

# **RAD – Way of Writing**

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## New concepts with usual RAD

- **Global Revision of RAD in concerned Airspaces**
- **Different strategies according to ACC and needs:**
  - ✓ No grammar change
  - ✓ Thorough though complex writings
- **Contingencies in cases of disruptions**
- **Feedback from user is welcome**



# LS Strategy

- Limited FRA will allow only some specific connection e.g. from EPT to XPT
- Every FRA significant point will have its own restriction

EPT NATOR			
	Routing	FL Restrictions	TRA affected
XPT	NATOR DITON	195+	CENTER
AKASU	NATOR TRA AKASU	195-245	CENTER
AKASU	NATOR TRA DEGAD AKASU	195+	No
GAMSA	NATOR TRA GAMSA	195+	No
HOC	NATOR HOC	195+	No
NUNRI	NATOR TRA NUNRI	195+	No

- LSZ008 allows connection from NATOR (E) to DITON, LUTIX, BADEP, ULMES (I) or HOC, RESIA, (X)
- LSZ009, LSZ010, LSZ011 and LSZ012: allow connection from IPT's to either the next IPT or an XPT

LSASFRA	NATOR TRA ODINA	195+	No	
	NATOR TRA RESIA	195+	EAST A9 & EAST A9+	LSZ008
	NATOR RESIA (HOC, BADEP)	195+	EAST A9 & EAST A9+	
	NATOR TRA SUKAN	305+	EAST A9 & EAST A9+	
DITON	NATOR TRA NEGRA SUKAN	305+	No	LSZ009
TRA	NATOR ULMES	195+	EUC25SP	
	Only available for traffic			
	1. with-FL-between FL195...FL245 via pt:AKASU			
	2. via pt:DEGAD and then pt:AKA SU		H24	LSZ010
LUTIX	Only available for traffic via pt:BENOT		H24	LSZ011
BADEP	Only available for traffic via pt:ULMES		H24	LSZ012



# LS Strategy

- **Vertical connectivity :**
  - **Vertical connection only allowed via dedicated ATS RTE's**
  - **LSZ001 grants connection for DEP LSZH into FRACH via specific ATS RTS**
  - **LSG007 grants connection for ARR LSGG from FRACH via specific ATR RTS**

LSASFRA	Not available for traffic DEP (ad:LSZH, LSMD) except-via 1. DEGES Z1 MINGA 2. DEGES Z1 ALAGO Z5 LOKTA 3. DEGES Z2 OSDOV 4. DEGES Z6 ALOXO 5. DEGES Z6 NUNRI T103 BEMKI 6. VEBIT T53 GERSA Z50 RESIA 7. VEBIT T53 GERSA N850 ODINA 8. VEBIT T53 GERSA N850 DEGAD Z424 AKASU 9. VEBIT T50 ROTOS UZ669 ULMES 10. VEBIT T51 LASUN UT10 TORPA 11. VEBIT T51 LSAUN UN176 MOROK	H24	LSZ001
LSASFRA	Not available for traffic ARR LSCG Except via 1.MOROK UZ24 AKITO 2.LUSAR 3.BENOT 4.ULMES 5.AOSTA L615 BANKO 6.KUKEV L50 BANKO 7.IRMAR DCT KINES	H24	LSG007



