

# AIXM 5.2 Changes for Procedure Model

## „Some Highlights“

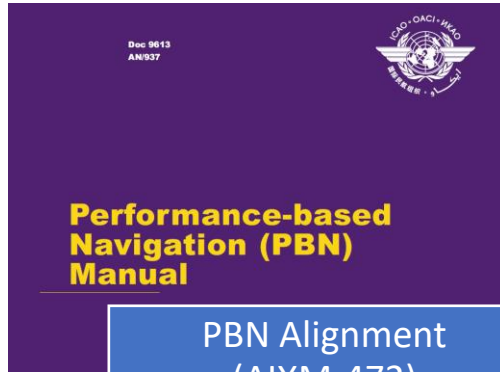
 Roll-out Workshop (27<sup>th</sup> of October 2021)

**SOLITEC**

— Software Solutions GesmbH —

*Wolfgang Scheucher*

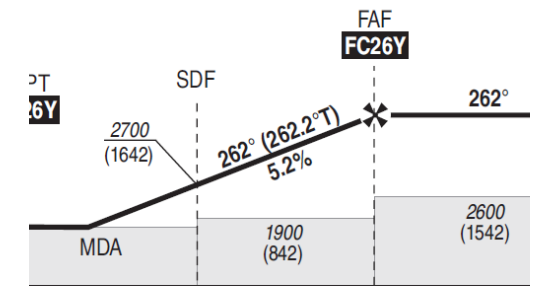
# AIXM 5.2 Procedure Model Changes - Overview



**PBN Alignment (AIXM-472)**

OCA (OCH) ELEV THR 1		
LPV	LNAV/VNAV	LNAV
201 (213)	242 (254)	
213 (225)	248 (260)	
221 (233)	267 (279)	670 (681)
232 (244)	293 (305)	
232 (244)		

**Approach Condition & Minima (AIXM-473)**



**MOCA (AIXM-492)**

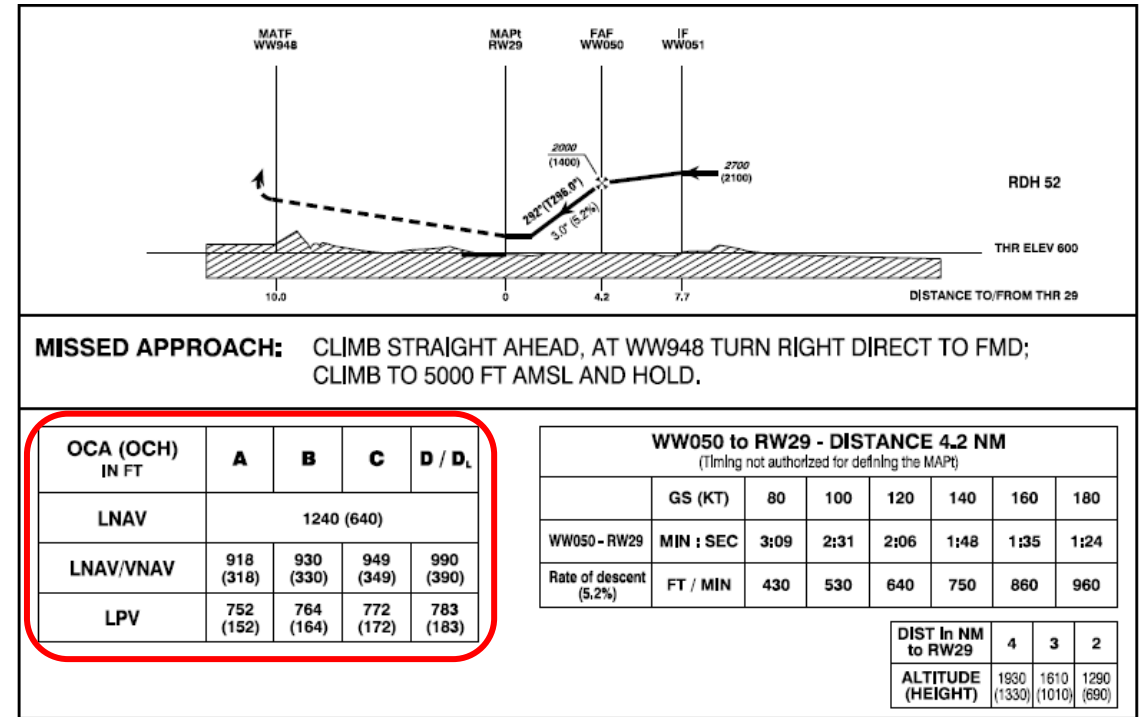
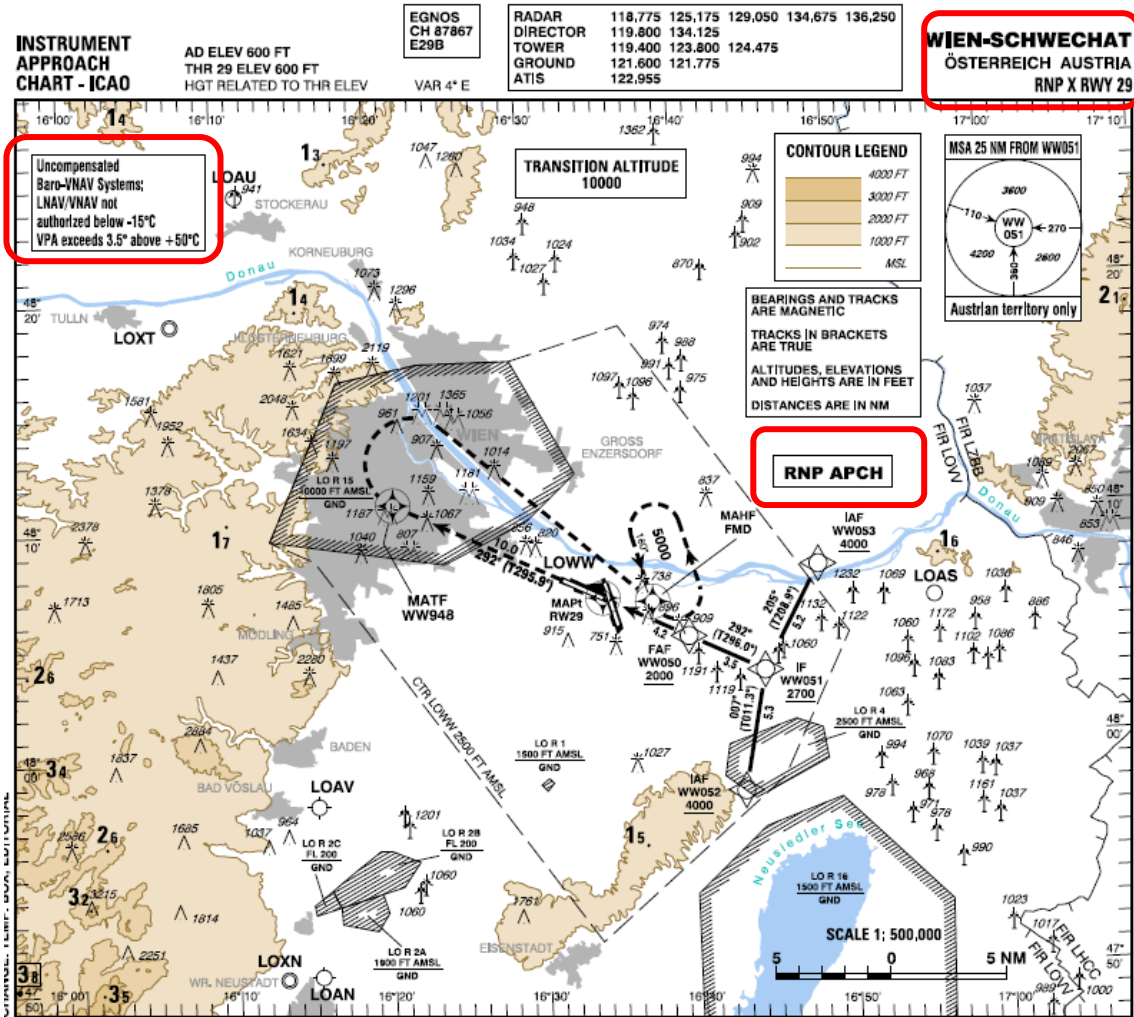


