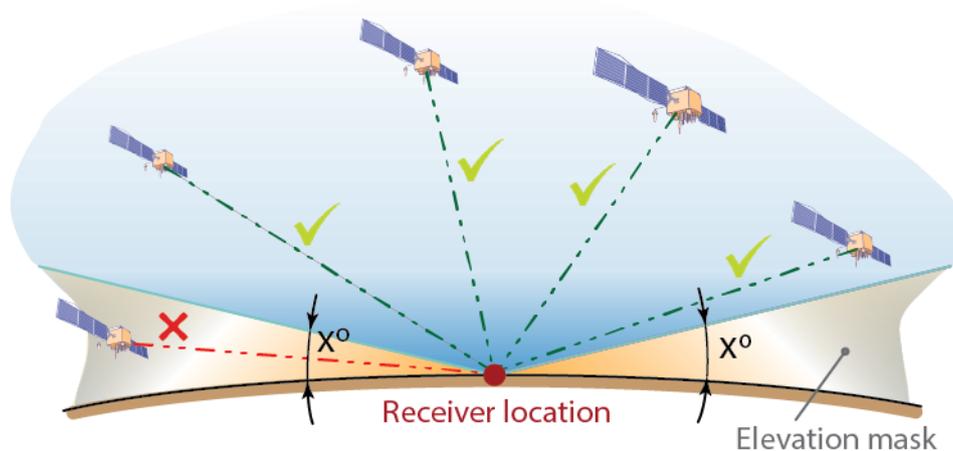


# Tuto 10:

## RAIM outages, How to determine the correct mask angle for an Airport.

For RNP AR procedure with high terrain, a mask angle appropriate to the terrain must be used; this will assure that from the airport surface, above a certain angle all the sky is clear where ever are the satellites.



(Thanks to Orolia for this picture)

With Arinc decoder, you plot any airport in the world... Example, SEQM / UIO at Quito...

Airport ICAO	Name	IATA	IFR	Longest RWY	Summary
SEQM	QUITO/MARISCAL SUCRE INTL.	UIO	Y	13400 (4084m)	Mask Angle
Latitude	Longitude	Mag Var	Altitude	Datum	Speed limit
S00072700	W078211600	3° W	7910'	WGS-84	FL100 /250Kts
Transition Altitude				D.S.T	Update
18000'			Civil	TU-5	No 1512

Push on the  button

This will open this module and will open Google earth with a circus around your airport.

**RNP AR Mask angle**

Mask Angle (°)