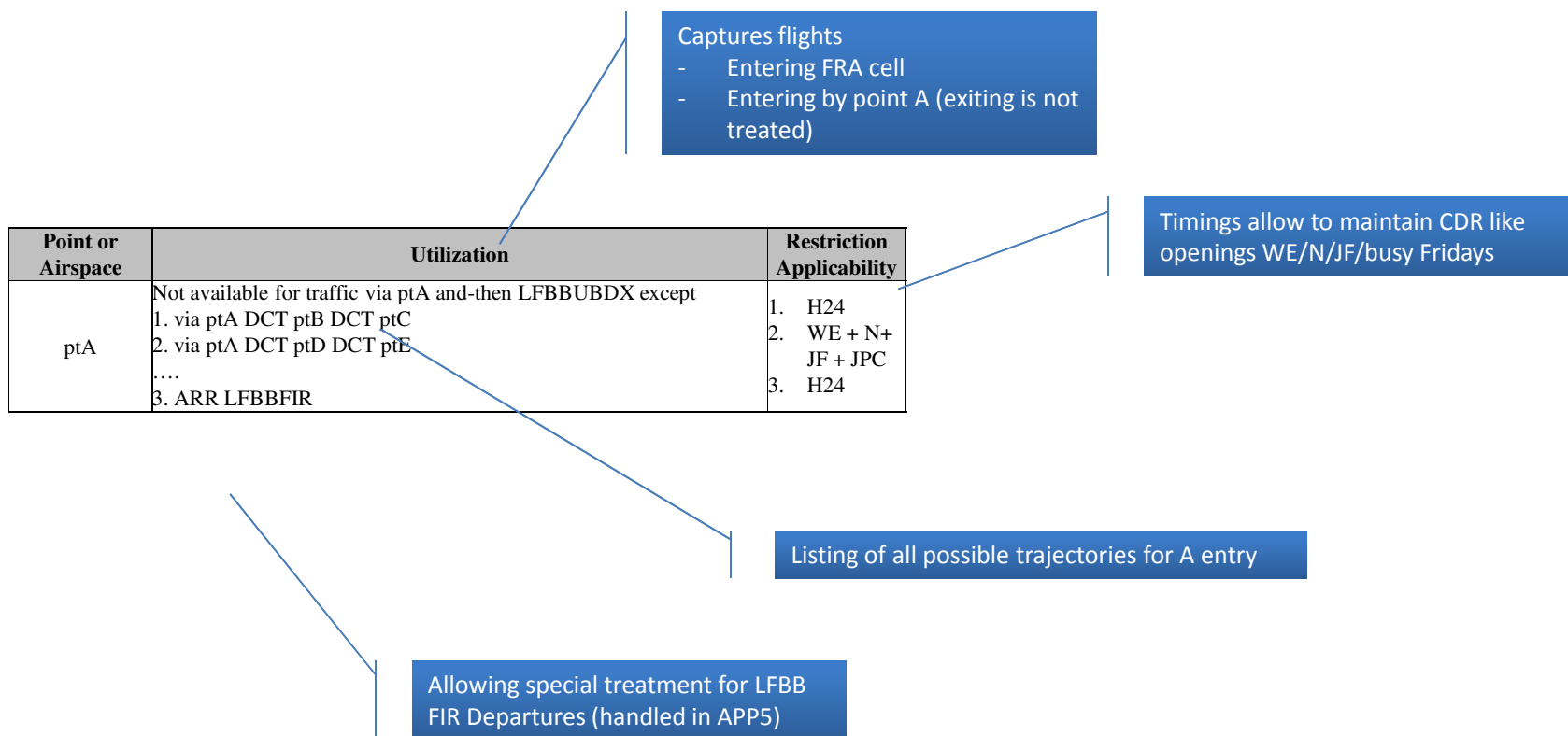
# LFBB strategy

- Prerequisites :
  - No ATS routes nor DCT above FL195
  - Only E,X,A,D,I points, trajectories managed by RAD, using existing points as often as possible
  - No modification of ATC sectors
  - Local FDPS (CAUTRA) constraints
- Usage of Entry Points / Focal Points / APP5 restrictions



# LFBB strategy

- Entry Points restrictions



# LFBB strategy

- Focal point restrictions : allow simplification of the global restrictions by using recurrent pattern

Point or Airspace	Utilization	Restriction Applicability
ptA	Not available for traffic via LFBBUBDX 1. via ptB, ptC, ptD and-then ptA except a. via ptA DCT ptE DCT ptF b. via ptA DCT ptG DCT ptH c. via pt A R10 ptI with ARR LFxx 2. via ptJ, ptK and-then ptA except a. via ptA DCT ptL DCT ptM b. via pt A R10 ptI with ARR LFxx	H24

