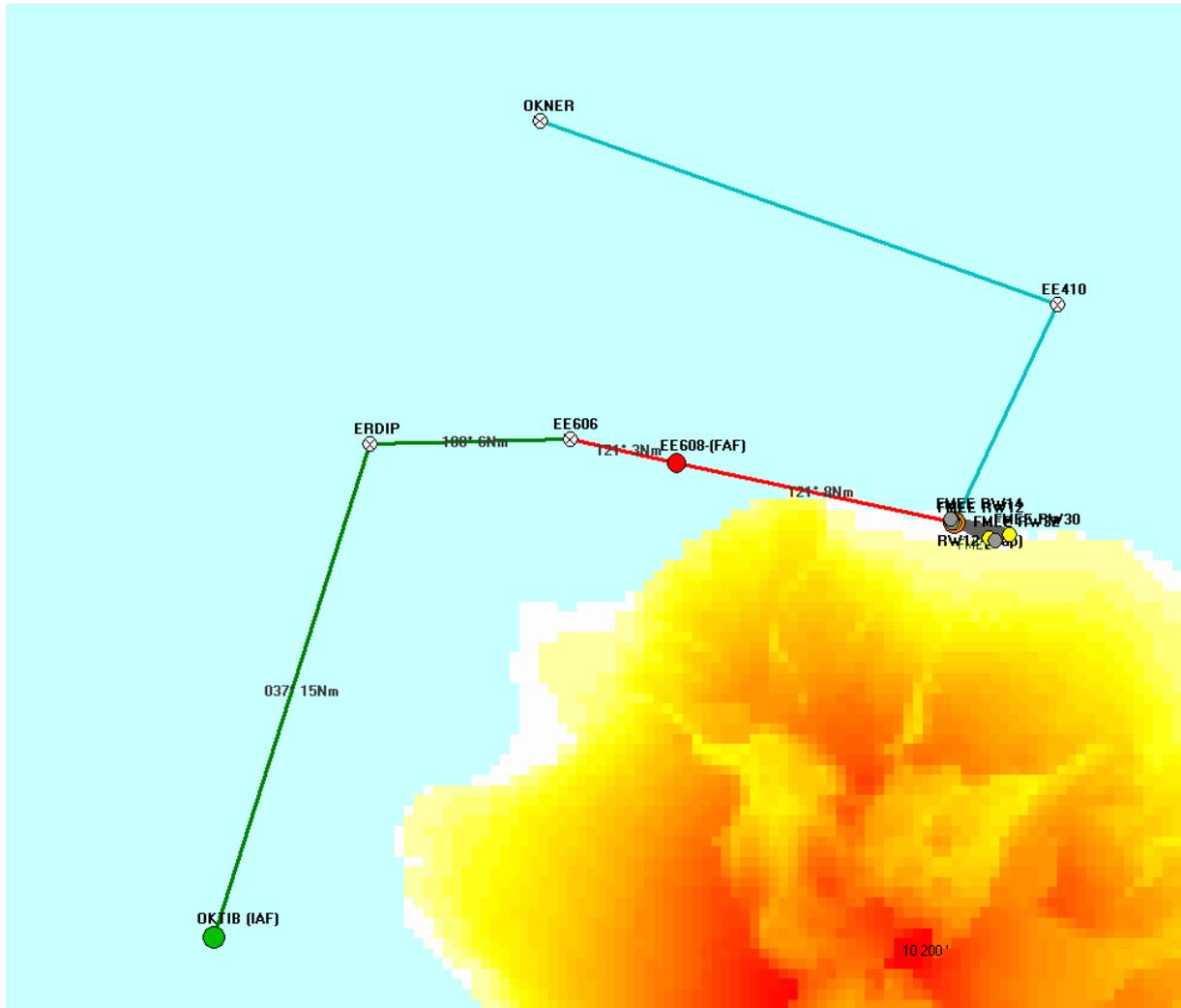


Tuto 3

Creation of a RF leg in a procedure.

With the same RNAV GNSS 12 at FMEE that we already modified, imagine you want to replace a TF path terminator with a RF leg (radial to fix) that gives a really better precision in the trajectory flown by the aircraft.