**True & Mag Track (AIXM-509)**

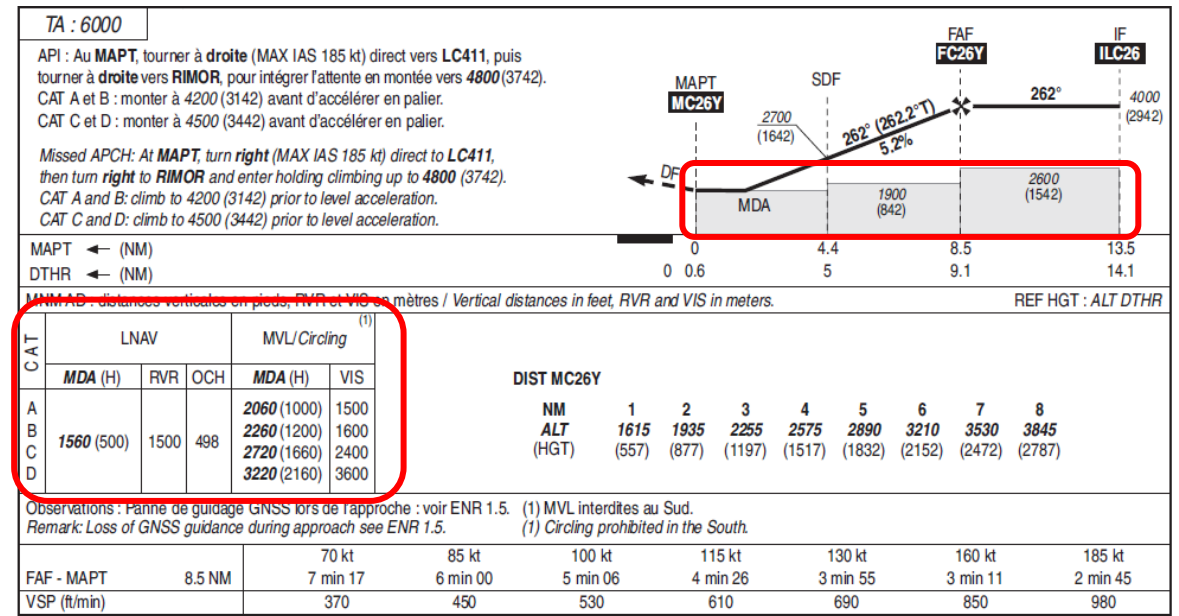
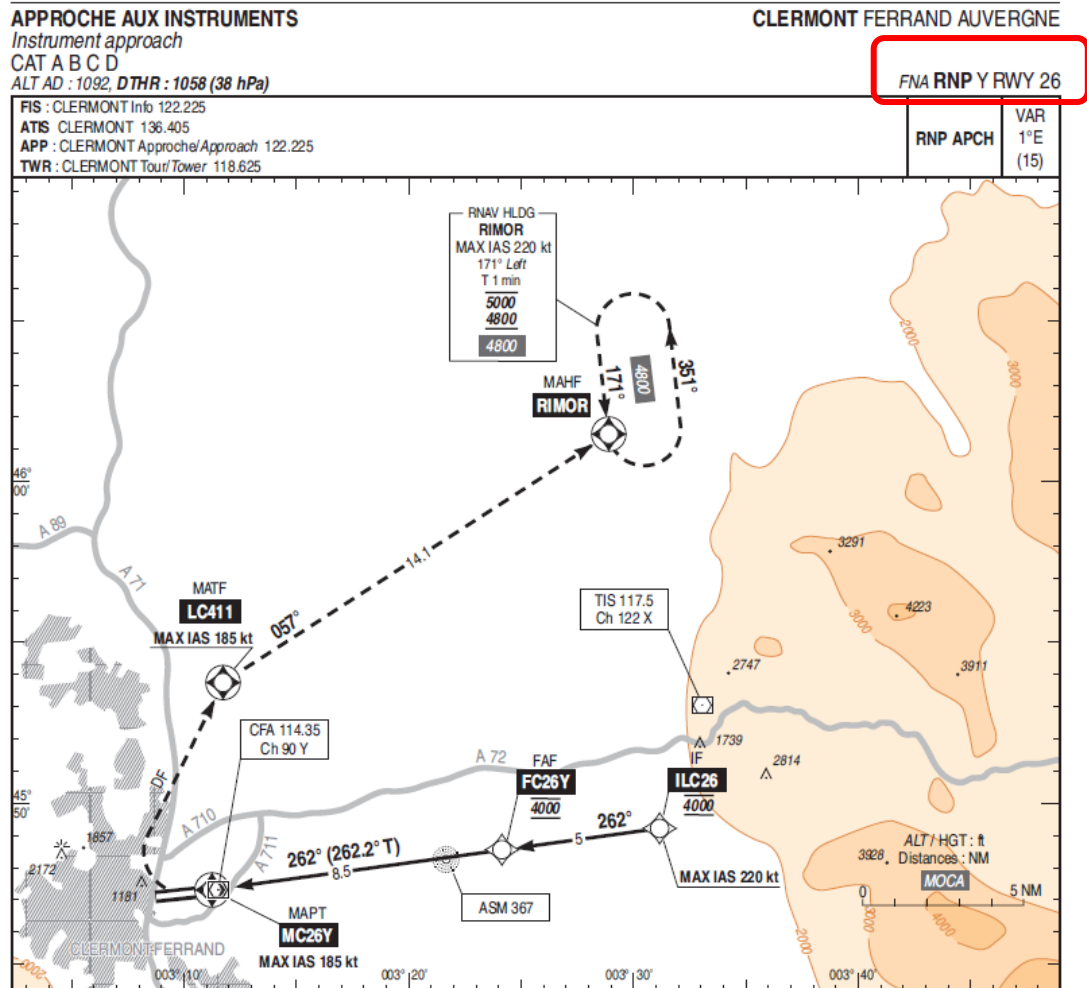
B	C	D	D <sub>L</sub>
481 (153)	491 (163)	501 (173)	
399 (71)	412 (84)	425 (97)	
810 (480)	810 (480)	810 (480)	

