

FRA DSNA

Implementation roadmap & fight planning issues

FABEC SCO – AOG & CFSPG meeting

Geneva, 16 May 2023

item 5a

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Summary

DSNA FRA roadmap

- **Wave 2: 22 Feb 2024**
- **Wave 3 : Q1 2025**
- **Wave 4 : 2026-2027**

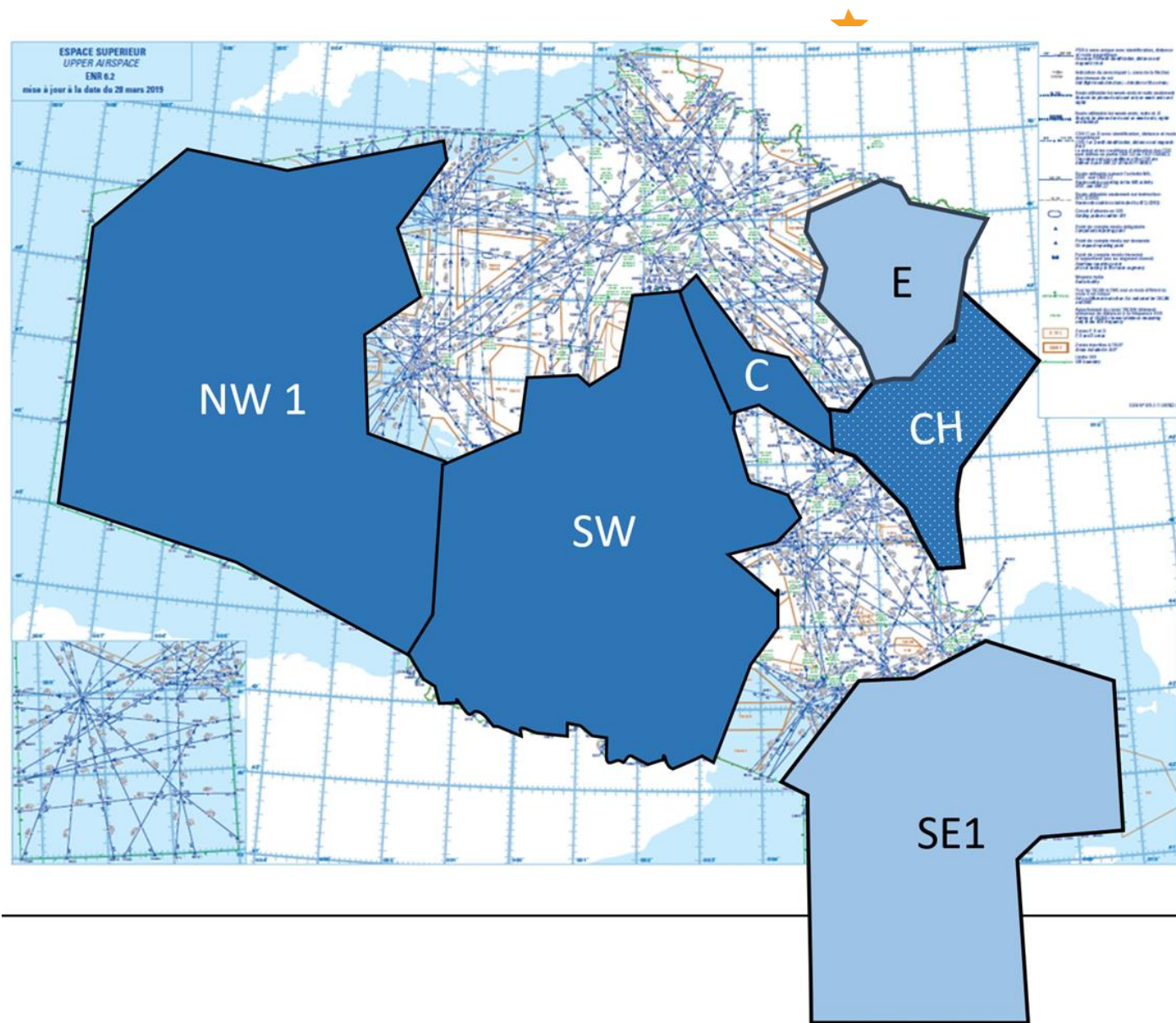
Updates & flight planning issues

- **Brest FRA NW**
- **Bordeaux FRA SW**



Wave 2 : 22 Feb 2024

