



# Flight Planning in Free Route Airspace

## Airspace Border and RAD issues

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24<sup>th</sup> May 2018

# Flight Planning in Free Route Airspace

Free Route Airspace now covers a much larger area than a few years ago

We have and continue to develop a system that maximises the opportunities the Free Route Airspace offer

Problems remain however:

## Airspace Borders

- Number of borders

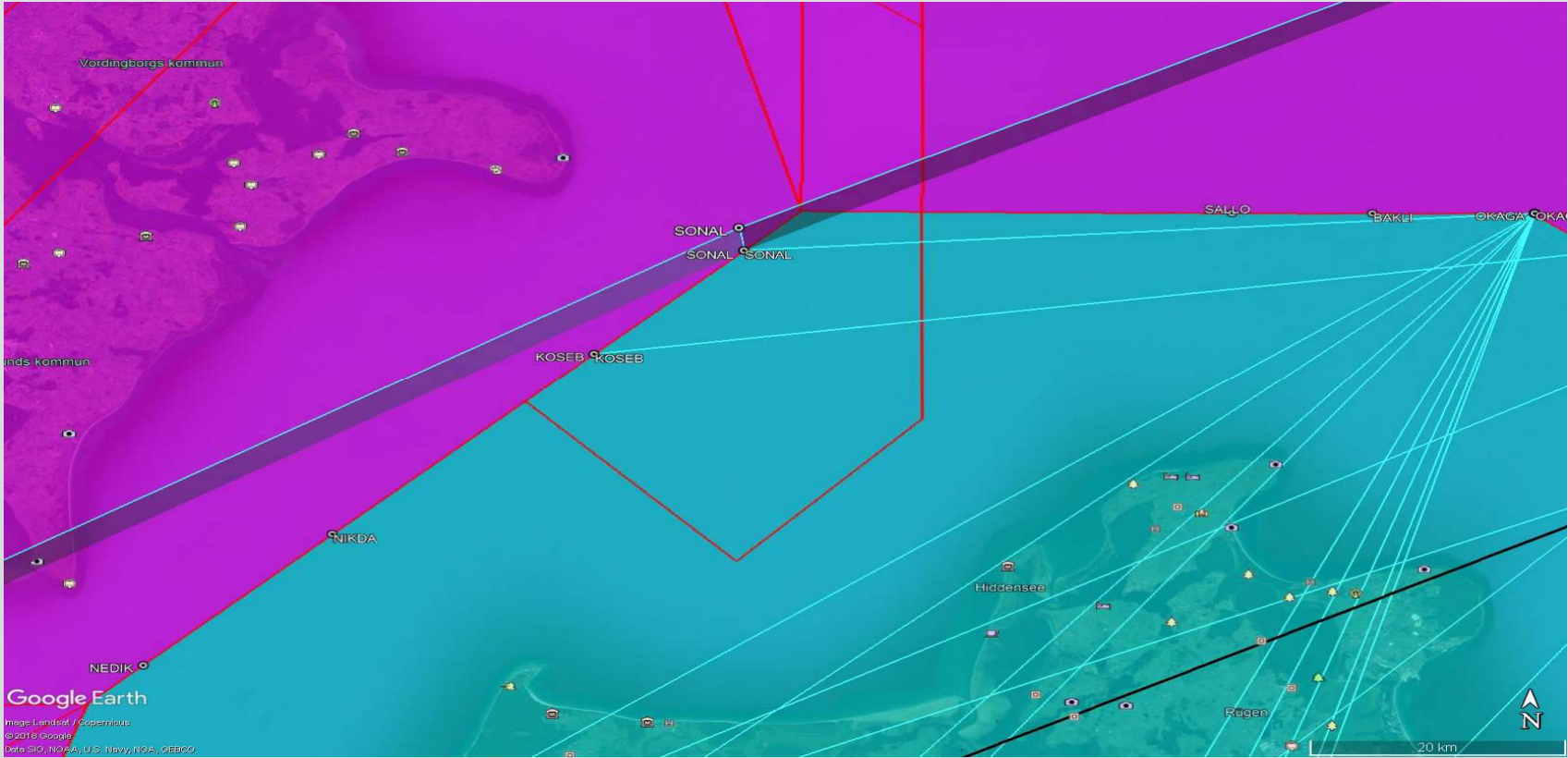
- Crossing correctly

- Border points can be way off the border

## RAD

- New types of RAD restrictions and increase in number

# SONAL DCT OKLAD



# SONAL DCT OKLAD

(FPL-P97-IS  
-B738/M-SDFGHIJ1P1RWXY/L  
-EDDW0525  
-N0449F360 WSN L23 ESTAD UL23 HAM UP605 AMICH/N0455F390  
UP605 **MEGAR DCT SONAL DCT OKLAD** DCT ORVIX  
-EVRA0130  
-PBN/A1B1L1O1 NAV/Y DOF/180519 REG/P97 EET/EKDK0023 EDWW0029 ESAA0029  
EVRR0058 SEL/AEBS  
RMK/TOW:60716 DAL:D24PTWSN DAL:D51PTESTAD DAL:D76PTHAM  
DAL:D122PTAMICH DAL:D145PTMEGAR DAL:D191PTSONAL DAL:D486PTOKLAD  
DAL:D540PTORVIX DAL:D607ADEVRA TOC:D103F360T0017 BOC:D122F360T0019  
TOC:D148F390T0023 TOD:D495F390T0109  
-E/0205 P/TBN A/WHITE D/3 70 C YELLOW J/LF R/UVE S/MJ  
)