**A/C Landing Categories (AIXM-482)**

# Main Procedure Example used: LOWW RNP X RWY 29

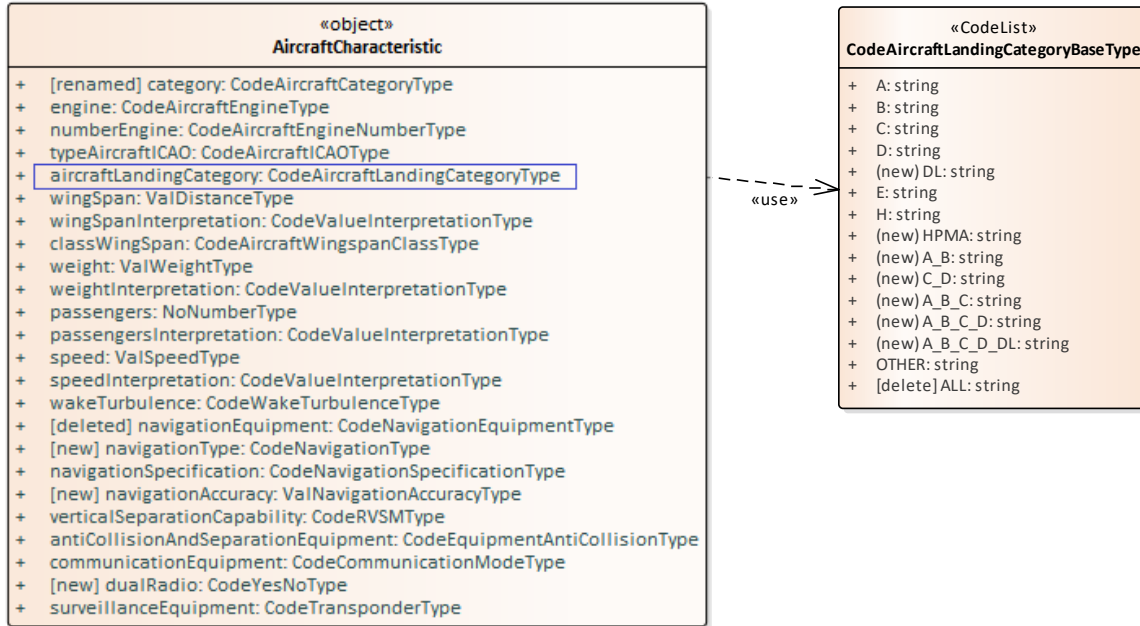


# Main Procedure Example used: LFLC RNP Y RWY 26



# Landing Categories

# AircraftCategory - LandingCategory



```

<axim:FinalLegTimeSlice gml:id="data_000000227">
...
<axim:condition>
  <axim:ApproachCondition gml:id="ac123">
    ...
    <satelliteApproachType>LNAV</satelliteApproachType>
    ...
    <axim:minimumSet>
      <axim:Minima gml:id="mlowwrnpx29">
        <axim:obstacleClearanceAltitude>1240</axim:obstacleClearanceAltitude>
        <axim:altitudeReference>MSL</axim:altitudeReference>
        <axim:obstacleClearanceHeight>640</axim:altitudeReference>
        <axim:heightReference>HAT</axim:heightReference>
        <axim:visibility xsi:nil="true"/>
        <axim:militaryVisibility xsi:nil="true"/>
        <axim:remoteAltimeterMinima xsi:nil="true"/>
      ...
    <axim:aircraftCategory>
      <axim:AircraftCharacteristic gml:id="ac987">
        <axim:aircraftLandingCategory>A_B_C_D_DL</axim:aircraftLandingCategory>
      </axim:AircraftCharacteristic>
    </axim:aircraftCategory>
    ...
  </axim:ApproachCondition>
</axim:condition>

```

CATEGORY	HPMA
S-ILS 11	525 -2.8 515 (600 - 2.8/2.8)
S-LOC 11	630 -3.6 620 (700 - 3.6/3.6)
CIRCLING	NOT AUTHORIZED

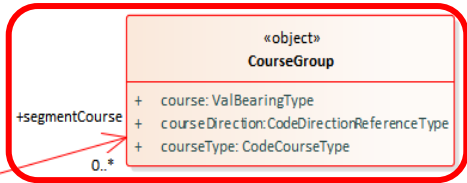
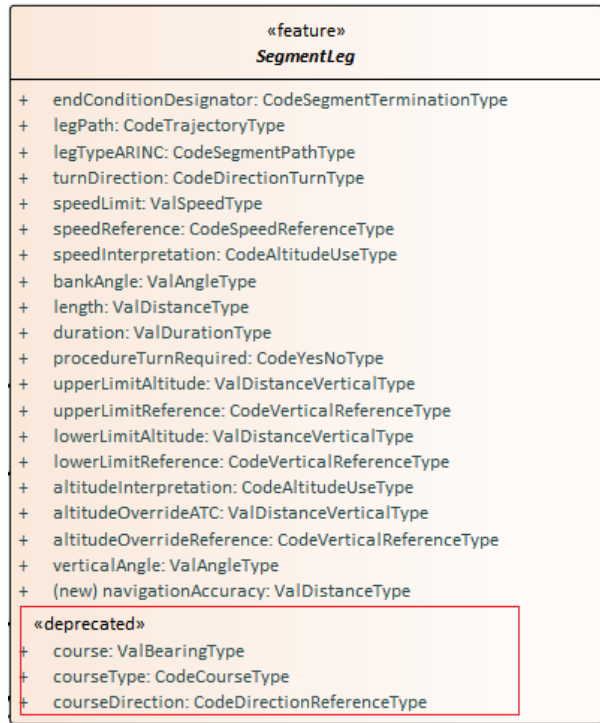
**ALDERNEY**  
RNAV (GNSS)  
**RWY 08**  
(ACFT CAT A,B)

AD ELEVATION	290
THR ELEVATION	284
OBSTACLE ELEVATION 942 AMSL (658) (ABOVE THR)	EGNOS CH 45014 E08A
BEARINGS ARE MAGNETIC	TRANSITION ALTITUDE 3000