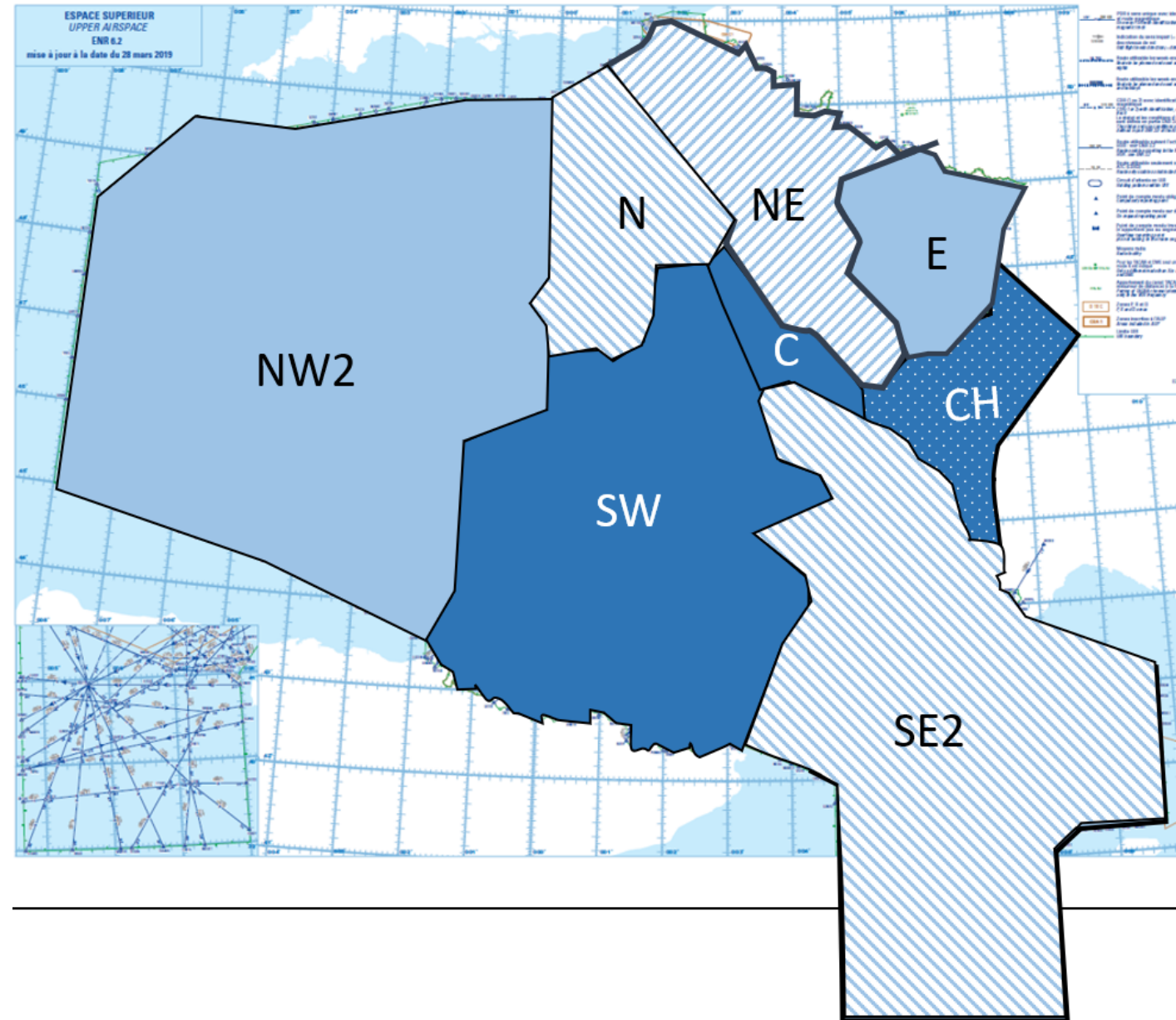
- Creation of Reims ACC LFFRAE & Marseille ACC LFFRASE step 1
- FL195-FL660
- H24
- Removal of all overflight ATS routes
- Draft available on DSN website not later than Sep 2023
- Joint pre-validation with NM & CFSP to be organised Q4 2023
- Hotline available before, during and after implementation



Wave 3 : Q1 2025

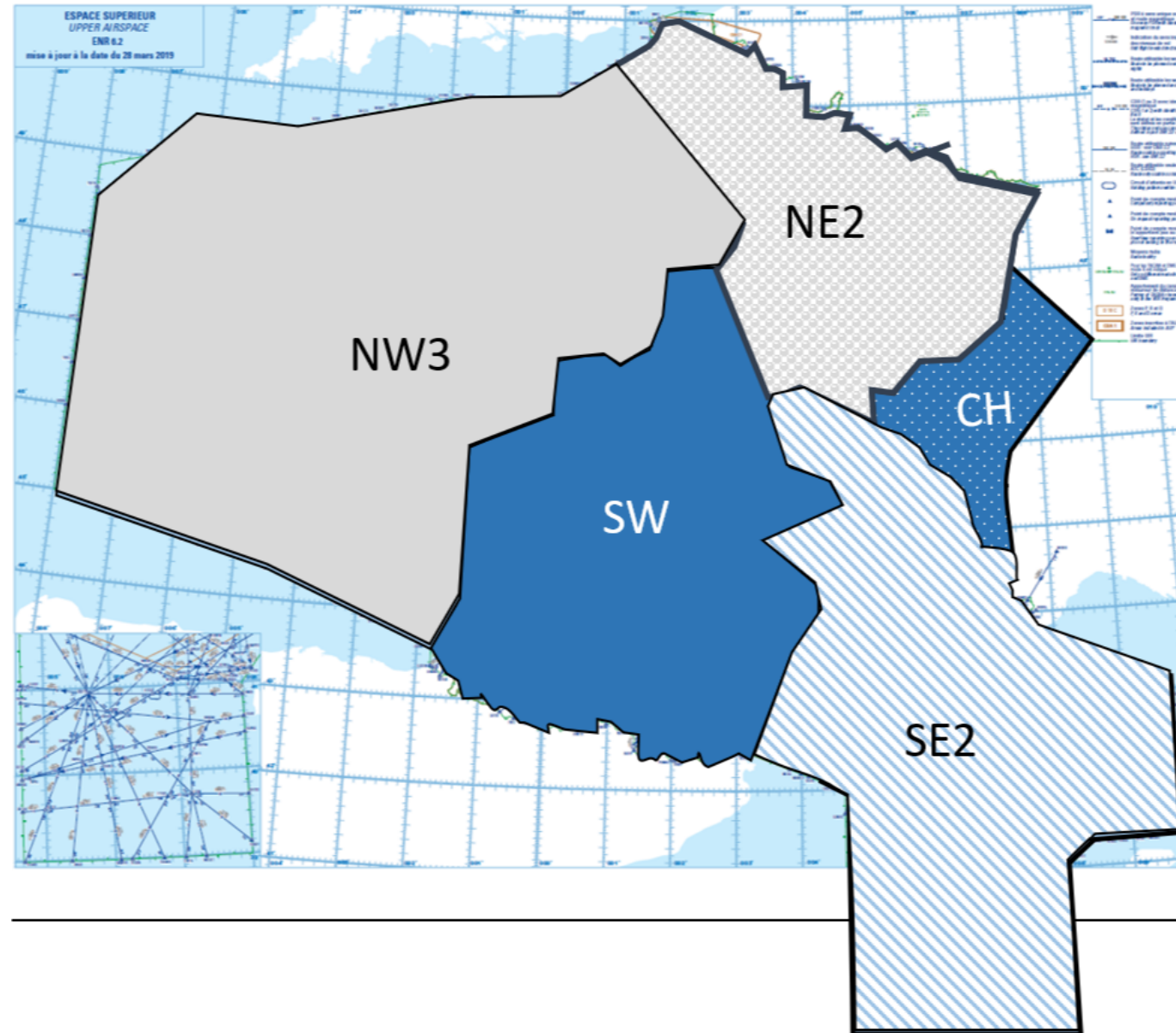
(tbc in Jun 2023)

