OAS Template

Version 1.08

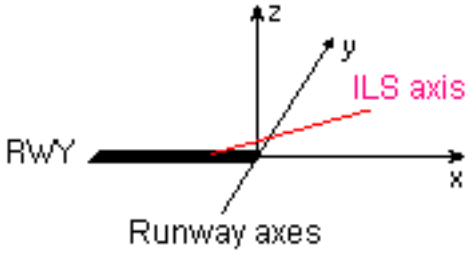
Regulatory adjustments

None.

Definition

The OAS template defines plane surfaces in 3 dimensions, that can be used to construct OAS surfaces.

The OAS template is referenced with respect to the "Runway system": 3D orthogonal coordinate system with positive abscissa on the LLS guidance end.

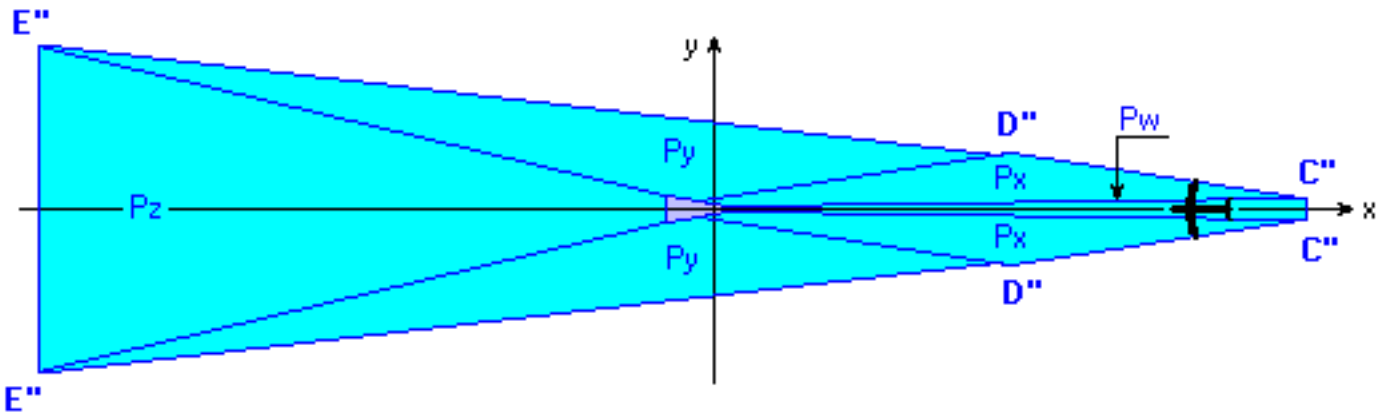


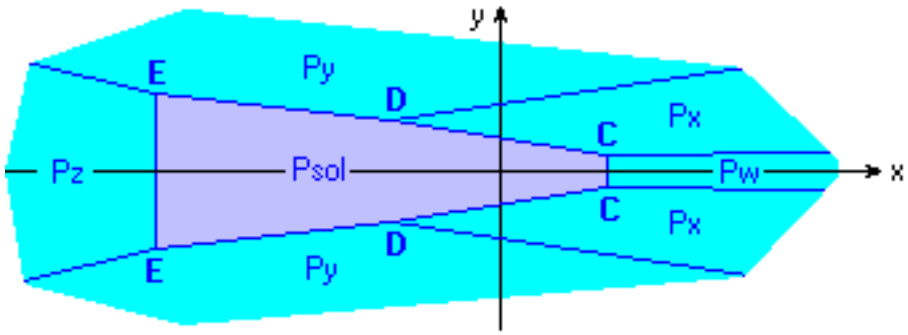
Graphical representation

Construction example for:

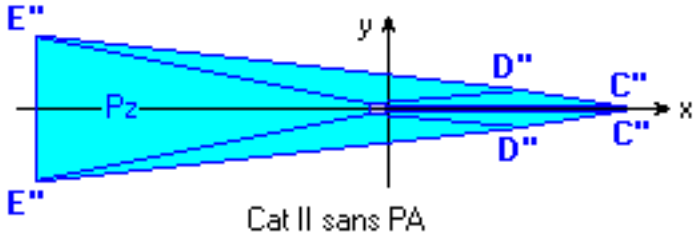
- LLZ / Threshold distance: 2400 m.
- Angle of GP: 3.0°.
- Aircraft characteristics: Standard.
- RDH: Standard.