OCA (OCH) IN FT	A	B	C	D / DL
LNAV	1240 (640)			
LNAV/VNAV	918 (318)	930 (330)	949 (349)	990 (390)
LPV	752 (152)	764 (164)	772 (172)	783 (183)

# True & Magnetic Track

# SegmentLeg - CourseGroup

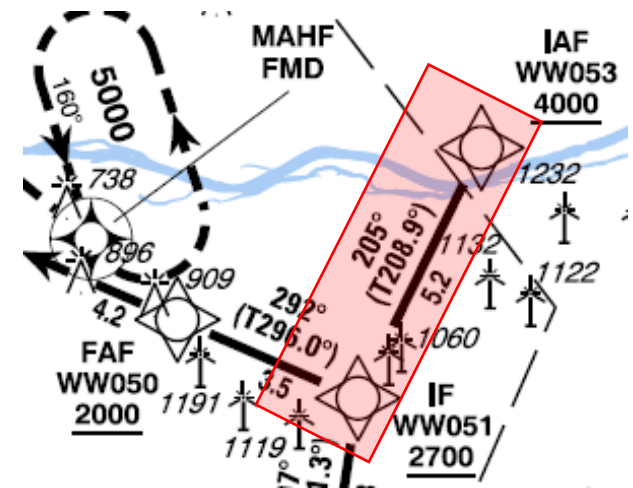


hasCourse  
0..\*

TF	WW051	IF	no	N480309.27 E0164454.29	007° (011.3°)	5.3	left	A2700+	K185-	RNP APCH
					205° (208.9°)	5.2	right			

```

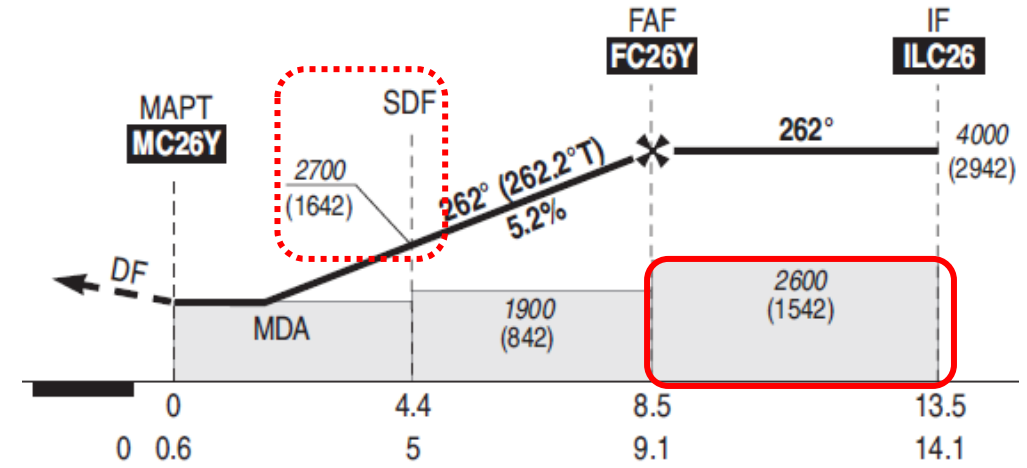
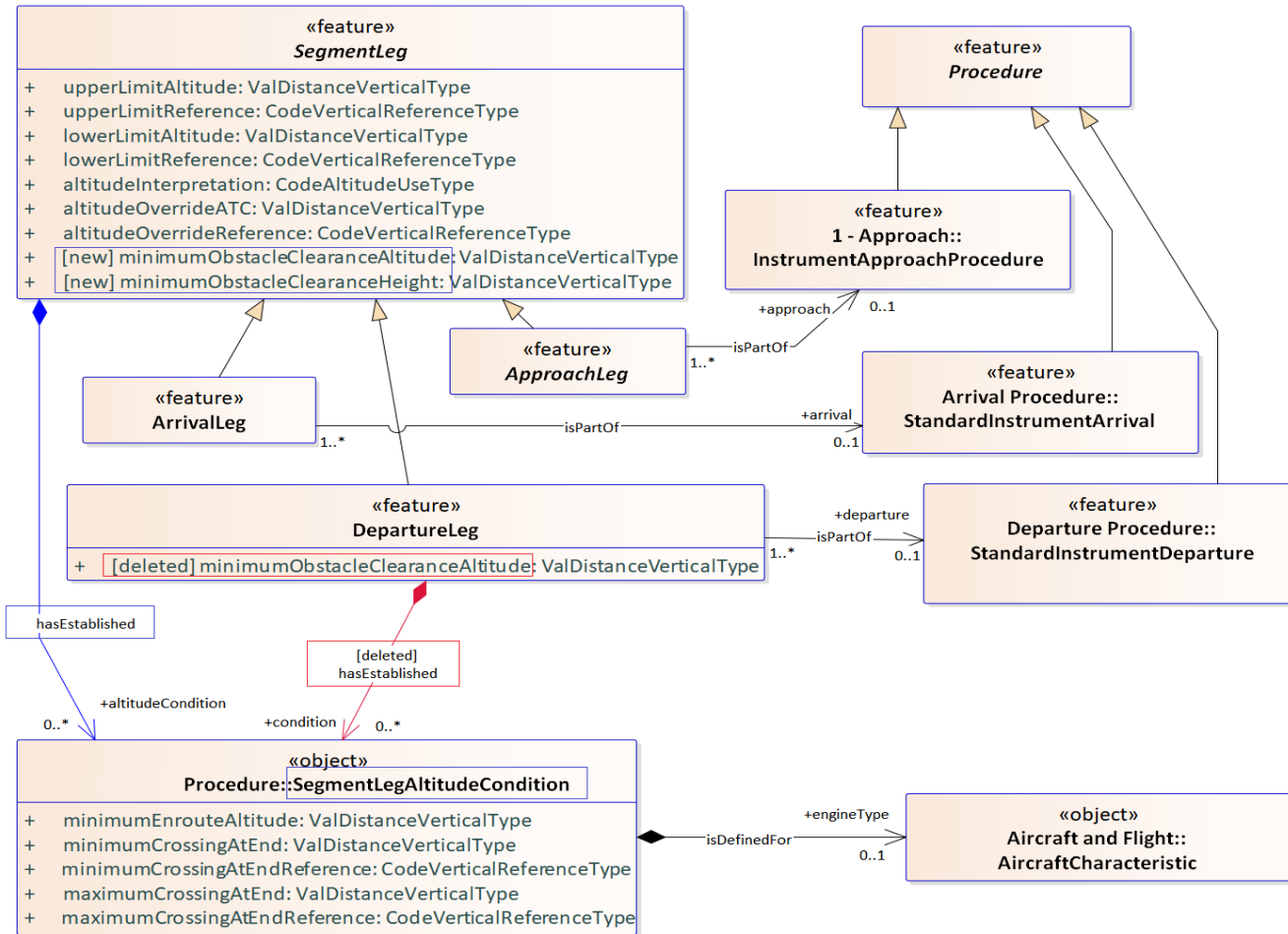
    <aixm:InitialLegTimeSlice gml:id="tsWW053_2">
    ...
    <aixm:segmentCourse>
      <aixm:CourseGroup gml:id="cgWW053_2-1">
        <aixm:course>205</aixm:course>
        <aixm:courseType>MAG_TRACK</aixm:courseType>
        <aixm:courseDirection xsi:nil="true"/>
      ...
    <aixm:segmentCourse>
      <aixm:CourseGroup gml:id="cgWW053_2-">
        <aixm:course>208.9</aixm:course>
        <aixm:courseType>TRUE_TRACK</aixm:courseType>
        <aixm:courseDirection xsi:nil="true"/>
      ...
  