Reference Altitude  feet

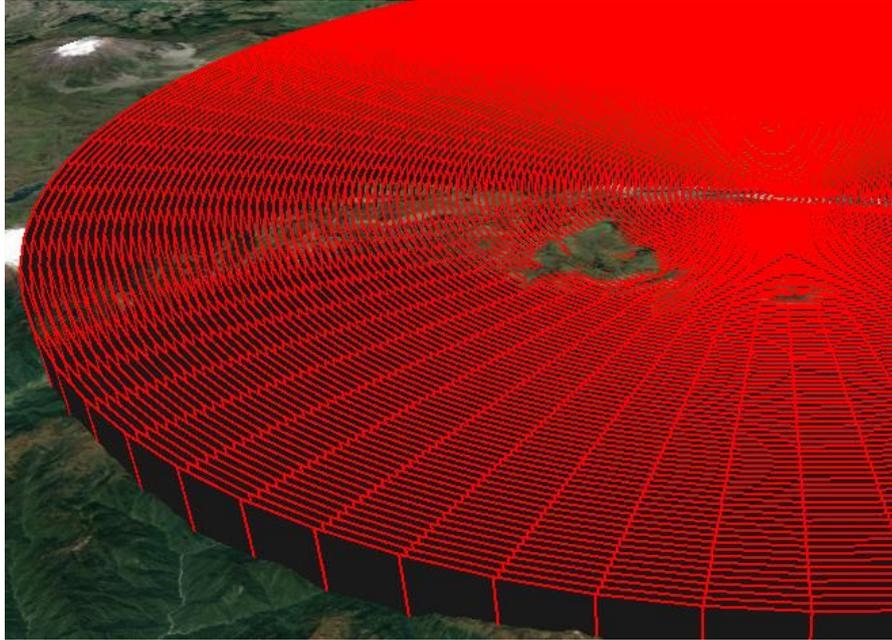
R=200Nm  R=100Nm

Latitude

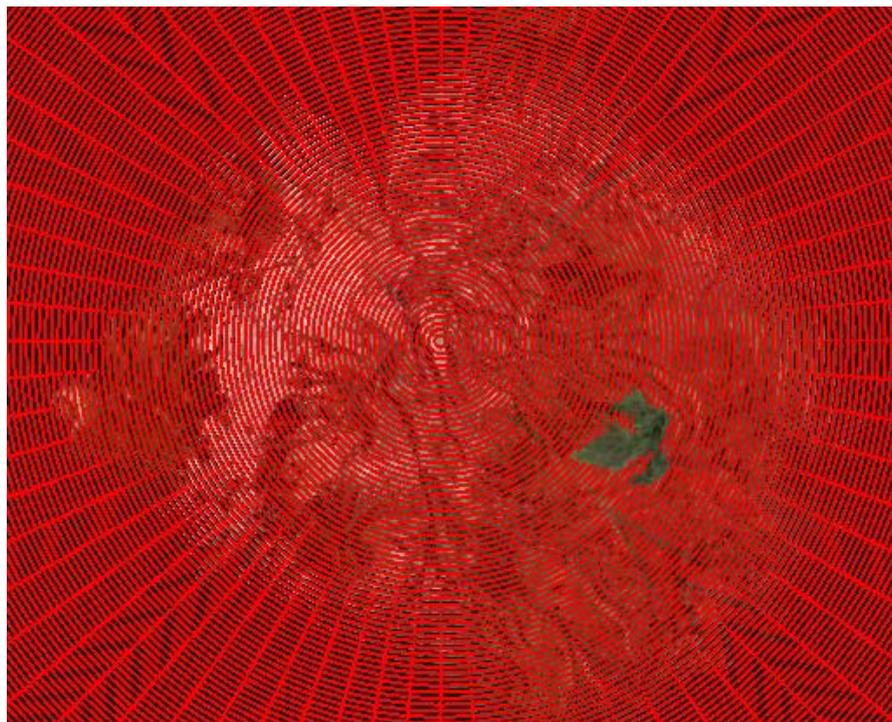
Longitude

Name

The default circus is 100 Nm radius, and the mask angle is set to 5° above horizon, from the airport reference altitude.



Where we see that south east of SEQM some terrain is above our surface...



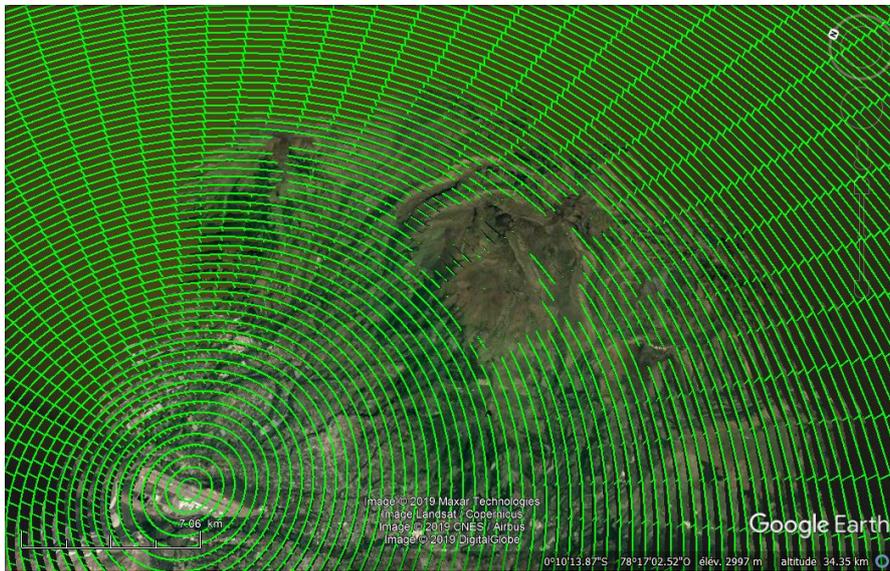
To determine the proper mask angle we just have to redo this with values higher than 5°

Push on button  .