1 Category I

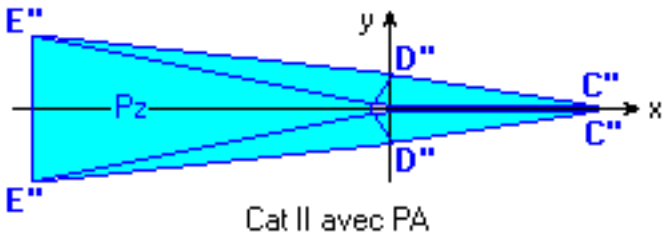




2 Category II



Cat II sans PA



Cat II avec PA

Digital terrain model

Version 1.10

Regulatory adjustments

None.

Definition

A digital terrain model (MNT) is a simplified digital representation of a surface which uses a set of altitudes associated with their horizontal coordinates.

Each association of an altitude with its horizontal coordinate constitutes a cell of the DTM grid.

The surface of the cell (spherical rectangle) defines the **resolution** of the DTM.

20	20	20	20	20	20	30
20	30	30	30	40	40	30
20	30	40	40	40	40	30
20	30	40	55	40	30	20
20	30	40	40	40	30	20
20	30	30	30	30	30	20
20	20	20	20	20	20	20

Tha altitude of the ground is given with the cell of the DTM ournit (without vegetation and without infrastructure) .

Accuracy

Depends on the planimetry accuracy and altimetric accuracy

For france , the DTM used (from alti. data base) :

For france, The DTM used (from the alti Data Base) provides :

- A vertical accuracy of :
  - about 2.5 m in plain area.
  - about 40 m in mountainous area.
- A horizontal accuracy of about 10 m

Representation

A digital terrain model can be represented by:

- An "image" file.
- A "Vectors" file.

Image

Vectors

1 "Image" file

The "Image" representation of an MNT associates a colour with a given altitude layer, for each MNT cell.

20	20	20	20	20	20	30
20	30	30	30	40	40	30
20	30	40	40	40	40	30
20	30	40	55	40	30	20
20	30	40	40	40	30	20
20	30	30	30	30	30	20
20	20	20	20	20	20	20

Between 15 and 24 :
Between 25 and 34 :
Between 35 and 44 :
Between 45 and 54 :
Between 55 and 64 :

20	20	20	20	20	20	30
20	30	30	30	40	40	30
20	30	40	40	40	40	30
20	30	40	55	40	30	20
20	30	40	40	40	30	20
20	30	30	30	30	30	20
20	20	20	20	20	20	20

2 "Vectors" file

The "Vectors" representation of an MNT associates each MNT cell with the 4 adjacent cells, by joining them together with lines.

Final NPA Approach propagation

Version 1.03

Regulatory adjustments

None.

DefinitionFinal NPA Approach propagation

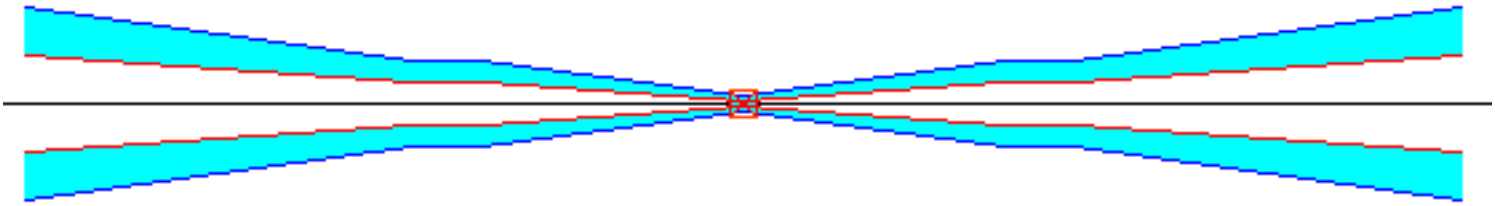
The purpose of the "Non-Precision final approach" propagation layer is to define the geometry of an area when a transmitter supports a "Non-Precision final approach" guidance path.

The "Non-Precision final approach" propagation is **always** a straight propagation supported by beam transmitters.