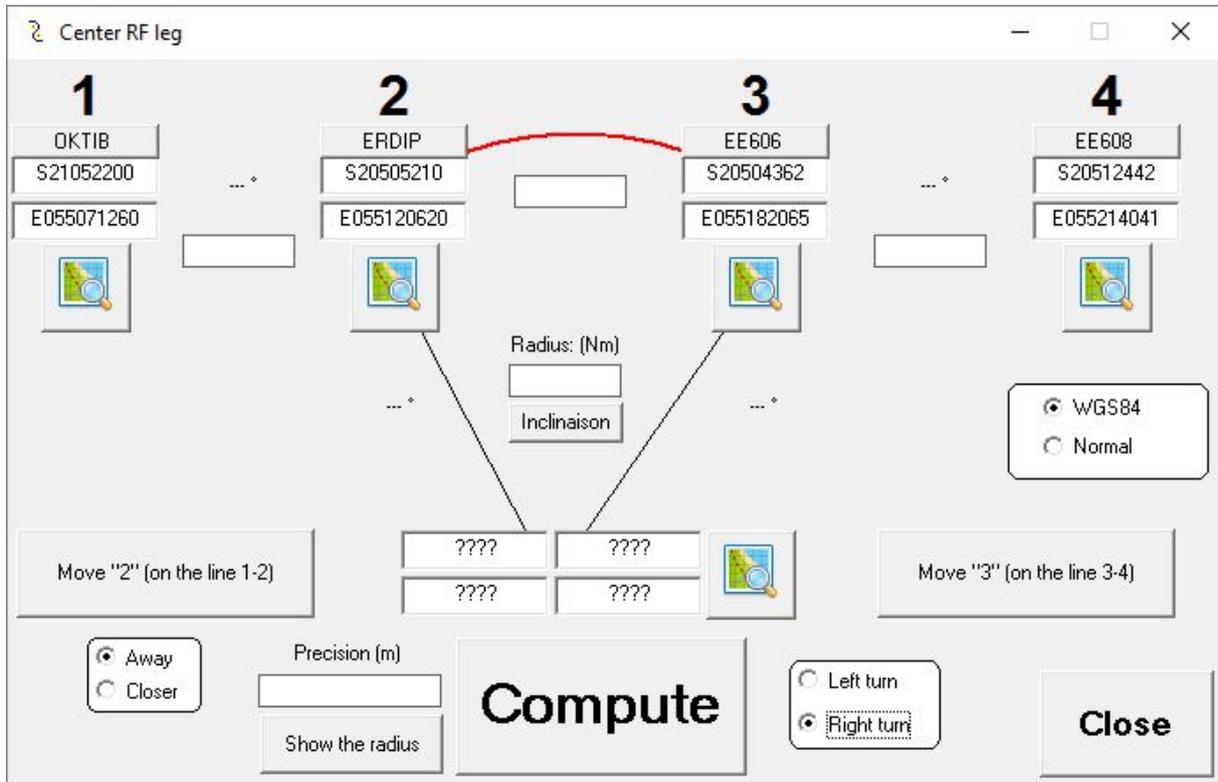
We will compute the positions of the fixes and the position of the center arc to keep this same trajectorie but with a RF to the final segment.

4 will be the FAF EE608.

We can actually decide what will be modified to obtain the best result... by moving south ERDIP point we will obtain the highest radial, and this will prevent from deplacing EE606. (In reality we would move both, ERDIP to south and EE606 to west to obtain a longer final segment)