## Errors:

ROUTE52 THE DCT SEGMENT SONAL..OKLAD [NOT AN ALLOWED FRA INTERMEDIATE POINT] IS  
FORBIDDEN. RESTRICTION: EDUU100N

# SONAL DCT OKLAD

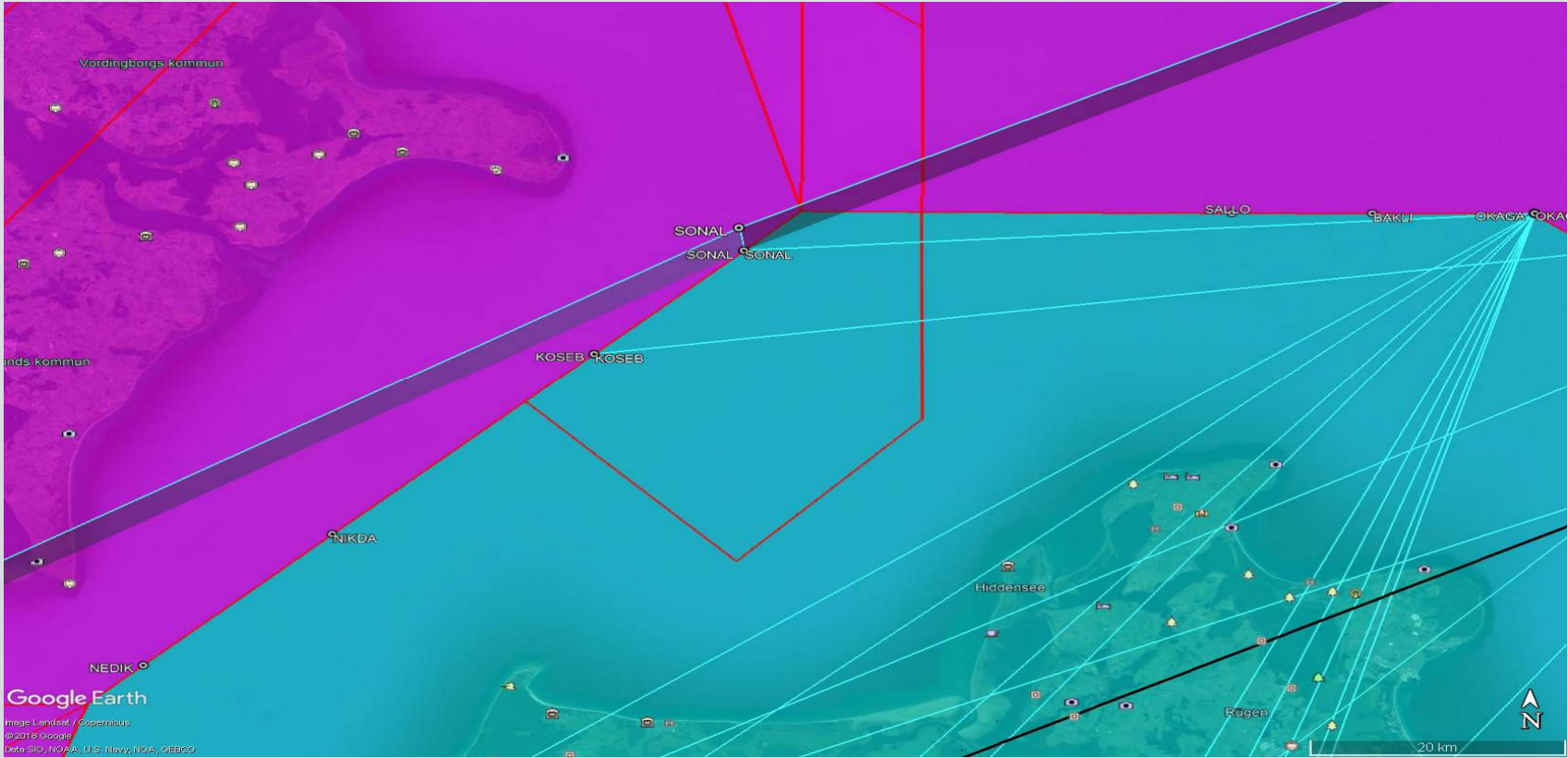
