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INTERNATIONAL CIVIL AVIATION ORGANIZATION

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Frequency Finder
Easy reference -*NAV Module*

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ICAO Workshop on Frequency Finder

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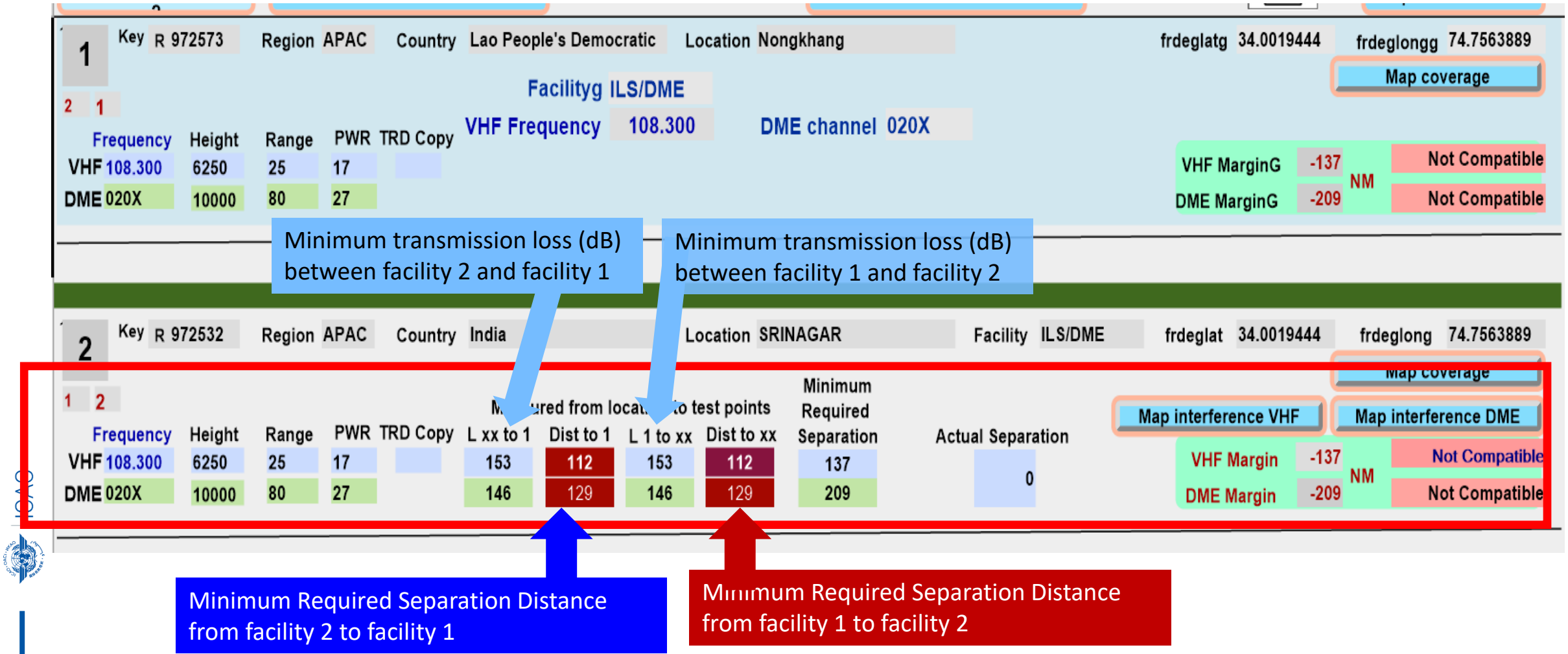
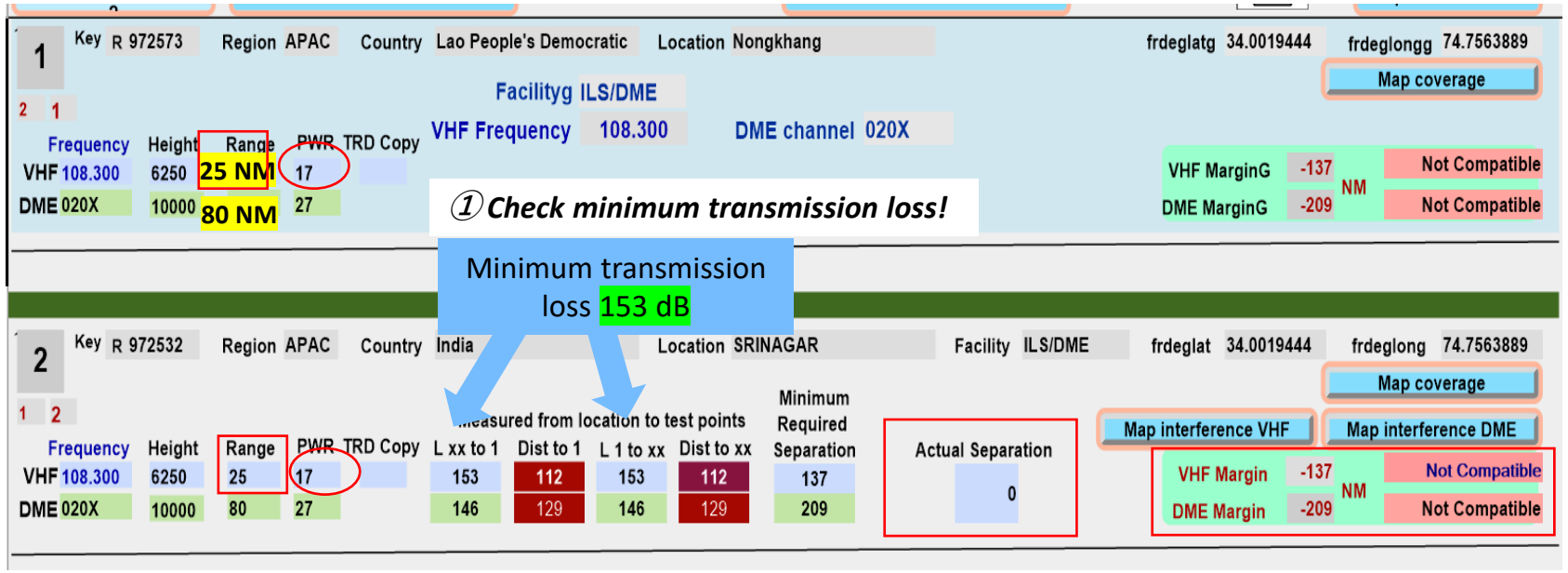
Demonstrations
Test Frequency & Understand the result