- Creation of Paris / Reims ACC LFFRANE step 1
- Creation of Paris / Brest ACC LFFRAN
- Extension of Brest ACC LFRANW step 2 (add N & J sectors)
- Extension of Marseille ACC LFFRASE step 2 (all Marseille ACC FL195+)



Wave 4 : 2026 - 2027

- After 4-Flight ATM system implementation in Bordeaux (planned Dec 2025) and Brest ACC (planned Jan 2026)
- LFFRANW step 3 : merge with LFFRAN
- LFFRANE step 2 : merge with LFFRAC and LFFRAE
- Optimization & X-border operations



Brest ACC FRANW issues / use of (I) WPT

- For each flow, a number of intermediate WPT are possible to plan a descent (usually not mandatory WPT).
- ATFCM RAD Restrictions applicable in LFRR FRA :
 - First AIRAC of March implementation of seasonal ATFCM Measures
 - LF3776: ARR LFPO below FL325 before LFRRN
 - Example from RIVAK (E) WPT

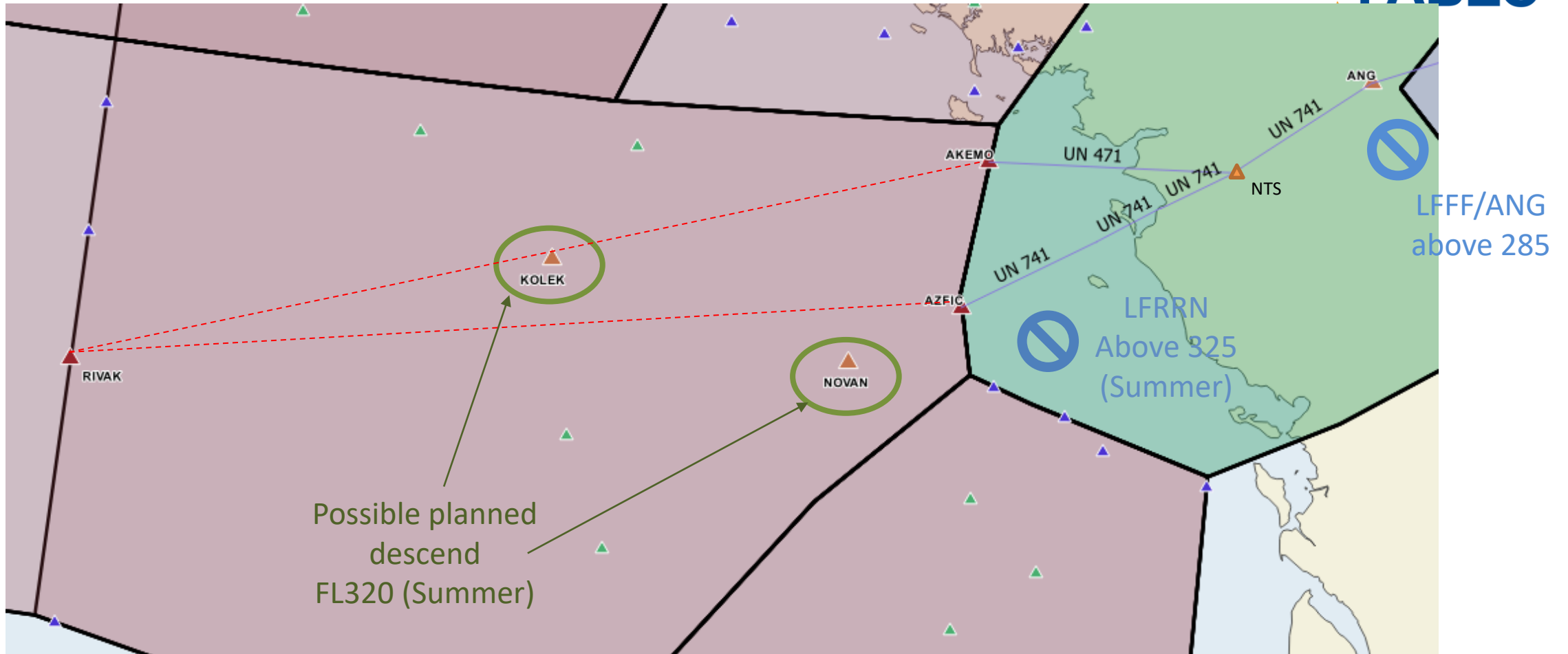


Brest ACC FRANW issues / use of (I) WPT

- **In March 2022 , most of the AO did not use the intermediate waypoints, and to comply with the seasonal RAD restriction filed FL320 at the entry of FRANW. Some even did after October 2022.**
- **The situation returned to normal after communication to AO and CFSP both directly and via NM flight efficiency (only a few AO still plan an early descent)**
- **Bad flight plan adherence (planned early descent not performed)**
 - **Vertical inefficiency (fuel calculation)**
 - **Intruders in AU Sector -> Possible sector overload**



