

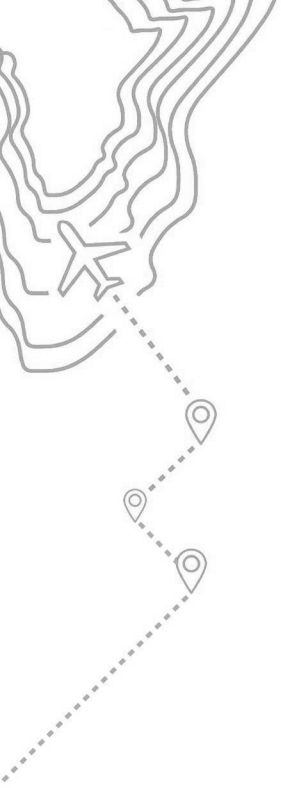


RocketRoute

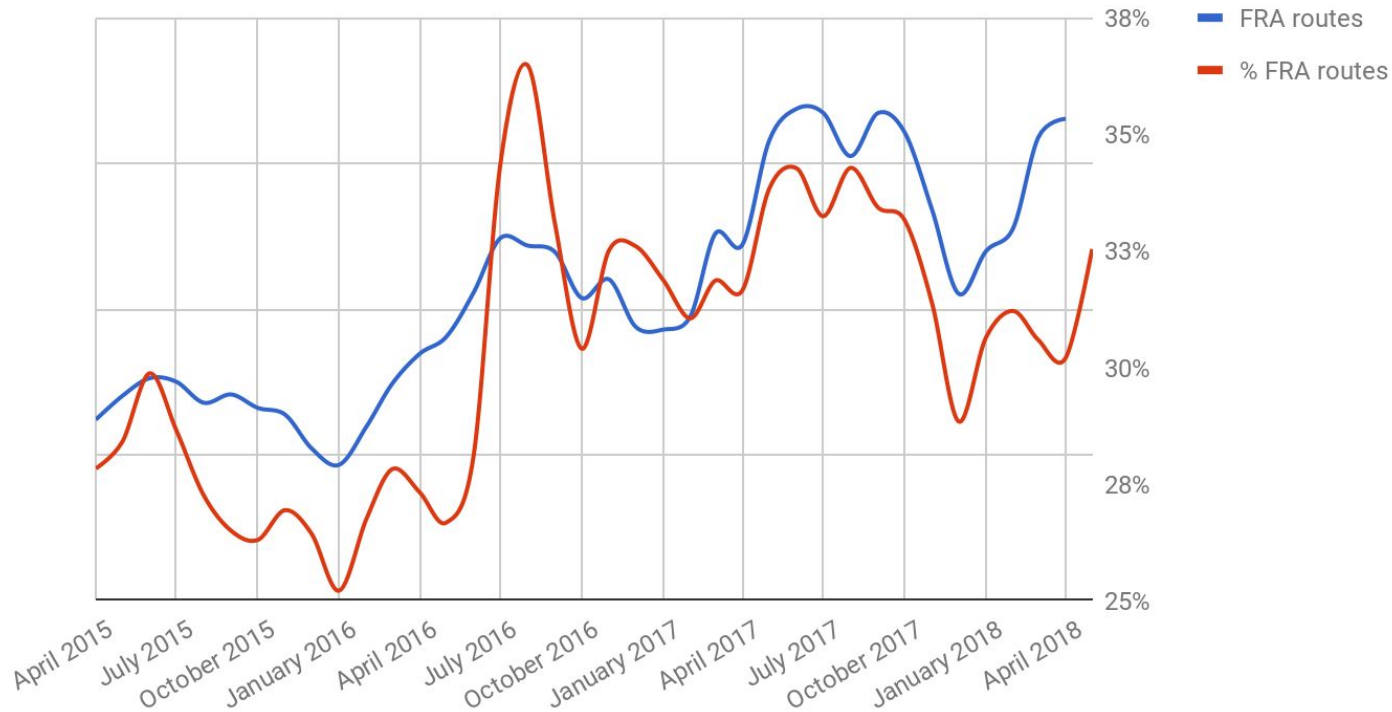
Free Route Airspace Workshop

24 & 25 May 2018

Uwe Nitsche CEO – RocketRoute Ltd



Growth in use of FRA





What to consider with FRA

- **Must dynamically respond to eAUP/UUP**
 - Company routes are no longer a suitable solution
 - Systems must synchronise constantly
- **Interaction with FRA specific RAD**
 - Entry, Exit, Intermediate, Arrival, Departure coded in RAD
 - Time restricted FRA points
- **SID/STAR connection**
 - Are SID/STARs endpoints allowed as arrival/departure points?
 - If not seek connections to ATS network not restricted by RADs
- **Minimum Safe Altitudes**
 - Planner is responsible for safe routing
 - Some FRA provide minimum altitudes by airspace definitions e.g. SECSI FRA with airspace xml