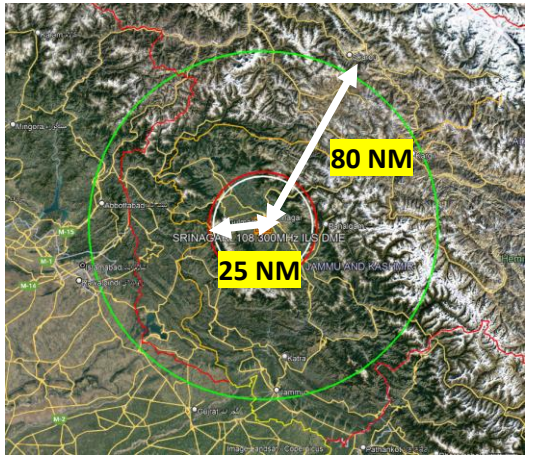
Example 1
Test Frequency & Understand the result

Example: Select Leo People's Democratic, Nongkhang, ILS/DME 108.300and click test



Example: Select Leo People's Democratic, Nongkhang, ILS/DME 108.300and click test





② Check a table included in the handbook!
In this example, Table 3-7

③ Consider Minimum Required separation!

a. LLZ 2 to LLZ 1: 137 NM

(Minimum separation distance **112** *+ Range of LLZ 1 (25) = 137 NM)*

b. LLZ 1 to LLZ 2: 137 NM

(Minimum separation distance **112** *+ Range of LLZ 2 (25) = 137 NM)*

④ Compare the result above and then…determine the required separation!

In this case, Required separation is **137 NM**

Table 3-7. Minimum geographical separation distances between the edge of coverage of a desired localizer and the location of an undesired localizer facility

E dB (μV/m)	*f* (MHz)	P_d (dBW)	*D/U* (dB)	P_u (dBW)	*Tx* (dBW)	*L* (dB)	***D* (NM)**	Δ*f* (kHz)	*Remarks*
32	108	–116	36	–152	30 17	182 169	**246** **135**	0	Co-frequency undesired localizer, 36 dB
32	108	–116	20	–136	30 17	166 **153**	**131** **112**	0	Co-frequency undesired localizer, 20 dB
32	108	–116	–7	–109	3 1	139 126	**81** **44**	50	Undesired adjacent localizer, 100 kHz receiver