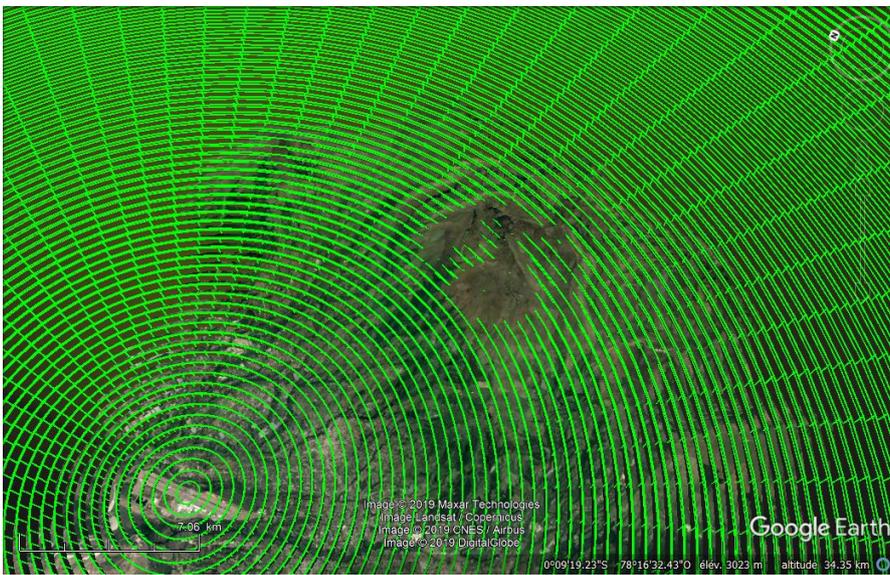
Nine files will be created, from 2 degrees below the initial angle to 2 degrees above, step 0.5°.