```





# MOCA & MEA

# SegmentLeg - MinimumObstacleClearanceAltitude



```
<aixm:IntermediateLegTimeSlice gml:id="ilts_LFLC_020">
```

```

...
<aixm:lowerLimitAltitude uom="FT">4000</aixm:lowerLimitAltitude>
<aixm:lowerLimitReference>MSL</aixm:lowerLimitReference>
<aixm:altitudeInterpretation>AT_OR_ABOVE</aixm:altitudeInterpretation>

```

```

...
<aixm:minimumObstacleClearanceAltitude uom="FT">2600</ aixm:minimumObstacleClearanceAltitude>
<aixm:minimumObstacleClearanceHeight uom="FT">1542</ aixm:minimumObstacleClearanceHeight>

```

```

...
<aixm:endPoint>
<aixm:TerminalSegmentPoint gml:id="tsprwy26">

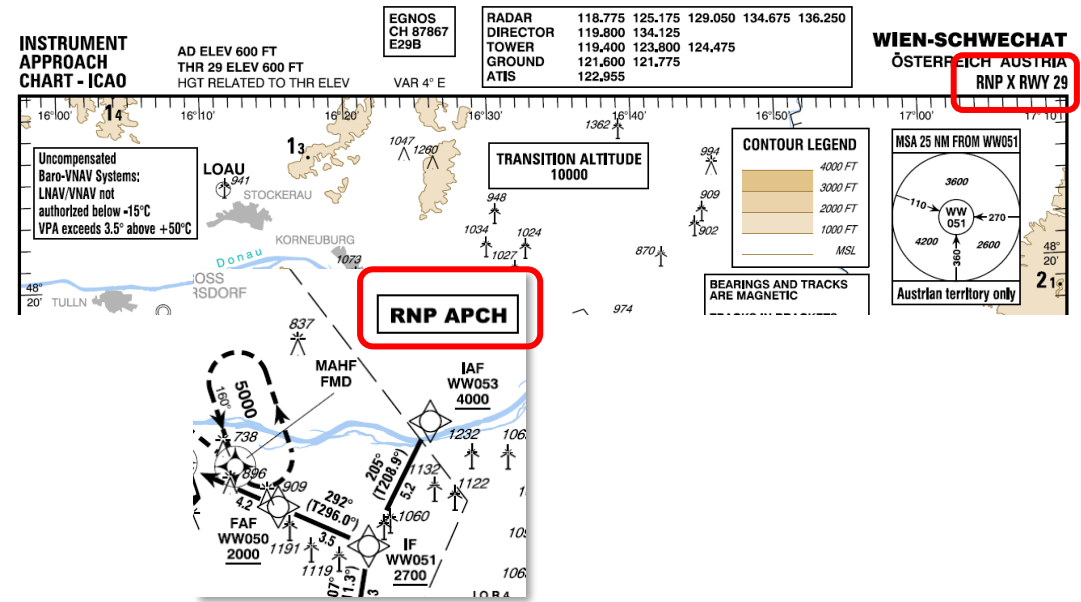
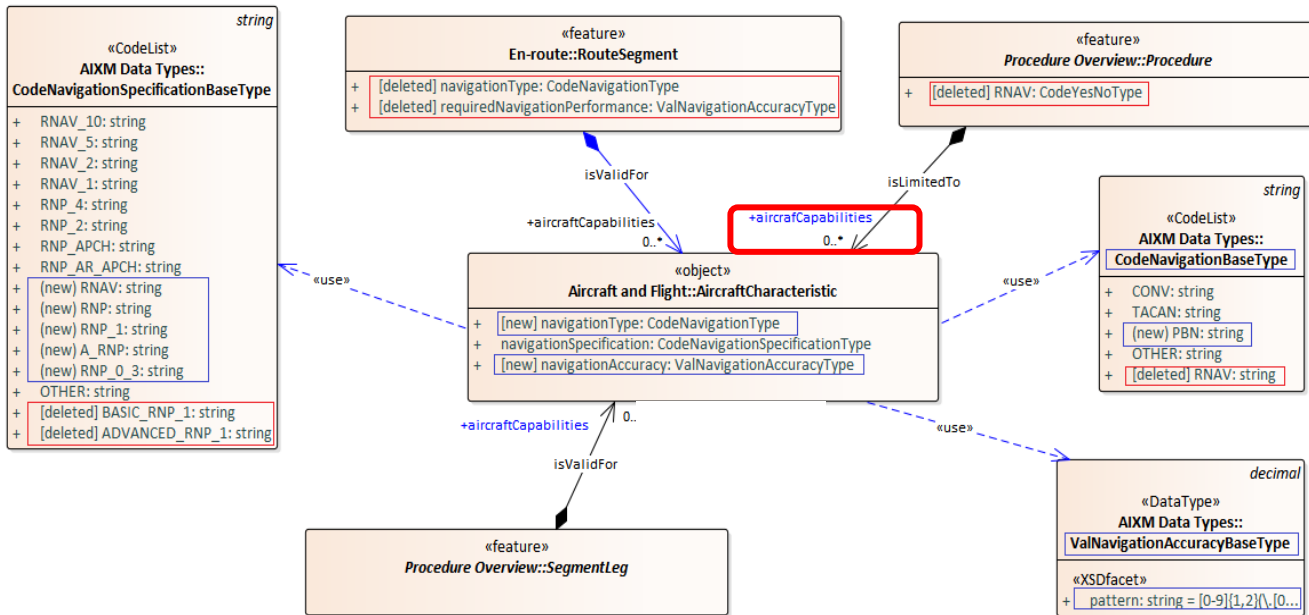
```

```
<aixm:pointChoice_designatedPoint xlink:href="#DPN_LFLC_FC26Y"/>
```

```
<aixm:role>FAF</aixm:role>
```

# Alignment with PBN Concept

# Navigation Type & Specification



`<axim:InstrumentApproachProcedureTimeSlice gml:id="data_0000000035">`

...