Minimum transmission loss (dB) between facility 2 and facility 1

Minimum Required Separation Distance from VOR 1 to VOR 2

Minimum transmission loss (dB) between facility 1 and facility 2

Minimum Required Separation Distance from VOR 2 to VOR 1

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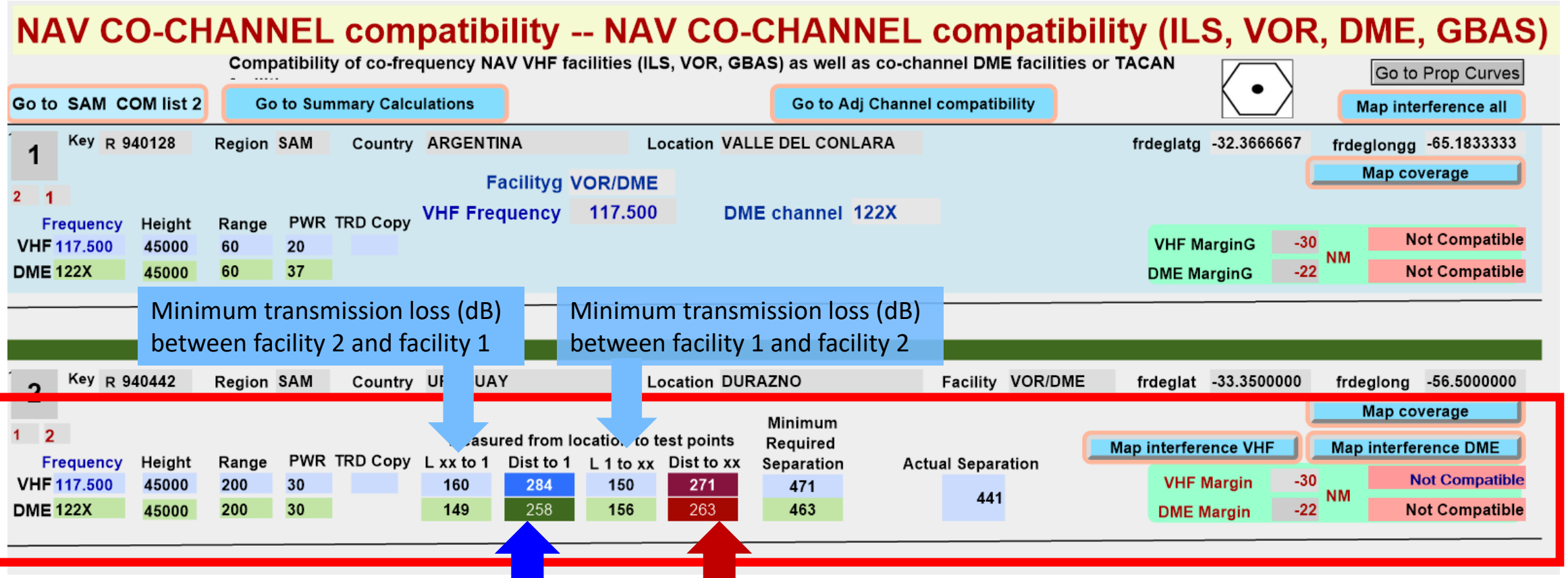
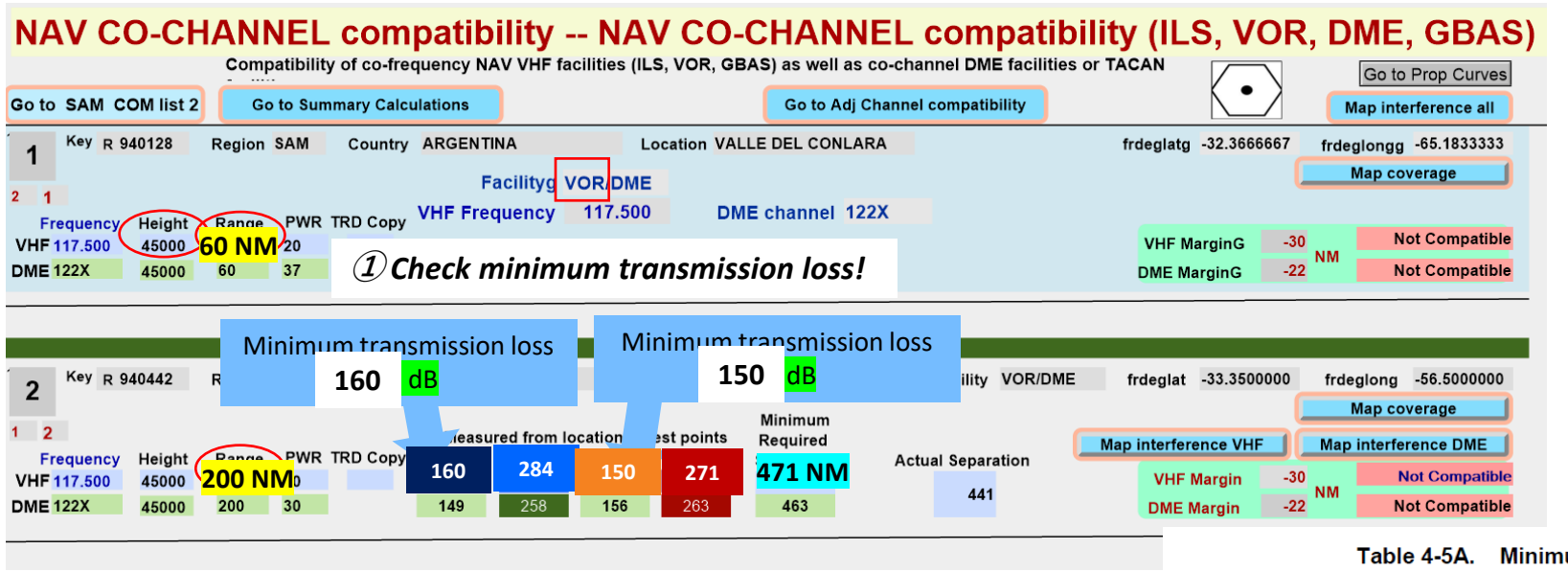
Example: Select Argentina, VALLE DEL CONLARA, VOR/DME 117.500 and click test