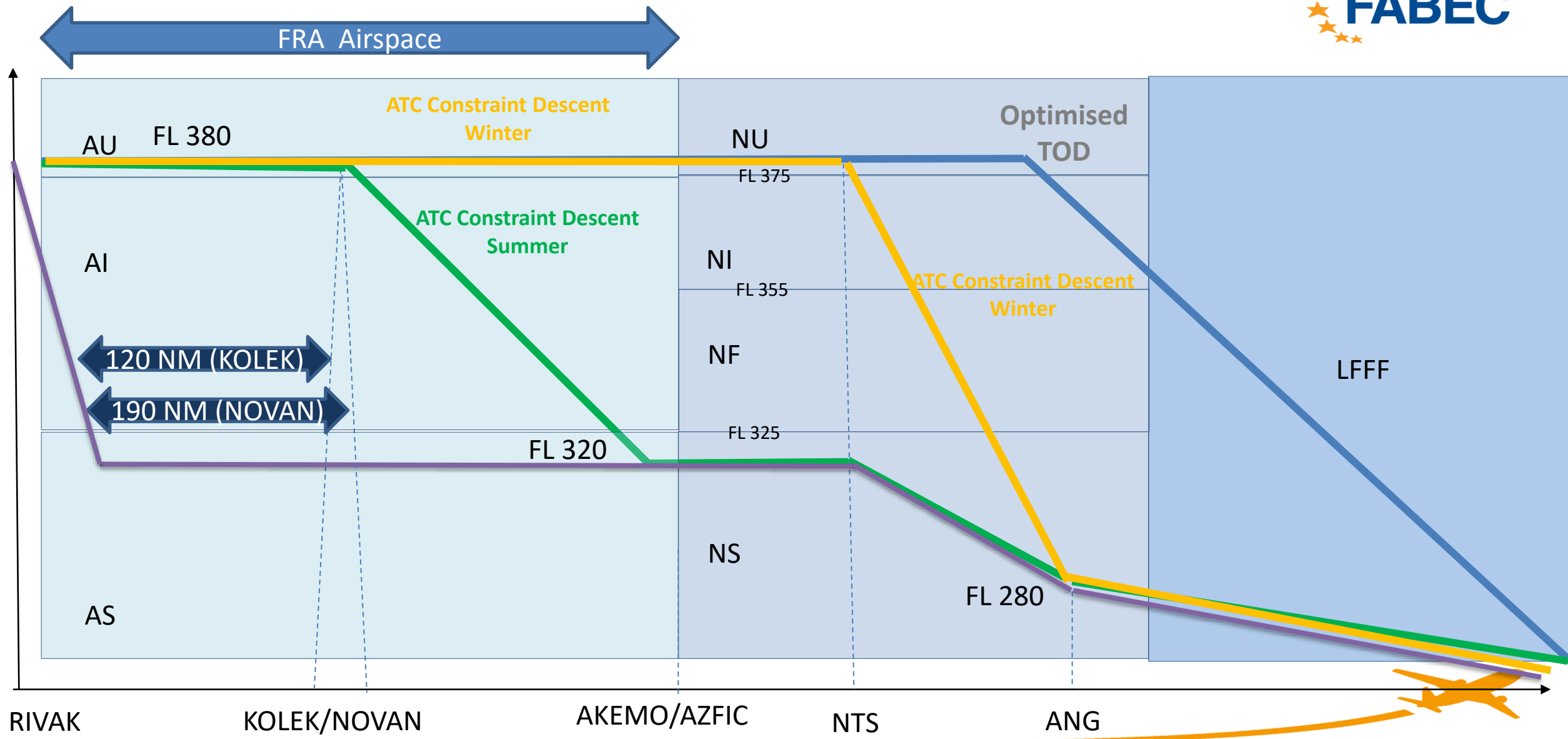
Flow RIVAK-AKEMO/AZFIC ARR LFPO



▲ Intermediate Points available on those flows



Ex ARR LFPO via RIVAK



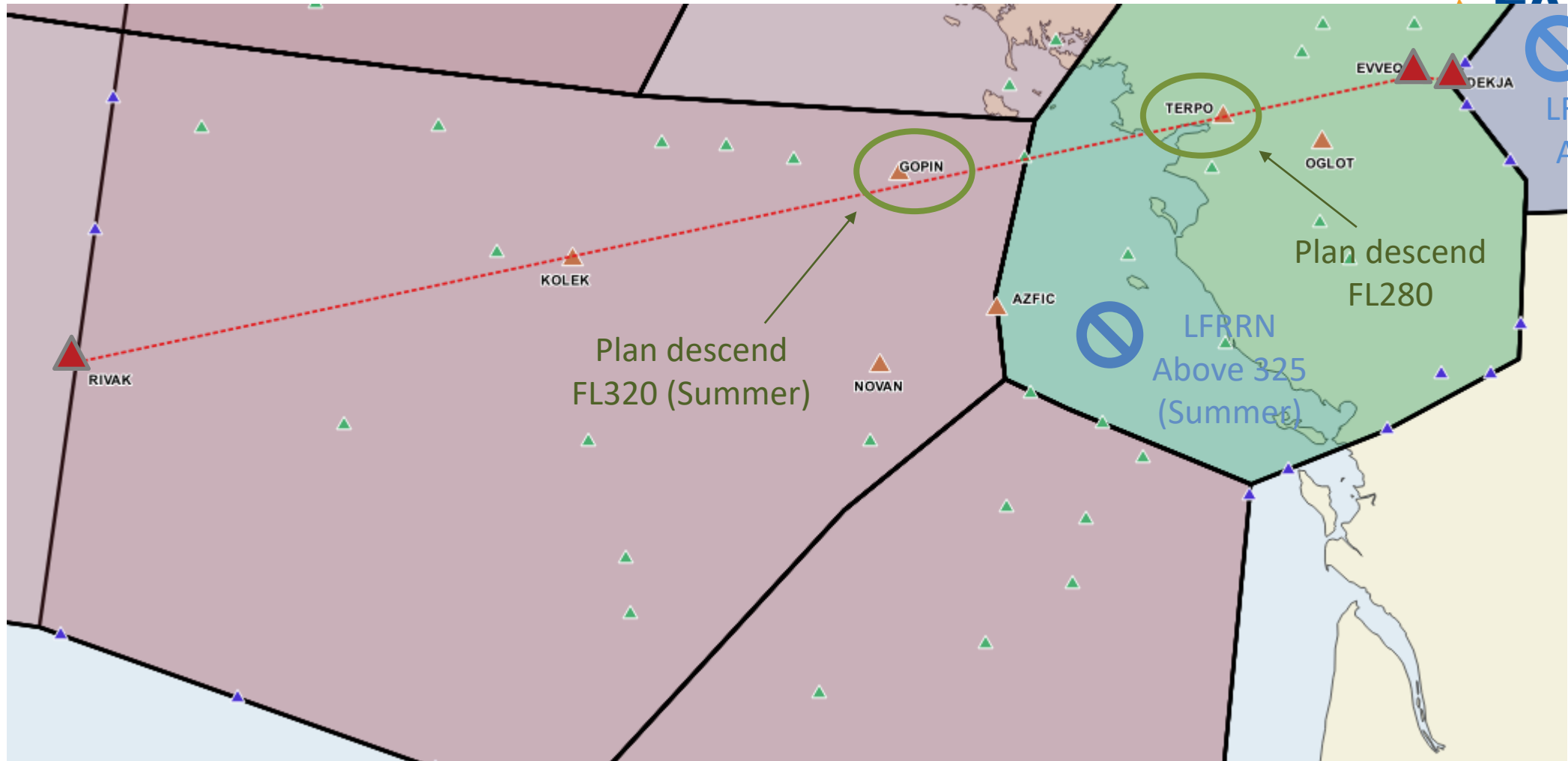
2025 : extension of LFRR FRANW

- **With a bigger FRA Cell and even longer DCT without mandatory intermediate WPT, this issue, if not solved, will have greater consequences :**
 - **More sectors involved**
 - **More destinations are forced into lower sectors**
 - **The sectors concerned by the FRA Extension (N &J) will be less tolerant to intruders as**
 - **The demand is already very high**
 - **These sectors have a high complexity**



