `maxOcc` 1
  - `content` `simple`
- **Annotation**
  - **Documentation**: Decibel adjustment at 180 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.

**complexType anpHeloDirectivitySet**

- **Diagram**
  ![Diagram of anpHeloDirectivitySet]

**Additional Notes**

- Decibel adjustment at 120 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
- Decibel adjustment at 135 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
- Decibel adjustment at 150 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
- Decibel adjustment at 165 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
- Decibel adjustment at 180 degrees right of the nose (dB). Valid values: Min = -99.9 Max = 999.9.
element `anpHeloDirectivitySet/anpHelicopterId`

diagram

<table>
<thead>
<tr>
<th>Kind</th>
<th>Value</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>minLength</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>maxLength</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

annotation documentation
Unique ID for ANP helicopters.

element `anpHeloDirectivitySet/anpHeloDirectivity`

diagram

<table>
<thead>
<tr>
<th>groundType</th>
<th>Valid values: H (head), S (side), F (fore), N (none).</th>
</tr>
</thead>
<tbody>
<tr>
<td>TopMode</td>
<td>Operational Mode. Valid values: 1 (approach), 0 (departure).</td>
</tr>
<tr>
<td>L180</td>
<td>Decibel adjustment at 180 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L165</td>
<td>Decibel adjustment at 165 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L150</td>
<td>Decibel adjustment at 150 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L135</td>
<td>Decibel adjustment at 135 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L120</td>
<td>Decibel adjustment at 120 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L105</td>
<td>Decibel adjustment at 105 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L90</td>
<td>Decibel adjustment at 90 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L75</td>
<td>Decibel adjustment at 75 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
<tr>
<td>L60</td>
<td>Decibel adjustment at 60 degrees left of the nose (left), Valid values: Min = -99.9, Max = 999.5,</td>
</tr>
</tbody>
</table>
**complexType** anpHeloNoiseGroup

**element** anpHeloNoiseGroup/noiseld

**element** anpHeloNoiseGroup/spectralClassApproach

**element** anpHeloNoiseGroup/spectralClassDeparture

**element** anpHeloNoiseGroup/spectralClassFlyover

**element** anpHeloNoiseGroup/speedApproach

**element** anpHeloNoiseGroup/speedDeparture

**element** anpHeloNoiseGroup/speedFlyover

**element** anpHeloNoiseGroup/npdCurves

---

**type** anpHeloDirectivity

**properties**
- minOcc 1
- maxOcc unbounded
- content complex

**children**
- groundType
- opMode
  - L180
  - L165
  - L150
  - 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** anpHeloNoiseGroup

**diagram**

This element contains the three spectral class references for a given aircraft Noise group with the corresponding thrust setting type and model type.

**used by**
- element fleet/anpHeloNoiseGroup

**annotation** documentation
This element contains the three spectral class references for a given aircraft Noise group with the corresponding thrust setting type and model type.
The approach spectral class number. Valid values: 0 to 999.

The departure spectral class number. Valid values: 0 to 999.

The flyover spectral class number. Valid values: 0 to 999.

N 6.1 Approach reference speed (knots). Valid values: Min = 0.0  Max = 250.0.

N 6.1 Depart reference speed (knots). Valid values: Min = 0.0  Max = 250.0.
```

element anpHeloNoiseGroup/speedFlyover
diagram

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

```

element anpHeloNoiseGroup/npdCurves
diagram

The set of noise curves for this group.

type anpHeloNPDCurves
properties
  minOcc 0
  maxOcc 1
content complex
children
  npdCurve
annotation documentation
The set of noise curves for this group.