Example: Select Argentina, VALLE DEL CONLARA, VOR/DME 117.500 and click test



② *Check a table included in the handbook!*
In this example, Table 4-5A

Table 4-5A. Minimum separation distances between desired and undesired VORs

Δf (kHz)	D/U (dB)	Tx = 17 dBW		Tx = 20 dBW		Tx = 30 dBW		Remarks
		L (dB)	D (NM)	L (dB)	D (NM)	L (dB)	D (NM)	Desired VOR at 45 000 ft
0	20	147	268	150	271	160	284	50/100 kHz receiver
50	–7	120	134	123	174	133	231	100 kHz receiver
50	–34	93	5	96	11	106	43	50 kHz receiver
100	–46	81	< 0.5		< 0.5	94	7	50/100 kHz receiver
150	–50	77	< 0.5	0	< 0.5	90	< 0.5	0/100 kHz receiver

Note.— The separation distances (D) are between the edge of coverage of a desired VOR at 45 000 ft and the location of an undesired VOR (localizer) facility.

Minimum Required Separation Distance from VOR 1 to VOR 2

Minimum Required Separation Distance from VOR 2 to VOR 1

③ ***Consider Minimum Required separation!***

a. VOR 2 to VOR 1: 344 NM

(Minimum separation distance **284** *+ Range of VOR 1 (60) = 344 NM)*

b. VOR 1 to VOR 2: 471 NM

(Minimum separation distance **271** *+ Range of VOR 2 (200) = 471 NM)*

④ ***Compare the result above and then…determine the required separation!***

In this case, Required separation is

471 NM

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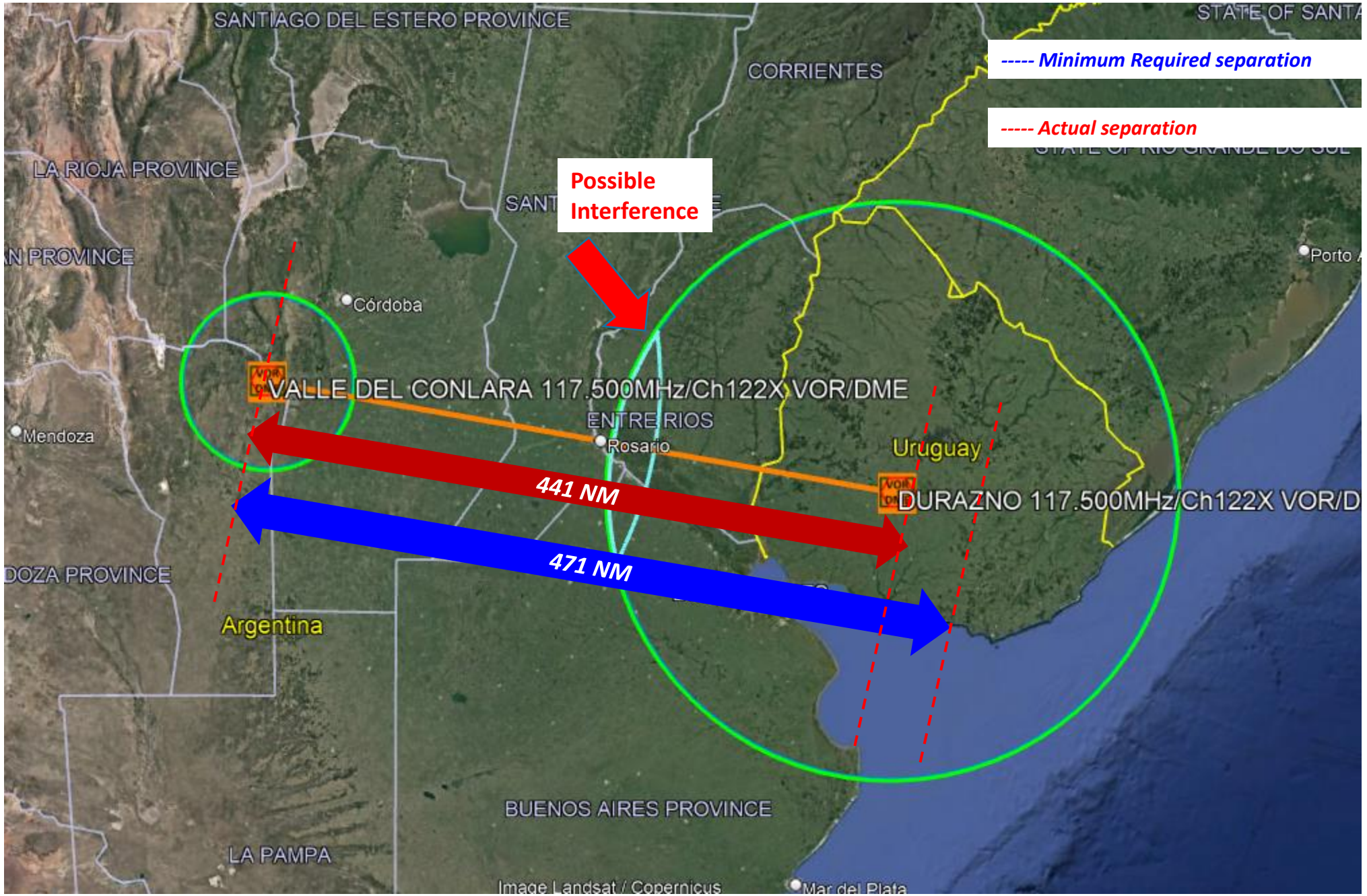
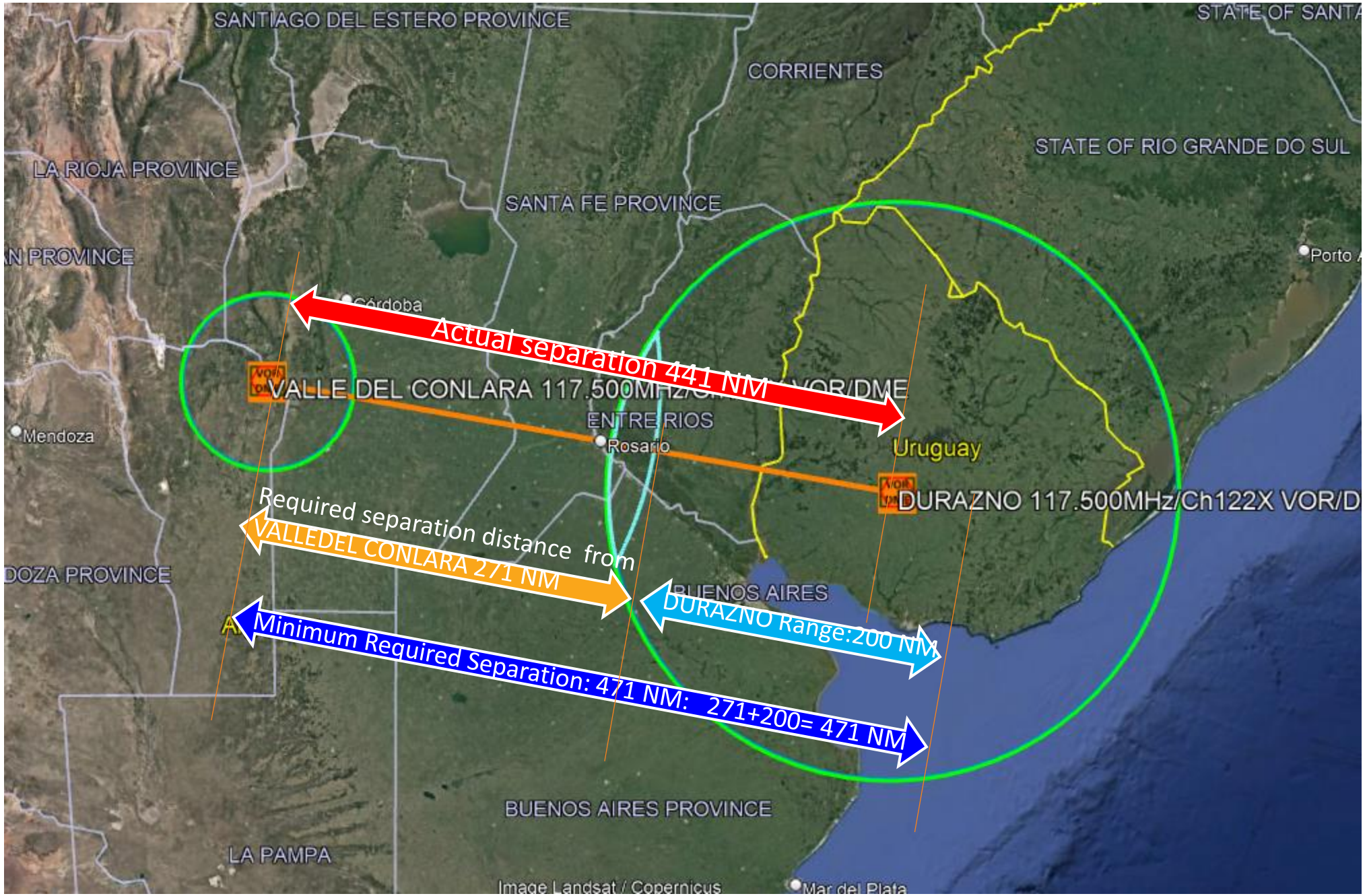