flow RIVAK-DEKJA

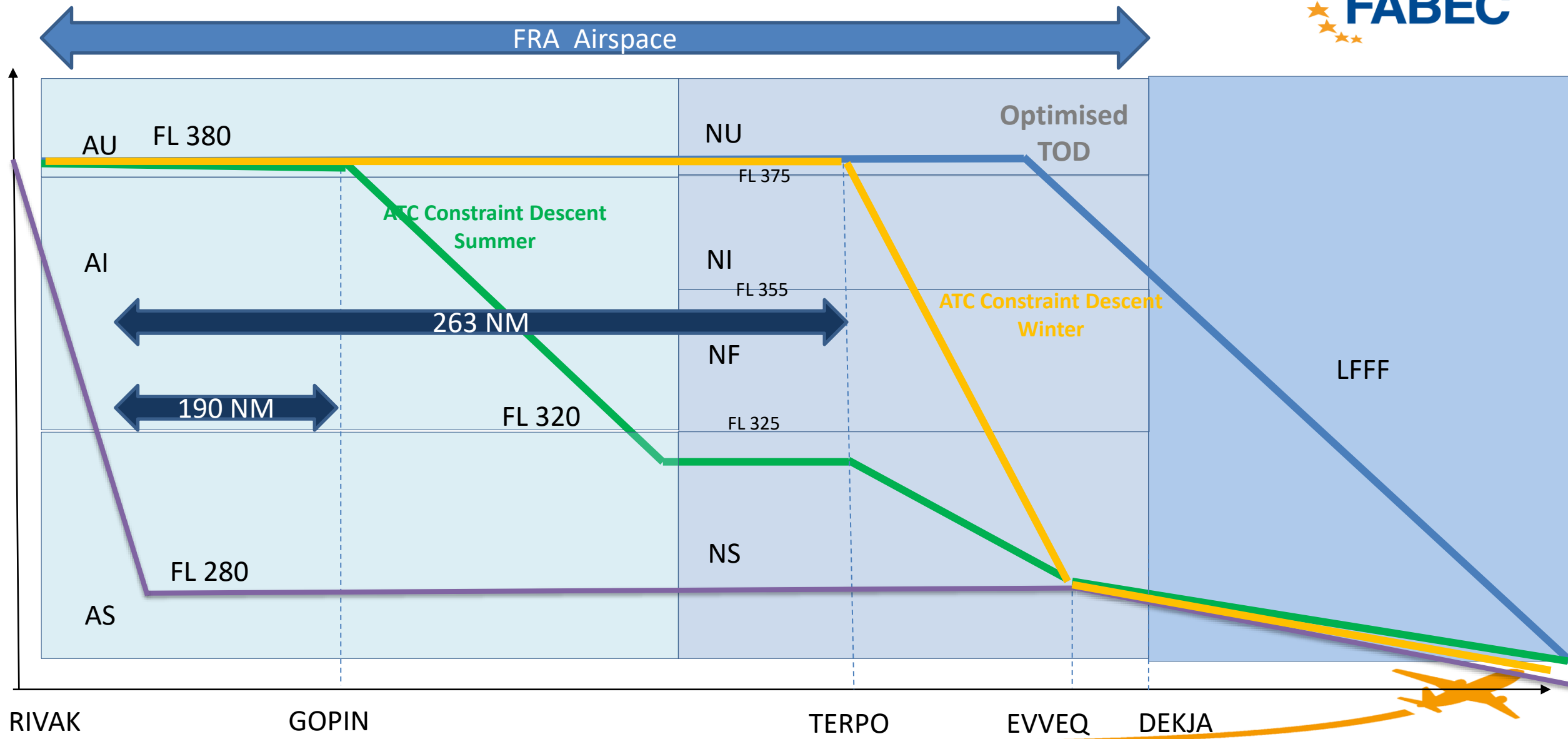
ARR LFPO



 Intermediate Points available on that flow  Mandatory Points on that flow



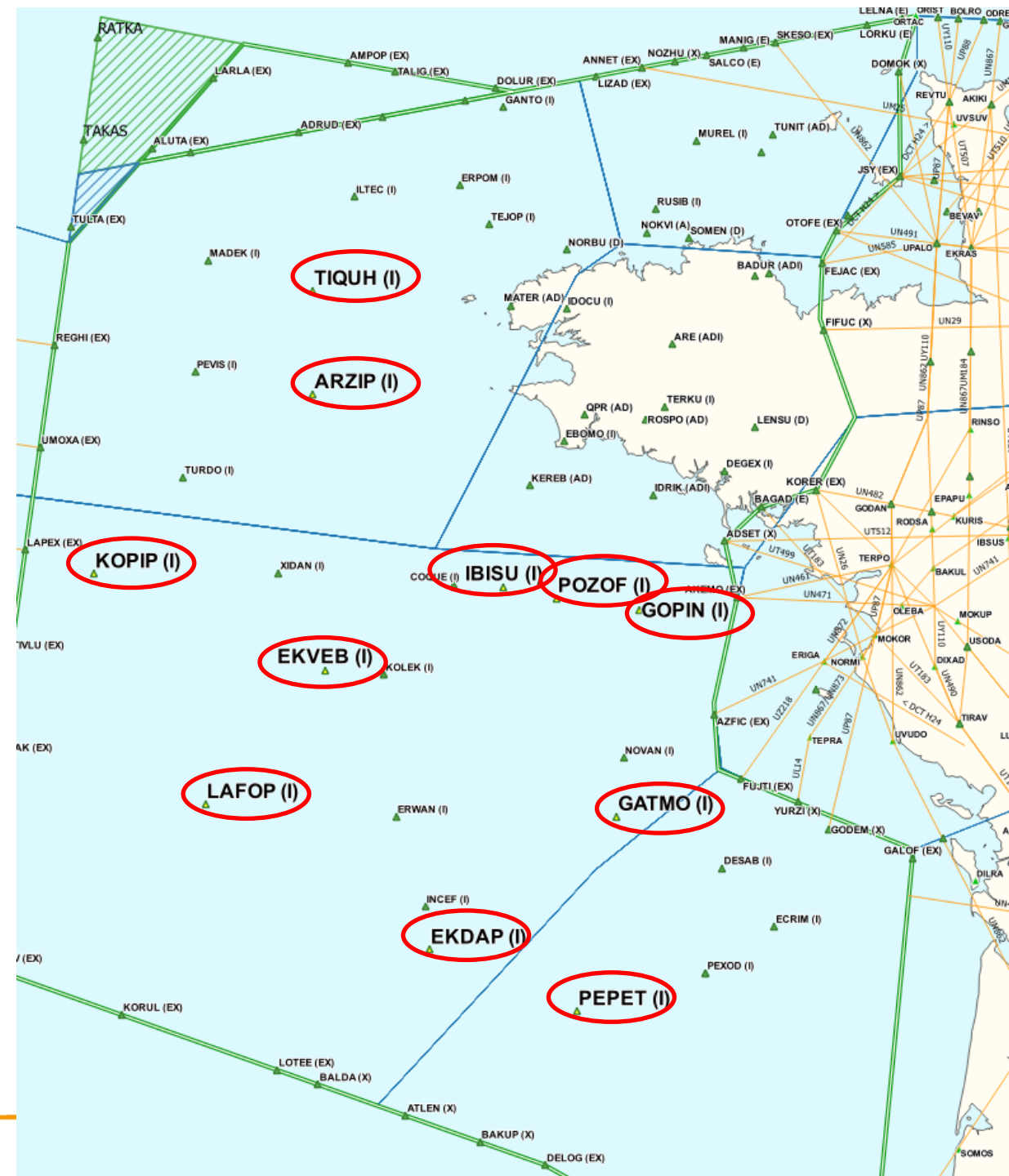
Ex ARR LFPO via RIVAK



Brest ACC FRANW update

11 optionnal (I) points added since March 2023 (FDP software upgrade)

- More level change possibilities for flight planning



Bordeaux ACC FRASW update

- [2022 : 4 more FPL possibilities added (-167,000 Nm / year)]
- March 2023: 2 (I) WPT for OKABI – PEPAX (ADABI) & OKABI-ELKUK (DIBAG)
to improve vertical profile at night
- May 2023 :2 more direct routes for night LFPG arrivals : ABRIX-NIGAG-ETPIL
& LUSEM-NIGAG-ETPIL

DSNA FRA contacts

| Function | Name | email |
|------------------------------|--|--|
| DSNA FRA program manager | René FEILLET (=> Jun 2023) (=> Sep 2023) Nicolas Hinchliffe | rene.feillet@aviation-civile.gouv.fr Nicolas.hinchliffe@aviation-civile.gouv.fr |
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| Reims FRA project leader | Pierrick FAUCONIER | Pierrick.fauconier@aviation-civile.gouv.fr |