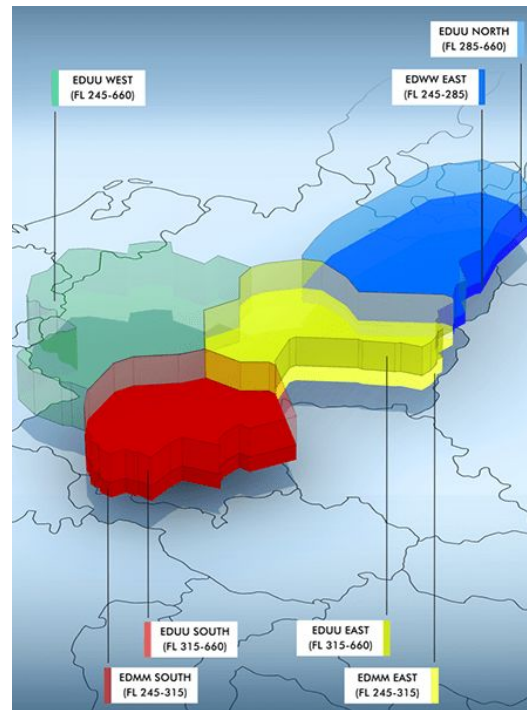
FRA – Best practice

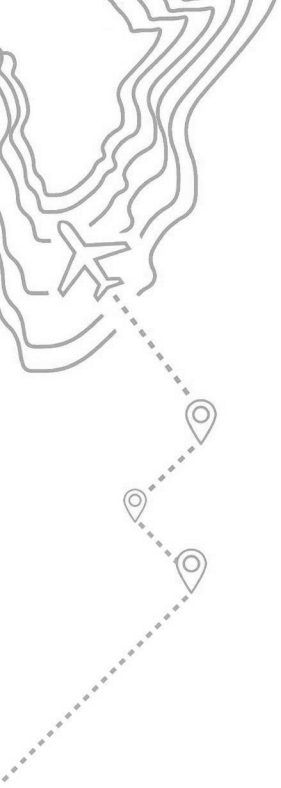
- Any waypoint can be used as Intermediate, Arrival and Departure point
 - *Example: Hungary, Portugal*
- 24H FRA availability
 - *No coding of time restrictions*
- Cross border DCT allowed without border restrictions.
 - *Example: Norway, Sweden, Finland, Denmark (Borealis)*
- Well thought through connections to/from airports.
 - *SID/STAR ends at Arrival/Departure points.*



Challenging examples of FRA

- Segmented/cross border FRA within country
- FRA restrictions create DCT replica of previous airways
 - *Example: Germany (core)*
- RAD restrictions prohibiting connections to Departure points due to high FRA base
 - *SID -> Lower Airway -> Departure point -> Then DCT, that DCT is then restricted by general RAD restriction*
 - *Example: Italy (before AIRAC1806)*





Ideas for future improvements



- **More cross-border FRA collaboration**
 - See Borealis example
- **Avoid recreating ATS route network with DCTs through RAD restrictions**
 - Avoid Blocking RADs that block DCTs and waypoints in FRA
 - Minimise Mandatory RADs that force route to DCT or FRA waypoint
- **Provide airspace structures with minimum altitudes**
 - See Austria FRA
- **Try to reduce complexity in RAD definitions especially where multiple restrictions interact.**
 - Review full RAD set looking for conflicts and interactions





Systems Evolution



Current system already high performing in FRA



Provide user options exploiting available low sector loads



Improve route optimisation in FRA (like FFA despite RAD)



Improve border parallel zone avoidance / x-ing angles



Extend meta-regulations (control surprising results)





**THANK YOU
FOR YOUR
ATTENTION**



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