complexType anpHeloNPDCurve
diagram

```
The Noise Power Distance curve table for a specified noise ID, noise type, operation mode, and thrust setting.

**Diagram:**

- **noiseType**
  - Type of noise described by the curve. Valid values: S (SEL), M (LMAX), E (EPN), P (PNL1/3).

- **opMode**
  - Engine operation mode.

- **sideType**
  - Operation side type. Valid values: L (left), C (center), R (right), S (side).

- **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:** `anpHeloNPDCurve/noiseType`

- **used by:** `anpHeloNPDCurves/npdCurve`

- **annotation:** The Noise Power Distance curve table for a specified noise ID, noise type, operation mode, and thrust setting.

---

**Kind:** Noise Type

**Value:** S (SEL), M (LMAX), E (EPN), P (PNL1/3)

**Annotation Pattern:** S|M|E|P
Type of noise described by this curve. Valid values: S (SEL), M (LAMAX), E (EPNL), P (PNLTM).

**Element:** `anpHeloNPDCurve/opMode`

- **Diagram:** Engine operation mode.
- **Type:** `anpHeloOpMode`
- **Properties:** Content simple
- **Facets:**
  - Kind: Value
  - Annotation: Pattern: A|D|G|H|I|J|V|W|Y|Z|B|C|E|F|X|S

**Element:** `anpHeloNPDCurve/sideType`

- **Diagram:** Operation side type. Valid values: L (left), C (center), R (right), S (static)
- **Type:** `anpHeloSideType`
- **Properties:** Content simple
- **Facets:**
  - Kind: Value
  - Annotation: Pattern: L|C|R|S

**Element:** `anpHeloNPDCurve/L_200`

- **Diagram:** Decibel level at 200 feet AGL. Valid values: Min = -50.0 Max = 999.9.
- **Type:** `xs:double`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
- **Annotation:** Decibel level at 200 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**Element:** `anpHeloNPDCurve/L_400`

- **Diagram:** Decibel level at 400 feet AGL. Valid values: Min = -50.0 Max = 999.9.
- **Type:** `xs:double`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
- **Annotation:** Decibel level at 400 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**Element:** `anpHeloNPDCurve/L_630`

- **Diagram:**
- **Type:** `xs:double`
- **Properties:**
  - `minOcc`: 0
  - `maxOcc`: 1
Decibel level at 630 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element `anpHeloNPDCurve/L_1000`

diagram

type `xs:double`

properties
minOcc 0
maxOcc 1

annotation documentation
Decibel level at 1000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element `anpHeloNPDCurve/L_2000`

diagram

type `xs:double`

properties
minOcc 0
maxOcc 1

annotation documentation
Decibel level at 2000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element `anpHeloNPDCurve/L_4000`

diagram

type `xs:double`

properties
content simple

annotation documentation
Decibel level at 4000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element `anpHeloNPDCurve/L_6300`

diagram

type `xs:double`

properties
minOcc 0
maxOcc 1

annotation documentation
Decibel level at 6300 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element `anpHeloNPDCurve/L_10000`

diagram

type `xs:double`

properties
minOcc 0
maxOcc 1

annotation documentation
Decibel level at 10000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

element `anpHeloNPDCurve/L_16000`

diagram

type `xs:double`

properties
minOcc 0
maxOcc 1

content simple