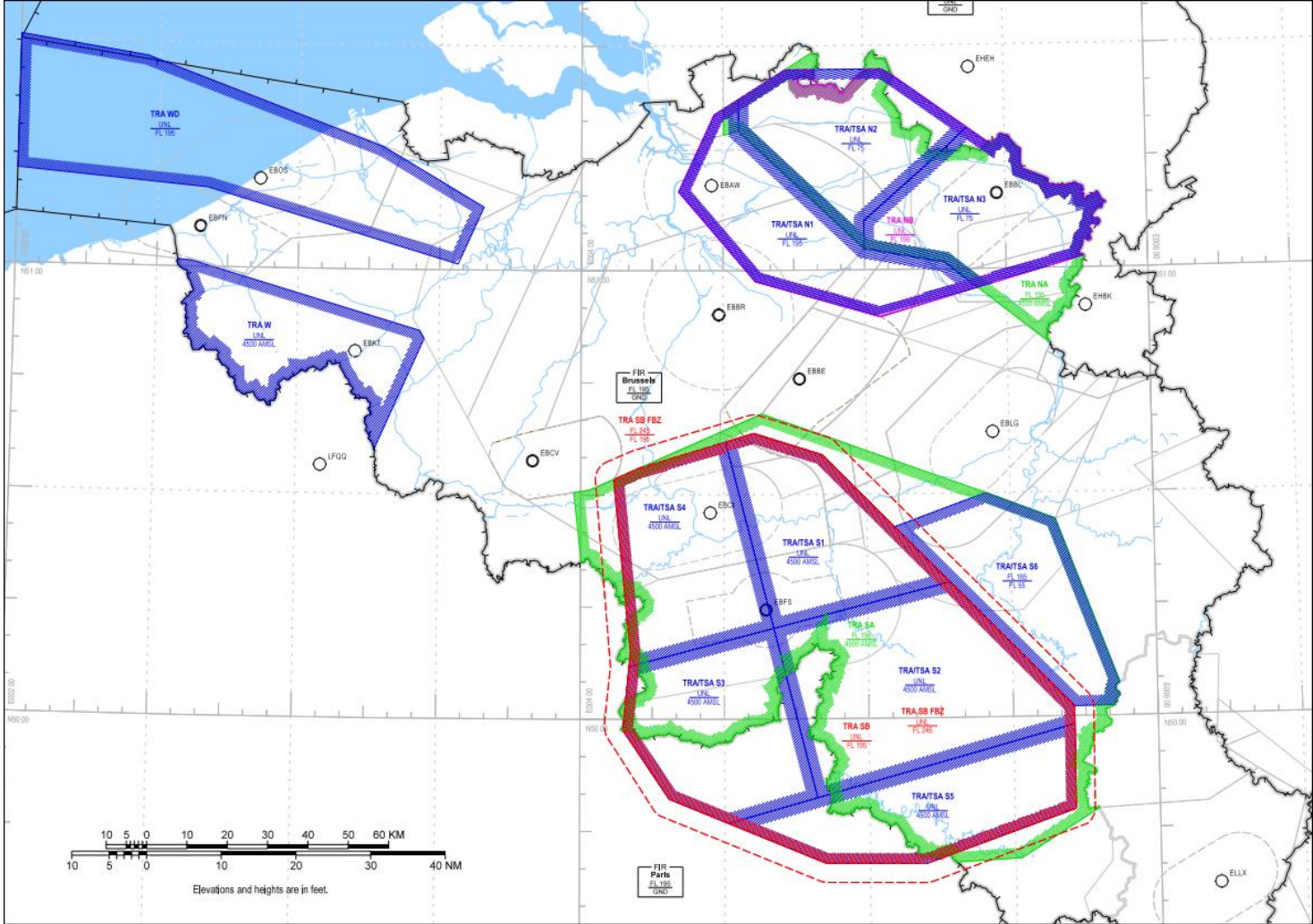
Thank you

Belgian FUA assessment

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Peggy Devestel
COO skeyes

Belgian military areas



Airspace management in 2021

Release of Military airspace at D-1 via AUP:

- Only before the start of Military activities and between the end of day activity and start of Night flight Mil activity (night flight days Mon - Tue)
- Exception for FL365+ at D-1 also release airspace during the day, if at least 1 hour between 2 Mil activities

Release of Military airspace via UUP:

- Only release of airspace max 3 hours ahead



Airspace management in 2022



As from March 2022 new evolution in the use of AUP/UUP - based on the Military bookings at D-1

Release of Military airspace at D-1 via AUP:

- Before the start of the Military activities + all timeframes of at least 1 hour between 2 Mil activities + after end of Mil activities

Release of Military airspace via UUP:

- Any release of Military Activity during the day, if at least 1 hour between 2 Mil activities

A so called "Procedure 3" exists to allow the Military to reclaim airspace 3 hours in advance



Missed opportunities AUP vs UUP