SONAL is an EX point

ENTRY / EXIT

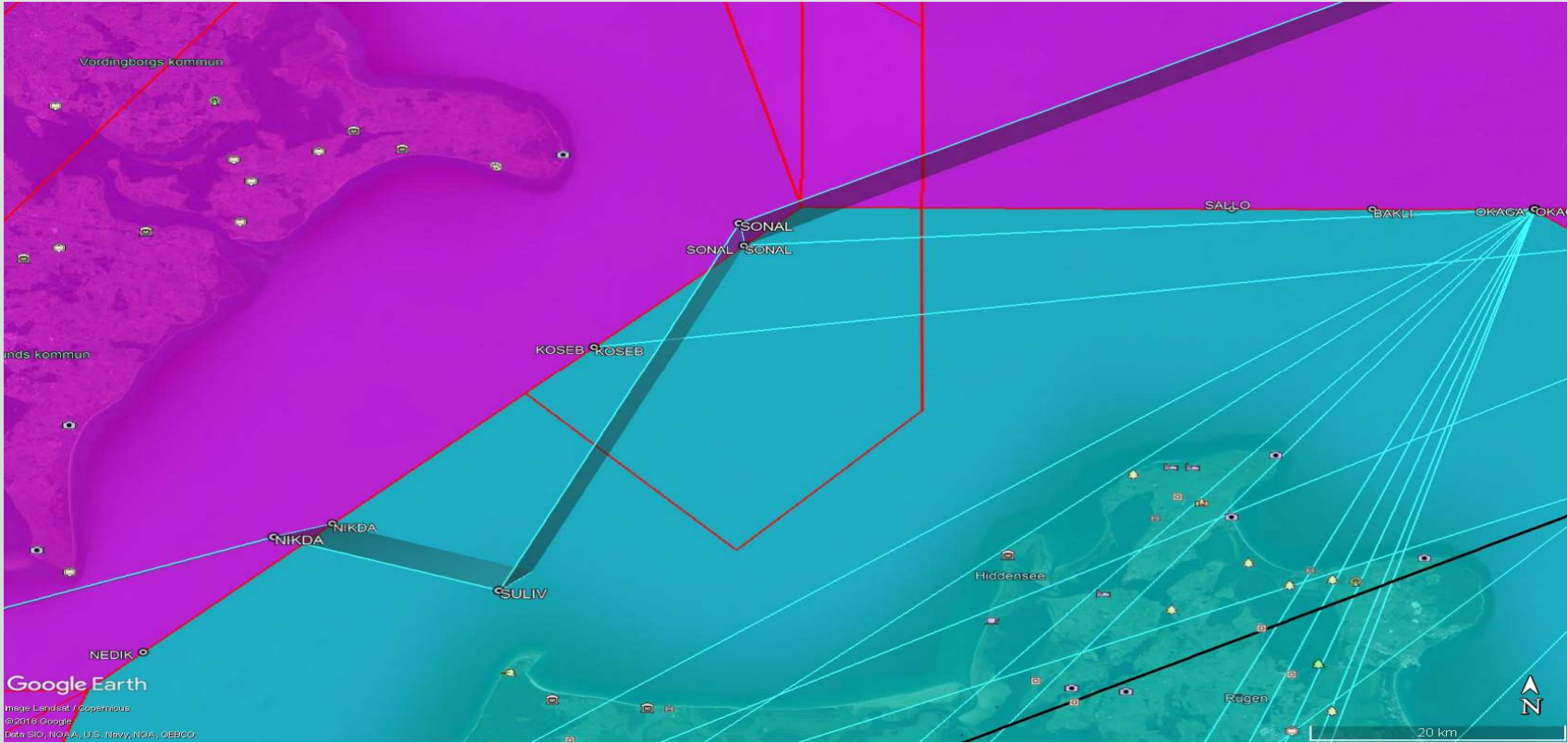
Clearly some form of directional requirement associated with SONAL