Straight propagation

Straight propagation is defined using a transmitter with the "*Beam*" attribute.
Straight propagation for final approach depends on the type of beam transmitter:

STRAIGHT PROPAGATION		
Transmitter	Secondary splay	Secondary half-width
VOR	7.8°	1.00 Nm
TACAN (1)		
NDB	10.3°	1.25 Nm
LOCATOR		



(1) Military TACAN transmitter seen as a beam transmitter.

Curved propagation

No curved propagation for "Non-Precision final approach".

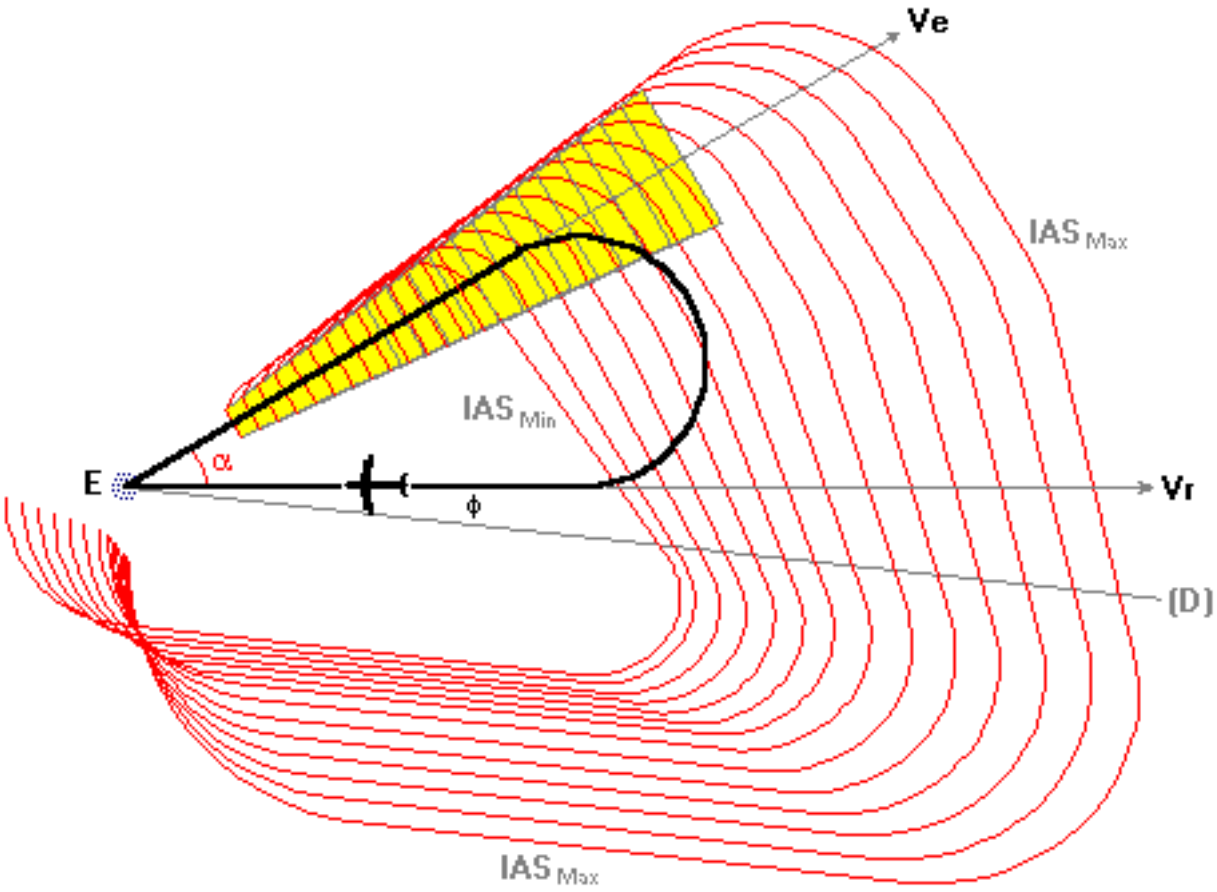
Multiple IAS (Time)

Version 1.08

Regulatory adjustments

None.