- Local FIR Airport handled with specific restrictions

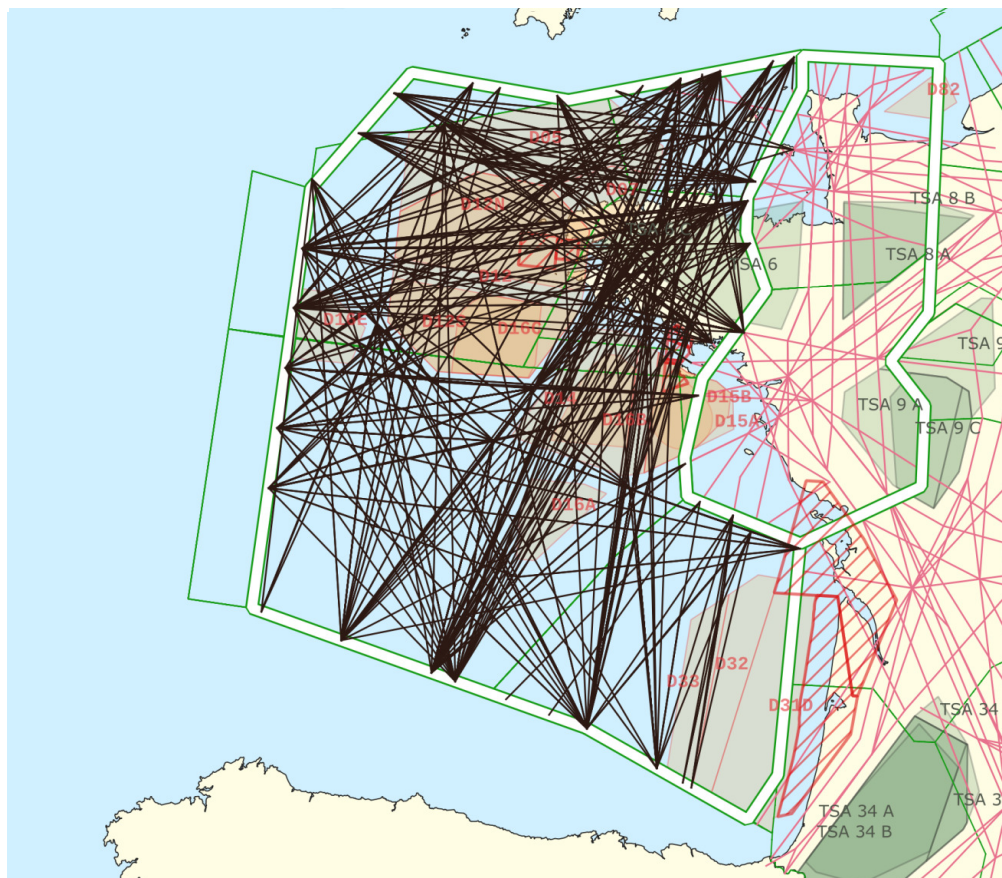
Change record	AIRWAY	FROM	TO	Point or Airspace	Utilization	Restriction Applicability	ID Number	Operational Goal	Remark/s	ATC Unit	NAS/FAB
				LFBBUBDX	Not available for traffic DEP LFXX/.... except 1. Via ptA RXX ptB DCT ptC 2. Via ptA RYY ptD DCT ptE 3. Via ptA RZZ ptF DCT ptG	H24	LFXXX X	To organize flow in LFBBACC		LFBBACC	LF

Change Record	ARR AD	First PT STAR / STAR ID	DCT ARR PT	ARR Restrictions	ARR Restriction Applicability	ARR ID No	ARR Operational Goal / Remarks	NAS / FAB
NEW	LFXX	pt1, pt2, pt3		Compulsory for traffic via LFBBUBDX	H24	LFXXX	To facilitate correct arrival from LFBBUBDX	LF