`<axim:name>RNP X RWY 29</axim:name>`

...

`<axim:airportHeliport xlink:href="LOWW" />`

...

`<axim:approachType>RNP</axim:approachType>`  
`<axim:multipleIdentification>X</axim:multipleIdentification>`

...

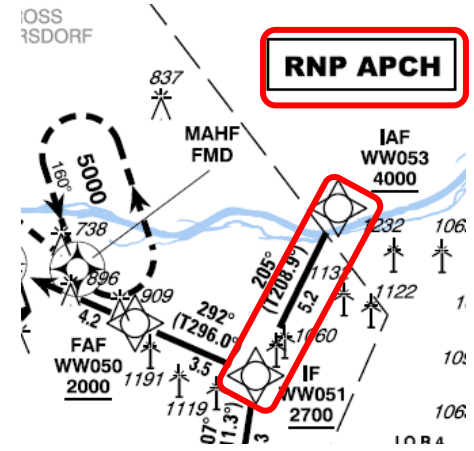
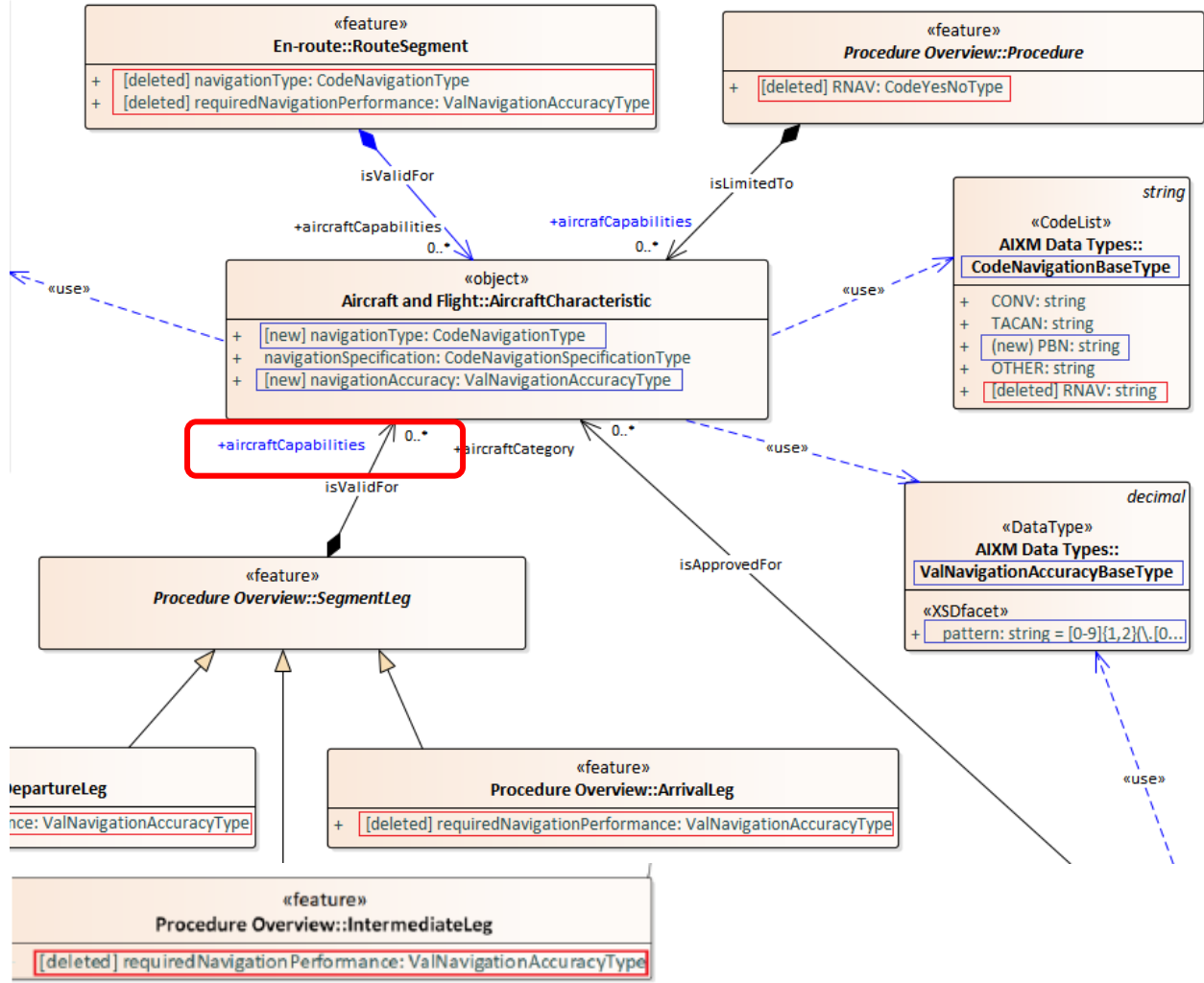
`<axim:AircraftCharacteristic gml:id="acumlux1m1">`

...

`<axim:navigationType>PBN</axim:navigationType>`  
`<axim:navigationSpecification>RNP_APCH</axim:navigationSpecification>`

...

# Navigation Accuracy



Navigation Specifications	Application of RNP by Flight Phase							
	Enroute Oceanic/Remote Continental	Terminal Enroute Domestic	Terminal Arrival	Approach Initial	Approach Intermediate	Approach Final	Approach Missed	Terminal Departure
RNP 1	N/A	N/A	1	1	1	N/A	1	1
RNP 2	2	2	N/A	N/A	N/A	N/A	N/A	N/A
RNP 4	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RNP 10	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A-RNP	2	2 or 1	1 - 0.3	1 - 0.3	1 - 0.3	N/A	0.3 - 1	0.3 - 1
RNP APCH	N/A	N/A	N/A	1	1	0.3	1	N/A
RNP 0.3	N/A	0.3	0.3	0.3	0.3	N/A	0.3	0.3