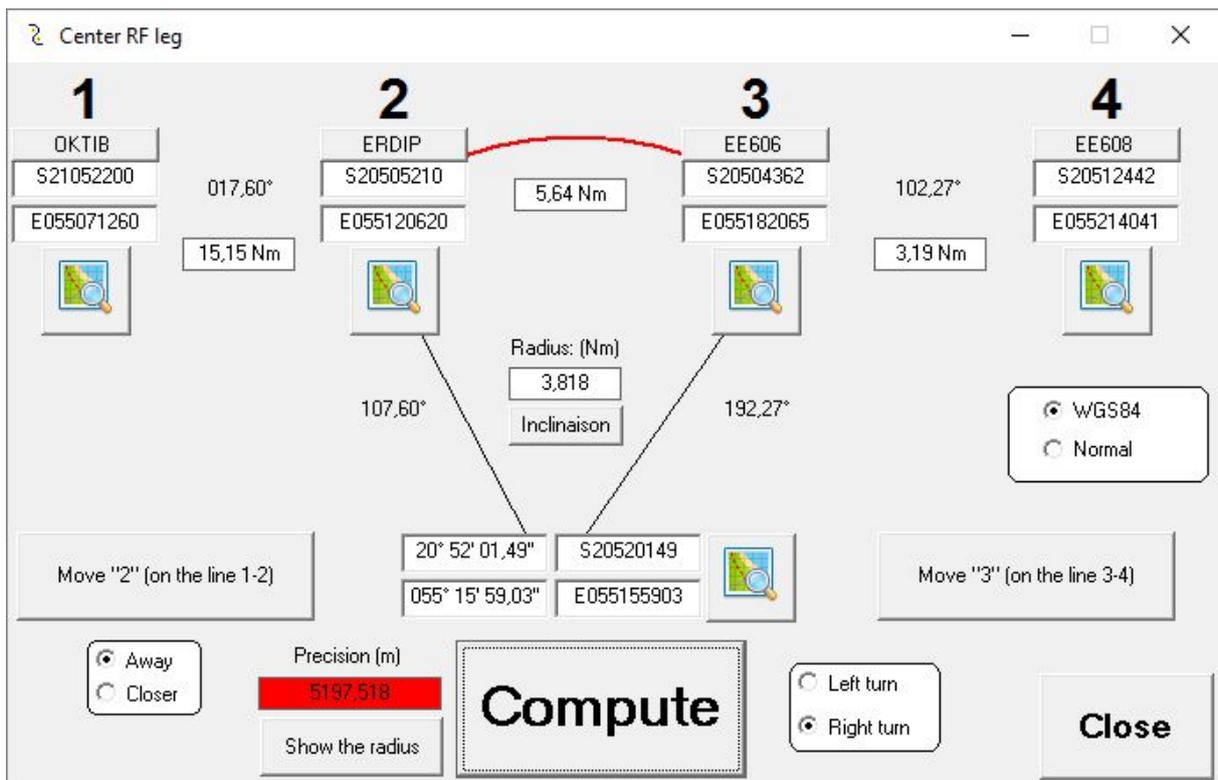
First we put the points.

Click in the list of the manual coding in the waypoints then in the "Import" buttons.



We have to select the turn direction (right)

Then press "Compute"

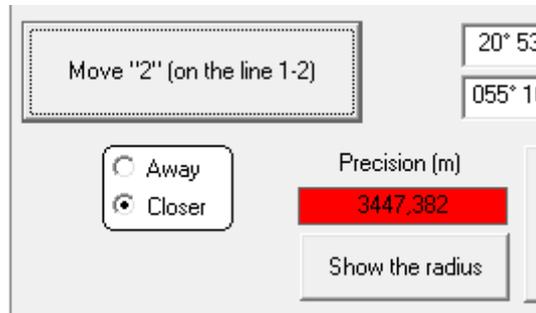


The precision is awful and that's normal. The "show the radius" button gives the reason, there's no tangential trajectories with any common arc center.

So as we said, we move ERDIP to the south.

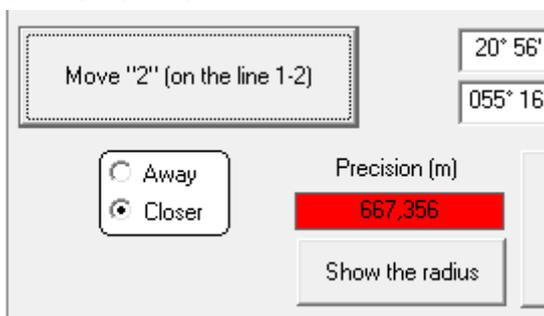
So we will move 2 on line 1-2, closer to 1...

Select Closer, and press the button !