A missed opportunity is a flight who files around a military area while the area is released to civil users (published as such in AUP or UUP)

| | 09-15 Sept 2021 | | | 08-14 Sept 2022 | | |
|--------------------|---------------------------------|----------------------------|---------------------------|---------------------------------|----------------------------|---------------------------|
| Flow | Nb of flights filing around TRA | Nb of missed opportunities | % of missed opportunities | Nb of flights filing around TRA | Nb of missed opportunities | % of missed opportunities |
| KOK to SUTAL/PITES | 245 | 149 | 61 % | 284 | 142 | 50 % |
| Arrivals LFP | 284 | 161 | 58 % | 343 | 184 | 54 % |
| SW-bound flow | 198 | 74 | 37 % | 206 | 63 | 31 % |

The percentage of missed opportunities is significantly reduced in 2022 compared to 2021, showing the benefit of a more accurate publication of military activity at D-1:

- Better predictability on sector loads
- Savings in fuel carriage



Example of missed opportunities

2022: KOK to SUTAL or PITES

849 flights → 565 filed via TRASB



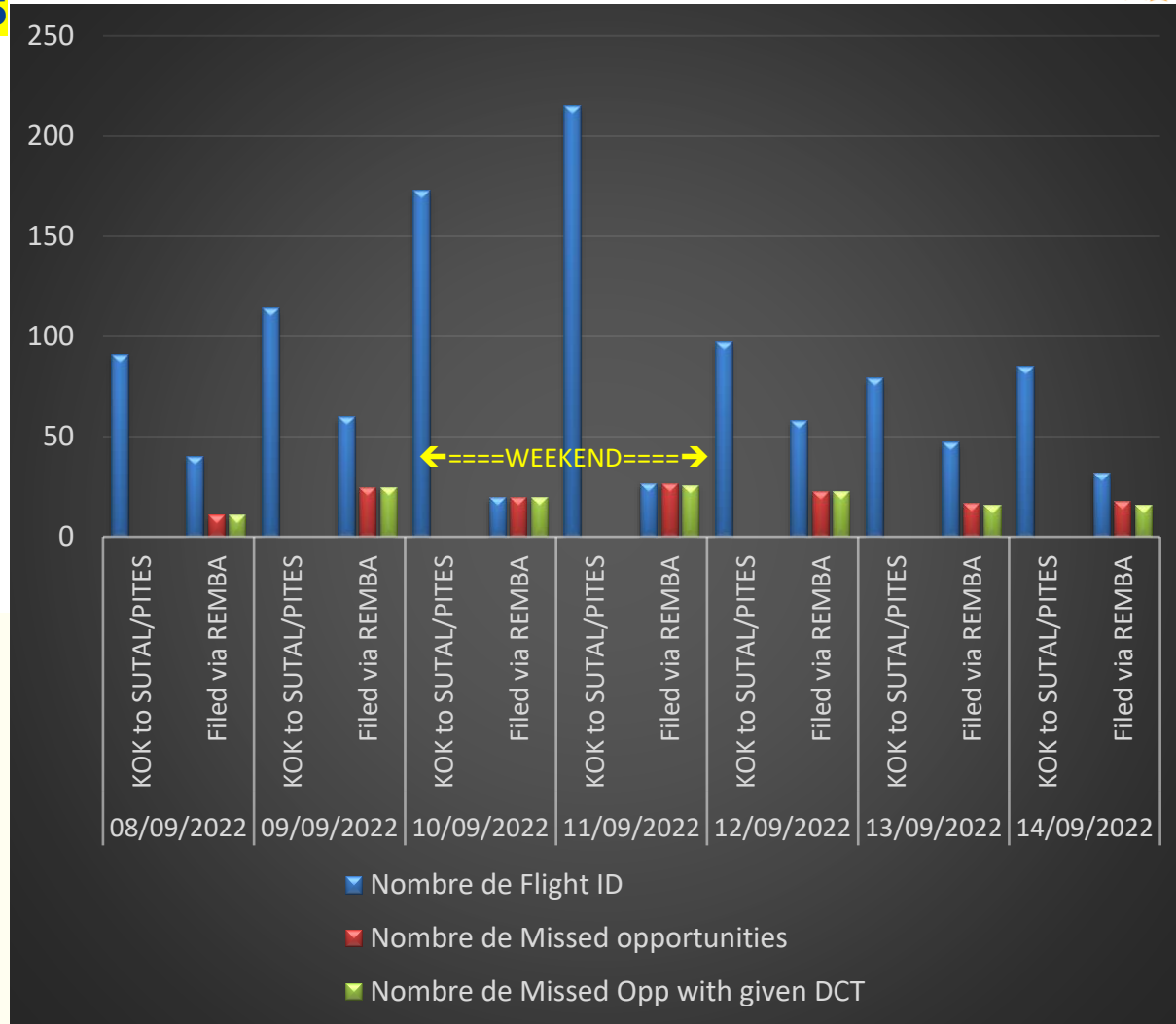
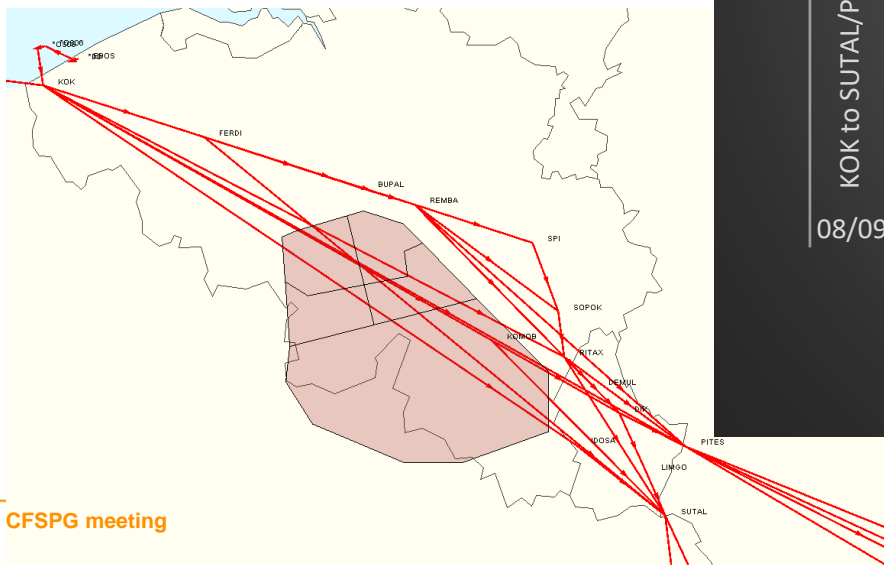
284 via REMBA → 142 when Mil ON