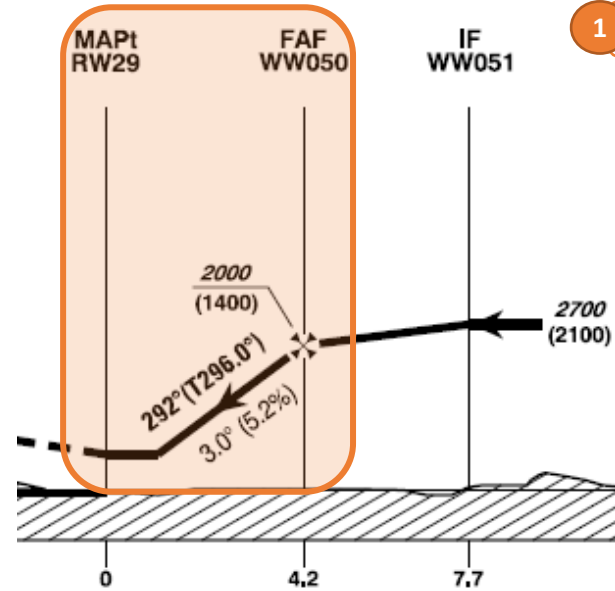
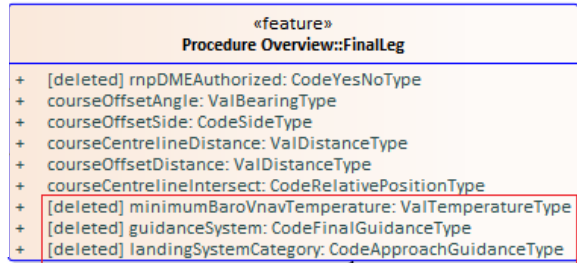
```

<aixm:InitialLegTimeSlice gml:id=" tsWW053_1">
...
<aixm:aircraftCapabilities>
<aixm:AircraftCharacteristic gml:id="qwqweqwe2">
  <aixm:navigationType xsi:nil="true"/>
  <aixm:navigationSpecification xsi:nil="true"/>
  <aixm:navigationAccuracy>1</aixm:navigationAccuracy>

```

# Approach Condition & Minima

# Approach Condition – Lines of Minima



```

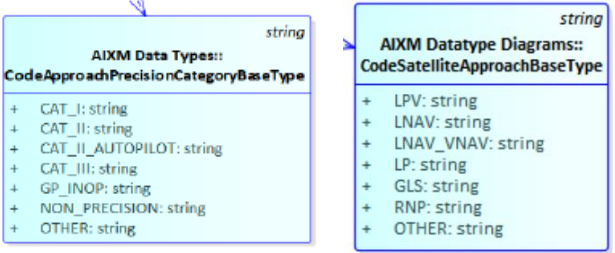
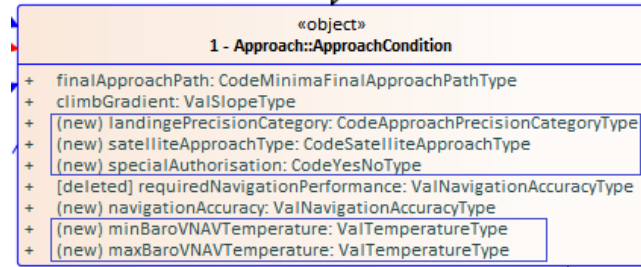
1 <axim:FinalLegTimeSlice gml:id="data_0000000227">
...

```

```

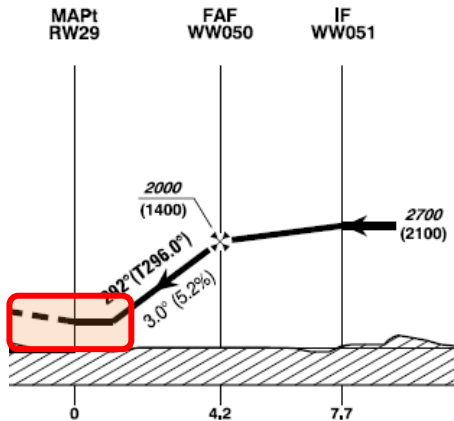
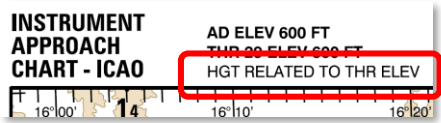
1 <axim:condition>
  <axim:ApproachCondition gml:id="ac121">
    ...
    <axim:satelliteApproachType>LNAV</axim:satelliteApproachType>
    ...
    <axim:minimumset>
    ...
2 <axim:condition>
  <axim:ApproachCondition gml:id="ac122">
    ...
    <axim:satelliteApproachType>LNAV_VNAV</axim:satelliteApproachType>
    ...
    <axim:minimumset>
    ...
3 <axim:condition>
  <axim:ApproachCondition gml:id="ac123">
    ...
    <axim:satelliteApproachType>LPV</axim:satelliteApproachType>
    ...
    <axim:minimumset>
    ...

```

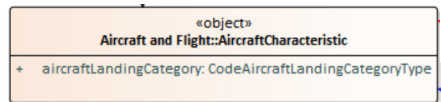
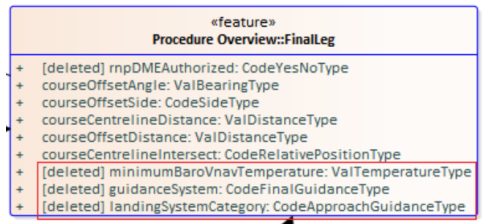


	OCA (OCH) IN FT	A	B	C	D / D <sub>L</sub>
1	LNAV	1240 (640)			
2	LNAV/VNAV	918 (318)	930 (330)	949 (349)	990 (390)
3	LPV	752 (152)	764 (164)	772 (172)	783 (183)

# Minima (1)



OCA (OCH) IN FT	A	B	C	D / D <sub>L</sub>
LNAV	1240 (640) 1-1			
LNAV/VNAV	918 (318)	930 (330)	949 (349)	990 (390)
LPV	752 (152)	764 (164)	772 (172)	783 (183)



```
<axim:FinalLegTimeSlice gml:id="data_0000000227">
```

...

```

1 <axim:condition>
  <axim:ApproachCondition gml:id="ac121">
    ...
    <satelliteApproachType>LNAV</satelliteApproachType>
  </axim:ApproachCondition>

```

```

1-1 <axim:minimumSet>
  <axim:Minima gml:id="mlowwrnp29">

```

```

  <axim:obstacleClearanceAltitude uom="FT">1240</axim:obstacleClearanceAltitude>
  <axim:altitudeReference>MSL</axim:altitudeReference>
  <axim:obstacleClearanceHeight uom="FT">640</axim:obstacleClearanceHeight>
  <axim:heightReference>HAT</axim:heightReference>
  <axim:visibility xsi:nil="true"/>
  <axim:militaryVisibility xsi:nil="true"/>
  <axim:remoteAltimeterMinima xsi:nil="true"/>

```

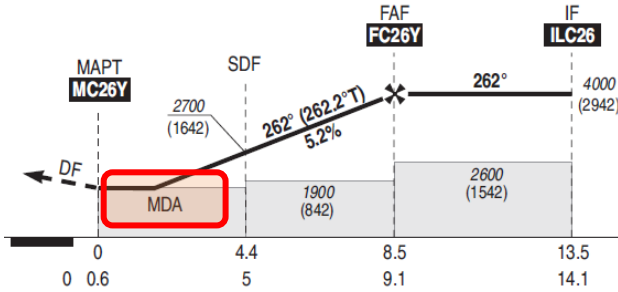
```

  ...
  <axim:aircraftCategory>
    <axim:AircraftCharacteristic gml:id="ac987">
      <axim:aircraftLandingCategory>A_B_C_D_DL</axim:aircraftLandingCategory>
    </axim:AircraftCharacteristic>
  </axim:aircraftCategory>
  ...