1 Design of multiple IAS procedures without entries



2 Analysis of multiple IAS procedures without entries

It can be seen that the area associated with **IAS Max** entirely covers the area associated with **IAS Min**, except on the side of transmitter **E**. However, for certain combinations of parameters, the area associated with **IAS Max** covers the area associated with **IAS Min** entirely.

The global area for the IAS domain is defined by the tangent between the spiral of **IAS Max** and the spiral of **IAS Min**. This tangent will **always** be an increasing factor, because it includes:

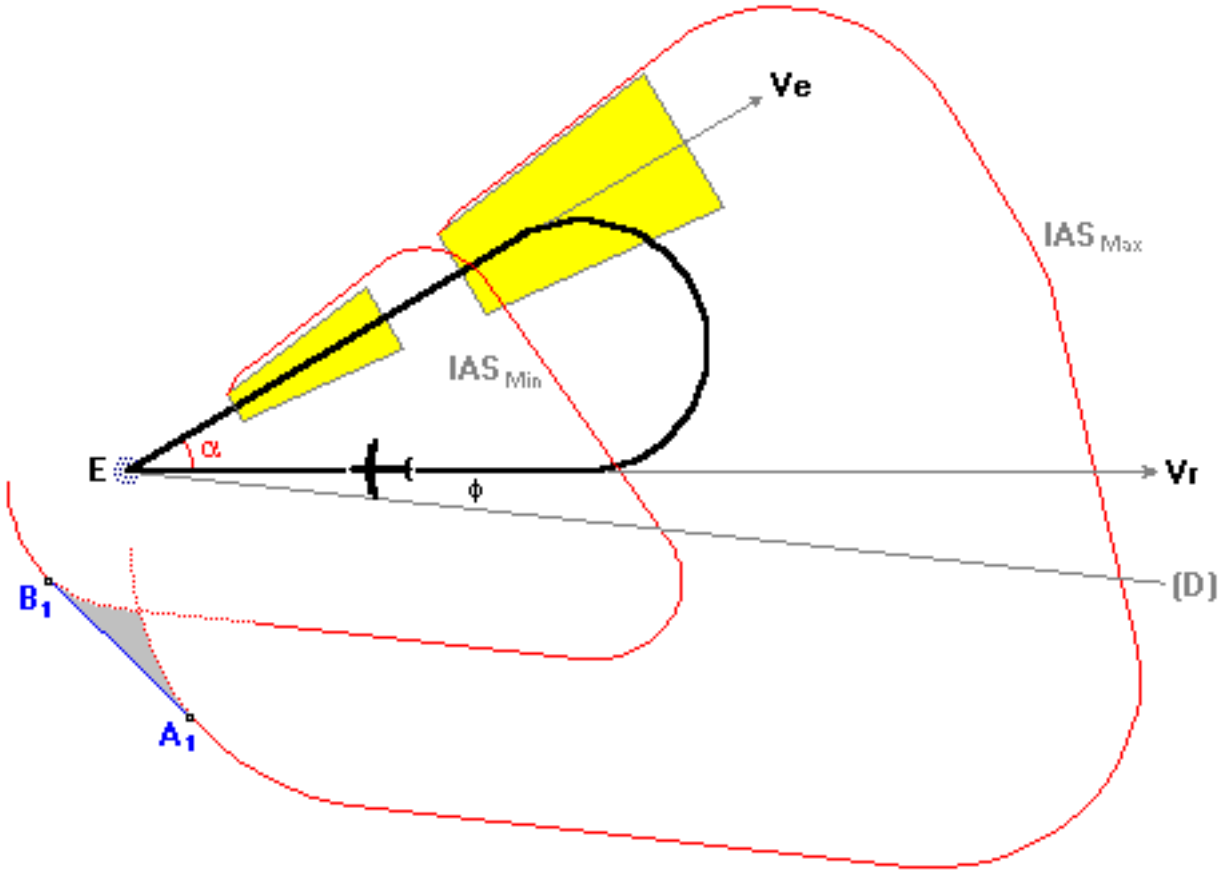
The linear variation of the constant rate turn radii.

The parabolic variation of the constant bank turn radii.

3 Design of multiple IAS procedures without entries

The tangent (when needed) between the spiral of the IAS $_{Max}$ and the spiral of the IAS $_{Min}$ is represented by the straight line segment **A_1B_1**.