So because we have 5° we will create 3°, 3.5°, 4°, 4.5°, 5°, 5.5°, 6°, 6.5°, 7°

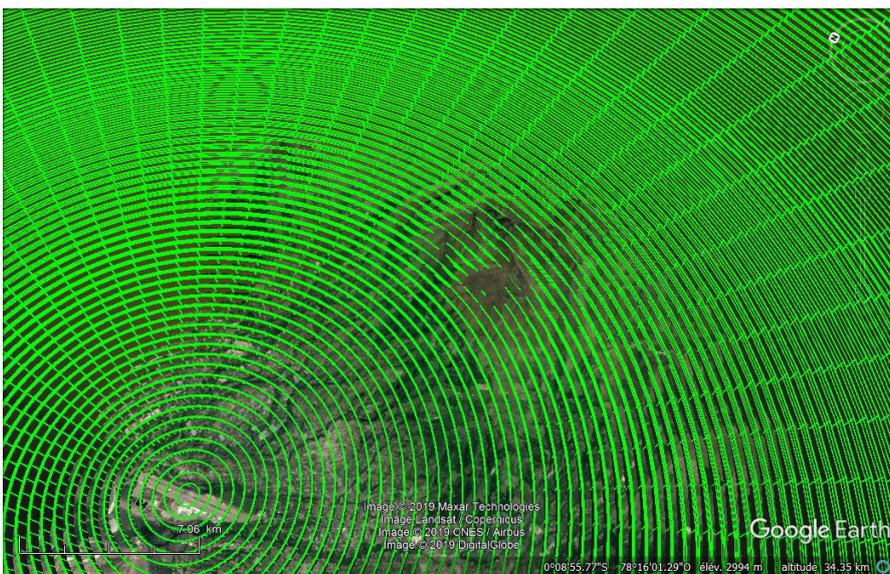
At 5°



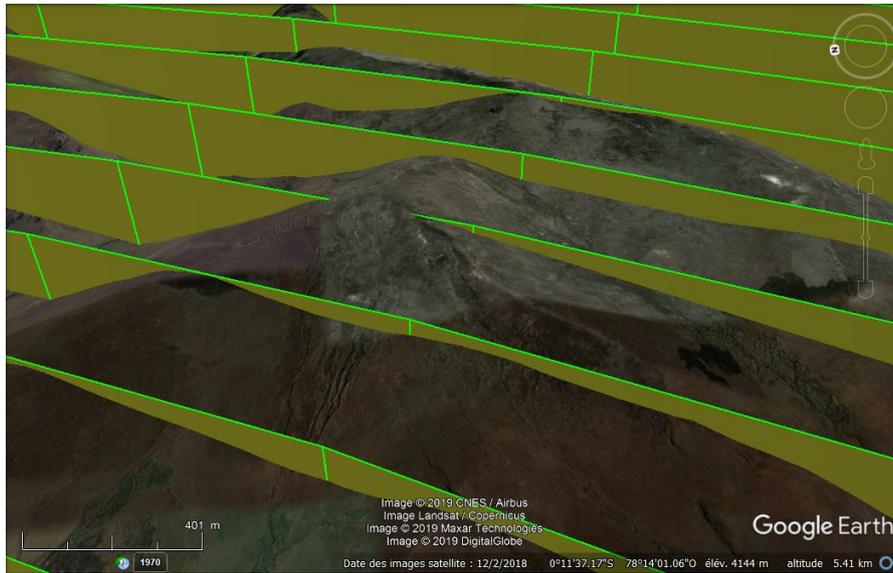
At 5.5°



At 6°

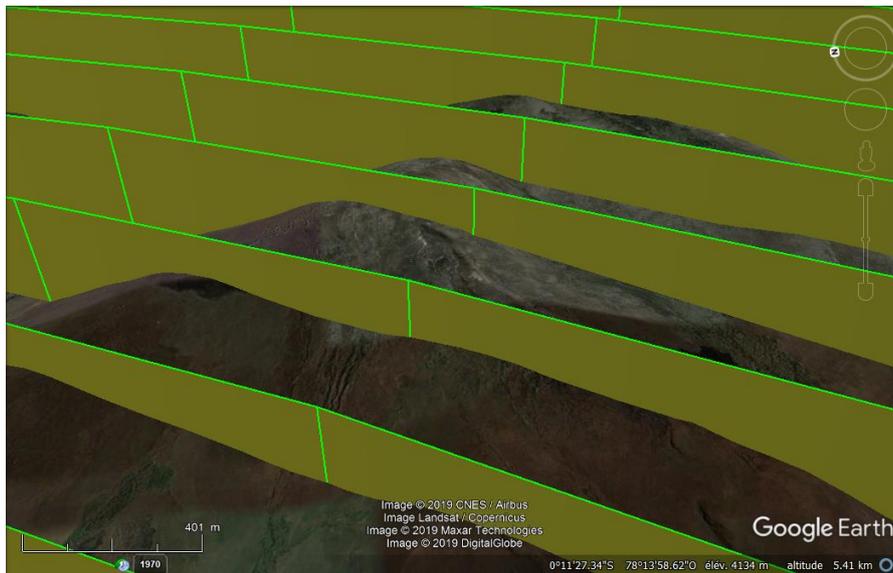


At 6.5°



We see that's there's still somewhere the horizon is not clear from the reference point of the airport, at the field altitude...

But, it's OK at 7°



With this information you know that you can set your RAIM outage application at 7 degrees and if there's no schedule outages you will stay in sight of the needed number of satellites for all the procedure long...