5nm + ( 2 x distance from the border point to the border) ... simplified

# SONAL DCT OKLAD



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(FPL-P97-IS  
-B738/M-SDFGHIJ1P1RWXY/L  
-EDDW0525  
-N0449F360 WSN L23 ESTAD UL23 HAM UP605 AMICH/N0455F390 UP605 MEGAR  
DCT **NIKDA DCT SULIV DCT SONAL DCT OKLAD** DCT ORVIX  
-EVRA0131  
-PBN/A1B1L1O1 NAV/Y DOF/180519 REG/P97 EET/EKDK0023 EDWW0026 ESAA0030  
EVRR0059 SEL/AEBS  
RMK/TOW:60753 DAL:D24PTWSN DAL:D51PTESTAD DAL:D76PTHAM  
DAL:D122PTAMICH DAL:D145PTMEGAR DAL:D169PTNIKDA DAL:D178PTSULIV  
DAL:D198PTSONAL DAL:D493PTOKLAD DAL:D547PTORVIX DAL:D614ADEVRA  
TOC:D103F360T0017 BOC:D122F360T0019 TOC:D148F390T0023  
TOD:D501F390T0110  
-E/0207 P/TBN A/WHITE D/3 70 C YELLOW J/LF R/UVE S/MJ  
)

No errors



# RFL Checking

(FPL-JBA058-IS  
-B738/M-SADE2E3FGHIRWXY/LB1  
-EDDT1350  
-N0438F340 BRANE Y200 HLZ T851 XAMOD  
-EDDL0046  
-PBN/A1B1C1D1O1S2T1T2 NAV/Y DOF/180524 REG/DATUI EET/EDGG0025  
SEL/FHJR  
RMK/PLAN 058 TOW:59347 DAL:D28PTBRANE DAL:D93PTHLZ DAL:D235PTXAMOD  
DAL:D264AEDDL TOC:D81F340T0014 TOD:D137F340T0022 BOD:D143F320T0023  
TOD:D147F320T0023 BOD:D153F300T0024 TOD:D159F300T0025  
BOD:D178F240T0028 TOD:D183F240T0029  
-E/0133 P/TBN A/WHITE BLUE D/8 30 C Y J/LF R/E S/M  
)