Decibel level at 16000 feet AGL. Valid values: Min = -50.0 Max = 999.9.

**element anpHeloNPDCurve/L_25000**

**complexType anpHeloNPDCurves**

**complexType anpHeloProcedureStep**

**element anpHeloProcedureStep/stepNum**

**element anpHeloProcedureStep/operationType**

**element anpHeloProcedureStep/profileGroupId**
<table>
<thead>
<tr>
<th>type</th>
<th>string255</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content</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></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 (JNM standard data).

**element** anpHeloProcedureStep/profileStageLength

<table>
<thead>
<tr>
<th>type</th>
<th>string1</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content</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></td>
<td>minLength</td>
</tr>
<tr>
<td></td>
<td>maxLength</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Profile stage number (min = 1, max = 9). Approach stage numbers are not related to trip distance. There is only one standard approach profile for most standard aircraft and its stage number is set to 1. Approach stage numbers are used to distinguish members of a group. For example, approach stage can mean different kinds of approaches (e.g. 1 = 3 degree approach, 2 = 5 degree approach).

**element** anpHeloProcedureStep/stepType

<table>
<thead>
<tr>
<th>type</th>
<th>string1</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content</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></td>
<td>minLength</td>
</tr>
<tr>
<td></td>
<td>maxLength</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Type of step. (A) Approach at constant speed, (D) Depart at constant speed, (L) Level flyover at constant speed, (G) Ground idle, (H) Flight idle, (I) Hover in ground effect, (J) Hover out of ground effect, (V) Vertical ascent in ground effect, (W) Vertical ascent out of ground effect, (Y) Vertical descent in ground effect, (Z) Vertical descent out of ground effect, (B) Approach with horizontal deceleration, (C) Approach with descending deceleration, (E) Depart with horizontal acceleration, (F) Depart with climbing acceleration, (X) Taxi at constant speed, (S) Start altitude at constant speed.

**element** anpHeloProcedureStep/duration

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content</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></td>
<td>minLength</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Procedure’s duration (hours).

**element** anpHeloProcedureStep/distance

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content</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></td>
<td>minLength</td>
</tr>
<tr>
<td>annotation</td>
<td>documentation</td>
</tr>
</tbody>
</table>

Distance along the ground relative to start (min = 9999999.9, max = 9999999.9, feet).

**element** anpHeloProcedureStep/altitude

<table>
<thead>
<tr>
<th>type</th>
<th>xs:double</th>
</tr>
</thead>
<tbody>
<tr>
<td>properties</td>
<td>content</td>
</tr>
</tbody>
</table>

Distance along the ground relative to start (min = 9999999.9, max = 9999999.9, feet).
| **maxOcc** | 1 |
| **content** | **simple** |

**annotation**
documentation
Altitude of aircraft (min = -9999, max = 60000, feet).

### element `anpHeloProcedureStep/speed`