----- Minimum Required separation
----- Actual separation
Possible Interference
SANTIAGO DEL ESTERO PROVINCE
CORRIENTES
LA RIOJA PROVINCE
Córdoba
VALLE DEL CONLARA 117.500MHz/Ch122X VOR/DME
ENTRE RIOS
Rosario
Mendoza
Uruguay
DURAZNO 117.500MHz/Ch122X VOR/D
441 NM
471 NM
Argentina
BUENOS AIRES PROVINCE
LA PAMPA
Image Landsat / Copernicus
Mar del Plata


SANTIAGO DEL ESTERO PROVINCE
CORRIENTES
STATE OF SANTA
STATE OF RIO GRANDE DO SUL
LA RIOJA PROVINCE
SANTA FE PROVINCE
N PROVINCE
Porto A
Córdoba
Actual separation 441 NM
VALLE DEL CONLARA 117.500MHz/CH
VOR/DME
ENTRE RIOS
Mendoza
Rosario
Uruguay
DURAZNO 117.500MHz/Ch122X VOR/D
Required separation distance from
VALLEDEL CONLARA 271 NM
DOZA PROVINCE
BUENOS AIRES
DURAZNO Range:200 NM
A
Minimum Required Separation: 471 NM: 271+200= 471 NM
BUENOS AIRES PROVINCE
LA PAMPA
Image Landsat / Copernicus
Mar del Plata