```

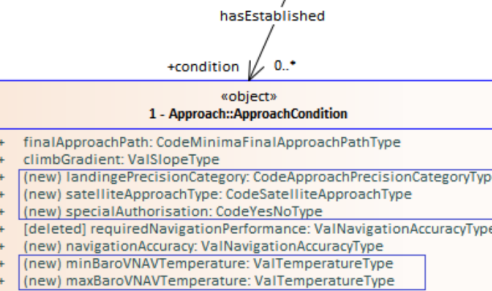
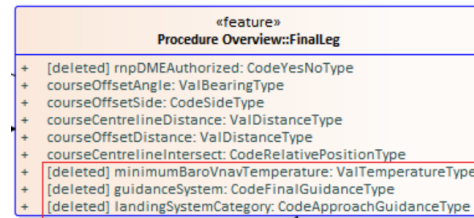
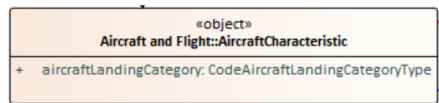


# Minima (2)



MNM AD : distances verticales en pieds, RVR et VIS en mètres

CAT	LNAV			MVL/Circling <sup>(1)</sup>	
	MDA (H)	RVR	OCH	MDA (H)	VIS
A	1560 (500)	1500	498	2060 (1000)	1500
B				2260 (1200)	1600
C				2720 (1660)	2400
D				3220 (2160)	3600



```
<axim:FinalLegTimeSlice gml:id="data_0000000237">
```

...

```
<axim:condition>
```

```
<axim:ApproachCondition gml:id="ac124">
```

...

```
<satelliteApproachType>LNAV</satelliteApproachType>
```

...

```
<axim:minimumSet>
```

```
<axim:Minima gml:id="mflcnpx26">
```

```
<axim:obstacleClearanceAltitude xsi:nil="true"/>
```

...

```
<axim:minimumDescentAltitude uom="FT">1560</axim:altitudeReference>
```

```
<axim:altitudeReference>MSL</axim:altitudeReference>
```

```
<axim:obstacleClearanceHeight uom="FT">498</axim:altitudeReference>
```

```
<axim:minimumDescentHeight uom="FT">500</axim:altitudeReference>
```

```
<axim:heightReference>HAT</axim:heightReference>
```

...

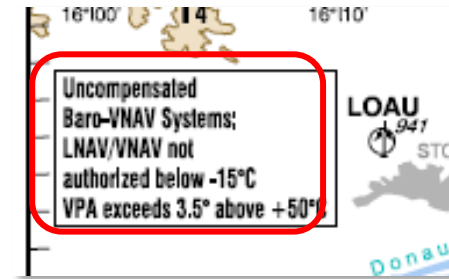
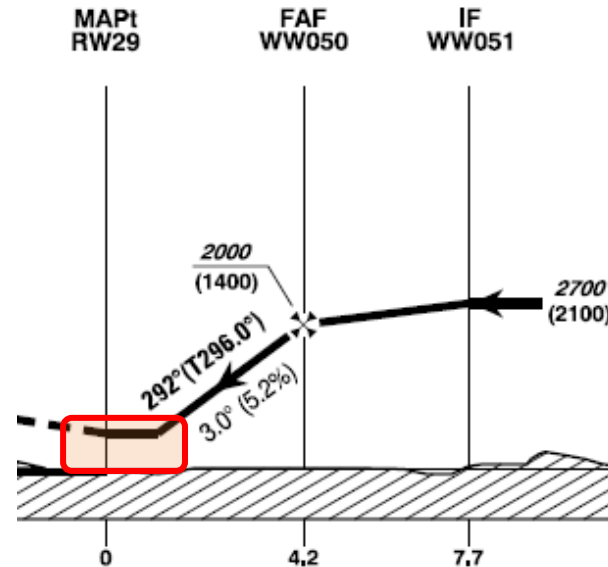
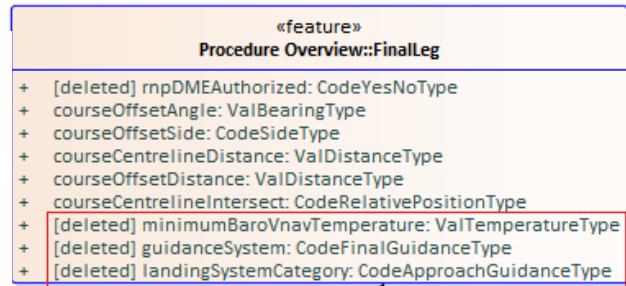
```
<axim:runwayVisibilityRange uom="M">1500</axim:runwayVisibilityRange>
```

...

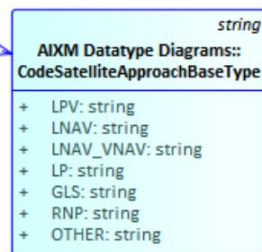
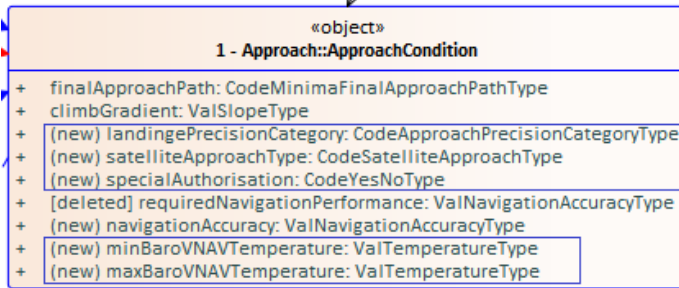
```
<axim:remoteAltimeterMinima xsi:nil="true"/>
```

...

# Approach Condition – Baro VNAV



OCA (OCH) IN FT	A	B	C	D / D <sub>L</sub>
LNAV	1240 (640)			
LNAV/VNAV	918 (318)	930 (330)	949 (349)	990 (390)
LPV	752 (152)	764 (164)	772 (172)	783 (183)



```
<axim:FinalLegTimeSlice gml:id="data_0000000227">
```

...

```

2 <axim:condition>
  <axim:ApproachCondition gml:id="ac123">
    ...
    <axim:landingPrecisionCategory xsi:nil="true"/>
    <axim:satelliteApproachType>LNAV_VNAV</axim:satelliteApproachType>
    <axim:specialAuthorisationType xsi:nil="true"/>
    <axim:navigationAccuracy xsi:nil="true"/>
    <axim:minBaroVNAVTemperature uom="C">-15</axim:minBaroVNAVTemperature>
    <axim:maxBaroVNAVTemperature xsi:nil="true"/>
    <axim:minimumset>
  
```

...



10/27/2021



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19