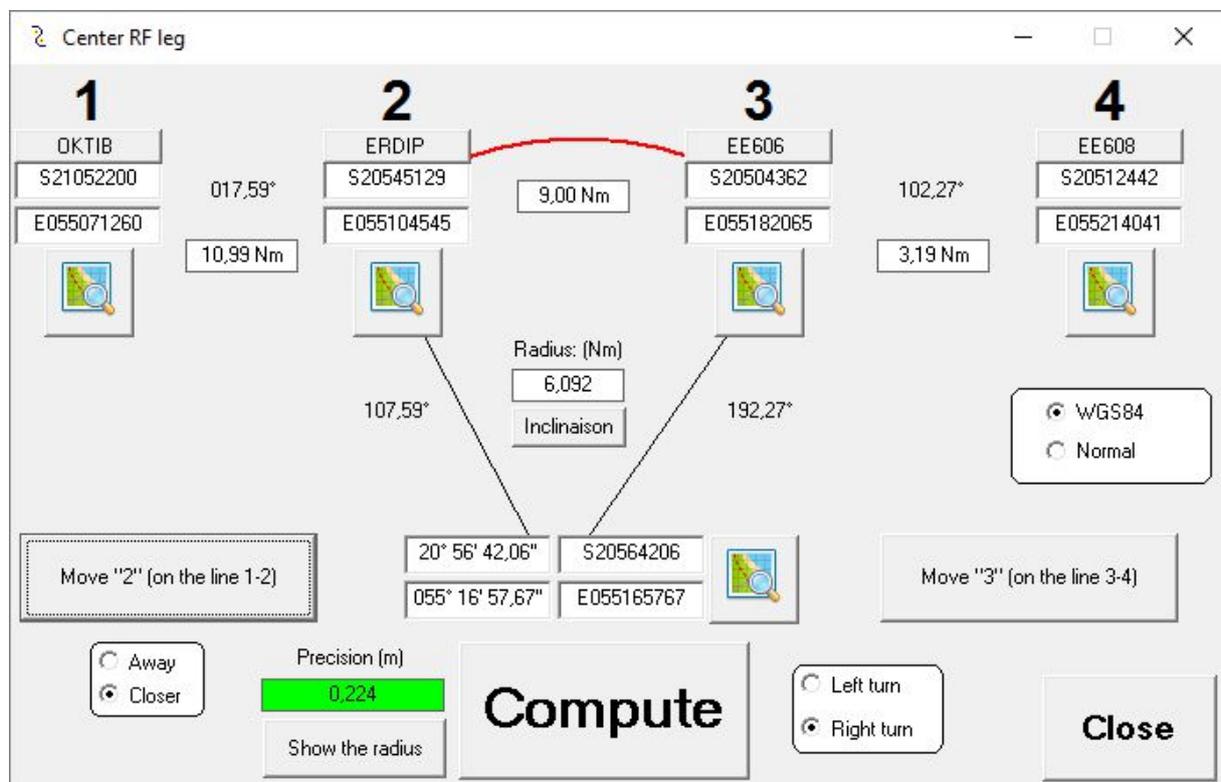
First time we have

then

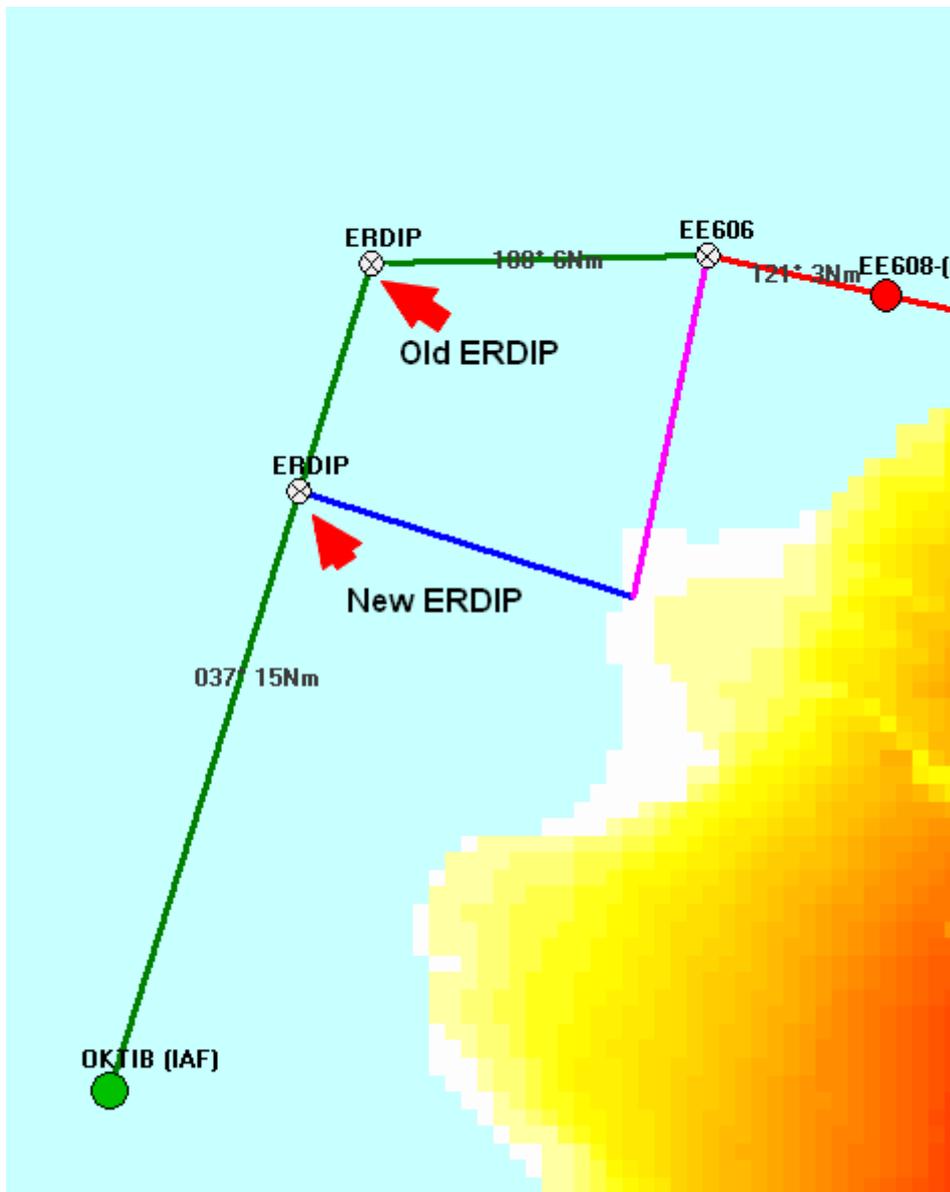


and so on until you have a green windows and

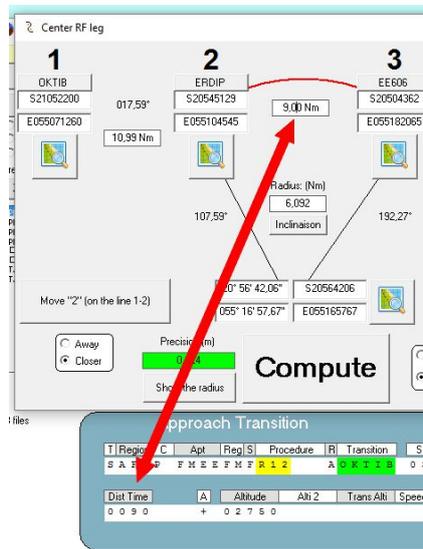
precision doesn't decrease any more.



Now the precision is 22 centimeters (the maximum we can obtain with Arinc 424 precision in coordiantes)



I modify the coordinates of ERDIP with the coordinates we computed, and I create a new waypoint by pressing on the button "Insert Line"