## Errors:

PROF204 RS: TRAFFIC VIA BKD BUREL GUGSU LODRO:F285..F999 IS ON FORBIDDEN ROUTE  
REF:[EC2027A] BKD, BUREL, GUGSU, LODRO

# RFL Checking

**BKD, BUREL, GUGSU, LODRO**

**Not available for traffic**

**DEP (ad:EDDB, EDDT) with**

**ARR (ad:EDDK, EDDL, EGLL, LFPG)**

**With RFL above FL285**

**AIRAC MAY..AIRAC OCT Today!!!**

**H24**

**EC2027**

**Connecting Routes to / from KUAC (limitation in initial FL)**

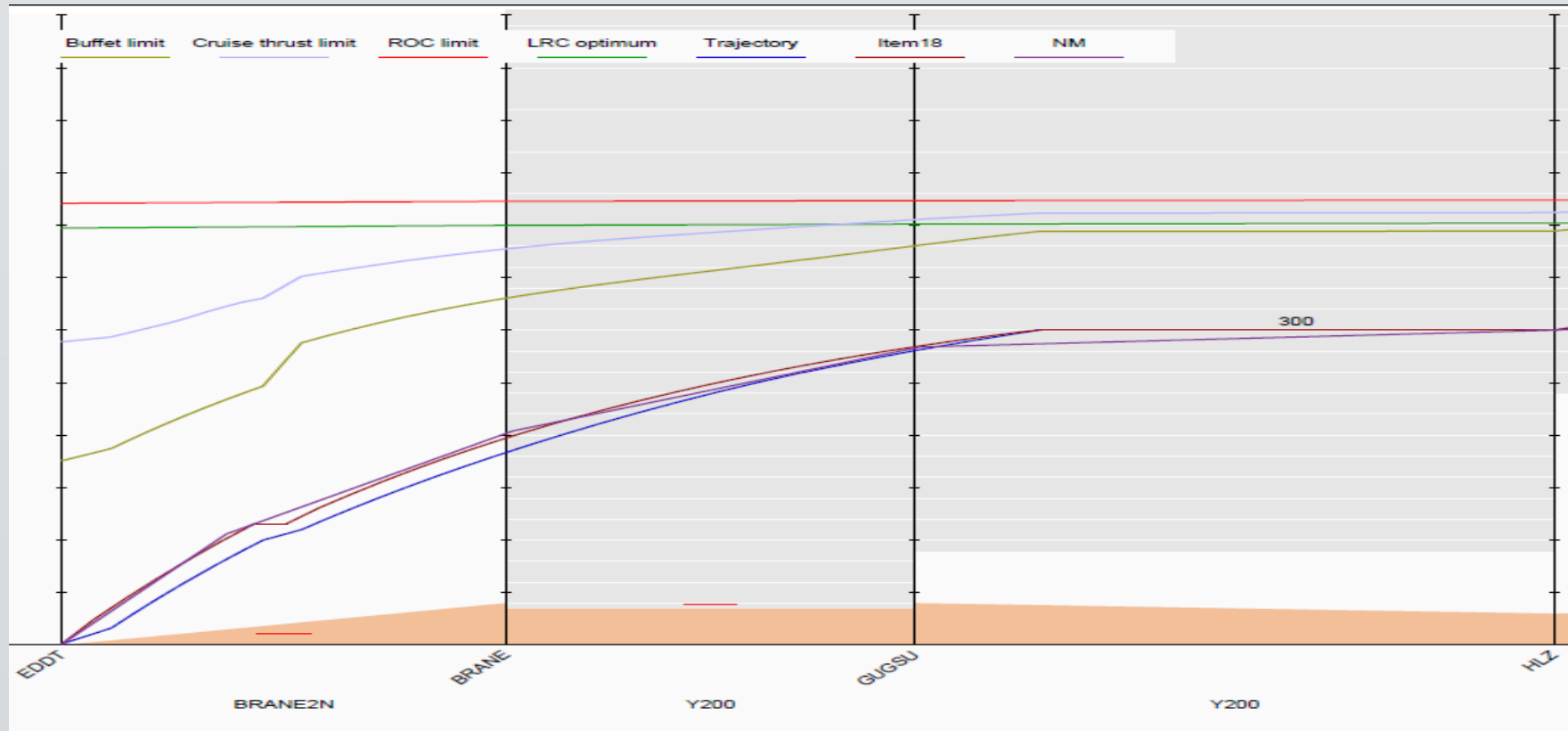
**To off-load sector EDUUVL1L .**

**Higher level when clear of the sector at POVEL/HLZ/BUMIL**

**(use of RFL checking at the points to force correct initial RFL and ensure**

**correct sector sequence and ATC data exchange)**

# RFL Checking



## RFL Checking

Our performance indicates we are just below FL285 at GUGSU

IFPS have us at 8656 metres at GUGSU (which is 28399 feet)

But we are rejected because our RFL is above FL285

Pretty much agree therefore that the aircraft is 101 feet below FL285

When we build 4D optimisation systems and publish full trajectory information on which we agree ... correct data exchange ... feels harsh to be judged on F15 levels

We try not to pass rejects to the customer so we strive to find an alternative route that passes – which can lead to us being accused of inventive flight planning

# ED3749

(FPL-JVI123-IS

-B738/M-SDE2E3FGIRWXY/LB1

-EDDS0950

-N0449F350 ROTWE7H ROTWE Y126 TUBLO N850 NATOR UN869

OLBEN/N0452F370 UN869 NEMOS DCT NINTU UN869 ZAR UZ245 CJN

UN10 SVL UN857 CLANA/N0448F390 UN857 TERTO

-GCFV0416 GCRR

-PBN/A1B1C1D1O1S2T1T2 DOF/180523 REG/JVIJS

EET/LSAS0018 LFFF0031 LECM0122 GMMM0240 GCCC0347 SEL/BQKS

CODE/3C0A02 OPR/TUI PER/C RMK/TCAS EQUIPPED PLAN 1951

RVR/200)