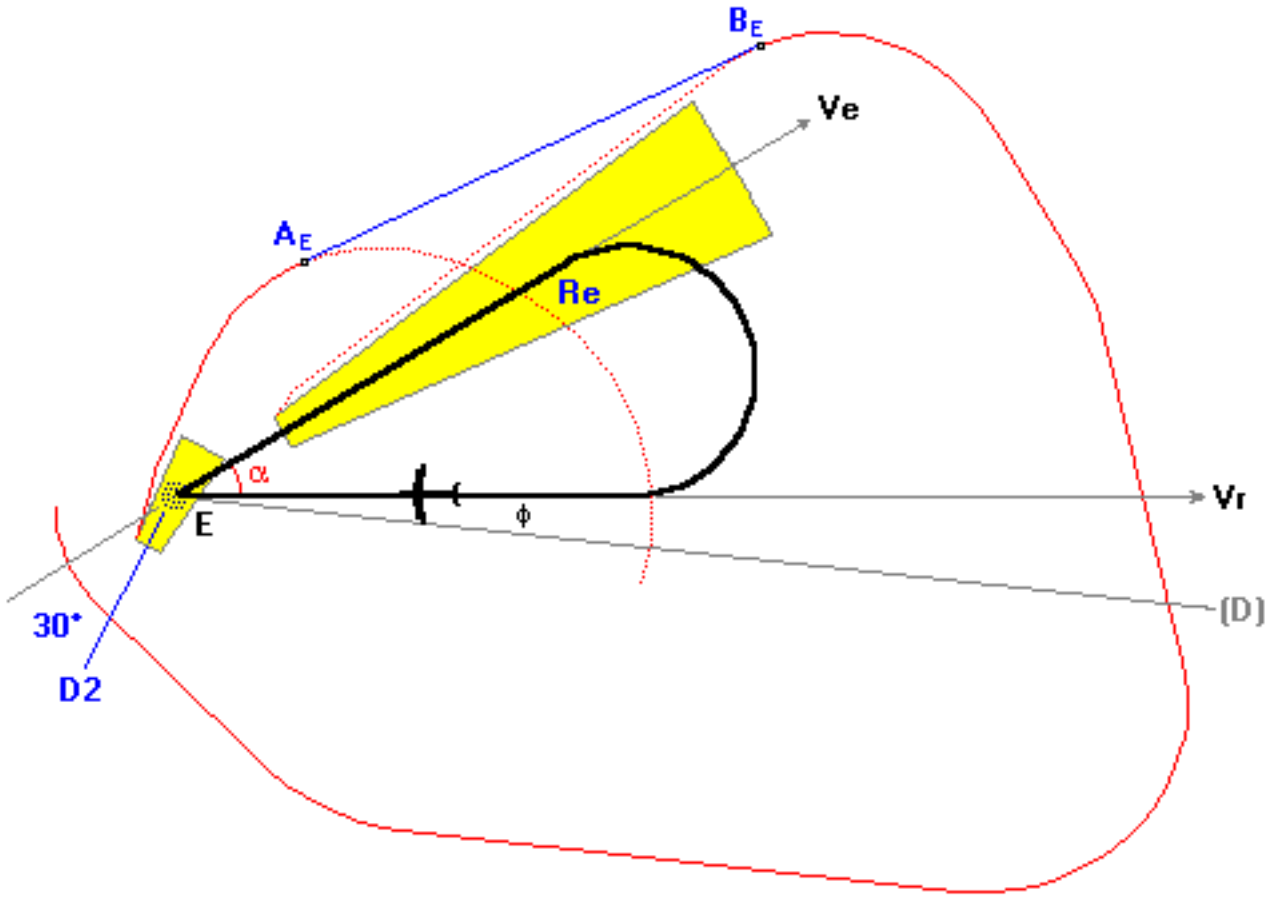
Between these two IAS values, the increased surface is shown in grey.



Multiple IAS procedure turn area with entries

The entries into the procedure turn are designed directly with IAS $_{Max}$ on the same side as **D2**

The protection area for the entries is then smoothed with the procedure turn area, using the tangent between the two spirals, represented by the straight line segment **A_E B_E**.


B_E
Ve
A_E
Re
α
E
ϕ
Vr
(D)
30°
D2