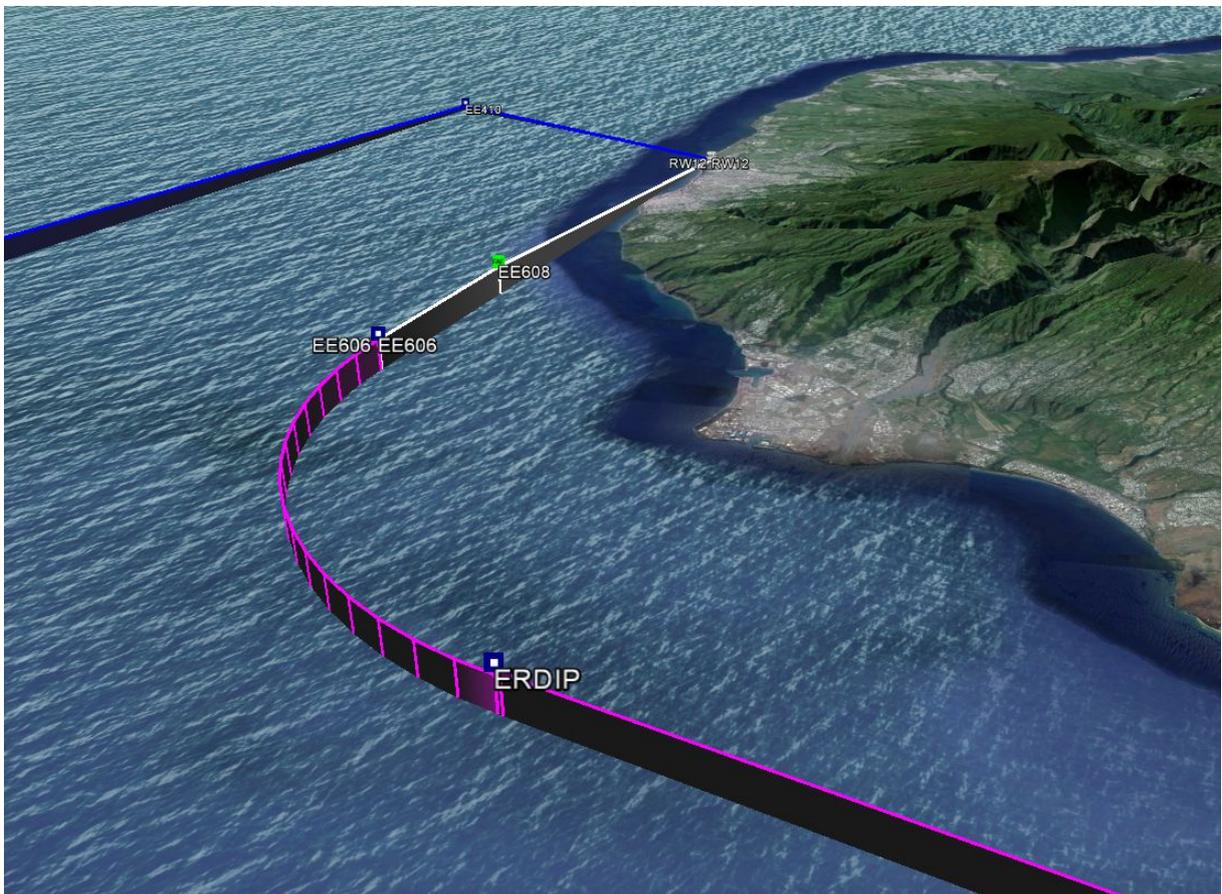
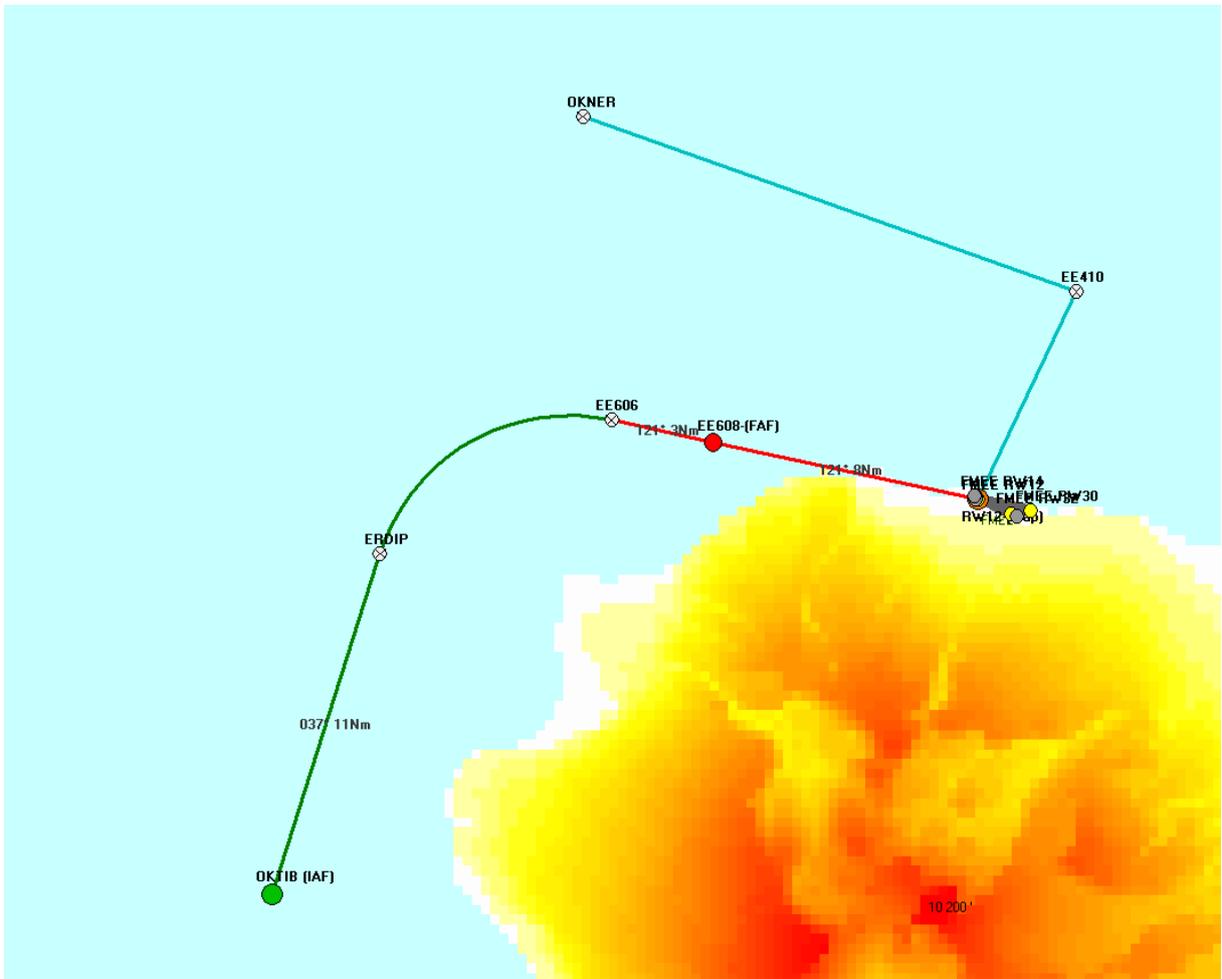