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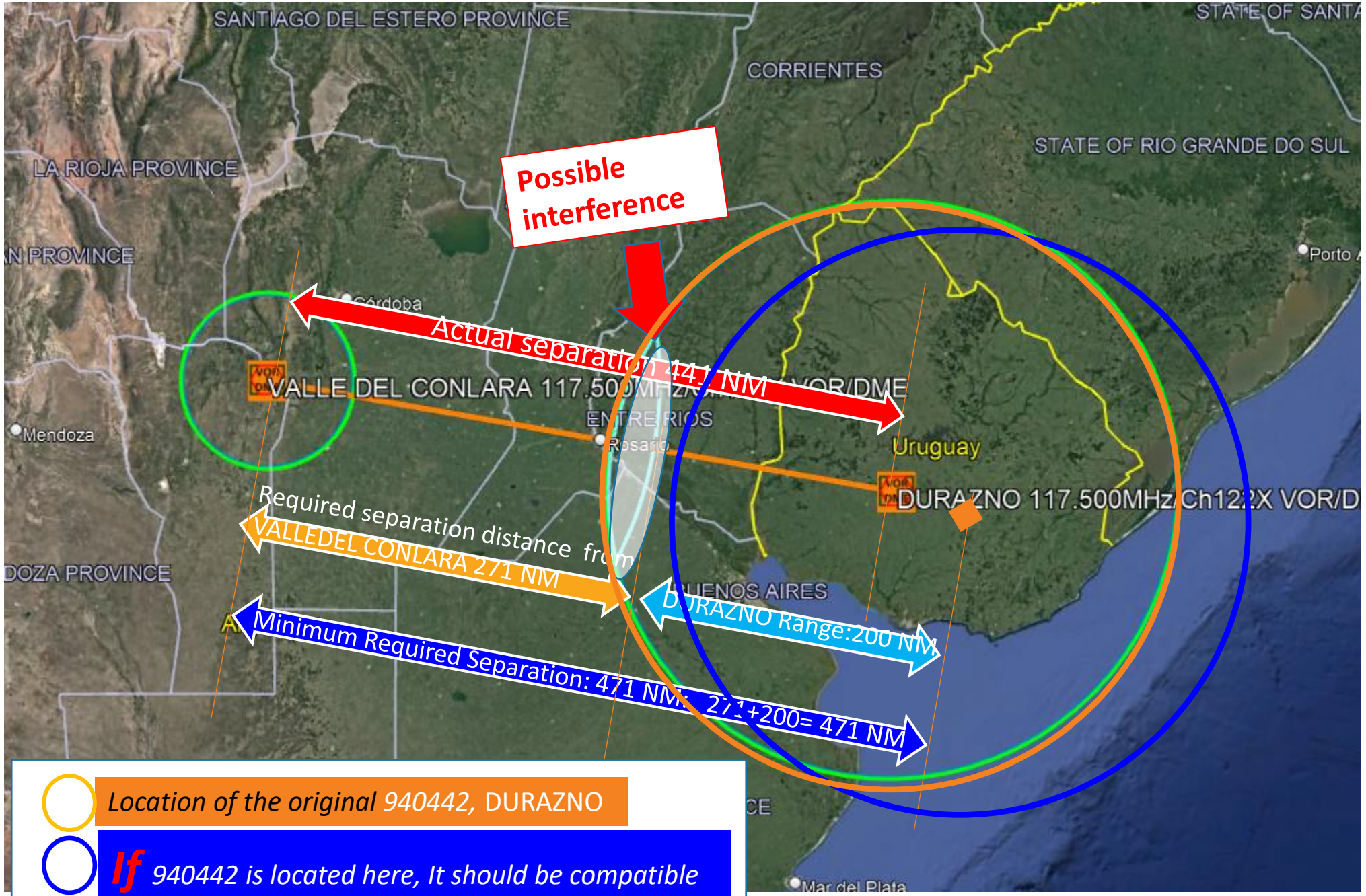
SANTIAGO DEL ESTERO PROVINCE
CORRIENTES
STATE OF RIO GRANDE DO SUL
LA RIOJA PROVINCE
Possible interference
Córdoba
Actual separation 441 NM
VALLE DEL CONLARA 117.500MHz
VOR/DME
ENTRE RIOS
Mendoza
Rosario
Uruguay
DURAZNO 117.500MHz Ch122X VOR/D
Required separation distance from
VALLEDEL CONLARA 271 NM
BUENOS AIRES
DURAZNO Range:200 NM
Minimum Required Separation: 471 NM 271+200= 471 NM
Mar del Plata
Location of the original 940442, DURAZNO
If 940442 is located here, It should be compatible

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Exercises

Exercise NAV 1- ***Update your COM List 2 of the Frequency Finder, using your latest data.***

Thank You!

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