142 missed opportunities (50%),



97% (138) received a DCT through TRASB/SA



Missed opportunities & savings



Example flow KOK

| | 09-15 Sept 2021 | | | 08-14 Sept 2022 | | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Flow KOK | fuel | CO2 | Extra Mileage | fuel | CO2 | Extra Mileage |
| Total Cost (1 week) | 4120 kg | 13021 kg | 917 NM | 4928 kg | 15577 kg | 706 NM |
| Average cost/flight | 27,65 kg | 87,39 kg | 6,15 NM | 34,70 kg | 109,70 kg | 4,97 NM |
| Savings 98,5% (2021) & 97% (2022) | 4058 kg | 12826 kg | 903 NM | 4780 kg | 15109 kg | 684 NM |
| Average savings | 27,24 kg | 86,08 kg | 6,06 NM | 33,66 kg | 106,41 kg | 4,82 NM |
| Yearly savings | 105 tons | 332 tons | 23000 NM | 211 tons | 667 tons | 30000 NM |



Missed opportunities & savings Summary



| | 09-15 Sept 2021 | | | 08-14 Sept 2022 | | |
|-----------------------------|-----------------|------------------|-----------------|-----------------|------------------|-----------------|
| Flow | fuel | CO2 | Extra Mileage | fuel | CO2 | Extra Mileage |
| KOK to SUTAL/PITES | 105 tons | 332 tons | 23000 NM | 211 tons | 667 tons | 30000 NM |
| Flow Arr LFP | 71 tons | 229 tons | 7500 NM | 297 tons | 939 tons | 24000 NM |
| Flow SW-Bound | 145 tons | 459 tons | 28000 NM | 175 tons | 553 tons | 30000 NM |
| Total yearly savings | 321 tons | 1020 tons | 58500 NM | 683 tons | 2159 tons | 84000 NM |



Extra fuel carriage assessment *

| | 2021 | | | 2022 | | |
|-----------------------|-----------------------------|------------------|-----------------|-----------------------------|------------------|-------------------|
| Flow | % Missed Opp (& Traffic) | fuel | CO2 | % Missed Opp (& Traffic) | fuel | CO2 |
| KOK to SUTAL/PITES | 61 % (61% of 6331 f) | 11,5 tons | 36 tons | 50 % (12541) | 16,5 tons | 51,7 tons |
| Flow Arr LFP | 58 % (10797) | 11 tons | 35 tons | 54 % (15907) | 22 tons | 70 tons |
| Flow SW- Bound | 37 % (7162) | 21 tons | 66 tons | 31 % (10048) | 18 tons | 52 tons |
| Total Cost | | 43,5 tons | 137 tons | | 56,5 tons | 173,7 tons |

* All Heavy and Jumbo flights are considered as B777 for the assessment

* All Medium and Light flights are considered as A320 for the assessment



Conclusion



- Since 2022, the AUP is better adapted to military requests and enables AOs to file a flight plan that will correspond to the actual trajectory
- The UUP with a horizon of more than 3 hours (rolling UUP) gives AOs more time to update their flight plan
- There are still a significant number of flights that do not take into account the information published in the AUP/UUP and file flight plans that bypass inactive military areas. However, this number decreased in 2022, showing the improvement of the AUP/UUP procedures published by the Belgian AMC
- When military airspace is released, the airspace is immediately reused by civil ATCOs, as 85% to 98% of the inefficient FPL are given directs
 - These directs represent annually 683 tons of saved fuel, 2159 tons of CO₂, and 84000 NM
- It is still difficult to identify the best performing Airlines in terms of AUP/UUP, as airlines behavior seems to vary from one year to another, and from one AO to another
- Airlines could save them 56 tons of fuel (173 tons of CO₂) per year in terms of fuel carriage, thanks to a special attention to AUP/UUP



**Thank you
for your attention!**