Finally we give the information of the waypoint to consider in center arc:

TI	Region	C	Apt	Reg	S	Procedure	R	Transition	Seq													
S	A	R	P	F	M	E	E	F	M	F	R	1	2	A	O	K	T	I	B	0	3	0

Time	A	Altitude	Alt 2	Trans Alt	Speed	Path	Center RF/AF	Reg	Sec	D	R	Q	Record	Cycle								
00	+	0	2	7	5	0	M	Y	C	T	B	P	S	4	9	1	9	7	1	6	0	1

And we are done...



Cherry on the cake, we want to know what is the maximum speed at the beginning of the turn.

The screenshot displays a flight planning application window titled "Center RF leg". It shows a sequence of four waypoints labeled 1, 2, 3, and 4. Waypoint 1 is DKTIB (S21052200, E055071260). Waypoint 2 is ERDIP (S20545129, E055104545). Waypoint 3 is EE606 (S20504362, E055182065). Waypoint 4 is EE608 (S20512442, E055214041). Distances between waypoints are 10.99 Nm (1-2), 9.00 Nm (2-3), and 3.19 Nm (3-4). An angle of 017.59° is shown between 1 and 2, and 107.59° between 2 and 3. A red arc indicates a turn at waypoint 3 with a radius of 6,092 Nm and an inclination of 192.27°. A "Turn Radius" dialog box is open, showing a turn radius of 6,092 Nm, a wind of 30 Kt, and an aircraft speed of 220 Kt. The dialog also displays: "6,092 Nm radius turn at 220 kts. With a wind in any direction of 30 kts. Worst equivalent Ground Speed: 250 Kts. Inclinaison = 8,50°". A red arrow points from the "Inclinaison" field in the dialog to the "Inclinaison" field in the main window. The main window also includes a "Compute" button, a "Precision (m)" field set to 0.224, and a "Show the radius" button. A sidebar on the right shows altitude values: + 02750, + 02750, 02750, + 00466, 03000.

Button inclination, we see that with the actual 220 kts the inclination with the worse wind will be of only 8.5° less than the max 25° authorized.