```xml
documentation
Altitude of aircraft (min = -9999, max = 60000, feet).
```

### complexType `anpHeloProfile`

```xml
class `complexType`

| **diagram** |
| **children** |
| **operationType** | `profileGroupId` | `profileStageLength` | `weight` | `useDirectivity` | `useTrack` | `headingTakeoffGround` | `headingTakeoffHover` | `headingLandGround` | `headingLandHover` |

**used by**
element `anpHeloProfileSet/profile`

**annotation**
documentation
Profile data element.

### element `anpHeloProfile/operationType`

```xml
class `complexType`

| **diagram** |
| **type** | `string1`

**properties**
**content**

**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 `anpHeloProfile/profileGroupId`

```xml
class `complexType`

| **diagram** |
| **type** | `string255`

**properties**
**content**

**facets**

| **Kind** | **Value** |
| **Annotation** |
| **minLength** | 0 |
| **maxLength** | 255 |

**annotation**
documentation
Profile group identifier. Valid values: STANDARD, NOISEMAP (INM standard data).

### element `anpHeloProfile/profileStageLength`

```xml
class `complexType`

| **diagram** |
| **type** | `string1`

**properties**
**content**

**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 `anpHeloProfile/weight`

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type <code>xs:int</code></td>
</tr>
<tr>
<td>properties</td>
</tr>
<tr>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
</tr>
<tr>
<td>content simple</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Aircraft weight during this operation type. Valid values: 0 through 999999. (lb)</td>
</tr>
</tbody>
</table>

### element `anpHeloProfile/useDirectivity`

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type <code>yesNoType</code></td>
</tr>
<tr>
<td>properties</td>
</tr>
<tr>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
</tr>
<tr>
<td>content simple</td>
</tr>
<tr>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td>pattern Yes</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Use directivity? Y=Yes N=No.</td>
</tr>
</tbody>
</table>

### element `anpHeloProfile/useTrack`

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type <code>yesNoType</code></td>
</tr>
<tr>
<td>properties</td>
</tr>
<tr>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
</tr>
<tr>
<td>content simple</td>
</tr>
<tr>
<td>facets Kind Value Annotation</td>
</tr>
<tr>
<td>pattern Yes</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Use track (static heading is relative to track)? Y=Yes N=No.</td>
</tr>
</tbody>
</table>

### element `anpHeloProfile/headingTakeoffGround`

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type <code>xs:double</code></td>
</tr>
<tr>
<td>properties</td>
</tr>
<tr>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
</tr>
<tr>
<td>content simple</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Takeoff ground heading. Valid values: -180 through 360. (degrees)</td>
</tr>
</tbody>
</table>

### element `anpHeloProfile/headingTakeoffHover`

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type <code>xs:double</code></td>
</tr>
<tr>
<td>properties content simple</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Takeoff hover heading. Valid values: -180 through 360. (degrees)</td>
</tr>
</tbody>
</table>

### element `anpHeloProfile/headingLandGround`

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type <code>xs:double</code></td>
</tr>
<tr>
<td>properties</td>
</tr>
<tr>
<td>minOcc 0</td>
</tr>
<tr>
<td>maxOcc 1</td>
</tr>
<tr>
<td>content simple</td>
</tr>
<tr>
<td>annotation documentation</td>
</tr>
<tr>
<td>Landing ground heading. Valid values: -180 through 360. (degrees)</td>
</tr>
</tbody>
</table>
**element** anpHeloProfile/headingLandHover

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
|          | maxOcc 1  
|          | content simple |
| annotation | documentation  
|          | Landing hover heading. Valid values: -180 through 360 (degrees) |

**element** anpHeloProfile/step

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
</tr>
</tbody>
</table>
| properties | minOcc 0  
|          | maxOcc unbounded  
|          | content complex |
| children | stepNum operationType profileGroupId profileStageLength stepType duration distance altitude speed |
| annotation | documentation  
|          | The procedure steps. |

**complexType** anpHeloProfileSet

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
</tr>
<tr>
<td>used by</td>
</tr>
</tbody>
</table>
| annotation | documentation  
|          | A profile set for an ANP helicopter. |

**element** anpHeloProfileSet/anpHelicopterId

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
</tr>
<tr>
<td>properties</td>
</tr>
</tbody>
</table>
| facets | Kind   Value Annotation  
|        | minLength 0  
|        | maxLength 255 |
| annotation | documentation  
|          | The anp helicopter id. |

**element** anpHeloProfileSet/profile

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>type</td>
</tr>
</tbody>
</table>
| properties | minOcc 1  
|          | maxOcc unbounded  
|          | content complex |
| children | operationType profileGroupId profileStageLength weight useDirectivity useTrack headingTakeoffGround headingTakeoffHover headingLandGround headingLandHover step |
| annotation | documentation  
|          | One or more ANP profiles. |

**complexType** anpNoiseGroup

<table>
<thead>
<tr>
<th>diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
</tr>
<tr>
<td>used by</td>
</tr>
</tbody>
</table>
| annotation | documentation  
<p>|          | This element contains the three spectral class references for a given aircraft Noise group with the corresponding thrust setting type and model type. |</p>
<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>anpNoiseGroup/noiseId</strong></td>
<td>Noise group's ID.</td>
</tr>
<tr>
<td><strong>anpNoiseGroup/spectralClassApproach</strong></td>
<td>Spectral class number for approach (min = 0, max = 999).</td>
</tr>
<tr>
<td><strong>anpNoiseGroup/spectralClassDeparture</strong></td>
<td>Spectral class number for departure (min = 0, max = 999).</td>
</tr>
<tr>
<td><strong>anpNoiseGroup/spectralClassAfterburner</strong></td>
<td>Spectral class number for afterburner (min = 0, max = 999).</td>
</tr>
</tbody>
</table>
| **anpNoiseGroup/thrustSetType** | }