# LFRR strategy

## Transitioning





# LFRR strategy

## Usage of :

### Flow Restriction :

List the allowed traffic flows

### Routing restrictions :

Limit the intermediate waypoints available for each flow

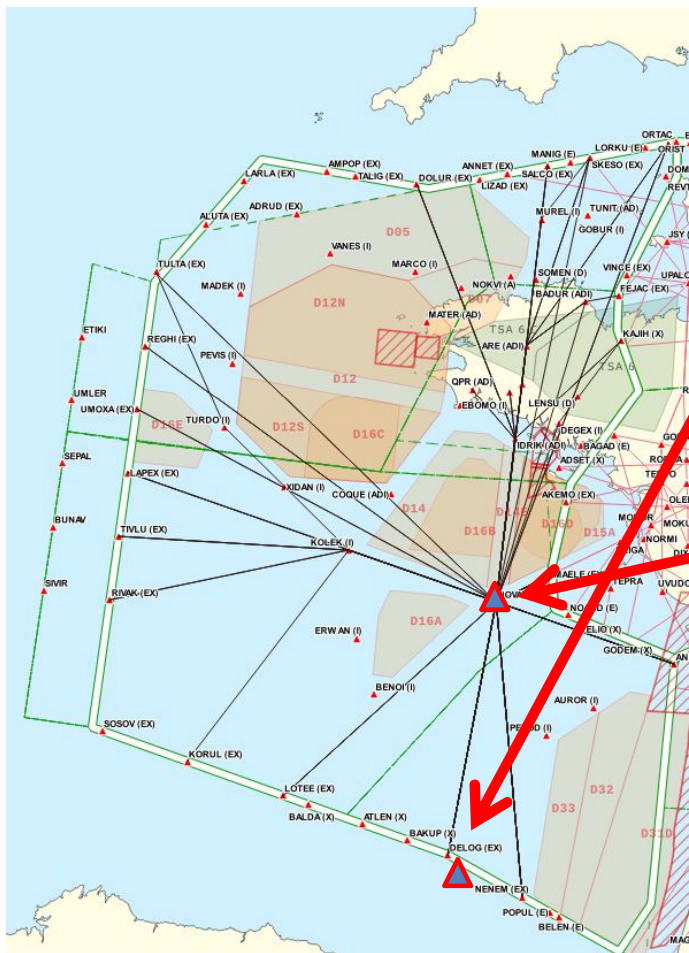
Prevent sector clippings

**Connectivity to and from Brest FRA will be organised using RAD App5**

LFRRB (DEP)	QPR	Not available for traffic via LFRRFRA Except via ADSET,NENEM,DELOG,BALDA,LOTEE,KORUL,RIVAK, TIVLU,LAPEX,UMOXA,REGHI
LFRRB (ARR)	QPR	Not available for traffic via LFRRFRA Except via LOTEE,KORUL,RIVAK,TIVLU,LAPEX,UMOXA



# LFRR strategy



**DELOG**

Not Available for traffic via LECMCTA and then LFRRFRA  
 Except via  
 1. TIVLU, LAPEX, TULTA, DOLUR, SALCO, SKESO, FEJAC, KAJIH, TELIO, GODEM, ADRUD  
 2. ARE, ROSPO, IDRİK

**NOVAN**

Not available for traffic via LFRRFRA Except via  
 1. LELNA And Then NENEM, DELOG  
 2. SKESO And Then NENEM, DELOG  
 3. SALCO And Then NENEM, DELOG  
 4. DOLUR And Then NENEM, DELOG  
 5. TULTA And Then ANSAT  
 6. MAELE And Then KORUL, RIVAK, TIVLU, LAPEX  
 7. ANSAT And Then TIVLU, UMOXA, REGHI, TULTA  
 8. REGHI And Then ANSAT  
 9. UMOXA And Then ANSAT  
 10. LAPEX And Then MAELE, ANSAT  
 11. TIVLU And Then MAELE  
 12. RIVAK And Then MAELE  
 13. LOTE E And Then KAJIH, MAELE, IDRİK  
 14. DELOG And Then DOLUR, SALCO, SKESO, FEJAC, KAJIH, ARE, ROSPO, IDRİK  
 15. BADUR And Then NENEM, DELOG  
 16. QPR And Then NENEM, DELOG  
 17. IDRİK And Then NENEM, DELOG  
 18. NENEM And Then ROSPO



## LFBB/LFRR pros and cons

### Positive

#### LFBB :

- ✓ No yoyos/ sharps turns
- ✓ Only envisaged FPLs are possible
- ✓ Easy and feasible FDSP parameters
- ✓ Easy RAD maintenance

#### LFRR :

- ✓ Low number of RAD maintenance
- ✓ Human & machine understandable
- ✓ Improved H-V efficiency without loss of capacity

### Negative

#### LFBB :

- FIR to FIR flights limited
- Circular flights (MIL) not possible
- GAT / OAT transition difficult
- EPT trajectories uneasy unless RTECOORATC
- Impossible RAD avoidance, special routings (cf contingency)

#### LFRR :

- No step implementation
- Exhaustive route catalogue to maintain



# Contingencies

- **RAD handled FRA is straightforward though it lacks flexibility**
- **Need to address specific situations where flight planning has still to be allowed**
- **Possible leads :**
  - ✓ **Via NM scenarios**
  - ✓ **Via dormant RAD restriction : known to users but only applied when necessary**



## Users feedback

- **Participation needed in Preval :**  
*Eg LFBB december 2020; During 2021 other PREVALs will be organised*
- **Is it fitting your systems ?**
- **Any ideas to make it clearer / easier for FPL calculations ?**