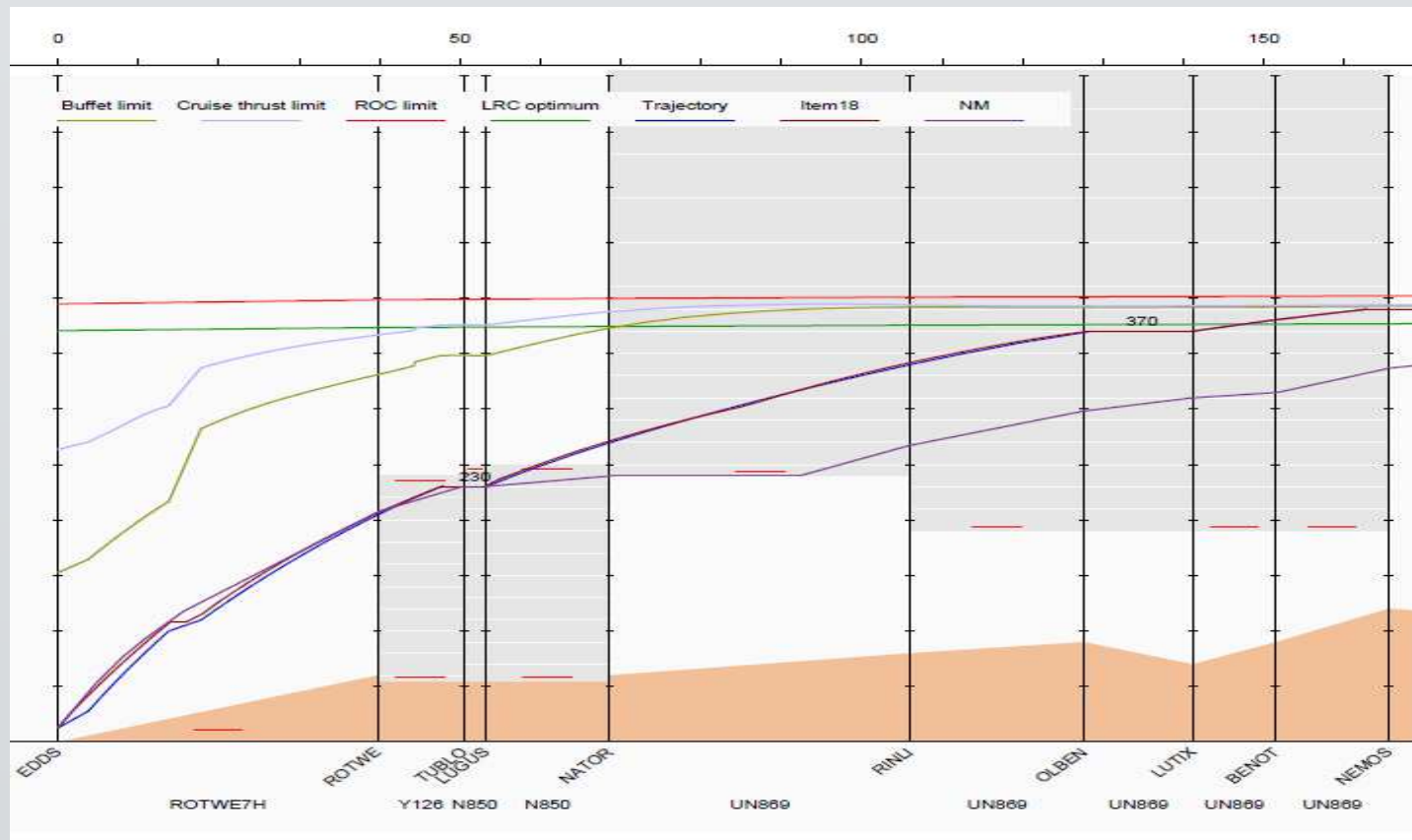
# ED3749



# ED3749



# ED3749





## ED3749

Our system is battling against restrictions but not a level playing field

Basic plans are manipulated behind the scenes to force compliance

This can lead some to question the wisdom of developing costly complex free route capable systems and the functionality of same

It leads to an impression of these costly systems producing non optimum results because the flight plan submitted and accepted had no fuel allowance for the prolonged period below FL245

# Restrictions

RAD restrictions I see in eRAD files

Some duplication due to same restrictions with different time applicability

AIRAC 1506      16301                      AIRAC 1806      22351

37% increase in 3 years including **hundreds of new airspace borders**

Vitor spoke this morning of border complexity

This rate of increase may surprise some with the implementation of so much new Free Route Airspace

We are seeking to comply with lots of new restrictions and new types of restrictions.

It feels like an arms race sometimes

